An ethnographic study of medicines, care, and antimicrobial resistance amidst disorder and decline in Yangon, Myanmar

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Thesis submitted in accordance with the requirements for the degree of Doctor of Philosophy of the University of London, London School of Hygiene & Tropical Medicine

August 2022

Department of Global Health and Development

Faculty of Public Health and Policy

London School of Hygiene and Tropical Medicine

Funded by the UK Foreign, Commonwealth & Development Office

I Yuzana Khine Zaw, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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ABU	antibiotic use
ABR	antibiotic resistance
AFPFL	Anti-Fascist People's Freedom League
AIDS	acquired immune deficiency syndrome
AMC	antimicrobial consumption
AMR	antimicrobial resistance
ASEAN	Association of Southeast Asian Nations
ART	antiretroviral therapy
AST	antimicrobial susceptibility testing
BSPP	Burma Socialist Programme Party
CDM	civil disobedience movement
CRP	C-reactive protein
EGASP	Enhanced Gonococcal Antimicrobial Surveillance Programme
GAP	Global Action Plan
GLASS	Global Antimicrobial Resistance and Use Surveillance System
GP	general practitioners
GPEDC	Global Partnership for Effective Development Cooperation
FAO	Food and Agriculture Organization of the United Nations
FDA	Food and Drug Administration, Myanmar
FIEBRE	Febrile Illness Evaluation in a Broad Range of Endemicities
HIC	high-income countries
HIV	Human immunodeficiency virus
ICJ	International Court of Justice
IMF	International Monetary Fund
INGO	international non-governmental organization
KAP	knowledge attitude and practice
LMIC	low- and middle- income countries
LRO	Labour Rights Organization (also an anonymised acronyms for the labour rights organization we did fieldwork with)
LSHTM	London School of Hygiene and Tropical Medicine
MDGs	Millennium Development Goals
MOHS	Ministry of Health and Sports
MORU	Mahidol Oxford Tropical Medicine Research Unit
NAP	National Action Plan
NCC	national coordination centre for AMR

NGO	non-governmental organization
NLD	National League of Democracy
NRL	national reference lab
OIE	World Organisation for Animal Health
OTC	over the counter
PDF	People's Defence Force
PHC	Primary Healthcare System
RDU	Rational Drug Use
SDGs	Sustainable Development Goals
SLORC	The State Law and Order Restoration Council
SO	state official
SPDC	The State Peace and Development Council
TB	tuberculosis
TLM	anonymised acronyms for the INGO we did fieldwork with
UK	United Kingdom
UK FCDO	United Kingdom Foreign, Commonwealth and Development Office
UN	United Nations
UN- Habitat	United Nations Human Settlements Programme
US	United States of America
USDP	Union Solidarity and Development Party
WHO	World Health Organization

Glossary of Burmese Terms and Phrases[1]

အကြောဆေး	*a kyàw hsày*	intravenous/intramuscular injections or drip
အသိ	*a thí*	an acquaintance
ဒဏ်ကြေလိမ်းဆေး	*dan kyay leìn hsày*	traditional ointments usually for managing pain/aches
အင်္ဂလိပ်ဆေး	*ingaleik hsày*	English medicines referring biomedicines
ကံ	*kan*	to have good karma, to be lucky
ကန်တော့	*kan táw*	to pay respect/to pay a bribe
မြန်မာဆေး	*nyanmar hsày*	Myanmar medicines
နားလည်မှု	*nàlehmú*	mutual agreement
ပဋိဇီဝဆေး	*pá tí zi wá hsày*	antibiotic (clinical term)
ပိုးသတ်ဆေး	*pò that hsày*	antibiotic (colloquial term), also translate to germ/microbe killer
ပွဲစား	*pwèza*	informal broker
ဆရာ	*hsaya*	teacher/doctor (male)
ဆရာမ	*hsayama*	teacher/doctor (female)
ဆေး	*hsày*	medicines
ဆေးကောင်း	*hsày kaùng*	good medicines
ဆေးနိုင်တယ်	*hsày naing te*	the medicines are effective
ဆေးဆိုင်	*hsày saing*	medicine shop
စပ်ဆေး	*sat hsày*	mixed medicines referring to drug cocktails
တိုင်းရင်းဆေး	*taìng yìn hsày*	traditional medicines
တပ်မတော်	*Tatmadaw*	Defense Services
တရားမဝင်	*ta yà ma win*	illegal
တရားမဝင်ဆေး	*ta yà ma win hsày*	illegal medicines
သမီး	*thamì*	daughter
သီးခံ	*thì hkan*	tolerance/forbearance
ဖမ်းခံရမယ်	*hpàn hkan ya me*	you can get arrested
စပ်ဆေးမရောင်းရ	*sat hsày* ma yaùng ya	cannot sell mixed medicine

[1] I have included the Burmese scripts in the text alongside the terms when they have been used. The English spelling of the terms have been derived from the British linguist and renowned Burma studies scholar, John Okell's *Burmese Romanization: A Proposed Systemization of the Traditional Method* (Okell, 2000).

Acknowledgements

This research would not have been made possible without all the help and support I received during my journey. First of all, I would like to thank all my research participants whose names I have anonymised or not mentioned to protect their identities. Aunty Moe and U Kyaw, thank you for being both the beginning and end of this research and for your patience, kindness, and willingness to teach me many things about the pharmaceutical market and industry in Myanmar without expecting anything in return. I thank the two clinicians at Mya clinic who patiently let Bawk and I observe their clinical practices and answer our questions. I thank Maung Toe for taking multiple interviews with us and for explaining labour laws and practices with much patience. I thank friends working within the Food and Drug Administration and the Ministry of Health and Sports who took personal risks in accepting interview requests and explaining things to me with patience and honesty. I also thank the rest of my interlocutors from clinics, charities, and labour rights groups who gave up their time, answered my questions, and allowed me to follow and observe their everyday lives.

Throughout this project, I am extremely grateful to my first supervisor Coll de Lima Hutchison for your support, encouragement, and willingness to guide me above and beyond the duties of an academic supervisor while being both a mentor and a friend. I am forever grateful to receive your mentorship and kindness in not only managing the PhD but also my growth as an individual. Thank you for being there for me in the past few years when I experienced significant life changes and for the great amount of empathy you have shown during this journey.

I am also very grateful to my second supervisor Professor Clare IR Chandler, who tirelessly pushed me towards excellence and has not once failed to respond to all my queries, however minor they were. This PhD would not have been made possible or completed without the excellent academic, administrative, and funding support you have acquired for me that other students can only dream of. Thank you for all the preparation you took in establishing reading groups, writing workshops, and analysis meetings and for bringing me into the Antimicrobials in Society research group. Thank you for establishing a social science research cohort, bringing everyone closer and making collaborative work possible. Thank you for the strength you have shown as a project supervisor and a leader despite the challenges we have all faced in the last few years due to the covid-19 pandemic. In sum, thank you for ensuring that I am more than well provided for as a PhD student, not giving up on me in many ways, and for teaching me many skills beyond that academic work.

I thank my colleagues from the FIEBRE social science team Salome, Susan, Justin, and Ellie for your continuing feedback on my work. I thank Professor Catherine Goodman and Associate Professor Eleanor Hutchinson for helping with viva preparation. I am also grateful to the FIEBRE study for providing me with the opportunity to do this research. In particular, I am grateful to Professor David Mabey, Associate Professor Heidi Hopkins, Professor John A. Crump, Amit Bhasin, Ruth Lorimer, Michael Lawrence, and Eulalia Iglesias de Bolos for your assistance with making funding and logistics possible. I thank the UK Foreign Commonwealth and Development Office for funding this study.

I am grateful to Ja Seng Bawk, who has supported me throughout this research as a partner more so than a research assistant. Thank you for your amazing organizational skills, helping me adjust to Yangon, providing me with moral support, and teaching me many survival skills. Thank you for treating this research project as your own and for caring for me as a person. I am also grateful to Ko Myo Min Kyaw, Ko Kaung Myat, Ma Demo Lwin, Ma Lin Lin Soe, Ko Naung Naung, for your reflections on this research.

I thank Izzy Rhoads, Matthew Walton, Indrė Balčaitė, Elliott Prasse-Freeman, and the Burma Studies Group for allowing me to share my drafts and for providing feedback. Indrė in particular, thank you for pushing me and helping me set deadlines for drafts, especially when I put them off under the excuse of not being ready. I also thank Marco and Ern for your friendship, continuing support, and reflections on antimicrobial resistance.

I thank all my friends and family who have encouraged me and cheered me on during this journey. In particular, thanks to anthropologist DS Farrer, for proofreading the thesis, and for showing great enthusiasm and interest for my research field. Thank you, Devrat, for engaging in ongoing academic debates and challenging my assumptions on several occasions. Thank you, Khush, for encouraging me to exercise during the write-up process. I also thank all my friends who have supported me in this journey. In particular, I thank Angela, Wunna, Jay, Tomi, Htike, Marie, Ele, Eaindra, The Noe, Victoria, and Keren for cheering me on. Last, I thank my grandparents, my parents, and my sister for putting me on this path and supporting me throughout. In particular, I thank my mom for providing a second opinion on Burmese concepts, helping me proofread the Burmese translations and transcriptions, and for being proud of me. This thesis is written in loving memory of my late grandmother, Phwa Khine, who would also have been very proud and would have enjoyed reading this work.

For my grandmother, Phwa Khine

Abstract

Antimicrobial resistance (AMR) has gained much attention, described by some as a global health emergency. At the 2015 World Health Assembly, countries around the world were asked to create national action plans to address AMR, following a blueprint of the World Health Organization's Global Action Plan (WHO GAP). This thesis, positioned in a suburban area of Yangon, Myanmar, provides a reflection on the expected state-centric approach to implementation. My ethnographic fieldwork illustrates how efforts under the umbrellas of awareness-raising and changing behaviours to curb antibiotic misuse can reinforce rather than relieve the conditions that lead to reliance on antibiotics through informal routes. Myanmar, with its authoritarian state and ongoing civil wars, is governed by a fragmentary and volatile rule of law. Others have previously shown how the residents of Myanmar have developed everyday coping mechanisms to adapt to a governance structure characterised by caprice and neglect. My ethnographic research explored how coping mechanisms have also developed in the context of medicine regulation and use as I traced medicines from within households, drug shops, private practices, markets, to pharmaceutical companies. I argue that medicine 'misuse' behaviours (overuse of medicines, inappropriate use of medicines) in Yangon as characterised from a clinical perspective, are less shaped by individuals and more so by the failures and biopolitical abandonment from the institutions/systems which are, in theory (according to values promoted by the liberal international order /also values promoted by the WHO GAP), supposed to protect individuals.[2] Medicines have become a quick fix to care for and support individuals in place of these failures. These findings illuminate universalist assumptions in AMR action plans that expect a particular order and development trajectory of states and citizens. Attempts to regulate or restrict medicines should take the context of disorder and decline – a situation that is not unique to Myanmar in a post covid-19 world – into account, or they risk intensifying pre-existing pressures on those who are already self-governing or coping on their own.

[2] In this thesis, I use the terms 'liberal'/'neoliberal' to refer to values (freedom, individualism) promoted within liberal democracies. I use the term 'liberal international order' to refer to core values embedded within intergovernmental organizations such as the United Nations, the World Bank, the World Health Organization, and the International Monetary Fund.

Thesis Chapter Summaries

Chapter 1 begins with the rationale where I introduce AMR as a global health problem, describe increasing concerns over antibiotic consumption within lower-income settings, discuss the problem of effective antibiotic policy making and implementation in such spaces, and relate how I address this problem through my specific aim and objectives. Within the rationale, I provide an overview of predominant global health discourses around AMR, particularly focusing on antibiotic regulation. I then briefly discuss the study context and my reasons for selecting Myanmar. I conclude the chapter with a review of social science literature on AMR and the alternative frameworks social scientists have proposed for antibiotic policy.

Chapter 2 provides an overview of Myanmar's history, politics, health system, and rule of law. In this chapter, I draw on previous work (urban studies, medical anthropology, politics and law) by scholars of Burma/Myanmar also known as the Burma Studies Group hosted by the Centre for Burma Studies at the Northern Illinois University. Drawing on Burma studies, I review the literature around rule of law and everyday politics in Myanmar to contextualise everyday living experiences in Yangon, Myanmar.

In Chapter 3, I discuss how my PhD was shaped by my involvement in the FIEBRE study hosted by the London School of Hygiene and Tropical Medicine, and how this research was done collaboratively with colleagues from FIEBRE. I then discuss the anthropologically informed research methods that were used in this study and describe how the ethnography was done together with the FIEBRE Social Science Myanmar research team. I conclude this chapter with an extended reflexive commentary on doing collaborative ethnographic fieldwork in Yangon, Myanmar.

Chapters 4 to 6 are my results chapters and are framed through three different lenses – the pharmaceutical supply chain, regulation, and the everyday lives of the patients or consumers. The result chapters aim to provide a deeper contextual understanding of how antibiotics and medicines more broadly are embedded within Myanmar society. Together, the results of this research argue for: (1) the importance of understanding the context or the wider social and political landscape of antibiotic use; (2) moving away from the common assumption that raising awareness of AMR should be simply focused on individuals for a more collective and holistic approach towards raising awareness; and (3) understanding the social roles of medicines in supporting livelihood practices and their significance beyond the biomedical 'rational'.

Chapter 4 traces medicines (with a focus on antibiotics) through the pharmaceutical supply chain through the biographical approach outlined in the Social Lives of Medicines. By doing so, I describe how the Myanmar rule of law, and everyday politics, shape and influence the trajectory of medicines from manufacture and import to consumption. While tracing medicines (and antibiotics), I highlight the role of various stakeholders involved (manufacturers, importers, pharmaceutical sales representatives and advertisements, medical doctors, and patients or clients) and how they exchanged medicines between one another. While observing these exchanges, I draw attention to wider themes influencing the trajectory of medicines such as pharmaceutical marketing, changing regulatory landscape, and local politics. In doing so, I move away from the assumption of individual responsibility/individual

use embedded within the WHO GAP's awareness raising strategy, aiming at 'correcting' individual medicine misuse behaviours.

In Chapter 5, I use an ethnographic vignette detailing a Food and Drug (FDA) inspection or raid on a small family pharmacy (Sein medicine shop introduced in Chapter 3) embedded within a popular wet market. I use this vignette to discuss antibiotic regulation in practice on the informal sector. I highlight the disconnect between regulation or antibiotic policy as imagined by the WHO in the WHO GAP and policy as enacted in practice. While describing policy in practice, I draw on Bacchi's approach to policy where she discusses policymaking as 'reactions to presumed problems' (Bacchi, 2016). Further to this, I discuss how the WHO GAP/Myanmar NAP were developed as a reaction to a presumed problem, which attempted to dictate how antibiotics and their associated users should be governed (globally via the WHO and nationally through NAPs, state surveillance, regulation and stewardship programmes). Due to problematic framing by the WHO, the proposed strategies in the WHO GAP/Myanmar NAP (a replica of the former), failed to consider local modes of governance. I draw on Burmese concepts to discuss informal modes of functioning and everyday politics in Yangon. In doing so, I highlight the unintended consequences of the disconnect between the WHO GAP and everyday realities in Myanmar, provide reflections on the consequences of this disengagement, and demonstrate solutions towards more effective antibiotic policy making.

In Chapter 6, I shift my attention from the pharmaceutical supply chain to the patients themselves. I focused on factory workers as patients as this research was conducted in an industrial zone. In this chapter, I describe the everyday lives of factory workers and how they are biopolitically abandoned by social security, public health services, public hospitals, and the factory. I define 'biopolitical abandonment' – originally adapted from the Foucauldian concepts of biopolitics and biopower (Foucault 1979) – through Selmeczi's conceptualisation from her work on migration and conflict studies (Selmeczi, 2009). Selmeczi uses the term 'biopolitical abandonment' to refer to the state's neglect and exclusion of certain populations (Selmeczi, 2009). I ethnographically describe the intersection of factory work, sickness, and social security to show how the three factors co-produced precarious circumstances for the factory worker, who was then 'abandoned' (Selmeczi, 2009) by structures that were supposed to mitigate or prevent this precarity (social security, public health services). To cope with precarity, factory workers/consumers resorted to medicine 'misuse' behaviours to manage the demands of both factory work and the abandonment they experience. Drawing on Mol's notions of 'good care', I found the coping mechanisms discussed in this thesis to have been developed through a shared or 'tinkered' process (Chandler et al., 2011; Mol et al., 2015). Coping mechanisms were managed not only by the consumer of medicines or the factory worker alone, but through mutual agreement arrangements between different agents in the healthcare industry (healthcare provider, pharmaceutical sales representative, consumer/client). I discuss how a pharmaceutical model of care developed as a consequence, and how it acted as another coping mechanism to account for infrastructural deficits in Myanmar.

The three chapters provide different lenses – regulation, distribution/providers, and consumption – but together make the argument for: 1) the importance of understanding the context or the wider social and political landscape of antibiotic use; 2) moving away from an assumption of individual responsibility towards one that is collective by providing ethnographic evidence of how antibiotic use is shaped by wider factors, and; 3) the social role of medicines in supporting livelihood practices and their significance beyond biomedical use. All chapters draw on

local terms and concepts reflected and defined together between two native Burmese speakers – JSB, YKZs (details of researchers are discussed in Chapter 3) to provide a deeper engagement with the context. Due to a fear of being at risk of reproducing 'Western' thoughts and explanations for everyday practices in Myanmar, I have purposefully refrained from imposing traditional (dictionary defined) English translated notions/concepts onto local practices. I have done this by leaving the Burmese words and concepts in their original format in this thesis and have only included a rudimentary verbatim translation (cross checked between JSB, YKZ, and other relevant Burma studies scholars) which has also taken the context of speech into account.

Chapter 7 includes my discussion and conclusion. My thesis aims to understand the implications of antibiotic policies promoted through the WHO GAP (awareness raising, behavioural change) on the informal sector in urban and peri-urban spaces within Yangon. The result chapters contextualise the broader landscape in which antibiotics are embedded in by tracing medicines through the pharmaceutical supply chain, discussing antibiotic regulation in practice on the informal sector, and presenting the everyday lived realities of factory workers in the context of precarity and biopolitical abandonment. I summarise the results of each chapter and discuss their implications for antibiotic regulation through a state-centric approach (state policy formulation and implementation through the Myanmar NAP). I also challenge the current interventions (awareness raising, discourses around individual responsibility) being proposed through the WHO GAP and provide reflections on their effectiveness and appropriateness for Myanmar. Last, I discuss the implications of my research for antibiotic policy making in the Global South more broadly and argue for a need to critically engage with the particularities embedded within each context.

Chapter One: Introduction

1.1 Rationale

1.1.1 Global policy discourses on AMR

The World Health Organization (WHO) and other global stakeholders report antimicrobial resistance (AMR) to be an increasing threat to all nations-states.[3] Due to fears of losing 'our' modern-day medicines, the WHO links the fight against AMR to the United Nations (UN) Sustainable Development Goals (SDGs) and raises concerns over how AMR is damaging progress made by the Millennium Development Goals (MDGs) (WHO, 2020).[4, 5] Antibiotic resistance (ABR), a subset of AMR, is described as escalating to 'dangerously high levels in all parts of the world' with a growing list of infections becoming harder or no longer being able to be treated by antibiotics (WHO, 2021a).[6] Antibiotics are one of the most frequently used drugs with global antibiotic consumption having risen by 30% from 2000 to 2010 (Reardon, 2015). ABR not only threatens progress made by modern healthcare, but is also an economic burden to families and societies due to longer hospital stays, higher medical costs, and increased mortality (WHO, 2021a). Concerns over the issue of AMR/ABR has resulted in interested stakeholders framing the topic as a global health priority, with the WHO declaring it as one of the top ten public health threats facing humanity (O'Neill, 2016; World Bank, 2021a; WHO, 2015).

To address AMR, three United Nations (UN) institutions – the WHO, the Food and Agriculture Organization (FAO), and the World Organization for Animal Health (OIE) – initially collaborated and published the Global Action Plan on AMR in 2015 that has operated as a blueprint for action globally (WHO, 2015). Many member-states have used the WHO GAP as a technical guide to develop National Action Plans (NAPs), in accordance with its five objectives. Objectives 1 and 4 focus on awareness raising, and optimising the use of antimicrobial medicines respectively, and suggest strategies to achieve these objectives.[7] The WHO GAP recommends implementation of these strategies through 'clearly identified actions by Member States, the Secretariat, and international and national partners across multiple sectors' (WHO, 2015, p1). Over 120 countries have developed or are in the process of implementing NAPs (Munkholm & Rubin, 2020), mostly through cross-departmental efforts between various ministries. For instance, in Myanmar (discussed further in Chapter 2), the AMR Coordinating Centre include representatives from

[3] The WHO defines antimicrobials as antibiotics, antivirals, antifungals, and antiparasitics – medicines used to prevent and treat infections in humans, animals, and plants and AMR to occur 'when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death' (WHO, 2021b).

[4] 'The Sustainable Development Goals are a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet' (United Nations, 2021).

[5] 'The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world's countries and all the world's leading development institutions'(United Nations, 2011).

[6] My thesis responds to discussions on AMR through the lens of ABR/antibiotic use in human health. I have used the term AMR throughout the thesis. While doing this unless if clarified as otherwise, I refer to ABR/antibiotic use in human health as one subset of AMR.

[7] The work presented in this thesis is most relevant to the WHO GAP's Objectives 1 and 4, I specifically refer to these when I reference the WHO GAP in the later chapters.

the Ministry of Health and Sports (MOHS) with the Food and Drug Administration (FDA) and the National Health Laboratory under the MOHS; Ministry of Agriculture, Livestock and Irrigation; Ministry of Education; Ministry of Commerce; Ministry of Home Affairs; Ministry of Defence, and three private organizations (Myanmar Pharmaceutical Association, Myanmar Medical Association, Myanmar Private Hospital Association).[8]

Under each strategic objective, the WHO GAP recommends corresponding actions for Member States, the Secretariat, international organizations, and other partners. Within Objective 1, the WHO GAP suggests 'steps to be taken immediately to raise awareness of AMR and promote behavioural change, through public communication programmes that target different audiences in human health, animal health, and agricultural practice as well as consumers' (WHO, 2015, p15). Objective 4 attributes over-prescription and easy access through over the counter (OTC) sales as drivers of high antibiotic use, suggesting 'more widespread recognition of antimicrobial medicines as a public good to strengthen regulation of their distribution, quality and use', and 'evidence-based prescribing and dispensing' as standards of care (WHO, 2015, p17). To summarise, awareness raising; strengthening the regulation of the distribution, quality, and use of antimicrobials; and better prescription/dispensing practices were recommended as key strategies to address AMR.

In addition to the development of the WHO GAP and NAPs, global health experts have also engaged in discussions on the increasing rate of antibiotic consumption, particularly within low-and middle income countries (LMICs) (Broom et al., 2020a; 2020b; 2020c; Klein et al., 2018; Browne et al., 2021).[9,10] 'Irrational' use of and the availability of 'unregulated' antibiotics within LMICs are often suggested as drivers of AMR (Broom et al., 2020a; 2020b; 2020c; Holloway et al., 2016; Zellweger et al., 2017). Wernli et al. mapped the global policy discourse on AMR and situate AMR policy discourses through five 'frames' (discussed more in-depth in Section 1.2). One of the five frames is 'AMR as a development'. Under this foundation, the authors describe how AMR is discussed as a 'pressing issue' particularly in LMIC contexts due to weaker health systems compared to that of high-income contexts. High-income countries (HICs) are stated to have had more progress in controlling infectious disease (Wernli et al., 2017a; 2017b).

Other discourses around antibiotic policy making discuss concerns over an inability to 'turn plans into action' (WHO, 2019) and enhance compliance and alignment between NAPs and the WHO GAP (Munkholm & Rubin, 2020; Weldon & Hoffman, 2021). Munkholm and Rubin conducted a cross-country study of alignment between the WHO GAP and NAPs. The authors define 'vertical alignment' as the extent to which each NAP overlaps with the GAP, and

[8] The FDA only gained its operational independence from the MOHS in 2013. Many of its activities are still monitored by the MOHS (FDA, 2021).

[9] The terminology to denote countries outside of the West has shifted over time. Within public health disciplines, the term LMICs has gained traction as a replacement for 'developing countries', but in a push to make more visible the dynamics between certain parts of the globe, many have adopted the phrase 'Global South' as a relational term to the 'Global North'. Some have also proposed the term the 'majority world' is an alternative world' and Alam defines this as the majority world or 'economically poor countries of the world… invariably countries that have been colonized, and continue to be colonised through globalised forms of control (Alam, 2008, p89)'. I have used the terms originally mentioned in the actual source I have drawn from.

[10] The World Bank classifies world economies as low (< 1,046), lower-middle (1,046 – 4,095), upper-middle (4,096 – 12,695), and high-income (> 12,695) depending on the country's gross national income (GNI) per capita in USD (World Bank, 2021b).

'horizontal alignment' as the degree to which NAPs overlap with other NAPs across regions and income groups' (Munkholm & Rubin, 2020, p1). The authors claim to have found evidence of vertical alignment in AMR NAPs, and for two-thirds of member states including some of the poorest member states to have developed NAPs. Despite this, drawing on the latest survey (published in 2020) from the Global Database for Antimicrobial Resistance Country Self-Assessment established by the WHO, FAO, OIE, the authors discuss how only twenty-six member states reported themselves to be in the process of implementation (Munkholm & Rubin, 2020). Munkholm and Rubin conclude with how despite a high degree of vertical alignment in the policy documents (alignment between WHO GAP and NAPs), there is much less 'harmonization and transparency in the actual policies implemented… policy documents and government procedures might give the appearance of having adopted best practices, but these practices are not implemented as intended' (Munkholm & Rubin, 2020, p8). They define this occurrence as 'isomorphic mimicry' where 'harmonization takes place primarily in form and not in function' and argue for how this phenomenon is most observed in LMIC and low-income country (LIC) contexts due to 'capability traps' – governments promising 'to undertake certain activities but subsequently failing to deliver due to lack of capacity' (Munkholm & Rubin, 2020, p8). In other words, NAPs in poorer member-states were more likely to be 'vertically aligned' or have a 'verbatim overlap' to the GAP when it came to the content included in the NAP (strategic objectives, proposed actions), but this did not translate to implementation. The study also concludes with finding limited evidence of strong 'horizontal alignment' within regions and suggests 'strengthening the regional governance regime as a mediating level between global governance (the Tripartite and the GAP) and local delivery (national actors and NAPs)' (Munkholm & Rubin, 2020, p9). Most importantly, the study raises the issue of how to best strengthen global governance structures and approaches, which is what my thesis contributes towards.

Further to the WHO GAP's/NAPs objectives 1 and 4 which provide technical guidance to better surveil and optimise the use of antibiotics within member-states, there was heightened attention to understand how to best implement policies and interventions in LMICs despite 'capability traps' (Munkholm & Rubin, 2020). I have previously discussed how global health policy discourses on AMR describe LMICs as sources of particularly high AMR, attributing 'irrational' use of antibiotics and 'unregulation' as the drivers of AMR (Broom et al., 2020; Holloway et al., 2016; Zellweger et al., 2017). Consequently, policies and interventions to target or reduce 'irrational' use and contain 'unregulated' sales of antibiotics have been suggested for these contexts (Khan et al., 2019; Klein et al., 2018; WHO 2015). Despite ongoing attempts to regulate 'irrational' use and sales of antibiotics, most comprehensive and detailed sources of global antibiotic sales data are proprietary databases, presenting yet another challenge (in addition to capability traps) to understand how to best regulate antibiotics, particularly in contexts where they are more likely to be 'overused' or 'misused.' In sum, due to 'capability traps', missing surveillance data on antibiotic consumption, and other uncertainties and challenges more common to LMIC contexts (limitations in resources available to address AMR), the question of how to most appropriately develop antibiotics polices in such settings has been extensively debated and discussed among various global health experts based within different disciplines (Broom & Doron, 2020a; Cox et al., 2017; Galindo-Fraga et al., 2018; Kirchhelle et al., 2020).

Social scientists working on AMR are engaged in this debate. Reviewing the literature of social science research on AMR, for this thesis, I focus on critiques on the WHO GAP and its strategic objectives 1 and 4 that discuss

the ‘optimisation’ of antibiotic use within humans. Beginning with the WHO GAP, social scientists have questioned whether its universalist approach to antibiotic policy implementation is in fact, effective (Kirchhelle et al., 2020). Furthermore, drawing attention to the WHO GAP’s strategic objectives 1 and 4, social scientists have also questioned whether an emphasis on individual responsibility and subsequently ‘correcting’ antibiotic use behaviours is appropriate or effective (Broom et al., 2020c; Haenssgen et al., 2020a; Kirchhelle et al., 2020; Tompson & Chandler, 2021).

As examples, Broom et al. reframes AMR as a ‘problem of values and culture rather than of behaviour’, ‘a social and political concern’ requiring ‘solidaristic models that espouse collective responsibility and recognise relative opportunity to act rather than a continuation of the individualistic behavioural models that have, so far, proven largely ineffective’ (Broom et al., 2020c, p451). Kirchhelle et al. reframe AMR as a ‘biosocial problem’, requiring multidisciplinary analyses including addressing the historical, political, economic, and cultural dimensions of AMR (Kirchhelle et al., 2020). In addition to these discussions on reframing the problem of AMR, social science research has also highlighted a number of empirical studies, showing how context matters in determining antibiotic use (Tompson & Chandler, 2021). Within these studies, social scientists have argued for a need for more contextual engagement. In other words, antibiotic policies should have more critical engagement with the contexts, and policies should be tailored to the particularities of each setting (Tompson & Chandler, 2021). Compounding this argument, Kirchhelle et al. propose how differing metrics, meanings, and challenges in each setting create a policy challenge, rendering universalist approaches to antibiotic policy (like the WHO GAP) less effective. In sum, social scientists have argued for the importance and necessity of understanding the diverse local contexts of antibiotic use to develop more effective and appropriate policies.

1.1.2 Anthropological research methods in global health

Within the body of social science research in global health, anthropological research methods (ethnography) have been commonly used and lauded for their suitability for studying contextual factors. Anthropology can offer a way to study the biosocial through its 'emphasis on understanding human social and biological variation through a holistic, that is to say multifactorial, perspective: accounting for the influences of history and people's nature, social and built environments' (Stellmach et al., 2018, p2). Ethnography can provide deeper reflections to understand the context or the wider landscape of a phenomenon (antibiotic use), enabling the ethnographer to paint a 'thick' description, providing context and meaning to human actions, as opposed to being limited to a factual account without interpretation (Geertz, 1973).

In addition to AMR, global health researchers have discussed the value of anthropological approaches for providing insights into addressing other health priorities, such as the West African Ebola epidemic, and the covid-19 pandemic (Higgins et al., 2020; Stellmach et al., 2018). As an example, anthropologists launched the Ebola Response Anthropology Platform (ERAP) which provided anthropological advice on responding to the crisis in the UK and internationally through collaboration with the then United Kingdom Department for International Development (now the UK Foreign, Commonwealth and Development Office), and the WHO (Martineau et al., 2017). Anthropologists within ERAP examined how initial international responses to the Ebola crisis were met with resistance from local communities as they failed to sufficiently take into account of local customs and burial practices (Wilkinson et al., 2017). Anthropological insights, some of which were directly drawn from an 'outbreak ethnography' in West Africa, brought important regional and local contextual understandings, which helped shape the WHO's Ebola response in positive ways. In response to this, the then Director-General of the WHO, Margaret Chan in a 2014 WHO Statement said:

> 'We have learned lessons of community and culture… This is not simply about getting the right messages across; we must learn to listen if we want to be heard. We have learned the importance of respect for culture in promoting safe and respectful funeral and burial practices. Empowering communities must be an action, not a cliché' (Bardosh, 2016, p92).[11]

As another example, anthropological perspectives have provided useful contributions to both understanding the biological and social complexities of covid-19 which in turn contributed to policy making and implications such as meanings around social distancing, the use of social media to control public behaviour, and how identities were reshaped for certain communities (Higgins et al., 2020). Within AMR, anthropological approaches can offer ways to understand how antibiotics are embedded in our societies, politics, and economies (Chandler et al., 2016).

In addition to reflections on the biological and social, anthropological research methods in global health have been used in formative research and programme implementation (Stellmach et al., 2018). Stellmach et al. said, 'where epidemiology can describe priorities, anthropology can define possibilities for action' (Stellmach et al., 2018, p3).

[11] Original source has been removed from the WHO's repository.

Using an ethnographic approach that employs the research method 'participant observation' (actively participating and observing everyday events over an extended period), the research study can produce detailed accounts and interpretations of everyday events (Ingold, 2014). Through in-depth analysis of locally grounded data, ethnographies can provide valuable perspectives in global health for a myriad of topics including interpretation of events/global health crises, and evaluations of policy uptake. Consequently, anthropological methods are also suited for answering the disconnects between global AMR policy and local action/implementation as they are ideal for observing everyday lives, and, in turn, policy in practice as enacted on people and societies. In their reflections on the ERAP, the authors (anthropologists) said:

> Anthropologists with long term ethnographic engagement in the region bring an invaluable broader perspective to policy discussions. Where local anthropological expertise is not readily incorporated into policy structures, international anthropologists can play a useful role in convening and connecting diverse local anthropological actors in order to bring a richness of understanding of local social phenomena to policy negotiations within, and between, national and international agencies defining the response (Martineau et al., 2017, p 491).

Being Burmese, myself, and collaborating with a local and international research team based at the London School of Hygiene and Tropical Medicine (LSHTM) (research collaborations discussed in-depth in Chapter 3), I occupy an ideal position between Myanmar and the global position (with specific reference to WHO GAP) to apply anthropological research methods to contextualise antibiotics in the social, political, and economic landscape of Myanmar. By doing so, I aim to provide anthropological insights for antibiotic policy making, implementation, and the development of interventions in Myanmar and elsewhere. I focus on antibiotic policy making through the lens and initiatives of the WHO GAP (particularly speaking to Objectives 1 and 4 on optimising antibiotic use in human health), and the Myanmar NAP.

1.1.3 Study context: Myanmar (formerly Burma)[12]

Being located within the Mekong region, which is referred to in global health discourses as a 'global hotspot for the emergence and spread of AMR' (Zellweger et al., 2017) with the WHO itself declaring an emergency response to contain artemisinin resistance in the region (WHO, 2013), there is a need to engage with and address AMR in Myanmar. In addition to Myanmar being identified as a 'hotspot' for AMR, global health experts have expressed growing concerns over the high prevalence of unregulated sales of antibiotics (Holloway, 2011b; Holloway et al.,

[12] The country was referred to as the Union of Burma until the military changed its name to the Union of Myanmar in 1989. Many governments around the world; however, refused to acknowledge this name change until the early 2010s. In this thesis, I use 'Burma/Myanmar' to refer to the country between 1824 – present. I use the term 'Burma' to refer to the country from 1824 – 1989. I use the term 'Myanmar' to refer to the country between 1989 – the present. I use the term 'Burma studies' to refer to the group of scholars who have close affiliation with Burma/Myanmar and the Centre for Burma Studies at the Northern Illinois University.

2017; Zellweger et al., 2017). Concerns over the prevalence of substandard medicines due to loose regulations and consumption of medicines from the black market have also been discussed in the context of Myanmar (Newton et al., 2008; Sakuda et al., 2020; Wondemagegnehu, 1999).

Despite these discussions, Myanmar has not yet attempted to regulate antibiotics through a national policy. The current and only policy document to address AMR (in the context of antibiotic policy), the Myanmar NAP, was drafted and published (in its draft format) in 2017 after the WHO's 2015 World Health Assembly (NAP for Containment of AMR: Myanmar, 2017). As Munkholm & Rubin describe, in its current state the Myanmar NAP is 'vertically aligned' to that of the WHO GAP in that there is a 'verbatim overlap' between the two. Regardless of a vertical alignment, the Myanmar NAP faces the challenge of a 'capability trap' common to LMICs, as the country struggles with its rule of law and issues related to human and health system resources, making it a challenge to carry out the proposed actions mentioned in the WHO GAP/Myanmar NAP. This presents a problem for those with objectives to engage with and address AMR in Myanmar, which is what my thesis aims to provide insights for.

The problem of regulation and implementation in Myanmar is not limited to the AMR agenda alone. Due to its long history of authoritarian politics since independence, and the fragility of the healthcare and social protection systems, Myanmar has faced many implementation challenges for past and present global health and international development initiatives. For instance, the military's isolationist policies in Myanmar's history (prior to 2011) have made it difficult for many global health/development projects to enter the country. Southeast Asia specialist, Booth, employing a comparative historical perspective, calls Myanmar a 'development disaster', and argues Myanmar is unique in Asia in that it underwent seven decades of economic and structural stagnation (1962 until the 2011 reforms) unlike its neighbouring ASEAN countries (Booth, 2003). Most international aid and development work entered the country after the 2011 political reforms, making Myanmar's engagement with such actors relatively contemporary. As a consequence, despite many needs (epidemiological/clinical/public health/ecological) to address AMR in this setting, there is a limited understanding of how to most effectively and appropriately engage with and support AMR initiatives through international and local collaborations.

As a brief example, the Myanmar MOHS and the FDA in public statements discuss the black market to be where the majority of 'unregulated' sales of medicines are to be found, and attribute unregulated consumption of antibiotics as the driver of drug resistance in the country (Phyo Wai Kyaw, 2019; Si Thu Lwin, 2016; Shwe Yee San Myint, 2014a; 2014b).[13] These statements were more pronounced after the 2015 World Health Assembly. Prior to the development of the WHO GAP/Myanmar NAP, the FDA's discourses around regulations focused on confiscating 'illegal' medicines and products. As the AMR agenda gained some traction in Myanmar, these discourses began to include mentions of drug resistance. For instance, a rector from the University of Pharmacy in Yangon warned how 'illegal drugs, such as antibiotics, painkillers and steroids, could result in more health problems for people, such as multidrug resistance, rising blood sugar, diabetes and osteoporosis' in a 2019 public statement in the Myanmar Times, a popular local news journal (Aung Phay Kyi Soe, 2019a). During fieldwork, I came across instances of regulators

[13] Except if published specifically in medical or public health journals (tend to have a more traditional last name, first name format), all Burmese names in this thesis have followed the Burma studies trend have been internally referenced through a 'full name, date' system as opposed to a 'last name, date' system because Burmese normatively do not have a last name.

(staff from the FDA, MOHS) confiscating medicines in the black market and blaming the informal sector for causing drug resistance (discussed in-depth in Chapter 5).

Discourses blaming the informal sector may have profoundly negative consequences in Myanmar, because the informal sector supports the majority of livelihoods and everyday practices. Anthropologist, Chang in her work on Burma during the socialist period (1962 – 1988) describes how 'everyone in Burma – regardless of class, ethnicity or political affiliation – was dependent on the black market and participated in it' (Chang, 2013, p299). The black market had and is still supporting the Myanmar economy. Regulators and relevant authorities'/experts (those who are part of the multi-steering committee on AMR, university rectors) condemnation of the informal and/or illegal without critical engagement with the reasons why this sector exist in the first place, may not only result in an ineffective attempt at regulation, but also risk exacerbating precarity in Myanmar as most people are somehow affiliated with it. It is therefore important to engage with the social, political, and economic contexts for more effective and equitable antibiotic policy making.

My thesis draws on locally grounded ethnographic data to provide reflections on the WHO GAP/NAP's approach to antibiotic policy making and the subsequent early-stage policy discourses around the topic in Myanmar. By doing so, I aim to not only provide insights for more effective and equitable antibiotic policy making in Myanmar but also present anthropological reflections on the WHO GAP's approach to antibiotic policy more globally. Last, I also discuss my reflections on how global health or development initiatives (specifically referring to initiatives aiming to achieve state-level partnership) can more effectively engage with authoritarian contexts like Myanmar.[14] This is particularly important now, as the February 2021 *coup d'état* has ended the brief period of quasi-democratic rule (2011/2012 – 2021), or 'disciplined democracy' in the terms of the Myanmar military, rendering engagement with the Myanmar state more difficult (Brown, 2011). As Myanmar returns to a more authoritarian regime, it's involvement with international development is also bound to shift. This research was conducted during the quasi-democratic period, but the findings discussed in this thesis provide useful contextual insights into understanding how authoritarian politics influence regulations and in turn, everyday lives.

1.1.4 Aims and Objectives

Next, I pinpoint two challenges focused upon in this thesis, and discuss how I address these challenges through my aims and objectives by contextualising antibiotics and AMR in Myanmar through an ethnographic approach.

Challenge 1: The first challenge focuses on the WHO GAP/NAP approach to antibiotic policy making (specifically referring to Objectives 1 and 4) to question whether some of the action points and assumptions endorsed within these documents are in practice effective, appropriate, or equitable. I have previously discussed the concept of a 'capability trap' common in LMICs including Myanmar where implementation plans like the NAP do not reach the stage of action. In order to address this challenge, social scientists within AMR have recommended more engagement with contextual factors. Building upon this argument, I use an ethnographic approach and draw on critical medical

[14] I further discuss how I address AMR through a development framework in this thesis in Chapter 2.

anthropological thought to contextualise antibiotics/antibiotic policy making within the wider social, political, and economic landscape of Myanmar. In doing so, I provide anthropological reflections on whether the WHO GAP/NAP approach is appropriate for Myanmar and consider ways to potentially move beyond the 'capability trap'. Although my focus is on Myanmar, I hope my reflections will also be useful for antibiotic policy making elsewhere.

Challenge 2: The second challenge is for those in the global health/international development community who hope to engage with Myanmar in the present or in the future. Scholars of Burma/Myanmar have characterised the rule of law in Myanmar as one that fails to both protect its citizens and offer effective guidance (Batesmith & Stevens, 2019; Cheesman, 2009; 2014; 2015; Thawnghmung, 2019). In addition to this, the long-term social, economic, and political issues in Myanmar have weakened healthcare and social infrastructures. Within this context, how should global health initiatives like the AMR agenda enter Myanmar? Using the example of the NAP AMR, I reflect on how cross-collaborative work with local stakeholders occurs in practice in Myanmar. The drafting and implementation of the Myanmar NAP AMR was managed and proposed to be spearheaded by different prevailing national regulatory authorities (MOHS, FDA, other ministries). What are the consequences of this approach and whose voices are being included/excluded? Global initiatives entering Myanmar are likely to engage with or become a reproduction of rule of law/everyday politics within this setting. Consequently, reflections and engagement with contextual factors like the rule of law is important to ensure that such initiatives are able to achieve their intended goals, yet able to do so in ways that do not exacerbate pre-existing precarity and inequalities, particularly in settings like Myanmar where the rule of law is not reliable, and may be in direct conflict with the welfare of its citizens.

As previously mentioned, Myanmar has developed a NAP spearheaded by MOHS who had just begun to initiate its implementation. Prior to this, Myanmar did not have any national guideline/action points on antibiotic use. The Myanmar NAP is an almost exact replica or is 'vertically aligned' to the WHO GAP with limited inclusion or reflections regarding the above-mentioned contextual factors. This presents a problem for endorsing an action plan that may not be appropriate for the particular context it speaks to. Reflecting on the above-mentioned challenges is crucial prior to endorsing a scale-up of more 'national' action, as this scale-up may risk intensifying pre-existing issues and inequalities. As evidenced by Myanmar's history of conflict since independence, and its most recent February 2021 military *coup d'état*, the majority of Myanmar people are already in positions of precarity and vulnerability due to political strife, religious/ethnic tensions and conflict, economic hardship, and lack of protective infrastructures (for example, healthcare system, social security). Therefore, it is important to promote global health policies that are effective in achieving intended goals, yet without risking reproducing everyday violence in Myanmar. In this sense, would a scale-down be more appropriate (discussed further in Chapter 7)?

In conclusion, my thesis begins to attempt to provide more critical reflections on the current approaches to antibiotic policy making, specifically in Myanmar. Despite my focus on Myanmar, these reflections may also provide useful insights for reframing or rethinking predominant global policy discourses around antibiotic policy making in LMICs. To do this, I have employed ethnographic approaches to be able to develop a deeper engagement with the context. My specific research aims and objectives are:

Aim: To contextualise the context of medicine use with a focus on antibiotics in Yangon – the social, economic, and pharmaceutical hub of Myanmar – with the objective of providing reflections for antibiotic policy making through global action plans like the WHO GAP.

Using ethnographic research methods, my objectives are:

Objective 1: To evaluate the implications of antibiotic policy implementation through the WHO GAP/Myanmar NAP by investigating policy in practice on the informal sector in a peri-urban township in Yangon, Myanmar.

Objective 2: To contextualise the wider landscape of antibiotic provision, use, access and availability by tracing and describing the trajectory of antibiotics within the pharmaceutical supply chain and everyday livelihoods in Yangon, Myanmar.

Objective 3: To characterise the broader social roles of medicines within individual lives in order to provide insights into the unintended consequences the implementation of predominant (WHO GAP's) global antibiotic policies (awareness raising, behavioural change, restricting access to antibiotics, targeting the informal sector/the black market) may bring about.

1.1.5 Clarifying prevailing key-terms, concepts, and themes in this thesis

This thesis is interwoven by a few major themes – regulation in practice, precarity, and biopolitical abandonment. Under the theme of regulation, I have used the terms 'legal', 'extra-legal', 'illegal', 'formal', 'informal', and 'rule of law' (discussed in-depth in Chapter 2). I have defined the term 'legal' through the Myanmar state's definition of law and order when this fieldwork was conducted. 'Extra-legal' as all that which exists outside of the legal (including the illegal) and the illegal as all that is in violation of Myanmar law and order (breaking the law). I use the term 'formal' to refer to institutions, individuals, and/ or activities which have been endorsed by the Myanmar government (MOHS, FDA) as legitimate providers. Having stated this, formal providers can also engage in informal activities (activities not endorsed by the MOHS/ FDA such as selling mixed medicines). As another example, a drug shop owner who is registered to sell medicines but not treat patients would be described as a formal provider engaging in informal activities. In conceptualising the 'formal' and 'informal', I draw on Ananya Roy's work on urban planning in India where she suggests 'against the standard dichotomy of two sectors, the formal and informal… informality is not a separate sector but rather a series of transactions that connect different economies and spaces to one another' (Roy, 2005, p2). Roy also states how 'the planning and legal apparatus of the state has the power to determine when to enact this suspension, to determine what is informal and what is not, and to determine which forms of informality will thrive and which will disappear. State power is reproduced through the capacity to construct and reconstruct categories of legitimacy and illegitimacy' (Roy, 2005, p3). Following Roy's conceptualisation, 'informality' as I have used the term in Myanmar is essentially produced by the state/ the military and is strongly linked to the formal (supports the formal, co-produced together with the formal) as opposed to existing in a dichotomous manner.

I have also drawn on political scientist Carol Bacchi's approach to policy in discussing regulation in practice, where she conceptualises, policy making as 'reactions to presumed problems' (Bacchi, 2016). I specifically refer to this conceptualisation, when discussing the development of the WHO GAP/Myanmar NAP as a framework for antibiotic policy in Myanmar. I argue for how the WHO GAP/Myanmar NAP was developed through the lens of global policy discourses problematizing AMR (Wernli et al., 2017a; 2017b – discussed in the next section). These global policy documents (WHO GAP) have urged member-states to tailor its guidance to suit the context. Myanmar is not at the stage of implementation yet and but had developed a NAP, an almost replica of the WHO GAP with limited to no critical engagement with the social, political, and economic context of the country. The Myanmar NAP in its current state exists as a reaction to a presumed problem (presumed by the WHO/ global policy discourses on AMR as opposed to a more locally contextualised problematization of AMR). This thesis therefore aims to contextualise AMR/ antibiotics/ antibiotic policy in Myanmar to provide a more locally tailored problematisation of the issue.

I also draw attention to the terms 'precarity' and 'biopolitical abandonment' which I have repeatedly mentioned throughout this thesis. Economist Guy Standing uses the term precariat to describe individuals who are:

> '[D]enizens who inhabit a locale without civil, cultural, political, social and economic rights, de facto and de jure. They are supplicants, reduced to pleading for benefits and access to public services, dependent on the discretionary decisions of local bureaucrats who are often inclined to moralistic judgments about whose behaviour or attitude is deserving' (Standing, 2014, p11).

In my thesis (particularly with reference to Chapter 6), I use the term 'precarity' in the context of factory work where workers despite their employment contracts still engage in unstable labour conditions and are in a 'general consciousness of relative deprivation and a combination of anxiety, anomie, alienation and anger' (Standing, 2014, p10) with limited to no access to public services due to biopolitical abandonment. Anna Selmeczi in her work on migration and conflict studies draws on the Foucauldian notion of 'biopolitics'/'biopower' (the state's control over human life at the level of the population and the individual body [Foucault, 1979]) to discuss how people are biopolitically abandoned by the state or intentionally neglected and excluded (Selmeczi, 2009; 2012). Drawing on the concept of a Foucauldian 'biopolitical abandonment', I discuss how decades of military rule in Myanmar has left the healthcare and social systems in a state of deliberate neglect while biopolitically abandoning the people they are supposed to protect. I draw on the specific example of factory workers and social security in Chapter 6 but also use the term biopolitical abandonment to discuss the circumstances of most people in Myanmar. Due to precarity and biopolitical abandonment, I then discuss the emergence of informal practices (defined previously) and local coping mechanisms which thesis will unpack in Chapters 4 to 7.

1.2 Social science research contributions to AMR/antibiotics

1.2.1 Alternative framings for AMR and antibiotics

Global health researchers have proposed a wide variety of frameworks to address AMR and develop effective antibiotic policies. Interdisciplinary researchers Wernli et al. summarises the global policy frameworks within AMR in their 'mapping of global policy discourses' by identifying and analysing >200 policy documents (Wernli et al., 2017a). The authors identified five predominant frameworks within AMR policy documents – 'AMR as healthcare', 'AMR as development', 'AMR as innovation', 'AMR as security', and 'AMR as One Health' (Wernli et al., 2017a). In this thesis, I am embedded within and reflecting on the 'AMR as development' framework, and provide reflections on this approach.

To briefly define each agenda, the 'AMR as healthcare' framework – also described as a biomedical paradigm – frames the issue through a 'disease-based conceptualisation' with reference to concepts such as evolution, germ, and genetics. 'AMR as development' structures the issue by problematising through the lens of infectious disease burden within LMICs due to weak healthcare systems. 'AMR as innovation' discusses the development of new research and development (R&D) and diagnostics for AMR. 'AMR as a security' defines global health security as 'main vulnerabilities arising from globalisation'; however, the authors comment on how global health security in practice tends to reflect the interests and concerns of the Global North (stopping the spread of disease from the Global South to North). Last, 'AMR as a One Health' issue is centred around 'the idea that benefits will accrue in addressing health issues in an integrated way as human and animal health lie in the same paradigm' (Wernli et al., 2017a, p5). The authors recommend 'a better understanding and integration of AMR policy frames into an overarching social and ecological framework' (Wernli et al., 2017a, p1).

The above-mentioned frameworks are summaries of prevalent global health policy discourses around AMR (Wernli et al., 2017a). Social scientists doing research on AMR have provided further reflections on reframing the issue (Kirchhelle et al., 2020; Littmann et al., 2020; Vedadhir et al., 2020). Through their pan-national analysis, Broom et al. highlight 'temporal myopia; individualisation; marketisation; and human exceptionalism' as contributing towards AMR and make a case for 'collective responsibility' as opposed to individual behaviour change models to address the issue (Broom et al., 2020c).

The authors define 'temporal myopia' as the presence of incentives and actions that prioritise immediate returns over longer term outcomes and provide the example of policies/programmes focusing on immediate infection management as opposed to goals towards longer term antimicrobial security (Broom et al., 2020c). Temporal myopia contributes towards immediate positive outcomes such as being able to treat the patient, but also results in contributing to longer-term future risks such as increased drug resistance or less effective antimicrobials (Broom et al., 2020c). Marketisation and consumerism due to capitalism were mentioned to be driving the direction of R&D when pharmaceutical industries prioritise the development of higher return drugs for cancer treatments as opposed to new antimicrobials (Broom et al., 2020c). Last, the authors discuss the consequences of how AMR is predominantly framed through the anthropocentric lens of human exceptionalism. According to this anthropocentric framing, bacteria are characterised as an 'exogenous threat to humanity, despite being a product (in its accelerated form) of shared human

practices such as innovation' (Broom et al., 2020c, p457). The authors argue for how an anthropocentric framing results in an 'assemblage of individualised risk, perpetuation of the idea of bacterial threat, and anxieties about human vulnerability' (Broom et al., 2020c, p458). The consequences include a heightened fear of AMR as an 'enhanced threat' to 'humanity' (Broom et al., 2020c).

Kirchhelle et al. highlight four challenges in current policy approaches for AMR and argue for holistic international antibiotic policies through the Structural, Equitable, and Tracked (SET) framework (Figure 1). The authors identify metrics, prioritisation, implementation, and inequality as key challenges for effective antibiotic making. Metrics refer to uncertainty in the ways we measure antibiotic usage and AMR to inform meaningful policies at the national and international levels. The authors describe the challenge of prioritisation under 'spatial' (restricting antibiotic use) and 'temporal' components (defined as the 'temporal conflict between acute healthcare needs and the future-focused dimensions of antibiotic stewardship'). Several implementation challenges, such as differing abilities for nation-states to implement policies; lacking data and robust metrics on AMR to inform policy; and the challenge of evaluating policy success in LMICs due to the presence of informal grey market and unregulated OTC sales of medicines, are mentioned. Furthermore, the problem of inequality touches upon how 'dominance of high-income country (HIC) voices can drown out LMIC concerns and lead to narrow [international] policies centring on HIC concerns' (Kirchhelle et al., 2020, p6). The authors propose a 'wide-angle' approach to AMR focused antibiotic regulation' through the (SET) framework (Figure 1).[15]

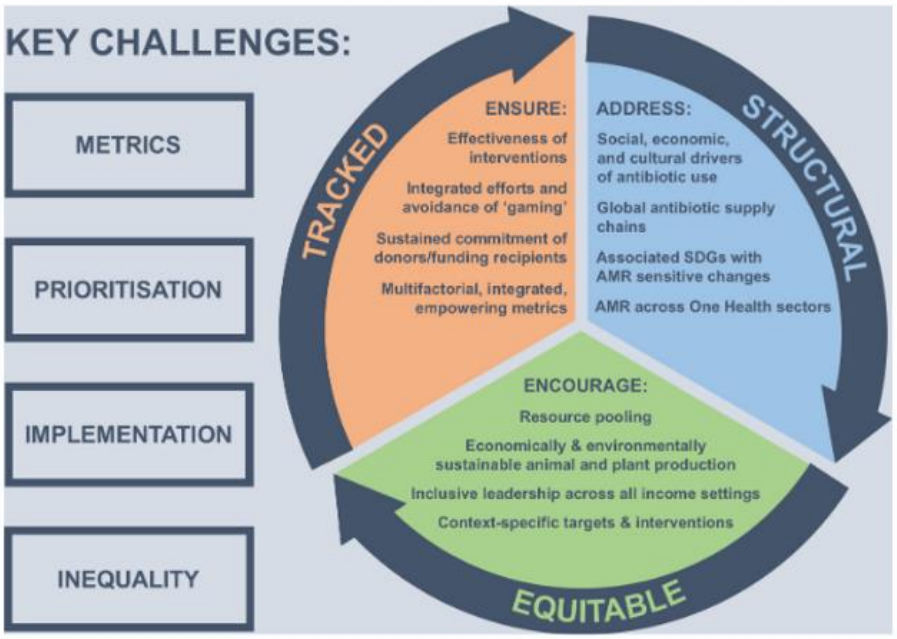


Figure 1. SET framework developed by Kirchhelle et al. as a tool for successful antibiotic policy-making (reproduction from Kirchhelle et al., 2020, p7)

[15] I was inspired by this 'wide-angle' approach in the design and implementation of my study.

Anthropologist Chandler examines how AMR is constructed as a problem through three different accounts – stabilisation, individualisation, and antibiotics as infrastructure. Stabilising AMR is described as exploring the ways in which AMR as an object is defined and counted as a threat. Chandler challenges individualised action proposed in two intervention models presented in predominant policy discourses on AMR (One Health paradigm and the behavioural model of intervention) and describes how the notion of individual responsibility undermines the framework of AMR as 'a problem of connectedness', requiring an attention to addressing scales and systems. Taking inspiration from scholars of infrastructure (Bowker & Star, 2000), she discusses AMR as 'a moment of infrastructural inversion when antimicrobials and the work they do are rendered more visible' and antibiotics form 'part of the woodwork that we take for granted, and entangled with our ways of doing life, in particular modern life' (Chandler, 2019, p1). Following on the framework of antibiotics as infrastructure, anthropologists drawing on ethnographic research in Uganda and Tanzania describe how antibiotics have become a 'quick fix' for care, productivity, and hygiene in settings with weak health systems and limited resources (Denyer-Willis & Chandler, 2019). The authors argue for a conceptualisation of antibiotic use as a 'quick fix' infrastructure which shifts the attention to the structural dimensions of AMR and antibiotic use to encourage longer term systemic solutions (Denyer-Willis & Chandler, 2019).

Geographers Hinchliffe et al. argue for a biosocial approach to framing AMR through their work on antibiotic use within aquacultural food production in Bangladesh as they describe how farmers adapt to disease risk. The authors argue for an 'adaptive' framework to address AMR as opposed to framing the issue as a technical challenge (lowering disease incidence and transmission rates) (Hinchliffe et al., 2018). In a later publication, Hinchliffe et al. make an argument to identify 'risk practices' and to avoid one-size fit all approaches originating from norms and assumptions within the Global North (Hinchliffe et al., 2021). The authors describe risk practices as 'the risks of a disease event and the ways in which diseases are experienced as threats to livelihoods' (Hinchliffe et al., 2021, p 41).

In sum, social scientists within AMR have developed alternative frameworks beyond the predominant public health model of behavioural change, proposing a more 'wide-angled' framing of the issue. In this thesis, I build upon this work and employ a wide-angled lens to contextualise the transfer of AMR policy and implementation into Myanmar. I reflect upon aspects of predominant global AMR policy approaches and the assumptions embedded within them. In particular, I refer to universalist assumptions in AMR action plans and stewardship programmes, and the emphasis on correcting individual antibiotic misuse behaviours. Drawing on empirically grounded ethnographic data, I show how AMR is problematised and framed in Myanmar, contrast this to predominant global health frameworks and policy discourses, and highlight the disconnects between them and the consequences of these disconnects.

1.2.2 On engaging with contextual factors beyond awareness for AMR

Research and efforts to address antibiotic use as proposed by the GAP and other high-profile global health reviews focuses on awareness raising among individual prescribers and patients (O'Neill, 2016; WHO, 2001; WHO, 2015). As an example, knowledge, attitude, and practice (KAP) surveys (to assess knowledge of antimicrobial prescription) have commonly been used in intervention studies (García et al., 2011; Quet et al., 2015; Rijal et al., 2021). Knowledge, attitude, and practice (KAP) surveys have been used to assess national awareness for effective implementation of

antibiotic policy (Chua et al., 2021). Nevertheless, researchers in global health have shown evidence of how knowledge rarely relates to practice (Taddei et al., 2014; Worsley, 2002; Yoder, 1997).

Social scientists working within AMR have underscored the need to go beyond notions of individual rationality and awareness raising in policy interventions for antibiotic use (Dixon et al., 2021; Haenssgen et al., 2018; Will, 2018; Denyer-Willis & Chandler, 2019). For instance, Pearson and Chandler drew on research in multiple countries and demonstrate how awareness of AMR among health-care professionals did not automatically translate towards reduced antibiotic prescriptions (Pearson & Chandler, 2019). Other contextual factors such as advancements to healthcare infrastructure and improved regulation appeared to be important for reducing antibiotic prescription (Pearson & Chandler, 2019). Rodrigues in her work in Mozambique show how highly educated individuals were more likely to self-medicate due to displaying more confidence and perceived autonomy regarding the management of medicines (Rodrigues, 2020). Similarly, Broom et al. in their qualitative study in India discuss higher levels of education as challenging, with more highly educated individuals expecting more interventions, including treatment with antibiotics (Broom et al., 2021). The authors conclude education and awareness raising efforts as futile (Broom et al., 2021). Pearson et al. in their multi-country qualitative study state how AMR awareness did not translate to reducing prescribing and dispensing, but rather to being more ready to use next-line antibiotics (Pearson & Chandler, 2019). In sum, a growing number of publications continue to provide evidence of how education or knowledge of antimicrobials does not necessarily lead to more 'appropriate' antibiotic use. To address this problem, social scientists within AMR have argued for a shift in attention away from notions of individual responsibility towards contextualising the broader landscape of antibiotic use.

Responding to such calls, several studies across the globe, drawing on locally grounded data, have shown how broader factors beyond individual rationality influence antibiotic use. To summarise, Tompson et al. (social scientists within AMR) reviewed the growing body of social (ethnographic) research on the topic and developed a conceptual framework to group the literature under three 'vantage points' – structures, practices, and network – categories from which antibiotic use can be understood (Tompson et al., 2021, p2) (Figure 2).[16]

[16] A wide body of social literature on AMR, drawing on various social research methods and disciplines exist. I focus myself on ethnographic research as I have drawn on it for the work presented in this thesis.

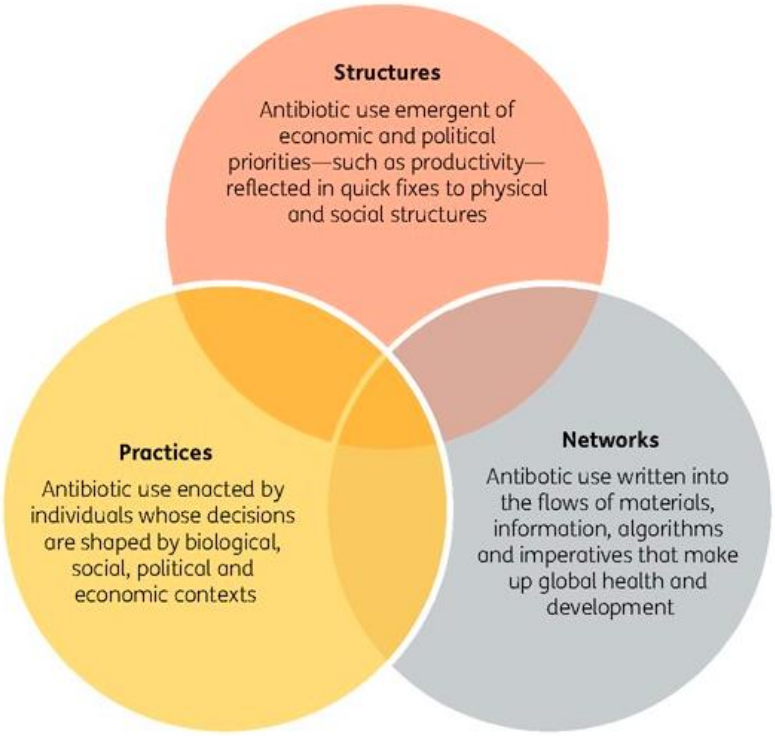


Figure 2. Three 'vantage points' identified by Tompson et.al to understand antibiotic use (reproduction from Tompson et al., 2021, p2)

The conceptual framework (Figure 2) organises the current available social research on AMR and antibiotics. My thesis stems from these conceptual thoughts as I discuss antibiotic use as a product of economic and political priorities, a way to fix problems in physical and social structures (healthcare systems, livelihoods), a form of negotiated care, and an enactment from individual decisions that have been shaped by social, political, and economic contexts as opposed to knowledge or awareness (discussed further in the Discussion Chapter). Under both vantage points, social research within AMR have highlighted themes of pharmaceutical markets/marketing and precarity as drivers of antibiotic use beyond awareness.

1.2.3 Pharmaceuticals and markets in relation to AMR

Anthropological perspectives on pharmaceuticals have long since provided useful insights into understanding the social roles of medicines and how the pharmaceutical industry and marketing influence antibiotic use patterns. Within the large body of work based under the topic, I focus on the literature that speaks to globalisation and marketisation of pharmaceuticals.

Beginning with earlier reviews on the anthropology of pharmaceuticals, Van der Geest et al. in their biographical approach followed the 'life cycle' of pharmaceuticals from production to consumption (production, marketing, distribution, prescription, purchasing, efficacy when consumed) and described the objects as social and cultural phenomena (Van der Geest et al., 1996). The authors discussed how each phase of the pharmaceutical's life cycle 'has its own particular context, actors, and transactions and is characterised by different sets of values and ideas'

(Van der Geest et al., 1996). Drawing on this work, in the Social Lives of Medicines, Whyte et al. described the 'social life' of a commercialised pharmaceutical, providing wider insights into globalisation while tracing the objects through labs in London, clinical trials in India, and pharmaceutical markets around the world (Whyte et al., 2002). The authors stated how medicines produce social and cultural outcomes in addition to the biological and claim to follow the 'social lives' of medicines to gain an understanding into the social, cultural, political, and personal lives of patients.

In a follow up and more recent review to Van der Geest's 'Anthropology and pharmaceuticals a biological approach' (Van der Geest et al., 1996). Hardon and Sanabria describe how pharmaceuticals are 'fluid' and are not discovered but are made and remade in relation to shifting contexts (Hardon & Sanabria, 2017). The review discuss how earlier medical anthropological studies focused on a dichotomous framework – understanding the biochemical contents of pharmaceuticals and how they are interpreted in sociocultural contexts (Hardon & Sanabria, 2017). For instance, these earlier anthropological studies described how medicines give ritual and symbolic meanings, producing therapeutic properties beyond their pharmacological effects (Bledsoe & Goubaud, 1988; Etkin et al., 1990; Van der Geest & Whyte, 1989). Van der Geest & Whyte discussed medicine as a metonym, 'a physical representation of a larger cultural context' and characterised the objects as having 'a charm' where their healing is objectified through their concreteness as objects (Van der Geest & Whyte, 1989, p170). The authors also conceptualised medicines as commodities, passing from one setting to another, creating different meanings within each setting (Van der Geest & Whyte, 1989). Etkin et al. drew on a West African case study to show how biomedicine use was influenced by local understandings of disease and healing (Etkin et al., 1990). Similarly, Bledsoe & Goubaud drew on research in Sierra Leone and described how medicines were distributed, re-interpreted, and incorporated into local treatment methods (Bledsoe & Goubaud, 1988). In sum, these earlier studies discussed medicines through their meanings and interpretations.

In 1994, anthropologists Nichter and Vuckovic in their 'Agenda for an anthropology of pharmaceutical practice' acknowledged how the field had so far focused on pharmaceuticals and their social cultural interpretations, calling for more research into other areas, including a need to understand the manufacture, prescription, and demand for medicines and the social changes that have occurred alongside (Nichter & Vuckovic, 1994). After this call, the anthropology of pharmaceuticals transitioned beyond the study of meanings and interpretations. Hardon & Sanabria describe this shift as a move towards understanding medicines as 'fluid', and being 'made and remade… evolving in relation to the context' (Hardon & Sanabria, 2017, p118). After this shift, anthropologists and sociologists positioning themselves within this conceptualisation discuss the social and material worlds in which medicines are embedded in. In the Social Lives of Medicines, Whyte et al. described the social life of a commercialised pharmaceutical, providing insights into globalisation (Whyte et al., 2002). Sociologist Barry through his case study on commercial pharmaceutical research and development (R&D) at ArQule (a pharmaceutical company based in the United States), developed the concept of seeing pharmaceutical molecules, not as discrete objects, but as 'constituted in their relations to complex informational and material environments' (Barry, 2005, p52). Following these theoretical thoughts, more recent work embedded within the anthropology of pharmaceuticals discuss how state-market nexuses and regulatory environments influence pharmaceutical action both upstream (clinical trials) and downstream (marketing, prescription).

Focusing myself within the downstream context of marketing and prescription, I highlight anthropological literature examining the political economy of pharmaceutical drug markets (delivery, marketing) which operates on a profit maximizing model as opposed to health promotion and how this practice impacts global health. Van der Geest's earlier (1980s) publications reviewed the literature on activities of pharmaceutical companies in 'Third World' countries, and stated how the industry and its practices prioritised profit making over people's health (Van der Geest, 1984a, 1984b). Following this statement, anthropologists have highlighted themes related to globalisation, inequality, profitisation, and ethics in the study of global pharmaceutical markets.

In more recent literature, Peterson in ethnographic work based in Nigeria describes the distribution system of pharmaceutical markets and highlights how 'speculation and development' in the drug industry produced longer term market patterns. For instance, Peterson examines how the 1973 global oil crisis left Nigeria in economic turbulence as the country could not repay the loans it took during the earlier oil boom. She then describes a 'speculative practice' in pharmaceutical distribution when African brand-name markets became 'irredeemable and unnecessary to brand-name manufacturers' due to 'the plummeting value of Nigerian currency and spiralling household poverty' (Peterson, 2014, p57). She uses the term 'risky populations to describe citizens and markets that were exposed to newly discernible risks via military governance and corporate practices' in her account of the Nigerian political history in the 1970s when the Nigerian state switched 'from investing in infrastructure and human capital to violently managing a population resistant to economic reforms' (Peterson, 2014, p56). Last, she discusses how the logics of state militarisation paved ways for 'new orders of capital, and various forms of extraction and accumulation emerged in many sectors, including pharmaceuticals' (Peterson, 2014, p57). In sum, Peterson attributes the changes in the Nigerian pharmaceutical market to 'speculative' practices brought upon by key social and political events in the world and Nigeria.

Dumit, in his ethnographic work on the American pharmaceutical industry describes the concept of 'surplus health'. He discusses how the pharmaceutical industry has created a perception of a chronically ill body, creating a health insecurity which in turn feeds the growth and demand for pharmaceutical products in attempts to prevent future 'illness risk' (Dumit, 2012a). This in turn results in a pharmaceuticalisation of society where individuals view their health in terms of risks and threats, creating a culture of paranoia where ill-health has become the norm to be resolved through medication (antidepressants, multivitamins) (Dumit, 2012a).[17] Dumit then uses the term 'prescription maximization' and states how this phenomenon is attained 'through growing the absolute number of new prescriptions, extending the time a patient stays on a prescription, or shortening the time between having a condition and getting a prescription for it' (Dumit, 2012b, p56). Last, Dumit discusses how commercials and messages embedded within pharmaceutical marketing, successfully generate anxiety concern, driving pharmaceutical sales up. This is achieved through a process of 'factual persuasion' where pharmaceutical markets manage emotions and dissociate viewers from their own bodies while re-creating the body as one which is at risk (Dumit, 2012b, p57).

[17] In this thesis, I use Biehl's anthropological development of the concept of pharmacuticalisation used in his ethnographic work on AIDS care services, where he describes how pharmaceuticals came to replace public health practices (Biehl, 2007).

Hardon in her ethnographic work within rural Philippines describes a process of 'multi-level marketing' of pharmaceuticals which occurred through 'sociometabolic work' (Hardon et al., 2019). Hardon states how sales agents manage to sell products by developing close social relationships with clients to tailor the provision of supplements in a way that soothes their (the clients) health related concerns (Hardon et al., 2019). She describes how the company uses a method of 'multi-level marketing' where pharmaceutical sales agents recruit other agents, particularly youths, by offering them a chance to earn money, educational discounts, and other benefits. Sociometabolic work then involved capitalising on intimate social relations, which involved sales agents presenting supplements as a solution to the clients' health related anxieties (Hardon et al., 2019). Capitalisation of intimate social relations was in particular successful in the informal sector due to people's reliance on personal relationships and social networks (Hardon et al., 2019).

Anthropological and sociological reflections on pharmaceuticals have highlighted several themes and theoretical thought beyond the biomedical framework of medicines as objects with pharmacological properties to cure ill health. Pharmaceutical markets and marketing for instance, determine and shape where and how medicines flow and are subsequently consumed by individuals, being wider structural influences on antibiotic use patterns. In sum, anthropological and sociological research on pharmaceuticals provide useful perspectives and theoretical thought for AMR, challenging discourses and interventions stemming from the assumption of individual responsibility.

1.2.4 Structural factors as drivers of AMR

In addition to underscoring the role of the pharmaceutical industry, anthropological studies discuss political and economic structures such as inequality, precarity, and vulnerability to influence antibiotic use patterns. Nichter's ethnographic work in the Philippines shows how sex workers took antibiotics before and after sex to cope with feelings of vulnerability and anxiety, sheltering them from the lack of broader social and health services, further enabling them to continue working (Nichter, 2001). Furthermore, several studies from Asia and Africa (China, South Africa, Sri Lanka, India) have shown how antibiotic use practices within primary care are interlinked with livelihoods; for instance, when notions of 'rational' use and actual prescribing practices contradicted each other due to prescribers weighing institutional pressures; their concerns for patient safety or the ability to afford care; and the desire to maintain a positive relationship with the patient (Broom & Doron, 2020a; Chen et al., 2020; Tarrant et al., 2020; Tompson et al., 2021). Several examples beyond primary care drawing from fieldwork in Mozambique (Rodrigues, 2020), Bangladesh (Lucas et al., 2019; Nahar et al., 2020), and Myanmar (Khine Zaw et al., 2021) describe how situated individual circumstances and rationales, compounded with structural factors such as poverty and lack of healthcare infrastructure, led to self-medication practices differing from the biomedical 'rational'. These studies, although based in different contexts, describe how contextual factors beyond biomedical notions of the 'rational' influence and determine antibiotic use.

Social science research on AMR discusses precarity and socio-economic constraints as themes and key drivers of drug resistance. Manderson et al. in their qualitative study on prescription practices in urban South Africa describe how community health centres and clinics were stretched for resources resulting in long wait times and short consultations. This resulted in providers prescribing antibiotics prophylactically (discourage use but to take if needed)

to manage risk and account for economic vulnerability (Manderson, 2020). Chen et al. in their qualitative study in rural China describes 'liberal prescribing of antibiotics' when providers desire to maintain good relations with patients and ensure patient safety contradicted with their knowledge of 'rational' antibiotic use (Chen et al., 2020). This occurred for instance when clinicians made greater efforts to manage immediate clinical risks and personal reputation than prioritise 'rational' drug use to prevent the future threat of AMR (Chen et al., 2020).

Social science research on antibiotic prescription patterns highlights how managing uncertainty and risk influences providers' decisions in precarious contexts. Tarrant et al. in their qualitative study across three countries describe how decisions about the 'threshold for appropriate antibiotic use' were framed in terms of moral terms with some prescribers drawing on the moral argument about their duty to protect public health (high threshold for prescribing), while others prioritised minimising immediate risks (low threshold for prescribing) (Tarrant et al., 2020). Consequently, notions of 'appropriateness' were dependent on the context and were influenced by both financial and social factors (Tarrant et al., 2020). Hinchliffe et al. discuss how farmers in the Bangladesh aquaculture industry used a 'risk practice approach' to disease management which then influenced their antibiotic use patterns. The authors state how farmers were less likely to use antibiotics in more frequently diseased systems (Hinchliffe et al., 2021). Managing uncertainty and risks were themes also present in high-income contexts. Tarrant et al. state how in the United Kingdom, doctors were more likely to prescribe antibiotics due to the risks of missing sepsis (Tarrant et al., 2020).

The link between poverty and AMR has been noted widely. Since the early 2000s, anthropologist Paul Farmer, described tuberculosis resistance as 'the consumption of the poor' (Farmer, 2000). More recently, researchers from the UK National Institute for Health Research conducted a systematic review to investigate the relationship between poverty and the risks of contracting infectious diseases, and conclude with a need to address the social determinants of poverty worldwide to prevent AMR (Alividza et al., 2018). Furthermore, social scientists working within AMR have also shown how antibiotic 'misuse' is strongly linked to precarity and poverty. Drawing on a decade of ethnographic work in Tanzania and Uganda, Denyer-Willis and Chandler describe how antibiotics function as a 'quick fix for care in fractured health systems; a quick fix for productivity at local and global scales, for humans, animals and crops; a quick fix for hygiene in settings of minimised resources; and a quick fix for inequality in landscapes scarred by political and economic violence' (Denyer-Willis & Chandler, 2019, p1). Doron and Broom describe AMR in India through 'structural violence' [originally drawn from Paul Farmer (Farmer, 2005)] – 'the types of organizational and institutional structures that inhibit marginalised populations from ready access to public goods, such as health care, water and sanitation – and 'slow violence' [originally drawn from environmentalist Rob Nixon (Nixon, 2011)] – 'incremental types of violence that afflict the poor and marginalised and that, in terms of scale and temporality, extends beyond established structural inequalities' (Doron & Broom, 2019, p 6-7). The authors describe how the pharmaceutical market mirrored patients' capacity to pay, producing what they term as a 'mutated health care environment'. The authors discuss an uneven spread of AMR among marginalised population in India through 'geographies of vulnerability … spaces that render poor people and their environment more exposed to infectious agents due to socio-cultural processes and environmental conditions' (Doron & Broom, 2019, p2). Budget constraints also resulted in pharmacies supplying lower quality drugs, creating even more precarity or 'a crisis of confidence' (when clinicians are not confident in the quality of the medicines they prescribe), resulting on higher dosages being

used (Broom & Doron, 2020a). Haenssgen et al. surveyed five rural communities in Thailand and Laos to study precarity and deprivation and how these factors impact healthcare seeking behaviours and discuss how individuals in precarious circumstances were almost twice as more likely to misuse antibiotics (Haenssgen et al. 2020b).

To conclude, social science research on AMR has presented themes of vulnerability, poverty, precarity, risk, and uncertainty as wider structural drivers of drug resistance, concluding with calls to move beyond strategies focusing on individual awareness to more collective longer-term structural solutions. I build upon this argument in my ethnographic study of contextualising antibiotic use in Myanmar.

Chapter Two: Introducing Myanmar's history, politics and health system

2.1 Background and political history

Present day Myanmar (formerly Burma), located in Southeast Asia (Figure 3), is an LMIC (as defined by the World Bank) with a population of 57 million as of July 2021 (UNdata | Country Profile | Myanmar, 2021). The Bamar ethnic group makes up 68% of the population with 89.7% of the country identifying as Buddhist (Central Intelligence Agency, 2021).[18] The capital city was officially moved from Yangon to Nay Pyi Taw in 2015. Despite this, Yangon where this fieldwork was conducted and where the 'legal' supply of pharmaceuticals begins (pharmaceutical companies and markets are most concentrated in Yangon), is still the most populated city and the financial and social hub of the country.

The country is very ethnically diverse, with 135 officially recognized ethnic groups and numerous unrecognised (by the military) religious and ethnic minorities, with urban spaces like Yangon predominantly occupied by the Bamars. Ethnicity is significant for everyday lives as it determines the ways in which social, economic, and political opportunities are divided (Walton, 2013). As a consequence, Bamar dominance amidst this ethnic diversity has led to 'national' policies being in favour of the Bamar group, resulting in ethnic tensions and conflict since independence. This already presents a problem for the implementation of the WHO GAP which suggests implementation through NAPs to be spearheaded by member-states. In Myanmar, as previously discussed 'national' regulatory bodies (FDA, MOHS, other ministries) were leading the multi-steering committee on AMR. In a context where 'national' regulatory authorities do not fairly represent the interests of all groups or at times are in direct conflict with the people (Rohingya crisis, Kachin war), a NAP AMR channelled through 'national' action may not only exclude but also work in opposition with the interests of certain groups.

[18] I use the term 'Bamar' to refer to the Bamar ethnic group and the term 'Burmese' to refer to the people of Burma/Myanmar. I also use the term Burmese to refer to the Burmese language.

Figure 3. Map of Myanmar, source: Google Maps

2.1.1 British-Burma and post-independence (1948 – 1962)

The existing absolute monarchy and the last dynasty of Burma was abolished by the annexation of Burma to the British Empire and brought about a period of significant and abrupt changes for the Burmese (See Table 1 for the political history timeline). Much like other British occupied territories, the colonial administration sought to 'divide and rule' reifying ethnicity and religion, by isolating ethnic groups through segregation and heightening tensions between existing and new groups as a means of control (Taylor, 2005). To repress rebellion, the colonial administration developed policies that were economically disadvantageous for the Bamar majority resulting in the group's interpreting British policies as attacks on Bamar culture, race, and religion which were closely linked, spurring Bamar nationalist movements (Ikeya, 2011; Taylor, 2005; Walton, 2013). This led to calls for independence from colonial rule, particularly during and after the Second World War. During the independence movement, General Aung San

(father of Aung San Suu Kyi) gained prominence and was described by many as the 'undisputed symbol of Burmese nationalism' during this period (Trager, 1958). General Aung San, still revered by many in present-day Myanmar and referred to as the 'founding father' and 'hero' was also the founder of the Myanmar Armed Forces or military, presently known as the တပ်မတော် *Tatmadaw*.

General Aung San developed the 1947 Panglong Agreement which political scientist and Burma scholar Walton describes as 'a deeply flawed event that included only three of the non-Burman [Bamar] ethnic groups' and negotiated with the British for a new constitution for post-independence (Walton, 2008, p9). Despite this, he and his cabinet members were assassinated by a group of men led by Galon U Saw, leaving a power vacuum and the terms and conditions of the Panglong Agreement unfulfilled (Walton, 2008). Multiple interpretations of the Panglong Agreement exist with different ethnic groups continuing to debate on what the terms and conditions were to be, creating the backdrop for decades of ethnic strife and unfulfilled promises (Walton, 2008). Since then, different political authorities have attempted and struggled with one another to define and establish a democracy, resulting in various periods of authoritarian rule with the most recent and open period being a quasi-democratic Myanmar or a 'disciplined democracy' (2011-2021) as the တပ်မတော် *Tatmadaw* refers to (Bünte 2011).

'Democracy' defined through post-independence in Burma/Myanmar has never steered far from the တပ်မတော် *Tatmadaw*'s notions of rule of law, as evidenced by its multiple rejections of election results, successive military coups, and violent suppression of resistance movements (Charney, 2009; Cuddy, 2021; Fink, 2001; Tin Maung Maung Than, 2014). In 1958 the military first stepped into power, ending U Nu's (the first prime minister of post-independence Burma) short-lived 'democratic experiment' due to a split in the ruling Anti-Fascist People's Freedom League (AFPFL) party (Thant Myint-U, 2001; Trager, 1963). Whether the ceasure of U Nu's 'democratic experiment' and the stepping in of the တပ်မတော် *Tatmadaw* in 1958 is to be considered a *coup d'état* is a topic of debate within Burma studies (Callahan, 2004). Following the 1960 elections, U Nu returned to power, but just for a brief period as General Ne Win led a *coup d'état* in 1962, marking the end of a constitutional democracy and the beginning of a one-party direct authoritarian rule, characterised by a period of economic isolation increasing poverty levels throughout the country (Thant Myint-U, 2001; Trager, 1958, 1963).

2.1.2 Direct authoritarian rule (1962 – 2011)

Direct authoritarian rule in Burma/Myanmar was covered by two successive military periods led first by General Ne Win under the Revolutionary Council (1962 – 1974) and then under the Burma Socialist Programme Party (1974-1988). Following a military *coup d'état* in 1988, the country dropped the 'Burmese Way to Socialism' espoused by Ne Win and was ruled by a military junta known as the State Law and Order Restoration Council (SLORC) 1988-1997 and then a reorganized junta with a new name State Peace and Development Council (SPDC), from 1997-2011 (Badgley, 1990; Butwell, 1972; Devi, 2014).

Inspired by the Socialist Revolution of China, General Ne Win isolated Burma/Myanmar (also referred to as Ne Win's socialist autarky) from the outside world and adopted a 'Burmanization policy' also referred to as the 'Burmese road to socialism', nationalising the country (land, the banking sector, foreign trade, schools) and placing

most operations under state control (Fink, 2001; Butwell, 1972; Devi, 2014). The successive military generals and their practice of economic isolation, nationalisation, and monopolisation of businesses for the military elites, and the introduction of political and economic policies that negatively affected the already struggling post-war economy, drove the general populace further into widespread poverty (Brown, 2011; Thant Myint-U, 2001). The black-market trade developed to support survival and supplement income and was stated to involve participation from farmers to cabinet ministers, accounting for as much as 80% of the national economy during the Ne Win period (Aung-Thwin & Thant Myint-U, 1992).

By 1988, both the general populace and the military elites were at a boiling point which led to the 1988 revolution (also known as the 8888 uprising), marked by bloodshed and another *coup d'état*, entering the SLORC period where the economy was moderately liberalised following the global trend towards capitalism. Foreign aid was resumed, much more private businesses outside the state system were allowed, and the National League for Democracy (NLD) led by Aung San Suu Kyi began its international appeal for democracy (Thant Myint-U, 2020).[19] Authoritarian rule continued in Burma/Myanmar until 2011 with freedom of speech inaccessible and all forms of dissent subdued through brutal and overwhelming force with Burma scholars describing the period as 'living in silence' (Fink, 2001) and an 'incipient fascist state… [with a] never fully realized potential, always present in propaganda and the constant threat of violence, that is frightening in the extreme' (Skidmore, 2012a, p58).

In addition to the တပ်မတော် *Tatmadaw*'s authoritarianism and its continual violation of human rights to retain control, Burma/ Myanmar also underwent a period of political and economic isolation and 'stagnation' (Alamgir, 1997; Booth, 2003; Kyi, 1994). Burma experts describe everyday life during this period as characterised by a 'politics of fear' (Skidmore, 2003), and frequent acts of militarisation of healthcare (with healthcare being denied to certain populations in conflict with the state/military) (Oehlers, 2005). Booth calls Myanmar a 'development disaster' and argues for it to be unique in Asia in that it underwent seven decades of economic and structural stagnation unlike its neighbouring Association of Southeast Asian Nations (ASEAN) countries (Booth, 2003). Meanwhile, the country stayed insular until 2010/2011 as corruption and the black market grew to not only support incomes but also to propagate the interests of the တပ်မတော် *Tatmadaw* (Seekins, 2010).

2.1.3 'Democratic transition'/Disciplined democracy (2011/2012 – 2020)

The တပ်မတော် *Tatmadaw* officially announced its roadmap to a 'disciplined democracy' in 2003, followed by a surge of privatization measures (Bünte 2011). For instance, Bünte draws on a publication report from a government property Auction from Myanmar times (a popular local news journal) and mentions over two hundred and seventy-one state-owned companies to be reported to have been sold to cronies (Bünte 2011). The economy from then onwards was inherently managed by military elites or cronies, worsening poverty and economic and social decline for the general populace. The တပ်မတော် *Tatmadaw* drafted a new Constitution in 2008 which continued to give the military leading authority in Myanmar politics. Despite promising multiparty democratic elections, the 2008 Constitution promises

[19] There were other military generals between Ne Win and Than Shwe but I am only referring to the two as they were most notable for their actions, and spent the most time in office.

25% of the seats for the military, also giving it the sole authority over security-related ministries (Border Affairs, Home Affairs, and Defence) (Maung Aung Myoe, 2014). In other words, the NLD government did not have operational independence and the military remained fully autonomous from civilian control (Bünte, 2011; Seekins, 2009). Burma studies experts characterise this period as a 'fractured centre' with a 'two-headed government' that 'has produced inertia and weakened the ability of the central government to formulate and implement effective policy, and further undermined the prospects of national reconciliation' (Thawnghmung & Htoo, 2022, p504).

The 2010 elections, the first 'democratic elections' after twenty years of direct တပ်မတော် *Tatmadaw* rule, marked the beginning of the quasi-democratic period of relatively open speech and economic liberalisation referred to also as 'the democratic transition' period or an 'electoral authoritarianism' when power was 'nominally' transferred to a civilian government in 2011 (Stokke & Soe Myint Aung, 2019; Bünte, 2011; Jones, 2014; Macdonald, 2013). The cause of the transition is unclear and political scholars have debated on various postulations of what triggered the regime change (Jones, 2014). Many Burmese refused to support the 2010 elections as the beginning of a democratic transition due to the National League of Democracy's (NLD) lack of participation; with the incident making international headlines.[20] NLD boycotted the 2010 elections due to 'unjust electoral laws', specifically referring to the 2008 Constitution that was drafted earlier ("Aung San Suu Kyi," 2012; "Myanmar's 2015 Landmark Elections Explained," 2015). The Constitution also bars Aung San Suu Kyi from the role of presidency for her marriage and family ties to foreign nationals with a specific clause stating 'he himself, one of the parents, the spouse, one of the legitimate children or their spouses not owe allegiance to a foreign power' (Library of Congress, 2014). Her husband carrying British nationality is deceased, but her two sons are British citizens. The 2010 elections placed the military-backed Union Solidarity and Development Party (USDP) in office, placing a retired army general, U Thein Sein as president.

Burmese people showed more hope and aspirations at the 2015 elections, described in popular media as a 'hallmark' election with an 80% voter turnout and NLD winning with a 'historic' landslide victory (Karimi, 2015; "Myanmar's 2015 Landmark Elections Explained," 2015; Moe Thuzar, 2015). However, due to the 2008 Constitution, the NLD entered a 'hybrid regime' where it constantly negotiated with the military for governance (Stokke & Soe Myint Aung, 2019). Despite this, many were highly optimistic in 2015 (and still so in the 2020 elections when NLD was re-elected) and were quick to laud Myanmar's economic opening up and NLD's election wins, asking to support calls for the rule of law as part of democratisation (Cheesman, 2014). During its time in office, Aung San Suu Kyi/NLD retained the support of the majority (the Bamar Buddhists) but was criticised by ethnic minorities and the international community for enabling/being unable to stop the တပ်မတော် *Tatmadaw*'s violation of human rights (most notably the Rohingya crisis). This was exemplified when Aung San Suu Kyi defended the military in the International Court of Justice (ICJ) in the Hague against accusations of crimes against humanity (Bowcott, 2019). NLD supporters (predominantly the majority ethnic groups) provide a sympathetic stance saying Aung San Suu Kyi was unable to defy the တပ်မတော် *Tatmadaw* and her actions at the ICJ were negotiated responses for the betterment of the democratic

[20] NLD was led by Aung San Suu Kyi who was back then widely popular in both national and international contexts as a 'democracy icon' prior to her 'fall from grace' according to popular media (Ellis-Petersen, 2018).

movement as a whole (Choudhury & Heiduk, 2019). Supporting their claim, Aung San Suu Kyi and the NLD more generally, have also repeatedly attempted to either tacitly or explicitly oppose the military, such as their attempt in 2020 to reduce the military's political power via changing the 2008 Constitution (Bowcott, 2019). Political opinions on Aung San Suu Kyi and the NLD during their time in office varied depending on one's positionality with minority ethnic groups voicing more explicit criticism of the NLD compared to the majority Bamars.

Despite international criticism in popular media for her 'inaction' against the military's atrocities in the Rohingya crisis, leading to headlines like 'Aung San Suu Kyi: from peace icon to pariah', the NLD remained popular locally and was re-elected through another landslide victory in the November 2020 elections (Ellis-Petersen, 2018; Nitta, 2020). The NLD stated a higher voter turnout and to have outperformed their 2015 victory; however, the 2020 elections was also criticised for excluding ethnic minorities like the Rohingya from voting rights (Nitta, 2020; Moe Thuzar, 2020). The election results were overturned when the တပ်မတော် *Tatmadaw*, led by General Min Aung Hlaing, staged another *coup d'état* on February 1st, 2021.

2.1.4 February 2021 military *coup d'état* (February 2021 – present day)

General Min Aung Hlaing, under claims of electoral fraud, led a military *coup d'état* on February 1st, 2021, and detained Aung San Suu Kyi and her cabinet members on the opening day of the new parliament in Nay Pyi Taw (Cuddy, 2021; Goldman, 2021). General Min Aung Hlaing publicly stated there would be a 'temporary' government known as the State Administration Council (SAC) until elections can be held again, a similar speech and pattern to that of General Ne Win in his 1962 *coup d'état,* spurring national anger; disbelief; and dissent. Peaceful protests shortly began with the initial trend being focused on 'Mother Su' (Aung San Suu Kyi)/NLD's release, but evolving into a demand for a 'federal democracy' through a new constitution which would fairly represent all ethnic groups (Prasse-Freeman & Ko Kabya, 2021).

Nationwide protests occurred alongside a civil disobedience movement (known colloquially as 'CDM'), initially led by medical doctors but expanded to other sectors, where civil servants peacefully protested by refusing to go to work. This had severe consequences for the healthcare system that was already struggling to cope with the consequences of the ongoing covid-19 pandemic. Yangon General Hospital, the largest hospital in the country, shut down along with several public hospitals as the CDM movement gained momentum and health workers refused to perform their duties. The first death occurred on February 19 when an unarmed woman in her early twenties was shot in the head, triggering both fear and national uproar (The Guardian, 2021). Over the course of the next few weeks, unarmed civilians were shot at to disperse protests, resulting in a growing death toll, mostly consisting of youths (Prasse-Freeman & Ko Kabya, 2021). Due to the crippled healthcare system, calls for emergency services and blood donations occurred informally through social media, and the informal sector again became the main mode of support for most individuals. Health practitioners, who were not adequately trained, found themselves treating gunshot wounds and injuries amidst the violence, and were later indiscriminately targeted for being the de facto figurehead of the CDM movement (Bowyer et al., 2021; Ratcliffe, 2021). The တပ်မတော် *Tatmadaw* increased the severity of its crackdowns as cases of indiscriminate violence, arbitrary arrests, and torture were reported. On the political front, the resistance leaders developed a parallel 'shadow' government appointed by the parliamentarians elected in the 2020 election, and

contested for sovereignty in the international landscape (Thein-Lemelson, 2021). The People's Defence Force (PDF), composed of members from pre-existing ethnic armed forces, and civilian youths who have decided to take up arms, was also developed, marking the start of a 'defensive war' against တပ်မတော် *Tatmadaw* (People's Defence Force – ကာကွယ်ရေးဝန်ကြီးဌာန, 2021).

Due to the February 2021 *coup d'état*, subsequent violence, and the CDM movement, the Myanmar healthcare and economy lies at the brink of collapse (OCHA, 2021; United Nations, 2021). Myanmar also experienced its worst covid-19 outbreak in July 2021, and with most of the population unvaccinated the nation experienced a humanitarian healthcare crisis as people scrambled to access oxygen in the black market and self-treated at home (Beach, 2021; Bowyer et al., 2021; Mahase, 2021). Militarisation of healthcare - a practice that has been noted in the past (Oehlers, 2005), occurred as the တပ်မတော် *Tatmadaw* hoarded oxygen, resources, and actively persecuted medical doctors during the outbreak (Krishna et al., 2021; Mahase, 2021; Soe et al., 2021).

As of today (February 2022), Myanmar remains politically unstable with violence and bombings appearing on a haphazard basis as PDF adopted 'urban guerrilla' tactics according to local news (Frontier, 2021).[21] Main cities like Yangon and Mandalay are marked by instances of guerrilla warfare between the တပ်မတော် *Tatmadaw* and PDF while regions that have already been in conflict (Rakhine and Kachin states) continue to face a humanitarian crisis as full-on battles commence between the တပ်မတော် *Tatmadaw* and ethnic armed forces (OCHA, 2021). According to international news, the Myanmar currency has dropped by 60% (Reuters, 2021). A July 2021 press release drawing data from the World Bank's 2021 Fiscal Year Report estimates the economy to contract by 18% at the end of the 2020-2021 fiscal year (World Bank, 2021d).

[21] As described in the previous sections, the country has been politically unstable since independence. Bamar dominated urban spaces (e.g. Yangon, Mandalay) were; however, more stable in comparison. I am now referring to the spread of this instability on a nation-wide scale.

Table 1. Timeline of Burma/Myanmar's Political History

Burma was under an absolute monarchy prior to British colonial rule and went through three successive empires known as Pagan Kingdom (First Burmese Empire), Taungoo Dynasty (Second Burmese Empire), and Konbaung Dynasty (Third Burmese Empire). King Thibaw (the last king of the Konbaung Dynasty) and the royal family were exiled to Ratnagiri, India in 1885 after the Royal Burmese Armed forces were defeated in the Third Anglo-Burmese war.

1824 – 1948	Burma under British colonial rule (Ganesan & Kyaw Yin Hlaing, 2007; Topich & Leitich, 2013)
1824 – 1826	First Anglo-Burmese war
1852 – 1853	Second Anglo-Burmese war
1885	Third Anglo-Burmese war (King Thibaw/ the last monarch and the royal family exiled to India)
1886	Burma becomes a province of British India
1942 – 1945	Japanese occupation of Burma
1945 – 1947	British Military Administration (Panglong Conference and General Aung San assassinated in 1947)
	Post-independence (Burma gains independence in 1948) (Charney, 2009; Topich & Leitich, 2013)
1948 – 1958	Anti-Fascist People's Freedom League (AFPFL) - The 'democratic experiment' led by U Nu
1958 – 1960	Military 'caretaker' government takes over after a military *coup d'état*
1960 – 1962	Parliamentary government restored with U Nu acting as prime minister again
1962 – 1988	Burma Socialist Programme Party (BSPP) led by General Ne Win (economic policy of autarky) 1963 – eradication of private press 1964 – nationalisation of private businesses 1976 – World Bank Aid Consortium for Burma established 1987 – Sale of land or businesses to foreigners banned UN labels the country under the 'Least Developed Country' status Demonetization decree dramatically increased poverty and led to riots *** Timeline was reproduced from 'A History of Modern Burma (Charney, 2009, p11-21) and corroborated by the timeline from the 'The History of Myanmar' (Topich & Leitich, 2013, pxiii - xxiv)
1988 - 2011	The State Law and Order Restoration Council (SLORC) led by General Saw Maung was initially created. General Than Shwe seized power in 1992 and replaced the former, dissolved SLORC, and developed the State Peace and Development Council (SPDC)

	1988 – '88 revolution' (popular revolution in Burmese history) 2000 – state exerts control over Internet access 2002 – Myanmar Consortium on HIV/AIDS established 2003 – The Bush Administration approved the Burmese Freedom and Democracy Act and restricted American banks from doing business in Myanmar (Topich & Leitich, 2013, pxix) 2005/2006 – capital begins to shift from Rangoon/Yangon to Naypyidaw 2007 – Saffron revolution (popular uprising led by monks) 2008 – Cyclone Nargis (leaving over 134,000 dead or missing) (Topich & Leitich, 2013, pxx) 2008 – SPDC drafts a new constitution and planned for elections in 2010 *** Unless if stated otherwise, the dates and events have been reproduced from 'A History of Modern Burma' (Charney, 2009, p11-21) and corroborated by the timeline from 'The History of Myanmar' (Topich & Leitich, 2013, pxiii - xxiv)
2011 – 2021	Period of quasi-democracy/'disciplined democracy' as the *Tatmadaw* (Burma/Myanmar military) refers to (Bünte, 2011). 2010 – First general 'democratic' elections took place in 2010. The National League of Democracy (NLD) boycotted the elections.
2011 – 2015	Union Solidarity and Development Party (USDP) - military backed political party led by U Thein Sein 2011 – U Thein Sein sworn in as president and lifts restrictions on media and the internet 2012 – Australia, the United States, and the European Union ease sanctions against Myanmar. The Obama administration allowed American firms to invest in Myanmar. Myanmar was granted access to European markets without quotas or duties 2015 – Second general elections took place. First openly contested elections since 1990. The NLD won with a landslide victory. *** Timeline was reproduced from 'The History of Myanmar' (Topich & Leitich, 2013, pxiii - xxiv).
2015 – present	2015 – 2020 National League of Democracy (NLD) time in office led by Aung San Suu Kyi 2020 – Third general elections took place. NLD again won with a landslide victory. February 2021 – Military *coup d'état* staged by General Min Aung Hlaing after claims of electoral fraud *** Sources: (Kipgen, 2021; Renshaw & Lidauer, 2021; Tin Maung Maung Than, 2016)

***Sources used to develop the timeline:
(Charney, 2009; Ganesan & Kyaw Yin Hlaing, 2007; Thant Myint-U, 2001; Topich & Leitich, 2013 Kipgen, 2021; Renshaw & Lidauer, 2021; Tin Maung Maung Than, 2016; Bünte, 2011).

2.2 Healthcare, development, and antimicrobial resistance in Burma/Myanmar

2.2.1 Healthcare, development, and medical pluralism in Myanmar

The status of present-day healthcare in Myanmar is closely linked to the country's political history. Grundy et al., describes the history of health in Burma/Myanmar post-independence through three periods parallel to the country's political history - the socialist primary healthcare system (PHC) from 1962 to 1988 (BSPP period/Ne Win period), free market era with the public health system in crisis from 1988 to 2005 (SLORC and SPDC period/Than Shwe period), and recovery and reform from 2005 to 2012 (Grundy et al., 2014) (Figure 4). The first period, the socialist PHC system, was lauded for its significant investments into healthcare. A PHC system was developed, being described as one of the first PHC systems in the region (Butwell, 1972). Government expenditure on the health system between 1961 – 1971 also doubled with the number of medical doctors having increased from 1778 to 3073 (Butwell, 1972). From 1964 to 1983, life expectancy increased from 45 to 61 years for men and from 48 to 65 years for women, infant mortality declined by one third, and literacy increased from 57 to 81% (Grundy et al., 2014). Despite these early investments, economic stagnation deteriorated the quality of healthcare in the following years, particularly post 1988 during the Than Shwe period (Cook, 1970; Khin Maung Kyi, 1994).

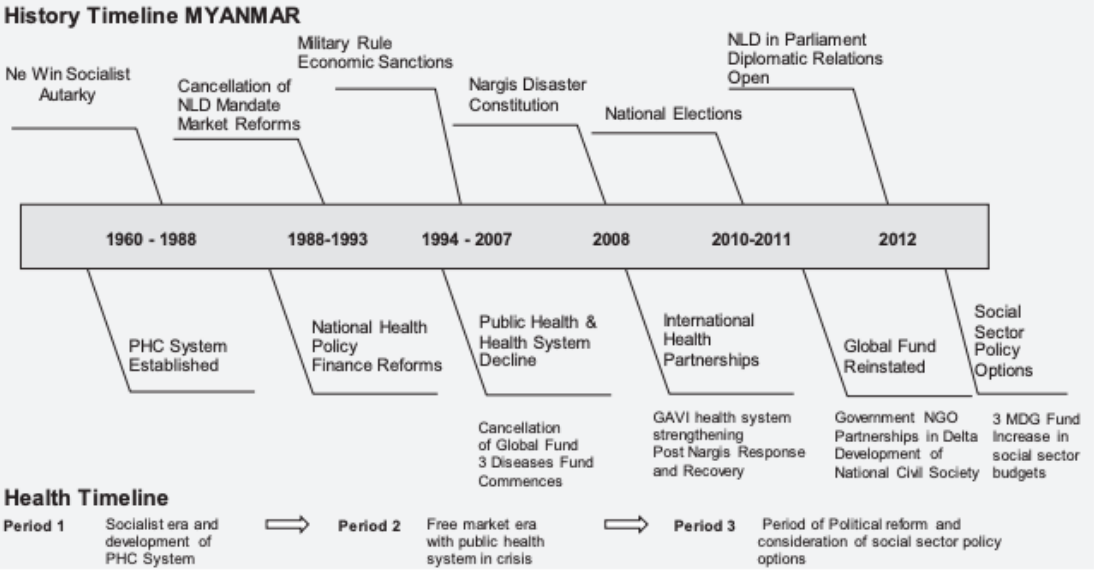


Fig. 2. Timelines of health and history Myanmar 1960–2012.

Figure 4. History of health timeline in Burma/Myanmar directly drawn from (reproduction from Grundy et al., 2014, p183)

The second period (1988 – 2007) also referred to as 'the free-market' era, beginning after the 88 revolution was when the country's healthcare and social systems experienced the most neglect and decline. The then ruling military government declared a switch towards an 'open door policy' also developing a new National Health Policy and instigating health reforms (user fee systems, a drug revolving fund, improved access to medicines) to decentralise and privatise healthcare. The reforms began in the early 1990s with some of the policies having continued on into

present day Myanmar (Cook & Minogue, 1993; Grundy et al., 2014; Phone Myint et al., 2014).[22, 23] These reforms into a free-market system resulted in much reduced investment into the public healthcare sector and instigated an exponential growth of private healthcare (Oehlers 2005). Oehlers, a specialist in the political economy and development in the Asia-Pacific region, draws on data from the International Monetary Fund (IMF) and discusses how the state's health spending was cut in half between 1988 – 1995, and again in half from 1995 – 1999, and attributes this period as a 'crisis' in the Myanmar's public health system (Oehlers, 2005) (Figure 5). Furthermore, Oehlers discusses how these declines 'were not due to any extraneous circumstances but were conscious policy choices made by the military [which] becomes very clear when corresponding figures for defence spending are examined and compared' (Oehlers, 2005, p199). Oehlers describes how defence expenditure in 1999 was ten times that of healthcare, despite worrying levels of poverty and public health issues during the period.

Table 1: Health Spending in Burma, 1988, 1995, 1999*

Year	% GDP	% State Expenditure
1988	0.62	4.97
1995	0.38	3.56
1999	0.19	2.70

Source: IMF (2002).

Table 2: Defence Spending in Burma, 1988, 1995, 1999.*

Year	% GDP	% State Expenditure
1988	2.31	18.67
1995	3.94	36.70
1999	2.06	29.34

Source: IMF (2002).

Figure 5. Decrease in health expenditure and increase in defence spending in Myanmar between 1988 – 1999 (reproduction from Oehlers, 2005, p199)

[22] Provision of health services were free until user charges were introduced in the form of cost sharing in 1993. Since then out-of-pocket payment has become the main source of finance (Phone Myint et al., 2014).
[23] A drug revolving fund, 'a scheme where drugs are sold at cost-price, plus a mark-up, and the revenue is used to replenish the drug stocks' (Waddington & Panza, 1991).

Due to the already high levels of poverty nationwide, a consequence of Ne Win's nationalisation acts and economic autarky, the population in Burma was also very susceptible to diseases that are known to be linked to poverty (malnutrition, tuberculosis, malaria, and HIV/AIDs) (Chandler, 1998). According to reviews from the Asian Development Bank, death rates due to malaria was significantly higher than other neighbouring ASEAN countries (Thailand, Vietnam, Indonesia, Philippines) with 1.1% to 2.2% of the population estimated to be affected with HIV/AIDs in the early 2000s (Asian Development Bank, 2004; Van Zant, 2004).[24] An economic assessment by the World Bank on poverty levels in 1999, summarises a quarter to one-third of all households to be 'poverty stricken' (based on the poverty indicators used during that period), and public expenditure on health and education to be significantly below that of other countries in the East Asia and Pacific region (Figure 6) (IMF, 1999, p6).

In sum, Myanmar's public healthcare and social sectors experienced a period of deliberate neglect and underfunding, resulting in an absence of necessary healthcare services. Compared to the socialist period (1962 - mid 1980s) where government expenditure in healthcare was around 10%, expenditure went down to 1.2% in the year 2000 with the WHO ranking the Myanmar health system as 190th out of 191, and out-of-pocket expenditure as a % of total health expenditure to be 95.5% in 2009 (Grundy et al., 2014; Tandon et al., 2000). According to a 2014 Myanmar health system review published by the WHO, the country's total health expenditure as a percentage of GDP between 2001-2011 was the lowest in the WHO Southeast Asia and Western Pacific region: only 1% of the population is covered by the social security scheme, with the government's spending on social security being below 1.3% (Phone Myint et al., 2014). The majority of the population continues to experience hardship from poverty and public health issues, while lacking the appropriate public healthcare services for their needs.

[24] Experts acknowledge the difficulty of obtaining data due to high incidents of tampering and/or exaggeration as it has been collected primarily through permission obtained through the military (Maung, 1989; McCarthy, 2000; Oehlers, 2005). Collecting data in Myanmar during the democratic transition period was relatively more open, but the country is more likely to shift back to the pre 2011 period in light of current circumstances. This may have implications for AMR data collection (i.e., surveillance data) and should be taken into consideration.

Myanmar: Selected Social Indicators

	Myanmar	East Asia and Pacific
Population 1998/99		
Population (million)	47.3	...
Population growth rate (percent)	1.0	1.0
Urban population (percent) 1/	26.6	33.0
Public Expenditure 1997/98		
Health (percent of GDP)	0.3	1.7
Education (percent of GDP)	0.9	2.7
Social Indicators 1997		
Poverty (headcount; in percent)	22.9	28.5
Access to safe water (percent of population)	60	77
Fertility rate (births per woman)	2.4	2.1
Population per physician (persons)	5,000	1,834
Immunization rate (percent under 12 months)		
Measles	88	93
Diphtheria, pertussis, and tetanus	90	93
Child malnutrition (percent under 5 years)	43	20
Life expectancy at birth (years)	60	69
Mortality		
Infant (per thousand live births)	79	37
Under 5 (per thousand live births)	131	47
Adult (15-59)		
Male (per 1,000 population)	263	183
Female (per 1,000 population)	217	148

Source: World Bank (forthcoming) Myanmar: An Economic and Social Assessment, East Asia Region.

1/ 1997.

Figure 6. Poverty and social indicators in Myanmar between 1997 (reproduction from IMF, 1999, p6)

As a consequence of both deliberate underfunding and decline of the public health system, private and/or informal healthcare services came into place as leading providers of healthcare services. The previously mentioned health reforms which were initiated as part of the 'open door policy' resulted in further reduced state investment and converted the majority of health financing to private out-of-pocket payments. This led to the rise and reliance on the private sector as the predominant form of healthcare provision (WHO, 2014). Between 2001-2009, the private sector was the main provider of healthcare services, accounting for over 80% of total health expenditure. Out-of-pocket expenditure in the private sector was nearly 100% as the country did not have private medical insurance schemes (WHO, 2014).

The last period (2008 – 2011) was marked by a relative improvement due to the relaxation of international aid entry, and the establishment of several national-international partnerships to address diseased-specific funding/programmes such as the Three Diseases Fund for AIDS, malaria, and tuberculosis). Myanmar managed to acquire health financing support from the Global Fund, GAVI, and Millennium Development Goal Health Fund, initiating more health policy reforms showing improvements in health system financing (Grundy et al., 2014).

The democratic transition period (2011/2012 – 2021) also experienced an increased investment in healthcare and social security. Proposals for a National Health Plan to ensure universal health coverage by 2030, and the 2012 Social Security Law aiming to provide comprehensive health and social protection for employees in the formal sector were both introduced (MOHS, 2016; Phone Myint et al., 2014). A 2014 WHO situation analysis on medicines in healthcare delivery in Myanmar states how a shift from:

> 'a centrally controlled push system to a centralized pull system' in 2011 have greatly improved drug availability and patient attendance. Government expenditure has increased from less than 0.2 USD to 3 USD per capita/per year. Essential drugs were stated to be available in 75%-80% of hospitals surveyed and in 59% of rural health centres. When drugs were not available, this was due to 'non-use and therefore non-purchase' as sub rural health centres did not treat non-communicable diseases. Despite these improvements, the report mentions key challenges including lacking adequate infrastructure and human resource capability to manage an 'efficient decentralised procurement' and the 'capacity to manage technical specifications of tenders, undertake quantification' (Holloway, 2014, p8).

The majority of work on research and implementation and following improvements have; however, focused on the public sector, despite the significant role of the informal sector in providing healthcare both in Myanmar's history and in its present. As of 2018, the World Bank estimates the predominant mode of healthcare financing in Myanmar to still be out-of-pocket, 76.4% of total health expenditure (World Bank, 2021c). In sum, Myanmar's healthcare and social systems experienced decades of deliberate neglect and decline. Most people are financing healthcare through out-of-pocket payment in the private and/or informal sector which has come to supply medicines, healthcare, and social services in place of the public systems. Despite this, several global health/international development agendas have relied on partnering with 'national' bodies in Myanmar (National Tuberculosis Programme, The Global Fund, Three Disease Fund), with limited reflections or inclusion on informal mechanisms supporting people that at times are in conflict with 'national' interests (in the case of Myanmar, the military's interest).

Present day Myanmar has a pluralistic healthcare system with a range of healing practices including Buddhism, astrology, spirit cults, indigenous medicine and Western biomedicine (Skidmore, 2008; Coderey, 2016; 2020; Holloway, 2014). Baer discusses medical pluralism as follows, drawing attention in particular to the complex interactions different subsystems can have with one another:

> ‘a complex society consists of the totality of medical subsystems that generally compete with one another but sometimes exhibit cooperative, collaborative, and even co-optative relationships with one another’ (Baer, 2015, p1069).

In the defining medical pluralism, anthropologists have emphasised the significance of analysing the ways people navigate the coexistence of different medical traditions (Leslie, 1980; Coderey, 2020; Ribera, 2007). Ribera in her work on medical pluralism in Africa, further unpacks the concept of as ‘political’ and ‘ethnographic’ (Ribera, 2007, p105-106). She discusses how ‘political’ discussions on medical pluralism involve ideological debates on how different medical traditions should coexist in each community or country (i.e., what their legal status should be) (Ribera, 2007, p105-106). On the contrary, the ‘ethnographic’ dimension considers how different models of health, illness, healing, medicines, and medical practices coexist in a particular setting (Ribera, 2007, p105-106). Coderey’s works on medical pluralism in Myanmar include discussions on both the political (Coderey, 2021) and ethnographic analyses (Coderey 2020) of the concept. I draw on Coderey’s analysis of medical pluralism in Myanmar as it relates most closely to my work.

Few medical anthropologists have worked in Myanmar. Two, in particular, have shed light on medical pluralism in the country: Skidmore (eg 2008) and Coderey (eg 2016; 2018; 2020; 2021). Coderey, drawing from her ethnography in Rakhine State, describes the therapeutic field in Myanmar to be composed of concepts and practices originating from different sources including Western medicine, indigenous medicine (herbal, massage, alchemical medicine, esoteric diagrams, mantra), religious traditions, divination, astrology, and spirit cults (Coderey, 2016). Despite this, in the ‘political dimension’ (as conceptualised by Ribera, 2007), Coderey states how only Western medicine and a modernised version of indigenous medicines (mostly herbal medicines dominated by ‘Buddhist ways’) occupy an official status in the national health system in Myanmar (Coderey, 2016). She discusses how ‘within this plurality the Buddhist and the medical ways play an important if not dominant role, this role is seldom exclusive; the appeal to other recourses seem to be the norm rather than an exception’ (Coderey, 2016, p2). The modernised version of indigenous medicines (standardised version of indigenous medicines promoted and taught in public universities) was introduced into the national health system after independence and remains as a separate entity from biomedicines, with the latter retaining dominance in the Myanmar health system. Traditional medicine has been a priority for the military council and the healthcare system is designed to include the education, training, registration, licensing, and research of traditional medicines (Skidmore, 2008). Coderey provides a political analysis by discussing how the government promoted traditional medicines after independence as an act to protect and improve national heritage and a need to unify and ‘Burmanize’ the country in the name of nation-building through ‘a standardised medicine, largely based on the Burman tradition, across the country [to] help eliminate inter-ethnic differences as well as the esoteric elements inherent in traditional medicine that were perceived as a potential threat to the state’s authority’ (Coderey, 2021, p1).

In contrast to Coderey’s works which focus on medicines (discussed further on p43), Skidmore discusses broader topics including women’s health (Skidmore, 2002), health system (Skidmore, 2008), political violence (Skidmore, 2003; 2008; 2012a), and politics and advocacy (Skidmore, 2006; 2012b). In my literature review, I specifically draw on her book chapter on contemporary medical pluralism in Myanmar for its relevance (Skidmore,

2008, p193-207). Skidmore describes Myanmar's healthcare system to consist of 'a shadow two-tier system… that of the military and the civilian divisions of health care' and characterises this divide as 'the contrast between free or low-cost healthcare of a reasonable standard in the high-tech military hospitals and the poorly funded public health system' (Figure 7) (Skidmore, 2008, p195). Those who were not in the military division (mainly minority ethnic groups) were often marginalised and face further structural violence, state-neglect, and lack of access to affordable healthcare.

Government			**Private**	
Military	**Biomedicine**		**Private Companies**	Hospitals, Cardiac, Cancer, Dental, Diagnostic, Pathology
Civilian	**Biomedicine**	Para-statal groups (USDA, MRC MMCWA), ministries	**UN, INGOs, Local NGOs**	Foreign doctors and volunteers
	Traditional Medicine		**Trans-National Health Providers**	Emergency health, Reproductive health, Trauma services
			Ayurvedic/Humoral Medicine	
			Traditional Medicine Practitioners	*Lethe* (midwives)
			Buddhist Sects (gaing)	*Bodaws, Weikza*, Occult practices
			Astrology	
			Magical Healers	Alchemy, *Inn Saya, Dat Saya, Medaws, Payawga Saya*
			Other Healing Systems	Wa, Karen, Naga healers, etc.

Figure 7. Skidmore's schematic of the Myanmar medical system (reproduction from Skidmore, 2008, p196)

Skidmore (2008) notes how biomedicine was still the first medical system used by most Burmese. However, the costs of biomedicine at the time of her research rendered most chronic and complex conditions inaccessible for most of the population, resulting in an appeal for simpler and faster consultations and treatment regimens. For instance, she argues that biomedical injections were popular due to the rapidity of symptomatic relief and were often equated with magic in contrast to the slower effects of homeopathy. Skidmore notes the common use of multivitamin and B-vitamin injections among Burmese to counter the effects of malnourishment. Coderey also describes how biomedical drugs were appreciated for their ability to quickly alleviate symptoms and were seen as symbols of modernity (Coderey, 2018).

During the time of Skidmore, Coderey, and my own fieldwork, the main cities like Yangon and Mandalay were dominated by biomedical services ranging from small clinics to hospitals. Such urban spaces, predominantly occupied by the Bamar ethnic group, were also marked by improved resources and more regulatory control. In

contrast, remote areas relied on informal health services provided by unlicensed medicine shops and encompassed a more pluralistic healthcare landscape including non-biomedical practices mentioned above (Skidmore, 2008; Coderey, 2018; 2021). Skidmore describes how for life-threatening disease such as cancer or HIV/ AIDs, her interlocuters engaged in syncretic healthcare seeking behaviours for instance, by initially beginning with folk and traditional medicine traditions and then switching to the biomedical sector once the disease had progressed to a late stage (Skidmore, 2008). The patient would spend large amounts of money in the biomedical sector until they are unable to finance their healthcare. When this scenario occurred, the patient would switch back to nonbiomedical modes of healing such as faith, religion, or supernatural intervention (Skidmore, 2008; Coderey, 2018). Out-of-pocket expenditure has always been the predominant mode of health financing with the WHO stating this expenditure to be nearly 100% between 2001-2005 (Myint et al., 2019; WHO, 2014). Coderey also discusses how traditional medicines were in some instances, ten times cheaper than biomedical products and were preferable for those who were economically disadvantaged (Coderey, 2018). The use of the health system and access to healthcare (biomedical/ non-biomedical) varied depending on military or civilian status, ethnicity, previous health experiences, financial circumstances, exposure to biomedicine, belief in non-biomedical healers, and the type and stage of illness (Skidmore, 2008; Coderey, 2018). However, in Yangon where this fieldwork was conducted, biomedicine remained the prevailing healing system. In sum, medical anthropological literature on healthcare in contemporary Myanmar discusses medical pluralism, a largely neglected and lack of public health services, unequal distribution of resources between different groups, and examples of 'Burmanization' and unification attempts through healthcare policies.

The topic of biomedical drugs in Myanmar was largely unexplored in the anthropological literature until Coderey's extensive research which includes an analysis of accessibility and use of biomedical drugs in Myanmar, based on her ethnographic fieldwork in Rakhine state (Western Myanmar) (Coderey, 2016; 2018; 2020; 2021). Coderey emphasises geopolitical inequalities in Myanmar and introduces her study of a 'peripheral' region (Rakhine State) to better analyse how medicine distribution is affected by the geopolitics of the country. In her analysis, Coderey discusses how the medical market was highly affected by the military governance. Due to the government's underfunding of the healthcare sector, Myanmar lacked the capacity to produce drugs and the majority of medicines in the country were imported from elsewhere (discussed further in Chapter 4). Coderey describes how imported medicines have always been inferior to the products circulating in other countries because of the military's protectionist attitude and trade embargos from the European Union and the United States (Coderey, 2018). The FDA's regulations around imported medicines were not strict and in the past, have allowed for the import of degraded and counterfeit medicines (Skidmore, 2008). Medicines were also imported by international organisations (UN agencies, WHO) and reserved for their public health initiatives. The funds for these medicines have historically been unstable as the government's protectionist policies have resulted in periodic withdrawal of funding from such organizations. Other NGOs also imported medicines for their own initiatives, but these were also limited in number as prior to 2011, NGOs were heavily restricted in their operations (Coderey, 2018). The availability of medicines itself depended on the WHO guidelines describing which medicines should be available at which level of care; however, Coderey describes how these services in Thandwe (a town and a major seaport in Rakhine state) were often lacking in terms of both the supply of medicines and other logistical planning such as human resources and equipment. As a result, she

describes how people referred to such services as ‘imitation or fake hospitals and centers’, ‘just for show’, and ‘empty’ and resorted to relying on out-of-pocket payments to access healthcare (Coderey, 2018). Public health facilities in Yangon were more well-resourced compared to rural settings but also experienced similar issues due overall weaknesses and resource constraints in the national healthcare system. As medical anthropological work on Myanmar has discussed, low social and economic development have impeded the development of a strong local pharmaceutical industry such as inadequate local pharmaceutical manufacturing capacity. Furthermore, isolationist policies in the past have hindered trade and import of medicines through legal means, also leading to the emergence and reliance on the black market. When access was made possible, geopolitics determined the distribution of medicines. Minority ethnic groups, rural areas, and conflict zones often faced the most neglect with residents in such spaces having much more limited access to biomedical care, resorting in alternative coping mechanisms and treatment regimes. In short, access to adequate healthcare and medicines was limited for the majority of the Myanmar population, with some groups facing more biopolitical abandonment and structural violence than others.

2.2.2 ‘AMR as a development’ frame in Myanmar

While discussing AMR policy implementation within LMICs, the global health community has highlighted the challenges of inadequate healthcare infrastructures, governance, and information gaps resulting from an inability to establish AMR surveillance. As discussed earlier in the rationale, an inability to ‘turn plans into action’ and a lack of compliance to the WHO GAP have been described as reasons for unsuccessful implementation of AMR policy in LMICs (Diazgranados et al., 2008; Wernli et al., 2017a; 2017b). Myanmar, from regional reports, was identified as a source of high drug resistance, and informal pharmaceutical markets in need of tighter state regulation (Holloway, 2011b, 2011a; Van Boeckel et al., 2014). As an LMIC, predominant global health discourses within the ‘AMR as a development’ frame, discuss Myanmar under the LMIC challenge characterised by inadequate healthcare infrastructure, weak governance and stewardship measures for antibiotic use, and information gaps on surveillance.

The development and proposed implementation of the NAP AMR for Myanmar (although in its early stages) follows a similar approach to the programmes mentioned in the previous section (National Tuberculosis Programme, The Global Fund, Three Disease Fund). My project and funding for this PhD (explained further in Chapter 3) also came from the UK Foreign, Commonwealth & Development Office (UK FCDO), and had intended to partner with ‘national’ or government endorsed bodies in Myanmar. This approach, within predominant international development discourses, stems from an intention (or stated intentions) to promote ‘sustainable action’, ‘sustainable development’, and ‘capacity building for lasting impact’ (Fowler, 2000; Gugerty et al., 2021; United Nations, 2021). As an example, international organizations like the Global Partnership for Effective Development Cooperation (GPEDC), whose mission statement is to be ‘the primary multi-stakeholder vehicle for driving development effectiveness to maximize the effectiveness of all forms of co-operation for development for the shared benefits of people, planet, prosperity and peace’ (GPEDC, 2019), publishes reports with aims for international development objectives to ‘align to national development priorities in country strategies and individual projects’ (GPEDC, 2019, p25). Although a ‘national’ body may be appropriate in some settings to take upon the responsibility of ‘sustainable action’, in Myanmar with its history of the ‘national’ or the military’s underfunding of healthcare and social security, while promoting its own interests,

uncritically promoting action through the 'national' may risk reproducing the military's interests or methods of governance. In addition to this, the AMR agenda in Myanmar and the NAP AMR has limited to no engagement with the informal sector, which is where most people access medicines and healthcare. Using the example of Myanmar, this thesis aims to provide reflections on the framing of 'AMR as development' for policy and implementation in Myanmar and argues for a further need to critically engage with the context, prior to promoting and scaling up of 'national' action.

The WHO itself in its reports on AMR, discusses implementation as a way to 'monitor progress'. For instance, after the WHO GAP was promoted as a blueprint for AMR policy making at the World Health Assembly in 2015, the Global Antimicrobial Resistance and Use Surveillance System (GLASS) was launched to foster AMR surveillance, monitor antimicrobial consumption, and inform strategies to contain AMR (WHO, 2021c). As of May 2021, 109 countries including Myanmar have enrolled in GLASS. The fourth and latest GLASS report published in 2021 mentions the inclusion of antimicrobial consumption (AMC) surveillance on a national level as an indicator (GLASS-AMC) (WHO, 2021c). In this report, Myanmar has stated to have implemented the following indicators - monitoring of AMR in common bacterial pathogens (GLASS-AMR), HIV drug-resistance, drug-resistance tuberculosis, malaria therapeutic efficacy studies, and one health (Figure 7). Myanmar has not yet implemented a national antimicrobial consumption surveillance system (GLASS-AMC) (WHO, 2021c). Furthermore, Myanmar reports 13 surveillance sites participating in the national surveillance system all within the public healthcare system (6 hospitals, 1 outpatient facility, 6 in-outpatient facilities). Seven laboratories are mentioned to be performing antimicrobial susceptibility testing (AST), a national reference lab (NRL) established, and a national coordination centre (NCC) in place (Figure 8).

SURVEILLANCE ACTIVITIES	IMPLEMENTATION
GLASS-AMR	✓
GLASS-AMC	
HIV DR[1]	✓
DR-TB[2]	✓
Malaria TES[3]	✓
One health	✓
EGASP	

1. HIV Drug-Resistance
2. Drug-resistant TB
3. Malaria Therapeutic Efficacy Studies

Figure 8. Myanmar's implementation status for the indicators in the latest GLASS report (reproduction from WHO, 2021, p115)

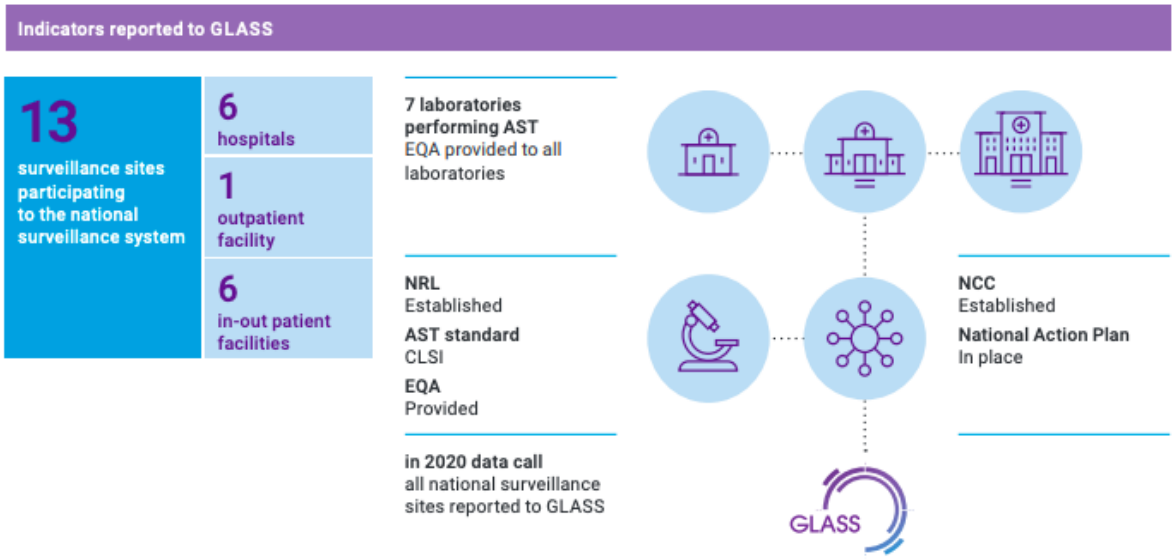


Figure 9. Myanmar's National AMR surveillance systems key indicators as reported in GLASS (reproduction from WHO, 2021, p115)

A separate WHO report published in 2018 (the second of its kind), with an aim 'to monitor global progress on AMR' mentions 93 countries to have developed NAPs and 51 to be in the process of drafting plans (WHO, 2018). The report states progress with implementation to be greater in HICs than in low-income, but for all countries to have scope for improvement (WHO, 2018). The most recent publication (published on February 28, 2022), the WHO implementation handbook for national action plans on antimicrobial resistance: guidance for the human health sector', states:

> 'In collaboration with FAO and OIE, WHO has been monitoring the progress of country action on AMR through the annual Tripartite AMR country self-assessment survey since 2016. Results for 2019 – 2020 show that 88% of 136 responding countries had a NAP on AMR. However, only 20% of those countries have fully financed their NAPs, reflecting a major gap in implementation. For comprehensive and sustainable implementation of NAPs, coordination both across sectors and within individual sectors and programmes is critical' (WHO, 2022, p2).

The guidance recommends a 'continuous process for NAP development… to strengthen implementation within the human sector' (Figure 10). In sum, the WHO highlights an 'implementation challenge' particularly in LMICs and proposes more investment in the 'development, endorsement, implementation, and monitoring and evaluation of the NAPs to address this challenge. The Myanmar NAP is modelled after this approach or an 'AMR as development' framework as Wernli et al. discuss during their mapping of global policy discourses on AMR (Wernli et al., 2017a).

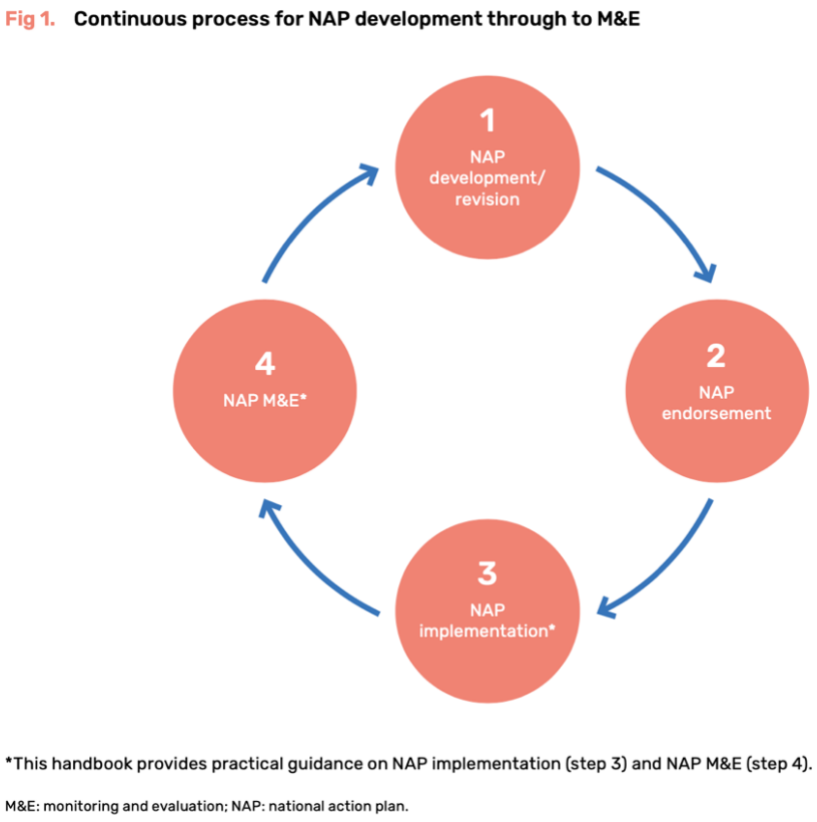


Figure 10. WHO's guidance for NAP implementation (reproduction from WHO, 2022, p2)

Similar to the WHO GAP, Myanmar's 2017 draft NAP is a technical policy document that does not describe its form of government, state-market arrangements, or other practices relevant to shaping antimicrobial use (NAP for Containment of AMR: Myanmar, 2017). The document frames AMR in line with the WHO GAP's objectives and states that the Myanmar government was at the stage of exploration and initial implementation of laboratory surveillance, AMR awareness, improving hygiene/sanitation and drug regulation, with nationwide scale up due to be completed in 2022 (MOHS, 2018, p48; NAP for Containment of AMR: Myanmar, 2017).[25] The NAP AMR Myanmar is the prevailing policy document on AMR in the country to date.[26]

The AMR agenda framed through discourses around 'national action' only came about in 2017 with the advent of the WHO GAP. The Myanmar Food and Drug Administration (FDA) is the key actor responsible for enforcing action points pertaining to regulating medicines and ensuring quality standards of antimicrobials. The draft NAP, however, states that they have 'limited human resources for regulatory enforcement' and 'lack effectiveness at the field level' (NAP for Containment of AMR: Myanmar, 2017, p17, p19). Despite this, the FDA between 2017 to 2020 had begun to incorporate antibiotic related awareness messages into its drug inspections including warnings like, 'antibiotics should only be sold under a prescription' (FDA, 2020; Shwe Yee San Myint, 2014a; 2014b; MOHS, 2018).

[25] This will most likely no longer be the case due to the 2022 military *coup d'état* and the ensuing political violence.
[26] My ethnographic research was done between 2017 - 2020 and the research findings in this thesis specifically refer to this period.

The AMR agenda was also discussed at the scope of a national (48th Myanmar Health Research Congress) and international conference (Australia Myanmar Institute 2020 Conference on Myanmar's Sustainable Development Goals) in January 2020 (48th Myanmar Health Research Congress | Facebook, 2020; Australia Myanmar Institute 2020 Conference Myanmar's Sustainable Development Goals, 2020). Awareness raising efforts were visible in Yangon through posters and information sheets being provided at health-related events and in public spaces. Such activities seemed to have disappeared or have fallen off the priority list when covid-19 control measures overtook public health initiatives beginning from March 2020 and are unlikely to resume due to the February 2021 military *coup d'état*, and the subsequent political crisis that has taken precedence over other matters in Myanmar.

In terms of public discourses on AMR, I came across an awareness raising infographic published by the MOHS in collaboration with the WHO and the Asian Development Bank (Figure 11). In sum, the infographic mentions the use of စပ်ဆေး *sat hsày* (mixed medicines or unlabelled assortment of drug cocktails) to be causing drug resistance, subsequently leading to one's eventual death. To prevent this demise, the infographic recommends people to not take စပ်ဆေး *sat hsày* and go to the doctor. Figure 11 was shared at the January 2020 at the Myanmar Sustainable Development Conference hosted by the Australia Myanmar Institute. AMR as a topic had a panel presentation on its own (Australia Myanmar Institute 2020 Conference Myanmar's Sustainable Development Goals, 2020). A few weeks earlier, AMR was also presented as a key topic through an independent panel at the 48th Myanmar Health Research Congress (Oo, 2020).

Figure 11. Awareness raising infographics being publicly shared through a popular local cartoon

Let's work together to prevent antibiotic (ပဋိဇီဝဆေး *pá tí zi wá hsày*) resistance. – Title

'I feel like I am about to develop a fever. Can you go to that shop at the end of the street to get some စပ်ဆေး *sat hsày* (mixed medicines) with strong ပိုးသတ်ဆေး *pò that hsày* (antibiotic) in it.' – Man on chair.

'If you take စပ်ဆေး *sat hsày*, you will cause ပိုးသတ်ဆေး *pò that hsày* resistance, a catastrophe. Your life will end and no one can help you.' – Girl on left.

'Don't take စပ်ဆေး *sat hsày*, the best option is for you to go get treatment with the doctor.' – Girl on right.

Taking စပ်ဆေး *sat hsày* that includes ပိုးသတ်ဆေး *pò that hsày* (ပဋိဇီဝဆေး *pá tí zi wá hsày*) will result in medicines not working anymore…your illness not being cured… and more money being spent… loss of life… – Bottom right paragraph

Our interlocutors mentioned a number of other internal departmental conferences on AMR between 2019 – 2020. The problem of drug resistance due to antibiotic 'misuse' and the use of 'unsafe and illegal' medicines was also mentioned in public discourses (news reports, social media) between 2018 – 2020. These sources were more informal (blog posts, a quote from a senior staff) compared to the national and international conferences. In 2020, we (CLH, YKZ – research collaborations explained in Chapter 3) came across another awareness raising infographic on the Yangon Circular Railway. This infographic had a similar awareness raising message to that of Figure 11. In addition to these sources, one of our interlocutors who had access to the Yangon General Hospital – mentioned seeing WHO endorsed/aligned messages on AMR awareness raising at the public hospital. In terms of other activities, to address AMR in Myanmar, research on drug resistance has been on-going since the 1970s (Htun et al., 1975; Phyu et al., 2005). Despite the information gap (lack of GLASS-AMC data) on understanding the exact scale and burden of antimicrobial use within Myanmar, high rates of drug resistance have been reported in the region, with lax regulations, and the ease and availability of antibiotics being stated as 'concerns' and areas for improvement (Chereau et al., 2017; Holloway et al., 2017; Van Boeckel et al., 2014). Although publications on tuberculosis and malaria have been available since at least the 1970s, research outputs specifically on antibiotics/antibiotic resistance/antibiotic consumption are limited and have only begun to emerge within the last few years. These publications mostly focus on molecular (Sugawara et al., 2017; Tada et al., 2019), epidemiological (Gibson et al., 2020; Moe et al., 2017a; Sandar et al., 2021), and clinical studies (Myat et al., 2014; Shwe et al., 2002). As examples, extracted isolates from all outpatients and inpatients at Yangon General Hospital between the period of 2005 to 2013 indicates *Staphylococcus aureus* resistance to first-line antimicrobials, and more than half of the tested samples of *Escherichia coli* and *Citrobacter* to be resistant to amoxicillin-clavulanic acid, ceftriaxone or gentamicin (Myat et al., 2014). Chalmers et al., in their cross-sectional study carried out at a hospital in the Thai-Burmese border between 2013-2014, show resistance profiles for *Escherichia coli* in the following manner: 'ampicillin 70.1%, ceftriaxone 20.9%, co-amoxiclav 7.5%, cotrimoxazole 62.7%, Ciprofloxacin 20.9%, gentamicin 20.9%, nitrofurantoin & meropenem 0%' (Chalmers et al., 2015).

In addition to drug resistance studies, a few publications have also explored antibiotic stewardship through the use of point-of-care tests (Althaus et al., 2019; Chalmers et al., 2015) and awareness raising through public engagement (Swe et al., 2020) in a specific township/region. Swe et al. discusses two national conference presentations on the topic of drug sellers and their 'perception and practice' and 'knowledge and attitudes' around antibiotic sales and pharmacy practices (Swe et al., 2020).[27] Holloway et al.'s 2014 situational analysis on medicines in healthcare delivery in Myanmar provides the most extensive report on antibiotic use and regulation in the public sector (Holloway, 2014; Holloway et al., 2017). The authors report primary care providers in Myanmar (n = 14 facilities with antibiotic data) to have prescribed antibiotics to 47% of all outpatients (Holloway et al., 2017). The publication also mentions Myanmar to be the country with the highest prescription of antibiotics (n=360), among the 8 Southeast Asian countries included in the review, for upper respiratory tract infections (≈ 85%) (Holloway et al., 2017).[28] A

[27] I am unable to locate the original sources. This may be due to several 'national' content not being made publicly available or being removed due to the recent political circumstances.
[28] A condition presumed to normally not require antibiotics from a clinical standpoint.

separate fever study in 2019, conducted in the outpatient department of a government hospital, indicates 69% of febrile patients (n=173) to have received an antibiotic (Althaus et al., 2019). A follow-up publication which conducted a secondary analysis of the trial data (1090 patient consultations with 40 prescribing doctors) concluded 'substantial inter-prescriber variation in antibiotic prescription, despite using the same management guidelines', suggesting prescription practices to differ despite being based within the same healthcare setting (Swe et al., 2020). These studies suggest an issue of over-prescription of antibiotics or 'misuse' (as described by the predominant global health language), contributing towards AMR.

Substandard/falsified medicines in Myanmar have also been discussed as contributing factors to the rise of AMR (Han, 2020; Islam et al., 2018; Newton et al., 2008; Prazuck et al., 2002; Yong et al., 2015). The prevalence of registered and unregistered medicines in Myanmar; the quality control status for each category; and their contribution to AMR are unclear due to a lack of national surveillance.[29] Han uses a probabilistic model to estimate the economic costs of substandard and falsified antimalarials and concludes an annual cost of 2 million USD contribution to the total annual cost of malaria in Myanmar (14 million USD) (Han 2020). Islam et al. did a preliminary assessment and found zero systematic surveys on counterfeit medicines to have been conducted since 1999 (Islam et al., 2018). The authors collected samples from pharmacies, hospitals, and wholesalers in Yangon in 2014, checking for authenticity and quality. Among the 235 samples collected, 221 (94%) were foreign medicines, and six samples were not registered with the Food and Drug Administration (FDA). Out of all the registered medicines that were analysed for quality control in three ways (content uniformity tests, quantity tests, dissolution tests), 15-20% failed quality tests. Three of the six unregistered samples failed in both microbial assay and identification tests. The study suggested the presence of substandard quality medicines, even among medicines that were registered with the FDA (Islam et al., 2018). Furthermore, Prazuck et al. assessed the quality of drugs they randomly sampled from a hospital, private clinicians, and drug shop prior to an implementation of a sexually transmitted disease program in Northern Myanmar and concluded half of the drugs to be lacking in the stated dosage of active ingredients (Prazuck et al., 2002). These studies suggest a high prevalence of falsified and substandard antibiotics in the country, most likely presenting as a key contributing cause of AMR.

The above-mentioned studies do not include deeper discussions or critical engagement with the social, political, and economic context of Myanmar. In sum, the studies (focusing on human health) indicate various patterns of drug resistance profiles, high antibiotic 'misuse' and 'overuse' behaviours, and a high prevalence of substandard medicines in Myanmar, corroborating global health concerns over the region being a 'hotspot' for AMR. However, compared to other countries in the region, Myanmar still lacks much data on AMR. For instance, the majority of the studies focus on a specific setting such as a healthcare setting or a township as opposed to engaging in epidemiological/clinical discussions on a national scope. Furthermore, the WHO GLASS itself mentions a lack of antimicrobial consumption data for Myanmar (Figure 8) (WHO, 2021, p115). Despite this gap in knowledge, current predominant policy discussions around AMR in Myanmar recommends 'national' action, and ways to scale-up implementation through global methods (strategic objectives advised by the WHO), rather than locally informed

[29] A national surveillance system is also unfeasible as Myanmar is at war in several regions with some districts/states like the Wa state being an autonomous region.

action. This can be a dangerous as it can result in promoting ineffective policies/strategies, misguided prioritisation and channelling of limited resources, and unintended consequences. These circumstances may then risk exacerbating lives, the last of which is important to consider, considering the country's current political and economic crisis. My thesis aims to contribute to this AMR implementation knowledge gap in Myanmar through the lens of antibiotic use in human health and is among the first AMR/antibiotic studies to include deeper reflections on the political and economic regulatory context of the country. With the work presented in this thesis, I argue for a potential 'step-back' to first understanding and second engaging in discussions on the country's regulatory climate prior to pushing forth global objectives. The next two sections review the literature on the rule of law and everyday politics in Myanmar as the two influence and inform policy in practice.

2.3 Everyday politics in Myanmar

2.3.1 The rule of law

Ethnography within Burma studies has transformed since earlier works such as Leach's *Political Systems of Highland Burma*, Bastian's *Reisen in Birma in den Jahren 1861- 1862*, Orwell's *Burmese Days* (Leach, 2021; Bastian, 1866; Orwell, 2021).[30] Burmese anthropologist U Chit Hlaing discusses how some of the earliest ethnographic works are inherently 'institutionally anthropological' in that they emerged from the need from governments to make sense of the people they govern or the 'outsiders' (U Chit Hlaing, 2008). Since these earlier works, anthropological works on Burma/Myanmar have taken major shifts with contemporary work attempting to decolonise colonial knowledge making (Sadan, 2020).[31] Being informed by this shift towards 'decolonising research', also becoming a trend in global health (Khan et al., 2021; Lawrence & Hirsch, 2020; Ong'era et al., 2021; Hommes et al., 2021; Lokugamage et al., 2021), I was inspired to reflect on having more contextually engaged AMR/ antibiotic policies in Myanmar. To do so, I draw on relevant contemporary works on Myanmar, many of which discuss military rule and everyday politics as the majority of the country's post-colonial history is characterised by military rule.

As previously discussed, Burma/Myanmar since independence from British colonial rule in 1948, has been governed by authoritarian politics, successive military *coup d'états*, and a rule of law which mostly functions to expand the interests of the military elites. Burma studies legal scholar Cheesman characterises rule of law in Burma/Myanmar as 'un-rule' of law and compares it to notions of what he discusses as 'thick' and 'thin' rule of law (Cheesman, 2009; 2014; 2015). Cheesman argues how Burma/Myanmar has neither. He provides definitions of a 'thick' rule of law or substantive rule of law as one promoted by 'Western democracies', occupied with ideals of moral correctness and human rights, normatively seen in liberal democracies (Cheesman, 2009, p599). He defines a 'thin' or a procedural

[30] Not all authors identify as anthropologists. I have included these references to highlight earlier ethnographies on Burma/ Myanmar.

[31] This thesis is a public health thesis which has drawn on and combined a wide range of disciplines (anthropology, politics, history, public health, medicine). I orient myself mostly in medical anthropology and applied public health as I have drawn on ethnographic methods and anthropological theory more so than theory/works from other disciplines. Due to the interdisciplinary nature of my work, I have qualified the academic orientation of the scholars I have drawn on throughout this thesis (for example, Anthropologist U Chit Hlaing, Burma studies legal scholar Cheesman).

rule of law as a minimalistic rule of law which is concerned with 'how laws are enacted and enforced rather than with their substance' (Cheesman, 2009, p599). For example, Cheesman discusses how authoritarian regimes or a non-democratic legal system in theory can have a 'thin' rule of law which need not to be based on moral correctness. Cheesman argues how a regime which denies human rights, propagate poverty, and reproduces inequalities, can follow a 'thin' rule of law if it continues to provide effective guidance to its citizens. Furthermore, he concludes that such regimes with a 'thin' rule of law can at times provide more effective guidance than that of Western democracies (Cheesman, 2009). In other words, in such systems laws need not be good or bad through moral judgements as long as they provide effective guidance to citizens by being transparent and stable, and with crime-preventing agencies present for enforcement (Cheesman, 2009).

To apply Cheesman's legal concepts to the global health context, the implementation of covid-19 control measures characterised as restrictive of individual liberties (placing trackers on individuals, mandatory facility quarantine common in East Asia) provides an example of how a 'thin' rule of law functions through a pandemic policy response. Despite some criticism for their authoritarian approach and a more apparent violation of individual liberties, countries in East Asia (Singapore, Japan, South Korea) were lauded for their rapid and effective control of disease outbreak compared to Western 'democratic' states (United States, United Kingdom) (An & Tang, 2020; Shaw et al., 2020). Drawing on Foucault's notion of biopolitics where he discusses how the state exerts 'biopower' or control over human life at the level of the population and the individual body (Foucault, 1979), Kloet et al. describes biopolitical nationalism in mainland China, Taiwan, and Hong Kong. The authors describe how the countries' citizens applauded the state's biopolitical control efforts for being successful in managing covid-19 (Kloet et al., 2020). These examples show a 'thin' rule of law where individual liberties were violated through strict policing or biopolitical control efforts such as wearing a quarantine tracker waistband in Hong Kong. Nevertheless, the regulations provided effective and clear guidance to its citizens and were successful in controlling the disease outbreak. In this example, an authoritarian 'thin' rule of law through covid-19 regulations need not be ladened with moral judgments of good or bad and can still be considered successful and accepted by its citizens.

Cheesman concludes that Burma/Myanmar neither has a 'thick' nor 'thin' rule of law. He characterises the rule of law in Burma/Myanmar as an 'un-rule' of law, one that is marked by haphazard policy making, instability, and power abuses (Cheesman, 2009). Consequently, the authoritarian 'un-rule' of law in Burma/Myanmar not only does not follow moral premises but also fails to provide effective guidance for its citizens. Other scholars have further adapted and contributed to defining the rule of law in Burma/Myanmar. Political theorist McCarthy discusses the rule of law during the country's political transitional period post-2011 in the context of land title reform and justice (McCarthy, 2018). McCarthy states how rule of law in Myanmar has been influenced by both half a century of military rule and by the more recent development policy agendas of the government introduced in 2011. He states how 'the former [half a century of military rule] left behind a legacy of distrust, patronage, and a rule by law and order' while 'the latter [more recent development policy agendas] encouraged and expedited a proceduralist rule of law to accommodate the government's (Western influenced) reform agenda', resulting in 'a rule of law rhetoric that departs from the reality of transitional politics and poor state capacity' (McCarthy, 2018, p2). Using examples from land reform laws, McCarthy argues how the very different natures of the two – the military's previous substantive rule of

law and the post 2011 expedited proceduralist rule of law – resulted in confusing and clashing interpretations and caused more conflict and injustice for the majority of the population employed in agriculture (McCarthy, 2018).

Legal scholars, Batesmith and Stevens while also focusing on the တပ်မတော် *Tatmadaw*'s 'disciplined democracy' period discuss how Myanmar's authoritarian governance upholds arbitrary state power while lacking restraint on how this power is applied. The authors draw on other legal scholars of Burma and characterise rule of law in Myanmar as:

> 'a tool of oppression and social control, feeding a justice system that is a dysfunctional mix of colonial-era legalisation, military-controlled and degraded institutions riddled with corruption, and justice actors operating without any degree of professional competence, independence, or integrity. Myanmar lacks the normative limitations on arbitrary state (and specifically military) power' (Batesmith & Stevens, 2019, p581).

Using the example of everyday lawyers who work on ordinary/everyday cases such as traffic accidents, drug cases, assaults, and thefts, the authors discuss how lawyers struggled when they challenged or resisted the rule of law to protect their clients' dignity (Batesmith & Stevens, 2019, p575).

Development scholar Mark, in the context of land issues and forced evictions, discusses the creation of 'stacked laws' in Myanmar referring to 'multiple layers of revoked and active laws layered on top of each other over time, often creating conflicts and contradictions in the legal framework' (Mark, 2016, p445). The author argues how 'legal ambiguity is used to the detriment of smallholder farmers by the more powerful, especially economic elites who materially benefitted under the 1988-2010 military regime' (Mark, 2016, p445). In sum, Mark discusses how the Myanmar rule of law is one marked by a continuing build-up of a weak legal framework and 'stacked laws' since the British colonial period up until the present. Furthermore, he argues for how this ambiguity results in harm to farmers during conflicts between farmers and local elites, private companies, state actors, and the military in land confiscation cases. For instance, compared to the large number of criminal cases filed against farmers (most common cases are forced evictions) only a few cases (farmers filing cases to win back their land) exists vice versa. In fact, Mark identifies only six civil cases between 2012 – 2016 and attributes this to farming communities having little information about the law, the high costs of civil suits, the lengthy time it takes to complete a suit, and overall, the inability to successfully challenge 'the law' (Mark, 2016). As a consequence, vulnerable groups or those who were not military and economic elites, also the majority of the country, often did not know how or lacked the resources to effectively challenge 'the law'. These issues have led to the emergence of what I characterise as clever local coping mechanisms (see Discussion) to navigate the rule of law, including the use of intermediaries, and informal negotiations.

2.3.2 Everyday politics

Burma scholars have discussed acts of resistance, informal negotiations, and the role of intermediaries in the transfer of rule of law and the navigation of everyday politics (Décobert, 2021; Henry, 2016; Kyed, 2019; Rhoads, 2020a; Simion, 2021). Inspired by James C. Scott's work on resistance, Burma political scholar Thawnhmung discusses everyday politics in Myanmar to be characterised by what Scott states as 'indirect, frequent, and often uncoordinated acts of resistance' (Scott 1985, p11). Thawnhmung along with other Burma scholars (Rhoads, Simion, Kyed,

Décobert) drawing on research from different disciplines and settings in Myanmar have discussed the role of intermediaries in 'brokering' justice to challenge or navigate the rule of law (Thawnghmung, 2019).

Simion in her work on analysing development aid into Myanmar during the democratic transformation period (2011/2012 to 2022), describes the role and significance of 'rule of law intermediaries' (Simion, 2021), or 'development intermediaries', who acted as brokers between local and international partners to negotiate development agendas (Simion, 2018). She argues for how such intermediaries held influence and power in the development aid sector as they selectively translate the rule of law to build trust between foreign and national development stakeholders, steer the allocation of project funding/directives, and deliver diffused messages for local needs (Simion, 2018; 2021). Simion concludes with a need to understand who these intermediaries are, and how they exercise their control and power in relation to rule of law assistance to be able to fully contextualise the process, and the limitations of a global transfer of the rule of law (Simion, 2018).

As previously mentioned, legal scholars Batesmith and Stevens describe how lawyers negotiated state power and uphold their clients' dignity by providing 'practical and material support for the individual human experience – and in so doing, subtly resist, evade, or disrupt state power' (Batesmith & Stevens, 2019, p573). They do this by practicing a form of 'relational' lawyering which Batesmith and Stevens define as lawyers addressing more than their client's legal concerns, such as when the former provided lunch boxes to clients who did not have sufficient food or paid for the client's medications. Other ways of supporting clients outside their legal responsibilities included protesting about clients being shackled or resisting the police on behalf of their clients when the former was arrested and treated harshly (Batesmith & Stevens, 2019).

Following the topic of resistance, other Burma scholars have described how informal negotiations to help evade the law or re-create regulation in practice have assisted in the process of brokering justice (Décobert, 2021; Kyed, 2019; Rhoads, 2020a; Roberts & Rhoads, 2021; Thawnghmung, 2011; 2019). Thawnghmung's fieldwork in different parts of Myanmar carried out between 2008 and 2015, shows how Myanmar citizens cope with economic hardship by negotiating with state authorities, which involved paying bribes, or making other informal mutually beneficial agreements (Thawnghmung, 2019). Rhoads, in her work on property sales within Yangon, describes how during property transactions, a နားလည်မှု *nàlehmú* (mutual informal agreement) arrangement acted as a legally binding sale which included the exchange of money and the involvement of ပွဲစား *pwèza* or brokers and/or lawyers (brokers can also be lawyers) (Rhoads, 2020a).[32] This နားလည်မှု *nàlehmú* sale may occur in place of transferring or officially registering the deed for the property and was considered legally complete (Rhoads, 2020a). In a later publication, Rhoads and Roberts define and conceptualise နားလည်မှု *nàlehmú* as a:

> 'set of informal relational practices for negotiating power across scales which have facilitated access and enforced accountability through mutually recognized norms and social sanctions in Myanmar… [and] as a

[32] Thawnghmung (2011: 646) defines နားလည်မှု *nàlehmú* as 'an informal and tacit agreement struck with authorities, service providers and business partners to overcome constraints, whether natural or institutional, in order to utilise the opportunity to fulfil individual and collective needs' (Thawnhmung 2011, p646).

> hidden-in-plain-sight social infrastructure across three different scales: relations of mutuality, obligation, and reciprocity between individuals; implicit connections for accessing goods, services, and recognition; and a means of interacting with the state via the နားလည်မှု *nàlehmú* economy' (Roberts & Rhoads, 2021, p1).

Furthermore, Rhoads states how နားလည်မှု *nàlehmú* negotiations can vary in scale, ranging from large scale corruption to a minor mutual understanding or arrangement between an individual and a neighbour on how to best share space (Rhoads, 2020a). Overall, ပွဲစား *pwèza* and နားလည်မှု *nàlehmú* helped enact regulation through tacit and mutually beneficial agreements in spaces or transactions where following the rule of law was unclear, took much longer, or created more bureaucratic costs (timewise, financial).

Development scholar Décobert's ethnographic research on the borderlands discuss the role of 'borderland brokers' in influencing socio-political change within which she describes as contexts of ongoing political unsettlement. Her ethnographic work draws on a polio immunisation campaign in Kayin state located on the Thai-Burmese border where she conceptualises 'borderland brokers' as 'network specialists and translators creating a temporary brokerage fix (drawing on Goodhand et al.'s work on the role of brokers in peace-building in Sri Lanka and Nepal) (Goodhand et al., 2016), facilitating collaboration between actors historically divided by conflict, enabling an internationally funded development intervention, and contributing to local-level peace formation' (Décobert, 2021, p1). She describes how brokers enabled a temporary 'brokerage fix' to reshape state-non state and centre-periphery relations in ways that were productive for more equitable development. Décobert details conversations with a key informant, she refers to as Dr Aung, who characterises himself as a broker and 'a bridge' in her research on 'health as a bridge to peace' (Décobert, 2021, p2). Here, a broker need not to take up a permanent identity and role of a ပွဲစား *pwèza* (for instance, a medical doctor temporarily acting as a broker, discussed further in Chapter 4). Dr Aung informally acts a broker to health for his patients while also maintaining his identity as a medical doctor. In addition to personally providing healthcare services, he was also a key actor in mediating state-non-state, international-local, and centre-periphery relations. These acts of mediation enabled him to liaise healthcare provision between providers and the population.[33] Décobert concludes with a need for stakeholders to engage with brokers to mediate between actors with differing revelations for health, development, and peace in Myanmar while also acknowledging the limitations of the broker's role. She discusses how broker networks are fickle and precarious due to constraints brought on by shifting and uncertain fields of power and authority (military *coup d'état*, violence) (Décobert, 2021).

In addition to the significance and relevance of mediators in Myanmar society, Burma studies scholars have also noted acts of 'indirect' resistance to be central to navigating everyday politics. These acts include informal resolutions like နားလည်မှု *nàlehmú* (Rhoads, 2020; Rhoads & Wittekind, 2018; Thawnghmung, 2019), other negotiations and passive acts of resistance around everyday justice (Kyed, 2020; Thawnghmung, 2019), and direct resistance against the state (Chambers & Cheesman, 2019; Chang, 2013; Thawnghmung, 2019). Thawnghmung discusses acts of resistance as passive and characterises them as 'indirect, frequent, and often uncoordinated' and provides examples

[33] Referring to relationship between the centre and the margins/ borders as this research discusses brokers in the borderland areas.

of political and psychological coping mechanisms. Political coping mechanisms include acts of negotiating with state authorities such as paying bribes or hiding incomes, contributing to perpetuating the cycle of poverty (Thawnghmung, 2019). Psychological coping mechanisms included gambling, astrology, religion.

Chambers and Cheesman describe a process of negotiating with what they define as 'moral authorities'. The authors argue for how 'authority rests uncertainly on a host of proliferating appeals to morality…[and] depends on authorities' enactment of moral claims. The claims are not uniform. Nor are the authorities that make them self-evident' (Chambers & Cheesman, 2019, p231). Batesmith and Stevens describe how the law became degraded under military rule after the 1962 *coup d'état*. As a consequence, law, which used to be an elite profession was no longer considered a prestigious occupation. The authors state how the formal justice system resembles a marketplace 'with bribes and facilitation payments changing hands depending on the size or type of case and the particular action required of the judge, prosecutor or police officer' and how 'lawyers are portrayed as skilled not in the law but in the relationships, market prices and pressure points necessary to secure a favourable outcome for the client' (Batesmith & Stevens 2019, p11). In sum, the law is often arbitrarily defined and enacted by authorities (usually military elites), prone to spontaneous changes. To navigate this rule of law, people in Burma/Myanmar have developed several coping mechanisms, many of which are tacit and informal including နားလည်မှု *nàlehmú* negotiations and bribe payments.

Burma scholars have also discussed more direct forms of resistance such as state agents themselves participating in the black market or people resisting by quitting or 'exiting' Myanmar. For instance, Chang describes the black market during the socialist era (1962 – 1988) as a 'widespread form of resistance against the stifling state-controlled economy [as] everyone in Burma – regardless of class, ethnicity, or political affiliation – was dependent on the black market and participated in it' (Chang, 2013, p299). Chang further describes how the black market was paradoxically supported by agents of the state as state authorities themselves, confiscated smuggled goods and resold them on the black market or kept the goods for themselves (Chang, 2013). Thawnghmung states how coping mechanisms can be 'accommodating, resisting, or exiting'. She provides the example of leaving the country (exiting) or giving up and a form of coping (Thawnghmung, 2019).

In conclusion, Burma/Myanmar's authoritarian rule of law has been described as functioning or dysfunctioning in an arbitrary manner, failing to neither follow moral codes nor provide effective guidance for its citizens. Under this rule of law, Burma/Myanmar people have relied on informal and/or extra-legal negotiations and coping mechanisms to care for one another and mitigate the negative effects of a dysfunctioning rule of law or an 'un-rule' or law as Cheesman (2009) describes it, to create function amidst dysfunction (enabling permits, negotiating legal processes) and broker justice (protecting livelihoods for economic survival, resisting state authorities).

2.4 Introducing Hlaing Thar Yar

Within urban spaces, peri-urban townships in Yangon (Hlaing Thar Yar, Shwe Pyi Thar, Mingaladon, Figures 12-13) have been noted for their high levels of poverty; population density; public health issues; and other urban issues such as sanitation problems, housing problems, environmental issues, forced evictions (Constant et al., 2020; Groot &

Bayrak, 2019; Htwe et al., 2017).[34] Being on the outskirt of Yangon and established as a township only in 1989, Hlaing Thar Yar was originally created by the military government to resettle residents whose homes had been destroyed during fires (Astolfo & Boano, 2020; Hein Thar, 2019). The township's first industrial zone was established in 1991. Hlaing Thar Yar was described as Yangon's most populated township, home to some of the country's most productive industrial zones (when this research was conducted), while harbouring a much higher density of social problems as compared to other townships. Common issues in Hlaing Thar Yar included forced evictions/housing issues (Astolfo & Boano, 2020; Rhoads, 2018); high levels of public health concerns such as diarrhoea, drug resistance tuberculosis, under-five mortality, and sexually transmitted infections including concerns over HIV/AIDs; and labour issues (Arnold & Campbell, 2017). Due to these reasons, the township was also colloquially referred to in the popular media as a 'problem' space, presenting itself as an ongoing regulation challenge for the relevant authorities (Khin Wine Phyu Phyu, 2015; Hein Thar, 2019).

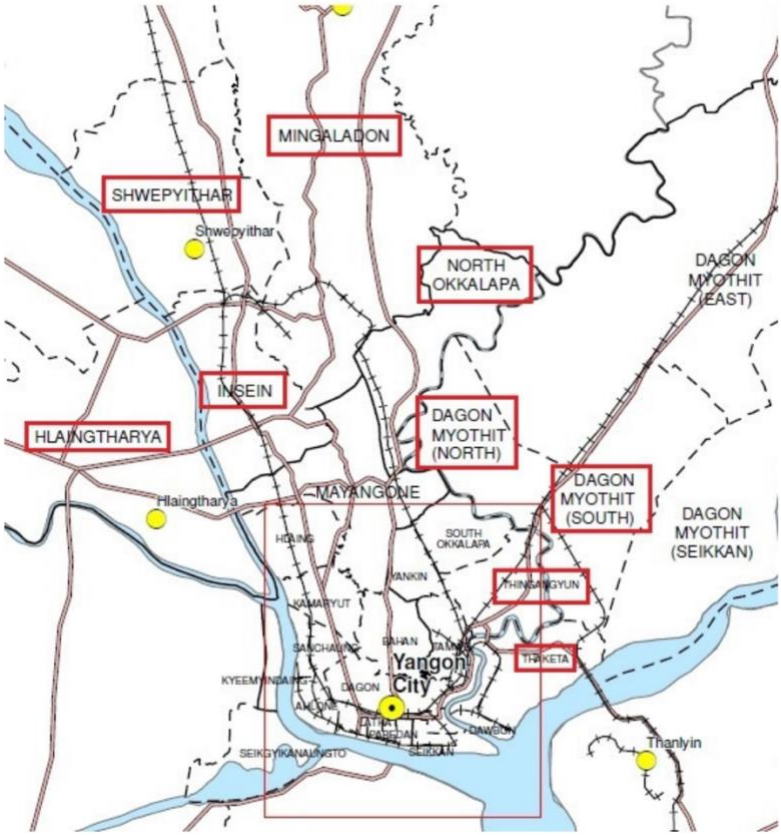


Figure 12. Peri-urban townships in Yangon (reproduced from Sheehy et al., 2016), original source: Myanmar Information Management Unit, 2012

[34] I have discussed parts of this section in an ethnographic past-tense as the February 2021 *coup d'état* and its subsequent consequences – migrant population leaving Hlaing Thar Yar, pull-out from many foreign factories – may have most likely altered the healthcare provision landscape, demographic context, and regulatory politics.

Figure 13. Map of Hlaing Thar Yar (shaded) and Yangon (source: Google Maps)

Figure 14. A Road in Hlaing Thar Yar during the monsoon (picture taken by JSB in May 2019)

A United Nations Human Settlements Programme (UN-Habitat) survey conducted among 500 households in Hlaing Thar Yar in 2019 describes most people in informal settlements in Hlaing Thar Yar to work in factories (30%), do casual labour (16%), manage small businesses (12%), work as constructions workers (13%) or are vendors (10%). Women were more likely to be employed in factories or be business owners and men were more likely to work as a casual labour or in the construction sector (UN-Habitat Myanmar, 2020). Hlaing Thar Yar also consisted of a large female migrant population from rural Myanmar due to being home to the country's largest manufacturing industry, the garment sector. An independent report on the garment industry states up to 94% of its employees to be women (EMREF, 2017). Migrant women were particularly common in this industry as Hlaing Thar Yar was known for having high levels of rural to urban migration activities. The 2008 Cyclone Nargis, Myanmar's worst natural disaster, displaced over 800,000 people from the delta region while destroying rural livelihoods (Moe Moe et al. 2017). This brought in an influx of migrants hoping to find industrial work into Hlaing Thar Yar, driving up housing prices, and turning the township into Yangon's most populated space in the present day when this fieldwork was conducted (Chaw Chaw, 2003; Moe Moe et al., 2017).

Figure 15. Informal settlements within Hlaing Thar Yar in (picture taken by JSB in January 2018)

Hlaing Thar Yar (when this fieldwork was conducted) was characterised by informal settlements, overcrowded residential halls, and factory enterprises (Figures 13-16). Other common occupations outside of factory work included forms of informal and precarious labour (carpenters, market vendors) where individuals were paid on a per-task or a per-diem basis when work was available. The precarity brought on by economic hardship within everyday lives in Hlaing Thar Yar was further diminished by the limited infrastructural development and support available in this setting (inadequate public health services, insufficient urban development). Many international non-governmental organizations (INGOs) and local NGOs were based in Hlaing Thar Yar to provide healthcare services for the poor (Azam, 2014; EMREF, 2017). Moreover, Hlaing Thar Yar not only hosted some of Yangon's largest informal settlements, but also faced more severe risks from natural hazards like seasonal flooding due to poor urban planning (Astolfo & Boano 2020).

Figure 16. Hlaing Thar Yar during seasonal flooding (photo taken by JSB in June 2019)

Regulatory issues were frequently mentioned as another problem in this township. A local news headline summarises the situation – 'Government seeks to tame Hlaing Thar Yar, Yangon's wild west' (Hein Thar, 2019). The government's desire to 'tame' it also made the setting apt to observe regulation in practice. As examples, urban studies scholars have already done work on understanding regulation in practice in this setting, through the topic of forced evictions (Astolfo & Boano 2020; Rhoads 2018). Hlaing Thar Yar also offered a space to observe interactions between the 'legal' and the 'illegal' and how rule of law was enacted or navigated in practice due to the government's continuing attempts to 'tame' the township (Hein Thar, 2019) through activities including forced resettlement, trespassing, and repossession of land (Astolfo & Boano 2020). Consequently, Hlaing Thar Yar was apt for the observation of informality and regulation in practice particularly in the context of poverty, as the township was characterised by an incessant busyness, hosted several regulatory and health 'problems' (discussed in the following paragraphs), and had a highly precarious population.

Despite the majority of regulation problems centring around housing issues and labour, Hlaing Thar Yar also had several epidemiological and public health issues (EMREF, 2017; the Irrawaddy, 2019; Relief Web, 2020). The township had been marked by significantly higher rates of infectious diseases and non-infectious diseases namely human immunodeficiency virus/acquired immune deficiency syndrome (HIV/ AIDS) (Maung, 2009; Htet et al., 2019); tuberculosis and drug-resistant tuberculosis (Khan et al., 2017); malnutrition; measles (Mon & Lwin, 2020; Lwin & Putra, 2018); sexually transmitted diseases; water-borne diseases (Lwin & Putra, 2018); mosquito-borne (dengue fever, malaria) (Lwin & Putra, 2018; Forbes, 2019); and reproductive, maternal and child health issues (Sheehy et al., 2016a; 2016b; Yee, 2020). Many of the epidemiological problems were closely linked to issues around poor environmental conditions, poor infrastructure, sanitation and hygiene issues, lack of water security (high levels of domestic pollution and industrial effluent), overcrowding, and poverty (Groot & Bayrak, 2019; Forbes, 2019; Khan et al., 2017; Astolfo & Boano, 2019; Yee, 2020). Lwin and Putra in their cross-sectional study conducted between November to December 2016 in Hlaing Thar Yar found half (53.43%) of under-five children to have suffered from diarrhoea within two weeks prior to the survey (Lwin & Putra, 2018). A study conducted by the UN-Habitat in 2013 described Hlaing Thar Yar township to have the highest incidence in Yangon for diarrhoea, dysentery, malaria, and tuberculosis and attributes poor environmental conditions as a key contributor (Forbes, 2019; Lwin & Putra, 2018).[35]

In terms of drug resistance, a 2019 Global Fund report states more than half of Myanmar's multidrug-resistant tuberculosis (MDR-TB) to have been notified in Yangon with the vast majority of cases originating in one of four townships on the city's outskirts; Hlaing Thar Yar being one (The Global Fund, 2019). A cross-sectional study

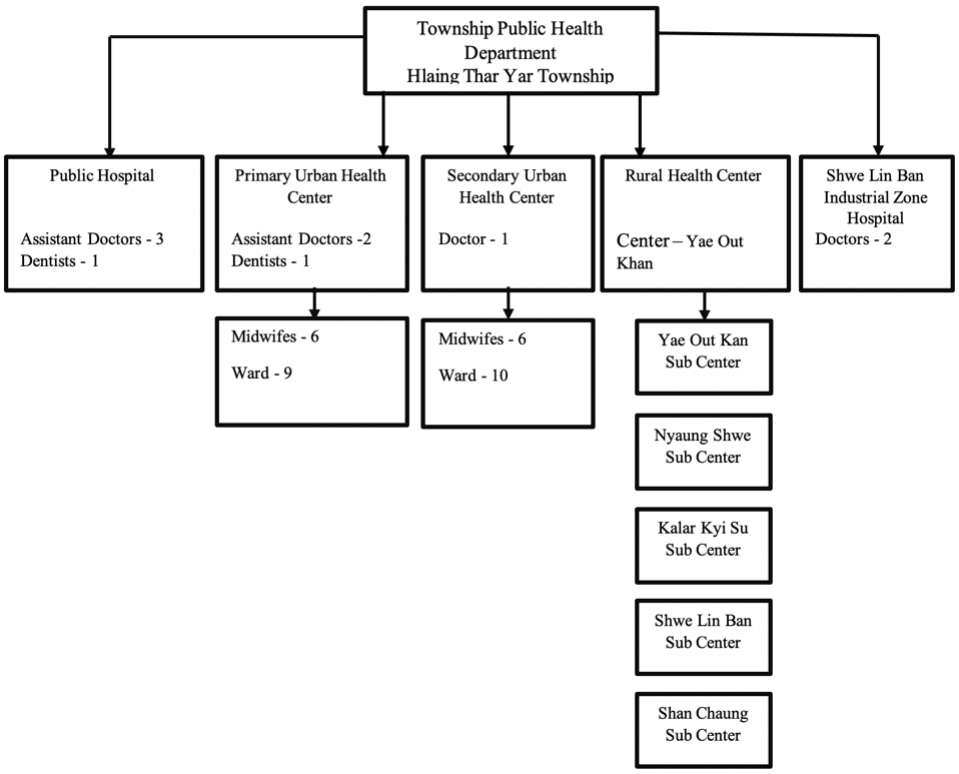
[35] I am unable to locate the original report but have found two publications (a public health publication and a social science publication to mention this report and have cited both publications. Forbes (cited in-text) describes the study as an 'informal' study by UN Habitat. The original report may not have been made available to the public or may have been removed after the February 2021 *coup d'état* due to the political sensitivities post-coup.

surveying 250 labourers in April 2015 states a 89.2% self-medication rate and attributes this to 'poor knowledge' (Thuzar & Aung, 2019). A few studies have also discussed high drug resistance to antibiotics in Hlaing Thar Yar (Althaus et al., 2019; Khan et al., 2017). Due to the epidemiological context, many international non-governmental organisations (INGOs) and non-governmental organisations (NGOs) at the time this research was conducted were engaging in some form of health care delivery for the residents of Hlaing Thar Yar, focusing on primary healthcare services, HIV/tuberculosis, and maternal and child health (Azam, 2014).

Healthcare provision in Hlaing Thar Yar was characterised by a wide variety of public and private services. Biomedical services (public health services, private: clinics, NGOs, drug shops) dominated the healthcare provision landscape. The township has twenty wards in the urban areas and twenty villages in the rural spaces.[36] Public healthcare was managed through the township public health department, based within the Hlaing Thar Yar township hospital. As of 2019, in addition to the Hlaing Thar Yar township hospital, public services included one station hospital (Shwe Lin Ban industrial zone hospital), two urban health centres, one rural health centre, and five sub-rural health centres (Figure 17). The social security board had a social security clinic, usually staffed by one or two medical doctors. The clinic provided free basic healthcare services to those with social security benefits (factory workers) and operated on a referral basis (referral to the Hlaing Thar Yar Public Hospital, Yangon Workers' Hospital, or Yangon General Hospital) for more serious conditions.

[36] I have kept this section in present-tense as city planning is unlikely to have been altered by the February 2021 military *coup d'état*.

English Version



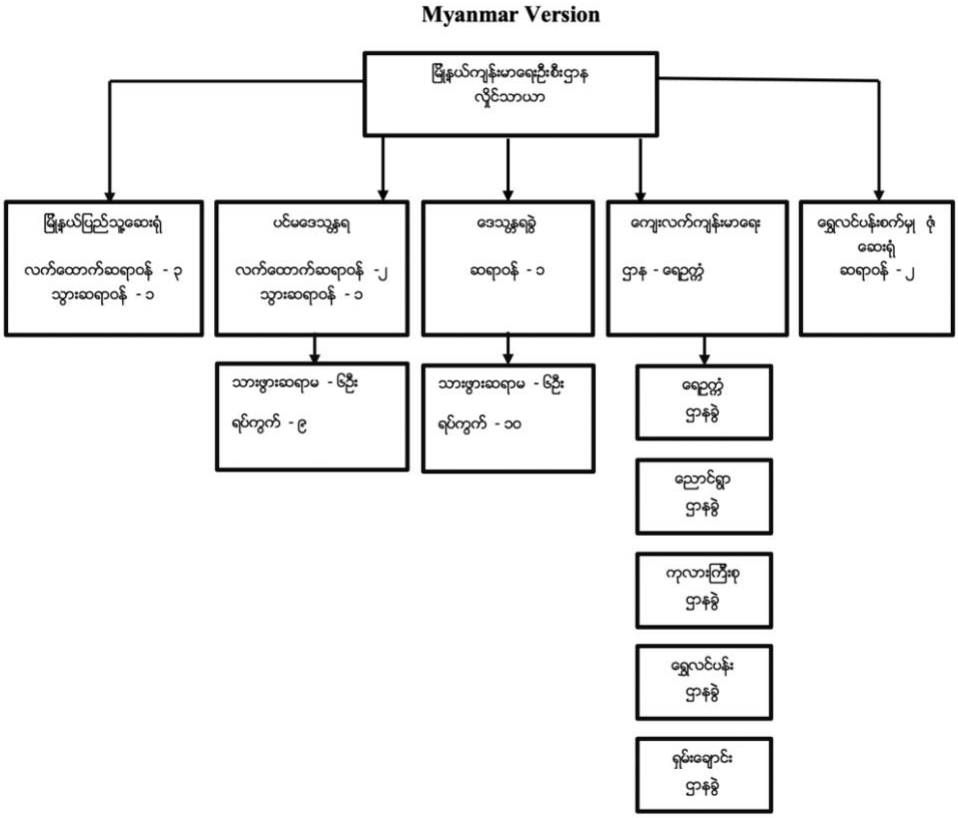


Figure 17. Organizational structure of public health services available in Hlaing Thar Yar. Diagram was re-developed and translated by YKZ and JSB from fieldnotes from January 2019 (image captured of a similar diagram at the Hlaing Thar Yar public hospital)

Private healthcare consisted of drug shops, clinics, hospitals, and healthcare services from INGOs. According to a 2014 report on healthcare delivery in Hlaing Thar Yar, over three dozen NGOs engaged in some form of healthcare delivery focusing on services including primary healthcare, HIV/ tuberculosis, and maternal and child health (Azam, 2014). Although a report on the prevalence of private drug shops, clinics, and hospitals is not available, the setting was characterised by a plethora of drug shops and clinics as busier streets harboured as many as ten to fifteen drug shops and clinics within a one-mile radius. Different forms of traditional medicines have also been described as widely practiced in Myanmar (DeFilipps & Krupnick, 2018; Coderey, 2021). DeFilipps and Krupnick describe the various social groups who partake in the knowledge generation of traditional medicines in Myanmar and list Buddhist monks and local doctors (nonbiomedical) who carry ancestral knowledge of traditional medicines to have been accepted as healers within the community. Within Hlaing Thar Yar, traditional medical practices were present within homes as ancestral recipes, passed from one another through word of mouth, and sold in drug shops as over-the-counter 'herbal' medicines. However, due to the dominance of biomedicine in urban spaces, traditional healers and practices were less prevalent compared to biomedical practices and were often accessed through informal personal networks. The above-mentioned characteristics made Hlaing Thar Yar continuously busy, with residents, factory workers, drug shops, NGO clinics, general practitioners, private/public healthcare centres operating on a twenty-four-hour basis. I began my Yangon fieldwork at Hlaing Thar Yar (discussed in Chapter 3) as I found the township an appropriate setting to contextualise antibiotic use and regulation within the informal sector due to its backdrop of structural violence (poverty, precarity), regulatory issues (frequent conflicts with the government – land repossession, forced evictions), and epidemiological problems (high drug resistance, poor sanitation).

Chapter Three: Fieldwork – observing antibiotic use practices and tracing pharmaceuticals

3.1 Theoretical concepts

While developing my research design, I was inspired by the anthropological stream of thought which – 'merges political-economic approaches with a culturally sensitive analysis of human behaviour grounded in anthropological methods… characterised by a strongly applied orientation and a devotion to improving population health and promoting health equity' (Witeska-Mlynarczyk, 2015, p385). Notable medical anthropologists embedded within this approach have discussed concepts such as 'the sufferer's experience' and 'structural violence' to highlight the link between ill health and wider social and political violence while discussing themes of inequality and poverty (Farmer, 2005; Scheper-Hughes, 1993; Das, 2006; Das & Randeria, 2015). Orienting my research towards medical anthropology, my ethnographic study aims to contextualise antibiotics/AMR within its broader social and economic landscape, paying attention to how forms of 'structural violence' or 'slow violence' (previously defined) influence antibiotic use.

More specifically, I modelled my ethnography after Whyte et al.'s (2002) *Social Lives of Medicines* (discussed in Chapter 1). Whyte et al. describe medicines to have 'social lives' with traceable biographies of their own and followed them from production to individual use to understand broader themes such as globalisation and the commercialisation of medicines. The authors draw inspiration from the *Social Life of Things*, which provides an analytical framework to study the material and social realities of objects or medicines by tracing their social life through detailed observation of how the objects are used and circulated in practice (Appadurai, 1988). Drawing on these concepts, I traced antibiotics through the pharmaceutical industry in Yangon, Myanmar (see result chapter 5).

Empirical philosopher Mol provides a conceptualisation for care and care in practice in her work in several high-income contexts (England, Denmark, Netherlands). She makes an argument to understand care in practice as active and transitory, occurring through a continuous 'adaptive tinkering' process involving 'embodied practices'.

> 'Care practices move us away from rationalist versions of human being. For rather than insisting on cognitive operations, they involve embodied practices. Rather than requiring impartial judgements and firm decisions, they demand attuned attentiveness and adaptive tinkering. Crucially, in care practices what it is to be human has more to do with being fragile than mastering the world. This does not imply a docile acceptance of fate: care is active, it seeks to improve life (Mol et al., 2015, p15).'

After conceptualising care in practice as a process requiring 'adaptive tinkering', Mol argues for a 'logic of care' approach to health, describing 'good' care as something that involves a judgment free space for 'practical tinkering' and 'attentive experimentation' (Mol, 2008).

Building upon this conceptualisation, anthropologists studying medicines in lower resource settings have shown how providers 'tailor' medicines for individual cases through a process of 'shared doctoring' between patients and providers (Chandler et al., 2011). In this thesis, while observing antibiotic use practices, I draw on Mol's

conceptualisation of care in practice, reframing antibiotic/medicine use as processes that are active, adaptive, fluid, and shared between different individuals and technologies/objects (providers, patients, medicines). This conceptualisation moves away from notions of the biomedical 'rational' which have a fixed view of 'right' and 'wrong' (the 'correct' way to use medicines vs. antibiotic 'misuse') while carrying a moral overtone. This is particularly important for understanding antibiotic use practices in lower income contexts like Myanmar where many factors (poverty, lack of access to healthcare services) act as constraints for peoples' lives, influencing both decision-making and everyday actions, and often taking priority over the logic of biomedical correctness.

The WHO GAP's objectives 1 and 4, which this thesis speaks to, frame antibiotic use around individual rationality and biomedical correctness. For instance, objective 1 proposes awareness raising to improve knowledge of antibiotic use so that individuals will 'correct' their 'misuse' behaviours. Messages from the WHO's awareness raising campaigns stipulate asking for advice from a healthcare worker, taking medicines only when prescribed, and following directions (WHO, 2022). As argued previously, in Chapter 1, social scientists have already challenged the emphasis on the individual in such global blueprints, and have proposed a more collective framework (Broom et al., 2020c; Kirchhelle et al., 2020). Adding to this, in order to 'trace' antibiotics in Yangon and observe antibiotic use practices, I draw on critical medical anthropological thought, specifically approaches to political economy; the biographical perspective outlined in the Social Lives of Medicines; and Mol's conceptualisation of care practices as shared, fluid, and adaptive. While observing the wider political and economic structures antibiotics are embedded in, I focus on paying attention to structural violence, and on describing larger 'structures' including the pharmaceutical industry, factory life, healthcare infrastructure, and the black market for medicines. I draw on Tompson's et al.'s definition of 'structures' – 'antibiotic use emergent of economic and political priorities – such as productivity – reflected in quick fixes to physical and social structures' in my 'thick' description of political and economic structures in Yangon (Tompson et al., 2021, p2). While discussing antibiotic use practices in this thesis, I also draw on the authors' definition of practices – antibiotic use enacted by individuals whose actions are shaped by biological, social, political and economic contexts (Tompson et al., 2021, p2). Last, I observed antibiotic use practices through a judgement free approach without imposing notions of biomedical correctness, seeing the practices as processes that are active, changing, and adaptive. I draw on Mol's use of the term 'tinkering' to describe how antibiotic use practices in Yangon occur through a changing, negotiated, 'tinkering' manner between various actors (pharmaceutical sales representatives, medical doctors, clients or patients).

3.2 Research collaborations and entering the field of social research on AMR

I first entered the field of social research on antibiotics and antimicrobial resistance in April 2017 as part of a placement offered in the MSc course (International Health and Tropical Medicine) at the University of Oxford. I was involved in a multi-country project (Thailand and Myanmar) assessing the impact of C-reactive protein (CRP) on antibiotic prescriptions in acute febrile patients attending low-resource primary settings. The study was based at the Mahidol Oxford Tropical Medicine Research Unit and was carried out in Yangon (Hlaing Thar Yar), Myanmar, and Chiang Rai, Thailand in 2016 before I was involved with the project. The social science component of the study engaged in a range of research questions including local conceptions of illness and medicines, healthcare providers' prescription

patterns, and how 'contextual' factors more broadly influence interventions. The team was led by Assistant Professor Marco J Haenssgen (University of Warwick) henceforth MJH, and Nutcha (Ern) Charoenboon (University of Bristol), henceforth NC. During this period, I conducted a secondary qualitative analysis of interview data (semi-structured interviews) that has already been collected in Yangon and Chiang Rai on patient's conceptions of illness and medicines in the context of C-reactive protein biomarker testing.

The MSc ended in September 2017, but I continued to work with MJH as a research consultant until December 2017 and was involved in collaboratively drafting manuscripts on our work in the CRP project. MJH also started a different project called 'Antibiotics and Activity Spaces: An Exploratory Study of Behaviour, Marginalisation, and Knowledge Diffusion' based in Thailand and Laos. As a research consultant, I assisted with the earlier phases of this project on antibiotic awareness. The activity involved pile sorting exercises (sorting antibiotics into recognised and not recognised piles), games, and mapping activities (mapping healthcare seeking pathways) to assess participants knowledge of antibiotics (Figures 18-19).

I joined the four-year Febrile Illness Evaluation in a Broad Range of Endemicities (FIEBRE) study hosted by the London School of Hygiene and Tropical Medicine (LSHTM) as a PhD candidate in 2017. The study was funded by the UK FCDO and 'aims to reveal leading causes of fever in sub-Saharan Africa and southeast Asia'. FIEBRE is a five-country study with a social science component in three of the five countries (Myanmar, Malawi, and Zimbabwe). The social science team aimed to gain a greater understanding of the antibiotics being used to treat febrile illness and how to best reduce antimicrobial use safely. The core members of the FIEBRE social science team were Professor Clare IR Chandler (LSHTM) henceforth CC, Assistant Professor Justin Dixon (LSHTM) henceforth JD, Dr Coll de Lima Hutchison (LSHTM) henceforth JD, Dr Eleanor MacPherson (Malawi-Liverpool-Wellcome Trust) henceforth EMP, Salome Manyau (Biomedical Research and Training Institute, Zimbabwe) henceforth SM, Ja Seng Bawk (Myanmar) henceforth JSB and me henceforth YKZ (when discussing collaborative work).[37]

I was the social science lead for Myanmar and together with CLH (my first supervisor), recruited JSB as a research assistant whose role I discuss in the next section. CLH was one of my London-based supervisors and took multiple trips to Myanmar and participated in fieldwork while he was in-country. CC (my second supervisor) was the project lead for the entire social science team and led weekly/bi-weekly project meetings and academic support (reading groups, writing groups). JD led cross-collaboration work between the three countries and was also responsible for supervising the Zimbabwe arm of the study. During wider team meetings which included analysis meetings and protocol workshops, we shared our progress and discussions commenced with the entire social science team providing feedback on each other's work.

In addition to the support from FIEBRE, CC also positioned me within a wider network of social scientists studying antibiotics/AMR within LSHTM and elsewhere (the Anthropology of AMR research group/Antimicrobials in Society research group). The research group had meetings on a frequent basis to present various topics on AMR and provided additional reading and writing support. CLH introduced me to the 'Burma studies' research group, a collaboration of researchers working on various topics in Myanmar who shared work and hosted seminars on an ad-

[37] Several research associates/assistants were involved in the Malawi and Zimbabwean teams as well. I have only listed the core members of the FIEBRE social science team.

hoc basis at the London School of Economics and Political Science. Although I have adapted my research based on preliminary data and ongoing analyses, my academic identity and journey had been shaped by my involvement in the above-mentioned groups and collaborations.

3.3 Negotiating access and entry into the field site

The FIEBRE social science team developed an anthropological study protocol for the three sites with an overarching set of aims and objectives to be adapted for each site.[38] The aim and objectives for the FIEBRE Social Science Myanmar study were:

> Aim: To explore ethnographically the roles and context of antimicrobials in fever case management in Myanmar with the application of a range of anthropological theories.
>
> Objectives:
>
> 1. To describe how fevers become classified in practice, how this relates to wider life and livelihoods as well as to guidelines or public health messages, and areas of certainty and uncertainty for different actors;
> 2. To establish how many and what kind of antimicrobials are being used in different ethnographically informed settings;
> 3. To shed light upon the roles of antimicrobials in homes, formal and informal health sectors, fever case management and algorithms, and how this relates to wider life and livelihoods;
> 4. To situate antimicrobial use, fever management and relevant discourses within public and global health priorities and scientific practices and institutions.

The specific aim and objectives for this thesis (stated in the Rationale) were adapted from the original aims and objectives from the FIEBRE Social Science Myanmar protocol. The main changes were to consider antibiotic use, the informal sector, and in tracing pharmaceuticals more broadly (replacing a sole focus on antibiotics). This broader approach was informed by my findings from the iterative data analysis process and by my involvement in the anthropology of AMR and the Burma studies research groups. I focused on the informal sector as this is where most individuals in Myanmar access healthcare and where the global health discourses around antibiotic 'misuse' were directed. The second shift was my tracing of pharmaceuticals (biomedicines) more broadly. This was due to the challenges I faced trying to 'trace' antibiotics (Whyte et al., 2002) in Yangon during the time period. Chandler describes how antibiotics were 'rendered visible where previously they have been a part of the woodwork' after it has been discussed as a major topic of global concern (Chandler, 2019). As previously discussed, the NAP AMR/AMR agenda in Myanmar was in its preliminary stages when I did this research and antibiotics had not yet been 'rendered visible' in a similar manner. In other words, antibiotic policy and discussions on AMR remained within the limited space of interested stakeholders as opposed being present in discussions among the public. Furthermore, while doing

[38] CLH and I adapted the protocol.

preliminary research, I found participants without clinical backgrounds to lack notions of an 'antibiotic', making it a methodological challenge to discuss the objects (not being able to talk about antibiotics within households/community settings and start a conversation). Antibiotics were embedded within broader biomedicines in participants' discourses, and this led me to shift to tracing pharmaceuticals with a focus on antibiotics when and where they appeared.

The FIEBRE social science team collaboratively developed the 'drug bag' method which involves a pile sorting exercise as a way to build rapport with participants and create entry points into the community (Dixon et al., 2019). Pile sorting is a research method that can be used for mapping 'cultural domains' and includes asking people to sort things (or in our case, medicines) based on similar attributes (Bernard, 2017). We (the FIEBRE social science team) adapted the anthropological pile sorting method to our research on medicines in order to 'engage in interview methods that are not solely cerebral but that use physical materials to stimulate a deeper conversation between interviewer and interviewee' (Dixon et al., 2019, p1). The 'drug bag' method involved a basic questionnaire on illness and medicine use (see Appendix 1) followed by a pile sorting exercise at the end where participants were asked to sort medicines (antibiotics) into piles of 'seen', 'used', 'frequently used', and 'cannot access'. To avoid imposing our own notions of what the medicines should be and where they should go, we refrained from making leading comments or disclosing the fact that the medicines were antibiotics. In Myanmar, this meant not mentioning the term 'antibiotic' in English or in Burmese (colloquial term – ဝိုးသတ်ဆေး *pò that hsày*, medical term – ပဋိဇီဝဆေး *pá tí zi wá hsày*) and allowing the participants to sort the medicines completely on their own.

Figure 18. Participant doing the pile sorting exercise within her own home in Hlaing Thar Yar (photo taken by JSB in June 2018)

We (CLH and I) first developed the drug bag by collecting different brands and types of antibiotics in our field-site to saturation (no new antibiotics/ brands of antibiotics were found at the pharmacies, shops, or the hospital) and asked participants to sort them into piles of 'seen', 'used', 'frequently used', and 'cannot access'.[39] This was also how we met some of our key informants (Aunty Moe and U Kyaw/introduced in the next section) as we engaged in information conversations with drug shops and pharmacies while developing the drug bag. In the African study sites (Zimbabwe, Malawi), the drug bag included between 40-60 antibiotics while in Myanmar, we (CLH and YKZ) found over 100 different brand variations of antibiotics (67 of the same antibiotics). The antibiotics were purchased over-the-counter and included the WHO's 'access', 'watch', and 'reserve' antibiotics.[40] The majority were 'access' antibiotics of Indian origin (See Appendix 1 for antibiotic list). Between June – July 2018, we (JSB, YKZ) went to 50 households across Hlaing Thar Yar (96 participants) and did medicine interviews where we used a short questionnaire (See Appendix 3.1) to ask household members about the common illnesses they experience, and the types of medicines they use.[41,42] The questions were kept as open-ended as possible, with a secondary aim to build rapport with the participant to re-visit for future interviews or participant observation activities. In sum, doing medicine questionnaires or interviews (some households participated in informal interviews), and the pile sorting exercises, enabled us (YKZ, JSB, CLH) to both enter Hlaing Thar Yar and begin informal discussions on the topic of antibiotics, and facilitate AMR to gain a preliminary understanding of how the topic is understood or enacted in practice.

The preliminary analysis from the medicine interviews provided important insights which informed the direction of the ethnography. In short, participants did not recognise the medicines in the drug bag as antibiotics, creating a methodological issue for the objective of tracing antibiotics. Participants engaged in discussions on medicines around the terms အင်္ဂလိပ်ဆေး *ingaleik hsày* (English medicines referring to biomedicines) and မြန်မာဆေး *myanmar hsày* (Myanmar medicines) and/or တိုင်းရင်းဆေး *taìng yìn hsày* (ethnic medicine referring to the non-Bamar ethnic practices) and stated that they were always able to access the medicines they needed from one provider or another.[43] To make sure that participants were in fact lacking a notion of an antibiotic as opposed to just failing to recognise the medicines in the drug bag as antibiotics, right before we concluded the interview and after the pile sorting exercise, I probed whether participants have heard of or used 'antibiotics/ပဋိဇီဝဆေး *pá tí zi wá hsày* /ပိုးသတ်ဆေး *pò*

[39] CLH and I collected the antibiotics for the drug bag. JSB and I did the medicine interviews, and the pile sorting exercises.
[40] The WHO in 2017 introduced the Access, Watch, Reserve (AWaRe) classification of antibiotics in its essential medicine list as a tool for antibiotic stewardship at local, national, and global levels (WHO 2021d).
[41] I led the interviews and JSB took notes.
[42] I did not use epidemiological methods to calculate the sample size or develop a method to achieve 'random sampling' through the epidemiological definition. The drug bag method was intended as an ethnographic research tool to help the ethnographers enter the community and begin a discussion and preliminary data collection on antibiotics. Having stated this, we (JSB, YKZ) went to households across different wards within Hlaing Thar Yar to try to achieve a diverse range of discussions. Our participants also included a few non-ethnic-Bamar Buddhist households.
[43] Our interlocutors used the term *Myanmar hsày* to refer to Bamar *hsày*, medicines originating from the Bamar ethnic tradition. The term *taìng yìn hsày* was used to refer to the broader category of traditional medicines including Bamar medicines and medicines from other ethnic groups. However, during our interviews, the terms were often used interchangeably. We believe this to be a result of our interlocutors mostly being Bamar Buddhists. Consequently, most of the medicines stored within their homes are also from the Bamar tradition.

that hsày'. Only a few participants (fewer than ten out of ninety-eight) acknowledged knowing the English term antibiotic and the colloquial term ပိုးသတ်ဆေး *pò that hsày*. These participants stated having taken 'antibiotic ပိုးသတ်ဆေး *pò that hsày*' before through prescriptions from medical doctors or in စပ်ဆေး *sat hsày* (translation: mixed medicines referring to drug cocktails). The technical or clinical term, ပဋိဇီဝဆေး *pá tí zi wá hsày*, more commonly seen in awareness raising messages on antibiotics was not mentioned or familiar to any of our participants. Almost all participants stated that they have not gone out to purchase antibiotics on their own without guidance from a healthcare provider.[44]

[44] We (JSB, YKZ) reiterated the fact that we were social scientists and were not medical doctors or a healthcare provider. Most participants appeared to have understood or accepted this explanation. A few participants mistook us for pharmaceutical sales representatives (despite our explanations) and tried to do the pile sorting exercise in a 'correct' way (trying to ask us for the correct answers). When this occurred, we explained that there was no 'correct' answer and that we only wanted to understand their engagement and discourses around these medicines.

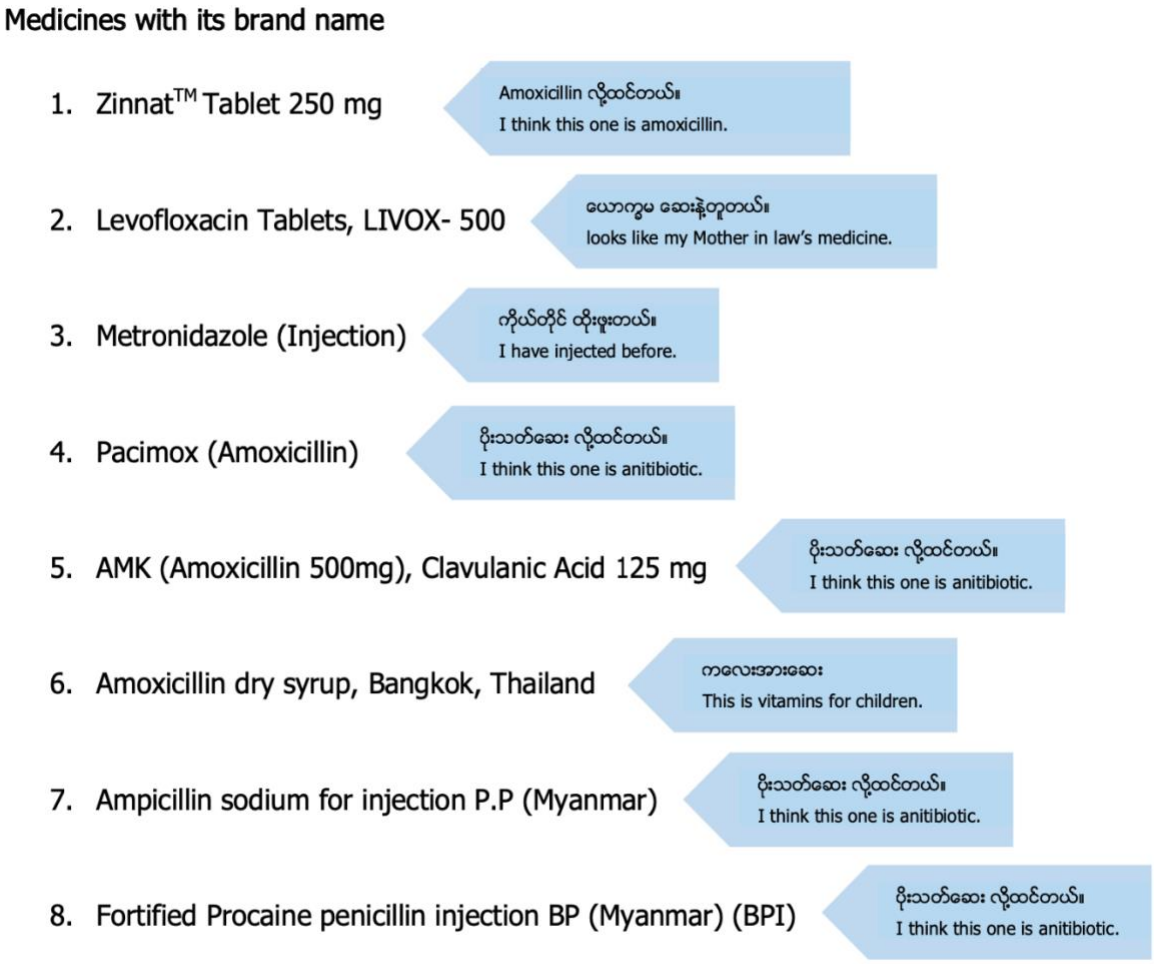


Figure 19. Sample fieldnotes from the pile sorting exercise[45]

[45] This sample fieldnote came from an interlocutor who was familiar with medicines and knew antibiotics. The majority of our interlocutors did not recognize the medicines in the drug bag as antibiotics.

Figure 20. Medicines stored within homes (photo taken by JSB in June 2018)

Participants also remarked preferring to go to the healthcare provider (a drug shop, a nurse, a doctor) to guide them with the အင်္ဂလိပ်ဆေး *ingaleik hsày* as they are afraid of 'getting a shock' or a 'bad interaction'. မြန်မာဆေး *myanmar hsày* or တိုင်းရင်းဆေး *taìng yìn hsày* were discussed as safer due to their herbal natures or being family recipes that had been handed down over generations. Due to their ability to make people 'feel better immediately' and 'fast effects', အင်္ဂလိပ်ဆေး *ingaleik hsày* were preferred for what participants identified as everyday illnesses – fever, cough, aches – and were mentioned as 'easier to consume, prepare, or apply'. Participants also stated desiring to prioritise a rapid healing process to meet the economic and social demands of their daily lives (having to give time and energy for household chores and job demands) as 'we need to keep going' and 'cannot be sick for a long time'. On the contrary, participants stated preferring မြန်မာဆေး *Myanmar hsày* or တိုင်းရင်းဆေး taìng yìn hsày for what they identified as more chronic conditions such as ongoing back-pain, due to the medicines being 'better at addressing the root causes.' Consequently,

မြန်မာဆေး *myanmar hsày* and တိုင်းရင်းဆေး taìng yìn hsày were preferred for elderly family members or those who are already on some form of palliative care or bed rest. တိုင်းရင်းဆေး Taìng yìn hsày were also stated to require more time and patience for preparation as they often require searching for and grinding of certain herbs. We (JSB, YKZ) asked to take pictures of medicines participants have stored within their homes. Almost all households had some form of medicines stored and these were mostly vitamin complexes, painkillers, ointments, traditional medicines, or other over-the-counter medicines (Figure 20). Antibiotics were only available in a few instances, and this was when a household member had a leftover prescription from somewhere. This raised the methodological conundrum of how to follow and observe antibiotic use practices when the objects are not spoken of or 'rendered visible' in people's (lay people) lives and homes (Chandler, 2019).

To address this conundrum, I shifted the research method form tracing antibiotics to tracing အင်္ဂလိပ်ဆေး *ingaleik hsày* or biomedicines with a focus on antibiotics when and where they are visible. I also decided to begin the ethnography with the healthcare providers as they appeared to be determining who receives antibiotics and how (as opposed to self-medication). After discussing these observations with the broader social science team, I was also directed towards observing 'pharmaceuticalisation' (defined previously). This preliminary data collection and analysis led me to focus my ethnography on observing antibiotic use practices within the broader observations of အင်္ဂလိပ်ဆေး *ingaleik hsày* consumption and use, and the workings of the pharmaceutical industry in Yangon, beginning this journey with the healthcare providers (results discussed in Chapter 5). As our entry point was through Sein ဆေးဆိုင် *hsày saing*, we (JSB, YKZ) began the ethnography there, and went upstream to speak to pharmaceutical representatives who visited the shop and the pharmaceutical markets U Kyaw and Aunty Moe sourced form. From there, we (CLH, JSB, YKZ) connected with leading pharmaceutical companies in Yangon to understand the supply chain from the perspectives of both manufacture and import.

We were also able to gain access into the field-site through permissions provided by individual stakeholders (kept anonymised) who were consulted multiple times throughout the fieldwork period (June 2018 – January 2020).[46] These individuals were those who had an interest in our research and have had relevant work experience of doing research or international development work in Myanmar. Such individuals were identified through personal connections, snowballing, or simple web-searches on the internet. Snowball sampling is a method commonly employed in qualitative research that involves using initial informants to recruit further participants who meet the eligibility criteria for the study (Given, 2008). As CLH, JSB, and myself all had previous fieldwork experience in Myanmar, we were able to collaboratively identify stakeholders who could introduce us for an ethnographic entry into a setting. As an example, CLH's contact made the initial introduction for us to access the INGO (see the INGO ethnography). YKZ's contact provided permission to enter Mya clinic (see the clinic ethnography). JSB arranged access to several medical doctors and development workers for informal interviews through her personal and professional network from her past experiences volunteering. When all three of us were not able to identify relevant

[46] Preliminary research was done between June – July 2018. The ethnographic research itself began only in December 2018. Fieldwork was done collaboratively between YKZ, CLH, JSB with pauses in between when YKZ came to the UK for coursework or investigator meetings.

stakeholders, we performed web-searches (searching for pharmaceutical companies and relevant personnel) and requested an appointment for an interview. Our interests were broad in the earlier phases of the study. We directed ourselves towards understanding the healthcare system and asking open-ended questions around medicines/antibiotics/AMR. We later refined the research themes and direction according to themes that have emerged from the iterative data analysis process.

3.4 Research methodology

3.4.1 Anthropologically informed research methods[47]

We (YKZ, JSB, CLH) used anthropologically informed ethnographic research methods including participant observation, informal interviews, documentary and media analysis, and thematic analysis. Fieldwork occurred in three distinct ethnographic sites – the drug shop (referred to as Sein *se saing*/ medicine or drug shop), the clinic (referred to as Mya clinic), the labour rights organization (referred to as LRO) – with each phase spanning approximately three months each (detailed in the following sections). The main research methods we used were participant observation and thematic analysis; however, we supplemented these two research methods with informal interviews, and documentary and media analysis.

Participant observation is a hallmark methodology in anthropology described as 'a method of data collection in which the researcher takes part in everyday activities related to an area of social life in order to study an aspect of that life through the observation of events in their natural contexts. The purpose of participant observation is to gain a deep understanding of a particular topic or situation through the meanings ascribed to it by the individuals who live and experience it' (Given, 2008, p627). Consequently, participant observation enabled us to gain an in-depth understanding of how antibiotics were understood in Yangon.

To supplement participant observation, we (YKZ, JSB, CLH) conducted in-depth interviews with stakeholders when and where they were identified.[48]

> 'In-depth interviews are interviews in which participants are encouraged and prompted to talk in-depth about the topic under investigation without the researcher's use of predetermined, focused, short answer questions. The researcher is not required to prepare an extensive list of questions; rather, the researcher is required to be aware of the major domains of experience likely to be discussed by the participant and be able to probe how these relate to the topic under investigation' (Given, 2008, p451).

Following the above-mentioned description, we used topic guides (see Appendix 3) to conduct unstructured in-depth interviews throughout the course of fieldwork.

Interviews were conducted on an ongoing basis and on two occasions: to supplement participant observation or when stakeholders have been identified. In the first occasion, interviews allowed for a greater degree of reflexive discussion than is possible during participant-observation or a questionnaire, helping us to understand what transpired during periods of observation, enabling a deeper exploration of what participants assume to be 'common sense'

[47] Ethnography detailed in the next section.
[48] Details of how the fieldwork was divided and how this collaborative nature influenced the research process are discussed in the 'Reflexivity and Positionality' section.

knowledge in their daily lives (Bernard, 2017; Given, 2008). Interviews also allowed us to explore discrepancies between what people say and then do in practice, as noted in our respective field journals.

On the second occasion, we conducted interviews with those who were not part of participant observation yet were able to provide useful insights for the study. These included relevant stakeholders such as, funding bodies, policy makers, public health practitioners, and members of the pharmaceutical industry. This was particularly useful for those in sensitive occupations and roles (for instance, an employee in the FDA or the MOHS) who would not be able to provide permission for us to do participant observation with. In such instances, in-depth interviews were invaluable in that they enabled us to gain deeper knowledge into understanding our participants lives without requiring an extended period of observation.

CLH participated in fieldwork activities between April – May 2019. During this period, we (JSB, YKZ, CLH) paused participant observation activities to carry out an intensive month of stakeholder interviews (see Table 3) with eight pharmaceutical companies and a diagnostic lab (three interviews with different staff members). CLH led and organised access into pharmaceutical companies by researching and emailing leading companies/names for interviews.[49] The pharmaceutical company interviews enabled us to understand the complexities of the pharmaceutical industry and helped us 'trace' medicines through the supply chain. We probed for antibiotics in all interviews and asked for their trajectory; however, they were embedded within the import and distribution of biomedicines more broadly as companies did not specialise on importing and distributing antibiotics alone.

CLH/JSB/and I discussed each interview to triangulate our fieldnotes and I compiled them into one document. Where consent was provided, interviews were recorded, transcribed, and translated into English. Interviews lasted between 60-90 minutes. If consent for an audio recording was not provided, fieldnotes were taken in place. We also requested follow-up interviews for participants who were key informants and were central to our data analysis. During these interviews, we shared our findings, asked for clarification where needed, and requested for feedback. In such ways, our key informants played an active role in shaping the direction of this research.

In addition to unstructured in-depth interviews, we (CLH, JSB, YKZ) collected media and documents to support the ethnographic research. This method was drawn from the wider FIEBRE Social Science Protocol, which states:

> '[S]elected documents and media sources will be analysed to shed light upon the discourses underlying their production, using an approach derived from critical discourse theory (Fairclough, 2003). Selected documents and media will be read/listened to, with a number of considerations in mind, including patterns and commonalities in the uses of language, the genre of the documents/media, and the broader socio-cultural context and structures in which the discourse is situated and created. We will be especially concerned with identifying how antimicrobial use (in relation to febrile illness) is framed, for instance which actors/practices

[49] A few pharmaceutical interviews were conducted in English and were led by CH. I was present during all interviews and took fieldnotes.

> are brought into view (e.g. patients and prescribers), what structures and relations are obscured, and what interventions are thereby legitimised' (Chandler et al., 2018, p26).

Throughout the fieldwork period, JSB and I collected documents and media sources related to antibiotics and AMR. These included regulatory documents, social media posts, pharmaceutical advertisements from companies, and news articles. Social media posts were particularly important as Myanmar regulatory bodies such as the FDA and the MOHS posted their notices/news around regulations on Facebook as opposed to elsewhere (the official website, other sources) (Figure 21). In response to this, the public also posted comments with their opinions, providing a basis for us to analyse how people responded to the information. In addition to posts around rules and regulations, Facebook was also a space where 'official' (government endorsed) bodies shared information on stakeholder meetings and multi-sectoral meetings. The names and affiliations of those who were involved in such meetings were often publicly mentioned, making Facebook an opportune source for us to identify stakeholders. Although we (CLH, JSB, YKZ) collected a large repository of material, I focused on doing documentary and media analysis on social media posts and documents specifically related to the regulation and use of medicines (the FDA's Facebook posts, the National Drug Law, pharmaceutical advertisements) and incorporated it into the wider thematic analysis explained hereafter. This focus was because we (JSB, CLH, YKZ) collected much more data (historical, archival), which is available for further analysis (see Appendix 6 for full list) beyond the scope of this thesis. As I decided to frame my thesis through the lens of current discourses and regulations around medicines in Myanmar as opposed to historical, I have limited the analysis of our data to the above-mentioned topics.

Figure 21. A Facebook post on the FDA's website explaining their rules and regulations around medicines, identifying counterfeit medicines, and a ban on drug cocktails. (This information is not available on their official website – fda.gov.mm).

I engaged in on-going and iterative thematic analysis together with JSB using the NVivo12 software, following the method described in the Sage Encyclopaedia of Qualitative Research Methods:

> 'The labelling of concepts and categories during the early stages of coding is referred to as open coding. During successive stages of coding, the researcher begins to hone in on and refine more specific categories and their properties, examining in depth one category at a time. This is spoken of as axial coding. A still further focus on particular links and relationships among a few chosen categories (the integration of categories) is referred to as selective coding' (Given, 2008, p 86).

My coding process began with an 'open coding' when I reviewed our (JSB, CLH, YKZ) fieldnotes and developed broad themes such as 'antibiotics', 'lack of antibiotics', 'labour', and 'time'. From these themes, I developed new topic guides for observation work and interviews.[50] Based on themes emerging from the first layer of 'open coding', I also refined my codes into more specific categories such as 'medicines in the context of informality'. The last stage of coding and analysis which occurred in parallel with writing, interlinked the above-mentioned themes and codes into relationships such as 'pharmaceuticalisation', 'the use of medicines as quick-fixes', and 'the black market and its role in drug resistance.'

JSB and I both took fieldnotes daily during participant observation activities (see Figure 22 for an example fieldnote). Fieldnotes involved three elements as described by Burgess – a substantive account, a methodological account, and an analytic account (Burgess, 1981). The substantive account included notes about events that have been observed or the conversations that have occurred. The methodological account detailed the autobiographical details of those who I have spoken to, the circumstances under which conversations or observation took place, and further questions that may have risen. This account supplemented the substantive account during the analysis process. Last, the analytic account was equivalent of a reflexive section where JSB and I recorded our personal reflections including how we, as researchers, have shaped the course of the research (see positionality section). The analytic account also took note of how the research has shifted over the course of the iterative data collection and analysis process. If JSB and I were both present for participant observation, we both took independent fieldnotes. At the end of the day, we discussed our observations and reflections, and I compiled both sets of fieldnotes into one document to include both ethnographers' comments. If JSB was on her own for data collection, I reviewed her fieldnotes daily and provided comments for her for further questions. Questions and topic guides were also developed and refined over time as data analysis progressed.

[50] CLH provided ongoing feedback on the topic guides. The data analysis process was also intermittently discussed with the wider social science team where further feedback was provided.

JSB and YKZ's Opinion

In these days, DSL mixes drugs or sells 'line drug' only to the clients she knew personally. When new customers come to buy, DSL said the drugs the customers want are not available at her shop. But OL doesn't care so much about the FDA. His behavior hasn't changed much since the incidence. He just mixes drug and sell drugs to every customer. He also orders a lot of line drugs as usual. A few times he mentioned that 'This is a business. I will do what is best for the business. I don't have any other goals.' JSB also felt like DSL no longer shows her drugs names of the ones she mixed *(not sure if she was just busy or this is because the recent events. In the past, when DSL mixes drugs she would explain in detail what drugs she put in and why she's putting then in and would also freely talk about antibiotics and line drugs).*

Customer List

1) 12:26PM, male (60-70), Taw Sayar 1 (rural health worker) came to the shop with his motor bike and bring them back with him. He bought Diclofenac (injection, 2 packets), B complex (50 pills), Votor (100 pills), Dexa, B12 (oral pills). All costed 5350 kyats.
2) 12:34PM, male (40-50) came to buy drugs for someone called Ma Swe. DSL already knew her and don't ask the symptoms and just automatically started mixing drugs. But the customer said don't mix drugs and just give that one pill (one tablet) which will cure the illness (စပ္ေဆးေမေပးနဲ႔ တစ္လံုးတည္း ေသာက္ဖို႔ ရတဲ့ေဆးမ်ိဳးဘဲေပးပါ). (He meant he didn't want a cocktail, he just one a single tablet for the illness). DSL gave him Solmux (medicine for cough) (500 kyats).
3) 12:46PM, male (60-70) bought 1 tablet of paracetamol.
4) 12:52PM, Htoo clinic bought para, liver, ATT (tetanus vaccine, 10 bottles) other didn't hear. The amount is 50000 kyats.
5) 1:30PM, female (30-40) asked to measure blood pressure as she doesn't feel well (ေနလို႔မေကာင္းဘူး။) She feels indigestion (ရင္ျပည့္ေနသလိုဘဲ). DSL said the blood pressure is normal and gave her Konimag (suspension) and Daneuron (1 pill). DSL asked her does she have other symptoms and can she sleep well and is her menstruation regular? "Not normal." DSL told to JSB that by listening to her symptoms, it is most likely because her menstruation is about to stop

Figure 22. Sample field note

Last during analysis and writing, I was sensitive to Burmese terms which I have included throughout this thesis as Burmese transliterations to assist and remind readers that the terms cannot be fully understood, independent of the contexts and practices in which we observed and heard them. Bearing this in mind, I have included simplified English translations beside each term for non-Burmese readers. Unless otherwise mentioned, these translations are my own and when unsure, translated together with JSB and other Burma studies scholars. The translations are to supplement and provide simplified definitions but are also to be understood in the context of the ethnographic data, interpretations, and analysis.

3.4.2 Ethnography

INGO ethnography (December 2018 – April 2019)

After receiving ethical approval for the study, JSB and I began our participant observation activities in December 2018 (see Table 2 for timeline). As explained previously, access into Hlaing Thar Yar was made possible through two entry points – an INGO (anonymised as TLM) and a medicine shop. I did most of the participant observation activities related to TLM (17 days in total between January to March 2019, See Appendix 6 for complete list of data collected). Between December 2018 and March 2019, I spent three days a week following TLM's field team on its health promotion activities to situate myself within Hlaing Thar Yar.

TLM provided health services for maternal and child health across Myanmar and had its headquarters in Hlaing Thar Yar. I met a senior project manager at the TLM through CLH's introduction and asked if I could do participant observation with the organization's field staff to acclimatise myself with the healthcare landscape of Hlaing Thar Yar. The senior project manager introduced me to the field team which consisted of three members (a team lead and two field staff). The team coordinated with public health centres within Hlaing Thar Yar and did health promotion activities which included a mobile clinic providing maternal and child health services and interactive health education and awareness raising activities (interactive games, educational talks) six days a week. One to two activities would be carried out in different wards on each day between the three team members. I joined the health promotion team by driving them to their destinations and participating in their activities (Figure 23).

TLM operated through informal contacts to gather an audience for its activities. One of members of the health promotion team, familiar with the context, lived in Hlaing Thar Yar. She had a network of informal contacts in each ward and would ring them a day before to request them to gather an audience for the health promotion activities. Attendees were predominantly women who came with their children and were given gifts such as cooking oil, t-shirts, and snacks for their participation. The team focused on hard-to-reach areas that I did not have familiarity with and otherwise would not know how to navigate. Following TLM not only gave me an understanding of how to best navigate the settlements, but also provided a rudimentary awareness of healthcare and socio-economic conditions within this setting. Furthermore, my informal affiliation with TLM brought me some familiarity and trust, making interlocutors more receptive and accepting of interview requests. When consent for interviews was provided, I carried them out on the same day (while the TLM team conducted its activities), or when the participants were not available, re-scheduled them for a later period. The in-depth interviews we (JSB and I) conducted with TLM staff which we have labelled as INGO interviews (see Table 3), provided insights into understanding the everyday lives of public health practitioners and other healthcare providers in this setting.

Figure 23. Following TLM's health promotion activities (photo taken by YKZ in January 2019)

Drug shop ethnography (December 2018 – April 2019)

In parallel to the INGO ethnography, JSB and I started participant observation activities at Sein medicine shop in December 2018 (see Table 2 for timeline). Sein has been in operation for 15 years and is a small (approximately five feet by five feet shed with a larger/hidden storage space in the back). A family-owned medicine shop based within one of the markets in Hlaing Thar Yar, Sein is owned by a married couple, Aunty Moe and U Kyaw (pseudonyms) who we refer to as 'Oo Lay' (uncle) and 'Aunty'.[51] I met Aunty Moe while I was purchasing antibiotics for the drug bag in January 2017, and we had an in-depth conversation about medicines. I requested her contact information to come back to see her in the future and she enthusiastically agreed. It was not until December 2018 that I requested for informed consent, asking permission to start participant observation at Sein.

[51] While U Kyaw was referred to as Oo Lay (uncle) in Burmese, Aunty Moe was known in the community as 'Aunty' in English as opposed to the Burmese equivalent. I have used the same phrasing to stay true to the original reference.

Aunty Moe and U Kyaw lived in Insein township, a 10-minute commute into Hlaing Thar Yar, for their business which operates from 6 AM to 6 PM. U Kyaw awakened at 5 AM every morning, arriving at Sein by 5:45 AM to open their shop at 6 AM, in time for the morning commute and the opening of the wet market. Aunty Moe took care of household chores and the responsibilities associated with their children (the couple had two children aged thirteen and seventeen), arriving at Sein around 9 or 10 AM.[52] Aunty Moe took over the sales responsibilities when she arrived at the shop, while U Kyaw switched to placing orders from sales agents, re-organising medicine stocks, and communicating with their customers on the phone. At 4 PM, Aunty Moe would go home and prepare for their children to arrive back from school, while U Kyaw stayed at the shop until 6 PM.

Figure 24. Sein medicine shop (front) (photo taken by JSB in January 2020)

For a full day observation (6AM – 6PM), Sein averaged around 60-70 clients. JSB and I alternated shifts of 6AM – 6 PM, 6 AM – 12 PM, 12 PM – 6 PM throughout the week to cover the entire period of Sein's operations and observed sale practices (28 days in total between January to April 2019, excluding earlier visits during preliminary research and subsequent follow-up visits after the ethnography).[53] We took note (see Figure 22 for sample) of who came to the shop (gender, estimate age, occupation if known), what kind of interactions or relationships they had with U Kyaw and Aunty Moe (for instance, their relationships with long term clients, customers who were passing by and were only purchasing items on a one-time basis, pharmaceutical sales representatives), and how the sales occurred

[52] I taught U Kyaw and Aunty Moe's children English at their home, twice a week for a few months at Aunty Moe's request.
[53] See Appendix 6 for complete list of data collected.

(which items were sold, how were the items were asked for or prescribed, the price). Not all pieces of information were available depending on how fast the transactions occurred. Sein was busiest in the early hours between 6:30 AM to 9:30 AM and in the evenings between 4:00 PM to 6:00 PM. When busy, U Kyaw or Aunty Moe spent less time communicating with their customers and prescribed medicines rapidly, making it difficult for us to ask or observe which medicines were included, particularly in the cases of စပ်ဆေး *sat hsày* (mixed medicines) or drug cocktails as the medicines were quickly taken out of their packets or bottles and placed into clear plastic bags.

Figure 25. A pack of medicine cocktails or စပ်ဆေး *sat hsày* (mixed medicines) (photo taken by YKZ in June 2018)

During our participant observation at Sein, we (JSB, YKZ) followed up with a few of Sein's regular clients (customers who had a longstanding relationship with U Kyaw and Aunty Moe) and requested consent for participant observation or an in-depth interview.[54] These individuals included a medical doctor, a public health officer, a nurse aid, and a vet. We took two full day visits to a village, an hour from Hlaing Thar Yar, following Mya Myint (pseudonym) who was Sein's longest standing and most important client as she purchased the largest quantity of medicines from Sein. Mya Myint was a public health officer, a graduate of the University of Public Health (Magwe) and was a key healthcare provider in her village.[55] Mya Myint did home visits and was available on call on a 24-hour basis. She treated all ailments, and her clinical practice was characterised by the frequent provision of injections and intravenous drips. We (JSB, YKZ) also followed U Kyaw on his visits to Mingalar Market, where he stocked his

[54] I refer to myself as YKZ when I am discussing collaborative work.
[55] To protect Mya Myint's identity, I am excluding the name of the village.

medicines. Here, we were able to observe how medicine sales were negotiated and transacted between the 'legal' and the 'illegal' black market.

We conducted interviews on an on-going basis (some interviews were repeat interviews with a few key informants like the FDA employees being interviewed multiple times during the course of the research) with residents and health providers related to the medicine shop. We interviewed two FDA employees, four individuals providing health services from non-governmental organizations, and six clinicians who worked for the public and private sector (see Table 3). Interviews lasted between 30 to 120 mins and focused on understanding participants' lives, their reflections and experiences of laws and regulations, their understandings of health provision, and their awareness of antibiotic use or AMR. Under my guidance, JSB also thematically analysed the quantitative data from the medicine shop observations (categorising medicines, clientele demographic, common illnesses discussed at Sein) which provided a cross-sectional understanding of what medicines were being sold and for which illnesses (See Appendix 2). The quantitative analysis was done on Excel with the intended purpose of summarising the sale transactions at Sein and to supplement the qualitative findings reported in the result chapters.

The drug shop ethnography provided an in-depth understanding into how medicines and antibiotics were stocked, prescribed/sold, and consumed in the informal sector. During our participant observation activities, we also observed an FDA raid (Chapter 4) where we were able to see how medicines and antibiotics were being regulated on the informal sector. Our time at Sein enabled us to see regulation in practice, providing an in-depth contextual understanding of how antibiotics were embedded in the everyday politics of Yangon.

Clinic ethnography (May – November 2019)

Due to my focus on the private and informal sector, I lacked an understanding of antibiotic use practices in the public sector. I was particularly curious to compare and contextualise our findings from the drug shop ethnography with that of a general practitioner (GP) clinic, as GPs were stated by a majority of our participants to be the second line of service, (or the first, if they do not prefer going to the drug shop, or if they are not cured). Consequently, I searched for an entry point into doing participant observation at general practitioners' (GP) clinic to supplement the drug shop ethnography.

Through one of our stakeholder interviews, we (JSB and I) gained permission to do participant observations at a GP clinic. Based in central Yangon and known to many, Mya clinic was a 'famous' polyclinic with several GPs in attendance, providing primary care and minor surgical services. Mya clinic also has its own pharmacy and a referral service to a large private diagnostic lab. The diagnostic lab itself has several branches across the country and has an extensive set of diagnostic testing available. Due to the reputation of Mya clinic and the diagnostic lab, the GPs at Mya clinic were also considered as 'good' and 'qualified', with patients travelling across the country to be seen by them.[56]

The GPs at Mya clinic functioned through a rotation system where they rotate between home visits and different clinics and hospitals (public and private). As a consequence, the GPs only spent two to three hours on average

[56] We (JSB and I) spoke to patients at Mya clinic to ask why they chose to come to this provider instead of others.

at Mya clinic, for which we received permission to do participant observation. We initially gained access to observe the morning shift (9 AM – 12 PM) for a female GP who we other staff members at Mya clinic (pharmacist, nurses) referred to as ဆရာမ *hsayama* (female teacher/doctor). Over the course of the observation period, JSB gained access to an evening shift (8 PM – 10 PM), a male GP who others referred to as ဆရာ *hsaya* (male teacher/doctor). The shifts were not always on regular timings and would sometimes be cancelled or changed without notice based on the GP's own schedule. As I intended for Mya clinic observations to be supplementary to the drug shop ethnography, I only scheduled one to two observation visits per week. Due to the small size of the clinic rooms and the more sensitive and regulatory nature (clinical assessments were short and the clients do not always have interpersonal relationships with the GP) of the clinical practices (compared to Sein where the activities were more interpersonal), it was inappropriate for both JSB and myself to be based within the room as the GP and the patient both showed discomfort in an overcrowded room.[57] Due to this discomfort, JSB did the clinic observations while I focused on other aspects of fieldwork. JSB and I were in constant communication with one another during the observation period where I guided her on what questions to ask and what to pay attention to. After two months of observations the morning GP stated that she was uncomfortable with our research as we were not trained as medical doctors and revoked her consent to do further observations. She stated that she was happy for us to use the data we had already collected but was no longer comfortable with our presence in the clinic. After this, JSB stopped her observations for the morning GP, but continued with the evening GP for a few more weeks until I decided that the data had reached saturation point, with no new themes emerging. Due to cancellation of shifts, on certain months JSB only went to Mya clinic once or twice.

The clinic ethnography enabled me to compare clinical practices in the 'formal' and 'informal' private sectors and observe how antibiotic use practices were situated between these two spaces. Being able to briefly observe antibiotic use practices in a GP clinic also answered questions that arose from the drug shop ethnography as many clients or patients went to the GP as the next line of service. Furthermore, JSB was able to observe how pharmaceutical sales representatives approached the GPs. We observed a similar practice in Hlaing Thar Yar; however, this process was different from the way it occurred in 'formal' spaces. Being able to compare and 'formal' and the 'informal' provided a broader understanding of antibiotic use practices in the context of primary healthcare provision. Our (JSB, YKZ) observations on the discussion of 'formal' and 'good brands' of medicines and negotiations between pharmaceutical sales representatives and GPs came from the clinic ethnography.

[57] The clinician and patient did not appear comfortable.

Figure 26. Mya clinic

Labour rights organization ethnography (June – September 2019)

As Hlaing Thar Yar hosted some of Myanmar's largest industrial zones, labour predictably emerged as a theme during data analysis. Factory life was a recurring theme with many clients of Sein being factory workers themselves. As we had yet to do ethnographic work with patients or consumers, I shifted the focus of our research to understanding residential life and labour within this setting. From June – September 2019 (see Table 2 for timeline), JSB and I rented accommodation in Hlaing Thar Yar, beside a labour rights organization (LRO) and spent time living there and participating in labour rights movements such as protests and education seminars for workers. During this period, JSB also took a part-time anthropology module at the University of Yangon, while I taught English once a week at LRO's main office in Hlaing Thar Yar to build rapport with labour rights activists. We both participated in protests including

one against Primark that involved hundreds of workers who commuted into central Yangon to protest on a key geographic site (name excluded to ensure anonymity).

While living in Hlaing Thar Yar, we were able to observe residential life as well as conduct in-depth interviews with factory workers and the labour rights activists. We focused ourselves on asking questions around factory life and healthcare. LRO's activities included organising protests, raising funds, hosting training and education sessions on labour laws and rights, and helping factory workers negotiate their rights. LRO took up 'complex cases' where factory workers were in some form of conflict with either their respective factories or the social security board while submitting claims for health insurance and social security (for example, being unable to reimburse funds). These cases were mostly related to accessing public healthcare for emergencies or injuries. In addition to asking questions around medicine use practices (explained earlier as to why I could not ask questions on antibiotics), and healthcare seeking practices, tracing the 'complex case' stories through LRO enabled JSB and I to gain a more in-depth understanding of what 'access' to healthcare meant in this setting. From the medicine interviews, all participants stated that they had no issues accessing the medicines they required. This question was aimed at assessing whether participants had problems with access to medicines. Despite their responses stating the contrary, access to medicines was not the same as access to adequate healthcare. Our time living in Hlaing Thar Yar and doing participant observation and in-depth interviews with patients/consumers (factory workers) provided insights into understanding how access to medicines was related to or differed from access to healthcare.

Table 2. Summary of research activities and timeline

Research Activities		Year 1 - 2018												Year 2 - 2019											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Phase 1	**Fieldwork Preparation**																								
	Pilot ethnographic fieldwork (select fieldsite)																								
	Assemble antibiotics library																								
	Access and permissions																								
	Literature review																								
Phase 2	**Conducting Fieldwork**																								
	Preliminary Work: Medicine Interviews																								
	Participant Observation at Sein																								
	Participant Observation at the clinic																								
	Participant Observation at a labour rights organization																								
	Living in Hlaing Thar Yar																								
	In-depth Interviews with stakeholders																								
	Media and Documentary Analysis																								

		Year 3 - 2020												Year 4 - 2021											
Phase 3	**Analysis, Dissemination, Writeup**	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
	Dissemination of findings to participants																								
	Conferences																								
	Write up (extended into Year 4 due to covid-19 delays)																								

Table 3. Summary of data collected** see appendix 6 for details on all data collected

Data collected	Quantity
Field-notes collected through participant observation	103
Medicine Interviews	50
In- depth interviews with healthcare providers	10
In-depth interviews with staff from TLM	4
In-depth interviews with a diagnostic lab	3
In-depth interviews with pharmaceutical companies	8
In-depth interviews with factory workers	11

3.5 Ethics and positionality

3.5.1 Ethical Approval and Consent

This study received ethical approval from the LSHTM (Reference Number: 14962, see Appendix 3) and endorsement letters from two local institutions: the Inya Institute and a member of the Tak Province Community Ethics Advisory Board on the Thai-Burmese border (See Appendix 4). We (CLH, YKZ) requested for endorsement letters from the two independent ethics advisory boards due to the anthropological research methods we were proposing in the protocol. Myanmar does not have an independent review board for anthropological research; medical research protocols are reviewed by the Medical Research Ethics Committee under the Department of Medical Research. Medical anthropology was not recognized as a discipline, with medical universities centring their teaching and activities solely around biomedical paradigms (Kyu, 2016). As a consequence, we (CLH, YKZ) decided an anthropological protocol would not have been appropriate to be reviewed under the Medical Research Ethics Committee given probable limited exposure to medical anthropological research methods. Furthermore, the clinical study was cancelled one year into the project, making it even more difficult for me to gain access through the Medical Research Ethics Committee. As an alternative, we consulted other independent researchers (anthropologists and social scientists) working in Myanmar, and per their guidance, established an alternative review process guided by the expertise of independent researchers familiar with anthropological research in Myanmar.

We consulted a senior affiliate of the Inya Institute (exact role excluded to ensure anonymity) – 'a Yangon-based higher learning institute dedicated to advancing the social sciences, the arts and humanities' (Inya Institute, 2022) – and another individual affiliated with the Tak Province Border Community Ethics Advisory Board, an ethics review board in the Thai-Myanmar border that is supported by the Mahidol Oxford Tropical Medicine Research Unit, and the Ethox Centre at Oxford (Kulpijit & Khirikoekkong, 2019). Both individuals are familiar with anthropological health research in Myanmar and took the time to independently review the FIEBRE social science Myanmar protocol, and subsequently provided endorsement letters as a local alternative review body (See Appendix 4). This process was also approved by the LSHTM ethics committee, and we shortly received ethical approval from LSHTM (Reference Number: 14962).

In addition to this, we (YKZ, JSB, CH) drew on a 'relational ethical approach' which 'demands attentiveness and responsiveness to our commitments to one another, to the earth, and to all living things' (Given, 2008, p 748). How we acted was determined alongside dialogues with others to ensure 'a fitting response that is suitable, balanced, and harmonious and that takes into account the immediacy and complexity of the particular situation and our moral responsibility within it' (Given, 2008, p 748). I initiated ongoing discussions with our informants and individuals/institutions that provided consent for participant observation, to ensure permission was still provided and to provide a space for discussing ethical concerns and inputs on the direction of the research and the ongoing data analysis process. Participants, and our contacts were informed both on an individual and community level as to who we were, what we were doing, who we worked for, their right to confidentiality, and their right to withdraw from the study or refrain from answering specific questions at any point during the study. When informed consent for participant observation was initially granted but the participant stated no longer wishing to be involved in the study (by the GP at Mya clinic), we ceased fieldwork in that space with that individual. We checked with the participants if we are still able to use the data we had already collected and if consent was provided, we have included it in our analysis. With longer term participants who were involved in the ethnography, we reassured them on an ad hoc basis that consent can be revoked at any point. Furthermore, we were attentive to non-verbal cues, and when discomfort was expressed, we adjusted our fieldwork activities to address this discomfort. For instance, when too many individuals being present in the GP rooms caused discomfort, JSB and I discussed the situation and adjusted the participant activities to involve only one observer. We followed a written consent procedure, and when participants did not wish to provide written consent, a verbal procedure (approved as an alternative in our ethics review) detailed in Appendix 5.

3.5.2 Reflexivity and Positionality

According to the Sage Encyclopaedia of Qualitative Research, reflexivity is broadly described as the 'researcher's engagement of continuous examination and explanation of how they have influenced a research project' (Given, 2008, p 747). Positionality is defined as 'how we are situated within social spaces and locations, taken in combination with our personal and shared intellectual histories as well as our lived experiences, shapes each of our understandings of the world, our knowledge, and our actions' (Given, 2008, p 98). I reflected on research discussing ethical considerations in Myanmar (Matelski 2014) and drew on aspects of our (YKZ, JSB) identity – ethnicity, educational

background, age, and gender – to discuss how our positionalities influenced the research process. Furthermore, as this research is a product of collaborations with multiple groups and individuals, I first outline the background of how I entered this topic and was positioned to carry out the fieldwork.[58]

I developed the topic guides for interviews, and the conceptual research design (adapting the FIEBRE Social Science Myanmar protocol for fieldwork in Myanmar), with direct supervision from CLH and CC, and ad hoc support from the wider social science team (weekly or biweekly team meetings, annual analysis meetings/workshops).[59] As JSB was well embedded within the data collection process, I use this section to outline her role, and her positionality within this work. I also discuss the collaborative nature of the fieldwork (CH, YKZ, and JSB) and how this influenced the research process including access points, fieldnotes, and data analysis.

JSB joined the study in May 2018 after responding to an advertisement CLH and I developed for the position of a research assistant whose roles and responsibilities were to manage translation, accompany me during fieldwork, and provide administrative support where relevant. I received interest for the position from individuals from varied demographic and academic backgrounds. CLH and I carried out interviews to select the most appropriate person based on their qualifications and their positionalities. JSB was two years younger than me, had an academic background from both a state university and a private liberal arts university known for research (Myanmar Institute of Theology), and a year of volunteering experience with non-profit organizations across the country.[60] As medical anthropology was not well-established within local universities in 2018, I had difficulty finding an individual who had familiarity with social research, fluent in both English and Burmese, and interested in anthropology.[61,62] For context, medical anthropology was only approved in 2008 as a post graduate course offered in a few specialised spaces (PhD and above) (Kyu, 2016). It would also have been inappropriate to hire an individual with extensive qualification in anthropology/medical anthropology for a research assistant position to a PhD student (myself). We (CLH, YKZ) therefore selected JSB due to her broad qualifications (familiarity with both state school and a private liberal arts program, fluency in English), and her positionality as a recent graduate, looking into a career in research and

[58] Although CLH was involved in some aspects of fieldwork, these were mostly related to conducting in-depth interviews with stakeholders. The majority of the participant observation activities were done between JSB and myself, and I have written this reflexivity and positionality section based upon JSB's and my own experiences doing ethnographic fieldwork.

[59] As mentioned previously, CLH and CC were both my supervisors. CLH was responsible for directly supervising the Myanmar research activities and had more frequent contact with JSB and myself.

[60] Myanmar society tends to place age as a core characteristic to determine social standing and hierarchy. As I was 21/22 when I started this study, having someone who was much older in a more junior position may have resulted in less receptiveness to training.

[61] The Peace Studies Center, Gender Studies Center, and Judson Research Center were part of the Myanmar Institute of Theology.

[62] The Myanmar education system after grade school is based on the ranking of 10th standard exam marks. The highest ranked disciplines were medicine, engineering, and maritime university. Anthropology required the lowest marks for entry and was considered a less prestigious discipline. The ranking system was heavily influenced by the government's priorities (military's interests). Disciplines that were discouraged (i.e., anthropology, political science) were often unavailable or underfunded in public universities to the extent of being close to disappearing. The university system was transitioning in the NLD period, with the opening of new disciplines such as political science. This has changed since the February 2021 *coup d'état* where university education was severely disrupted along with healthcare and other public services.

development. Over the course of the research, JSB became more involved in the study, and fieldwork was done in a more collaborative nature, as opposed to one that was hierarchical.

JSB's difference in positionality provided for a more inclusive research process, creating space for invaluable critical reflections that may not have been possible on my own. JSB and I had very different, yet complementary backgrounds, enabling us to challenge each other's assumptions throughout the fieldwork. I was raised by a Bamar Buddhist family, outside of state-education in an international education system and had lived abroad since I was seventeen. In contrast, JSB was raised in a Kachin Baptist family, with lived experiences in Myitkyina (Kachin state) and Yangon. JSB attended Myanmar Institute of Theology, established in 1927, and is one of the longest-standing private liberal arts institutions in the country. In addition to this, JSB was also embedded within the state education system as she also studied at the University of Distance Education, Yangon. The familiarity with both state education and a private liberal arts curriculum, provided JSB with a balance of both understanding the Myanmar state's way of knowledge production while being receptive to learning new ways of thinking – anthropological theory and methods as informed by my/CLH's educational training at a 'western' institution/LSHTM. Consequently, CLH and I were able to request assistance from JSB in areas we were not well versed (for example, accessing public libraries) while also incorporating her reflections and assumptions during our reflective discussions.

I had a limited understanding of the state system as I attended a liberal arts university in the United States, followed by a master's in Global Health in the United Kingdom, prior to my doctorate at LSHTM. As my academic and work experiences prior to the PhD have been abroad, I did not have lived experiences in Myanmar during the post 2011 'democratic transition' period. Despite being born and raised in the country, my lived experiences during the direct authoritarian period were very different from the condition Yangon was at in 2017. In a way, I was re-entering Myanmar through my PhD, and was unfamiliar with and estranged from the social and political changes that had been occurring. JSB's support and advice on navigating everyday norms in Myanmar proved to be invaluable for me to re-adapt to Yangon and undertake this research. In such ways, our different yet complimentary positionalities based upon our ethnicities, academic backgrounds, and lived experiences created a space for a richer ethnographic data collection process as we challenged each other while noticing different aspects in people's conversations and engaging with our research participants in distinctive ways.

For example, due to her volunteering experiences, JSB was more familiar with social norms in rural spaces, and thus she advised me on appropriate speech and dress. In contrast, in clinical settings, or in stakeholder meetings, I took the lead, as I was more versed on global health discourses, given experience from having discussions with clinicians. We came across a Kayin community during our fieldwork activities. These interlocutors quickly built up a rapport with JSB, while they were more cautious with me. In contrast, during instances where clinicians, particularly those in senior positions were involved, I had to re-emphasise my affiliation to LSHTM to bring legitimacy to our research endeavours. In such ways, we employed and adapted our strengths based on our positionalities to bring legitimacy to ourselves, and gain access to different individuals and spaces. Last, our age and gender (early twenties, female) also enabled a particular form of access. At Sein, U Kyaw and Aunty Moe took upon the roles of 'Oo Lay' (uncle) and 'Aunty', educating us about the pharmaceutical industry, and took us 'under their wings' to teach us about

their business. This dynamic may have been more complicated had we been much older. For instance, when others questioned our presence or felt threatened, as in a few instances when JSB/I followed them on their black-market visits or similarly sensitive spaces, U Kyaw and Aunty Moe referred to us as their သမီး *thamì* (daughters), making people more willing to accept us as non-threatening actors.

As previously mentioned, CLH was also involved in several stretches of fieldwork, mainly focusing on stakeholder and pharmaceutical industry interviews. CLH initiated ongoing conversations with stakeholders where we received feedback on our research process (for example, the Foreign, Commonwealth and Development Office, Myanmar; research fellows/clinicians within Yangon General Hospital; expatriates working within INGOs; and other researchers). CLH's positionality as a research fellow from LSHTM, and an expatriate, helped us gain entry to more higher-level spaces. For instance, positioning ourselves as researchers affiliated to a foreign institution, with CLH leading the interview, enabled interview access from senior management at pharmaceutical companies. In such ways, we repositioned ourselves to lead certain aspects of the project depending on our strengths and our positionalities.

Chapter Four: 'Tracing' pharmaceuticals through the pharmaceutical supply chain

In this chapter, I contextualise antibiotics within the pharmaceutical supply chain by drawing attention to how medicines (and antibiotics) move through different actors in this chain. As previously mentioned in Chapter 3, I adapted our research method from tracing antibiotics to tracing pharmaceuticals with a focus on antibiotics due to a lack of the term 'antibiotic' in English or in Burmese (technical/clinical term: ပဋိဇီဝဆေး *pá tí zi wá hsày*, colloquial term: ပိုးသတ်ဆေး *pò that hsày* or microbe/germ killer) in lay participants (non-clinicians/non-healthcare workers) discourses. In our (JSB, CH, YKZ) tracing of pharmaceuticals, we observed pharmaceutical (biomedicines/ အင်္ဂလိပ်ဆေး *ingaleik hsày*) use practices with a focus on antibiotics at Sein. We then followed the medicines upstream through the pharmaceutical industry by doing stakeholder interviews with healthcare providers, pharmaceutical sales representatives, and companies, while collecting advertisements/media and documents related to the sale and distribution of medicines. This result chapter is structured to describe our ethnographic following of medicines beginning with observing pharmaceutical regulation and advertisements at Sein, supplemented by our documentary and media analysis, and tracing medicines upstream (with a focus on antibiotics) through pharmaceutical distribution, marketing, import, and manufacture.

4.1 Observing pharmaceuticals (with a focus on antibiotics) at Sein

On January 15, 2019, Sein ဆေးဆိုင် *hsày saing* (Sein medicine shop) was bustling with customers. Ma Kay Thi, a woman in her twenties, came in at around 6:50 AM, holding a used label for a bottle of Neomycin eyedrops. She could not read the label and asked U Kyaw, to give her the same medicine. U Kyaw searched for Neomycin on the shelves of his small but well-stocked medicine shop and said, 'I have the same one, but the product is almost expired, do you want it?' The woman declined saying that she did not want the expired product and that she needed the medicine to be in a good condition for a long time. U Kyaw told her to wait a minute, trying to quickly decipher a solution in his head as to what he could do to sell something and maintain his status in the neighbourhood as 'the small shop that has everything'.[63] Within a few seconds, U Kyaw suggested: 'I have something similar and with a good expiry date. Do you want to try this instead?' He handed the woman a bottle of Gentamycin eyedrops. The woman, looking busy and anxious to get to her next destination, bought the medicine for 2500 kyats (1.6 USD), trusting U Kyaw's advice due to his ability to ဆေးနိုင်တယ် *hsày naing te* ('win over the medicine' referring to one's ability to manage the medicine or prescribe effective cures), a phrase used by customers to describe U Kyaw and Aunty Moe's prescription practices.

[63] The ethnographic details in this section were collected a few days after the FDA raid (see Chapter 5). During the raid and a few weeks after, *Sein* refused to sell စပ်ဆေး *sat hsày* to new clients (only selling to people they knew). However, this pattern only lasted a few weeks and the shop reverted back to its normal sales patterns (mixing စပ်ဆေး *sat hsày* for customers) by the end of February.

The provider's ability to ဆေးနိုင်တယ် *hsày naing te* was important as patients or clients selected their providers based on the latter's ability to 'cure well' or 'make them feel better immediately', discussions I explore further in Chapter 6.

Around 10 AM, Aunty Moe took over the shop from U Kyaw, attracting more customers (women, clients who knew her personally) due to her more vivacious personality. U Kyaw on the contrary, was quieter and did not make small talk as much as his wife. Aunty Moe often joked about this and said 'he is scaring away the customers because he is not patient and does not ask how they are getting on with their lives'. Shortly, Ma Khine, a woman in her thirties came and asked her for စပ်ဆေး *sat hsày* (mixed medicines) and to have her blood pressure measured. She mentioned her symptoms as feeling a headache, dizziness, and having a white vaginal discharge. Aunty Moe told the customer that she was not allowed to sell စပ်ဆေး *sat hsày* anymore as this is the current regulation by the FDA. When the customer sassily responded, 'Then what should I do?', Aunty Moe gave in and said, 'I am not allowed to sell စပ်ဆေး *sat hsày* anymore but if you really want it, tell them [the FDA] that I am not mixing medicines but that I am only suggesting, and that you are buying it yourself.' The woman agreed to these terms and conditions and described her symptoms 'I feel some lumps on my head and it aches.' Aunty Moe suggested that she go see the doctor and asked her why she hasn't done that. The woman replied, 'I have already shown it to the eye specialist at Taw Win clinic. It is far and they said I am fine. I don't want to go again.' Aunty Moe mixed စပ်ဆေး *sat hsày* for the patient which included Daneuron (Vitamins B1, B6, B12) and Diclofenac (pain killers) and provided the anti-fungal, Nystifem for her vaginal discharge.

Sein's customers were not restricted to patients themselves as Sein made the most profit out of being a small distributor of medicines to individual healthcare providers who had been purchasing medicines from them for years (a nurse, a public health officer, a vet, a doctor, non-clinical staff from clinics in the vicinity). Mya Myint, a public health practitioner practicing in a nearby village, was Sein's most important client by her nature of purchasing the largest quantity of medicines among all of Sein's customers. Mya Myint came in to buy 'B6 inject (injectable form of vitamin B6), Amoxicillin, 20 CC syringes, 5 CC syringes, Cimetidine (OTC medicine for heartburn), Ecoflox (ciprofloxacin), Cifran 500 mg (ciprofloxacin), Opirim (cotrimoxazole), and Neurobion (vitamin B complex)'. Mya Myint mentioned all the medicines by their brand names and purchased multiple boxes of each item (see Figure 27 for a sample of Mya Myint's orders). Mya Myint would order medicines through a phone call a few days in advance of her visit. U Kyaw did not keep a log of his sales but for large orders like that of Mya Myint, he would prepare them in advance by writing down the brand name, the quantity for each item, and the total price (quantity times price for one item) on a piece of paper in preparation for Mya Myint's arrival. Due to the long-established relationship between Mya Myint and Sein, a successful relationship of more than five years, Mya Myint rarely ever reviewed the order and would just pay the lump sum at the end while she collected her medicines in a large bag.[64] JSB and I have been part of these transactions a few times when we volunteered to deliver medicines to Mya Myint at her village, a thirty to forty five minute commute by car from Sein. I did not observe Mya Myint unpacking and reviewing the order nor the bag of medicines at her village as she simply did not have the time to go through this process. She proceeded to directly picking out the specific medicines she needed and continued with her medical practice which was very busy/ on call

[64] Prior to 2020 when our data collection stopped.

the entire day. The relationship between Mya Myint and Sein appeared to be one of mutual support (camaraderie, financial support), occurring in an almost regular auto-pilot manner where there was no distrust between their exchanges. Furthermore, U Kyaw and Aunty Moe looked forward to Mya Myint's phone orders, preparing for Mya Myint's visits with enthusiasm as they were an opportunity to see their friend while also making a significant profit from the sale of medicines involved. Sein had a few customers who were like Mya Myint. These included a vet, a doctor, a nurse aid, the owner of a nearby clinic, and a few owners of nearby drug shops. The rest of the customers visited Sein on an ad hoc basis, on their way to work or the wet market in front of Sein.

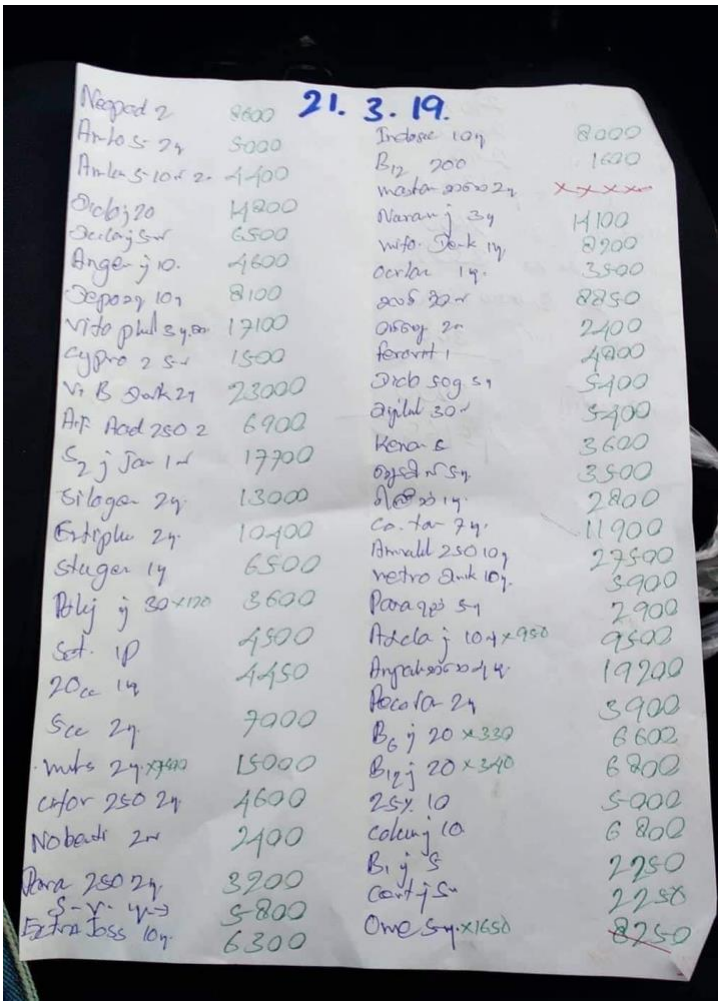


Figure 27. Sample of an advance order of medicines at Sein. These orders are only placed by healthcare providers.

Throughout the day, transactions in Sein alternated between clients who were patients (client-patients as I refer to them) and clients who were healthcare providers (client-providers). Out of the 843 transactions of sales we observed between December 2018 – April 2019 (247 purchases of vitamins and minerals, 196 purchases of non-biomedicines, 192 purchases of painkillers, 113 purchases of antibiotics or 13% of all transactions) observed by me and JSB, most antibiotics were purchased by healthcare providers or prescribed by U Kyaw and Aunty Moe through စပ်ဆေး *sat hsày* (See Appendix 2 for details).[65,66] Of all the sales of စပ်ဆေး *sat hsày*, 78% included an antibiotic. Although

[65] We (YKZ, JSB) observed the details of each transaction in as depth as we could. We included what medicines were purchased and what the costs were for the treatment. On busier days, the sales of medicines were too fast to observe so we have missing data on such days. U Kyaw also mixes စပ်ဆေး *sat hsày* in a very rapid manner and on many occasions, we were unable to observe what was in the drug cocktail.

[66] I counted each transaction as one unit. For example, whether the cocktail included one or two antibiotics, it would still be counted as one if it was in one transaction/sales to one person. It was not possible to quantify the number of antibiotics in each cocktail as the shop can have four to five customers within a span of five minutes during busy hours.

client-patients frequented Sein twice as many times as client-providers did, client-providers spent almost three times more money on purchases at Sein (See Appendix 2 for details). Antibiotics were not the most purchased item. Vitamins, minerals, and non-biomedicines (herbal, Myanmar medicines) were purchased at the same frequency or more often. The sales of vitamins, minerals, and non-biomedicines were directed by client-patients. Client-patients referred to the name of the specific medicine they wanted or referred to the brand name. This was not the case for antibiotics, as clients were less familiar with the antibiotic brands except for a few popular brands of amoxicillin and penicillin (also the most commonly prescribed/sold antibiotics among others). Reinforcing our (JSB, YKZ) preliminary results from the medicine interviews (discussed in Chapter 3), these observations at Sein show how healthcare providers determined which brands of antibiotics/method of administration were used, when, and for which conditions/circumstances.

4.2 Locating pharmaceutical regulation and laws

Following from our observations at Sein, we (JSB, YKZ, CLH) continued to trace medicines and antibiotics through the context of pharmaceutical regulation and laws. Discourses around medicines at Sein included mentions of တရားမဝင်ဆေး *ta yà ma win hsày* or 'illegal' medicines and တရားဝင်ဆေး *ta yà ma win hsày* 'legal' medicines. Legal and illegal medicines also refer to the registration status of the medicines. 'Legal' medicines have been registered with the Myanmar FDA and the 'illegal' as the contrary. These terms appeared to act as a conceptual basis in the ethnography in that participants grouped medicines in their everyday discourses around notions of 'legal' and 'illegal' (mostly referring to the extra-legal/anything outside the boundary of the 'legal'). To clarify and unpack the terms, I drew on both our participant observation work and documentary and media analysis.

The majority of medicines in Myanmar are imported rather than being locally manufactured.[67] Most businesses in the pharmaceutical industry function as local distributors who liaise with foreign manufacturers to negotiate the purchase price and import of medicines (Thida Aye, & Finch, 2000). Import and custom fees can be directly handled by the local distributor or by the foreign manufacturer through a cost-insurance-freight method where the foreign manufacturer takes responsibility over costs associated with the import process. Prior to importing large quantities of a drug, the foreign manufacturer and local distributor sends a sample to the FDA for quality assurance testing. Once the sample passes quality assurance, the drug goes through a licensing process handled by agents or ပွဲစား *pwèza* who negotiates the relevant bureaucratic fees and processes involved in producing a Myanmar registration license for the drug. According to Credevo, a global consulting organization specialising in regulatory, clinical development, licensing, and feasibility, the individual registering a drug in Myanmar must be:

> 'An authorised representative who is a product license holder [who] shall submit applications to register and be a resident of Myanmar. For a foreign company, the applicant must be a resident representative of the company and need an authorization letter by the foreign manufacturer to the local party' (Credevo, 2021).

[67] I have discussed practices in the pharmaceutical industry around regulations, import, manufacture, and distribution in present-tense as I presume the official regulations have not explicitly been changed post February 2021 *coup d'état.*

Due to such requirements, foreign companies often hire or partner with local agents to manage the registration process. Once issued a license, the drug is legally registered under the FDA with the registration license valid for between one to five years (Holloway, 2014). An import authorisation is valid for three years and a drug seller's authorisation is valid for three years. Subsequently, the manufacturer/distributor/seller must renew their license through the FDA. The registration process for a new drug can take up to two to three years with re-registration being much faster (Thean-ngarm et al., 2020).

The licensing and accreditation of health professionals, health facilities, and pharmacies is managed by different regulatory authorities that are closely linked to the MOHS or the FDA. According to a WHO situation analysis report, national pharmacovigilance was reported in 2011 and was led by the Department of Medical Research. The FDA was to be responsible for ongoing pharmacovigilance activities but due to lack of resources, no further units have been assigned for follow-up activities. At present, the Myanmar Medical Council is responsible for the licensing of medical doctors who in theory must renew their license every three years. There is no system of accreditation in place for the renewal process. The Myanmar Medical Council is stated to be 'partially independent' from the government but works closely with ministries like the FDA and the MOHS (Holloway, 2014). For instance, the Myanmar Medical Council is affiliated with other medical organizations like Myanmar Medical Association (the only fully independent association of medical doctors) or the Myanmar Academy of Medical Sciences (a government thinktank comprised of retirees from government service/staff members are also appointed by the government) (Holloway, 2014). Pharmacies and drug retail outlets are accredited and licensed by the local Food and Drug Supervisory Committee (part of the FDA) according to a checklist developed by the committee itself (Holloway, 2014). Information handouts were provided during FDA inspections (see Chapter 5, Figures 33-34), listing a few of the rules and regulations; however, the checklist itself does not appear to be publicly available. Like the registration of drugs, we found drug retail shops to seek assistance from agents who are familiar with the process, to acquire the relevant licenses for their businesses. Consequently, Aunty Moe and U Kyaw at *Sein* medicine shop did not express knowledge of how their shop received its license. When issues or a need for a renewal of license appeared, the shop owners delegated the process to their 'contact' at the hospital who managed the bureaucratic work for them. Aunty Moe and U Kyaw did indicate a priority for 'being legal' and distinguished themselves as 'legal' providers of medicines as opposed to unlicensed 'illegal' retailers which were also present in Hlaing Thar Yar. Being legally registered with the local authorities and having contacts or approval from the public hospital brought legitimacy to *Sein*.[68]

During fieldwork we came across two types of medicine dispensers – pharmacies and medicine shops. A pharmacy is operated by a licensed pharmacist, an individual who has undergone a four-year qualification for a Bachelor of Pharmacy and has received a license to practice. An example would be the pharmacy associated with Mya

[68] Aunty Moe has attended a nurse aid course at the hospital during the Thein Sein period. She stated that she was 'required' to attend the course to be put on call when needed. As the hospital has helped her, it is 'not good' if she does not go. To date (until 2020 when this fieldwork ended) Aunty Moe attends monthly mobile medical missions organized by USDP party members as a medicine supplier. Aunty Moe is paid for these visits but, if she cannot attend, she is responsible for finding a replacement, someone who can read medical scripts and dispense medicines.

Clinic. Pharmacies are more common in central Yangon and private hospitals. A medicine shop like *Sein* and other shops we engaged with in Hlaing Thar Yar were often operated by people who have received a short (usually three months) training course on health and pharmaceuticals. However, many medicine shops were also operated by those who have not received such training. Aunty Moe for instance, claimed to have learned the trade from her friend, a nurse who works at a nearby clinic. When we engaged with his suppliers in the market, U Kyaw also introduced JSB and me as 'his daughters' who were hoping to understand the pharmaceutical business to eventually take it over. Most medicine suppliers were required to apply for a license to sell medicines. The specifics of this process remain unclear. Coderey, however, in her ethnographic fieldwork in Thandwe, Rakhine State between 2005 and 2011, describes the licensing process to have cost up to 2000-3000 kyats (2-3 USD) per year at that time (Coderey 2018). This fee may have been different in Yangon at that time (things can be more expensive in the city) and is most likely to have increased since then. In addition to pharmacies and medicine shops, we also observed individuals who sold medicines in small baskets as part of their convenience store or home grocery shop. These sellers were unlikely to have obtained a license. Coderey notes a similar observation in Rakhine State and discusses how unlicensed medicine shops were more common in rural spaces (Coderey 2018).

In addition to rules and regulations on medicines provided primarily through the FDA and translated into practice by agents, Myanmar only has one major legislation for pharmaceuticals, the 1992 National Drug Law. The National Drug Law was amended in 2018 with updates to the penalty fees (no changes to the regulations itself). The National Drug Law characterises legality and authorities around medicines through the following definitions –

> 'A person who has been granted registration of the drug or who has obtained a licence shall abide strictly by the order, directive, and conditions issued by the Board of Authority in respect of labelling and advertising' (The Union of Myanmar, 1992, p11).

> 'Board of Authority means the Myanmar Food and Drug Board of Authority formed under the Law' (The Union of Myanmar, 1992, p2).

> 'Advertising means carrying out measures in a direct or indirect manner to inform the public in order to promote distribution and sale of the drug' (The Union of Myanmar, 1992, p5).

Based on these definitions, 'illegality' as defined through the National Drug Law consists of practices that are not endorsed by the Drug Board of Authority. According to the National Drug Law, the Drug Board of Authority is led by ministers from health, defence, home affairs, livestock breeding and fisheries, trade, industry, and agriculture services (The Union of Myanmar, 1992, p4-5). The specifics of what these practices are, is not listed in the National Drug Law itself. The FDA on its official webpage (Figure 28) states a few recommendations and guidelines around registration of medicines, tender processes, and 'highly controlled drugs' such as psychoactive drugs.

The FDA department was previously under the MOHS and did not have independent authority until 2013. The FDA's headquarters are based in Nay Pyi Taw, but the organisation has teams across the country who liaise with

local authorities to carry out their activities including inspections. Our interlocutors from the FDA mentioned their activities and regulatory authorities being strongest in the main cities like Yangon and Mandalay, and weaker on the borders due to understaffing and lack of resources.

In a public statement, The FDA estimated only 20% of medicines to be illegally imported (Myint, 2014), but our interlocutors from the FDA mentioned this number to be an underestimate, as large regions of the border have been and are still currently in conflict or are autonomous such as the Wa State, resulting in several data gaps due to the inability for the FDA to effectively monitor or establish rule of law in such spaces. The FDA was also mentioned to be understaffed and under-resourced with its jurisdiction being strongest in the central cities such as Yangon and Mandalay. One of our interlocutors from the FDA recounted his experiences being posted to the borders where he mentioned feeling directionless.

> Q: Is there no FDA on the borders?
> R1: There is FDA on the border.
> R2: My first posting was in Tachileik, near the border gate. Near Mae Sai. When I went, well if I have to tell you honestly, the aim was not for me to go and tackle illegal activities. I was sent then by force/coerced by (mentions name of supervisor). He was the head of the hospital there at that time. There was no FDA workforce at that hospital [in Tachileik]. So he just randomly forced me to go there overnight, just like that. He asked me to go. When I got there, there was nothing [in terms of work] for me to do. – Two FDA staff working in the Drug Department and the Food Department

The FDA posts rules and regulations around medicines on its website and its official social media handle on Facebook (see Figure 21).

Most of our interlocutors were not versed on online searches or using the internet and often relayed rules and regulations through word of mouth. While discussing their understanding of regulation around medicines, our interlocutors mentioned ‘illegal’ practices primarily through two characterisations. The first characterisation focused on the National Drug Law and the specific clauses written in this document. Breaking the National Drug Law was described as a more totalitarian form of illegality where the specific act is definitively ‘illegal’. As examples, such acts included the sale and distribution of unregistered or counterfeit medicines, or the sale of highly controlled drugs. The regulations stated in the National Drug Law have not been updated since 1992, and the document emphasises illegality through matters related to registration of medicines through the relevant authority boards. The second characterisation of illegality was through mentions of ‘breaking the rule’. These characterisations centre on discussions around guidelines and regulations such as those that have been publicly published on the FDA website or its official social media channel (Figure 21, Figure 28). These guidelines were described and understood by our interlocutors within the FDA, and the drug shops, as ‘rules but not the law’. Our interlocutors from the FDA stated – ‘Guidelines are like rules. They can be broken without legal consequences and is also why people don’t follow them.’ Regulations around antibiotics fall under the sphere of ‘guidelines’. Our interlocutors in the FDA mentioned only being able to reprimand people as opposed to taking further action for not following guidelines around antibiotics. Specific

guidelines include ‘don’t mix medicines’, ‘don’t sell drug cocktails’, and ‘sell antibiotics only to those with a prescription’. Legal action such as a penalty or a lawsuit can only be taken when the law is broken, and the law was defined through the 1992 National Drug Law, that as I previously mentioned centres around appropriate registration of medicines.

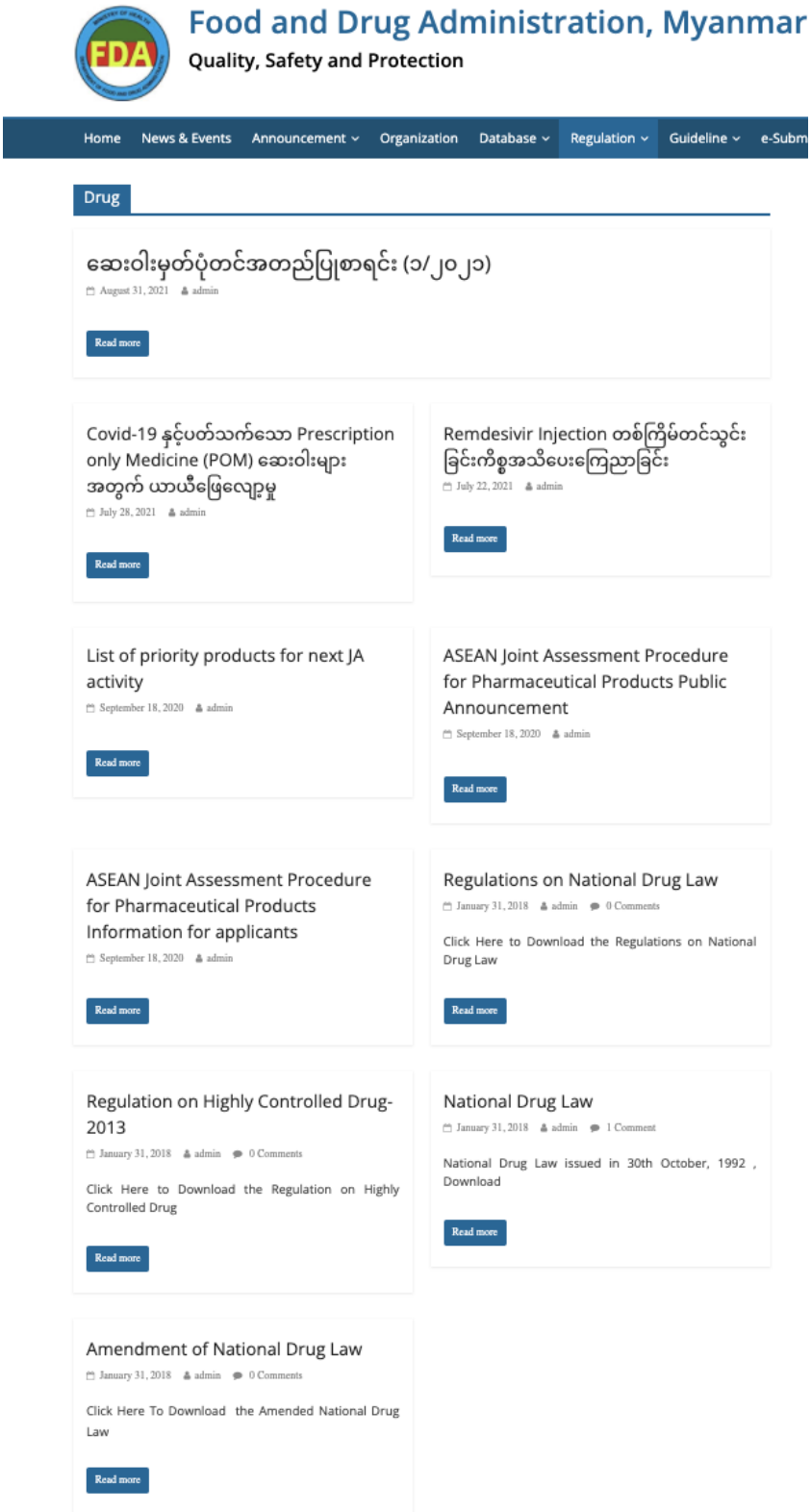


Figure 28. Regulations available on the FDA webpage (Food and Drug Administration, 2022)

We (JSB, YKZ) were able to clarify the two characterisations around legality through follow up interviews with those in the FDA, and from our own analysis of the document and media sources we collected on the topic. In practice, the two characterisations of illegality occur interchangeably in a less distinctive manner, as evidenced in the FDA raid when the drug shopkeepers were reprimanded for the sale of unregistered medicines (discussed further in Chapter 5), selling ဈေးဆေး *sat hsày*, and prescribing antibiotics to those without a prescription. Our interlocutors who were not in the FDA also used the following Burmese phrases interchangeably – တရားမဝင် *ta yà ma win* (illegal), ဖမ်းခံရမယ် *hpàn hkan ya me* (you will get arrested), ဈေးဆေးမရောင်းရ *sat hsày* ma yàùng ya (cannot sell mixed medicines) – when they are describing what they understand as 'illegal' practices around medicines. Aunty Moe and U Kyaw, for instance, did not seem to distinguish between breaking the law and breaking the guidelines, and showed their frustration over changing guidelines and feeling excluded from information circuits where such news (on updated regulations/ guidelines) is shared. Burma studies scholars have discussed similar circumstances (being excluded, not being familiar with rules and regulations) in their work on rule of law and everyday lawyering (Cheesman, 2009; Prasse-Freeman, 2015; Batesmith & Stevens, 2019).

U Kyaw and Aunty Moe did not know how to use smartphones proficiently (did not have a social media account) and they relied on word of mouth from their contacts and information on printed newspapers to follow the changing guidelines. 'Illegality' in practice appeared to be whatever message was received after passing through the various channels involved – social media, word of mouth, documents and awareness raising efforts from the FDA – as opposed to the law as written on paper in documents like the National Drug Law or guidelines posted on the FDA's webpage. In addition to this lack of clarity with what the law/guidelines were, U Kyaw and Aunty Moe along with their colleagues in the business also lacked clarity on what the penalties were, and on how stringently they should follow the 'rules'. For instance, the FDA left information sheets on rules and regulations around the sale of medicines (Figures 33-34, discussed in Chapter 5). One sheet detailed specific guidance around the storage of medicines and the specific conditions required for quality assurance. Aunty Moe laughed at this guideline saying, 'How can anyone in this market meet these conditions?', referring to the fact that many small shops in the market had limited infrastructure and capacity required for 'proper' storage such as ensuring the right temperature for the medicines and having glass shelves. Consequently, the 'rules' were received in an uneven manner depending on what was feasible and what was considered as more important.

We (JSB, YKZ, CLH) were unable to locate legal and regulatory documents specifically on pharmaceutical advertising; however, during our interviews with pharmaceutical companies, we included questions on how the law or the rules around pharmaceuticals are enacted in practice. In an interview with a well-established pharmaceutical distributor who I refer to as Pharmaceutical Company A, a company that has been in business since the 1990s and has acted as a local distributor for several foreign manufacturers, mentioned evading the law through 'loopholes'.

> 'But you know, previous faults of our FDA, there are some 5, 10 brands which should be prescription-only medicines (POM), antibiotics but … because of their some… faults, it became OTC [over-the-counter]

> products [only POM can be publicly advertised according to regulations].[69] Like you might find antibiotics from…which pharmaceutical…I forgot. It is actually a prescription product. But they are advertising everywhere because they managed to get the OTC certificates.' – Managing Director of Pharmaceutical Company, A

Our FDA interlocutors, and other interlocutors from the pharmaceutical industry corroborated the above statement, but we were unable to find an official source from a regulatory body (FDA, MOHS). Such scenarios were common during our data collection process as several of our interlocutors verbally communicated their understanding of a specific regulation. These understandings were remarkably similar despite the interlocutors not having communicated with one another. In such ways, knowledge of what is 'legal' appeared to be in circulation somehow, outside of official notices and regulatory documents. Following this observation, we also came across ပွဲစား *pwèza* (informal brokers) who acted as intermediaries who navigated regulations on behalf of individuals (discussed in-depth in the last section of this chapter). For example, a ပွဲစား *pwèza* working within the pharmaceutical industry would be aware of what is 'legal', and the processes that are involved in ensuring the involved parties act within the boundaries of the 'legal'. Reiterating Burma Studies scholars' work on ပွဲစား *pwèza* and intermediaries (see references related to Rhoads, Simion, Roberts in Chapter 2), the ပွဲစား *pwèza* within the pharmaceutical industry were crucial in transferring pharmaceutical regulation from paper into practice. ပွဲစား *Pwèza* navigated in the realm of the extra-legal. Although formally accepted by those in the 'legal' sector, their work was often implicit, and functioned outside the boundaries of the 'legal'. To understand the trajectory of pharmaceuticals in the extra-legal sector, I observed discourses and practices around 'illegality' and 'breaking rules or regulations', which I discuss in the following section.

4.3 Describing the pharmaceutical supply chain

4.3.1 Pharmaceuticals in the extra-legal spaces

We (JSB, YKZ) observed discourses around 'illegality' in the context of medicines during our participant observation activities at Sein. Participants colloquially referred to 'illegal' medicines or practices and defined them as all activities that are not in accordance with the rules and regulations published by formal or 'legal' bodies mentioned in the previous section (FDA, MOHS, other relevant ministries).[70] For example, 'illegal' practices at Sein involved the sale of unregistered medicines; the prescription of စပ်ဆေး *sat hsày*; and the ordering, purchasing, and redistribution of 'illegal' or unregistered medicines to other providers. In addition to our observations, these practices were also mentioned in public discourses/notices on regulations and through our interviews as common ways people 'break the

[69] Suggesting that rules can be changed without reason. POM medicines can be misregistered as OTC if the FDA desires to do so.

[70] Although participants used the Burmese term 'illegal', when describing the activities themselves, they often are referring to things that are outside the boundaries of the law or the extra-legal as I have used the term in this thesis (explained in Chapter 1).

law' and contribute to drug resistance (Si Thu Lwin, 2016; Shwe Yee San Myint, 2014a; 2014b; Aung Phay Kyi Soe, 2019a; 2019b).

We (JSB, YKZ) first observed 'illegal' medicines and practices at Sein, a few weeks into our observations when U Kyaw and Aunty Moe gave us permission to stay the whole day from 6 AM to 6 PM.[71] The busiest hours for the shop were in the mornings between 6:30 AM to 8 AM when customers stopped by on their way to the market or prior to going to work. Here, I observed the transactions of စပ်ဆေး *sat hsày* when U Kyaw mixed medicines for those who presented ailments. The client-patients would describe what they are feeling, and for how long, and in exchange U Kyaw would pack three doses of စပ်ဆေး *sat hsày* and ask the client to come back if he or she does not feel better. By around 9 AM, most of the client-patients' interactions have slowed down, and the transaction of medicines became focused on client-providers (for example, other shopkeepers, non-clinical staff from nearby clinics, clinicians).

'Illegal' practices here shifted towards the sale of unregistered medicines, where client-providers would intentionally and specifically ask for these medicines along with registered medicines. The frequency and the specific usage of unregistered medicines depended on the clinician's own clinical preferences. U Kyaw and Aunty Moe for instance, preferred to only use registered medicines for their စပ်ဆေး *sat hsày* prescriptions. This was because they wanted their စပ်ဆေး *sat hsày* to be effective while also keeping the treatment inexpensive, as the 'expensive' medicines were only being sold in lesser quantities and were therefore affordable. U Kyaw and Aunty Moe still preferred to sell the unregistered versions if client-patients or client-providers asked for 'the cheaper brands', particularly if the customer wanted to purchase a large quantity of medicines. They told us that, overall, the cheaper brands of unregistered medicines bring in more profits, as 'people preferred the cheaper option and are more likely to buy them. We only stock the expensive brands if someone requests for it or for စပ်ဆေး *sat hsày*.'

Client-providers all distinguished between registered and unregistered medicines, and specifically asked for the version they preferred, while the client-patients in general relied on the brands and suggestions provided by U Kyaw and Aunty Moe. U Kyaw mentioned that most of the profits from the shop came from the sale of medicines to client-providers, as opposed to client-patients, because the former purchased medicines in bulk. The frequency and specifics of which medicines are used for which conditions depended on the provider's own clinical preferences, as each had varying notions of 'what works'. These notions were informed not only by profit margins, but also by the marketing and negotiations with pharmaceutical sales representatives. For instance, at Mya clinic (where all medicines are registered due to Mya clinic being an 'expensive' or 'upscale' clinic), the morning general practitioner preferred Azithromycin and prescribed it commonly, while the doctor on duty in the evening preferred Levofloxacin and

[71] Our ability to trace the 'illegal' depended not only on U Kyaw's ability to convince his contacts that we were trustworthy. One way he did this was calling us his သမီး *thamì* (daughter), who he had been training to take over the business. He mentioned the same to a few suspicious onlookers in the market as well as, those who were curious as to why we had been coming each day. He told us, due to the sensitivity of the sales (e.g. sale of unregistered medicines), and the general unfamiliarity towards research in this setting, particularly one that entails participant observation, introducing us as a personal contacts was the only way for us to be accepted, and for him to not 'lose business' while retaining the trust of his customers. Our observations of 'illegal' practices and medicines, therefore, were informed by passive observation at Sein, and while following U Kyaw to his visits to wholesale Mingalar Market.

prescribed the latter for a prolonged cough (described as a 'precautionary prescription in case the patient has something'). Thus, we observed and heard more concerns over patient safety and client satisfaction, and subsequent precautionary prescription practices, as opposed to concerns over drug resistance.

4.3.2 Stocking medicines at Sein

Sein stocked medicines by purchasing directly from pharmaceutical agents who came to the shop with a list of medicines and their prices, and by going to Mingalar Market to purchase directly from wholesalers. The list from pharmaceutical agents included information on the company name, brand name, and the price of specific medicines. The majority of these medicines were registered; however, a few regular agents have brought in unregistered medicines if U Kyaw had specifically ordered and requested for these. These agents were in a close relationship with U Kyaw and Aunty Moe as they would joke, laugh, and make small talk whenever they visited. U Kyaw did not use a log for his medicines and did not record his sales information. He would make a mental map of the medicines that were low on stock, would write them down on a piece of paper, and then telephone his contacts to ask for the current asking price of that medicine. Whoever offered the best price would receive U Kyaw's loyalty for the week, and an order would be placed. If his contacts happened to be sales representatives, he would ask them to bring it whenever they are in the region. Most medicines U Kyaw ordered were from Mingalar Market. U Kyaw would place an order in advance, which he would then pick up on Sunday. U Kyaw also on an occasional basis shouted at pharmaceutical sales representatives who were passing by (the street had a large number of medicine shops) to ask for the price of the specific medicines he needed. If the price was favourable, or if he required the medicine urgently for a client who had requested to pick it up shortly (for example, a specific brand of Amoxicillin), U Kyaw would purchase the medicine. U Kyaw told us:

> Usually, all the medicines from the agents are registered and that is also why they are expensive, and I don't usually buy them. I prefer the market. We also don't do risky things like buying medicines through loans. They have that business model at the market where you take their medicines for free and agree to sell it for them but then you have to pay it back with interest eventually. We don't want to do this kind of business. It's complicated.

Having said this, there were exceptions where pharmaceutical sales agents who visited Sein regularly brought in unregistered medicines from their own distributors. Such agents, Sein, and U Kyaw's supplier shops in Mingalar Market were all 'legal' providers and suppliers of medicines, as they have been registered, and have received the relevant operational license from the authorities. However, they (the drug shops) engaged in 'illegal' practices and according to them, this was to provide an 'affordable' and 'cheap' supply for medicines for their clientele who were from a lower socio-economic background and could not afford the 'expensive brands' even if they were acknowledged as better.

Most of the 'illegal' or unregistered medicines available at Sein were purchased through Mingalar market with utmost secrecy and speed. As mentioned previously, U Kyaw would place orders for these medicines through

phone calls to his trusted suppliers. On Sunday, he would take a taxi, early in the morning and navigate the two multi-storied buildings to pick up his orders. There would be very little conversation in each transaction and the process would be strictly limited to the exchange of cash for the bag of medicines. The entire visit would be over within thirty minutes (1 hour commute each way), and U Kyaw would be back at his shop within the same morning. On Sundays the shop would open by 9 AM, as opposed to 6 AM, to accommodate his visit to Mingalar Market.

Most wholesalers in Mingalar Market, like Sein, had operational licenses, and were legally registered to sell FDA registered medicines. Despite this, for the right connections with those they trusted like U Kyaw, wholesalers would pull out their stock of illegal or unregistered medicines, usually kept hidden. This practice was also similar at Sein, where the bulk of the unregistered medicines were kept in the neighbour's home or within the back storage space (see Chapter 5), only to be accessed when providers purchase them in bulk either through pre-orders or when they come in person. One of *Sein's* key customers, Mya Myint for instance, would place her order in the morning, leave to carry out other businesses in the region, and only be back in the evening to pick up the order. Depending on one's socio-economic status, the client-patients had more options to either access high-end clinics where branded medicines will be sold at a much higher price or go to providers the likes of Sein and Mya Myint that claimed to prioritise affordability over brand status. In such ways, among the consumers and the providers we met in the private sector, legality became a socio-economic brand status for those who could afford it (as opposed to a label that had significance for one's health or corresponding to the MOHS's implicit endorsement of good brands for better healthcare). For instance, authority figures within the medicine regulation landscape (MOHS, FDA, university lecturers) made public statements in the popular media of how 'registered' medicines are better quality, and that the 'unregistered' versions are substandard, counterfeit, and the cause of drug resistance (Si Thu Lwin, 2016; Khin Myat & Aung Shin, 2010; Shwe Yee San Myint, 2014a; Aung Phay Kyi Soe, 2019a; 2019b).

Following this, patients despite not engaging in discourses around antibiotics or AMR, discussed medicines through notions of ဆေးကောင်း *hsày kaùng* (good medicines), often referring to expensive brands of medicines which they characterised as brands from high-income contexts (for example, German *hsày* or Japan *hsày* /German medicines or Japan medicines).[72] Client-patients also mentioned wanting to access these ဆေးကောင်း *hsày kaùng* and going into central Yangon to 'expensive clinics' for such medicines if affordability was not an issue. This sentiment was expressed during the medicine interviews, as well, when participants described how they would access 'good clinics and medicines' for their children, whereas they would prefer to just go to the drug shops for themselves to save money. A few participants even mentioned only going to 'expensive specialist clinics' (referring to paediatricians) for their children and not relying on drug shops:

> 'We never do like that on our children [go to the drug shop]. We only do by prescription. Even when they have a fever, we never buy and give medicines nearby us. For medicines, even if the shops have Biogesic, if

[72] Medicines from (high-income countries) the United States, United Kingdom, and Japan for instance, are always seen as 'better' and are also more expensive than medicines from India and Thailand. These views were similar across our interlocutors, regardless of which clients they catered to and how much clinical background they had/did not have.

> the child is not getting better, we go to the clinics and give medicines to them with prescription. For children, we only listen to the doctor.' – Medicine interview female interlocutor with child

Therefore, knowledge or awareness was not the issue in the disconnect between taking ဆေးကောင်း *hsày kaùng* as advised by the FDA/MOHS even if participants were not concerned or aware with the issue of AMR. In other words, individuals were aware or agreed with the MOHS/FDA's discourses in their promotion of 'legal' or registered medicines and would themselves prefer to access such medicines. Their inability to do so, and their decisions to go to the drug shops and access potentially unregistered or 'inferior' medicines (as described by the regulatory authorities) were driven by financial constraints, and not awareness. This was not limited to individual purchases of medicines but extended throughout the informal network of medicine providers as individuals like U Kyaw, Aunty Moe, and Mya Myint who purchased and used 'illegal' medicines to lower the cost of healthcare provision for their clients or patients.

Providers like Sein or Mya Myint also harboured distrust on state discourses as discussed in Chapter 5, and often did not trust claims from regulatory figures (FDA, MOHS) remarking on the fact that regulations change haphazardly, making them unreliable. As a consequence, the providers had qualms over whether registered medicines were in fact safer for people. Aunty Moe said:

> These medicines have already been registered abroad, in more reliable and developed countries such as Thailand and India. They must therefore, be quality controlled already. It is because they are evading taxes that the government doesn't like them. They are cheaper because the registration process takes three years and a lot of money. The only difference is that unregistered medicines bypassed this process. The quality is the same. – Aunty Moe

Registered medicines were occasionally seen as more expensive due to the administrative fees involved in having them registered. In other words, unregistered medicines were seen as cheaper alternatives as they have bypassed the administrative fees, rendering them cheaper. According to Aunty Moe, 'the poor just want medicines. They don't need status symbol brands and cannot afford to pay for bureaucracy.' Aunty Moe was also convinced that 'bureaucracy fees' involved ကန်တော့ *kan táw* (pay respect) payments and payments related to နားလည်မှု *nàlehmú* negotiations (discussed further in Chapter 5), fees that were inappropriate for the poor to be responsible for.[73] In line with this thought process, Aunty Moe/U Kyaw, and other providers supplying illegal or unregistered medicines, did not see themselves as criminals breaking the law, but rather as providers tailoring their services to a population who required such medicines.

4.3.3 Pharmaceutical Distribution and Marketing

The advertising of pharmaceuticals is managed and influenced by the Ministry of Planning and Finance and the Myanmar Pharmaceutical and Medical Device Manufacturer Association (MPMDMA). The MPMDMA acted as a

[73] Literal translation is to pay respect but in the context of this thesis, *kan táw* refers to paying a bribe as a form of respect.

gate keeper in the import and distribution of 'legal' medicines, collaborating with the Ministry of Planning and Finance, and the Ministry of Commerce to set up retail price markups for medicines (Hnin Thiri Chaw, 2012; Holloway, 2014; Myanmar Healthcare Consulting, 2020; Shukla, 2012). Established in 2018, their stated mission is:

> [to become self-reliant, minimize the trade deficit of our nation by producing sufficient pharmaceuticals and medical products domestically to reduce the imports. To pursue the worthy causes by collaborating effectively amongst the members of the Association to bring forward the nation (Myanmar Pharmaceutical and Medical Device Manufacturer Association, 2021).

MPMDMA was led by locally reputable (well-known by the public, endorsed by the MOHS/FDA) pharmaceutical companies, including members from state-controlled pharmaceutical manufacturing factories (Myanmar Pharmaceutical and Medical Device Manufacturer Association, 2021). The organisation had significant control over the 'legal' medicines as it collaborated with the Ministry of Commerce to decide the mark-up prices for imported drugs (Holloway, 2014). A 2014 WHO situation analysis on medicine delivery in Myanmar states wholesalers are allowed a 5-7% mark-up, and retailers a further 5% mark-up for vitamins and 10% for other medicines (Holloway, 2014). The same report mentions how there was little to no monitoring or supervision of the prices charged. Our interlocutors in the pharmaceutical industry stated how price markups depended on 'the government and can change without notice.' The managing director of a locally well-established pharmaceutical company described taxation on medicines:

> But you know it is not… cannot fix it [taxation rates] forever because government, our Myanmar's policies, they are changing every time. They are fixing every time. So, sometimes… I said 5%. Sometime 10%. (laughs) There might be some special case like if the government needs for HIV, some NGO products, maybe they will extend [reduce taxes]. In special case only. But products that we have, have already gone through tax. We must renew tax. We have around 250 products now. Previously, there was 500 products, but as Sun Pharma is moving from our company to elsewhere. – Managing director of private pharmaceutical distribution company, A

Interlocutors also mentioned that medicine prices fluctuated quite dramatically whenever the US Dollar to Myanmar Kyat exchange rate hiked, a process that can occur suddenly or when a product is discontinued for whatever reason upstream.

We were not able to source the appropriate regulation or guideline on pharmaceutical advertising. Our interlocutors in the pharmaceutical industry stated how only OTC medicines can be included in public advertisements. Antibiotics were classified as POM medicines and were in theory not allowed to be in public advertisements. Having heard this statement, we (JSB, YKZ) attended a pharmaceutical exposition in April 2019, hosted by members from the FDA and the MPMDMA. The exposition was held at တပ်မတော် *Tatmadaw* Hall on Pyay Road, a public venue attended mostly by medical doctors, yet also open to unaffiliated individuals. We were able to gain access without

needing to show verification of our institutional or professional identification and were provided with twenty to thirty advertisements on different antibiotics by attending companies who were presenting their products at the exposition. The antibiotic advertisements (Figure 29-30) appeared to be public in that the advertisements were freely handed out to everyone who attended regardless of their professional backgrounds; however, the event was mostly attended by clinicians and pharmaceutical companies through the MOHS/FDA endorsed space. In addition to this, our interlocutors with access to public hospitals mentioned seeing posters of antibiotic advertisements within public hospitals (for example, Yangon General Hospital). We (CLH, JSB, YKZ) ourselves did not have fieldwork access to public hospitals and did not see antibiotic advertisements within such spaces. Our fieldwork was also concentrated on private clinics and drug shops where we did not come across public advertisements (posted in a public space) of antibiotics; however, Aunty Moe and U Kyaw often received advertisements in the form of flyers, booklets, or gifts (for example, calendars) from pharmaceutical sales representatives where advertisement on antibiotics would be included along with other medicines (Figure 31). These observations suggest antibiotic advertising rules and regulations to be lax, in practice, with the notion of 'no public advertisements' being open to interpretation for those involved in the industry. Confirming this conclusion, an interlocutor from the pharmaceutical industry described his understanding of antibiotic advertising, saying how the regulations can be changed due to 'faults [implying an intentional mistake] of our FDA':

> R: Some OT… there are 2 types of medicines: Over the Counter (OTC) and prescription medicines. So, prescription medicine is nearly 5%, Nearly around about 5%.
>
> Q1: And OTC?
>
> R: OTC 15 %.
>
> Q1: Oh, OTC is high because they produce higher sale or something like that.
>
> R: Yes. Yes.
>
> Q1: So, Antibiotics is OTC or prescription medicines?
>
> R: OTC is not prescription? We have more mainly prescription pharma products. Very few… only 2% of our products are OTC.
>
> Q1: And Antibiotics, are they OTC? Prescription? Which one?
>
> R: Antibiotics, actually prescription. But you know, previous faults of our FDA, there are some 5, 10 brands which should be prescription medicines antibiotics but.. because of their some… Faults, it became OTC products. Like you might find advertisement of cefixime/cetirizine [? Voice unclear] from … which pharmaceutical… I forgot. Cefixime/cetirizine [? Voice unclear] is prescription product. But they were advertising everywhere because they got as OTC certificate.
>
> Q2: If prescription, they cannot advertise?
>
> R: Yes. You cannot advertise. Not at all.

Respondent: managing director of a prominent local pharmaceutical distribution company, Q1: CLH, Q2: YKZ[74]

Figure 29. Marketing advertisement for Vigentin (Amoxicillin and Clavulanic Acid) which was being distributed at the pharmaceutical exposition to all passer-by

[74] Stated by several interlocutors in the pharmaceutical industry as a key distributor in the market. Further details have been excluded for the purposes of maintaining anonymity.

Figure 30. Marketing advertisement for Quinvonic which was being distributed at the pharmaceutical exposition to all passer by

Within the marketing of medicines, I noted two types of pharmaceutical sales agents: 'medical representatives', and 'non-medical representatives'. Medical representatives had a clinical background and target other clinicians, while the non-medical representatives focused on the wider population including drug shops, markets, and smaller pharmacies. Common targets for medical representatives were senior medical doctors in teaching positions or management positions at public hospitals, such as hospital heads, specialists, and professors who were responsible for junior medical doctors. This is because the medical and education systems in Myanmar operate through a hierarchical top-down approach where the decisions of senior staff cannot be easily challenged by junior staff. Once a senior staff decides to use a certain brand of medicine, junior staff will be pressured to follow-suit as described in the quote below. A junior doctor recounted his experience prescribing 'CS-1' or Cefoperazone from Zifam pharmaceuticals during his residency training:

> We more commonly call drugs by their brand names rather than the ingredients and by company name… In our hospitals and in the private hospitals too, the doctors only call it by the brand name, the company's brand name. When you write down the real name like Ceftriaxone the doctors [senior doctors] get angry. It's because they sometimes get commission from the companies. They can't take money, but they get many benefits like the companies pay for their conferences to Thailand, buy a new air-con for them. So, they use certain brands over others. The companies also donate things to the hospitals. The pharmaceutical companies host and pay for the CMEs [continuing medical education], stays in hotels, free lunches. Many of these doctors [do not think]… that this is bad, unethical, [because] the hospital might lack funding to buy medicines or do certain things.' – Junior Medical Doctor (name excluded to protect identity)

The senior doctor was able to influence the junior doctors, getting them to use CS-1, and refer to it by its brand name. Most medical doctors working within the public sector also had their own private practices to supplement their incomes. Public salaries for medical doctors, ranged between 100-300 USD a month and many either switch into other professions (for example, as pharmaceutical sales representatives), work for private hospitals, or start their own private practices. A senior doctor that required their juniors to use the CS-1 brand in the public hospital would also inadvertently end up reinforcing the behaviour beyond this specific hospital, and into the domain of the private sector. Targeting the heads of hospitals was an effective marketing and promotion strategy, as the behaviours these individuals endorsed (for example, using CS-1 while referring to the specific brand name) implicitly ended up being replicated in the private sector, because all medical doctors undergo mandatory residency training in the public sector first.

Figure 31. Pharmaceutical advertisement from a sales agent who regularly visits Sein (photo taken by JSB in February 2019)

Marketing tactics also involved providing direct benefits for healthcare providers and public hospitals.[75] Our interlocutors, medical doctors working in public hospitals, mentioned seeing their hospital receive large donations from certain companies, such as the donation of air-conditioners, or sponsorship for continuing medical education. Public hospitals also used a tendering process to select the pharmaceutical companies that will receive an agreement with the hospital to supply medicines. Winning the tender is profitable beyond the direct sales of medicines to that

[75] Public hospitals are targeted as the medical education system is still very centralised/managed by the Ministry of Education. One can only practice medicine after going through state education (exceptions were available but rare). Medical doctors that private hospitals vie for, usually have senior positions in the public healthcare system. In other words, a medical doctor gains fame through being part of the state system and getting more credentialed/promoted through this pathway. Once in a senior position (e.g. a professor), private hospitals will compete with one another for the individual's time. In such ways 'famous' doctors are often found doing shifts in reputable private hospitals outside of their primary work for a public hospital.

specific hospital, because the company is also able to promote their brand through the senior medical doctors at that hospital. As described earlier, a key promotion strategy is one that begins from a central public and/or teaching hospital as this would establish medicine use patterns from the top of the provider chain, to be then reinforced in the smaller clinics and eventually the private sector.

Beyond direct marketing through offering benefits (donating air-conditioners, paying for conferences), we (JSB, YKZ) saw marketing through negotiated benefits in the form of နားလည်မှု *nàlehmú* agreements between healthcare providers and pharmaceutical sales representatives. JSB saw one of the general practitioners at Mya clinic negotiating prices of medicines for chronic liver disease for one of her patients who was not able to afford the medicines. The general practitioner telephoned the sales representative and managed to reduce the price of the medicines from 3.5 lakhs (350,000 MMK or 200 USD) to 3 lakhs (300,000 MMK or 230 USD) and asked her patient to purchase it directly from the agent as opposed to the clinic's pharmacy counter or elsewhere. The general practitioner was proud of her ability to manage this negotiation and mentioned to her patient that the market price outside for this product could be up to 6-8 lakhs (6 to 800,000 MMK or 400 USD to 530 USD) without such negotiations. In exchange and as part of the နားလည်မှု *nàlehmú* agreement, the general practitioner agreed to start using a different product that was being sponsored and marketed through the same agent. This နားလည်မှု *nàlehmú* agreement benefited all parties as the patient was able to receive the medicines at a subsidised cost, the clinician was able to satisfy her patient, and the medical sales representative was able to successfully promote a different product that was more profitable over the course of time at the expense of reducing the price of medicines on a one-off basis. In such ways, informal negotiations were part of everyday lives in the ways medicines were marketed, distributed, and supplied to individuals. Due to the fluid and mutually beneficial nature of နားလည်မှု *nàlehmú,* I have discussed it as an act of care (see Discussion 7.5). Moving further up the supply chain, we conducted interviews with pharmaceutical companies to understand how medicines (with a focus on antibiotics) are imported and distributed throughout the country.

4.3.4 Pharmaceutical Import and Manufacture

Myanmar's pharmaceutical market relies on imported medicines as opposed to manufactured, to meet the demands of the population. Myanmar has three state owned factories that manufacture medicines under the Ministry of Industry with a domestic market share ranging between 3% to 10% (Japan International Cooperation Agency (JICA), 2013; Myanmar Pharmaceutical and Medical Device Manufacturer Association, 2021). Locally manufactured medicines meet less than 20% of the country's needs with most medicines in the market having been imported from elsewhere, mostly from India and Thailand (Holloway, 2014). 'Branded medicines' as our interlocutors refer to them, which include brands like Amoxil from the United Kingdom based GlaxoSmithKline, and Amoxi-Denk from Germany based Denk Pharma, were on average several times more expensive than Indian or Thai brands and were mostly found in larger private clinics and hospitals. In Sein, and in Hlaing Thar Yar, most brands we came across were Indian generics. Indian medicines represent the largest proportion of imported medicines in Myanmar, making up 40% of all imported medicines (Chauhan, 2017; Hnin Thiri Chaw, 2012; Shukla, 2012). Yangon and Mandalay, the two largest cities in

the country, are the hubs for pharmaceutical distribution, being the base for most companies and wholesale markets. Over 60% of all drug sales have been noted to take place in these two cities.[76]

Although the import and distribution businesses (as opposed to manufacturing) dominate the Myanmar pharmaceutical industry, there were attempts (negotiations, joint ventures with foreign partners) to increase local production of medicines by expanding the manufacturing sector. These attempts occurred during the economic liberalisation or 'quasi-democratic period' (2011/2012 – 2021) and appeared to have ceased with the economic recession (pull out of foreign investment), instability brought on by the covid-19 pandemic, and with the 2021 military *coup d'état*. Prior to the 'democratic transition', most businesses in Myanmar were nationalised, with limitations on foreign investment opportunities due to economic sanctions from the United States, the European Union, and the ASEAN (Turnell, 2011).

The liberalisation of the economy following the 2011/2012 reforms and the subsequent easing of restrictions and sanctions brought in foreign investment, resulting in a number of joint ventures for the development of pharmaceutical manufacturing plants (for example, the joint venture between Phapros Tbk from Indonesia and Medi Myanmar Group) (Purwanto, 2017; Thiha, 2017). Based on statements from the Thilawa SEZ Management Committee (the organisers of the Thilawa Special Economic Zone/an industrial zone located in the South-East of Yangon) where the majority of the new manufacturing plants were being built or proposed to be built, two new manufacturing plants (Zifam Pyrex and Alidac Pharmaceuticals) were registered as approved investors as of 2016 (Thilawa SEZ Management Committee, 2015).[77] Our fieldwork, in April 2018, led us to Pacific Pharmaceuticals in Thilawa, who mentioned that they are still in the process of officiating the approval process (Thiha, 2017). Our interview interlocutors from the pharmaceutical industry also mentioned another manufacturing plant in Pyin Oo Lwin, RVK Meditech Co, Ltd, a joint venture between a Singaporean company and two local companies. A few more joint ventures were reported in the popular media, such as the agreement between Indonesian pharmaceutical company Phapros Tbk and the Myanmar based firm Medi Myanmar Group (Purwanto, 2017). Counting the number of pharmaceutical manufacturing plants listed from all the various sources (fieldnotes, interviews, media and documentary data) we collected data from, by 2020, when we concluded this fieldwork, we came across fewer than ten new pharmaceutical manufacturing plants in Myanmar in addition to the pre-existing state-owned plants.[78] Several of these manufacturing plants were also still in their 'trial phase' as mentioned by our interlocutors, and are only starting to manufacture a few select products.

[76] I have drawn on grey literature for this section as the majority of the reports written on the Myanmar pharmaceutical industry were published as market research reports or independent consultants.

[77] This government website (officially stamped with the government logo and says 'official website') appeared to be last updated in 2015 (looking at the approval dates of the investors). With the military coup, this information has most likely changed/not updated. This report appeared to have been last updated in 2017.

[78] A central source with this information has not been made available yet. Where available, the Thilawa SEZ management committee website, information is often incomplete. To quantify the number of new manufacturing plants that were being proposed, we asked stakeholders and compiled data from the various news/other sources published on the topic.

> Myanmar is recently growing as a country but even then, 80-90% of the materials need to be imported from either India or China. There are also some raw materials that are imported from Europe. However, this is less common as they are more expensive. We cannot manufacture as easily here because Myanmar doesn't have the technology or techniques yet because it [the pharmaceutical manufacturing sector] has only started to grow since the last two years. For instance, there are three layers to manufacture drugs. The first layer, the distribution, is OK here in Myanmar. The second layer, the manufacture of medicines based on imported raw materials, is somewhat OK but not that well developed here. The third layer, manufacture of medicines from raw materials found in country, is not here in Myanmar. China and India [referring to imported medicines from China/India] are the major players in the pharmaceutical market because of the quality and price, good quality for lower price. Europe comes in third but it's less popular because the costs are high. – Expatriate Senior Staff from a Pharmaceutical Manufacturing Plant

Our expatriate interlocutors (individuals who were foreign investors themselves or had a direct link to the former) from the pharmaceutical industry mentioned how foreign investors were cautious with their investments in the pharmaceutical manufacturing sector and characterised Myanmar as a country with 'potential' but also 'unstable' and 'new'. This statement was made prior to the further instability brought about by the covid-19 pandemic and the 2021 military *coup d'état*. The military *coup d'état* caused several foreign investors in other industries (e.g. Suzuki Motor corporation) to pull out from Myanmar with the most recent (announced the termination of its activity and withdrawal in January 2022) being Total Energies who had been in the country since 1992 (Ando & Nussey, 2021; Total Energies, 2022). Following this trend, the pharmaceutical manufacturing industry is unlikely to undergo a different outcome with hopes and imaginations for an increased local production likely to remain unfulfilled.

Our interlocutors mentioned expanding the manufacturing sector (prior to *coup d'état*) as a positive step towards increasing the supply of medicines to meet the population's demand. A lack of a production capacity brings about 'more instability', 'price fluctuations due to the reliance on the USD exchange rate', and spontaneous product discontinuation, which may result in adverse consequences for people who rely on that specific medicine. Interlocutors described how certain medicines can disappear off the market, without prior notice, depending on disruptions to the supply chain. The supply chain process was described as 'expensive' and 'long', requiring several administrative procedures dealt with by ပွဲစား *pwèza*. Most companies preferred to use a cost, insurance, and freight (CIF) approach to importing medicines from foreign manufacturers, where the manufacturer is responsible for most of the supply chain process. An owner of a local pharmaceutical company described this approach in the following manner:

> When we agree on the payment or price of the drug, we buy it with CIF – Yangon (cost insurance freight – Yangon). So it means, the foreign company is responsible for everything until the drug reaches Yangon. They also pay for the costs related to registering the drug. Sometimes, we have to send samples of the drug to Nay Pyi Taw by plane. The manufacturer pays for this. When the quantity is low, they transport the drugs by plane. When the quantity is much higher, they come by ship. For neighbouring countries, they usually use containers and trucks. – Owner of a local pharmaceutical distribution company

ပွဲစား *Pwèza* are also employed in this process to manage the regulatory aspects which include sending samples to Nay Pyi Taw and filling in the necessary paperwork. The process was described as time consuming and expensive; however, our interlocutors had positive comments mentioning how the FDA has improved in its capacity, and that they were willing to undergo a longer and more expensive process to bring in quality assured medicines into the country. To continue:

> Registering a new drug can take between one and a half to two years. We begin with the assessment fee to register the drug at the lab for assessment which can cost around 3 lakhs [200 USD]. Then we pay the lab fees which can range from 80000 kyats [52 USD] to 4 lakhs [263 USD]. This depends on the 'generic' [the ingredients in the drug]. Some ingredients are more expensive to test than others. Then we pay for the simple import permit process which is the registration fee itself. This costs around 5 lakhs [500,000 MMK or 329 USD]. Then we have the 'follow up fees'. This is not for the government. This is for the ပွဲစား *pwèza* or the broker who follows up and ensures that the approval will come out. This is not the 'official process'. The agent fees can be anywhere between 400-500 USD per drug. In the past, all this used to be very cheap. Around 3000 – 4000 kyats [2-3 USD] per drug. But now the FDA has a new lab, and everything is stricter so of course it will be more expensive too. Before 2008, this entire process was manual, and you have to go in person. Now they have an online system. – Owner of a private pharmaceutical distribution company

Concerns over instability such as fluctuating exchange rates, disruptions to the supply chain, and withdrawal of foreign investment were raised as themes during our interviews. The ability to locally manufacture medicines in a capacity that reduces the reliance on import was stated a key factor to reduce and stabilise the price of medicines, also making registered medicines more accessible and less expensive. Unless stability is achieved, registered medicines will remain a rare commodity, generally available in more well-infrastructured spaces like the main cities, where there are more people who can afford such medicines, and where the distribution networks are at its strongest. Even within a main city like Yangon, we already found a disparity in accessibility between places like central Yangon and peri-urban Yangon, Hlaing Thar Yar. As previously argued, registered medicines or ဆေးကောင်း *hsày kaùng* /expensive brands were less likely to be present in peri-urban and poor neighbourhoods where there was less demand for such medicines. Consequently, the reason for why the poor access unregistered medicines (contributing to drug resistance as per the FDA/MOHS's public discourses) goes beyond a single factor like individual awareness and is multifactorial. For instance, drawing on our ethnographic work in Yangon alone, I have highlighted how regulation issues, instability, and a limited capacity for local manufacturing restrict the availability and accessibility of so called 'higher quality registered medicines'. On a national scope, even more factors will be bound to influence medicine supply and delivery.

The collapse of the regulatory and healthcare systems due to the recent political instability, civil disobedience movement, and the health burdens brought on by the covid-19 pandemic, implies a worse outlook for the accessibility of registered or quality assured medicines. As evidenced during the July 2021 covid-19 outbreak, most individuals resorted to being fully responsible for one's own healthcare and through informal means, purchasing oxygen tanks

and medicines on the black market, relying on 'Myanmar methods' (boiling traditional herbs and inhaling the steam to improve breathing), or the use of certain herbs when unable to afford oxygen. The practice of accessing unregistered medicines was already dominant for the poor (the majority of the population), prior to these catastrophes, when Myanmar was in a relatively more stable economic climate. Due to the current compounded increase in both political and economic instability, unregistered medicines and the black market may most likely continue to grow as a source of supply and sustenance for the majority. Informal mechanisms like နားလည်မှု *nàlehmú* and ကန်တော့ *kan táw* or acts of care to enable function within dysfunction, may thrive again as it occurred during the pre-2011 totalitarian period.

4.4 Enabling function within the pharmaceutical industry

4.4.1 The role of *pwèza*

I have briefly introduced ွဲစား *pwèza* in the earlier sections as intermediaries that help transfer regulation into practice. I came across two categories of ပွဲစား *pwèza* during our tracing of the pharmaceutical supply chain. The first type was a ပွဲစား *pwèza* whose public identity or role was already clearly established as a ပွဲစား *pwèza*. The second consisted of individuals who took a temporary role of a ပွဲစား *pwèza* under certain circumstances. For example, individuals who self-identified as ပွဲစား *pwèza* often had full-time positions where their sole or most of their roles and responsibilities involved negotiating regulations for the involved parties. A ပွဲစား *pwèza* in the pharmaceutical industry can be hired to manage all responsibilities related to the application and registration of medicines with the FDA. Our interlocutors in the pharmaceutical industry mentioned having a percentage or a set fee allocated for a ပွဲစား *pwèza* for the registration of medicines. This fee would vary depending on how 'complicated' the process was. According to our interlocutors, importing a POM medicine like a cancer drug would require higher ပွဲစား *pwèza* fees than an OTC medicine, as the former would allegedly involve more expensive administrative fees due to more testing involved.

All our interlocutors from pharmaceutical companies characterised the new developments within the FDA as positive, being in place to work towards ensuring the import and registration of good quality medicines.[79] Despite these statements, registering or legalising medicines, in practice, came with its own opportunity and financial costs such as the time taken, fees required, and the connections needed. Due to this, a need for ပွဲစား *pwèza* (informal brokers), that have the knowledge and the skills to navigate this transitioning bureaucratic landscape became important brokers who negotiate or help enact regulations in practice.

Beginning with manufacturing and import, the legal sector relies on ပွဲစား *pwèza*, informal brokers, for the smooth processing of the relevant approvals and permits. Joint ventures must be established with the relevant connections for one to even receive approval to manufacture medicines in Myanmar. These connections are commonly

[79] It is important to note that several of these 'registration' bodies including the FDA's Nay Pyi Taw facilities were only developed as formal bodies after 2015. The FDA medical testing laboratory in Nay Pyi Taw received the US based International Standard Operation certification in 2017. Prior to this, the FDA was under the MOHS, and had even more limited capacity to register medicines, with the registration processes handled with much reduced transparency.

managed by agents or ပွဲစား *pwèza* who have the relevant networks and knowledge on how to best process things in an efficient and effective manner. During our fieldwork focusing on the pharmaceutical industry, we came across two types of ပွဲစား *pwèza*. ပွဲစား *pwèza* who took upon a permanent identity, and *pwèza* who I describe as temporary ပွဲစား *pwèza*. The first type of ပွဲစား *pwèza* usually works in designated sectors or lines of work, such as property sales, pharmaceutical registration, and car registration. For example, the agents that were hired per medicine to manage the registering of a specific drug, or the agents that negotiate permits for the pharmaceutical manufacturing plants, had the permanent identity of a ပွဲစား *pwèza* because they were hired specifically to negotiate bureaucratic procedures.

We came across the second type of ပွဲစား *pwèza*, the temporary ပွဲစား *pwèza*, during our participant observation. These are individuals who have other roles, but temporarily take up the role of negotiating rules/regulations/prices as a ပွဲစား *pwèza* when circumstances initiated the process. The general practitioner who negotiated the price of the medicines down for her patient with chronic liver disease may be considered a ပွဲစား *pwèza*, as she decided to partake in a negotiation with the pharmaceutical sales representative. In the FDA raid example, Aunty Moe's brother who worked at the public hospital acted as a ပွဲစား *pwèza* for her shop by helping with the license process. Aunty Moe did not necessarily have to pay her brother a ပွဲစား *pwèza* fees as they were related, but she may have offered other benefits. For instance, Aunty Moe took care of her brother's daughter during the day and included her in the tutoring sessions she paid for her own children. Her brother had a full-time position as an administrative staffer on an infectious disease project within the public hospital and is not a permanent ပွဲစား *pwèza*. In such ways, one can be placed in the position of a temporary ပွဲစား *pwèza* to negotiate on behalf of clients or family members.

The role and work ပွဲစား *pwèza* engage in have been noted in other sectors/industries such as property sales and urban planning (Rhoads, 2020). I first heard of ပွဲစား *pwèza* in the pharmaceutical industry when the owner of a pharmaceutical distribution company described how he used special agents or in Burmese ပွဲစား *pwèza* who were paid a 'follow up fee' (service priced per item/drug) to follow up with the regulatory authorities and the manufacturer to ensure smooth processing of the registration process. I heard the term ပွဲစား *pwèza* again during our interviews with expatriate managers from the pharmaceutical manufacturing plant. When we asked who was handling the permits for the factory, the two managers we interviewed (both Indian expatriates who were relocated to Yangon to oversee the process) mentioned 'local agents' in English and stated that they themselves were unfamiliar with the bureaucracies involved and were not able to answer the questions related to the topic.

ပွဲစား *Pwèza* appeared to regulate and retain certain forms of knowledge in relation to regulations, permits, and negotiations related to the former two. When we probed this topic further with our interlocutors, and with other scholars who have discussed ပွဲစား *pwèza* in Myanmar, we found that in most cases there was no clear educational or professional trajectory to become a ပွဲစား *pwèza*. One 'falls into the line of work due to being street-smart' and the ပွဲစား *pwèza* we met were often pharmaceutical sales agents themselves or clinicians who 'got involved'. Corroborating my own lived experiences in Myanmar where I resorted to using a ပွဲစား *pwèza* to obtain a driving license, other Burma

scholars who have written on the topic stated how ပွဲစား *pwèza* can be found in any sector that involves government relations between multiple parties, particularly if there is bureaucracy involved. Further examples include, car ပွဲစား *pwèza* that handle the sale and registration of car permits, immigration ပွဲစား *pwèza* that assist with visa applications, and real estate ပွဲစား *pwèza* that help with tenancy agreements or property sales.

Despite their prevalence, ပွဲစား *pwèza* are also sometimes spoken of or viewed negatively in colloquial discourses for being 'cunning' and 'extractive' as they know their niched brokering skills are necessary to 'get things done'. ပွဲစား *Pwèza* can increase their rates without notice and may charge 'as they please' depending on how sought after they are, particularly if they are involved in more specific or bureaucratic processes where they have become indispensable. For instance, a ပွဲစား *pwèza* with a specific set of connections to who they have access to, may charge exorbitant fees for their services. Due to the informal nature of hiring ပွဲစား *pwèza* and settling payments with them (given negotiated fees as opposed to set published rates), the process of selecting ပွဲစား *pwèza* occurs best through personal referrals or through someone who has an established reputation in the industry to increase the probability of hiring a 'good' ပွဲစား *pwèza* to efficiently manage the process.

ပွဲစား *Pwèza* act to broker the rule of law or enact regulations in Burma/Myanmar, and are not limited to pharmaceutical industry regulations alone. ပွဲစား *Pwèza* can be a fluid identity, as either permanent or temporary. They often act as intermediaries between the 'legal' and the 'extra-legal', making things function within systems or processes that are (dys)functioning, assisting, for example, where the process is taking too long, or the paperwork too complicated. The specificities of how they enable functionality depends on individual circumstances, with the knowledge of how to enable function being restricted to the ပွဲစား *pwèza*. Aunty Moe and the pharmaceutical industry representatives we interviewed were not familiar with the process of applying for a registration license for their respective factories/shops. This bureaucratic complexity further enables a need for the role of ပွဲစား *pwèza* in Burma/Myanmar society regardless of how 'formal' or 'informal' the processes are. Advancing from the discussion of the terms 'legal', 'illegal', 'formal', and 'informal', I next contextualise extra-legal practices in everyday lives within Burma/Myanmar society.

4.4.2 Extra-legal practices to support the 'legal'

The 'legal' and 'illegal' dichotomous framing does not work in practice in Burma/Myanmar. Individuals like ပွဲစား *pwèza* or negotiation approaches like နားလည်မှု *nàlehmú* and ကန်တော့ *kan táw* fall in the extra-legal space of not necessarily being 'legal' or in this sense 'formal' regulations/regulatory processes/approaches yet are still widely established and enacted upon by all parties involved (including the 'legal' itself such as established foreign manufacturers aiming to get 'legal' permits for their factories in Myanmar). Despite this observation, the 'legal' on paper avoids conversations about the extra-legal (ပွဲစား *pwèza*, နားလည်မှု *nàlehmú*, ကန်တော့ *kan táw*).

'Legal' pharmaceutical expositions like the one we (JSB, YKZ) attended were also predominantly limited to those at the top of the healthcare hierarchy, such as medical doctors from reputable clinics, private hospitals. U Kyaw,

Aunty Moe, Mya Myint, and none of their colleagues/contacts were aware of such events being hosted in central Yangon despite such events being wide publicised in social media (also how we found out). As mentioned previously, the events were made public, and we were able to walk in without needing to show identification, albeit individuals like U Kyaw and Aunty Moe did not know of/were uninterested in the display or marketing of what they understood as 'expensive medicines'. The medicines at such events were endorsed and promoted by regulatory authorities as senior members from the FDA/MOHS were in attendance, even giving a speech on the topic of promoting safe and effective medicines. Nevertheless, in practice such events and discourses appeared to be disconnected from the everyday lives of the poor, occurring in, and supplying 'legal'/'safe'/'expensive' medicines 'which will prevent AMR/drug resistance' to the more privileged spaces and residents of Yangon.

Furthermore, even when interested or showing a desire to become involved in the so called 'legal' sector, individuals like Aunty Moe and U Kyaw had other factors actively excluding them from being able to participate. I asked Aunty Moe if she wished to attend a course (a three-month course on pharmaceutical distribution and sales) provided by the MPMDMA to which she responded with enthusiasm that she would be well interested to expand her own knowledge. Hoping to make this a possibility, I enquired about the registration process for this course and was informed that the participant would need a state-exam certification stating that they have successfully passed the 10th standard/grade school. This automatically disqualified and excluded both Aunty Moe, U Kyaw, and myself (as I did not go to state school) from being able to attend the course (only JSB was qualified). In such ways, the 'legal' entities and spaces were restricted to those not already part of the system. In addition to regulatory or bureaucratic exclusions, a course like this also monetarily excluded the poor. The course was considered to be expensive for the likes of U Kyaw and Aunty Moe (300,000 MMK or 200 USD), costing more than the monthly wage (minimum wage) of an average worker in the industrial zones of Hlaing Thar Yar.

U Kyaw and Aunty Moe were 'legal' providers actively engaged in the medicine industry for sixteen years. Yet because they did not possess state qualifications, they were unable to attend the pharmaceutical course, and were excluded from expositions promoted and targeted among expensive or established private clinics and hospitals. Although U Kyaw and Aunty Moe and the rest of their colleagues in Hlaing Thar Yar were not explicitly excluded the way Aunty Moe was while registering for the course, they were not aware of such events occurring, nor did awareness raising, or other promotional materials reached places like Hlaing Thar Yar. The drug shopkeepers in Hlaing Thar Yar, in practice, were therefore implicitly excluded from participation. In such ways, the 'legal' draws support from the 'extra-legal' or at times the 'illegal' activities/practices, but also works in ways where it isolated itself while excluding the others (also discussed by Burma studies scholars Cheesman, Prasse-Freeman – see Chapter 2). As a consequence, awareness raising for AMR or implementation of AMR regulation through the 'legal' channels in Myanmar risks reproducing the above-mentioned pattern, potentially rendering the original aims and objectives of the policy or regulation ineffective while also bringing harm to those in the extra-legal/illegal spaces that are already made vulnerable by both precarity and the burdens of paying 'legal' fees (နားလည်မှု *nàlehmú* or ကန်တော့ *kan táw*).

I have described above how the 'legal' network of medicines passes through the hands of manufacturers, distributors, pharmaceutical sales representatives, and the providers and their clients. The 'extra-legal' network on the contrary functions through the shadows, alongside the legal market as cheaper alternatives to the legal medicines.

These medicines were purchased directly through နားလည်မှု *nàlehmú* arrangements in Mingalar Market, such as when U Kyaw placed orders in advance and efficiently collected them each Sunday with little to no conversation during the process. As argued in the previous sections, the 'legal' appears to exclude the 'extra-legal' in many ways (attendance to the pharmaceutical exposition, Aunty Moe's inability to register for the pharmaceutical sales course). In practice, we found the 'legal' to be supported by the 'extra-legal' such as when ပွဲစား *pwèza* and နားလည်မှု *nàlehmú* /ကန်တော့ *kan táw* arrangements enable things to function whether they are bureaucratic functioning (attaining registration licenses, permits) or the functioning of everyday lives (supplying affordable medicines).

Rather than a dichotomous framing of the two, where one works in opposition to the other, such as how the MOHS and the FDA described 'illegal medicines to be contributing to drug resistance', I argue for a more co-dependent framework. Drawing on McFarlane and Roy's work on urban development, the scholars conceptualise the relationship between the formal and informal 'as a bricolage…. a relation of power where the formal sphere engages with the informal and mobilise informal practices when it desires to do so' (McFarlane, 2012). Furthermore, Roy describes how in India the 'legal elites' can use or suspend the law to enable violation of new developments and state that 'the law itself is rendered open-ended and subject to multiple interpretations and interests' (Roy, 2009, p82). Roy concludes with the description of 'the law as a social process' and as 'idiosyncratic and arbitrary as that which is illegal' (Roy 2009, p80). I have used the term extra-legal describe the practices that occur outside of the 'legal' in our data, as they are not necessarily illegal/acknowledged by everyone as the norm but are preferred to be kept under the table. The 'legal elites' as defined through Roy in the pharmaceutical industry (MPMDMA, FDA, MOHS) develops regulations and bureaucracies involved in administering such regulations. Despite this, the 'legal elites' in practice also tacitly enable the law or regulations to be suspended under the right arrangements through ပွဲစား *pwèza*, နားလည်မှု *nàlehmú*, and ကန်တော့ *kan táw*. Furthermore, they acknowledge the necessity of the extra-legal such as when when ပွဲစား *pwèza* and their work are accepted and normalised within bureaucratic matters. Despite this framework of co-dependence that occurs in practice, policy implementation in Myanmar, including early AMR regulation, functions through the 'legal'/'illegal' discourses on paper. This disconnect between the legal and illegal–may result in implications for policy in practice as policy is channelled through the legal. For instance, punishing the 'illegal' or the 'extra-legal' for not using registered medicines may disrupt the livelihoods they support, and the supply of affordable medicines they provide to clientele. Any policy recommendation or regulatory intervention must, therefore, be attuned to the workings of the extra-legal and an understanding or contextualisation of the practices/livelihoods they are supporting.

To conclude, Chapter 5 traces medicines and antibiotics through the pharmaceutical supply chain and describes the workings in this network. Among these workings, I draw attention to extra-legal practices including ပွဲစား *pwèza*, နားလည်မှု *nàlehmú*, and ကန်တော့ *kan táw* and discuss the disconnect between the legal and the illegal and the implications this may have for policy in practice. The next chapter draws on an ethnographic vignette which I refer to

as the FDA raid for to examine antibiotic regulation in practice and the consequences of the previously mentioned disconnect.[80]

[80] The FDA raid is a key incident at *Sein* where shop owners were unexpectedly inspected and penalised for the sale of unregistered medicines.

Chapter Five: Antibiotic regulation in practice[81]

5.1 A Food and Drug Administration raid

One morning early in 2019, I dropped JSB off at Sein ဆေးဆိုင် *hsày saing* (Sein medicine shop) and went to meet up with the TLM team for its health education programme in a nearby ward. JSB sent me a message an hour into her observations, mentioning an unusual situation at the shop. Several boxes of injectable vitamins were missing from the shelves, and U Kyaw was shifting them and other medicines into a storage space at the back of their shop. U Kyaw had already shifted boxes of medicines into their neighbours' homes the day before. On the left of Sein is a residential home; the owners have established a private loan business and have kindly allowed U Kyaw to store medicines within their home. On the right of Sein is a decrepit shack. Aunty Moe told us that the shack used to be a public health centre which ran out of funding and closed as a result. She heard a rumour that it will be re-opened 'soon' and that someone who is friends with ဆရာမ *hsayama* (a senior state official who I abbreviate as 'the SO' in this chapter) won the tender process and has the permit for the space. She heard this rumour a while back, but so far the shack had remained empty. U Kyaw and Aunty Moe used the space for storage, and left boxes of medicines in it. News of an FDA inspection was circulating in the neighbourhood. We (JSB, YKZ) later learned that U Kyaw has already shifted most of the medicines from Sein into the two neighbouring spaces. Aunty Moe's brother worked as a program coordinator at the Hlaing Thar Yar public hospital, and was aware of the impending FDA inspections. These inspections occurred through a rota, developed beforehand by an FDA team, but carried out in practice with a team of regional/township staff. The FDA did not have a township specific headquarters, and relied on regional/township staff to navigate the streets and carry out inspections. For example, Yangon City Development Committee relied on township staff from the hospital.

[81] Chapter 5 has been adapted from a published co-authored publication. The publication has been adapted to fit the book-style format of my thesis (with the methodology section removed, implication section expanded). CLH and YKZ drafted the manuscript together. YKZ and JSB did the fieldwork. Only JSB was present on the day of the FDA raid. She provided live updates through instant messaging, and we (YKZ, JSB) discussed the event and wrote fieldnotes together. JSB and YKZ collaboratively collected more data (interviews, participant observation, media and documentary analysis) after the FDA raid to help understand the event.
Link to publication: https://doi.org/10.1080/09581596.2021.1943314

Figure 32. Sein medicine shop (hidden back storage space) (photo taken by JSB in January 2020)

Despite news of an FDA inspection and having a large quantity of 'illegal' medicines (unregistered with the Myanmar FDA), Aunty Moe was not anxious, because she later told us they had evaded such inspections before, often by closing their shop early. Unexpectedly, on that day, the FDA vehicle was parked right in front of Sein, and closing the shop was no longer a possibility. Aunty Moe remained composed, as most of their medicines had already been moved to the neighbouring spaces. Nonetheless, she continued her regular sales. For instance, a customer came and asked her for Mixagrip. Aunty Moe sold the item, but said: 'You know, today FDA is checking in the market and this one (e.g. Mixagrip) is illegal. You can be arrested. So, be careful.' Shortly, another customer came and asked her for စပ်ဆေး *sat hsày* (mixed medicines, an assortment of medicines, usually 3-4 pills per packet) as he was travelling and had pain when urinating. Aunty Moe initially refused, saying that the FDA is here in the market. The customer was adamant in asking for his medicines, and she complied, not wanting to lose a regular customer. Just as she was preparing စပ်ဆေး *sat hsày*, which included antibiotics, an FDA van arrived, and eleven government officials got out and surrounded the entrance of Sein. Without giving her chance to say anything, an FDA inspector sternly reprimanded her:

> You are mixing drugs? Are antibiotics included in here? [he looked at the packet] …Never sell antibiotics without a prescription. Antibiotic resistance is happening because you are selling them. This was recently announced by MOHS. They are now drawing up the policy…If we see you selling antibiotics after the policy is out, we will put you in jail.

Shortly afterwards, the inspectors started confiscating several boxes of medicines. One of them asked U Kyaw why he had Analgesic injections. He answered that it was because the doctors and nurses came to buy them. She responded angrily, almost shouting, 'Watch your mouth, as a health officer we would never buy it from a place like this!' while another instructed:

> If people come to buy antibiotics, only sell it to those who bring their prescription books and don't cut up the pills; you must sell them with their packaging. Because you mix medicines, people don't go to clinics and hospitals anymore…When people come to the hospital, they are resistant to the medicines.

The FDA confiscated more than twenty different types of medicines, mostly unregistered medicines, a net worth of approximately 5 lakhs (500,000 MMK or 350 USD).[82] After leaving leaflets with instructions on how to sell medicines, they left, leaving Aunty Moe close to tears. Not only was she upset by how these 'young' officials spoke to them, their elders, but also because they had suffered a huge financial loss. Despite what the inspectors had said, Aunty Moe and U Kyaw were left with a sense of confusion and injustice as to why the incident occurred.

For those working in the field of global health, the above encounter may seem to be an example of how state employees can act to regulate the sale of unregistered pharmaceuticals and the unqualified provision of antibiotics. These practices may also be accepted as necessary measures to contribute towards global imperatives to reduce antibiotic consumption, ensure patient safety and medicine quality. Such an uncritical interpretation is problematic for Myanmar, on at least three accounts. First, it fails to engage with how and why most people living in Myanmar access health care, and the potential repercussions of clamping down on unregistered medicines. Second, it appears ignorant or disinterested in how the MOHS and the FDA enact regulation, like other state agencies in Myanmar, enacting a politics of fear and repression to publicly blame and penalise those such as Aunty Moe and U Kyaw for the dysfunctional and fragmentary nature of health provision. Finally, it fails to engage with how state employees and drug shop vendors attempt to negotiate the enactment of regulation – partly through နားလည်မှု *nàlehmú*, a mutual understanding – to minimise disruptions to their work, and make cheaper medicines available, while avoiding directly challenging social hierarchies and inequities. To further elucidate these points, in this chapter I follow the aftermath of the FDA raid, foregrounding Burma/Myanmar's broader history and the WHO'S AMR GAP.

5.2 Sustaining national (dis)order: The National Drug Law and Yangon's poor

Sein's customers were a mix of medical professionals buying supplies for their clinics, shops, and practices, and residents of the township, widely referred to by development organisations as the 'urban poor' (Azam, 2014). Almost all of Sein's customers were those who provide care and medicines to the urban poor of Yangon, or were the urban poor themselves, subject to various forms of structural violence, such as state neglect and market exploitation (see Chapter 6).

[82] Exchange rate in early 2019 (1 USD = 1520 MMK).

Sein has a registration license from the MOHS recognising them as a legal vendor of medicines. While the shop was registered with requisite state authorities, a large portion of the medicines they sell were unregistered with the FDA and were, therefore, illegal, according to the updated 2018 National Drug Law. This act states that legal action (up to seven years of jail or a fine) will be taken against the sale of drugs that are unregistered, fake, dangerous, or 'determined as not fit for utilisation by the Ministry of Health'. Although Aunty Moe and U Kyaw – as well as other drug vendors we (YKZ, JSB) observed and spoke with – were aware of this law, the fact that they did not follow it to the letter was not due to their disregard for patient-consumer safety, but quite the opposite. Their – and others' – knowledge and ongoing experiences of Burma/Myanmar's state repression, violence, and its focus on its security, meant they did not simply trust that registered medicines are necessarily safer than those that are not. They were aware that not only had the FDA been understaffed and underfunded, limiting their ability to do their work effectively, but the processes of drug registration lacked transparency, and was commonly known to require ကန်တော့ *kan táw* (paying respect or in this case paying a bribe). Despite this, Aunty Moe contended that this does not mean that the MOHS is unable to regulate and remove 'dangerous' medicines, as when chloramphenicol pills disappeared from pharmaceutical markets. The director of the FDA and the Department of Fisheries stated that chloramphenicol was not registered for import and was prohibited for use in aquaculture (Shwe Yee San Myint, 2014b). We (CH, YKZ, JSB) have not been able to locate publicly available information to corroborate these statements. This reflects a common trope in Burma/Myanmar – that knowledge of the laws, of what is illegal or not, is not a citizen's right, or at the very least, is not a self-evident matter. Whether this is intended or not as a means of social control, Burma/Myanmar's citizens are kept in the dark about questions of legality, conferring a privilege of power to those with knowledge, potentially enabling them to exercise and enforce laws according to their whims (Cheesman, 2009; Prasse-Freeman, 2015). This also means that state employees can make claims to illegality where such laws may not exist, or at least, not strictly in the ways they are articulated in practice. Thus, as Cheesman (Cheesman, 2009; 2014; 2015) argues, in Burma/Myanmar, law serves as means to maintain a particular order.

In the case of medicines, this legal order determines what medicines are available, where, for whom, and how the state employees classify them, as well as who can afford to purchase and consume them. Hence, any general designation of Sein's sales and its customers' purchases of unregistered medicines and antibiotics without prescriptions as illegal fails to understand how rule of law in Burma/Myanmar actually (dys)functions in practice, through its limited investment in quality assurance measures, underpaid staff, and lack of affordable provision of medicines and care to its citizens. Aunty Moe and U Kyaw's distrust of the State was not only sensitive to this but was also part of sustaining (dis)order through filling the 'gaps' that national drug laws (re)produce in the classification of medicines and practices as illegal or not in the first place.

Shops like Sein sold unregistered medicines because they were cheaper than medicines registered with the FDA (Shwe Yee San Myint, 2014a). Such medicines were also available elsewhere, such as in pharmaceutical chains or clinics, where customers will likely also be charged a consultation fee of 2 to 3 USD. Most residents in the vicinity of Sein earned 3 or less USD a day through minimum wage jobs or casual labour and had little choice except to purchase cheaper unregistered medicines. Many state officials were aware of this, albeit not openly. This is the case of medical professionals who refer their patients on to providers like Sein when public health facilities they work in

lack the requisite medicines, or they themselves purchase unregistered medicines for their own private practices. One example of the latter is Mya Myint, one of Sein's top customers, a government employed rural health assistant in her village outside Yangon. Her meagre monthly salary at just over 1 lakh (100,000 MMK or 66 USD, roughly the same as factory workers on minimum wage) was barely enough to support herself. Thus, like many other government employees (Win, 2016), including medical consultants working in public hospitals, she has had little choice except to start up her own private practice.

Every 1-2 weeks Mya Myint visited Sein to purchase medicines in bulk of up to 5-6 lakhs (5-600,000 MMK or 300 – 400 USD), carrying them on her motorbike during her home visits, attending to the elderly, those too sick to leave home, or patients who cannot travel to Yangon or another village for medical attention. For each visit, she charged between 5000-10000 kyats (3-7 USD), almost the same cost as a clinician's consultation fee in central Yangon. From these visits, she said she can earn significantly more than her government salary. Without the likes of Sein and their sale of unregistered medicines, and Mya Myint and her private practice, Yangon's urban poor and those across Burma/Myanmar would lack affordable medicines and sufficient earnings. The state's de- and underfunding of public health infrastructure and other state institutions – including salaries, affordable medicines, and transparent processes for regulating them – means that policies such as the National Drug Law actively participated in creating the 'necessity' for shops like Sein to fill such 'gaps' in state provision for Yangon's urban poor. They also contributed to sustaining the distrust Burma/Myanmar's people harbour towards laws on paper (many of which they had not seen or heard of) and affected their meaning in everyday encounters.

5.3 Negotiating the rule of law: mutual understanding and paying respect

Sein received two warning letters stating a mandatory three-month suspension of all operations and a termination of the shop's registration license.[83] U Kyaw and Aunty Moe were very upset and asked a friend who had also received a warning letter what he was going to do. Also distressed, he responded: 'If my shop is closed, what are we going to eat and live with? I have to keep it open.' U Kyaw and Aunty Moe then decided to visit the FDA, who denied sending the letters. Later that evening, two other shopkeepers came to discuss the situation, and speculated on whether the letters were 'fakes' and if someone else in authority, not based in the FDA, had sent them to 'warn us'. Such reflection made it evident that the shopkeepers were less concerned with the regulations and whether they had broken them (selling unregistered medicines or antibiotics without prescriptions), and more concerned with why state officials had specifically targeted and caught them in particular. Furthermore, in line with Myanmar's draft AMR NAP, during their unannounced inspections, the FDA had in addition to confiscating unregistered medicines began to reprimand drug shopkeepers for selling antibiotics without prescriptions. However, legally, the FDA could only act against the sale of unregistered medicines and not the sale of antibiotics. So, the owners of other medicine shops like Sein were confused when they were reprimanded by FDA inspectors for selling antibiotics when it is not currently illegal to the extent of persecution to sell them over the counter without prescription. The shopkeepers knew that state officials

[83] JSB alone was present during the FDA raid itself but the data after the incident (for example, how U Kyaw and Aunty Moe negotiated with the FDA, changes in the way they sold medicines) were collected collaboratively.

were aware of these 'illegal' activities and typically turned a blind eye, so they were convinced that they must have disrespected one of the local authorities, and thus be in 'in their bad graces.' After some deliberation, Aunty Moe concluded that they must approach a state official responsible for overseeing activities in the area.[84] She was convinced that someone was upset because she had not once gone to the public hospital to ကန်တော့ *kan táw* to the SO. She provided several reasons as to why this may be the case.

One scandal they had heard involved Sabai (which also received a warning letter), a large drug shop with multiple branches, who was sued by the FDA and received a jail sentence for having a large stock of unregistered medicines. However, rumour had it, the owner paid 150 lakhs (15,000,000 MMK or $10,000) to the SO, which resulted in all the charges being dropped. When they eventually met the SO, they learned that this had happened under the previous SO. Despite this, rumours circulated that the current SO had reached a နားလည်မှု *nàlehmú* (mutual agreement) with Sabai. နားလည်မှု *Nàlehmú* is a discrete, mutual understanding based on relations of mutuality, obligation, and reciprocity that seeks to broker justice often outside the rule of law, whilst leaving intact existing social hierarchies and inequalities (Rhoads, 2020; Roberts, 2020). The outcome of the နားလည်မှု *nàlehmú* was that Sabai would ကန်တော့ *kan táw* the SO, and in return they could continue to stock and sell as many illegal medicines as they wanted, unhindered by the potential enactment of the national drug law, so long as they also took precautions to avoid getting caught again.

The current SO was furious with this rumour, as it had led to her receiving a warning from her superior. From this, Aunty Moe deduced that the raid had been intended for Sabai and had caught them as collateral damage with their unregistered medicines. She was right, Sabai had to ကန်တော့ *kan táw* to the SO. Similar to the shame the SO experienced when the rumour circulated about a ကန်တော့ *kan táw* relationship with Sabai, she was shamed again, this time in front of the inspectors and other state employees when they found unregistered medicines in Sein, a drug shop in an area under her jurisdiction; openly implicating her in allowing illegal activities to take place. Aunty Moe told us that the owner of Sabai, and the SO, came to a နားလည်မှု *nàlehmú*, and the SO warned everyone else, 'If you are selling unregistered medicines, maybe you should do it quietly'. In doing so, the SO recognised Sein and the other drug shops' precarious circumstances and emphasised that they need to recognise hers too.

Two months later, Sein was back to its pre-raid activities. When we inquired about the penalty from the warning letters, U Kyaw merely responded, 'we have come to a နားလည်မှု *nàlehmú* with the SO.' Despite the raid and the activities that followed, Aunty Moe was not angry with the state officials. She said:

> I don't blame her [SO] too much. It's hard to be a doctor here. You have to work hard and their basic salary is only around 2-3 lakhs [2 – 300,000 MMK or 130 - 200 USD/month] and they always have to do overtime. So, they try to get money like this to survive.

[84] I have excluded further details of the SO in order to protect the individual's identity.

Later, we learnt from interviews with our FDA informants that prior to any drug shop raids they must seek permission from a wide range of state actors, some of whom also participate in their raids. This confirmed Aunty Moe and the other drug shopkeepers' suspicions that it was the SO, and not the FDA, who had sent them the letters.

5.4 Evading and breaking the law to broker (in)justice

Reaching a နားလည်မှု *nàlehmú* agreement that involves ကန့်တော့ *kan táw* was one of the ways that Sein and other drug shops negotiate with state authorities to evade the full penalties of the National Drug Law. Preferable to getting caught in the first place, Aunty Moe and U Kyaw employed several strategies to evade the authorities. Primary amongst these was receiving notification of raids in advance, so they can close their shop. For Sein, these warnings came from Aunty Moe's brother, who works as a state employee, or from a phone call from a fellow shop owner. However, when they had insufficient forewarning, like in the raid described earlier (the FDA van was parked in front of their shop and it would have been suspicious for U Kyaw and Aunty Moe to suddenly start closing their shop), U Kyaw moved any unregistered medicines and others that they were not licensed to sell into hidden storage at the back of their shop. Aunty Moe told us such measures are normal amongst drug shops. The senior member of the FDA, attested to such practices in a local news article:

> We try to control the sale of illegal drugs at the market, but we cannot stop all of it. When we go to these shops to inspect for illegal medicines, store owners move their stock before we come (Myint, 2014a).

One of our FDA interlocutors corroborated this statement by stating that the department lacked staff and budget to do frequent raids and more than one or two antimicrobial awareness raising activities per year. Thus, breaking and negotiating the application of the law through နားလည်မှု *nàlehmú* often is the most practical way for all parties involved to broker relative justice.

A few months later, we witnessed another FDA raid. This time Aunty Moe and U Kyaw were ready. Her brother had already notified them in advance, so they were able to remove their shop sign and close up, leaving what looked like an abandoned roadside cubicle to any passer-by. Meanwhile, U Kyaw stood nearby, listening for any signs of the inspectors coming and going, notifying others of the authorities' intended raid. This time they evaded getting caught and bringing further shame to the SO, fulfilling their part of the နားလည်မှု *nàlehmú* agreement with her. The SO appeared to fulfil her part; they did not receive another warning letter or have to ကန့်တော့ *kan táw*. This allowed vendors to continue to sell unregistered medicines and authorities to continue to conduct their raids in the neighbourhood. Burma/Myanmar's national (dis)order is not only sustained by shops like Sein and practices like Mya Myint's, which act to fill the 'gaps' in healthcare provision, but also through state agents like the SO, who actively participate in breaking the law to allow such provision to continue.

5.5 Implications for antibiotic policy through the WHO GAP

The WHO prescribes nation-states as those responsible for translating its AMR GAP policies into action, particularly the regulation of access, use and quality of antibiotics. Our ethnographic exploration of drug regulation in practice pushes back against the sufficiency of such technical prescriptions (reduce illegal sales of antibiotics) to effectively achieve the National Drug Law and NAP AMR's apparent intended ends. Shops like Sein's sale of unregistered medicines, and Mya Myint's private medical practice, provide where the Burma/Myanmar state does not. FDA and other state authorities, and drug shop vendors, were well aware of the limits of the Burma/Myanmar state's health care infrastructure, inadequate investment in drug quality assurance and low employee salaries. They understood that the illegal sale of medicines was necessary because of the state's lack of provision of affordable medicines but also to sustain the livelihoods of the likes of U Kyaw and Aunty Moe, as well as to supplement state officials' own meagre salaries. They all also knew that not only does the state lack infrastructure to effectively enact regulations according to the letter of the drug law, but when attempts were made to enforce it they typically ended up serving the military and state authorities' interests over Burma/Myanmar's citizens' health and welfare (Cheesman, 2009; Oehlers, 2005).

As we (YKZ, JSB, CLH) have described through the example of the FDA raid, distrust of Burma/Myanmar's state and fear of its authorities were commonplace; an ongoing legacy of the military's authoritarian approach to governing everyday life in Burma/Myanmar, as amply evidenced in the recent *coup d'état*. So, drug vendors, FDA and other state officials discreetly negotiated the enactment of drug laws through negotiated နားလည်မှု *nàlehmú* and ကန်တော့ *kan táw* practices to maintain a semblance of following the rule of law to the letter, while avoiding bringing shame to more senior state officials and openly challenging Burma/Myanmar's 'law and order'. In doing so, they found ways to cope and make do with the little they have, while brokering small acts of justice through ensuring Yangon's poor continue to have access to affordable medicines. I therefore call for those working within AMR (including WHO GAP/Myanmar NAP, the United Nations) to promote the regulation of medicines, such as antibiotics, and to attend more carefully and explicitly in policy design and implementation not only to a state's infrastructural abilities to enact laws, but also its political priorities, approaches to political governance, and the relevant effectiveness of its state-market arrangement to the provision of affordable quality assured health care. In Burma/Myanmar, this means questioning the effectiveness and harm of promoting a state-centric approach, such as the regulatory aspects of its AMR NAP, as well as considering cautious engagement and decentralised work with the many non-state 'experts' that are already in place (including civil society and other ethnic minority organisations, local researchers). If not, AMR agencies may run the risk of contributing to, if not intensifying, already existing health disparities and social injustices, whilst also failing to generate intended outcomes, such as meaningful changes to antibiotic sales and reductions in resistance.

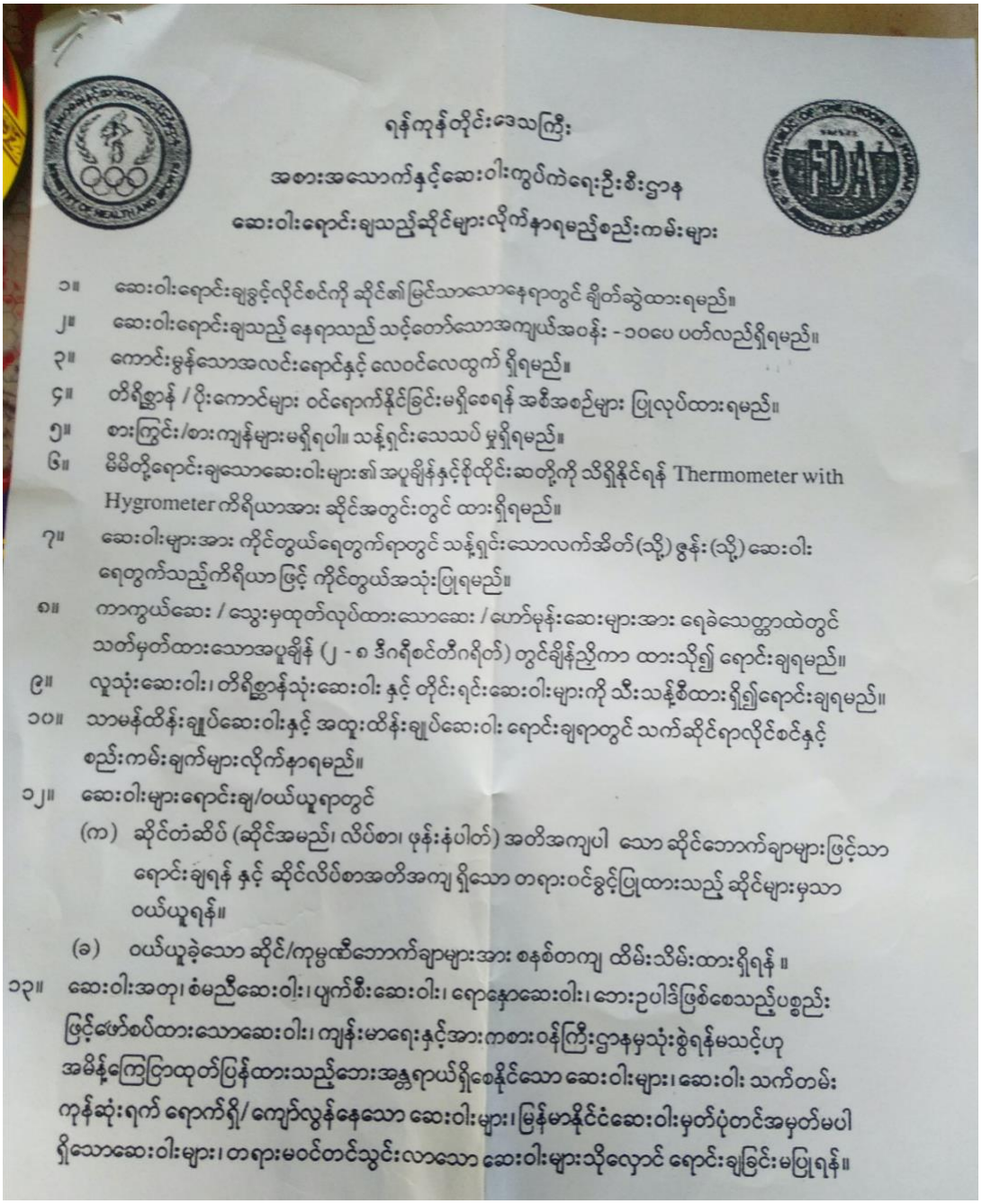
Thus I make an argument to include more critical reflections in global blueprint documents (such as WHO GAP/Myanmar NAP/UN sustainable development cooperation framework/WHO GLASS) to mitigate harm to those who are already coping with dysfunction in Burma/Myanmar (specifically, the underfunded healthcare system and staff, high prevalence of illegal medicines, ကန်တော့ *kan táw* practices, policies that could change spontaneously without notice, and a rule law that does not protect its people). As described in the vignette, cracking down on the informal

sector or illegal medicines as a strategy to address AMR, may reduce the consumption and sale of medicines that are less likely to be quality assured (by their nature of not being registered through the Myanmar FDA). However, this may also bring about additional economic/livelihood harms to those who are involved in the regulation and transaction of these medicines (shopkeepers like Aunty Moe and U Kyaw, the FDA staff, the SO).

These individuals and their actions as evidenced through the FDA raid vignette, cannot be described through legal/illegal or formal/informal dichotomies (terms clarified in Chapter 1).[85] For instance, the SO had a relatively senior position as a state official responsible for the regulation and management of health affairs within Hlaing Thar Yar, evidently carrying the identity of a 'legal' actor.[86] Her willingness to negotiate with those in the informal sector like Aunty Moe and U Kyaw and the other drug shopkeepers; however, shows how she also actively participated in and reproduced 'illegal' practices (sale of unregistered medicines, နားလည်မှု *nàlehmú*, ကန်တော့ *kan táw*) in the everyday politics of Hlaing Thar Yar. Similarly, Sein might be classified as an 'informal' drug shop/store in predominant global health definitions due to it being a roadside stall with loosely regulated sales of medicines, operated by lay people.[87] Despite this characterisation, the shop had already received an operational license from the hospital to be able to perform its duties (for example, sell medicines) and had 'legal' rights to sell medicines. Nevertheless, the shop engaged in several 'illegal' practices, including selling unregistered medicines and စပ်ဆေး *sat hsày* (mixed medicines, drug cocktails). These 'illegal' practices, although publicly condemned during the FDA raid (when Aunty Moe was directly caught by a large inspection team who happened to have walked in on a transaction of စပ်ဆေး *sat hsày*), were enabled off-the-books, or in practice, such as when the SO told the shopkeepers to sell unregistered medicines 'quietly' and not get caught in the future.

As another example, Sein, along with many other shops in Hlaing Thar Yar, did not meet the operational standards (Figure 33) for medicine shops as stated by the FDA (not having ten feet by ten feet space to sell medicines, a thermometer, and a hygrometer to monitor the temperature of medicines, a fridge). Many medicine shops in Hlaing Thar Yar had the appearance of informal stalls, without the infrastructural capacity to host a refrigerator and temperature control equipment. The FDA was aware of these limitations but still handed out information sheets with the above-mentioned guidelines (Figures 33-34). Therefore, regulation on paper contrasts with regulation in practice, presenting a need to understand how the latter functions and where the disconnects are.

[85] In state discourses/national policy/local popular media, the 'legal'/'formal' and 'illegal'/'informal' are often used interchangeably. This is not the case in global health discourses. In this section, I focus on how the Myanmar state agents and healthcare providers use the terms.
[86] To ensure anonymity, I have not included her exact position/ranking.
[87] The WHO's glossary states 'Many low- and middle-income countries have at least two different types of shops in which medicines can be purchased: pharmacies with a registered pharmacist and drug stores, chemists or medicine outlets with paramedical staff or lay people' (WHO 2021, p235).
https://www.who.int/medicines/areas/access/NPrices_Glossary.pdf



ရန်ကုန်တိုင်းဒေသကြီး

အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာန

ဆေးဝါးရောင်းချသည့်ဆိုင်များလိုက်နာရမည့်စည်းကမ်းများ

၁။ ဆေးဝါးရောင်းချွင့်လိုင်စင်ကို ဆိုင်၏မြင်သာသောနေရာတွင် ချိတ်ဆွဲထားရမည်။

၂။ ဆေးဝါးရောင်းချသည့် နေရာသည် သင့်တော်သောအကျယ်အဝန်း - ၁၀ပေ ပတ်လည်ရှိရမည်။

၃။ ကောင်းမွန်သောအလင်းရောင်နှင့် လေဝင်လေထွက် ရှိရမည်။

၄။ တိရိစ္ဆာန် / ပိုးကောင်များ ဝင်ရောက်နိုင်ခြင်းမရှိစေရန် အစီအစဉ်များ ပြုလုပ်ထားရမည်။

၅။ စားကြွင်း/စားကျန်များမရှိရပါ။ သန့်ရှင်းသေသပ် မှုရှိရမည်။

၆။ မိမိတို့ရောင်းချသောဆေးဝါးများ၏ အပူချိန်နှင့်စိုထိုင်းဆတို့ကို သိရှိနိုင်ရန် Thermometer with Hygrometer ကိရိယာအား ဆိုင်အတွင်းတွင် ထားရှိရမည်။

၇။ ဆေးဝါးများအား ကိုင်တွယ်ရေတွက်ရာတွင် သန့်ရှင်းသောလက်အိတ်(သို့) ဓွန်း(သို့) ဆေးဝါး ရေတွက်သည့်ကိရိယာ ဖြင့် ကိုင်တွယ်အသုံးပြုရမည်။

၈။ ကာကွယ်ဆေး / သွေးမှထုတ်လုပ်ထားသောဆေး / ဟော်မုန်းဆေးများအား ရေခဲသေတ္တာထဲတွင် သတ်မှတ်ထားသောအပူချိန် (၂ - ၈ ဒီဂရီစင်တီဂရိတ်) တွင်ချိန်ညှိကာ ထားသိုရှ ရောင်းချရမည်။

၉။ လူသုံးဆေးဝါး၊ တိရိစ္ဆာန်သုံးဆေးဝါး နှင့် တိုင်းရင်းဆေးဝါးများကို သီးသန့်စီထားရှိရှ်ရောင်းချရမည်။

၁၀။ သာမန်ထိန်းချုပ်ဆေးဝါးနှင့် အထူးထိန်းချုပ်ဆေးဝါး ရောင်းချရာတွင် သက်ဆိုင်ရာလိုင်စင်နှင့် စည်းကမ်းချက်များလိုက်နာရမည်။

၁၂။ ဆေးဝါးများရောင်းချ/ဝယ်ယူရာတွင်

(က) ဆိုင်တံဆိပ် (ဆိုင်အမည်၊ လိပ်စာ၊ ဖုန်းနံပါတ်) အတိအကျပါ သော ဆိုင်ဘောက်ချာများဖြင့်သာ ရောင်းချရန် နှင့် ဆိုင်လိပ်စာအတိအကျ ရှိသော တရားဝင်ခွင့်ပြုထားသည့် ဆိုင်များမှသာ ဝယ်ယူရန်။

(ခ) ဝယ်ယူခဲ့သော ဆိုင်/ကုမ္ပဏီဘောက်ချာများအား စနစ်တကျ ထိမ်းသိမ်းထားရှိရန် ။

၁၃။ ဆေးဝါးအတု၊ စံမညီဆေးဝါး၊ ပျက်စီးဆေးဝါး၊ ရောနှောဆေးဝါး၊ ဘေးဥပါဒါဖြစ်စေသည့်ပစ္စည်း ဖြင့်ဖော်စပ်ထားသောဆေးဝါး၊ ကျန်းမာရေးနှင့်အား ကစားဝန်ကြီးဌာနမှသုံးစွဲရန်မသင့်ဟု အမိန့်ကြေငြာထုတ်ပြန်ထားသည့်ဘေးအန္တရာယ်ရှိစေနိုင်သော ဆေးဝါးများ၊ ဆေးဝါး သက်တမ်း ကုန်ဆုံးရက် ရောက်ရှိ/ကျော်လွန်နေသော ဆေးဝါးများ၊ မြန်မာနိုင်ငံဆေးဝါးမှတ်ပုံတင်အမှတ်မပါ ရှိသောဆေးဝါးများ၊ တရားမဝင်တင်သွင်းလာသော ဆေးဝါးများသိလျှောင် ရောင်းချခြင်းမပြုရန်။

Figure 33. Information sheet left by the inspection team during the FDA raid on rules and regulations around the sale of medicines (this sheet describes the conditions that must be maintained for the sale of medicines) (photo taken by JSB in January 2019)

Figure 34. Information sheet left by the inspection team during the FDA raid on rules and regulations around the sale of medicines. This sheet describes guidelines on how to sell medicines (photo taken by JSB in January 2019).

One way to include more critical reflections in global blueprints on AMR is to identify disconnects in global policy making and regulation in practice while considering ways to mitigate the consequences of these disconnects. For instance, the FDA raid shows local ways of functioning or coping (e.g. နားလည်မှု *nàlehmú*, ကန်တော့ *kan táw* practices). These practices appeared to almost act in contradiction with the aims and objectives of regulating/restricting unregistered medicines, a proposed strategy to address AMR in Myanmar. However, to simply label these practices as 'corruption' or 'threats' to global health agendas, not only overlooks the reason why these practices exist (to support the regulatory/healthcare system in Myanmar) but also results in reproducing ineffective regulatory strategies and solutions to AMR (for example, confiscating medicines through an FDA inspection and providing regulatory handouts). The above-mentioned regulatory efforts were rendered futile when they interacted with local modes of functioning (နားလည်မှု *nàlehmú*, ကန်တော့ *kan táw*), signifying a need to take this interaction into consideration, prior to pushing forth or scaling up of the same strategies on a national level through the Myanmar NAP. I, therefore, recommend a slower approach to antibiotic policy making in contexts like Myanmar and a need for a more thorough engagement with the wider context prior to pushing forth national action.

To conclude, this chapter highlights the risks brought about by disconnects in policy making and regulation in practice and suggests strategies to address this issue (for example, identifying local modes of functioning and

considering them in policymaking). To further identify these local modes of functioning, I draw on anthropological concepts and ethnographic methods to contextualise medicines and antibiotics in their wider social and political landscape, paying attention to forms of ‘structural’ and ‘slow’ violence. Chapter 6 does shifts attention to structural violence and biopolitical abandonment to discuss how medicines are embedded within everyday livelihoods as a coping mechanism.

Chapter Six: Pharmaceuticals as coping mechanism

6.1 Overview of Myanmar's industrial zones and the garment industry

After following medicines through providers and the medicine supply chain, I directed my attention to the patients or the clients who purchase medicines in Hlaing Thar Yar. As previously mentioned, Hlaing Thar Yar hosted some of the largest industrial zones in Yangon and was home to various labourers and factory workers. I shifted the ethnographic focus of our fieldwork (described in the Methods chapter) to contextualising medicine use in the context of industrial labour, namely factory work.[88]

Most of the factories in Hlaing Thar Yar produced garments, shoes, or bags and have been reported to have a 94% female workforce (Action Labour Rights, 2016). After the 2011 economic liberalisation, Yangon was stated to have an exponentially growing garment industry. The garment industry was projected to grow at a rate of one billion USD per year since 2015. Brands such as GAP, H&M, Primark, and Adidas have all sourced from Myanmar and have exported to countries in the Global North (Gardener & Burnley, 2015). The International Labour Organization (ILO) viewed this growth as an 'important engine for Myanmar's sustainable development and a place for unparalleled job opportunities especially for vulnerable groups such as women, rural migrants, and unskilled labourers' (International Labour Organization, 2019). Trade unions were legalised in 2011, resulting in labour mobilisation in the country's industrial zone and the growth of formal unions. Burma specialists and geographers Arnold and Pickles, characterise the labour regime in the Thai-Burmese border as 'a highly precarious working population' placed within 'zones of growth' which are 'underpinned by national and transnational governmental policies and infrastructural investments aimed at economic efficiency and regional integration… [and] by nationalist social policies that seek to reconfigure the place of these growing numbers of immigrant workers in the body politic' (Arnold & Pickles, 2011, p1619). Building upon this work, geographer Arnold and anthropologist Campbell provide an analysis of the Myanmar labour regime industrial zones, characterised by 'many traces of a half-century of military rule, a period in which trade unions were banned or tightly restricted, international organizations had no room to operate and workers' demands were readily suppressed' (Arnold & Campbell, 2017, p814). The authors describe regulation in this context as an 'ensemble of coercive and consent-seeking forms of regulation', where workers are often 'urged to accept short term sacrifices in the form of low pay and excessive working hours in the interests of bolstering international investor confidence… deemed necessary for the national economic development project' (Arnold & Campbell, 2017, p814). Supporting this, discourses in the popular media discuss the growth of the garment industry through the positive lens of national growth and development. For instance, statements such as 'how five garment companies will create 6000 new jobs in Myanmar' (Dar, 2016), and how 'Gap will operate in partnership with the USAID to improve skills among Myanmar's largely female textile industry workers… to accelerate economic and social growth' (The Peninsula, 2014) were mentioned in popular media in global news channels. In parallel, increasing concerns over the violation of labour

[88] I deliberately shifted our fieldwork emphasis because: 1) most of the patient-clients at Sein were labourers, and; 2) preliminary themes from data analysis indicated the importance of labour and time concerns (such as the need to cure quickly to work more hours).

rights and despotic working conditions were raised through frequent protests in the industrial zone (Astolfo & Boano, 2020; Zajak, 2017).

In addition to exploitation and precarity, Myanmar lacks the appropriate regulatory capacity to enforce labour laws and protect factory workers. Many labour laws only underwent reforms after 2012. For example, the Minimum Wage Act first published in 1949, the Factories Act in 1951, and Social Security Act in 1954 were only updated within the last decade. Due to the rapidness of the reforms (the presence of social security), the ability for regulatory bodies to enact them in practice fell short of the intended ideals such as protecting factory workers. Minimum wage during the time I did the fieldwork (2019 – 2020) was set at 4800 MMK (3.16 USD) per day.[89] This is theoretically supposed to be revised every two years, but in practice can take much longer. The first mention of a national minimum wage only came about in 2013 through the Minimum Wage Law. The minimum wage was then set at 3600 MMK per diem (2.34 USD) (International Labour Organization, 2022). Our interlocutors mentioned how their salaries were often inadequate for rent, livelihood costs, and the need to occasionally send money home.

Factory workers in Myanmar also work exploitative hours and do not receive proper time off for rest. In Myanmar, workers are only entitled to ten days of 'earned leave' (in place of annual leave and only after a full year of employment), six days of paid casual leave, and thirty days of paid medical leave (International Labour Organization, 2022). Thirty minutes of rest is mandatory after five hours of work under the 1951 Factories Act (which has not been updated), and the working day should not exceed eleven hours in total (including breaks and overtime). There is no legal provision for unpaid time off, and leave is subject to negotiations between the factory and the worker. These rules and regulations in practice (for example, the number of days leave) are easily overlooked, with uncompensated labour being one of the top reasons for protests/strikes against factories not only in Myanmar but also universally (Darby, 2019). Our interlocutors mentioned working twelve to fifteen hours per day, with managers often disapproving or refusing to sign for paid leave, coercing people to work more hours. Even through our (JSB, YKZ) access to factory workers through a labour rights organization (the organization provides education activates for workers), many factory workers we met were unfamiliar with their rights and the regulations around labour laws. In sum, labour laws were only recently established, and being still loosely regulated provided limited to no protection for workers from exploitation.

Under this context of on-going protests, precarity, exploitative labour conditions, and inadequate regulatory protection in Hlaing Thar Yar, we (JSB, YKZ) joined a labour rights organization (LRO) (introduced in Chapter 3) to contextualise medicine use in the context of labour. We began our participant observation activities at LRO (explained in depth in Chapter 3) and conducted a series of interviews with factory workers focusing on their everyday lives and their experiences with medicines. We also participated in a few protests to better situate ourselves within LRO. Reiterating previously published work on labour within industrial zones, our findings indicate how individuals (factory workers) are exploited or 'biopolitically abandoned' by the various infrastructural bodies (factories, social security, public health services) that are supposed to protect them. I draw on and adapt Selmeczi's use of the term 'biopolitical abandonment' (taking inspiration from the Foucauldian concepts of biopolitics and biopower, Foucault 1979) in

[89] According to a 2017 World Bank poverty report, the national poverty line was 1,590 kyats (approximately 1 USD) per adult (World Bank, 2017).

migration and conflict studies to describe the state's neglect and exclusion of certain populations (Selmeczi, 2009, 2012). I use the term biopolitical abandonment in this chapter to describe how factory workers are abandoned by the previously mentioned infrastructural bodies, creating a need for coping mechanisms, one of which involves medicines. Anthropologist Biehl, conceptualises a 'pharmaceutical model of care' in his work on AIDS, where he describes how pharmaceuticals have come to replace clinical care (Biehl, 2007). Adapting this conceptualisation, I argue for how pharmaceuticals have come to act as a coping mechanism to manage the precarity co-produced by exploitative working conditions and biopolitical abandonment. Here I begin with a vignette of a case story we (JSB, YKZ) f at LRO of a female factory worker who needed urgent care for her chronic heart condition. With this vignette, I show how the factory worker not only manages her own day to day precarity, but also the additional precarity brought on by biopolitical abandonment.

Figure 35. Protest in front of a factory (photo taken by JSB in August 2019)

6.2 Factory life and resistance

The factory workers I met through LRO were predominantly women in their early and mid-twenties living in what development scholar Mezzadri defines as 'neobondage' in her work on sweatshop regimes in India (Mezzadri, 2016), where fears of losing the job and thus being even more worse off made women to accept and continue in their roles. As an example, I met Ma Khin, a 23-year-old woman who works at a garment factory. She came from the Ayeyarwaddy division and supported her family financially through her work at the factory. She had been in Yangon for two years and lived in a dorm where she shared a room with four other women also working at garment factories. Ma Khin left school at an early age, helping her family with farming. However, a declining rural economy meant that profits from agriculture alone was not enough to support her parents and her three younger siblings. Being the eldest, Ma Khin took upon herself the responsibility of moving to Yangon to find work at the factory. She found employment at a garment factory, and secured the job by providing a fake identification, and through the verbal support from her အသိ *a thí* (acquaintance) who had a personal relationship with the supervisor at her factory. Her role within the factory was 'iron' (ironing clothes), and she receives the minimum wage salary of (4800 kyats per day 3.16 USD). Ma Khin mentioned always feeling fearful within the factory, as her supervisor hired her through a fake identification. She did not have a Citizenship Scrutiny Card, or a national identification, normatively a requirement for most bureaucratic procedures in Myanmar, including the hiring of formal workers. Consequently, Ma Khin did not have a signed employment contract with the factory, and essentially worked for the factory with no protection (the employer did not have to pay social security fees for her).

Ma Khin woke up at 5:30 AM to take the bus provided by the factory which arrived at a junction near her house at around 6:30. Although work formally only starts at 8:00 AM, the bus had multiple stops and traffic was congested in the mornings. Taking the bus is a longer and more tiring process but is cheaper than having to pay for a motorbike taxi or a trishaw. Her work at the factory began at 8AM sharp and continued until noon when workers break for a one-hour lunch. Ma Khin paid for her food from her salary as she felt too tired to cook. The factory served food, but Ma Khin told us it was basic and not tasty. Work ends at 5 PM, but Ma Khin took up overtime hours until 8 PM, as overtime pay is more lucrative (1200 kyats per hour compared to 4800 kyats per diem). Ma Khin commuted back by herself at the end of the day, arriving at home at around 9 PM, to rest, and prepare to repeat the same routine the next day. Ma Khin followed this routine five days a week. On Saturday, Ma Khin worked a half day (as these counted as overtime), and Sunday was taken off as a rest day. On a monthly average, if Ma Khin did not miss any days of work, and with her collective overtime hours, she managed to make around 150000 – 180000 MMK (100 – 200 USD) a month. Some months she sent a third or half of this back to her family.

At work, Ma Khin was placed within a 'row' (a team of individuals who work together to produce a piece of clothing). Ma Khin's row consisted of sewers, ironers like herself, and others. Her supervisor managed multiple rows, and each row must produce a certain quota by a deadline (for example, 1000 T-shirts by the end of the month). If quotas are not met, the workers were asked to work overtime regardless of their preferences. Many like Ma Khin prefered to work overtime due to the more lucrative overtime pay. However, a few of Ma Khin's friends did not want to work overtime, but were coerced with threats of dismissal, and cuts to their normal pay. One report surveying 1200

factory workers from 39 factories in Hlaing Thar Yar states 62% of those surveyed to be doing overtime hours against their personal preferences (Action Labour Rights, 2016). Ma Khin described how she continued to work overtime even when ill due to her fear of her supervisor –

> 'If I get ill during overtime, and I say want to go home because I feel ill, they say "no, you cannot go. You already said you will do this many hours of overtime today. Why can't you tell me earlier if you can't do it." Of course, I wouldn't sign up for overtime if I knew I would not be able to do it. I thought I was going to be well. If I'm not well, how can I help it? … If it happens like that, I close my eyes, tolerate, and continue.' – Ma Khin

Women have been targeted for factory work in Myanmar due to their perceived 'docility', which makes them likely to tolerate the pressures of factory life without direct resistance (Chaw Chaw, 2003). Anthropologist Ong, whose work on factories has been widely drawn upon in labour studies, describes forms of resistance to surveillance and scrutiny within factories. She discusses how Malay women in factories are seized by spirit possession, arguing that factory workers call upon the spirit realm as a form of resistance to reclaim their time and humanity (Ong, 2010). Following Ong's conceptualisation of resistance to reclaim time and humanity, I describe resistance within factory life in Hlaing Thar Yar through protests, strikes, and coping mechanisms.

The most apparent form of resistance came through the work being done by labour rights organizations (Figures 35-37). These included large scale protests outside factories and strikes (refusing to work) (Figures 35-37). These forms of resistance were mostly limited to factories with established worker's unions who also had direct relationships with labour rights organizations to arrange media attention and provide other forms of support such as providing T-shirts and loudspeakers. More subtle forms of resistance included protest behaviours within the factories. Our interlocutors mentioned taking multiple toilet breaks to receive more rest time or feigning sickness to be able to go home.

> 'The girl from that other row always goes to the toilet and she annoyed the super [supervisor]. That's why now we must take toilet passes and it's her fault. If they slack off like this, we have to work more.' – Factory worker

From the interviews we (JSB, YKZ) conducted, despite having complaints about long hours and tiredness, the workers themselves reproduced a culture of productivity, describing the above-mentioned forms of resistance such as taking multiple bathroom breaks or feigning sickness as 'bad behaviours' that would eventually bring about penalties for everyone else. I interpret this as a neobondage practice (Mezzadri, 2016) – when workers themselves made negative remarks about taking too many toilet breaks, therefore creating penalties for others, resulting in supervisors pushing for increased productivity. One interlocutor stated how she သီးခံ *thì hkan* (forbearance, tolerance), that was tolerating her tiredness and pain, and continuing to work by adopting coping mechanisms, such as applying ointments to her body.

> ‘People are tired. We don’t get a break until lunch time so sometimes we go to the toilet. For me, I take some ဒဏ်ကြလိမ်းဆေ *dan kyay leìn hsày* (Burmese ointment for pain).’

One of our interview interlocutors who had affiliations with the social security clinic, U Min, reinforced the notion of taking sick leave as a ‘bad behaviour’ and discussed it as a form of resistance seen within the factories. We (JSB, YKZ) interviewed U Min, the owner of a teashop, located beside the social security clinic. U Min’s wife, Ma Marlar, was an administrator at the social security clinic and had been in office for several years.[90] U Min was well-acquainted with several of LRO’s staff members and factory workers who often drank tea at his shop. During the interview, he expressed his views and spoke on behalf of Ma Marlar. U Min states his disapproval of the sick leave process:

> ‘Sometimes workers come to take sick leave to hang out with their boyfriends or do other things. I see them all the time. They are even dressed nicely and don’t look sick at all and come on motorbikes with a boy. Because you must come to the social security clinic and get a signature to get the sick leave, they do like this and usually the clinic administration or my wife signs it for them without a hassle.’ – U Min

U Min discussed how accessing sick leave through the social security clinic was simple, claiming that some workers took advantage of the system by coming in only to retrieve the signature. His wife usually provided this signature out of compassion, even if the workers were not considered sick enough to request leave. In such ways, accessing leave was collaboratively accepted by both U Min, Ma Marlar, and the factory workers as an indirect form of resistance against factory life.

[90] The interview was conducted right before the covid-19 outbreak/restrictions. I was not able to obtain access for a direct interview with U Min’s wife, Ma Malar (names anonymised), due to the outbreak of the covid-19 pandemic.

Figure 36. Strike against Primark who was allegedly sub-contracting a local factory (public event) (photo taken by JSB in August 2019)

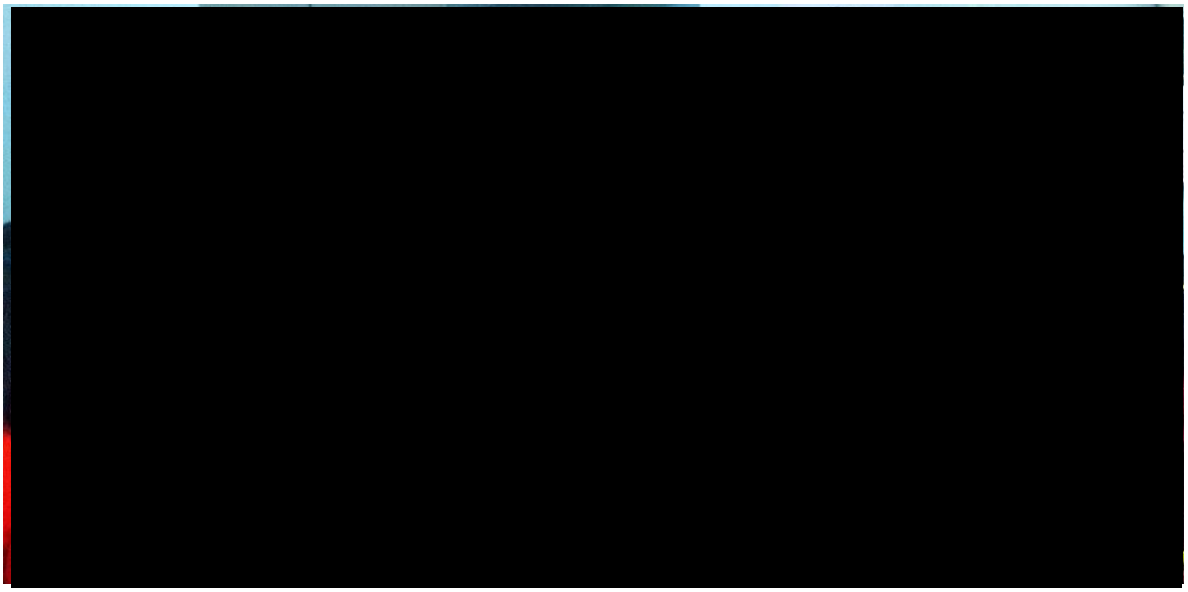


Figure 37. Labour rights training at LRO's office (photo taken by JSB in August 2019)

6.3 Biopolitical abandonment in primary healthcare

Healthcare is completely absent or minimal within the factory re-iterating several reports on the failures of the public healthcare and social security systems in Myanmar (Oehlers, 2005; Grundy et al., 2014; WHO, 2014). Our interlocutors mentioned 'the medicine box' to be the most common form of healthcare available if services were available at all. The medicine box as its name suggests is a small box of medicines, mostly OTC products for factory workers to use. In some instances, the factory would pay for the medicines in this medicine box; however, during our interviews we also came across situations where the worker unions pooled resources to purchase their own medicines. Common medicines included in the box were Bamar ointments to apply for aches (Tun Shwe Wah ဒဏ်ကြေလိမ်းဆေး *dan kyay leìn hsày*) or brands of paracetamol (Decolgen, Para Denk). The medicines purchased for the box were determined based on popular demand (workers suggesting medicines for the union leaders to purchase) or when provided by the factory, were determined by the supervisor/manager's own preferences. In short, the medicines in the box were not informed by clinical or epidemiological advice, and mostly were limited to OTC medicines. Consequently, antibiotics (or ပိုးသတ်ဆေး *pò that hsày* for those familiar with the term), were said to be absent from the medicine box. Three of our interlocutors mentioned being prescribed Amoxicillin for fever and cough outside of the factory and claimed that the medicine box contained only 'ointments/topical creams and painkillers'. Furthermore, the factory workers we (JSB, YKZ) spoke to at times discussed Amoxicillin as its own category, independent from the terms ပိုးသတ်ဆေး *pò that hsày* or antibiotic in English, suggesting understanding the two as separate from one another (not recognising Amoxicillin as ပိုးသတ်ဆေး *pò that hsày* or antibiotic).

Some factories had a 'nurse' to prescribe medicines and to provide basic medical services such as measuring blood pressure or temperature. This 'nurse' as the workers referred to was not professionally trained to be a nurse and was often an administrative staff member taking the role of a nurse to provide medicines. A few of our interlocutors mentioned preferring to သီးခံ *thì hkan* (forbearance) or tolerate their pain or sickness until the day is over as they did not trust the 'nurse' and the medicines prescribed. An interlocutor stated fearing a situation where the medicine and the illness is misaligned, causing more problems for her. In such situations, workers described how they tolerated their pain until they could seek healthcare elsewhere. The notion of asking for healthcare within the factories appeared to be secondary to other issues around labour rights (such as compensation, over-time, and sexual harassment), with organisations like LRO and workers' unions not prioritising healthcare. A few interlocutors lamented on unfulfilled promises within the factory, such as a clinic that is to be established in the future:

> 'It doesn't have [a clinic]. But I heard they are going to make one soon. What is the date? They did mention with an exact date. But it hasn't come yet. Also same with medicine box. They said they will make a medicine box on the 16th. But it's not here yet.' – Female Factory Worker (name withheld)

As for primary healthcare services outside the factory, factory workers were entitled to free healthcare at the social security clinic through their social security benefits or could access private healthcare if they paid out-of-pocket. Depending on the seniority and reputation of the provider (drug shop, general practitioner clinic, specialist clinic,

private hospital), the cost of healthcare varied. In the private sector, workers selected the most appropriate healthcare based on their own personal circumstances and preferences, including affordability and distance.

For workers with employment contracts paying their social security fees (many are not in this position such as Ma Khin who I discussed earlier), the social security clinic provided free primary healthcare services. Many workers did not wish to use this service as it was time consuming and under-staffed. Accessing the social security clinic was stated to take at least half a day, a process which was not favoured by the factory workers. In addition to this, when medicines or services were not available at the social security clinic, workers were asked to access the services privately, and to claim reimbursement to offset the cost. Our interlocutors did not favour this process either, as claim forms were stated to be a 'waste of time' as they were 'complicated and bureaucratic, never fully resulting in a full compensation'. When referred to private healthcare services, factory workers often had to purchase medicines out-of-pocket without reimbursement. Consequently, some choose to access private directly to save time.

The social security clinic, however, was mostly accessed to acquire signatures for sick leave. Paid sick leave was only granted when workers could provide a signature from the social security clinic. Signatures from private clinics were not accepted. Due to these circumstances, for what workers described as 'short illnesses' (including coughs, aches, and malaise), accessing the social security clinic was not preferred. Workers preferred to go to drug shops and private clinics instead. Workers stated that they would only access the social security clinic for prolonged illnesses that required sick leave, or when they desired paid sick leave for other reasons such as tiredness, or more time-off. U Min, who I introduced earlier, mentioned how his wife spends most of her time managing sick leave documents:

> At the social security clinic, I felt so tired of waiting. I wanted to go to the outside clinic (private) as I was sick. But the factory won't cut the salary only if I can show them the medical report from the social security. That's why I went to the social security. I got lucky as I looked very sick, and the doctor saw me, so he skipped the line and saw me first. That's because there are also people who come who don't look ill. They come just for the certificate to get the sick leave. I was feeling suffocated. The doctor came by accident and saw me, so I got treated. – Female Factory Worker (name withheld)

At Sein, we (JSB, YKZ) saw young women arrive early in the mornings at around 7AM to purchase medicines, prior to going to the factories to: 'carry the medicines' to work for when they needed them. These medicines were usually variations of painkillers and antibiotics were only included if U Kyaw or Aunty Moe prescribed them. Our interlocutors had mixed views on whether they preferred going to the drug shop or the general practitioner. Their views depended on their trust in the healthcare provision and their prior experience with the provider. Through trial-and-error, providers were assessed based on several factors, including their ability to cure quickly, and their sociability, affordability, proximity, flexibility, and availability. Therefore, even for general practitioners that tended to charge three to five times more than the drug shops, factory workers were willing to pay for their services if they trusted the provider. Despite costing more, accessing healthcare in the private sector was mentioned as 'hassle free' and 'fast', characteristics that workers valued due to time constraints in their lives.

In conclusion, both within the factory and beyond, even for those who are in a best-case scenario (allegedly in the formal economy and entitled to social security benefits), factory workers in practice are left on their own to manage ill health. They are abandoned (or biopolitically abandoned as I have used the term earlier) by the factory who provides little to no occupational health service, abandoned by the social security clinic which functions to process sick leave requests more so than to provide adequate healthcare, abandoned by the industrial zone and the factory which continues to create exploitative working conditions, and last, abandoned by labour laws/regulations which fail to be properly enacted in practice.[91] The biopolitical abandonment was made more apparent when the worker needed to access secondary or tertiary healthcare. This I describe in the next section, through a vignette we (JSB, YKZ) we collected on a worker who required an immediate coronary artery bypass graft.

6.4 Biopolitical abandonment in secondary and tertiary healthcare

Ma Kyawt is a woman in her mid-thirties with a chronic heart condition exacerbated by poor working conditions (long hours, lack of rest), resulting in her needing immediate surgical care for a coronary artery bypass graft. A staff member at LRO, Ma Thida, who also happened to be Ma Kyawt's cousin, introduced us (YKZ, JSB) to Ma Kyawt after she had received her surgery. From there onwards, we did follow up interviews with relevant people who helped assist Ma Kyawt, including Ma Khin, and a young man from her factory, Maung Toe.

Ma Kyawt worked at a garment factory for more than five years. She said she has a 'bad heart' and has been taking စပ်ဆေး *sat hsày* from the drug shop near her house, and, when she feels worse, from the general practitioner who lives a few streets down. She felt better after such treatments and stated that 'they are within [my] price range and easy to access.' Usually, Ma Kyawt would go to the drug shop first, explain how she felt, and access စပ်ဆေး *sat hsày*. This resolved her problem temporarily; however, sometimes she did not feel better, and this was when she would go to a nearby clinic or a general practitioner. The doctor was more expensive to access but was still affordable for her. Ma Kyawt continued in this pattern for years, until she stopped feeling better with the doctor, and felt tired and sick all the time. She could no longer perform her duties at the garment factory and was falling behind on her quotas. One day, there was a random health check-up service at the factory provided by the social security clinic and the public health hospital (according to Ma Kyawt). This was the first time within the five years that such a service was provided, and Ma Kyawt went to see the doctor, who, according to her, possessed more advanced medical equipment. Ma Kyawt was told to access tertiary healthcare immediately as her heart was failing.

Ma Kyawt lives with her husband in a decrepit home near the factory. She worked six days a week (7 or 8 AM to until 5 or 6 PM and occasionally up to 9 PM on days with over-time) which was standard for factory workers. Many, including Ma Kyawt herself, choose to work over-time on Saturdays, but usually only for half the day (8 AM – 12 PM). After her health check-up, experiencing an increasing feeling of weakness, Ma Kyawt decided to go home

[91] I discuss how individuals who are allegedly in the 'formal' economy (employed through the factories) do not receive welfare benefits that those in the Global North tend to associate with formal work. Biopolitical abandonment in Myanmar is even starker for those who are in the 'informal' economy where people do not have employment contracts or any form of protection from their employers.

and apply for sick leave. Ma Kyawt did not feel better after a few days and underwent her usual pattern and ended up at a general practitioner, who referred her to Yangon General Hospital. At the hospital Ma Kyawt was immediately put in in-patient care and told that she required 'an operation for her heart'. The Head of the hospital quoted a fee of 40 lakhs (4,000,000 MMK or 2,631 USD) which she did not have, especially with such short notice. When she mentioned her inability to pay, she was immediately discharged the next day with no further explanation. She went home perplexed, and fearful, debating on what to do next.

Her news reached Ma Thida, a woman in her early twenties and a full-time staff member at LRO, who had been participating in and organising protests around Hlaing Thar Yar. Ma Thida was furious on behalf of her cousin, stating that this was supposed to be the factory and the social security clinic's responsibility. Ma Kyawt had been paying for her worker's health insurance fees throughout the period of her employment. Workers are entitled to social health protection through worker's insurance introduced in 2012 by the Social Security Law (Introduction to Myanmar Labour Law 2020, 2022). Under this regulation, an employer withholds 2% of the employee's monthly wages while contributing 3% for the individual's social security fund. The social security fees are capped at 15,000 MMK per month (10 USD). Ma Thida was upset that her cousin was discharged without a proper consultation and was receiving little to no aid from the factory. Ma Thida raised this case with the rest of the team at LRO, who reached out to the worker's union at the factory to negotiate how to best support Ma Kyawt.

The next few days involved significant travel as Ma Kyawt, her husband, and an LRO staff member navigated the bureaucracy of the social security clinic, Tamwe Workers' Hospital, and Yangon General Hospital. The administration at Yangon General Hospital that discharged her told her to go to the social security clinic to retrieve pre-authorisation so that she could be re-admitted; this time through social security. When she arrived at the social security clinic (an hour's commute by car), she was told to go to Tamwe Worker's Hospital (another hour's commute) as her case is 'complex' and 'beyond their [administration and doctors at the social security clinic] scope'. Sick, tired, and having to pay for expensive taxi fares that she cannot afford, Ma Kyawt kept her spirits up. She attended Tamwe Workers' Hospital, only to be informed that her the pre-authorisation must be provided by Yangon General Hospital – as they are the ones who initially admitted her and had her records. During this back-and-forth period, a volunteer from the worker's union at her factory, Maung Toe joined the team helping Ma Kyawt out of goodwill to help with the negotiations relating to the factory. Urged by Maung Toe, Ma Kyawt went back to Yangon General Hospital. Without Ma Thida and Maung Toe's support, Ma Kyawt would have accepted her fate and would not have tried to get re-admitted again for her surgery. All this time, the factory ignored Ma Kyawt, kept her on unpaid sick leave, and told her they have 'done their best by not having fired her.'

The factory, the social security clinic, Tamwe Workers' and Yangon General Hospital all denied responsibility and deflected the patient between one other. Ma Kyawt was close to giving up; it was Maung Toe who saved her life. In my interview with Maung Toe, he expressed his frustrations with the system for 'denying responsibility' and 'leaving Ma Kyawt on her own.' Maung Toe felt a need to get involved, resulting in negative consequences for his own circumstances at the factory: having used up his casual leave, he was now being 'watched' by the supervisors for his involvement. A few days later, he went back to the social security clinic to 'cause some noise' to escalate the issue.

Maung Toe's visit to the social security clinic was successful in that he was able 'to threaten' the regulatory staff by stating that he will speak to the media about the injustice and cause noise. After what appeared to be a series of successive threats by Maung Toe, and now supported by LRO, a notable labour rights organization in the region, the social security board agreed to partially cover the cost of the surgery (see quote below for details). The catch was that the funds would only come in as reimbursements, and the process may take anywhere between six months to a year, leaving Ma Kyawt with the problem of having to procure 40 lakhs (4,000,000 MMK or 2,631 USD) for the surgery, out-of-pocket, as payment must be made in advance to Yangon General Hospital. As stated:

> The social security board will only reimburse 20 lakhs [2,000,000 MMK or 1,316 USD] in full. After that it becomes a percentage. So, for instance, if it is 30 lakhs [3,000,000 or 1,974 USD], you can get 80% of it back. So, you will get 8 lakhs back. If it's above 30, let's say 40 lakhs [4,000,000 or 2,632 USD]. The last 10 lakhs [1,000,000 MMK or 658 USD]. The next 10 lakhs will be reimbursed, you can only get 75% of it back so it's 7.5 lakhs [7,500,000 MMK or 493 USD]. – LRO staff member
>
> (Clarification - The social security board will only reimburse the first 20 lakhs in full. Between 20-30 lakhs, they will reimburse 80% and between 30-40 lakhs, 75%. As Ma Kyawt needs 40 lakhs, she will be reimbursed 20 lakhs, 8 lakhs, 7.5 lakhs. She will have to pay 4.5 lakhs out-of-pocket.)

These calculations were made as a best-case prospect for the reimbursement. LRO staff and factory workers I interviewed that it was very unlikely for Ma Kyawt to receive the entire claim/reimbursement back, as 'incorrect claims', or 'missing forms' often result in workers being reimbursed only partially. According to LRO staff members, the actual amount one receives in a reimbursement depends on one's own ကံ *kan* (to have good karma/ to be lucky) and, for minor claims (expenses for medicines): some workers give up on filing for reimbursement as the effort outweighs the actual funds. In addition to this, the claim process is complicated and riddled with jargon (Figure 38). I saw a one-inch-thick binder filled with papers at Ma Kyawt's house with some forms written in English (many workers cannot read Burmese, let alone English). Ma Kyawt can read and write Burmese at an intermediate level of fluency. But even for someone who can read/write in Burmese at a higher education level, without the assistance of organisations like LRO, the bureaucratic language and processes involved are very difficult to navigate, as is typical of the many bureaucracies in Myanmar (medicine registration, permits described in Chapter 4).

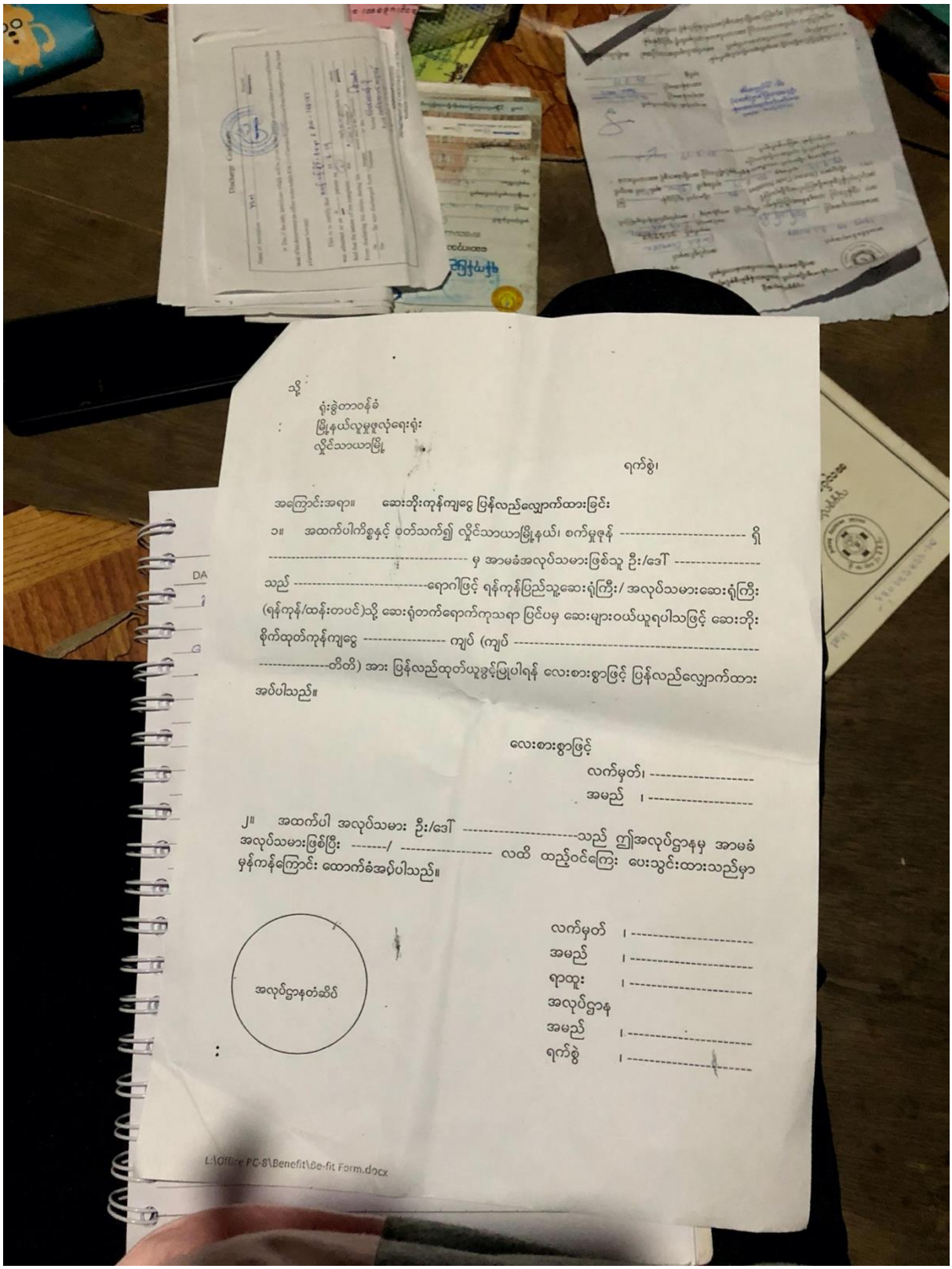


Figure 38. Sample of one of the many forms from the social security clinic I saw at Ma Kyawt's house (photo taken by YKZ in June 2019)

Even after the social security clinic agreed to reimburse her, Ma Kyawt then had the issue of liquidity, as she did not have 40 lakhs (4,000,000 MMK or 2,632 USD) to pay Yangon General Hospital to be admitted back in as an in-patient. In fact, at that moment in time, she did not even have 5 lakhs (500,000 MMK or 329 USD) to hand. She considered pawning off her jewellery and selling whatever household furniture she had to raise the funds. Even then she would not be able to acquire 40 lakhs in cash. After hearing this, Maung Toe and the workers at the worker's union at her factory decided to approach the factory management asking them to bear some responsibility. Refusing to provide any form of support, the factory stated that this was not their responsibility, claiming that it was the responsibility of the social security clinic.[92] They allowed Ma Kyawt as many days of unpaid leave as she required, stating that this action was more than fair from their part. Led by Maung Toe, and supported by LRO, the worker's union at the factory threatened the administrative staff, saying that they would start a protest on behalf of Ma Kyawt. After multiple threats, the factory agreed to provide an interest-free loan of 20 lakhs (2,000,000 MMK or 1,316 USD), half of the amount Ma Kyawt needed, to be repaid after she received her reimbursement from the social security board.

The workers' union at the factory raised funds among themselves and managed to collect another 7 lakhs (700,000 MMK or 461 USD), still leaving Ma Kyawt with 13 lakhs (1,300,000 MMK or 855 USD) to sort out herself. After explaining her difficulties, the administration (appeared to be an advisory board) at Yangon General Hospital agreed to lower the price of her operation to 30 lakhs (3,000,000 MMK or 1,974 USD). The hospital administration also stated that they would be able to do it for 20 lakhs (2,000,000 MMK or 1,316 USD) if Ma Kyawt could wait two to three months to receive the operation, telling Ma Kyawt and her support system to keep the negotiation process a secret as they are not able to do this for everyone. The second option was refuted by Ma Kyawt's attending surgeon who stated that she was not able to wait.

Ma Kyawt now had enough funds to pay for the surgery: 20 lakhs borrowed from the factory, 7 lakhs donated from the worker's union, and 3 lakhs she acquired by pawning her jewellery (discussed shortly). This sum only covered costs related to the surgery itself. Ma Kyawt still had additional expenses, such as transportation fees (10,000 MMK or 6.6 USD each way to the hospital), medicine fees, and laboratory fees. Her husband was also a casual labourer who was being paid on a per diem basis. As he had stopped working to support Ma Kyawt through the surgery, the household no longer had any form of income. Ma Kyawt had some jewellery, a gold bracelet she inherited from her mother, and a gold ring she had purchased from years of savings. She decided to pawn of her jewellery to loan sharks in the region, notorious for their extremely high, unfair interest rates. The loan sharks Ma Kyawt was familiar with had interest rates ranging from ten to thirty percent per month. For instance, a loan of 100 USD would accrue 10 USD in interest per month. The higher the interest rates, the easier it was to apply and have a loan approved. Ma Kyawt pawned various items she owned, some of which were accepted by the loan sharks at the 10% rate, others at the 30% rate. In short, most of her possessions were pawned off for her and her husband to be able to afford the remaining expenses and to offset the opportunity costs of her ailment.

[92] Many factories did not have worker's unions formed. Ma Kyawt was fortunate in that her factory had a recently established and supportive union.

This case story shows how individuals like Ma Kyawt, even after receiving much support from LRO and her worker's union, still struggled to be able to finance desperately needed healthcare. Many factories in Hlaing Thar Yar did not have workers' unions, and labour rights organisations did not have the capacity to help everyone in need. Ma Kyawt was fortunate in that her cousin worked at LRO, and that the worker's union at her factory was supportive and effective. Even then, we do not know what additional challenges she will face or how long it will take her to file reimbursement claims. Ma Kyawt was able to receive the surgery she needed, which saved her life, but is to date still in financial distress as she most likely will be unable to repay her loans and may face additional challenges while trying to get reimbursed (being unclear as to how long it would take to process and how much she would receive in practice). Despite this, LRO staff characterised Ma Kyawt's case as having good ကံ *kan*, as she was able to receive support, unlike many others in similar positions, that may be biopolitically abandoned, left completely on their own to manage the situation.

6.5 A pharmaceutical model of care as a coping mechanism

Exploited by the factory, abandoned by social security/labour regulations, factory workers are left to find their own ways to continue with their daily lives and to cope. Previously I mentioned the term သီးခံ *thì hkan*, defined as forbearance, or tolerance. This term was frequently mentioned by our interlocutors to describe their lives within the factories. Medicine use was discussed as one way to သီးခံ *thì hkan* their working conditions.

Factory workers mentioned the use of pain killers, vitamins, and အကြောဆေး *a kyàw hsày* (intravenous injections) to feel better immediately so that they can continue to work and take overtime hours (Figures 39-40). Although the term အကြောဆေး *a kyàw hsày* translates to an intravenous injection, workers used the term to refer to receiving an injection (intravenous/intramuscular) or an intravenous infusion. During our (JSB, YKZ) observations at Mya clinic, and our interviews with clinicians, the term was similarly defined. In our interviews and observation work with healthcare providers in Hlaing Thar Yar, the provision of a cocktail of vitamins (such as vitamin B complexes, Cevit/vitamin C) through စပ်ဆေး *sat hsày* or အကြောဆေး *a kyàw hsày* and an injection of diclofenac (a non-steroidal anti-inflammatory drug) was common. While doing participant observation with Sein's clients (Mya Myint and a medical doctor who has a practice near Sein), we saw the administration of vitamins referred to by both the patient and the clinician as အကြောဆေး *a kyàw hsày*, when patients present with symptoms of tiredness and malaise. Skidmore highlights a similar use of vitamin B injections during her fieldwork in the early 2000s but discussed the practice as a treatment for malnourishment (Skidmore, 2008). Although less frequent, we saw the same phenomenon at Mya clinic in central Yangon. In addition to injections of vitamins and diclofenac, we also came across a few instances of glucose injections.

I followed up on these observations and asked healthcare providers (seven medical doctors and one public health practitioner working in both public and private healthcare) as to why အကြောဆေး *a kyàw hsày* was popular, and the significance behind the use of such medicines. The medical doctors stated that this was to make patients feel better without causing clinical harm. Patients often come to the clinics asking for အကြောဆေး *a kyàw hsày* for their malaise and declining such requests could result in losing clients. The medicines might be administered as pills or injections and

were considered ‘harmless’ as they were mostly vitamins. As patients expressed a desire for quick relief from an injection, complying with their wishes would maintain a positive relationship, increasing the likelihood of the patient coming back to the provider. A doctor stated:

> ‘It’s a placebo…The patient gets the injection they want, so they become happy. We do it so they are happy. How to put it? They achieve mental wellbeing. It is not necessary for their physical wellbeing. They want these [multivitamin or glucose injections]. For the most part, we don’t give it to them. They request it.’ – Senior medical doctor (more than 15 years working at a public hospital and at his own practice)

The workers we interviewed described အကြောဆေး *a kyàw hsày* as a ‘fast cure’ to help them immediately feel better. Compared to မြန်မာဆေး *myanmar hsày* ‘which may have fewer side effects because they are made from natural products like plants, အကြောဆေး *a kyàw hsày* have chemicals but we prefer it because they are fast.’ This statement corresponded to the medicine interview responses during the drug bag method when participants in Hlaing Thar Yar failed to recognise the medicines as antibiotics but started speaking of medicines through notions of အင်္ဂလိပ်ဆေး *ingaleik hsày* and မြန်မာဆေး *myanmar hsày*. The desire for a fast cure was also expressed during our conversations in households with residents from Hlaing Thar Yar. For instance, an interlocutor from one of the medicine interviews stated the following:

> မြန်မာဆေး *myanmar hsày* is good if you can wait and it has fewer side effects. For chronic conditions like my uncle’s skin problem, I would use မြန်မာဆေး *myanmar hsày*. But for things that I need a quick result like headache or fever, I cannot wait. So, I rely on အင်္ဂလိပ်ဆေး *ingaleik hsày*. There are chemicals in it, but you can feel the effect faster. – Housewife and mother within one of the households near the factories

In their fieldwork, Skidmore and Coderey both highlight the same observation – a preference for biomedicine or အင်္ဂလိပ်ဆေး *ingaleik hsày* due to its ability to quickly alleviate symptoms despite fears of side effects (Skidmore, 2008; Coderey, 2016; 2018). During the medicine interviews, our conversations centred on tablets and not injections as most of the medicines in the drug bag were the former. When the notion of using အကြောဆေး *a kyàw hsày* came up during our observations and interviews with factory workers, I compared the use of စပ်ဆေး *sat hsày*, အင်္ဂလိပ်ဆေး *ingaleik hsày*, and အကြောဆေး *a kyàw hsày*. For instance, I probed as to which types of medicines (စပ်ဆေး *sat hsày*, အင်္ဂလိပ်ဆေး *ingaleik hsày*, and အကြောဆေး *a kyàw hsày*) were used and for what reasons and compared the responses during my analysis. A common response was biomedicines ability to ‘cure fast’ compared to traditional medicines and certain methods of taking the medicine (intravenous injections like အကြောဆေး *a kyàw hsày*) provided an even more immediate relief of symptoms or cure. In sum, not all interlocutors were in favour of these medicines but the ones who were stated that they prefer or have used such medicines to save time and to feel better immediately even while expressing a fear of side effects and unknown chemicals.

Figure 39. Mya Myint administering အဓြာဆေး *a kyàw hsày* (photo taken by YKZ in March 2019)

Figure 40. Sample of a cocktail of အကြောဆေး *a kyàw hsày* (used vials of injectable vitamins) (photo taken by JSB in March 2019)

At Sein, quick cures were prioritised in စပ်ဆေး *sat hsày* when ဆေးကောင်း *hsày kaùng* (good medicines) or what U Kyaw and Aunty Moe understood as 'good brands' of medicines were used in cocktails to ensure a higher probability of cure or quick alleviation of illness. Similarly, the GPs at Mya clinic prescribed what they considered as stronger medicines, and good brands, so that patients can feel the immediate effects. Across our data (ethnographic, drug bag, interviews) collected in different settings, we came across the phenomenon of medicines, and their mode of administration, being selected for a quick cure or alleviation of illness. To interpret these observations, I draw on Biehl's concept of 'pharmaceuticalisation', that I have defined earlier as when pharmaceuticals replace public health practices (Biehl, 2007). Furthermore, anthropologists within AMR have conceptualised antibiotic use as a 'quick fix for care in fractured health systems; a quick fix for productivity at local and global scales… a quick fix for hygiene in

settings of minimised resources; and a quick fix for inequality in landscapes scarred by political and economic violence (Denyer-Willis & Chandler, 2019, p2). Drawing on these two conceptualisations, I interpret medicine use (vitamins, painkillers) through စပ်ဆေး *sat hsày* and အကြောဆေး *a kyàw hsày* as a 'quick-fix', and as a pharmaceutical coping mechanism for people in Yangon beyond the factory workers we interviewed, to cope with biopolitical abandonment. I have presented biopolitical abandonment through the lens of social security and factory life; however, a lack of social protection extends beyond the industrial zone to most of Myanmar and may even be worse in certain places outside of the major cities. For instance, Burma scholar Prasse-Freeman uses the term biopolitical abandonment in his conceptualisation of a 'necroeconomy' to describe mining practices in Northern Kachin State. He defines necroeconomy as 'a system of value extraction constituted by combining extraction processes that spatially, mechanically, and politically require death-making; willing labourers driven by debt, dispossession, and existential desperation; and biopolitical abandonment (by states or corporations) and describes labourers in this context as disposable and 'subjects to the carnage of extraction' (Prasse-Freeman, 2021, p1).

In my fieldwork tracing medicines and antibiotics, I found people to rely on medicines beyond their clinical efficacy or biomedical cure such as when providers and patients negotiate among အကြောဆေး *a kyàw hsày* (intravenous medicines), စပ်ဆေး *sat hsày* (mixed medicines or drug cocktails), အင်္ဂလိပ်ဆေး *ingaleik hsày* (English medicines or biomedicines), and ဆေးကောင်း *hsày kaùng* (good brands of medicines) for the most appropriate treatment tailored to the patient's personal circumstances. Going back to Mol's conceptualisation of good care as one that occurs through a continuous 'adaptive tinkering' process involving 'embodied practices' (Mol et al., 2015), I further characterise the pharmaceuticalisation model of care we observed as one that has been negotiated as opposed to an exploitative purely profit-driven healthcare provision practice. I state this because patients or clients are aware of going to better clinics and using ဆေးကောင်း *hsày kaùng* such as when they stated they would prioritise sending their children to a specialist while resorting to စပ်ဆေး *sat hsày* for themselves. A lack of knowledge of where to find safe medicines is not the issue. A need for affordable medicines and a lack of infrastructural support (for example, proper enforcement of labour laws, social protection, healthcare access) results in the 'misuse' of medicines. Furthermore, the apparent 'misuse' of medicines observed in Yangon during our fieldwork is a coping mechanism to not only manage the daily demands of work-life but also the biopolitical abandonment experienced in everyday lives.

The 2021 military *coup d'état*, the increased political instability brought upon on the country, and the almost collapsed/already collapsed status of the healthcare and social security systems due to the civil disobedience movement (discussed in Chapter 1) suggests an exacerbated biopolitical abandonment for the people of Burma/Myanmar. Efforts to 'rationalise' medicine use or restrict medicines should consider the context of biopolitical abandonment and the pharmaceutical model of care discussed in this chapter in order to risk avoiding worsening livelihoods. Furthermore, more critical reflections are needed on whether a focus on knowledge is the most appropriate AMR response, as I have argued, providing several examples in this chapter and the previous chapters of how structural violence (Farmer, 2005) in slow violence (Nixon, 2011) drives medicine and antibiotic misuse in Yangon.

Chapter Seven: Reflections on antibiotic policy making

7.1 Summary discussion for results

Through the three results chapters, I have ethnographically contextualised pharmaceuticals, particularly antibiotics, amidst the wider social and economic landscape in Myanmar. Chapter 4 regards medicines and antibiotics in the context of the Myanmar pharmaceutical industry. Chapter 5 focuses on regulation in practice on the informal sector through the NAP AMR. Chapter 6 shows how a pharmaceutical model of care has come into place as a coping mechanism for the biopolitical abandonment the people of Burma/ Myanmar experience. I discuss how the results in Chapter 4-6 challenges the NAP AMR's approach to antibiotic policy making – particularly speaking to awareness raising and the emphasis on individual responsibility (individual use/ misuse of antibiotics). In short, the result chapters show how the trajectory and use of antibiotics are shaped by factors beyond an individual's control. The chapters discuss how providers' and patients' prescription/medicine use patterns were determined by wider factors including the workings of the pharmaceutical industry, the rule of law in Burma/Myanmar, the black market, the negotiations undertaken by ဖွဲ့စား *pwèza*, the affordability of medicines, patient's relationships with their providers, and individual coping mechanisms for precarity and biopolitical abandonment. Individual awareness had some influence on antibiotic use patterns but was overtaken by the above-mentioned factors. An overemphasis on awareness raising may therefore be futile if everyday lives continue to be dictated by arbitrary rule of law, precarity, and biopolitical abandonment.

Chapter 4 contextualises medicines in the pharmaceutical supply chain and describes how medicines and antibiotics were exchanged between different actors within this chain, including manufacturers, distributors, providers, and patients. I highlight local modes of functioning already discussed by Burma studies scholars, including the workings of intermediaries like ဖွဲ့စား *pwèza* and negotiations in extra-legal spaces (Décobert, 2021; Henry, 2016; Kyed, 2019; Rhoads, 2020a; Simion, 2021). These modes of functioning enable regulation to be enacted in practice, and influence the trajectory of medicines (for example, ဖွဲ့စား *pwèza* negotiating certain brands and prices of medicines). With this chapter, I argue that knowledge or awareness had little to do with decisions to take or not take antibiotics. On the contrary, affordability appeared to be a key determinant behind patient's and providers' decisions on which providers and brands of medicines to prescribe or use. For instance, 'good brands' of medicines that were acknowledged as 'better' were also considerably more expensive and were reserved for high-end clinics and patients who could afford to access such spaces. Drug shops like Sein, located in more impoverished neighbourhoods, provided cheaper generics or illegal/ unregistered medicines to tailor to their clients. Regulators and providers appeared to be aware of the potential 'dangers' of unregistered medicines and condemned them in their public discourses on AMR. However, they do not publicly acknowledge issues of affordability and the reasons why the black market exists. To do so would also mean admitting to the failures of the state, in decades of biopolitical abandonment, a discussion that state-officials or those working closely with the former (including, MPMDMA, pharmaceutical manufacturers) might find difficult to engage with, due to authoritarian politics, the lack of open or free speech, and the corresponding inability to criticise the military. Blame discourses around AMR directed at the illegal sector in Myanmar have failed to consider how the illegal economy supports the legal and how policy decisions may result in repercussions for both parties. This was made apparent in Chapter 5, illustrated ethnographically by the example of the FDA raid, when the legal actors or regulators (FDA staff, the SO) attempted to enact regulation and recommendations around medicines, that is, to not sell unregistered medicines, not mix medicines, and not sell antibiotics to those without a prescription.

In Chapter 5, I use the FDA raid vignette to show how medicine regulation is enacted in practice. Furthermore, in this chapter I discuss how several actors in the legal and extra-legal spaces attempted to negotiate the rule of law through mutually beneficial agreements (*nàlehmú*) (Rhoads 2020a). I also discuss negotiators in this chapter (Aunty Moe's brother at the hospital, the SO) that acted as intermediaries to enable the enactment of regulations, including applying for registration licenses, and evading inspections. Following on from Chapter 4, Chapter 5 presents an in-depth understanding of everyday livelihoods, informal negotiations, and 'illegal' practices help support people, providing an income for U Kyaw and Aunty Moe, and affordable medicines for their clients. Chapter 5 illustrates how people evade the law – even the state-officials themselves. Such evasion was a virtual necessity for the everyday functioning and the brokering of justice, and this point reiterates previous work done by Burma studies scholars on the rule of law and intermediaries, discussed in Chapter 2. Chapter 5 challenges the appropriateness of an antibiotic policy through 'national' action (discussed further in the next section) by drawing attention to issues around fragmented sovereignty and 'un-rule' of law (Cheesman, 2009, Batesmith & Stevens, 2019).

Chapter 6 delves deeper into the livelihoods of the patients. Specifically, I speak to factory life and factory workers as patients through research conducted in an industrial zone. Chapter 6 discusses the consequences of biopolitical abandonment (Selmeczi, 2009), precarity, and considers how people have come to rely on coping mechanisms to manage their everyday lives. The topic of coping mechanisms has already been discussed by other Burma studies scholars. I contribute to this discussion by identifying the use of medicines (mixed medicines, intravenous injection of vitamins) for a 'quick-fix' or to feel better immediately so that people can continue with their everyday responsibilities. I draw on Biehl's development of the concept of 'pharmaceuticalisation' (Biehl 2007) to discuss this pharmaceutical model of care we observed, to frame it as a 'quick-fix' coping mechanism to manage biopolitical abandonment and precarity.

The three result chapters aim to provide a deeper understanding of the wider social, economic, and political factors that direct the trajectory of medicines and antibiotics, while also contextualising the biography of medicines within Myanmar's 'law and order', tracing (dis)order, the un-rule of law, the role of intermediaries, and the functioning in the extra-legal spaces. In doing so, I challenge the current approach to antibiotic policy making in Myanmar through the WHO GAP/Myanmar NAP (specifically referring to Objectives 1 and 4) which endorses 'national' action/national policies and awareness raising. I discuss my reasoning in the following section where I unpack how 'national' action and awareness raising may not be appropriate for Myanmar.

7.2 The appropriateness of a 'national' action plan

Beginning with a discussion on the implications of antibiotic policy through the WHO GAP/Myanmar NAP AMR, I first reflect on aspects or framings of antibiotic policy proposed through the Myanmar NAP AMR – state stewardship, awareness raising, an emphasis on individual prescribers and patients as opposed to broader structures, andh making the informal and/or illegal sector responsible for AMR in public discourses. I frame my reflections around a discussion on disconnects between the WHO GAP/Myanmar NAP and everyday practices and particularities on the ground, questioning the effectiveness of a universalist framing for antibiotic policy making, in the context of biopolitical abandonment, factory exploitation, widespread corruption, and a vicious ongoing military *coup d'état*.

Following Bacchi's approach (Bacchi, 2016) to policy in reading the WHO GAP and NAPs as 'reactions to presumed problems', which attempts to dictate how antibiotics and their associated peoples should be governed (globally via the WHO and nationally via state governments) and the expected means to do so (state surveillance, regulation and

stewardship programmes). The WHO AMR GAP acknowledges nation-states have variable resources available and thus differing abilities to govern antibiotics. This is posed as a particular challenge for many LMIC member-states including Myanmar, where the availability of antibiotics and their 'irrational' uses are shaped through localised infrastructures (for example, state-market formations, socio-political contexts) which in many cases differ to those of high-income countries. Such LMIC member-states may also lack equivalent government infrastructure and investments, as well as having differing degrees of state sovereignty, modes of political governance and means of enacting rule of law. As shown in Chapters 4 and 5, unregistered medicines which are presumed to be of lower quality than registered medicines or expensive brands of medicines are prevalent in Myanmar due to them being more affordable. Regulation of unregistered medicines was also influenced or impeded by local politics as discussed in Chapter 5 during the FDA raid. This raises questions about the success and possible negative consequences of the WHO's apparent default promotion of nation-states (the Myanmar government and the relevant ministries) as the primary governing bodies through which global health policies, like antibiotic regulations, are expected to be enforced.

Beginning with state-stewardship, Myanmar faces the challenge of being characterised by a fragmented state sovereignty that does not always represent the interests of its population. As introduced in Chapter 2, Burma/Myanmar's history is marked by conflict and authoritarian rule, where the military has dominated the country's politics. Furthermore, it has been widely criticised by both experts and the Burma/Myanmar population for the prioritisation of its own interests which are often in direct conflict with the welfare of the citizens (for example, the ongoing civil wars between the military and ethnic groups, and human rights abuses) (Seekins, 2010). Consequently, everyday regulations are still heavily influenced by authoritarian politics and are often a reproduction of how the state functions through the interests of the military. For example, the National AMR Coordinating Centre whose role and responsibilities are 'planning, implementation and monitoring & evaluation of different strategic interventions and activities of NAP AMR', include members from various ministries including the Ministry of Defence (MOHS, 2018, p42).

Public sector reforms, including in healthcare and education, were published during the NLD period in strategy documents such as the NAP AMR, and the National Health Plan (2017 – 2021) which outlines a roadmap to Universal Health Coverage in Myanmar by 2030 (MOHS, 2016). In addition to this, international development assistance increased dramatically during the NLD period with the Asia Foundation highlighting Myanmar as the seventh largest recipient of international aid globally in 2015 compared to its position as the 79th in 2010, with the report discussing this shift as a significant consequence of the political and economic transition initiated by the Thein Sein government, the first quasi-democratic government before the NLD (The Asia Foundation, 2018). Despite such improvements, aid paradigms in Myanmar have been criticised by local community-based health organisations for potentially producing more harm than benefits (Décobert, 2020; Desportes & Hilhorst, 2020; Ong & Steinmüller, 2021).

As examples, Décobert discusses how development projects in the borderlands such as the building of roads and dams led to land confiscation and environmental destruction, propelling displacement and dispossession of ethnic minorities while benefiting the military and cronies in place of local communities (Décobert, 2020). Desportes & Hilhorst conducted interviews with community members, state officials, civil service organisations, international humanitarians, and researchers for their three-country analysis (Myanmar, Zimbabwe, Ethiopia) on disaster governance and response, to argue that the state was perceived to be using disaster governance to advance its own political goals. In Myanmar, this involved marginalising ethnic and religious minorities (Desportes & Hilhorst, 2020). Furthermore, the authors argue how international actors/donors were also perceived as 'Western agents with their own political agenda' or 'government aligned' (working together with the state), further propagating the state, or, as in Myanmar's case, the military's interests (Desportes & Hilhorst, 2020, p348). Similarly, Ong & Steinmüller discuss how many 'charitable, philanthropic, or

welfare-state activities in the de facto states of insurgent armies, are generally interpreted in terms of utilitarian motives and the self-legitimation of military elites and their business associates' (Ong & Steinmüller, 2021, p1).

Décobert further states how 'aid economies designate different actors as legitimate', and characterises development 'as a site for struggle over recognition and inclusion in contested states' (Décobert 2020, p2). Drawing on ethnographic research in the eastern borderlands, she describes how Myanmar's democratization had led towards a shift in the aid paradigm from a humanitarian framework to more 'development-style' approaches, and notes how this shift was characterised by local community-based organizations (non-state) as causing more harm than good. Décobert discusses this 'development-style' approach as 'a liberal peace approach, which posits economic (and, in particular, neoliberal) development as a long-term solution to conflict, since it is assumed that this will eliminate the grievances that are believed to fuel violence' (Décobert 2020, p3). However, she also describes how ethnic minority health workers fear that internationally funded development programs could instead worsen conflict and structural violence in circumstances where 'structural inequalities have not yet been resolved' (Décobert 2020, p3).

Décobert also discusses how local organizations struggled for recognition in non-state governance systems and managed the impact of when international aid economics designate different socio-political actors as legitimate, creating an unequal 'aid encounter' (Décobert, 2020, p2). Local community-based organizations advocating for alternative models of development in their communities struggle as they compete for legitimacy during this unequal 'aid encounter', resulting in a competition over the territorialization of border areas. The author concludes with an argument to understand local perspectives and engage 'critically with the political implications of evolving aid interventions [or], international aid programs risk impacting negatively on conflict dynamics in contested and transitional states' (Décobert, 2020, p3). These findings resonate with my discussion on the problems of the current approach to antibiotic policy making through the WHO GAP/a state-centric Myanmar NAP.

The multi-steering committee for the NAP AMR responsible for the implementation of antibiotic policy involves members from MOHS, Ministry of Agriculture, Livestock and Irrigation, Education, Commerce, Home Affairs, and Defence. From the private sector, members from the Myanmar Pharmaceutical Association, Myanmar Medical Association, and Myanmar Private Hospital Association were included in the meeting. These individuals fulfilled similar roles to those we (JSB, YKZ) saw at the pharmaceutical exposition in representing the same 'formal' or state-endorsed organizations/bodies (for example, the MPMDMA). In such ways, the legitimacy or the power/control to develop and implement antibiotic policy through the NAP has been granted to formal/state-endorsed bodies in Myanmar with little to no representation from actual suppliers in practice, notably individuals like U Kyaw and Aunty Moe. In other words, the voices of the latter are essentially excluded from antibiotic policy making, despite informal medicine networks being central to supporting the supply of medicines to most of the population. This is not a radical argument to bring individuals like Aunty Moe and U Kyaw into the multi-steering committee itself, but rather a push to begin to understand and hear their perspectives and include them in antibiotic policy making.

Similar to Décobert's conclusions from her borderland ethnography, antibiotic policy through the FDA raid brought more harm than good to the individuals involved while failing to accomplish its purported intentions (reducing the sale of unregistered medicines regarded as the contributors of drug resistance) as the shopkeepers were let off after a နားလည်မှု *nàlehmú* arrangement. The နားလည်မှု *nàlehmú* arrangement suggests how regulators knew the informal sector exists to support people and that it was not always possible or appropriate to eradicate the informal sector, especially when other infrastructural systems like social security or health insurance are inadequate. To prevent such risks, and for more effective policy making, critically engaging with local stakeholders (U Kyaw, Aunty Moe, the FDA field staff who

conduct the raids, the SO) and including their voices or lived experiences would result in more effective antibiotic policies. This would involve potentially de-centring the emphasis on the partners listed in the multi-steering committee or expanding involvement to civil society organizations and other non-state endorsed local groups. Rather than beginning from the top through a 'national' action plan in a country where the notion of 'national' has been and is still contested, a humbler localised approach where the particularities of the specific context are first contextualised would be more appropriate. Such an approach or a bottom-up, 'wider lens' method as I have characterised it throughout this thesis, could produce policies that are inclusive and in alignment with the practicalities of everyday lives and the needs of the population they are governing. If not, the policies may not only fail to achieve their intended outcomes but may also risk reproducing authoritarian politics, exacerbating pre-existing inequalities. Furthermore, similar to Décobert's argument, a state-centric or a national approach to antibiotic policy making may also result in over-legitimising less relevant voices while ignoring the circumstances and the livelihoods of those who these policies in practice are referring to. Excluding a consideration of these circumstances and the everyday politics of those whom the policies are aiming to regulate or police, may result in poorly designed and enforced regulations as other priorities (sustaining livelihoods, coping) overshadow effective policing of medicines. This is particularly true in a context like Myanmar where regulation on paper has historically carried limited significance, as discussed by Burma studies scholars in different disciplines (Cheesman, 2009; Prasse-Freeman, 2015; Batesmith & Stevens, 2019). Reiterating these claims, I demonstrate how people cope with biopolitical abandonment (Chapter 6) and the 'un-rule' of law (Cheesman 2009) (Chapter 5) by navigating everyday politics on their own through implicit နားလည်မှု *nàlehmú* and ကန်တော့ *kan táw* negotiations and the workings of informal brokers such as ပွဲစား *pwèza*.

7.3 The appropriateness of awareness raising

The WHO GAP/Myanmar NAP's 'Objective 1' focuses on awareness raising. The Myanmar NAP has two sub-objectives: to improve awareness of AMR amongst the general public and professionals and improve knowledge of AMR through professional education and training deployed at the national scale. For the first sub-objective, an evidence-based public communications programme is recommended as an intervention. The second sub-objective recommends including infection prevention control as a core component of professional education, training, and certification. KAP studies on a national scale to assess awareness levels and gaps in knowledge is stated within the first objective. Priority target groups for the general public include 'farmers, pharmacists, pharmacies, druggists, traditional medicine practitioners, primary and secondary school curriculum, general public and media' (NAP for Containment of AMR: Myanmar, 2017, p29). Priority target groups for professionals include 'specialist physicians/surgeons, general practitioners, veterinarians, para-veterinarian, paramedics, nursing staff, environmental health specialists, agriculture/production experts, ministry officials of relevant departments and policymakers' (NAP for Containment of AMR: Myanmar, 2017, p31).

Social scientists within AMR, including medical anthropologists, have discussed and emphasized the limitations of using KAP surveys to assess knowledge (Chandler, 2018; Dixon et al., 2019; Haenssgen et al., 2020a; Launiala, 2009). In a review of antibiotic use data collection methods, Queenan et al. discuss how surveys often relied on respondent recall and inventories of antibiotics kept at home (Queenan et al., 2017). Dixon et al. pointed out that surveys applied to assess antibiotic knowledge have particular methodological drawbacks (Dixon et al., 2019). The authors state how recall memory is unreliable, home inventories are limited to what is kept at home, and the cross-sectional nature of a survey provides limited time for interlocutors to engage with the research (Dixon et al., 2019). Our

preliminary research using the drug bag method in Myanmar, and the inability to effectively trace antibiotics among the public generally (described in Chapters 3) further prove the limitation of assessing antibiotic knowledge through KAP surveys. In addition to the above-mentioned limitations, a KAP survey would not work if the knowledge were not available. The proposed interventions in Objective 1 to assess knowledge through KAP surveys may be limited in their ability to correctly quantify or assess awareness of antibiotics, particularly among the lay public. In this thesis, I showed how the lay public did not recognise antibiotics or distinguished them from other အင်္ဂလိပ်ဆေး *ingaleik hsày* or biomedicines, resulting in me modifying my research to tracing medicines with a focus on antibiotics. This methodological challenge provided important insights into the feasibility and appropriateness of an awareness raising intervention for the lay public in Myanmar. Educating the lay public on objects or notions/definitions it does not possess (sample of an awareness raising message – Figure 11) may result in an ineffective education campaign. For instance, how would one effectively discuss antibiotics and raise awareness of ABR on a national scope when most people outside of healthcare workers do not have a notion of what they are? This also presented a methodological problem, necessitating further research for solutions.

The current political crisis following the February 2021 military *coup d'état* is expected to enhance levels of all arbitrary rule of law, precarity, and biopolitical abandonment. The most recent World Bank press release on Myanmar published on January 26, 2022 states a 'critically weak economy, around thirty percent smaller than it might have been in the absence of covid-19 and the February 2021 coup' with 'recent trends of escalating conflict… a low vaccination rate and inadequate health services' making Myanmar's people particularly vulnerable to both precarity and emerging health hazards like the Omicron variant of covid-19 (World Bank, 2022b). In the same press release, World Bank Senior Economist for Myanmar states how private investment has fallen markedly, and previous projects are becoming unviable with costs of imports rising and the Myanmar currency falling dramatically in the global currency market (World Bank, 2022b). The ongoing political and economic instability and increased structural violence, reverses the limited development progress the country has made during the quasi-democratic period (for example, a National Health Plan for universal health coverage, social security, labour laws, increased capacity within public hospitals).

The current circumstances in Myanmar – increased structural violence and an exacerbated level of biopolitical abandonment as the military is now at effectively at war with most of its citizens – further debases the notion that individuals have agency over their actions or a neoliberal choice. In other words, people's behaviours are informed by their need to survive as opposed to having a choice. Most of Myanmar's people are now resorting to coping mechanisms, the informal sector, and employ personal connections to access oxygen, medicines for covid-19, and healthcare services (Krishna et al., 2021). Actions taken for survival may or may not align with biomedical rationality. For example, many medical doctors promoted the use of certain antibiotics on social media during the June – July 2021 covid-19 outbreak.[93] As medical doctors were being persecuted during this period, access to healthcare became increasingly difficult and expensive.[94] Those who could not afford oxygen cans, oxygen concentrators, or the fees for a medical doctor relied on shared information on Facebook such as home remedies and the use of certain medicines including antibiotics to alleviate symptoms and co-infections. Many of such information is not biomedically correct or 'rational' as the world was still

[93] I was unable to collect data on the topic despite its relevance as I had to leave Myanmar in April 2021 at short notice for my own safety. I decided to complete this thesis in the safety of London. The June/ July 2021 covid-19 outbreak took many lives including that of my father and the information stated in this section came from my own personal experiences searching for medical doctors and healthcare on Facebook for my family.

[94] A British Medical Journal report compiled by two journalists mentioned 240 attacks against healthcare workers as of October 2021 (Krishna et al., 2021).

coming to terms with understanding and treating covid-19 even in high resource settings. However, the alternative – doing nothing – caused more anxiety and suffering for those who were placed in positions of not being able to send their loved ones to a hospital. As another example, after the July 2021 outbreak, I came across instances of individuals accessing a fourth or a fifth booster dose of the Covid-19 vaccine (Sinopharm) in the black market, despite limited guidance available on its efficacy beyond a second dose. These actions were taken out of fears for another outbreak, an oxygen shortage, and an inability to access a healthcare provider. Such examples show how most people in Myanmar are now experiencing a dangerously high level of biopolitical abandonment, particularly affecting the poor who do not have the financial means to access services in the black market. Consequently, appropriating medicine 'misuse' behaviours necessitates going beyond presumptions of individual agency and above reductionist blame-shifting discourses on the individual.

In the context of factory workers as this research speaks to, addressing the drivers of precarity and biopolitical abandonment is central to appropriating medicine and antibiotic use.[95] This, however, involves addressing the political crisis which is beyond the scope of international and local stakeholders within AMR. Nevertheless, discourses around AMR in Myanmar (pre *coup d'état*) centred around condemning the informal and/or illegal sector as the driver of AMR, while suggesting awareness raising as an appropriate intervention to alter medicine misuse behaviours. Early intervention proposals based within the awareness raising model included a forum theatre approach for public engagement around antibiotic use in Myanmar (Swe et al., 2020). Such interventions may be rendered less effective if awareness is not a determining factor in antibiotic misuse. To my knowledge, awareness raising was the most visible public intervention effort for appropriating antibiotic use when this research was done. Social scientists within AMR working in neighbouring contexts (Bangladesh, Thailand, Laos) have already attempted to study how precarity affects drug resistance (Haenssgen et al., 2020b; Hinchliffe et al., 2021). Directing our efforts to promoting further studies on the social, economic, and political determinants of AMR to identify ways to address medicine misuse in the context of precarity and biopolitical abandonment in Myanmar may be more appropriate prior to a proposal for a nation-wide scale-up of awareness raising interventions and public engagement activities framed around the former. In short, re-framing the issue in policy discourses as one that is driven by factors beyond individual awareness would be a suitable onset.

7.4 Reflections on targeting the informal sector to address AMR

To briefly summarise global health discourses on AMR in Myanmar, experts express concerns over AMR and attribute antibiotic overuse patterns in LMICs as a major driver (Klein et al., 2018; Okeke et al., 2005; Zellweger et al., 2017). The Mekong region in Southeast Asia has been identified as a particularly concerning hotspot for the rise of newly resistant pathogens (Liverani et al., 2020; WHO, 2013). Countries with lower incomes in this region like Myanmar have been regarded with apprehension for their role in driving up rates of AMR in the region, due to the high utilisation of commercial healthcare providers and the often unregulated sales of medicines (Khan et al., 2017; Liverani et al., 2020).

As a consequence of the abovementioned concerns, several calls for 'national' action and interventions to address antibiotic 'misuse' have been voiced by various stakeholders (WHO, Fleming Fund, researchers). Furthermore, many interested stakeholders placed hopes on the NAP AMR, justifying 'national' action as a way to garner political interest and sustainable action. However, due to several reasons, the NAP AMR at its current state is a verbatim overlap of the WHO GAP, with a very limited engagement and inclusion of situational factors. With the advent of this early-

[95] But also applicable to others in Myanmar

stage proposal for antibiotic policy implementation and interventions, public discourses on AMR from officials have begun to attribute illegal medicines and mixed medicines in the informal sector as the drivers of drug resistance in Myanmar (Phyo Wai Kyaw, 2019; Si Thu Lwin, 2016; Shwe Yee San Myint, 2014a; 2014b; Aung Phay Kyi Soe, 2019a; 2019b).[96] Awareness raising efforts (see Figure 11) through posters endorsed by the WHO and the MOHS announced that taking mixed medicines can lead to drug resistance and eventual death. Although the efforts were in their early stages in 2019/2020, there appeared to be a strong condemnation of the informal and/or illegal sector, making the sector responsible for AMR and, in particular, directing blame at individual prescribers and patients. Blanket targeting of the informal sector through blame discourses, however, is counterproductive in Myanmar for the reasons specified below.

This ethnographic data grounding in this thesis demonstrates that policy making around medicines/antibiotics cannot simply be categorised through the dichotomous framings of formal/informal or legal/illegal, because individuals who fall in the legal sphere at times partake in illegal activities and vice versa.[97] Burma researchers in other disciplines have supported this observation, including Rhoads and Roberts in their work on urban development and property sales (Rhoads, 2020b; Roberts & Rhoads, 2021). Thawnhmung in her qualitative study of everyday economic survival in Myanmar (Thawnhmung 2019), and Chang in her study of the underground trade in Burma in the borderland areas (Chang 2013). Furthermore, the significance of the informal sector in supporting everyday livelihoods is widely acknowledged beyond the academic scholarship. The World Bank estimates 76% of current health expenditure in Myanmar to be out-of-pocket in the year 2019 (World Bank, 2022a). Outpatient care and the purchase of medicine and medical supplies were the main drivers of out-of-pocket expenditures (WHO & World Bank, 2021, p26). Research in other low resource settings shows similar problems. Pinto describes how self-made doctors in North India were informally sanctioned by the government to provide services where public facilities are unavailable (Pinto, 2004). Hutchinson shows how the introduction of rapid diagnostics in drug shops legitimised drug vendors in Uganda (Hutchinson et al., 2015). In conclusion, the significance of the informal sector in supporting livelihoods in LMICs has been well established.

Therefore, it is not surprising that the situation in Myanmar demonstrates the dependence of people's livelihoods on the informal sector. In addition to the informal sector supplying most of the medicines available in Myanmar, this sector economically supports the livelihoods of a multitude of officials in the formal sector. A blanket restriction of medicines in the informal sector, or unilaterally shifting the responsibility of AMR onto this sector, may result in adverse unintended consequences if the interventions do not take into account the fact that the informal sector supports and co-exists with the formal; as Roy iterates: 'informality is not a separate sector but rather a series of transactions that connect different economies and spaces to one another' (Roy, 2005, p2). Continuing in this vein, blaming the 'illegal' sector or 'illegal medicines' as the cause of drug resistance is ill advised, because the 'illegal' has been defined and constructed by the state.[98] This circumstance resonates with 'legality' in the context of urban planning in India:

[96] The novelty of the AMR agenda in Myanmar, as compared to other diseases like HIV or TB, and the changing political landscape from direct authoritarian rule to disciplined democracy during the democratic transition period, has affected normative and hierarchical structures within public health and policy. Given a lack of adequate resources the NAP AMR is a verbatim overlap of the WHO GAP with insufficient engagement at present.

[97] To reiterate a point from Chapter 5, it must be noted that the dichotomous framing of formal/informal and legal/illegal is ambiguous in practice, therefore, these terms must be used with caution. I define the terms in the following manner: 'formal'/'legal' – relevant ministries and organizations endorsed by the ministries, and 'informal'/'extra-legal'/ as– those who are outside the boundaries of the 'formal'/'legal'.

[98] I occasionally employ the terms 'illegal' and 'informal' interchangeably in the ethnographic vignettes because in the Burmese language informal practices or extra-legal practices are rendered as 'illegal'.

> ‘The planning and legal apparatus of the state has the power to determine when to enact this suspension, to determine what is informal and what is not, and to determine which forms of informality will thrive and which will disappear. State power is reproduced through the capacity to construct and reconstruct categories of legitimacy and illegitimacy’ (Roy, 2005, p3).

Consequently, blaming the ‘informal’/‘illegal’ sector risks reproducing state power, which in Myanmar operates in the military’s interests, previously discussed by development scholars working on Myanmar (Décobert, 2020; Desportes & Hilhorst, 2020; Ong & Steinmüller, 2021).[99]

To mitigate the risk of legitimating the military’s authoritarian rule, I recommend a more critical understanding of and engagement with the local politics. In the Burma/Myanmar context, this includes understanding and incorporating discussions on the relevance of နားလည်မှု *nàlehmú*, ကန်တော့ *kan táw*, and coping mechanisms when considering interventions for antibiotic policy. My ethnographic study of medicines focuses on informal medicine practices in one township in Yangon. No doubt this work could in future be extended towards an understanding of medicine use in other demographic and healthcare settings. Prior to national discourses shifting the responsibility of AMR to those who occupy the extra-legal and illegal spaces, more work (research, policy discussions, stakeholder engagement) to both understand and critically engage with the extra-legal/illegal context is necessary to develop policies and interventions that are effective in producing their intended outcomes, and simultaneously refrain from exacerbating pre-existing precarity and economic hardship. My thesis contributes to the initial aim of understanding medicines and antibiotics within their social, political, and economic contexts. Future research to inform antibiotic policy in Myanmar must address ‘national’ action, which at this stage appears to be too ambitious, at worst resulting in harmful unintended consequences, and at best offering yet another action plan that remains on paper as opposed to implementing effective antibiotic policy. As argued in the previous section, taking a step back to commence with a humbler, more localised approach, promises more informative, appropriate, and achievable results.

7.5 Everyday coping mechanisms in Myanmar

As an extension to my previous discussion on local politics, I discuss how people in Myanmar cope with biopolitical abandonment by compiling the various coping mechanisms I observed during the ethnography. I discuss coping mechanisms through the themes of learning to live with an ‘un-rule’ of law (Cheesman 2009), finding support for biopolitical abandonment through informal routes (the use of ပွဲစား *pwèza*, နားလည်မှု *nàlehmú* negotiations, ကန်တော့ *kan táw* practices), and managing everyday economic survival.

I first characterise regulation in Myanmar as a projection of how the rule of law is enacted in practice in everyday lives (see Chapter 2). In addition to political violence, precarity, and inadequate health infrastructures, the rule of law in Myanmar is characterised as arbitrary and prone to rapid change. As I detail in Chapter 2, Burma scholar Cheesman discusses the rule of law in Myanmar as an ‘un-rule’ of law; lacking in transparency, stability, and unable to provide effective guidance to its citizens (Cheesman 2009). Our conversations with pharmaceutical interlocutors, and

[99] The military maintained its dominance over public policy despite this research being conducted during the democratic transition period. As Myanmar has reverted back to full authoritarian rule, the military will undoubtedly hold unparalleled power in public policy. Consequently, development projects aiming to work in Myanmar are at an even further risk of enabling state power.

with Aunty Moe and U Kyaw, corroborated Cheesman's characterisation, for instance when the head of a pharmaceutical company laughed at the fickle tax rules (Chapter 4), and Aunty Moe/U Kyaw intentionally ignored regulations to prioritise their livelihoods and their relationship with their clients (Chapter 5).

When work related to managing regulations was required (such as, obtaining permits/licenses), people utilised the expertise of ပွဲစား *pwèza* who have the knowledge of how to come up with the most appropriate နားလည်မှု *nàlehmú* arrangement. Rhoads, in her work on property disputes in Yangon, conceptualises ပွဲစား *pwèza* as informal justice brokers in Myanmar's legal system. Rhoads discuss how in Myanmar there is a high level of avoidance of the formal justice system as there is no equal treatment, resulting in people resorting to 'localised, socially mediated informal forms of dispute resolutions' (Rhoads 2020, p283). Other Burma scholars have described a similar process in spaces outside of Yangon, such as Mi Thang Sorn Poine on accessing justice in southern Mon state (Mi Thang Sorn Poine, 2018), and Cheesman in his work on judicial courts (Cheesman, 2015). As Rhoads has also argued, ပွဲစား *pwèza* in the pharmaceutical industry engaged in ways to broker justice, such as when the SO, Sabai drug shop, and the other drug shops came up with a နားလည်မှု *nàlehmú* arrangement (see Chapter 5), or when the GP at Mya clinic negotiated with a pharmaceutical representative to lower the price of medicines for her patient. In Chapter 5, I characterised the ပွဲစား *pwèza* I encountered during fieldwork into two types – one whose identity as a ပွဲစား *pwèza* is explicit, such as individuals that manage permits for pharmaceutical companies, and the other as temporary ပွဲစား *pwèza*, individuals who have an occupation elsewhere, but accept the role of a negotiator when circumstances initiate the process. I interpret these circumstances, the corresponding activities of ပွဲစား *pwèza*, and the informal negotiations they manage as coping mechanisms to alleviate everyday hardship caused by precarity, biopolitical abandonment, and the 'un-rule' of law.

Drawing on fieldwork conducted across the country between 2008 to 2015, Thawnhmung extensively discusses coping mechanisms in Myanmar in her book Everyday Economic Survival in Myanmar (Thawnhmung 2019). Like Rhoads, Thawnhmung describes how 'many Burmese rely on social networks, mutual obligations, and reciprocity as a way to mitigate their economic risk', resulting in the development of coping mechanisms shaped by the imperative of economic survival (Thawnhmung 2019, p4). She outlines the 'LPVE (Loyalty – Passive Resistance – Voice – Exit) framework (drawing inspiration from Hirschman's and Scott's frameworks) (Hirschman, 1970; Scott, 2008) to conceptualise and organise coping mechanisms in Myanmar. The framework conceptualises coping mechanisms to accommodate structures of power (loyalty), to be indirect and uncoordinated in nature (passive resistance), as an act of escape from oppression (exit), and as a way to resist or address injustice (voice). Thawnhmung provides the examples of frugal living, income supplementation, mobilising support or external aid through social networks, psychological strategies (gambling, astrology, religion), and political mechanisms (negotiating with state authorities, concealing income) as coping mechanisms for everyday economic survival (Thawnhmung 2019). Furthermore, she classifies coping mechanisms as self-enhancing (finding alternative sources of income) or self-defeating (pawning and selling off things to generate cash). Last, she discusses how humanitarian work, and the involvement of non-governmental organizations, unintentionally results in rupturing such local networks and ties (Thawnghmung 2019, p115). Thawnhmung's analysis is relevant to my own observations around coping mechanisms.

As previously discussed, I interpret everyday practices in relation to medicine regulation, sales, and coping mechanisms. Chapter 4 discusses နားလည်မှု *nàlehmú* in the pharmaceutical industry and the use of ပွဲစား *pwèza* or

intermediaries that negotiate on behalf of different stakeholders. Drawing on Thawnhmung's framework, I interpret the presence of ပွဲစား *pwèza* and their work as a coping mechanism, and another form of political resistance to navigate the rule of law through extra-legal practices. As the rule of law in Myanmar is an 'un-rule' of law (Cheesman 2009), the role of ပွဲစား *pwèza* has developed as a coping mechanism to broker justice, and support livelihoods.

In Chapter 5, the shopkeepers' decision to ignore warning letters and continue to operate as usual, prioritising their need to sustain their livelihoods as opposed to being law-abiding, may be seen as an act of self-enhancing political passive resistance. The shopkeepers discussed navigating how to best appease state officials and 'not get into trouble' was indirect and uncoordinated; similar to how Thawnhmung characterises passive resistance (Thawnghmung 2019). နားလည်မှု *nàlehmú* and ကန်တော့ *kan táw* can be interpreted as political mechanisms, because the shopkeepers negotiated with state authorities to continue their activities and made accommodations for structures of power by negotiating in a way that benefits all parties involved. Consequently, a negotiated sense of justice is brokered among all parties (similar to how Rhoads discuss ပွဲစား *pwèza* as informal justice brokers in property transactions, [Rhoads 2020]). The smaller shops like Sein maintained their livelihoods, the SO received a ကန်တော့ *kan táw* compensation, and Sabai evaded the law or a lawsuit by paying a penalty it can afford. Everyday economic survival was sustained for everyone involved. As a consequence, the AMR agenda was lost amidst other competing priorities and coping mechanisms, while economic survival took priority. Without consideration of these everyday politics in antibiotic policy making, we may risk endorsing and promoting implementation activities that do not work.

Chapter 6 shifts the attention away from the pharmaceutical industry and providers to the patients and consumers, to describe how the latter access pharmaceuticals and healthcare. In this chapter, I discuss precarity and biopolitical abandonment when institutions (the factory, the state, rule of law, public healthcare) fail to protect the individual and enable access to adequate healthcare. Ma Kyawt experienced a 'self-defeating' coping mechanism as she pawned her jewellery, went into debt, and took out high interest loans from loan sharks to finance her surgery. Had she not been helped by LRO, she would have resorted to an 'exit' strategy, which Thawnhmung describes as leaving the situation/country. An 'exit' strategy for someone like Ma Kyawt, who does not have the means to leave the country, is giving up or dying. Ma Kyawt and LRO again engaged in forms of passive resistance as they negotiated with social security and the relevant public hospitals. LRO in a way acted as a temporary ပွဲစား *pwèza* to broker justice on behalf of Ma Kyawt. In conclusion, all forms of coping mechanisms I observed during fieldwork were collective and almost collaborative in nature, involving informal negotiations between the involved partners for a mostly beneficial outcome for all those involved.

Last, I discuss the use of စပ်ဆေး *sat hsày* and အကြောဆေး *a kyàw hsày* as a 'psychological coping mechanism' (Thawnhmung 2019) to tolerate the laborious conditions of factory life. Pharmaceuticals became a model of care or as Chandler and Denyer-Willis describe 'a quick fix' (Denyer-Willis & Chandler, 2018) to soothe individuals from the failures of healthcare infrastructures that are unavailable (biopolitical abandonment) and precarity emerging from everyday living conditions in this context. As the clinicians during the interviews said, the placebo effect of providing quick fixes like အကြောဆေး *a kyàw hsày* not only appeases but also retains their patients by incentivising them into come back. An ability to keep patients was seen as important in a clinical practice as it supports both the provider's income and increases the likelihood of the patient coming back in the future for more severe issues (as opposed to not seeking clinical care).

I interpret the provision of အကြောဆေး *a kyàw hsày* as a negotiated practice or another example of a နားလည်မှု *nàlehmú* agreement. Drawing on Mol's conceptualisation of care as a process of 'adaptive tinkering and tailoring' (Mol et al., 2015; Chandler et al., 2011), I argue နားလည်မှု *nàlehmú* to be an act of care in itself, achieved through a similar process of adapting, 'tinkering', and tailoring'.[100] In addition to analysing နားလည်မှု *nàlehmú* as an act of care through Mol's work, I interpret both နားလည်မှု *nàlehmú* and other acts of care (for example, provision of drug cocktails and vitamin injections which I have interpreted as acts of pharmaceuticalisation) in Myanmar as coping mechanisms to structural violence and biopolitical abandonment.[101] For this analysis, I draw on Das's (anthropologist) discussion on care and violence (Das, 2006; 2013; Das & Randeria, 2015).

Das through her examination of case studies of violence during the Partition of India in 1947 and the massacre of the Sikhs in 1984, discusses how such state violence has become 'the recesses of the ordinary' in everyday life as opposed to an interruption to life. Das analyses violence as both a means of power and a force that shapes the lives of people and communities (Das, 2006). Similarly, for Burmese people biopolitical abandonment and state violence in Myanmar through deliberate neglect (decades of underfunding health and social sectors), militarisation of healthcare (denying access to healthcare for certain populations), and direct conflict (civil wars), is the ordinary everyday life. Das examines how people have developed a form of 'care' outside of 'formal politics' to manage this ordinary everyday life marked by violence.

Das's concept of care is expanded upon in a later analysis of the politics of the urban poor, based on long-term ethnographic fieldwork in Africa, Asia, Latin America, and the Middle East (Das & Randeria, 2015). Das & Randeria conceptualises 'an ethics of care' as a 'determined commitment to sustain life, showing paths other than that of liberal citizenship through which life comes to be sustained' (Das & Randeria, 2015, p8). The authors describe this process of care to have emerged outside of 'formal politics', existing to help people manage the unstable relationship they have with the state and everyday structural violence. The authors discuss how:

> In all these cases the relation with the state might be characterized as a moving, shifting, unstable relationship. In some cases, the everyday life honed out of the conditions in which poverty and violence are imbricated depends on an ethics and aesthetics carved through improvisations and innovations on the given categories of kinship or community. In other cases, there is an attempt to remake the networks of relations that include the transactions with street-level bureaucrats or other brokers and instruments of the state. In all these cases there is a critique generated from within these lifeforms of the possibilities and limits of formal politics that deserves utmost attention as itself a form of politics in order to recognize the work that the poor do in the affirmation of life (Das & Randeria, 2015, p8).

[100] Chandler et al., 2011 have drawn on Mol's conceptualisation of care and have used the term 'adaptive tinkering and tailoring' to discuss care in the context of medicine and rapid diagnostic test provision for malaria by private providers in Cambodia. I have also drawn on Chandler et al.'s work as it is more closely related to my fieldwork.

[101] I have interpreted the act itself – the use and provision of vitamin cocktails for quick alleviation of symptoms or a 'placebo' effect – as an example of pharmaceuticalisation through Biehl's conceptualisation of the term discussed earlier (a pharmaceutical model of care) (Biehl, 2007). However, I am discussing the negotiations involved in accessing this medicine (negotiating with the healthcare provider for a home visit and an injection version of the medicine as opposed to a pill format) as နားလည်မှု *nàlehmú* negotiations or acts of care.

Drawing on the above quote, I interpret all the negotiated practices I have ethnographically described in this thesis – various examples of နားလည်မှု *nàlehmú* arrangements, the provision of vitamin cocktails as a 'placebo', ပွဲစား *pwèza* and their activities, ကန်တော *kan táw* acts – as innovative and improvised acts of care, having emerged outside of 'formal politics' as an attempt 'to remake the networks of relations' to manage poverty, violence, and 'unstable relationship' with the Myanmar military. These acts of care are in fact 'the work that the poor do in the affirmation of life' or a way to cope and manage life under Burmese authoritarian politics or in Cheesman's words, an 'un-rule of law' (Cheesman, 2009).

To further unpack my analysis of care, I expand upon the example of နားလည်မှု *nàlehmú* as a form of care.[102] Roberts and Rhoads describe နားလည်မှု *nàlehmú* as an 'economy' and a 'hidden-in-plain-sight social infrastructure' which works 'across different scales – from the intimate to the public – [producing] social and economic value horizontally through rhizomatic decentralized networks and vertically through hierarchies' (Roberts & Rhoads, 2021, p2). နားလည်မှု *nàlehmú* is a 'discreet and prolonged way in which Myanmar people have struggled to survive and better their lives through grassroot tactics' (Roberts & Rhoads, 2021, p2). In this definition, I draw attention to how the authors highlight the significance of နားလည်မှု *nàlehmú* in upholding infrastructure in Myanmar. My observations of နားလည်မှု *nàlehmú* reiterates this analysis. Furthermore, I add to Roberts and Rhoads's discussion by interpreting နားလည်မှု *nàlehmú* as a coping mechanism to structural violence and biopolitical abandonment, a discreet social infrastructure that exists outside of formal politics to support people and sustain livelihoods where state services are unavailable or are dysfunctioning.

In sum, people in Myanmar practice care through a fluid process of 'tinkering' and negotiating to cope in ways discussed by Das, Mol, Denyer-Willis & Chandler, and Roberts & Rhoads. These practices are not limited to Myanmar alone and extend to other settings marked by parallel yet different forms of structural violence (Das in India – Das, 2006, Denyer-Willis & Chandler in East Africa – Denyer-Willis & Chandler, 2019). From this discussion, I argue that policies on paper will inevitably be affected by everyday politics, which then dictate how such policies are translated into practice. In my thesis, I depict the intricacies of everyday politics as a reproduction of structural violence and biopolitical abandonment and have provided examples of various coping and caring practices people engage in to manage circumstances. Attempts to develop policies in Myanmar should consider how medicines are intertwined within the country's social, economic, and historical backdrop (for example, care as a coping mechanism, everyday politics, 'un-rule' of law). The findings and discussion in this thesis also extend beyond policies relating to AMR. Any global policies applied to Myanmar or other settings marked by high levels of structural violence, precarity, and biopolitical abandonment should have localised reflections on how the rule of law is enacted in practice, the pre-existing ways in which people are caring and coping with everyday politics, and the potential implications of introducing policy into this context. Without such critical reflections, global policies (not limited to antibiotic policies) may fail to generate their intended outcomes and risk intensifying pressures on individuals who are already made vulnerable by everyday violence.

[102] I have used နားလည်မှု *nàlehmú* as an example to further unpack my analysis as the concept has been central to my thesis. Despite this, I am not arguing for နားလည်မှု *nàlehmú* to be the only act of care I observed. I interpret other examples of negotiations (ပွဲစား *pwèza*, pharmaceuticalisation practices, ကန်တော *kan táw*) also as acts of care through Mol, Das, and Randeria's analysis on care.

7.6 Implications for global antibiotic policy making

A growing body of literature within global health draws attention to the disconnect between the global and the local (particularly referring to LMICs/majority world/Global South). For instance, decolonising global health research draws attention to tensions between the global north-south relationships (Bacchi, 2016; Khan et al., 2021; Kim et al., 2017; Reidpath & Allotey, 2019; Walsh et al., 2016). Themes arising from this body of literature include reforming global health politics through rectifying power imbalances, ensuring health equity, and promoting global health policies and initiatives that will address the needs of the people they claim to serve.

Making antibiotic policies through a universalist approach, which is designed to be applicable across such a wide range of settings that its application to any specific setting becomes challenging when it is limited in its ability to critically engage with the contexts and may risk promoting certain assumptions and ideals that may not be appropriate or are available when member-states for their own reasons fail to tailor their NAPs. For example, the notion of patient/provider choice embedded in the awareness raising/behavioural change model is framed around ideals of autonomous decision making, individualism, and western liberal values of individual freedom and choice, the patient/providers thereby regarded as having sufficient individual agency to learn to use antibiotics rationally. Empirical philosopher Mol describes this assumption as dominant in Western medical systems, calling it the 'logic of choice' (Mol 2008). She argues how the 'logic of choice' is often in contradiction with good care and says that 'creating more opportunities for patient choice will not improve health care' (Mol 2008, p2). Care 'grows out of collaborative and continuing attempts to attune knowledge and technologies to diseased bodies and complex lives' (Mol 2008, p2). I question whether the current emphasis on changing the behaviours of individual patients/providers (as explicitly stated or interpreted through the WHO GAP/NAPs, including the Myanmar NAP), should be framed through the 'logic of choice', and around assumptions of individual freedom – especially where individual freedom is not available in an authoritarian state like Myanmar. For example, individual choice was less of a predictor of medicine use behaviours compared to other priorities such as economic survival, coping mechanisms, and affordability. As a consequence, creating more opportunities or promoting programmes that are aimed at improving patient choice (such as awareness raising), may not only result in ineffective programmes but also lead to universalising and promoting neoliberal ideals that are not appropriate or available in authoritarian contexts.

This is not to say that individual choice, and freedom, are values not to be strived for in Myanmar. Many past and present popular democratic movements in the country have utilised discourses around freedom and individual liberty in their rallies. Political scholar, Wells, in his analysis of democracy in Burma/Myanmar states how freedom has been a key concept for activists and leaders during Burma/Myanmar's long history of democratic struggles (Wells, 2018). Wells further defines this freedom as 'a focus not on freedom as the exercising of own entitlements but rather on freedom for moral conduct; freedom to bear the responsibilities and discipline of democracy' (Wells 2018, p5). My thesis does not attempt to conceptualise or contribute towards defining freedom in Myanmar. I provide examples from scholars working on Burma/Myanmar – Cheesman, Wells, and Thawnhmung – to show how the country functions under its own values and everyday politics differing from Western assumptions regarding the rule of law, freedom, and choice. Promoting universalist antibiotic policies framed around ill-considered Western assumptions risks producing a neo-colonial

approach to health policy, thereby widening the disconnect between the healthcare policy of the global north and local survival practices in authoritarian regimes.[103]

This thesis builds upon arguments made by social scientists within AMR against a universalist approach to antibiotic policy making (Kirchhelle et al. 2020), to promote the necessity to understand and engage with particularities arising from biopolitical abandonment and precarity in Myanmar (Charoenboon et al., 2019; Hinchliffe et al., 2021; Tarrant et al., 2020; Tompson & Chandler, 2021), and recommend a shift away from individualistic AMR framing towards a collective responsibility framework (Broom et al. 2020c). I provide ethnographic research from Myanmar showing how the Myanmar context influences antibiotic policy implementation, distribution, exchange, and consumption. Contextual factors I draw upon include the particularities of law and order, and everyday politics in Myanmar, the academic discussions of which are applied to and compared with my own observations concerning medicines. As the Myanmar NAP is an almost replica of the WHO GAP, I argue that the current approaches to antibiotic policy being promoted in Myanmar are still based on universalist assumptions with limited to no critical engagement with the context. This creates a blatant disconnect between the global and local which leads to ineffective policies and may risk exacerbating pre-existing issues such as inequality, precarity, and biopolitical abandonment. To diminish this disconnect, I argue for a more critical understanding of, and engagement with the authoritarian situation in Myanmar, given local responses to survive biopolitical abandonment and precarity ('the context' in shorthand). To help create better policies, I propose more in-depth and localised studies that better understand the ethnographic reality addressed in specific policy making, and second, I encourage more honest discussions around specific topics (biopolitical abandonment, precarity, dysfunctional legislation, confounded legitimation practices, bureaucratic nightmares, perceived corruption, informal negotiations, justice brokers) in policy discourses. Last, I propose a slower, humbler, and more achievable incremental approach to antibiotic policy making as compared to that of national action.

7.7 Concluding Remarks

7.7.1 Limitations

As discussed in Chapter 3, I was informed initially by the aims and objectives of the FIEBRE study, which seeks to reveal the leading causes of fever, and offers insights to understand how best to reduce the [mis]use of antibiotics. As antimicrobial resistance has not been discussed on a national level in Burma/Myanmar until the drafting of the NAP AMR in 2017, emerging activities on antibiotic regulation were still in their early phase when this research was conducted. As a consequence, I was only able to observe early discourses around antibiotic policy/regulation/NAP AMR as opposed to standing policies and implementation activities in their full effect. This is not necessarily a negative situation as I have discussed the potential problems with the current approaches to antibiotic policy making and have argued against pushing forth implementation plans that do not critically engage with the context. Nevertheless, being unable to observe some elements of antibiotic policy in Myanmar at the stage of complete implementation places limits on the conclusions I may draw, particularly in cases where our ethnographic or media/documentary data is related to early policy discourses that may or may not come to fruition in Myanmar. Being able to observe more aspects of antibiotic policy implementation in Myanmar beyond early public discourses, and in other sectors (including agriculture, and

[103] I am specifically referring to circumstances where member-states are not able to produce a more contextually relevant NAP for their own reasons. Global health practitioners can provide support for more contextual engagement such as funding and promoting more research on the topic or taking the findings of ethnographic research into policy tables as opposed to pushing forth the WHO GAP (in its blueprint state) for implementation.

animal farming), would provide a more complete analysis of how Myanmar implements the WHO GAP into policy. Priorities in Myanmar have shifted to managing the consequences of political instability with several international collaborations having halted their work. When international collaboration is possible again in Myanmar in the not-so-distant future, it will be important to urge experts involved in global public health interventions to address local specificities and contextualize their policies more thoroughly in a way that will help reduce harm, especially for deprived communities, in the current fight against AMR.

Second, most of this research is focused on the private sector.[104] We (JSB, CLH, YKZ) gained access to the government sector to supplement our observations in the informal, conducting observations at Mya clinic, and supplementary in-depth interviews with stakeholders in the formal sector (with pharmaceutical industry representatives, clinicians, and researchers). As we did not gain access for observations in the public formal sector (public hospitals, and primary healthcare centres) my ability to draw conclusions about the public sector is limited. Being able to observe pharmaceutical sales representatives within the public hospitals would provide a more in-depth understanding of the pharmaceutical supply chain and marketing model. Our current data on pharmaceutical marketing was drawn from in-depth interviews and observations at Mya clinic. We were not able to do observe medicine supply practices further up the supply chain, in hospitals, and pharmaceutical companies. Consequently, unlike my analysis of medicine use practices in the private and informal sector, my analysis and description of the formal and public sector relies on what interlocutors said as opposed to what they did.

Finally, this study is limited to participant observation work in one township and one clinic in Yangon. Most of our interlocutors identify as Bamar Buddhist making the findings of this research most relevant to the particular setting and subset of Myanmar people we engaged with during the period of this research. Although some aspects of our findings such as my discussions on rule of law, နားလည်မှု *nàlehmú*, precarity, biopolitical abandonment, and coping mechanisms are relevant to Myanmar people outside of Yangon, as other Burma scholars show, there remains a lack of ethnic and religious diversity among the participants we recruited. This was largely due to our selection of the study setting, Yangon, where the majority is Bamar Buddhist. As previously discussed, the study setting was first informed by the FIEBRE study's initial collaboration with the University of Medicine 1, Yangon. Initially I was supposed to be embedded within these collaborations, based in Yangon until a year into the project when the Myanmar clinical study was suddenly cancelled. The focus on Yangon was prioritised because the country's pharmaceutical hub and markets were based within the city, making it relevant for the investigation of the pharmaceutical nexus. Last, peri-urban Yangon or spaces like Hlaing Thar Yar exist on the border of urban and rural zones, characterised by incessant activity and ongoing migration patterns between the two zones. These characteristics make such spaces ideal for observing relationships between the formal and the informal, everyday politics, to witness how people navigated function within dysfunction (explained in Chapter 5). Having stated this, I did not explore other industrial zones (Shwe Pyi Thar, Dagon Seikkan) which may have different dynamics due to their concentration on other industries as opposed to garment.

[104] I was not permitted to access the state-sector (public hospitals, public health centres) as I was not directly affiliated with the government. When the collaboration between the FIEBRE study and the University of Medicine 1 fell through, I had even less support to access public healthcare settings and was limited in my ability to do observation in such spaces. Supplementing this research with ethnographic work in public healthcare settings will provide more conclusive reflections on contextualizing antibiotics.

7.7.2 Further research

As I discussed in the previous sections, my study provides insights into antibiotic policy making in Myanmar and globally. Beginning with antibiotic policy making in Myanmar, as I have stated before, much further research is needed on the topic. First, Myanmar does not have national antibiotic consumption data according to the WHO GLASS report (WHO 2020, p 80), and most studies on antibiotic consumption focus on a single setting (as in one hospital, or one region) (Prazuck et al., 2002; Pwint et al., 2021; Swe et al., 2020). Most of studies are also focused on the formal or public sector. Being able to develop metrics for quantifying antibiotic use in the informal and/or illegal sector would be useful to inform antibiotic policy. I recommend doing ongoing stakeholder analysis and engagement via more regional and localised approaches, as compared to 'national' top-down studies, to develop metrics to quantify antibiotic consumption in the informal and/or illegal sector. Engaging the voices of non-state/national partners during stakeholder analysis would be of particular importance. Being able to quantify which antibiotics are being used and where would help inform interventions. As Myanmar is geographically and demographically diverse, understanding consumption patterns will help policy makers and researchers effectively triage where and how to focus particular interventions. In short, I recommend an increased focus on the particularities of the Myanmar case, in order to better frame global health care policy towards effective solutions in practice, rather than offering what may otherwise be perceived as neo-colonial policy interventions from the global north.

It follows that global antibiotic policymaking and universalist approaches may be effective in garnering political attention, yet limited in their ability to achieve intended objectives and goals. For instance, the Myanmar NAP AMR was developed as a direct consequence of the WHO GAP, and the 2015 World Health Assembly's global problematisation of AMR. Without the WHO GAP, a Myanmar NAP and other NAPs may not have developed as national agendas, and antibiotic 'misuse' or consumptions levels may not have received political priority, particularly in settings like Myanmar where many other competing urgencies (precarity, civil war) rule over everyday lives. Even after the development of a NAP AMR, Myanmar may most likely falter in its attempts at implementation considering the current political instability and the collapse of the healthcare system. This thesis is not to argue against the development of the WHO GAP and NAPs, but rather to question whether the specific universalist approaches endorsed within these documents are in practice achievable, appropriate, or effective. With this argument, I wonder whether we as global health practitioners can also endorse other methods of antibiotic policy making, while de-centring the WHO GAP/NAP, when necessary, as opposed to utilising it as a global and national gold standard for antibiotic policy.

Most studies on AMR and antibiotic use in Myanmar published to date are epidemiological or clinical in nature (See Chapter 2) and are limited to apolitical technical solutions. Although it is important to identify technical solutions, I argue for more social research on antibiotics engaging with the wider social, economic, and political lives of people – because, the problem, as I argue in this thesis, is often rooted in factors beyond the individual and requires collective responsibility. Technical solutions may therefore act as band-aid solutions. While they may or may not be effective in producing their intended outcomes, whether to reduce antibiotic use or correct 'misuse' behaviours, such solutions are limited in their ability to address the issue from its root and may provide merely partial and temporary solutions. This is not necessarily a negative outcome as reducing inappropriate antibiotic use behaviours may be positive to addressing AMR globally; however, when such technical solutions risk not only failing but also reproducing pre-existing problems as in the example of the FDA raid (Chapter 5), it may be worth taking a step back utilising a more cautious approach, beginning with a pilot localised study, prior to pushing forth implementation. An overemphasis on the technical, together with a lack of engagement with the economic and political situation as the current WHO GAP/Myanmar NAP exists,

may result in more harm than good. Therefore, I argue for more social research on antibiotics and antibiotic policy not only in Myanmar but also globally, to improve prevailing antibiotic policies and question their effectiveness in various contexts and begin to foster a discussion on whether other approaches may be more effective. In conclusion, globalising the issue of AMR has positive outcomes in that it generated national discussions on antibiotic policy in many settings. Despite this, an ability to critically engage with the particularities (rule of law, everyday politics, coping mechanisms in Myanmar) of the specific contexts in which these policies are proposed to be implemented (or are already in the process of implementation) may result not only in failed attempts at regulating antibiotics, but may also risk enhancing precarity and inequality. In other words, the WHO GAP and NAPs may work in some settings but cause problems in others. I argue for more critical engagement in particular contexts to explore which policies may be appropriate, where, and how, as opposed to unilaterally pushing forth universalist approaches to antibiotic policy implementation as the gold standard. In Myanmar, this may mean contesting the proposal for a NAP/'national' action while identifying a more inclusive set of stakeholders to inform antibiotic policy. Other countries may require different approaches based on their own particularities.

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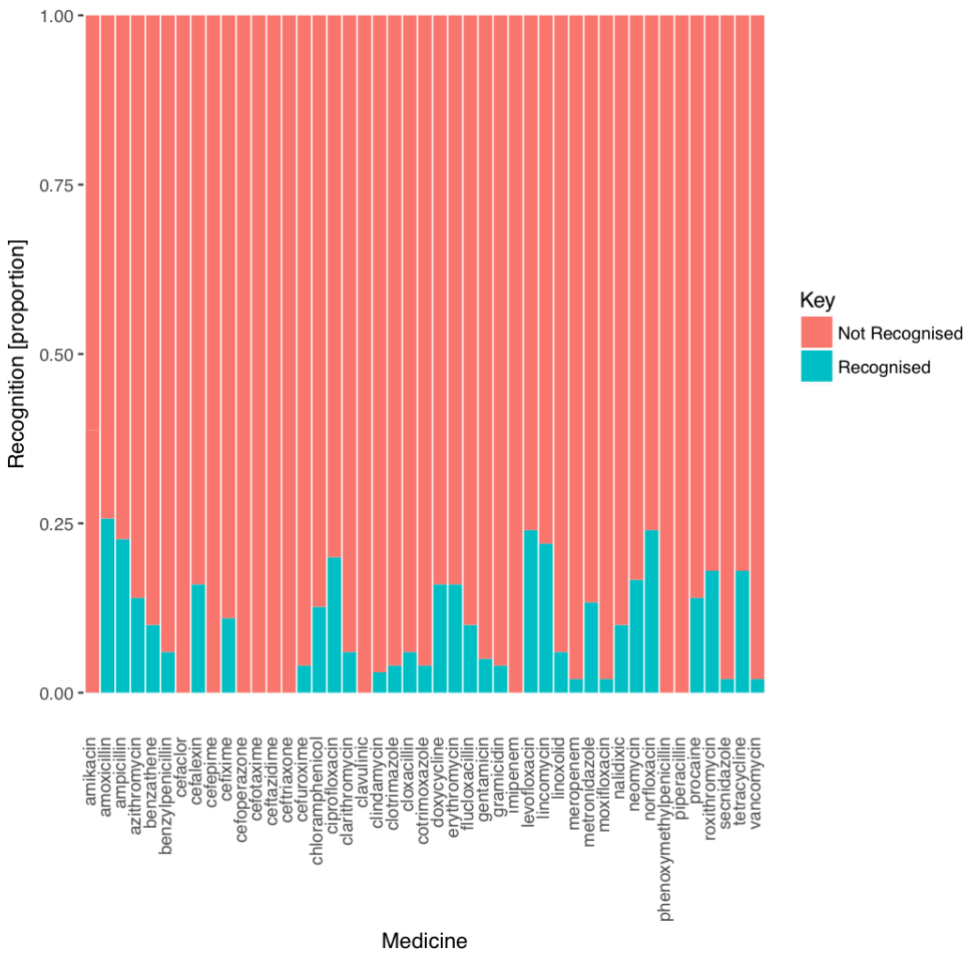
Appendices

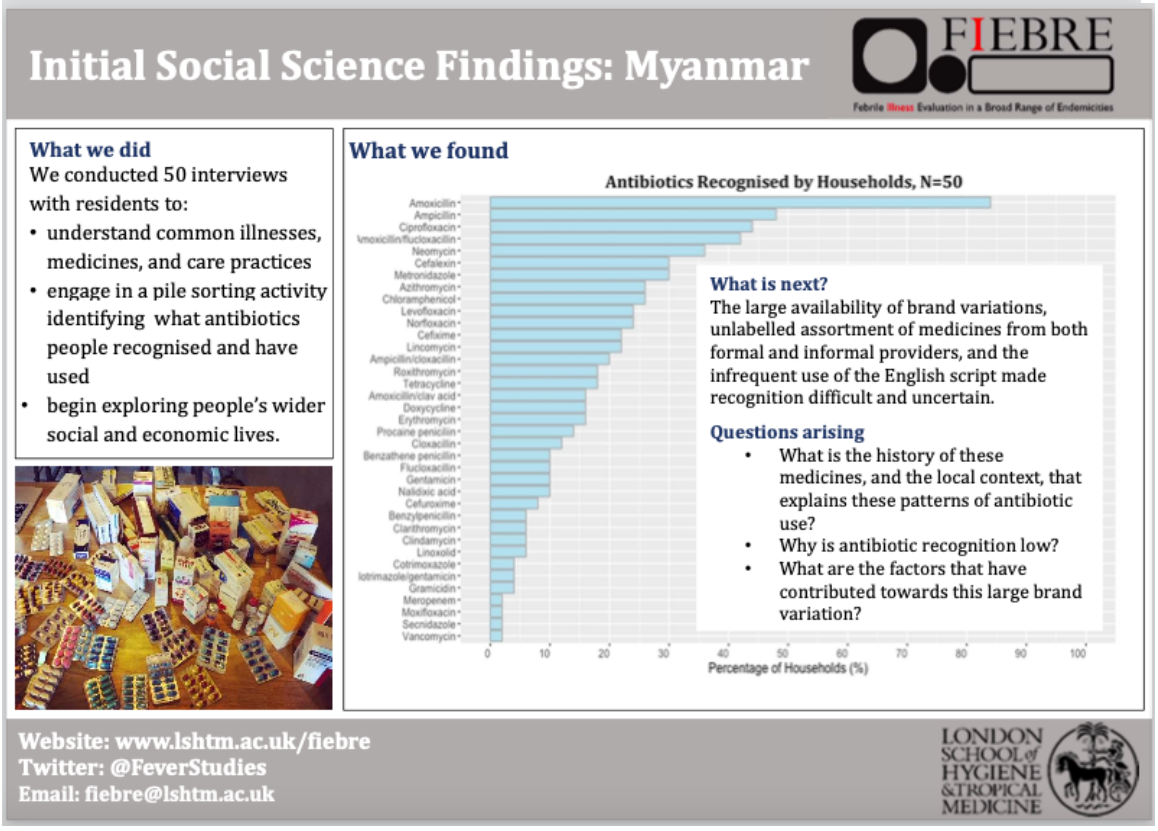
Appendix 1 – The 'drug bag' method and preliminary results

Antibiotics	Class
Amikacin (Injectable)	Aminoglycoside
Chloramphenicol (Tablets)	Other
Chloramphenicol (Eye)	Other
Chloramphenicol (Skin)	Other
Clindamycin (Tablets)	Lincosamide
Clindamycin (Injectable)	Lincosamide
Cotrimoxazole (Suspension)	Sulfonamide
Doxycycline (Tablets)	Tetracycline
Gentamicin (Injectable)	Aminoglycoside
Gentamicin (Eye)	Aminoglycoside
Metronidazole (Tablets)	Other
Metronidazole (Suspension)	Other
Metronidazole (Injectable)	Other
Amoxicillin (Tablets)	Penicillin
Amoxicillin (Suspension)	Penicillin
Amoxicillin (Injectable)	Penicillin
Amoxicillin/clavulanic acid (Tablets)	Penicillin
Amoxicillin/clavulanate (Injectable)	Penicillin
Ampicillin (Tablets)	Penicillin
Ampicillin (Injectable)	Penicillin
Benzathine Penicillin (Injectable)	Penicillin
Benzylpenicillin (Injectable)	Penicillin
Cloxacillin (Tablets)	Penicillin
Cloxacillin (Injectable)	Penicillin
Phenoxymethylpenicillin (Tablets)	Penicillin
Piperacillin/tazobactum (Injectable)	Penicillin
Procaine Peniciliin (Injectable)	Penicillin
Cefalexin (Tablets)	Cephalosporine (1st)
Cefalexin (Suspension)	Cephalosporine (1st)
Watch	
Azithromycin (Tablets)	Macrolide
Azithromycin (Suspension)	Macrolide
Clarithromycin (Tablets)	Macrolide
Ciprofloxacin (Tablets)	(Floro)quinolone
Ciprofloxacin (Injectable)	(Floro)quinolone

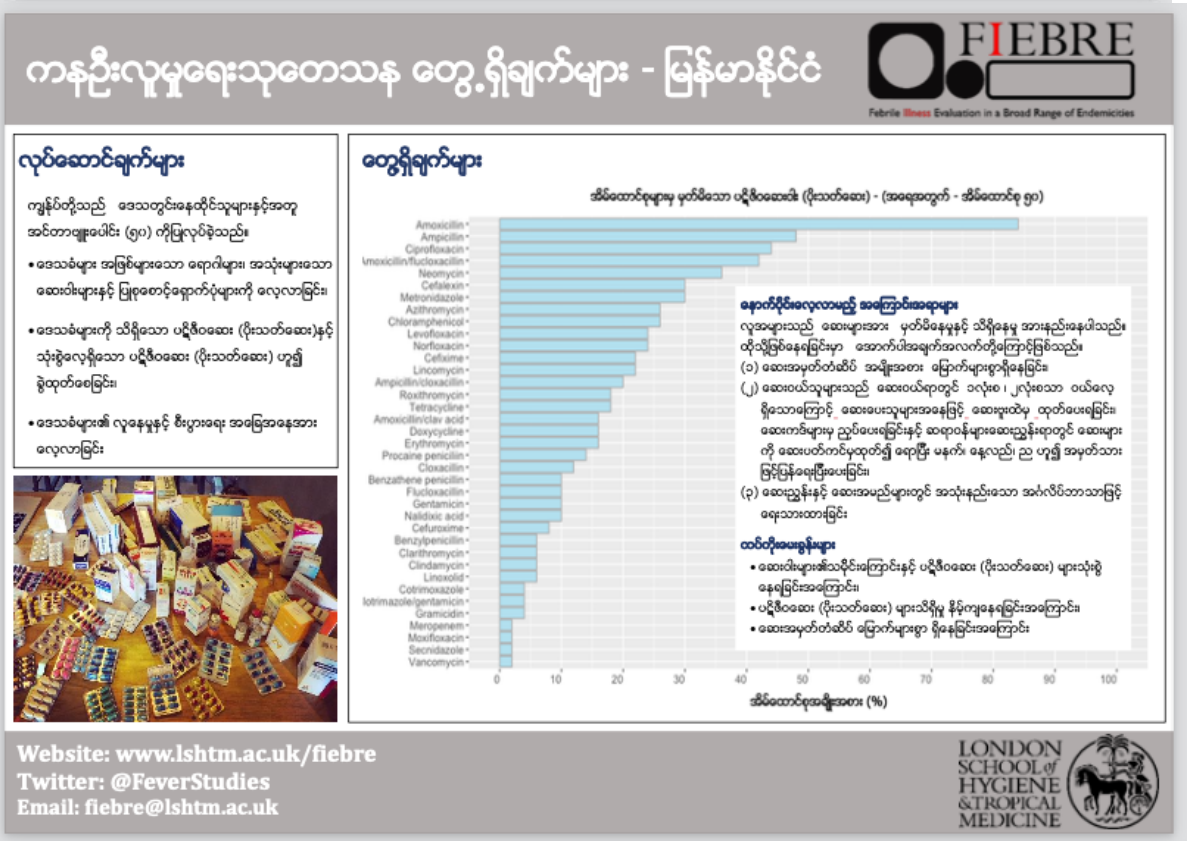
Ciprofloxacin (Eye)	(Floro)quinolone
Vancomycin (Injectable)	Glycopeptide
Cefixime (Tablets)	Cephalosporine (3rd)
Cefixime (Suspension)	Cephalosporine (3rd)
Cefotaxime (Injectable)	Cephalosporine (3rd)
Ceftriaxone (Injectable)	Cephalosporine (3rd)
Meropenem	Carbapenem
Erythromycin (Tablets)	Macrolide
Roxithromycin (Tablets)	Macrolide
Levofloxacin (Tablets)	(Floro)quinolone
Moxifloxacin (Tablets)	(Floro)quinolone
Nalidixic acid (Tablets)	(Floro)quinolone
Norfloxacin (Tablets)	(Floro)quinolone
Ceftazidime (Injectable)	Cephalosporine (3rd)
Imipenem (Injectable)	Carbapenem
Reserve	
Cefepime (Injectable)	Cephalosporine (4th)
Linoxolid (Tablets)	Oxazolidinone
Not Mentioned	
Amoxicillin/flucloxacillin (Tablets)	Penicillin
Amoxicillin/flucloxacillin (Injectable)	Penicillin
Ampicillin/cloxacillin (Tablets)	Penicillin
Flucloxacillin (Tablets)	Penicillin
Neomycin (Eye)	Penicillin
Neomycin (Ear)	Penicillin
Neomycin (Skin)	Penicillin
Cefaclor (Tablets)	Cephalosporine (2nd)
Cefoperazone (Injectable)	Cephalosporine (3rd)
Cefuroxime (Tablets)	Cephalosporine (2nd)
Cefuroxime (Injectable)	Cephalosporine (2nd)
Lincomycin (Tablets)	Lincosamide
Tetracycline (Tablets)	Tetracycline
Gramicidin (Eye)	Other
Secnidazole (Tablets)	Other
Clotrimazole/Gentamicin (Skin)	Aminoglycoside



Appendix Figure 1. Preliminary results from pile sorting exercise: recognized medicines



Appendix Figure 2. Summary of Preliminary Results (English). We (CH, YKZ, JSB) shared these summary sheets with Aunty Moe, U Kyaw, and pharmaceutical companies to foster a conversation.



Appendix Figure 3. Summary of Preliminary Results (Burmese)

Appendix 2 – Medicine Interview Questionnaire

Part 1. Demographics

- Who lives in this household? How are the people in this household related?
- What is your age?
- Are you originally from here, if not where?
- What are the main occupations of the household members?
- Who is present during the survey?
- Any other comments about household context or survey atmosphere Part

2. Illness and Medicines

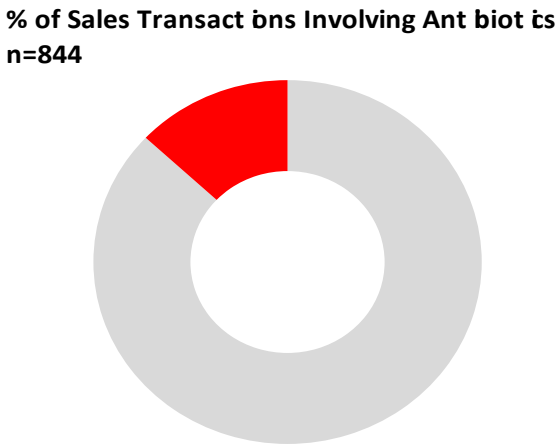
- What illnesses do people in your household frequently experience?
- Do people in your household ever experience a hot body when they are sick?
- What are the most common medicines you use in your home? (This is not limited to western medicines)
- Do you have a preference for certain medicines? If so, why?
- Do you always get the medicines you need in your household?
- Can you tell me more about difficulties that you have accessing medicines? What about difficulties accessing care more generally?

Part 3. Pile Sorting (We take all our antibiotics out and explain to the informant that we aren't clinicians or pharmacists. Hence, we are not qualified to answer any questions they may have with regards to medicine use. There is no right or wrong answer. We also refrained from mentioning the term antibiotic at all periods during the survey).

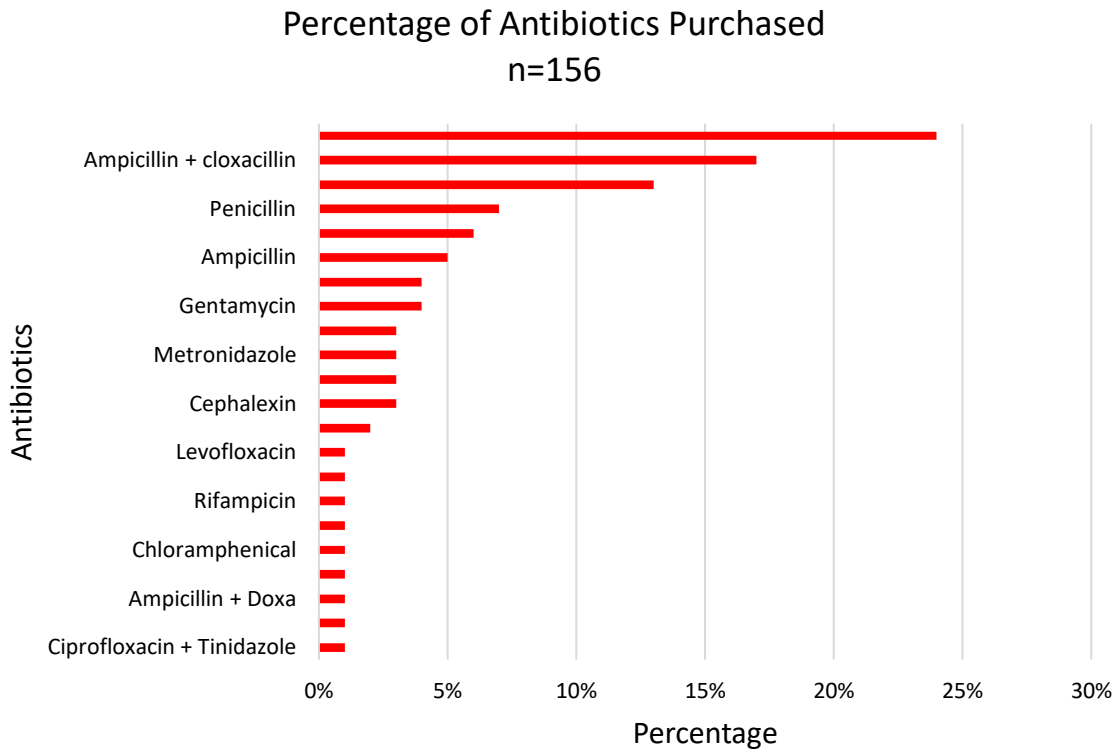
- Which of these medicines have you seen or heard of before?
- Out of these medicines that you have seen or heard before, can you pick out the medicines that you have ever used before in your household?
- Out of these medicines that you have used before, have you used any of these medicines frequently?
- Out of these medicines that you have seen or heard before, can you pick out the medicines that someone in your household has needed but you could not actually get it? Can you tell us why you couldn't access these medicines (if they picked out medicines)?
- Out of these medicines that you have seen or heard before, has there been medicines that don't work? Can you tell us why it doesn't work (if they picked out medicines)

Appendix 2 – Antibiotic Sale Patterns at Sein

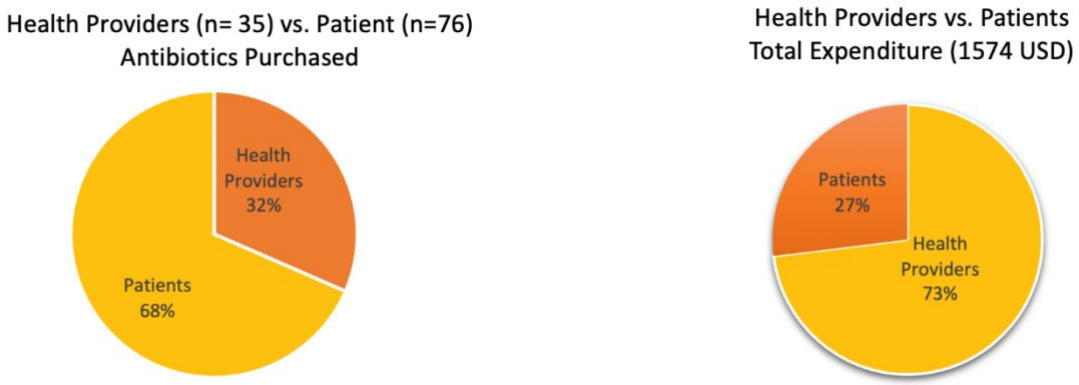
JSB constructed the following graphs through my supervision. The graphs were intended to supplement the qualitative analysis.



Appendix Figure 1. AB Sales: total percentage of sales transactions that involved antibiotics at the drug shop (13%)



Appendix Figure 2. Antibiotic Purchases at the Drug Shop. Percentages were calculated based on the proportion of transactions that included each specific antibiotic.



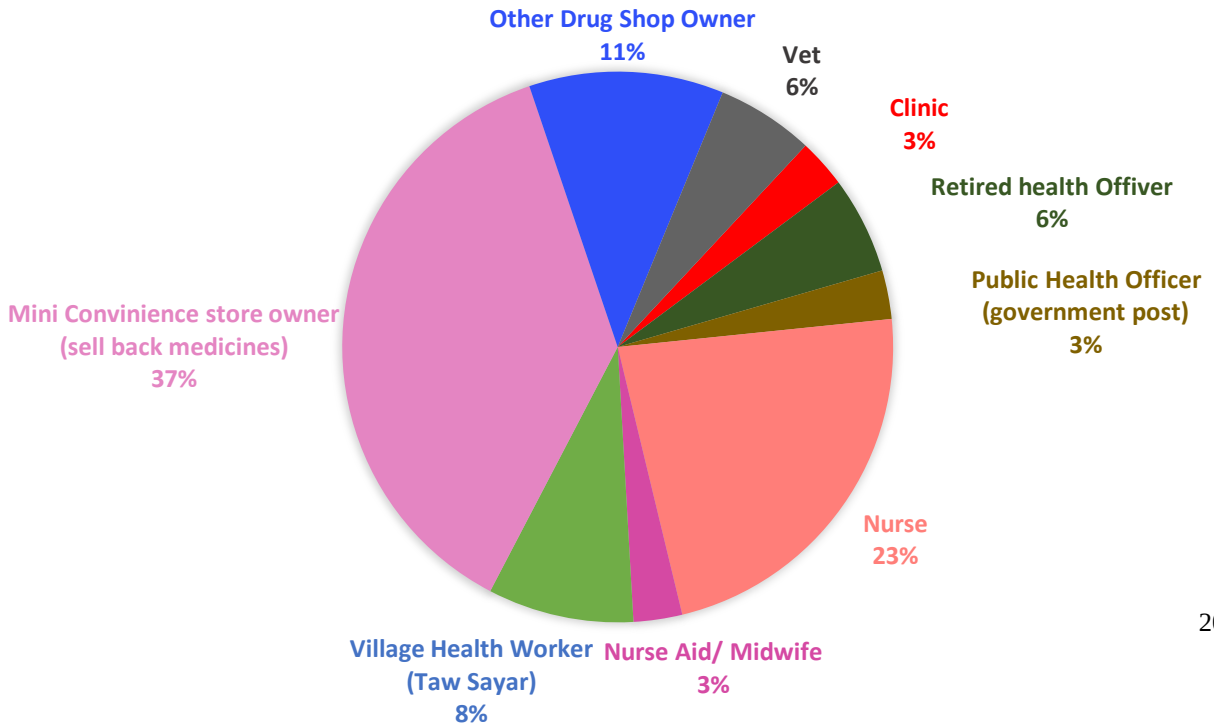
Appendix Figure 3. The Customers: the proportion of health providers as compared to the proportion of patients (left); The proportion of total expenditure at the drug shop among health providers as compared to the proportion of total expenditure at the drug shop among patients.

Customers	MAX	MIN	MEAN	MEDIAN	RANGE
Lay Person (n= 320)	MMK 30,000 ($19.75)	MMK 50 ($0.03)	MMK 2,001 ($1.32)	MMK1,000 ($0.66)	MMK 29,950 ($19.72)

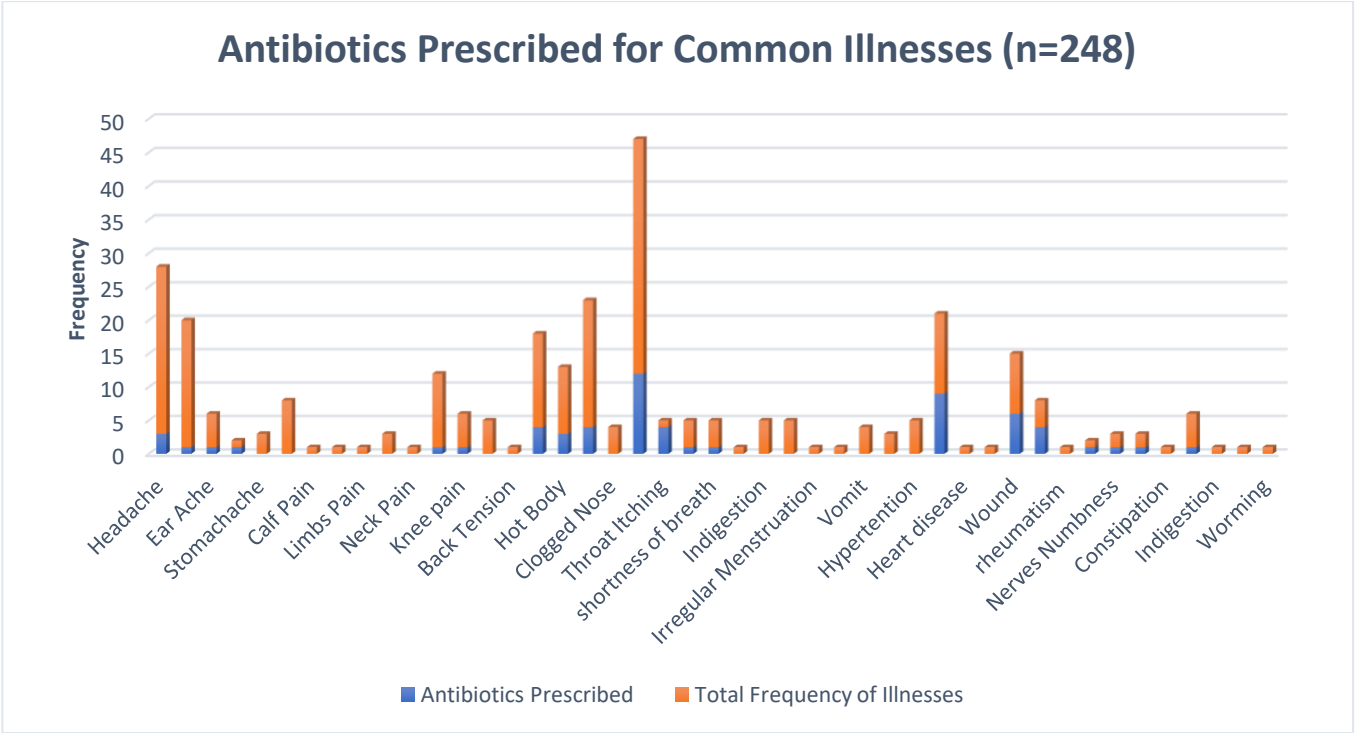
Health Providers (individual practitioners) (n=21)	MMK 331,408 ($218.16)	MMK 400 ($0.26)	MMK 37308 ($24.56)	MMK 9800 ($6.45)	MMK 331008 ($217.87)
Health Providers (larger providers – drug shops, clinics) (n=45)	MMK 78,250 ($51.51)	MMK 1,900 ($1.25)	MMK 21,465 ($14.13)	MMK 12,850 ($8.46)	MMK 76,350 ($50.26)

*Using the exchange rate in early 2019 (1 USD = 1520

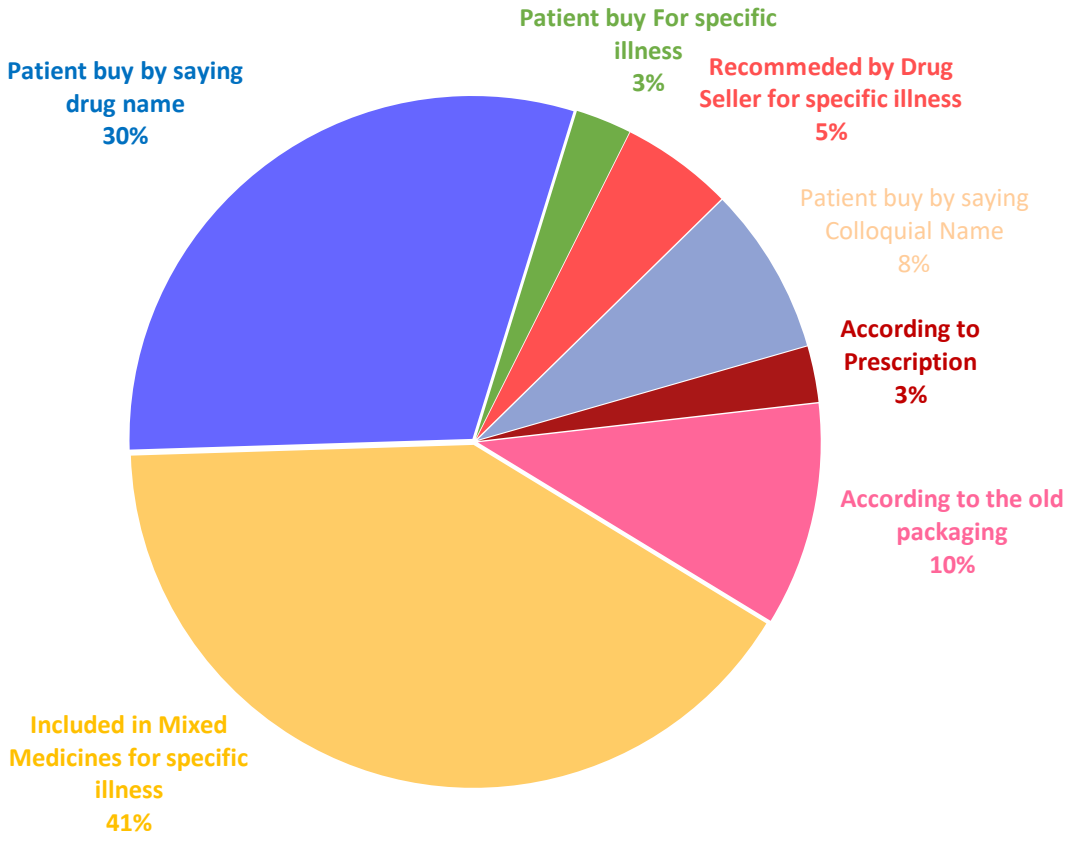
Classification of Health Providers who Purchase Antibiotics (n = 35)



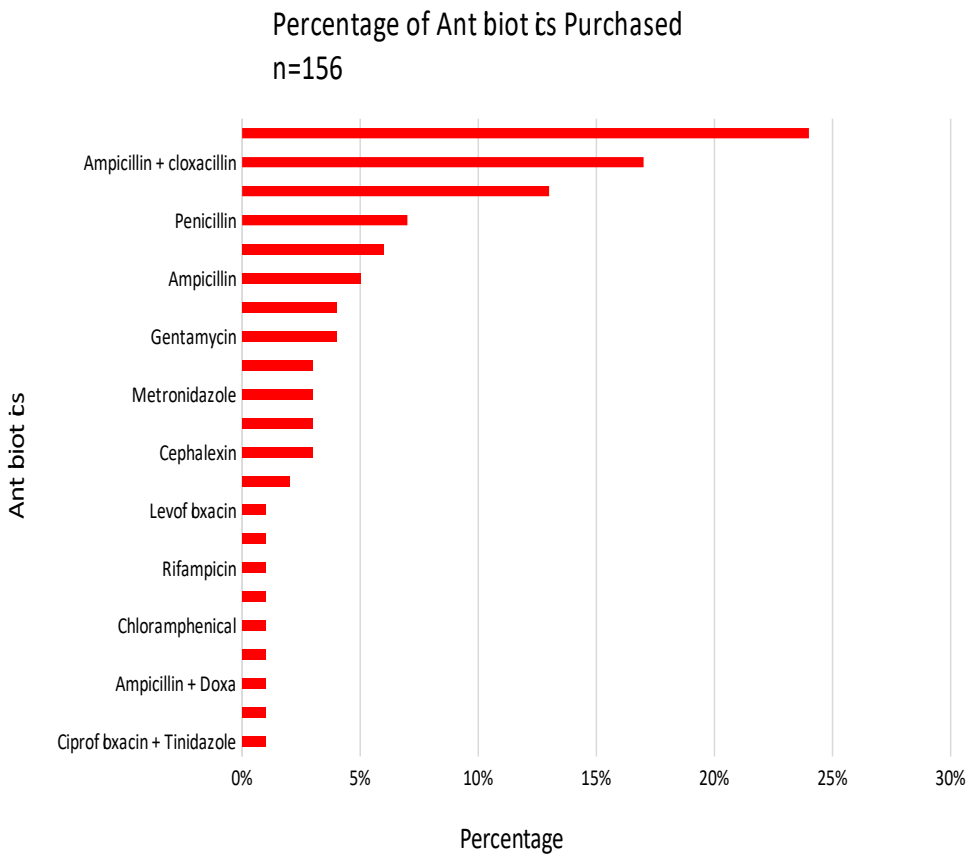
Appendix Figure 4. The Health Providers n = 35. We classified health providers as those who supply any quantity of medicines to others. This include individual healthcare practitioners such as nurses, nurse aids, village health workers, and public health workers. We also included larger health providers who sell back medicines such as mini convenience store owners; clinics; and other drug shops. We counted each transaction or purchase so some providers are counted twice if they are recurrent clients.



Appendix Figure 5. Antibiotics Prescribed for Common Illnesses. We counted the frequency of antibiotic prescription (n= 60) during specific conditions as described by patient/shop owner (orange, n= 248).



Appendix Figure 6. How and why do all customers (patients + providers) buy antibiotics (n=114). Focusing on all customers (where data is available), these are the main reasons for how and why antibiotics have been purchased.



Appendix Figure 7. How and why do patients buy antibiotics (n=76). Focusing on the patients alone, who we define as individuals purchasing medicines for themselves or their families and for a specific illness condition (this excludes providers – health practitioners, resales, clinics, drug shops), these are the main reasons for how and why antibiotics have been purchased.

Appendix 3 – Interview Topic Guides

Preliminary interview topic guides

Introduction to the participant (exclude sections depending on who the participant is):

My name is (name_____.) In this interview, I would like to find out more about the use of medicines in this community to treat common illnesses. All your answers in this discussion will be kept confidential. Please feel free to discuss the topics raised, all the responses that you give are valuable. You are free not to talk about any topic that you are not comfortable with. I will audio-record this interview so that I can transcribe later. If you are not comfortable with audio-recording I will take down some notes during the discussion. This discussion will take about 45 minutes to 90 minutes.

(1) Life and Livelihoods

- Occupation and income
- Household and neighbourhood demographics
- Kin networks
- Community and religion

(2) Illnesses and Medicines

- Common illnesses experienced
- Fever classifications
- Commonly used remedies/medicines at home
- Medicines accessibility

(3) Healthcare seeking

- Use of formal and informal providers
- Order in which providers are consulted
- Time taken before healthcare seeking
- Healthcare accessibility
- Costs associated with healthcare seeking

(4) Care Relationships

- Patient/client needs and expectations
- Meanings of 'care'
- Adherence
- Threats and limits to good care
- Resource constraints

(5) Antimicrobial use and resistance

- Which medicines work/don't work
- Perceptions and experiences of drug resistance
- Ideas about preserving medicines efficacy
- Markets and regulation
- Availability in formal and informal sectors
- Causes of resistance
- 'Excess' or 'access'?
- Global and local discourses of antimicrobial use/resistance
- Next steps for addressing resistance

(2) Health Priorities in Myanmar

- Epidemiological and socioeconomic situation
- Structure and resourcing of health system
- Skills and human resources
- Funding flows
- Key priorities and knowledge gap

Interview Topic Guides for Midwives/Nurse Aids/Nurse/Health Volunteers/Vet

Introduction

- Age, gender
- Where are you from? Where do you live? Originally from HTY or not? If not, from where? Why and how did you come here?

Daily lives/Work

- Life history
    - What do you do? Where do you live?
    - How did you enter your profession? What were the processes?
- Daily duties
    - What are your day to day responsibilities?
    - Can you give me an example of how your week looks like/what are your work or resting hours?
    - What are your opinions on public healthcare vs. private healthcare?
    - Can you give me an example of any past experiences seeking/providing healthcare? (e.g. where/how/when did you go?)
- Challenges/Fulfillment
    - What challenges do you have while performing your day to day responsibilities?
    - What are the things you enjoy most about your week?
    - Can you give me some examples?
- Social networks
    - Who do you engage with while performing your day to day responsibilities (e.g. doctors/other health professionals, patients/clients)?
    - How do you interact with these people?
    - Can you give me an example?

Healthcare Provision (providers only)

- How do you engage with your patients/clients?
- How do you perform your duties (e.g. home visits, referral systems in place)?
- Do you engage with your clients/patients outside of work? If so how?
- Can you describe/give me an example of what would be your ideal form of care/care-taking for your patients/clients?

Healthcare Seeking (patients only)

- Can you give me an example of what you and your family did when someone in your family was last ill?
    - What do you normally do when you are sick? Where do you go/not go? Why?
- Can you give me an example of what you do for yourself vs. your family when someone is ill?
    - What about your husband/brothers/uncles/male relatives and acquaintances (if respondent is male, switch the question around to wives/sisters/female relatives and acquaintances)?
- What are your preferences/opinions with regards to private vs. public care?
    - Can you give me any specific examples?
- Are there any differences between the way you take care of yourself vs. other members of your family? If so how?
    - Can you give me any specific examples?
- Have you had any challenges accessing the care/healthcare you want? What are these challenges? On the contrary, is there anything you really like or think that is working for you?

Medicine Use/AMR

- What were the last medicines you bought? Why? What other medicines do you normally buy? Do you buy anything commonly?
- Where do you get these medicines from? How do you get there?
- Have you heard of '*pá tí zi wá hsày'* or '*pò that hsày*'(antibiotics)?
    - Have you prescribed/referred/used these medicines before? If so which medicines and for what reasons?
    - Have you had any peculiar/particular experiences with these medicines?
    - Have you heard of any government policies/campaigns about them? If so, can you tell me about them?
    - Have you heard about anything else in the community relating to these medicines?
- Have you ever heard of AMR?
    - Can you tell me what you've heard and explain about it?
    - Can you tell me an example of your experiences if you had witnessed a case of AMR?
    - What are your opinions on AMR as an issue (the scale of the problem)?

<u>Past vs. Current</u>

- Can you tell me your opinions of healthcare in the past vs. now (how they differ if you were to compare the two)?
- Can you tell me your opinions of NGOs working on healthcare related projects in the past vs. now? (how they differ if you were to compare the two)?
- Can you tell me about medicine use/provision in the past vs. now (how they differ if you were to compare the two)?

<u>Gender and Development (if respondent is affiliated with an NGO)</u>

- How were you approached by the NGO you are affiliated with? How did you start to get involved?
- Have you worked with any other NGOs/health providers before? If so who are they? When did you work with them? How did you get involved/how did they approach you/How did you hear about them? What do you do?
- Does your husband/brothers/uncles/male relatives and acquaintances (switch the question to wives/sisters/aunts/female relatives if the respondent is male) involve themselves in similar work? If so can you share what they do? Are there any differences between your roles/responsibilities and theirs?
- Do you have any challenges or things you would like to share about being part of this NGO environment?

*(ask only if the situation is appropriate) Can I shadow you once or twice a week while you are performing your day to day responsibilities?

Pharmaceutical company interview topic guide

Introduce as anthropologists interested in import and distribution, retail, sale of medicines - trying to understand why some medicines are popular.

Get any specific data (i.e. list of any drugs from the specific company that you have observed sold in HTY)

Biography of interviewee
Tell us about your self
- How did you come to work for this company
- What were you doing before
- What did you study
- Why work in pharmaceuticals

Pharmaceutical company and medicines supply chain (i.e. import/manufacture, distribution and sale)

Tell us about the (history of) the company
- When did it start operating in Myanmar?
- What operations does it focus on

Import or Production in Myanmar
- Costs of medicines or raw materials from other country and procedures
- Import process: transportation, documentation and cost
- Are any antibiotics produced in Myanmar? Who? Where etc
- Why imported and not manufactured in country
- If they produce, see if can get a tour of manufacture and/or get them to talk through the process (including where raw materials come from etc)

Distribution and sale in Myanmar
- How transport of medicines to different parts of countries
- Who do you sell to: wholesale; small drug shops; public and private hospitals?
- How do you sell: Medical and sales reps? Others?

Price of Medicines:
- What factors contribute to the differences in medicine prices?
- What affects the changes in brands price of medicines? (i.e. changes in exchange rate, other factors)

FDA + Registration
- What is the role of the FDA
- How is the medicine registration and re-registration process? Costs? Procedures? Challenges?
- How have things changed?
- Do you interact with any international agencies, like the WHO? Essential medicines list?
- Something about un/registered medicines?

If I wanted to start my own medicine distribution company, what should I do?

History of pharmaceuticals and pharmaceutical companies in Myanmar
- What other companies were operating before your company?
- Where did antibiotics/medicines come from in the past? before your company?
- Why the diversity of brands? When did this happen?

Feedback on leaflet &
- Why people take medicines?
- What are the preferred/popular medicines?
- Why are these antibiotics preferred/popular ?
- Awareness of AMR? Is it a problem? Why? Where?

Further Questions

- Are there any differences in qualifications/roles and responsibilities between 'medical sales reps' and 'pharmaceutical sales reps'? How do they decide who to approach? What is their way of approaching/following up?
- Challenges or successes working with FDA/MOHS?
- Feedback on leaflet – focus it more on the antibiotic list and get feedback on that rather than on our research questions which people seem to focus on.
- Get a fuller picture of the history of pharmaceutical companies in Myanmar? how did they come in? How did they negotiate permission/access? What did they have to do to remain successful in their businesses? What are their strategies.
- Medicines Member Committees – look up their posts/seminars on Facebook
- What do you mean by 'buying drugs from foreign countries with loans'? How does this work? What is the process of distributing drugs with loans?
- How does the tender process work? What are their opinions of the way they work now?
- Pros/Cons of only having distribution companies and not having manufacturing companies historically? What are your opinions on the upcoming introduction of new pharmaceutical manufacturing factories?
- What do you think the market for antibiotics will look like in the upcoming future? Reflections on the antibiotic market in the past?

Factory worker interview topic guide

We are conducting these interviews to understand:

1. the daily lives of factory workers (when they have to work, when they can rest) in order to explore how labour impacts people's health.
2. the process factory workers go through to access the types of health services (formal/informal/drug shops/clinics/hospitals/social security clinics/private/public) they end up accessing, and again how labour influences this process and choices.
3. How labour influences health providers decisions and practices in providing certain types/brands/forms of medicines over others (with a focus on antibiotics).

<u>Demographics</u>

- Gender
- Age
- Religion
- ethnicity
- Where do you live? How did you come to live there? Who do you live with? How long? etc
- Where are you from?
    - Migration
        - Where do you live? Where do you come from and why? How long have you been here? Who do you live/who do you room with? (if not with family, where is your family)
- Education Level
    - If you left school, why?

<u>Work</u>

- Work
    - Where do you work?
    - What are your roles and responsibilities at work?
    - How long do you take to commute to work?
    - What is your work week like (how many days of work, rest days, when time do you start work? What are your working hours)?
    - How much do you get paid? How are you paid? Do you get any insurance (health etc)?
    - What is your leave like (how many days a year, how often do you take leave)? Do you get paid for leave?
    - Have you ever been sick during your current job? Previous work? What happened?
    - What happens if you or another person is sick at work?
    - Can you tell me your understanding of your sick leave?
        - How many days? Are they paid?
        - When can you get sick leave?
        - What is the process?
        - Any challenges?
    - Have you asked for/taken sick leave before in the past? Can you tell me about this experience in as much detail as you can? (probe about social security, asking sick leave, worker's hospital, referral system)
- Daily duties
    - What are your day to day responsibilities at work and at home?
    - Can you tell me how your day/week looks like?
    - What are the roles and responsibilities within your household/who does what?

<u>Illness Experiences if available (broad picture – can you tell me your experiences with illness)</u>

- What illness
- When did it start
- How did it start
- Other illnesses

Provider choice

- Public vs. Private
- Where did you go first and Why?
- Where else have to been to and why? (healthcare seeking pattern)
- Specific Narratives (can you tell me in detail what your experiences are at each provider?)
    - What do you like?
    - What do you not like?

- What factors play a role in the decisions you make? (e.g. Where to go for treatment? Who to see for treatment?)
    - E.g. news, hearing from family, trial and error on which doctor is good

- Local Medical Migration (CHALLENGE STORIES LOCALLY)
    - Have you switched providers before during an illness episode?
        - Why did you switch doctors/clinic/hospitals?
        - Specific example?
    - Have you travelled to a farther place for healthcare? (e.g. another township, another city)
        - Can you describe the process and why?
    - What are your experiences with referrals?
        - Eg. worker's hospital to public hospital; public to private etc
        - Can you describe this experience and process in detail?

Drug Shop (if not answered previously)

- Where did you go when you were last sick (e.g. drug shop, clinic)? Can you describe all the things you did in as much detail as you can?
- Did you go to a drug shop when you were last sick?

IF YES

- Can you describe in detail why and how? (e.g. what illness, for who, when, how)
- Was it effective or not? What did/did not do next?
- Where is the drug shop you went to?

IF NO

- Where did you go instead and why?
- Was it effective or not? What did/did not do next?

Challenges

- Have you experienced any difficulties while accessing health services at the drug shop/public hospital/clinic (ask for all places they go to for health services)? Can you share these experiences in detail?

Antibiotics

- What are the common medicines you use, purchase, or store at home? Why do you use these medicines?
- Where do you get these medicines from? How do you get there?
- Have you heard of *pá tí zi wá hsày* or '*pò that hsày*' (antibiotics)?

    - Have you personally used them before? If so which medicines and for what reasons?
    - Have you prescribed/referred these medicines before? If so which medicines and for what reasons?
    - Have you heard of any government policies/campaigns about them?
    - Have you heard about anything else in the community relating to these medicines?
    - Have you had any peculiar/particular experiences with these medicines?
- (If they know what antibiotics are) Have you taken them prophylactically before?
    - Why? Where did you buy them? Where did you learn this information from (to take AB prophylactically)

Mixed Medicines and Injections

- Have you received mixed medicines before?
    - From who/where/why?
    - Does it work?
    - What do you do if it doesn't work?
- Have you received injections before?
    - From who/where/why?
    - Does it work?
    - What do you do if it doesn't work?
- (If they know AB/ *pò that hsày*) Have you seen *pò that hsày* among the mixed medicines and injections you have received before? Can you give me any details about what you remember?

(Additional questions added for later interviews)

Biography

- Basic Demographics: Gender, Age, Religion, Ethnicity
- Where are you from? Why did you come to HTY?
- How did you come about working at ALR? Where did you work before? Why did you stop working there?
- What are your roles and responsibilities at ALR?
- Can you tell me how your week looks like/what are your hours?
- What challenges and success do you have while performing your day to day responsibilities?

Additional Questions for Overtime

- How often do you do overtime hours per week? Is this optional or required by the factory?
- What are your main incentives/why do you do over time?
    - Do you prefer doing over-time?
    - Do you have any challenges during over-time?
- Do your over-time hours, in any way affect your ability to rest or your health/well-being more generally?

Additional Questions for Labor and Health

- How often do you take medical/sick leave?
    - For what reasons?
    - How many days on average? How often in a year?
    - Do you have any challenges?
- What are health problems you yourself, or someone you know have experienced at the factory? Get as many details as possible.

Additional Questions for ‘Quick Fix’

- For example, when you are tired or not feeling great, what do you do? (e.g. take off day, take some medicines and go to work, take a nap?)
- If you must go to work but aren’t feeling well, what do you do to help you work? (e.g. take medicines, work less at work?)
- Have you yourself or anyone else you know heard of people taking oral medicines?
    - If so, when/from who/why did you take the medicines?
    - How often do you take them?
    - Did you continue to go to work/did you rest?
- Have you yourself or anyone else you know heard of people taking IV drips?
    - If so, when/from who/why did you take the IV drips?
    - How often do you take the IV drips?
    - Did you continue to go to work/did you rest?

FDA interview topic guide

Tell us about your self
- How did you come to work for the FDA
- What were you doing before
- What did you study/are you studying?
- Why work in FDA
- What are the career opportunities available to you through the FDA?
- Where do you imagine yourself in the future? (FDA/non FDA related)?

Tell us about the FDA
- What is the role of the FDA? When was it formed? How has it changed?
- How is the FDA structured/organised?
- What work does it do on medicines? What is it is responsibility?
- How does it enforce its drug regulations and sure people are compliant with them?
- How does it work with international and non-govermental organisations?
- Who does the FDA collaborate with locally? (for example, how they employ township health officers during the FDA raid)
- What are the penalties if you break rules/FDA guidelines? Who enforces them?
- What qualifications do you need to apply to the FDA? What kind of people apply for jobs with the FDA?
- How does the FDA sue people? What does this process entail? Have you heard of or experienced a particular case?
- How does the tender process for medicines work?

Medicines in Myanmar (where possible focus on antibiotics)
- What is the FDA's role with relation to the import of medicines?
- What companies manufacture medicines in Myanmar?
- What is the FDA's role with relation to producers of medicines in Myanmar?
- Can you describe the registration process for antibiotics/medicines in Myanmar?
- What role does the FDA play with relation to the consumption/use/prescription of medicines (antibiotics)?
- Who are the main medicine distributors in Myanmar according to you?
- How does the distribution process work?

Antibiotic specific questions:
- Are there any specific regulations/guidelines for Antibiotics?
- FDA work on prescription of antibiotics? Interactions? AMR?
- antibiotics in food/meat/agriculture? any experiences?
- regulations around antibiotics in agriculture

General questions
- What are your feelings on AMR? What is the scale of the problem for you?
- What is your 'ideal' vision for the role of FDA in Myanmar? What can the FDA do more/less? Pros/cons

General practitioner interview topic guide

Biography

- Life history
    - How did you become a GP? What were the processes (educational, financial – school fees, how long, which university) to become a GP?
    - Why did you choose this path?
    - Happiness/Challenges? (give examples if possible)
- Daily duties/Work
    - Where are you working now? How did you get into this job?
    - What are your day to day responsibilities?
    - Can you tell me how your week looks like/what are your hours?
    - What challenges do you have while performing your day to day responsibilities?
- Social networks
    - Who do you engage with while performing your day to day responsibilities (e.g. doctors/other health professionals, patients/clients)?
    - How do you interact with these people?
    - Can you give me an example?

Patients

- How do you engage with your patients?
- How do you perform your duties (e.g. home visits, referral systems in place)?
- Do you engage with your clients/patients outside of work? If so how?
- Can you describe what would be your ideal form of care/care-taking for your patients?
- Have you met patients who cannot afford the healthcare they require? How do you deal with this? How do they deal with this (e.g. take loans)?
- We have heard of some clinics where patients are judged on their appearance and the doctor decides what treatment to give, have you heard of this before? What is your opinion? (e.g. when patients don't look wealthy, doctor withholds information or recommends a less favorable treatment course)?

Injection

We have heard health providers giving injections in place of oral medicines for more effective and faster cure or pain relief. We want to hear your opinions and experiences about this. Can you please share?

- Have you heard of or given 'a kyaw say' before? What is your definition of 'a kyaw say'? (e.g. IV injections, drip) Can you share your experiences?
    - What kind of IV injections and/or have you given before? For what conditions? What type of patients (age, sex, exclusion criteria, when you will give/when you will not give)?
- Have you heard or personally given/seen others give mixed injections for minor illnesses like feeling weak/tired/fever/body aches/headache? (mixing multiple different ingredients into one syringe or drip to patients before?). (e.g. mixing 3-8 injectable medicines)
    - Can you share your experiences with this?
    - In your experience, what medicines are included in these 'mixed injections'?
    - If YES – where did you gain this knowledge from? (e.g. experience, books, seniors, school curriculum) - try to be as specific as possible
    - If NO – do you have an opinion on this (e.g. heard about it from somewhere, seen it from somewhere, experience it yourself?). Can you tell us your experiences/examples in as much detail as you can?
- Whose decision is it on whether the patient receives an injection? (e.g. doctor's vs. patient demand)
    - If the patient demands, what happens (e.g. do you fulfil not fulfil the patient's wishes?) Why do you think patients asks for injections?

    - If it's your decision, have you have issues communicating this with your patient (e.g. patient disagrees and only wants injection)?
    - In your opinion, what other factors affect the decision (either from patient side or your side) as to why injections are provided in place of oral medicines?
- In your opinion, what is the difference between 'drip' vs. 'injections'? (eg. if a condition can be treated with both injection or drip, what will you choose? Why?)
    - Who gets what, when, and why? Who decides?
    - Is there any price difference between the two?
- When a patient can take both oral medicines or injection, what factors determine whether they get oral or injection? (e.g. patient demand, price)
    - Who gets what, when, and why? Who decides?
    - Is there any price difference between the two?

Fever

- Have you seen patients with fever? What are your experiences?
    - What kinds of fever have you seen in clinical practice before (e.g. 'normal fever', 'high fever')?
- How do patients describe symptoms of fever in Burmese?
- Have you given antibiotics for fever? If so which antibiotics?
    - To who? (gender, age)
    - For what symptoms? When will you give and when will you not give?)
- Have you given injections for fever? Mixed injections?
    - When and why and for who?

Posting Process

- If you want to enter government service after medical school? What is the posting process?
    - Pros/cons (challenges)
- What factors influence people's decisions to either enter government service or the private sector? What are the pros and cons of each sector?
- What bonds or agreements do you have to follow to enter government service? What are the penalties if you break your bonds? (e.g. bonds related to accepting government scholarships abroad)
- What is the pension process like (if you have served the government)?

Antibiotics

- Have you ever prescribed or referred antibiotics for your patients/clients?
    - What antibiotics/from where did you obtain them/why did you prescribe/for who or what kind of patients/how often?
    - Where did you get the antibiotics (e.g. stock at own clinic or hospital, approached by agents?)
    - Which guideline do you use?
    - Where did you gain your knowledge on how to prescribe antibiotics (e.g. medical school, experience)?
- Have you been approached by pharmaceutical agents before? If so can you share that experience with me?
- Policy
    - Have you heard of any government policies/campaigns/regulations about antibiotics?
    - Have you heard about anything else in the community relating to these medicines?

Appendix 4 – Approval Documents

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Observational/Interventions Research Ethics Committee

Dr Clare Chandler
Associate Professor in Medical Anthropology & Director, Antimicrobial Resistance Centre

Department of Global Health and Development (GHD)

Public Health and Policy
(PHP) LSHTM

11 May 2018

Dear Clare,

Study Title: Febrile illness evaluation in a broad range of endemicities: Anthropological studies in Myanmar

LSHTM Ethics Ref: 14962

Thank you for responding to the Observational Committee's request for further information

on the above research and submitting revised documentation. The further information has

been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type	File Name	Date	Version
Local Approval	Study recommendation letter from Inya Institute (Myanmar)	26/01/2018	1
Investigator CV	Justin Dixon CV Ethics Jan 2018	30/01/2018	1
Investigator CV	Clare Chandler CV Feb 2018	01/02/2018	1
Investigator CV	Coll de Lima Hutchison CV (Investigator)	01/02/2018	1
Local Approval	Study recommendation letter khin (Myanmar)	16/02/2018	1
Investigator CV	Yuzana Khine Zaw CV (Investigator)	21/02/2018	1
Protocol/Proposal	FIEBRE Myanmar Anthropological Study Protocol v1.1	27/02/2018	1.1
Information Sheet	Health Provider Consent (Myanmar) v.1.1	27/02/2018	1.1
Information Sheet	In-Depth Inverview Consent (Myanmar) v.1.1	27/02/2018	1.1
Information Sheet	Adult Resident Consent (Myanmar) v.1.2	27/02/2018	1.1

Information Sheet	Adolescent Assent (Myanmar) v.1.1	27/02/2018	1.1
Information Sheet	Guardian Consent for Adolescents (Myanmar) v.1.1	27/02/2018	1.1
Covering Letter	Clarification_letter_signed	01/05/2018	1.2
Protocol/Proposal	FIEBRE Myanmar Anthropological Study Protocol v1.2 Clarification	01/05/2018	1.2 Clarification

After ethical review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project by submitting a Serious Adverse Event form.

An annual report should be submitted to the committee using an Annual Report form on the anniversary of the approval of the study during the lifetime of the study.

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Att. To: The London School of Hygiene and Tropical Medicine
Keppel Street
Bloomsbury
London WC1E 7HT
United Kingdom

Dear Ethics Review Committee,

I am Dr. François Tainturier, the Executive Director of the Inya Institute. I completed my PhD from the Art and Archaeology Department at SOAS, London. The Inya Institute is a Yangon-based higher-education institute dedicated to advancing the social sciences, arts and humanities as they are related to Myanmar. It seeks to build research and intellectual capacity for young local researchers, to foster scholarly exchange between local and international researchers, and to create original scholarship for international and local scholars.

I am writing with regards to Ms. Yuzana Khine Zaw and Dr. Coll de Lima Hutchison's anthropological research in Myanmar and with a view to offering alternative support in place of local government or university ethical review. I have spoken with both Ms. Yuzana Khine Zaw and Dr. de Lima Hutchison, and reviewed their project. I believe they have identified the relevant risks posed by their study, which are minimal, and are taking the requisite precautions and measures to address them. Furthermore, their research will produce valuable findings for those involved locally (e.g. residents in Hlaing Thar Yar, health professionals and scientists working in Myanmar), as well as other local institutions (such as our own, the Inya Institute) and international partners and researchers. At present, there is very limited medical anthropology work conducted in Myanmar, so this project will also provide vital capacity building for Ms. Yuzana Khine Zaw and opportunities for other researchers working in Myanmar.

I understand that, for any medical anthropology work conducted abroad, the London School of Hygiene and Tropical Medicine requires from research teams some form of local government or university ethical review. However, there are a few important complications with regards to obtaining such ethical approval for anthropological projects, such as Ms. Yuzana Khine Zaw and Dr. de Lima Hutchison's. Firstly, the main medical ethical review boards in Myanmar are handled by the government and are associated with government public health or medical institutions (e.g. universities). Anthropological research studies generally do not go through these government ethical review boards and anthropological departments in universities are not equipped with review boards. Typically, medical research projects take an epidemiological or clinical approach and thus, would seek local ethical approval from the

government's Department of Medical Research or relevant university working in health. However, from my experience working in Myanmar and after discussing with Ms. Yuzana Khine Zaw and Dr. de Lima Hutchison, we all agreed that obtaining approval through these institutions is unfeasible in the current academic and institutional context.

This is firstly due to the nature of the project and collaborations both researchers are participating in. Ms. Yuzana Khine Zaw and Dr. de Lima Hutchison are part of a larger clinical study, FIEBRE (Febrile Illness Evaluation in a Broad Range of Endemicities), which is already collaborating with the University of Medicine 1 (UM1) in Yangon via the subcontract with the University of Otaga (UO, New Zealand), and thus, the UM1 is responsible for conducting the clinical arm of the research in Myanmar. This is not the case for the anthropological component of the FIEBRE study, which has to work independently of UM1 for the following reasons. Firstly, Myanmar citizens not affiliated with UM1 (as in the case with Ms. Yuzana Khine Zaw) cannot work directly with the UM1 for various official and unofficial reasons; to force this could put UM1, Ms. Yuzana Khine Zaw and the FIEBRE study at large in a very difficult position. Secondly, UM1 and the Department of Medical Research generally handle quantitative projects and a few smaller qualitative projects, none in medical anthropology. No course on medical anthropology is taught at Myanmar universities and as a result such a project is not likely to receive from the Department of Medical Research the due regard it deserves, the department being more interested in biomedical research. Lastly, formal collaboration with another government institution (e.g. Myanmar universities) in Myanmar could complicate the collaboration between UO and UM1, as relationships between different Myanmar universities are subject to their own histories and local politics. Therefore, seeking ethical approval from public health institutions (e.g. universities) associated with the government could possibly place the larger study both researchers plan to develop in the middle of local challenges and difficulties.

As someone who has been developing collaborative research projects in Myanmar for more than six years, I can vouch for the fact that such complications are common. It is my understanding that many non-clinical research projects, especially ones that focus on the private and non-governmental sectors, either do not seek external ethical review or organise alternative forms of local support and approval. Hence, with this letter, I support Ms. Yuzana Khine Zaw and Dr. de Lima Hutchison's proposal to work in Myanmar and believe that they are taking apposite measures to minimize the risks they have identified. In addition, the research they propose will be valuable for its participants and other interested parties in and beyond Myanmar. Both the Inya Institute and myself are willing to contribute as local advisors to their study, so as to help them negotiate any complexities they might encounter during their research.

Yangon, January 26, 2018

Yours Sincerely,

Dr. François Tainturier
Executive Director
The Inya Institute

**name of individual has been removed considering current political circumstances

MAHIDOL-OXFORD TROPICAL MEDICINE RESEARCH UNIT
Shoklo Malaria Research Unit

47/A4ShankoneStreet, San Chaung Township Yangon

Date: 16 February 2018

Dear Ethics Committee,

I am and I worked as a facilitator with the Tak Province Community Ethics Advisory Board on the Thai-Burmese border with the Shoklo Malaria Research Unit (SMRU). SMRU has been involved in providing healthcare and conducting operational research in the Thai-Burmese border for over 30 years. SMRU has also been informally engaging with the community for many years. In 2009, SMRU decided to develop a more formalized community advisory board with members from the community, acting as a bridge between researchers and the community. I partook a central role in the development and functioning of this community ethics advisory board. Currently, the community advisory board at SMRU advises if a study is acceptable and also advises on the ethical and operational aspects of research studies including consent procedures, compensation, and confidentiality.

I am writing to support and advocate for Dr. Coll de Lima Hutchison and Ms. Yuzana Khine Zaw's research on fever and antimicrobial resistance. The scope of the project and the topic itself is very relevant. Firstly, the proposal to use medical anthropology to study fever and antibiotics, healthcare seeking patterns, and access to medicines is appropriately justified in their protocol. Furthermore, there is very limited social research capacity in Myanmar and an in-depth anthropological study on the topic of would be amongst the first, providing valuable findings to understand peoples' livelihoods, constraints, and care seeking processes. Secondly, Hlaing Thar Yar, the proposed primary field site, is one of the biggest and most populated township in the country. Hlaing Thar Yar consists of a largely migrant and labourer population and faces several challenges with healthcare access due to the unstructured nature of squatter housing. In addition to this, lack of clean water and overpopulated households make the community an ideal location for infectious diseases. Lastly, the study's focus on private care is also very relevant as the majority of healthcare expenditure is out of pocket through private and/ or informal care. Particularly, in a setting such as Hlaing Thar Yar, most residents receive a daily wage and are unable to take time off to access formal services. Hence, Hlaing Thar Yar may be one of the central places to witness informal care practices such as taking drug cocktails or mixing medicines at homes which may be more common among the less privileged and/ or the marginalized. Therefore, this study responds to understanding such social and economic processes and will provide noteworthy insights into care seeking practices and antimicrobial use in the context of inequality. Finally, their protocol demonstrates careful and appropriate consideration of relevant ethical concerns and proposes contextually suitable measures to protect and inform participants. Furthermore, as this an observational anthropological study, they will not be putting their study participants at any more risk than they face in their daily lives (i.e. the researchers are not taking any human samples or providing any interventions), and given the social nature of their research, special medical ethical review may not be necessary or relevant.

There are several sensitivities with regards to non-government personnel (such as Yuzana) conducting research in Myanmar and I believe their decision to not go through

government ethical approval and to find an alternative such as a community advisory board is reasonable; see subsequent justifications. The Burmese system functions in a way that a hierarchy is set up among public service officials based on one's years of service. Those who have not worked for the government whether academic researchers or medical doctors have difficulties formally entering government services. As a result, a government coordinated ethical approval process may not be feasible for someone from the private sector who isn't formally partnering with government personnel. Hence, I also think an alternative form of local support and ethical guidance can be found. Yuzana and Coll have suggested creating an advisory panel who could comment on the protocol and provide advice during the course of their research. I would be happy to assist with this and share my experiences from the Tak Province Community Ethics Advisory Board. In conclusion, I believe this project will be of great value both to the relevant local actors and to the social research capacity of Myanmar. I strongly recommend this project and hope this letter acts as an alternative mean of support for ethical approval.

Appendix 5 – Consent Form (English and Burmese)

Consent forms were adapted for health providers, guardians, and adolescents. Where participants were only willing to provide verbal consent and not sign, we read out the consent form; obtained verbal consent; and left the unsigned form with the participant for their own information.

Febrile illness evaluation in a broad range of endemicities
FIEBRE Social Science Study

In-country Investigator: Yuzana Khine Zaw,
Tel: +989 723 9996

What you should know about this research study:
We give you this information sheet so that you may read about the purpose, risks, and benefits of this research study.
The main goal of research studies is to gain knowledge that may help future patients.
You have the right to refuse to take part, or agree to take part now and change your mind later.
Whatever you decide, it will not affect your regular care.
Please consider this consent form carefully. Ask any questions before you make a decision. Your participation is voluntary.

Introduction
We would like to invite you to take part in a research study. Joining the study is entirely voluntary. Before you decide, we will ensure that you understand why the research is being done and what it involves. We will go through this information sheet with you, and answer any questions you may have. Please ask questions if anything you read is not clear, or if you would like more information. Please feel free to talk to others about the study if you wish. It is OK to take time to decide whether or not to take part in the study and you can decide to withdraw at any time later.

Purpose of this study
Often, people experience illnesses that lead them to seek care or self-treat at home. One common way that people recognise that they are ill is that they have an unusually hot body, sometimes referred to as a 'fever'. Yet, little research has been done in Myanmar about what people do to get well again when they experience an unusually hot body, as well as how health workers and healers treat people experiencing this sign of illness. In this study, we are interested in spending time with a variety of people, including community members, patients, healers, drug shop workers, health professionals, scientists and policy-makers. Approximately 110 people in Myanmar will take part in this study. We wish to learn more about how people identify, experience and treat common illnesses, and any difficulties that they may face. We will share our findings with health planners to help improve access to medicines and guidelines for their use.

Taking part in this study and duration in the study.
We have asked you to take part because you live in an area where we are conducting research on fever and antimicrobial use. We may also ask the other members of your household to take part. If you agree to take part, a member of the study team will request to spend periods of time with you (and other members of your household), over the duration of a year. The study staff will attempt to understand more about life in your community, and will be especially interested to learn about what you and your household do when someone experiences an illness. The times and activities during which the study staff will spend time with you will be arranged with you on an ongoing basis. You are free to alter, or cancel, any of these arrangements at any point during the study. While spending time with you, the study staff will take field notes to aid their memory. They will also ask permission to take photographs during the research process.

In addition to spending time with you, we may ask you to take part in a medicines survey, where we will ask you about the medicines you commonly use in your household. We may also request to interview you about topics related to the study. Such topics might include: life in your community and any difficulties of getting by; what you do when you or someone in your family experiences an illness; and how you access and use medicines. During the study, we might ask permission to interview you more than once, in order to ask about new topics as they arise during the study. Interviews will likely last between 30 and 90 minutes. We will ask your permission to digitally record interviews, which will later be transcribed.

Are there any possible risks if I take part?
If you agree to take part in this study, there are no risks beyond those you experience in your everyday life. The study might, however, raise topics that are potentially difficult or emotional, for instance asking you to relate experiences of illness. We will be careful to phrase our questions sensitively, and will be responsive to any signs of discomfort. You are free to refuse to answer any questions.

Are there any possible benefits?
There are no direct benefits to you if you choose to take part. However, where travel is needed for the purposes of this study, you will be reimbursed money for transport. In addition, you may derive benefit from knowing that this study will contribute towards better healthcare and medicines for illnesses that are commonly experienced by people in illness. We will be careful to phrase our questions sensitively, and will be responsive to any signs of discomfort. You are free to refuse to answer any questions.

What will happen to the information collected about me?
All information collected about you during the course of the research will be kept strictly private. All information about you will be stored on a password-protected file and will be shared with the research team only. We will use the information that you share in an anonymised form (without using your name or identifying features) in research outputs, which will include scientific publications and reports. We will ensure that none of the information that we use can be linked back to you. Under some circumstances, The London School of Hygiene and Tropical Medicine Research Ethics and/or local advisory board may need to review participants' records for compliance audits.

Who has checked this study?
All research involving human participants is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by The London School of Hygiene and Tropical Medicine Research Ethics Committee (Ref 14962).

The Inya Institute and a member of the Tak Province Community Ethics Board have deemed this project to satisfactorily meet local ethical requirements.

Who is organising and funding this study?
This study is funded by the UK Department for International Development (DfID). London School of Hygiene & Tropical Medicine is the sponsor for the research and they have full responsibility for the project including the collection, storage and analysis of your information.

Voluntary participation
Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future treatment at any health care facility. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

Informed Consent
We would now like to ask for your consent to participate in this study. This statement of consent indicates your decision to participate or not in this study. You can either provide a written statement of consent or oral consent. The written statement requires your signature indicating your decision to participate in this study. If

for any reason, you are uncomfortable with the written documentation, we would like to go through a verbal consent procedure with you. This means verbally discussing the written consent form with you while completing a checklist together. We/the researcher (s) will sign the checklist in your presence, at the end of the discussion. This signature will indicate that we have gone through our study's details; your rights as a participant; answered all questions; and lastly, have received your oral statement of consent.

SIGNATURE PAGE
OFFER TO ANSWER QUESTIONS
Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION
You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

_____ _____
Name of Research Participant (please print) Date

_____ _____
Signature (or Thumb Print*) of Participant Time

_____ _____ _____
Name of Staff Obtaining Consent Signature Date

_____ _____ _____
Name of Witness* Signature Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.
If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries, please contact: Coll de Lima Hutchison, London School of Hygiene and Tropical Medicine, 15-17 Tavistock Place, London, WC1H 9SH, UK. Or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact: [Insert agreed direction of local advisor].

Audio Recording and Photography
Statement of Consent to be Audiotaped

I understand that audio recordings will be taken during the study. (Please choose YES or NO by ticking the relevant box)

I agree to being audio recorded Yes

No

_____ _____ _____
Name of Participant (please print) Signature (or Thumb Print*) Date

(*Only required if participant is unable to read or write)

As part of our research activities, we would like to take photographs to help us to document and understand health, illness and everyday life in Myanmar. We wish to ask your consent to be photographed during your participation in the study. If you agree to this now, we will always ensure that you are comfortable with us taking photographs before they are taken. You are free to refuse our taking photographs at any point, and can ask us to delete any photographs already taken. The image(s) will be stored in password-protected files and will be used for research purposes only. In order to protect your identity, no photographs that include your face or identifying features will be included in research outputs arising from this study.

Statement of Consent to be photographed

I grant my permission for photographs to be taken of me during my involvement in the study. I understand that photographs will be used for research purposes only.

I agree to being photographed Yes

No

_____ _____

Name of Participant (please print) Signature (or Thumb Print*) Date

(*Only required if participant is unable to read or write)

Febrile illness evaluation in a broad range of endemicities
FIEBRE Social Science Study

In-country Investigator: Yuzana Khine Zaw,
Tel: +959897239996

Researcher record of oral consent template

Participant Name or Number (if anonymous participant):_____

Date: _____

Location (City/Region): _____

Project explained:	Yes/No
Right to confidentiality explained:	Yes/No
Right to withdraw at any point explained:	Yes/No
Participant agreed to allow note taking:	Yes/No
Participant agreed o allow photos (without identifying features):	Yes/No
Participants agreed to audio recording of interview:	Yes/No
Witness Present:	Yes/No

Offer to Answer Questions

Before I sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over. My signature indicates that I have gone through the study information with you; explained your rights as a participant; and have answered all of your questions regarding this study. You will also receive a copy of this information sheet and researcher record form for you to keep.

Signature of Researcher [INSERT NAME]

(Signed in the presence of the participant to confirm oral consent):
Witness name (if witness present):

(ဖျားနာခြင်း) ဆေးပညာနှင့် လူမှုရေးလေ့လာခြင်း

လေ့လာသူ: ယုဇနခိုင်ဇော်

ဤသုတေသနစာတမ်း၏ အချက်အလက်များ

- ဤအချက်အလက်စာရွက်ကိုပေးခြင်းသည် သင့်အား ဤသုတေသနစာတမ်း၏ ရည်ရွယ်ချက်၊ အကျိုးအမြတ်နှင့် ဆုံးရှုံးမှု တို့ကို သိရှိ နားလည် နိုင်စေရန်ဖြစ်သည်။
- ဤသုတေသနစာတမ်းပြုစုခြင်း၏ အဓိကရည်ရွယ်ချက်မှာ နာမကျန်းသူများအား ရှေ့.ရှောက် ပံပိုးကူညီပေးနိုင်မည့် အသိပညာ ဗဟုသုတများကို တိုးပွားလာစေရန်ဖြစ်သည်။
- သင်သည် ဤသုတေသနစာတမ်းပြုစုရာတွင် ပါဝင်မည်၊ မပါဝင်မည် ကိုလွတ်လပ်စွာ ရွေးချယ်နိုင်ပါသည်။ အကယ်၍ ယခုအချိန်တွင် ပါဝင်ပြီး နောက်နောင်အချိန်တွင် ပါဝင်လိုခြင်းမရှိတော့လျှင်လည်း အချိန်မရွေး ငြင်းဆိုနိုင်ပါသည်။
- သင်၏ ရွေးချယ်မှုသည် သင်နှင့် ဆက်ဆိုင်သော လုပ်ငန်းဆောင်သာများအပေါ် မည်သည့်အကျိုးမှ သက်ရောက်မည် မဟုတ်ပါ။
- ဤသဘောတူအချက်အလက်စာရွက်အား သေချာစွာလေ့လာပြီး မေးခွန်းများရှိပါကလည်း လွတ်လပ်စွာ မေးနိုင်ပါသည်။ သင်၏ပါဝင်မှုသည် သင်၏ ဆန္ဒအရသာ ဖြစ်ပါသည်။

နိဒါန်း

ကျွန်ုပ်တို့သည် သင့်အား ဤသုတေသနစာတမ်းပြုစုရာတွင် ပါဝင်ရန် ဖိတ်ခေါ်ပါသည်။ ပါဝင်မည်၊ မပါဝင်မည်ကို လွတ်လပ်စွာ ရွေးချယ်နိုင်ပါသည်။ ကျွန်ုပ်တို့သည် သင့်အား ယခုပြုလုပ်နေသော သုတေသနစာတမ်းနှင့် ပတ်သက်သော အကြောင်းအရာများကို ဦးစွာသိရှိနားလည်စေလိုပါသည်။ ထို့ကြောင့် မရှင်းလင်းသည့်အပိုင်းနှင့် နောက်ထပ်သိလိုသော အကြောင်းအရာများ ရှိပါက အချိန်မရွေး ကျွန်ုပ်တို့အား မေးမြန်းနိုင်ပါသည်။ ကျွန်ုပ်တို့၏ သုတေသနစာတမ်းပြုစုနေသည့် အကြောင်းအရာများကို အခြားသူများနှင့် ဆွေးနွေးတိုင်ပင်နိုင်သည်။ သုတေသနစာတမ်းပြုစုနေစဉ်တွင် ပါဝင်ပြီး နောက်နောင်အချိန်မျိုးတွင် ပါဝင်လိုခြင်းမရှိတော့ပါကလည်း အချိန်မရွေး ငြင်းဆိုနိုင်ပါသည်။

စာတမ်း၏ရည်ရွယ်ချက်

လူများသည် နေမကောင်းဖြစ်လျှင် အိမ်အတွင်း (သို့မဟုတ်) ပြင်ပတွင် စောင့်ရှောက်မှုကို ရှာယူကြပါသည်။ လူတော်တော်များများသည် ကိုယ်ပူလျှင် နေမကောင်းဖြစ်သည်ဟူ၍လည်း ယူဆကြပါသည်။ "အဖျားဟူ၍လည်းခေါ် ဆိုတတ်ပါသည်။" မြန်မာနိုင်ငံတွင် လူတော်တော်များများ ကိုယ်ပူလျှင် မည်ကဲ့သို့သော ကုသမှုကိုခံယူကြသနည်းနှင့် ကျန်းမာရေးလုပ်သား (သို့မဟုတ်) တိုင်းရင်းဆေးဆရာများ မည်ကဲ့သို့ကုသကြသနည်းကို အနည်းငယ်သာ သုတေသနပြုလုပ်ထားပြီးဖြစ်သည်။ ထို့ကြောင့် ဤသုတေသနတွင် ရပ်ကွက်အတွင်းရှိလူများ၊ လူနာများ၊ တိုင်းရင်းဆေးဆရာများ၊ ဆေးဆိုင်ထိုင်သူများ၊ အခြားကျန်းမာရေးဝန်ထမ်းများ၊ အခြားသုတေသနပြုလုပ်နေသော ပညာရှင်များ၊ မူဝါဒရေးဆွဲသူများနှင့်အတူ ဤအကြောင်းအရာများကို အချိန်ယူပြီး စကားပြောလိုပါသည်။ ခန့်မှန်းခြေအားဖြင့် မြန်မာနိုင်ငံတွင်းရှိ လူပေါင်း (၁၁၀) ဦးသည် ဤသုတေသနပြုလုပ်ခြင်းတွင် ပါဝင်ကြမည်ဖြစ်သည်။ ကျွန်ုပ်တို့သည် ဖျားနာခြင်းဟူသည်ကို လူအများက အဘယ်သို့ခွဲခြားသတ်မှတ်သနည်း၊ မည်ကဲ့သို့တွေကြုံကြသနည်း၊ ကုသကြသနည်း နှင့် မည်ကဲ့သို့သော် အခက်အခဲများနှင့် ရင်ဆိုင်နေရသနည်းဟူသည်ကို လေ့လာလိုပါသည်။ ကျွန်ုပ်တို့၏ တွေ့ရှိချက်များကို ကျန်းမာရေးအခန်းကဏ္ဍတွင် ဦးဆောင်နေသူများအား ဆေးဝါးသုံးစွဲမှုနှင့် လမ်းညွှန်ချက်များအတွက် အထောက်အကူဖြစ်စေရန် ပြန်လည်ဝေငှသွားမည်ဖြစ်သည်။

ဤစာတမ်းတွင်ပါဝင်ခြင်းနှင့် ဤစာတမ်း၏ကြာမြင့်ချိန်

ကျွန်ုပ်တို့သည် သင်နေထိုင်ရာပတ်ဝန်းကျင်တွင် ဖျားနာခြင်းနှင့် ပဋိဇီဝဆေး (ပိုးသတ်ဆေး) သုံးစွဲနေမှုတို့ကို လက်ရှိတွင် သုတေသနပြုလုပ်နေခြင်းဖြစ်သည်။ ထို့ကြောင့် သင်နှင့် သင်၏မိသားစုဝင်များအား ဤသုတေသနပြုလုပ်နေခြင်းတွင် ပါဝင်ရန် ဖိတ်ခေါ်လိုပါသည်။ ပါဝင်မည်ဟု သဘောတူလျှင် ကျွန်ုပ်တို့သည် သင်နှင့် သင့်မိသားစုဝင်များ၏ တစ်နေ့တာလုပ်ငန်းဆောင်သာများနှင့် အထူးသဖြင့် နေမကောင်းဖြစ်လျှင် မည်ကဲ့သို့သော စောင့်ရှောက်မှုကို ခံယူကြသနည်းဟူသည်ကို ၁နှစ်အတွင်း လေ့လာရန် တောင်းဆိုလိုပါသည်။ ကျွန်ုပ်တို့အနေနှင့် သင့်နှင့်အတူနေမည့် အချိန်ကာလများကို သင်နှင့်တိုင်ပင်သဘောတူပြီးမှသာ စီစဉ်သွားပါမည်။ ဤအစီအစဉ်များကို ရက်ချိန်းပေးရန်သော်လည်းကောင်း၊ ဖျက်သိမ်းပေးရန်သော်လည်းကောင်း သင်အနေနှင့် ရွေးချယ်နိုင်ပါသည်။ သင့်အားဤစာတမ်းအတွက် မှတ်ချက်ကောက်ခြင်း၊ စာတံပုံရိုက်ခြင်းကိုလည်း ခွင့်တောင်းလိုပါသည်။

သင်နှင့်အတူရှိနေစဉ်အတွင်းတွင် ကျွန်ုပ်တို့သည် သင့်အား အိမ်အတွင်း အသုံးများသာ ဆေးဝါးများအကြောင်းနှင့် စာတမ်းနှင့်ပတ်သက်သော အကြောင်းအရာများကို မေးမြန်းလိုပါသည်။ ဤအကြောင်းအရာများသည် သင့်ပတ်ဝန်းကျင်တွင် ကြုံတွေ့နေရသော အခက်အခဲများ၊ မိသားစုဝင်များ ဖျားနာလျှင် မည်ကဲ့သို့ ပြုစုစောင့်ရှောက်ကြသနည်း၊ ဆေးဝါးများကို မည်ကဲ့သို့ သုံးစွဲပုံနှင့် ရယူမှုတို့ဖြစ်သည်။ စာတမ်းပြုစုနေစဉ်တွင်လည်း စာတမ်းနှင့် ပတ်သက်သော အကြောင်းအရာသစ်များ ပေါ်ပေါက်လာလျှင်လည်း မေးခွန်းများကို ထပ်၍မေးလိုကြောင်းတောင်းဆိုလိုပါသည်။ မေးခွန်းမေးခြင်းသည် မိနစ် (၃၀) မှ (၉၀) အထိကြာမြင့်နိုင်ပါသည်။ ဤမေးခွန်းနှင့်အဖြေများကို အသံဖမ်းယူရန်နှင့် စာသားပြန်ရေးရန်ကိုလည်း ခွင့်တောင်းလိုပါသည်။

ဤစာတမ်းတွင် ပါဝင်ခြင်းဖြင့် ဆုံးရှုံးမှုရှိနိုင်ပါသလား

သင့်၌ ဆုံးရှုံးမှုများမရှိပါ။ သို့ရာတွင် ဤစာတမ်းသည် ဖျားနာခြင်းအကြောင်းဖြစ်သောကြောင့် စိတ်ထိခိုက်စရာ၊ စိတ်မကောင်းစရာများ၊ ပြောဆိုရမည့်အပိုင်းများ သို့ရောက်ရှိလာပါက ကျွန်ုပ်တို့သည် မေးခွန်းများကို ဂရုစိုက်၍ မေးပါမည်။ သင်အနေနှင့် မဖြေချင်သောမေးခွန်များရှိပါက မဖြေလိုကြောင်းကို လွတ်လပ်စွာဖြင့် ငြင်းဆိုနိုင်ပါသည်။

ဤစာတမ်းတွင် ပါဝင်ခြင်းဖြင့် အကျိုးအမြတ်များရရှိနိုင်ပါသလား

အကျိုးအမြတ်များ တိုက်ရိုက်မရရှိနိုင်ပါ။ သို့ရာတွင် ဤစာတမ်းပြုလုပ်ခြင်းနှင့် ပတ်သက်၍ ခရီးသွားလာမှုများရှိလာပါက ခရီးစရိတ်အား ကျွန်ုပ်တို့ဘက်မှ ထောက်ပံ့ပေးမည်ဖြစ်ပါသည်။ ထို့အပြင် ယခုပြုလုပ်နေသော စာတမ်းသည် ကျန်းမာရေးစောင့်ရှောက်မှုနှင့် ဆေးဝါးသုံးစွဲနေမှုကိုလေ့လာနေသော သုတေသနဖြစ်ကြောင်းကို သိရှိနားလည်နိုင်မည်ဖြစ်သည်။ ကျွန်ုပ်တို့သည် မေးသည့်မေးခွန်းများကို အထူးသတိထားပြီး ပြင်ဆင်ထားမည်ဖြစ်သည်။ အဆင်မပြေမှုအားရှိလျှင်လည်း မဆိုင်းမတွန့် တုံ့ပြန်ပေးမည်ဖြစ်သည်။ သင်အနေနှင့် မဖြေချင်သောမေးခွန်များရှိပါက မဖြေလိုကြောင်းကို လွတ်လပ်စွာဖြင့် ငြင်းဆိုနိုင်ပါသည်။

မှတ်တမ်းများ ထိန်းသိမ်းခြင်း

သင်နှင့် ပတ်သက်သော အကြောင်းအရာအားလုံးကို တင်းကြပ်စွာဖြင့် Password (လျှို့ဝှက်နံပါတ်) များအဆင့်ဆင့်နှင့် လျှို့ဝှက်ထားပါမည်။ ကောက်ယူရရှိထားသော အချက်အလက်များအားလုံးကို ဤစာတမ်းအတွက်သာ အသုံးပြုပါမည်။ ကျွန်ုပ်အပါအဝင် စာတမ်းပြုစုသူအဖွဲ့သားများသာ အသုံးပြုမည်ဖြစ်ပြီး အခြားသူများနှင့် အချက်အလက်ခွဲဝေသုံးစွဲခြင်း လုံဝမပြုလုပ်ပါ။ သို့ရာတွင် လိုအပ်ပါက Landon School of Hygiene and Tropical Medicine ကျောင်း၏ ကျင့်ဝတ်ကော်မတီနှင့် ပြည်တွင်းအကြံပေးအဖွဲ့များသည် ကောက်ယူထားသော အချက်အလက်များကို စာရင်းစစ်လုပ်ဖို့ရန် ပြန်လည်ဆန်းစစ်ခြင်းများ ပြုလုပ်မည်ဖြစ်ကြောင်း အသိပေးအပ်ပါသည်။

ဤစာတမ်းအား မည်သူစစ်ဆေးပြီးပြီနည်း

စာတမ်းများကို ကျွန်ုပ်တို့နှင့်မသက်ဆိုင်သော သုတေသန ကျင့်ဝတ်ကော်မတီမှ စစ်ဆေးပြီးပါပြီ။ London School of Hygiene and Tropical Medicine ကျောင်း၏ ကျင့်ဝတ်ကော်မတီမှ စစ်ဆေးပြီးထောက်ခံသည်ဟု အတည်ပြုပြီးပါပြီ။

ဤစာတမ်းအား မည်သူမှ ဦးစီး၍ ဒွေကြေးထောက်ပံ့ပေးသနည်း

United Kingdom (UK) ရှိ နိုင်ငံတကာ ဖွံ့ဖြိုးရေးဌာနမှ ဒွေကြေးများကို ထောက်ပံ့ပေးထားခြင်းဖြစ်သည်။ London School of Hygiene and Tropical Medicine ကျောင်းမှ စာတမ်းပြုစုခြင်း၊ အချက်အလက်များကို ကောက်ယူခြင်း၊ ထိန်းသိမ်းခြင်းနှင့် ပြန်လည်စီစစ်ခြင်းကို အဓိကတာဝန်ယူပြီး လုပ်ဆောင်ပေးခဲ့ခြင်းဖြစ်သည်။

ဆန္ဒပြပါဝင်ခြင်း

ဤသုတေသနစာတမ်းပြုစုခြင်းတွင် ပါဝင်ခြင်းသည် သင်၏ဆန္ဒအရသာဖြစ်ပါသည်။ သင်၏ ဆုံးဖြတ်ချက်သည် နောက်နောင် သင်၏ ဆေးဝါးကုသမှုများတွင် မည်သည့်အတားအဆီးမှ မရှိပါ။ မည်သည့် အချိန်တွင်မဆိုငြင်းဆိုနိုင်ပြီး မည်သည့်ပြစ်ဒဏ်မှ မရှိကြောင်း အသိပေးပါသည်။

ပါဝင်ရန် သဘောတူခြင်း

ဤစာတမ်းပြုစုမှုတွင် ပါဝင်လိုခြင်းရှိ၊ မရှိကို သင့်အား မေးလိုပါသည်။ သင်၏ တင်ပြချက်သည် ဤစာတမ်းတွင် ပါဝင်မည်၊ မပါဝင်မည်ကို ဆုံးဖြတ်မှုပေးနေသောအချက်ဖြစ်သည်။ သင့်အနေနှင့် စာတမ်းပြုစုရာတွင် ပါဝင်ရန် သဘောတူသည်ကို လက်မှတ်ရေးထိုးခြင်း (သို့) နှုတ်ဖြင့် အတည်ပြုပေးခြင်းတို့ပြုလုပ်နိုင်ပါသည်။ နှုတ်ဖြင့်အတည်ပြုခြင်းကို မေးမြန်းသူမှ တာဝန်ယူ ဆောင်ရွက်သွားပါမည်။ ထိုကဲ့သို့ လက်မှတ်ရေးထိုးပေးခြင်းအားဖြင့် သင့်အား သုတေသနစာတမ်းအကြောင်းကို အသေးစိတ်ရှင်းပြပြီးဖြစ်ကြောင်းနှင့် သင်၏ပါဝင်မှုသည် သင့်ဆန္ဒသာဖြစ်ကြောင်းကို အတည်ပြုနိုင်ပါသည်။

လက်မှတ်ထိုးရန်

မေးခွန်းများ

ဤစာရွက်တွင် လက်မှတ်မထိုးမီ သိလိုသော မေးခွန်းများရှိလျှင်မေးမြန်းနိုင်ပါသည်။ စဉ်းစားရန် အချိန်အား သင်လိုအပ်သလောက် ယူနိုင်ပါသည်။

ခွင့်ပေးခြင်း

သင်သည် ဤစာတမ်းပြုစုရာတွင် ပါဝင်မည်၊ မပါဝင်မည်ကို ဆုံးဖြတ်တော့မည်ဖြစ်ပါသည်။ သင်၏လက်မှတ်ရေးထိုးခြင်းသည် အထက်ဖော်ပြပါအချက်အလက်များကို နားလည်ထားပြီး မေးခွန်းများလည်း မရှိတော့ကြောင်းကို ဖော်ပြပါသည်။ ဤစာတမ်းတွင် ပါဝင်မည်ဟူ၍လည်း သဘောတူခြင်းဖြစ်သည်။

သုတေသနပြုလုပ်မှုတွင် ပါဝင်သူ၏အမည်		ရက်စွဲ
ပါဝင်မည့်လူငယ်၏လက်မှတ် (သို့မဟုတ်) လက်ဗွေ		အချိန်
လက်မှတ်တောင်းခံသူ၏အမည်	လက်မှတ်	ရက်စွဲ
သက်သေ၏ အမည်	လက်မှတ်	ရက်စွဲ

ဤသဘောတူညီချက် စာရွက်မိတ္တူကို သင့်အား ပေးထားမည်ဖြစ်ပါသည်။

အသံဖမ်းခြင်းနှင့် ဓါတ်ပုံရိုက်ရန် ခွင့်ပြုချက်

အသံဖမ်းခြင်း ခွင့်ပြုချက် ဤစာတမ်းပြုလုပ်ရာတွင် အသံဖမ်းယူမည်ကို သိရှိထားပြီးဖြစ်သည်။
(အချက်တစ်ခုစီတိုင်းကို ပေးထားသော 'တူပါသည်' (သို့) 'မတူပါ' ဟူသော ဘောင်ထဲတွင် အမှန်ခြစ်ပါ။)

အသံဖမ်းရန်သဘောတူညီပါသည်။ တူပါသည်။ ☐

မတူပါ။ ☐

_____ _____ _____

ပါဝင်သူ၏အမည် လက်မှတ် (သို့မဟုတ်) လက်ဗွေ ရက်စွဲ

စာတမ်းပြုစုခြင်း၏ တစ်စိတ်တစ်ပိုင်းအနေနှင့် ကျွန်ုပ်တို့သည် ကျန်းမာရေးအကြောင်း၊ ဖျားနာခြင်းနှင့် မြန်မာနိုင်ငံရှိ သူများ၏ နေ့စဉ်ဘဝအကြောင်းများကို နားလည်သိရှိရန်နှင့် မှတ်တမ်းပြုစုရန် စာတ်ပုံများရိုက်လိုပါသည်။ စာတ်ပုံမရိုက်လိုလျှင်လည်း လွတ်လပ်စွာငြင်းဆိုနိုင်ပါသည်။ ရိုက်ယူထားသော စာတ်ပုံများအနက် သင်၏မျက်နှာ မပေါ်သော စာတ်ပုံများကိုသာ အသုံးပြုမည်ဖြစ်ကြောင်းနှင့် ရိုက်ယူထားသော ပုံများကို Password (လို့.ဂ့က်နံပါတ်) ဖြင့်ထားရှိပြီး စာတမ်းအတွက်သာ အသုံးပြုမည်ကို အသိပေးထားလိုပါသည်။ ရိုက်ယူထားပြီးသော ပုံများကိုလည်း ဖျက်သိမ်းရှိ တောင်းဆိုနိုင်ပါသည်။

စာတ်ပုံရိုက်ရန် ခွင့်ပြုချက်

ဤစာတမ်းပြုလုပ်ရာတွင် စာတ်ပုံရိုက်ယူရန် ကျွန်ုပ်ခွင့်ပြုပါသည်။ စာတ်ပုံများအား သုတေသနအတွက်သာ အသုံးပြုမည်ကို သိရှိထားပြီးဖြစ်သည်။

ဓါတ်ပုံရိုက်ရန်သဘောတူညီပါသည်။ တူပါသည်။ ☐

မတူပါ။ ☐

_____ _____ _____

ပါဝင်သူ၏အမည် လက်မှတ် (သို့မဟုတ်) လက်ဗွေ ရက်စွဲ

နှုတ်ဖြင့်ပေးသော ခွင့်ပြုချက်

ပါဝင်သူအမည် (သို့) ကုတ်နံပါတ် (အမည်မဖော် ပါဝင်ပါက): _____

ရက်စွဲ: _____

တည်နေရာ (မြို့/ ဒေသ): _____

စာတမ်းအား ရည်ရွယ်ချက်ရှင်းပြပြီး	ပြီး / မပြီး
အချက်အလက်များအား စာတမ်းတွင်သာအသုံးပြုမည်ကိုရှင်းပြပြီး (စိတ်ချယုံကြည်နိုင်ခြင်း)	ပြီး / မပြီး
အချိန်မရွေး အပါဝင်လိုလျှင် ငြင်းပယ်နိုင်ကြောင်း ရှင်းပြပြီး	ပြီး / မပြီး
မှတ်တမ်းကောက်ယူရန် သဘောတူ	တူပါသည် / မတူပါ
တတ်ပုံရိုက်ယူရန် သဘောတူ	တူပါသည် / မတူပါ
အသံဖမ်းယူရန် သဘောတူ	တူပါသည် / မတူပါ
မျက်မြင်သက်သေ	ရှိ / မရှိ

မေးခွန်းဖြေဆိုရန် အခွင့်ပေးခြင်း

(မေးမြန်းသူ) မှ ဤစာရွက်တွင် လက်မှတ်မထိုးမီ သိရှင်သော မေးခွန်းများရှိလျှင်မေးမြန်းနိုင်ပါသည်။ စဉ်းစားရန် အချိန်အား မိမိလိုသလောက်ယူနိုင်ပါသည်။ မေးမြန်းသူ လက်မှတ်ထိုးပြီးသွားခြင်းသည် အထက်ဖော်ပြပါအချက်အလက်များကို နားလည်ထားပြီး မေးခွန်းများလည်း မရှိတော့ကြောင်းကို ဖော်ပြပါသည်။ ဤသဘောတူညီချက် စာရွက်မိတ္တူကို သင့်အား ပေးထားမည်ဖြစ်ပါသည်။

မေးမြန်းသူ၏လက်မှတ် [_____]

[နှုတ်ဖြင့်ပေးသောခွင့်ပြုချက်ကို ပါဝင်သူရှေ့တွင်သာ လက်မှတ်ထိုးပါ။]:

မျက်မြင်သက်သေနာမည် (သက်သေရှိပါက):

Appendix 6 – Data Map

Overall Summary Data Map (2018 – 2020) ***excludes follow up visits done between December 2019 – January 2020. Names have been anonymised or altered to protect our participants' identities.

- Total Interviews: 101
- Total Observation: 103 Fieldnotes
- Total Media File: 111 Files
- Literature: 286

Total Interviews: 101

I. Medicines Interview (x50)
II. Health Provider interview (x7)
III. INGO Interview (x4)
IV. Lab interview (x3)
V. Stakeholders Interview (x6)
VI. Pharmaceuticals Interview (x8)
VII. Labour Case Story Interview (x11)
VIII. Side Interview (x9)
IX. Doctors Interview (x3)

Total Observation: 103 Fieldnotes

I. Drug Shop (x 28 Fieldnotes)
II. Mya Myint (public health practitioner) (x 2 Fieldnotes)
III. Army Doctor (x 1 Participant Observation Fieldnote)
IV. Mya Clinic (x 28 Fieldnotes)
V. Labour Rights Organization (x 9 Fieldnotes)
VI. INGO (x 17 Fieldnotes)
VII. Visit to UM1 (x 1 Fieldnote)
VIII. Scoping Period (x 17 Fieldnote)

Total Media File: 111 Files

I. FDA (x 23 Files)
    a. FDA News & Articles x 13
    b. FDA (Law & Regulations) x 7
    c. FDA (Registered & Unregistered) x 3
II. HTY News & Articles (x 13 Files)
III. Frontier News (x 9 Files)
IV. Myanmar Times News (x 18 Files)
V. Healthcare News & Articles (x 15 Files)
VI. Medicines Antibiotics AMR News (x 17 Files)
VII. Vet, Sein Drug Shop, TDH (Books) (x 6 Files)
VIII. Report (x 5 Files)
IX. Labour - Facebook Source (x 4 Files)

Relevant Literature Compiled: 286

I. Pharmaceutical Market (x 12)
II. Gender (x 21)

III. Medical Anthropology (x 5)
IV. Medicine Related (x 7)
V. AMR (x 14)
VI. Care (x 4)
VII. Myanmar (x 223)
    a. Yangon Urban secondary sources x 14
    b. Med Anthropology & History of medicine x 1
    c. Health documents x 7
        - Country health profile x 8
        - MOH x 45
        - TB x 5
    d. Research & Ethics x 16
    e. Gender, Buddhism, Nationalism x 16
        - Buddhism and Gender in Myanmar x 12
            - Kawanami x 2
            - Chie Ikeya x 10
            - Jessica Harriden x 2
        - Colonial Medicines in Myanmar x 4
        - Context Myanmar x 2
        - Ikeya @ Refiguring women in Burma x17
        - Media x 2
    f. AMR x 16
    g. Socio-Political-Economic-Historical Context x 44

I. Medicines Interviews

- 50 Patients (June – July 2018)

II. Health Provider Interviews

1) Drug shop owner (24.1.2019)
2) Vet (18.2.2019)
3) Doctor from Pun Hlaing Hospital (6.4.2019)
4) Psychiatrist@CLH's Interview (18.5.2019)
5) Midwife@CLH's interview (21.5.2019)
6) Doctor from SAMITIVEJ International at Parami Hospital (30.4.2019)
7) MD@Coll's interveiw (21.5.2019)

III. INGO Interviews

1) NLS (5.3.2019)
2) KMK (8.3.2019)
3) AC_Health Volunteer (11.3.2019)
4) DL (25.3.2019)

IV. Lab Interviews

1) TMZ, Laboratory (6.4.2019)
2) Owner @ Diagnostic Center (25.4.2019)
3) Sciences lab (22.4.2019)

V. Stakeholders Interviews

1) DFID meeting @ British Embassy (30.4.2019), Not sure it is interview or Meeting
2) FDA_Food (6.4.2019)

3) FDA_Drug (9.4.2019)
4) Dr.STT_Senior Director, Strategic Information Division, PSI Myanmar (11.6.2019)
5) Dr.KK, NHS research Fellow (30.4.2019)
6) FC, NHS

VI. Pharmaceuticals Interviews (anonymized)

1) Pharmaceuitcal company A (4.4.2019)
2) Pharmaceuitcal company B (5.4.2019)
3) Pharmaceuitcal company C (9.4.2019)
4) Pharmaceuitcal company D (10.4.2019)
5) Pharmaceuitcal company E (24.4.2019)
6) Dr.TNW, Managing Director of Pharmaceutical company F (20.5.2019)
7) Pharmaceuitcal company G
8) Pharmaceuitcal company H (23.2.2020)

VII. Other Interviews

1) Dr.MK, Anthropology Professor (2.5.2019)
2) Medical Doctor/ *hsaya* MO (GP supervisor of Dr.KK) on (3.5.2019)
3) Microfinance Interview (to learn about the microfinance business in Hlaing Thar Yar) (10.1.2020)
4) Seafarer (10.1.2020)
5) AYT Clinic Interview (21.2.2020)
6) Labour rights organization - staff Interview (19.2.2020)
7) Labour rights organization – interview with teashop owner besides the social security clinic – (22.2.2020)
8) Drug shop lady (Sein drug shop) re-interview – (3.2.2020)
9) FDA re-interview

VIII. Labor Case Story Interviews

1) Labor Case Story 1 about Heart Operation (30.6.2019)
2) Labor Case Story 2 & 3 about pregnant lady & Hand cut (12.7.2019)
3) Labor Case Story 1_ follow up Interview about Heart Operation (31.7.2019)
4) Labor Case Story 4 (Male) Leaders of worker Union (4.8.2019)
5) Labor Case Story 5 (Male) Volunteer & leader of worker union (4.8.2019)
6) Labor Case Story 6 (Female) worker (18.8.2019)
7) Labor Case Story 7 (Female) worker (25.8.2019)
8) Labor Case Story 8 (Female) worker (25.8.2019)
9) Labor Case Story 9 (Female) worker (25.8.2019)
10) Labor Case Story 10 (Female) worker (8.9.2019)
11) Labor Case Story 11 (Female and Male, Married couples work at Mama Noodle factory) workers (29.9.2019)

IX. Medical doctor Interviews

1) GP Interview – 9.1.2020
2) Dr.MNT (Public Health) – 17.2.2020
3) 2 Doctors interview (Public Hospital) – 17.2.2020

PARTICIPANT OBSERVATION FIELDNOTES

I. Drug Shop Fieldnotes

1) 2018_12_12_Observation and Interview (DSL)

2) 2018_12_13_Observation and Interview (DSL)
3) 2018_12_18_Observation Notes (DSL)
4) 2018_12_19_Observation Notes (DSL)
5) 2019_1_9_Observation Notes (DSL)
6) 2019_1_10_Observation Notes (DSL)
7) 2019_1_15_Observation Notes (DSL)
8) 2019_1_16_Observation Notes (DSL)
9) 2019_1_17_Observation Notes & FDA raid (DSL)
10) 2019_1_19_Observation Note (Mingalar Market)
11) 2019_1_23_Observation Notes (DSL)_YKZ
12) 2019_1_24_Observation Notes (DSL)
13) 2019_1_26_ Observation Notes (Mingalar Zay)
14) 2019_1_29_Observation Notes (DSL)
15) 2019_1_30_Observation Notes (DSL)
16) 2019_02_05_Observation Notes (DSL)
17) 2019_02_06_Observation Notes (DSL)
18) 2019_02_07_Observation Notes (DSL & Wedding)
19) 2019_02_13_Observation Notes (DSL)
20) 2019_02_16_ Observation Note (DSL)
21) 2019_02_18_Observation Notes (DSL)
22) 2019_02_20_Observation Notes (DSL)
23) 2019_02_26_Observation Notes (DSL)
24) 2019_03_01_Observation (DSL)
25) 2019_03_05_Observation Note (DSL)
26) 2019_03_11_Observation Notes (DSL)
27) 2019_03_14_Observation Notes (DSL)
28) 2019_03_19_Observation Note (DSL)

II. Mya Myint Fieldnotes

1) 2019_03_06_Observation Notes (Mya Myint)
2) 2019_03_21_Observation Notes (Mya Myint)

III. Army Doctor Fieldnote

1) 2019_4_2_Army Doctor Observation

IV. Mya Clinic Fieldnotes

2) 6.5.2919_Observation Notes
3) 28.5.2019_ Observation
4) 4.6.2019_ Observation
5) 11.6.2019_ Observation
6) 18.6.2019_ Observation
7) 25.6.2019 _ Observation
8) 2.7.2019 – Observation
9) 9.7.2019_ Observation
10) 10.7.2019_ Observation
11) 16.7.2019_ Observation
12) 23.7.2019_ Observation
13) 30.7.2019_ Observation
14) 6.8.2019_Observation

15) 13.8.2019_ Observation
16) 13.8.2019_ Observation
17) 15.8.2019_ Observation
18) 16.8.2019_ Observation
19) 6.9.2019_ Observation
20) 5.9.2019_ Observation
21) 12.9.2019_ Observation
22) 13.9.2019_ Observation
23) 19.9.2019_Observation
24) 20.9.2019_ Observation
25) 17.10.2019_ Observation
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5) Mental illness- Myanmar's hidden epidemic
6) The 'donation' dilemma
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8) Workers welcome changes to social security system
9) Social Security Board

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3) Cheap drugs build drug resistance
4) Substandard traditional medicine is still being
5) Govt to streamline free healthcare for poor
6) Medicine, both good and bad
7) Medicine importers urged to weather kyat's
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40) Steinberg – Unknown
41) Under The Dragon (Rory Maclean)--R – Unknown
42) The River of Lost Footsteps (Thant Myint U)--R – Unknown
43) Living in Silence--R – Unknown
44) Burma Chronicles (Guy Delisle)--R - Unknown Perfect Hostage, Part 1--R - Unknown