An ethnography of antibiotics and antimicrobial resistance, in the lives of medicine providers, residents, and sex workers, in Harare, Zimbabwe

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Declaration by student

I, Salome Manyau, 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 this thesis. This work has not been submitted previously for an academic qualification.

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Abstract

A key global health challenge of our time is the rise of antimicrobial resistance (AMR). There is growing recognition that interventions to address AMR must transcend narrow behavioural approaches and address the ways in which antibiotics have come to stand in for more sustainable and equitable approaches to poverty, healthcare, and productivity. The quick-fix roles of antibiotics are particularly salient for the billion plus people globally living in impoverished urban areas of cities, many of whom live without adequate water and sanitation infrastructure, housing, and basic healthcare. Informality, a central characteristic of urban living, is an important part of the problem AMR poses for cities, yet to date, most scholarship and stewardship frameworks have been biased towards formal parts of health and economic systems. Addressing this gap, this thesis explores the ways antibiotics connect and hold together different aspects of informal urban living. I draw on ethnographic fieldwork in Mbare, the oldest township in Harare, Zimbabwe, and focus in particular on three important dimensions of informality in which antibiotics and AMR are caught up: (1) how residents navigate poor water and sanitation infrastructure through the use of antibiotics, (2) the role of informal market vendors in supplying antibiotics in the recesses of an under-resourced and frequently collapsing public healthcare sector, and (3) the role of antibiotics in the informal economy of sex work. A key connective theme throughout is that of the dynamics between municipal, national, and global modes of governmentality that explain both entrenched patterns of marginalisation and also why vulnerable individuals and groups are nonetheless increasingly being held accountable for mounting AMR. By tracing these processes as they impact lives and livelihoods in Harare, I expose pathways for stewardship that are more attuned to the realities of those relying on informality to survive on the peripheries of social and economic life.

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Abbreviations

AMIS	Antimicrobials in Society
AMR	antimicrobial resistance
AMS	antimicrobial stewardship
AMU	antimicrobial use
ART	antiretroviral therapy
BRICS	Brazil, Russian, India, China, and South Africa
BRTI	Biomedical Research and Training Institute
CAM	complementary and alternative medicine
CASO	Central African Statistical Office
CHW	community health worker
CID	Criminal Investigation Department for Drugs
EDLIZ	Essential Drug List for Zimbabwe
ESAP	Economic Structural Adjustment Programme
FAO	Food and Agriculture Organization
FIEBRE	Febrile Illness Evaluation in a Broad Range of Endemicities
GAP	global action plan
GARP	Global Antimicrobial Resistance Partnership
HIV	human immunodeficiency virus
HRT	Harare Residents Trust
IACG	Interagency Coordination Group on Antimicrobial Resistance
IDI	in-depth interview
ILO	International Labour Office
KAP	knowledge, attitudes, and practice
LMIC	low- to middle-income country
LSHTM	London School of Hygiene and Tropical Medicine
MCAZ	Medicines Control Authority in Zimbabwe
MDC	Movement for Democratic Change

MoHCC	Ministry of Health and Child Care
MRCZ	Medical Research Council of Zimbabwe
MSF	Médecins san frontières
NAP	National Action Plan
NGO	non-governmental organisation
NMTPAC	National Medicine and Therapeutics Policy Advisory Committee
ODK	Open Data Kit
PAM	penicillin with aluminium monostearate
PHC	primary healthcare
PLHIV	people living with HIV
RDU	rational drug use
STI	sexually transmitted infection
STD	sexually transmitted disease
SWC	sex workers' clinic
TrACSS	Tripartite AMR Country Self-assessment Survey
TB	tuberculosis
THRUZIM	The Health Research Unit in Zimbabwe
USD	United States Dollar
VD	venereal disease
WASH	water sanitation and hygiene
WHO	World Health Organization
ZANU-PF	Zimbabwe African National Union – Patriotic Front
ZEDAP	Zimbabwe Essential Drugs Action Programme
ZIMASSET	Zimbabwe Agenda for Sustainable Socio-Economic Transformation

Chapter 1

1. Introduction and literature review

> … the system needs to be fixed, there should be rationing of antibiotics so that we preserve the remaining drugs, people should not be given antibiotics without proof of what they are sick of and everyone should adhere to that. As a country we have to do away with this fixed belief that if I can get an antibiotic I will be okay because that is ignorance on the ability of the body to heal itself. I advise Zimbabweans to finish the antibiotics prescribed to them even when they feel better, also avoid using left over's [sic] and sharing of the antibiotics as this has contributed largely to AMR.The Zimbabwe National AMR Core Group Chairperson and Director of Epidemiology and Disease Control in the Ministry of Health and Child Care, addressing an audience at the 2018 World Antibiotic Awareness meeting in Bulawayo. 'Govt tackles antibiotics resistance' 15 Nov 2018 (Damba, 2018)

1.0. Background

Globally heightened concerns that antibiotics are losing their efficacy has given rise to greater awareness of the problem of antimicrobial resistance (AMR) among researchers and practitioners in public health and global health. Urgent calls to do something to preserve these 'precious' medicines have dominated the AMR discourse, as in the excerpt above where the Zimbabwe National AMR Core Group Chairperson, a medical doctor by profession, reiterates the need to preserve and ration antibiotics (Damba, 2018).This champion for AMR identifies the systemic and country-level challenge of optimising antibiotic use, but as is often seen within AMR, she then focuses on individuals' choices by making a passionate call for Zimbabweans to do away with "this fixed belief that if I can get an antibiotic I will be okay", as this to her is "ignorance on the ability of the body to heal itself". Mirroring the global-level challenge of finding messages for individual action on AMR, she goes on to warn Zimbabweans to "avoid using left over's [sic] and sharing of the antibiotics as this has contributed largely to AMR" (Damba, 2018:1). This move from a recognition of system-level issues to imploring citizens to act is not unique to AMR and is entrenched in public health globally. By deploying framings of ignorant, 'irrational' actors who do not know when an antibiotic is necessary and how to use antibiotics 'appropriately', the AMR Core Group Chairperson follows the mainstream discourse that holds individual citizens responsible for collective health challenges.

During my research, I became increasingly known among the public health community for my research on antibiotics, which formed part of the broader increase in attention in Zimbabwe on addressing AMR. What was especially interesting was that while I was examining antibiotic use at multiple levels of the health system, local actors, including those situated both within and outside the Ministry of Health and Child Welfare (MoHCC)

– all well versed in the script and practice of rational drug use (RDU) – were greatly concerned about the ways antibiotics were being used beyond formal healthcare settings. This was especially palpable when considering antibiotic use not only within but, particularly, beyond formal healthcare settings. One particular site that was mentioned repeatedly was the famous markets of Mbare, at the heart of the capital of Harare, where antibiotics were well known to be sold by unlicensed market vendors. There was a sense that this was quite new, or at least that in the past it had not been nearly as big a problem as it is now, and that something should be done to clamp down on these errant actors. Very little sympathy was shown for these vendors, with language such as 'irrational' or 'irresponsible' deployed to describe them. In many ways, they were hoping I would be able to tell them what to do about it since most – including those in the Zimbabwe AMR Core Group whom I had engaged with on numerous AMR fora, as well as key stakeholders whom I interacted with during stakeholder interviews in my study – were aware of my work in precisely these markets. To my advantage, I had the opportunity to engage in immersive ethnographic work with market vendors and residents and, indeed, to complete all my fieldwork before the emergence of Covid-19, which disrupted fieldwork for many others and substantially changed the landscape of urban informality (which I will return to in Chapter 7).

In November 2020, in one of the periods when COVID-19 restrictions were relaxed, one of my local PhD advisors, the late Dr Sekesai Zinyowera, a microbiologist – who at that time happened to be the Deputy National Coordinator for the Zimbabwe AMR Core Group – invited me to attend an AMR conference during the 2020 World Antimicrobial Awareness Week. In this telephone call she made it very clear that:

> I want you to go and show your PhD work on how antibiotics have escaped into the informal sector. People must know the danger that this poses to AMR. I want you to go and stimulate discussion on how best to deal with this problem of vendors.

I had grown to learn that vendors were to her, and to many other AMR Core Group members, 'a menace' whose practice of selling unprescribed antibiotics was highly shunned. I found myself at the conference on a platform with a wide range of Zimbabwean AMR stakeholders who too believed that informal medicine vendors increased risk of AMR and should be flushed out of the system. Though I was not in disagreement that risk of AMR was indeed posed by unprescribed antibiotics, my ethnographic work with medicine vendors spoke more about why medicine vendors had suddenly emerged on the scene, and their vibrant and necessary informal role in the Zimbabwean health sector. Uncertain how best to present my work without causing too much controversy, I provided a snapshot of antibiotics in the informal sector, a picture which three community health workers (CHWs) at this conference noted as a reality that had been imposed in their communities due to the systemic failings of the formal public health sector to provide community clinics with adequate and affordable supplies of

medicines. This opened a debate on how the informal medicine sector was playing a crucial role in providing access to medicines, especially to the economically disadvantaged in the context of an ailing and crumbling health sector. The CHWs expressed that the residents whom they represented had an 'empty choice' and their yearnings were for clinics with medicine as the solution to the informality in medicine. I walked out of this AMR conference having opened dialogue around the possibility that, perhaps, rather than clamping down on medicine vendors we need to be asking deeper questions about why the informal antibiotics trade has arisen in Zimbabwe and what it might take to 'steward' antibiotics beyond formal prescriber settings.

This thesis is about the ways in which antibiotics have become part of the fabric of informal living in a low- to middle-income country (LMIC) like Zimbabwe. It responds in part to calls within Zimbabwe for research into the field of antimicrobial use (AMU) and AMR and it also responds to a gap in the wider literature on informality and antibiotics. This is the first study in Zimbabwe to provide insights from an anthropological perspective into the ways antibiotics connect and hold together different aspects of informal urban living. A common thread throughout this thesis is a concern with the language of 'rationality' as a lens for framing the problem of (and possible solutions to) informal medicines. Scholarship and antimicrobial stewardship frameworks have predominantly focused on the formal parts of health and economic systems and yet very little attention has been paid to the role that the informal sector plays in healthcare provision in relation to AMU and AMR and possibilities for stewardship frameworks in such settings. While a substantial body of literature exists on medicines in the informal sector, very few accounts focus on antibiotic supplies in the informal sector, especially under conditions of political, economic, and social instability, despite the fact that antibiotics are currently a matter of huge concern. With no qualitative research on AMR having been conducted in Zimbabwe in this area, this work responds in part to this call, but also goes beyond it, suggesting that knowledge and 'rationality' are only part of the picture, if high levels of antibiotic use are to be understood. The language of 'rationality' does not even begin to scratch the surface of the complex and multifaceted shifts that are occurring in Zimbabwe and leads one to question the claim that biomedicine can – or even should – regain control over the domain of antimicrobial medicines. Motivated by these considerations, l set out in this thesis to explore how, against the backdrop of a broken health system like Zimbabwe's, where access to essential medicines is constrained, antibiotics have escaped from clinical settings into the informal sector. I explore how informality has become intertwined with the day-to-day realities of those who have come to rely on antibiotics as a 'quick fix' to protect against economic, political, and social marginalisation. I adopt an anthropological perspective to explore the ways in which antibiotics have become embedded in the everyday lives of residents and to understand the impact of substandard access to, and waning efficacy of antibiotics in, a fragile health system

where contestations exist over who is responsible for 'quality' care or lack of care and for the stewarding of antimicrobials in a context rife with uncertainties.

Throughout this work, I shed light on the dynamics between municipal, national, and global modes of governance, this being a connective theme that is key in understanding why marginalised groups are forced to rely on antibiotics to get by and why these same groups are framed as behaving 'irrationally' and as targets for stewardship.These insights will be valuable to policymakers and public health practitioners in supporting efforts aimed at tackling AMR and stewardship efforts beyond the formal domain, and this will help in the development of contextually appropriate solutions in dealing with informality as a central characteristic of urban living which stands as an important part of the problem AMR.

1.1. Public health perspectives on AMR

The discovery of penicillin in the 1940s precipitated the development of numerous classes of antibiotics, leading to a dramatic improvement in health gains as antibiotics proved effective in combating infections. Currently, AMR is one of the greatest public health challenges and could reverse these dramatic health gains by undermining our ability to fight against pathogens, as they become drug-resistant (Podolsky, 2010; Podolsky *et al.*, 2015; Ha and Haste, 2019; Iskandar *et al.*, 2021; Sulis *et al.*, 2021). In 2011, the World Health Organization (WHO) published the European Strategic Action Plan 2011–2026 on antimicrobial resistance (WHO, 2011), which identified AMR as one of the greatest threats to human health. Jim O'Neill, in his 2016 report 'Tackling Drug-Resistant Infections Globally: Final Report and Recommendations. The Review on Antimicrobial Resistance', explicitly elaborated this threat to human health with warnings that if no action was taken, AMR could lead to a dramatic increase in future deaths, with an estimated loss of "10 million lives each year by 2050" (O'Neill, 2016:12). In this report, O'Neill cited the lack of interventions to slow down the much-dreaded rise in drug resistance, and the lack of new supplies of antibiotics to deal with superbugs, as a serious setback to efforts to curb AMR, whose impacts were likely to be profound at a global level and across all societies, negatively affecting healthcare systems. Concerns over the diminishing effectiveness of antibiotics have placed AMR on both the international and national agendas "as a critical threat to public health and health systems" (Smith, 2015:1).

Global action to tackle the threat of increasing AMR led in 2015 to the development of the Global Action Plan (GAP) by the memberships of the FAO, OIE, and WHO, with key strategic areas for nations to develop national action plans (NAPs)(WHO, 2015a; WHO, FAO and OIE, 2019). The GAP is a blueprint around which AMR

national action plans are structured and is premised on five strategic objectives primarily aimed at combating AMR. According to the GAP, each country is expected to design its own NAP to meet the five strategic objectives "in a manner that meets both local needs and global priorities" (WHO, 2017:6). The Tripartite AMR Country Self-assessment Survey, a tool used to monitor progress in the development and implementation of NAPs, indicated that at least 140 countries have developed NAPs, whilst 95 have started implementing them (WHO, 2021). Zimbabwe is among the nations that have responded to the call to develop NAPs; its first NAP was launched in September 2017 but expired in 2021, and it has started working on yet another NAP. In their review of existing NAPs on AMR, Willemsen and colleagues note that despite the existence of NAPs, the response by member states to AMR has been inadequate due to poor alignment of NAPs to the GAP and inadequate implementation capacity (Willemsen, Reid and Assefa, 2022).

One of the central pillars of the GAP and many NAPs is optimising the use of antimicrobials in humans and animals. LMICs have been shown to make up a significant proportion of global antibiotic consumption. For instance, the BRICS countries – Brazil, Russian, India, China, and South Africa – account for 67% of global antibiotic consumption (Laxminarayan and Chaudhury, 2016). One of the main drivers of high rates of use, particularly in LMICs, has been attributed to non-prescription purchase and use of antimicrobials with no prescription, which has been reported in Mauritius, Ethiopia, Zimbabwe, Nigeria, Egypt, Oman, Jordan, Palestine, Kingdom of Saudi Arabia, Fiji, and Cambodia (Willemsen, Reid and Assefa, 2022). Optimising antibiotic use and preventing 'misuse' remains a considerable obstacle preventing LMICs from following through on NAP targets (Willemsen, Reid and Assefa, 2022). Exactly what constitutes 'optimal' antibiotic use, however, has often been benchmarked against a narrow biomedical conception of what constitutes judicious antibiotic use. In the 1980s and 1990s, 'rational drug use' was the predominant framework through which this was operationalised, though in the era of AMR it now occurs primarily through the framework of 'stewardship', which according to Broom and colleagues consists of surveillance, restriction, and correction of antibiotic use practices (Broom *et al.*, 2017). Discourses advocating for 'appropriate' antibiotic use have surged within the public health arena, focusing on the way antimicrobial medicines are being used by prescribers and patients with a prevailing imaginary that doctors are recklessly prescribing antibiotics whilst patients are haphazardly consuming these antibiotics in a manner that threatens their effectiveness. Like other nations, Zimbabwe, in its situation analysis on AMR, has presented a scenario of 'irrational' consumers fuelling AMR and advocated for restrictive and corrective intervention to restrain 'unnecessary' consumption of antibiotics (AMR Core Group, 2017a). Public health initiatives have generally involved restrictive and corrective interventions in promoting 'rational' use of antibiotics and these initiatives have often been made without sufficient recognition of the social, political, and

epidemiological shifts that select for bacterial infection and antibiotic use (Denyer Willis and Chandler, 2018). The World Health Organization (WHO) has long operationalised the categories of 'rational' and 'irrational', 'appropriate' and 'inappropriate' to describe the use of antibiotics and to encourage 'prudent' prescribing and use of antibiotics by both prescribers and patients (World Health Organization, 2015b). These categories have informed the current approach to documenting, quantifying, and understanding antibiotic use. Such categorisation has dominated the Zimbabwean health context, as exemplified in the opening excerpt of this chapter with the AMR Core Group Chairperson chastising Zimbabwean citizens for 'inappropriate' use of antibiotics. The challenge with these categorisations, however, is that what constitutes 'rational', 'irrational', or 'prudent' use of antibiotics is difficult to apply in practice to different patients in different settings, with different histories, populations, and health system contexts. A particular characteristic of many LMIC health systems that continues to drive considerable uncertainty among the global AMR community is the presence of large informal pharmaceutical markets. Poor regulation or lack of implementation of regulations for antimicrobial sales in most LMICs has been argued to promote informal trade, with antimicrobials being sold in the streets by untrained persons and purchased without medical prescription (Ayukekbong, Ntemgwa and Atabe, 2017). Numerous studies have documented high rates of antibiotic 'misuse' and 'overuse', due to widespread availability of antibiotics through informal channels and little regulatory oversight (Morgan, 2011; Ocan *et al*., 2014; Zellweger, 2017). Accounting for antibiotic prescribing and dispensing practices has been a challenge in LMICs, especially in fragmented health systems where informal markets have made the documentation of antibiotics difficult because these markets are often illegal. Thus, stewardship planning for this sector remains very early-stage, with most stewardship frameworks currently focused on the formal parts of health and economic systems. In practice, stewardship beyond the formal sector often involves education campaigns imploring people not to buy from illicit sources/without a prescription, along with calls for better regulation, often with little clarity on how this could be achieved. Interventions that look into the stewardship of informal markets through systems that support the regulation of pharmaceuticals beyond the formal health system have been found lacking (World Bank, 2019). Instead, interventions aimed at curbing 'irrational' prescription and antibiotic use have focused more on the creation of restrictive regulations aimed at asserting control over domains of formal healthcare at the expense of the informal health sector. Such efforts to exert more control over the way people use medicines reflect a narrow way of understanding antibiotic use. Restricting antibiotic use in the formal sector does not make antibiotic overuse go away, but rather pushes it elsewhere, because of the social and structural problems that lead people to need antibiotics, and where there is demand, there is supply. The narrow focus on interventions in the formal sector and education of patients have typically had little or no effect. For instance, a systematic review of nearly 500 prescribing interventions across low- and middle-income countries found that

even when such interventions had an impact, effect sizes were small (Rowe, 2015). More recently, recognition of the limitations of interventions focused on correction and restriction of use has led to increasing awareness of the need to consider the broader social, structural, and system-level processes that shape the ways in which antibiotics are used, with much thought at the moment on how to enact 'AMR-sensitive' or 'structural' interventions. This increasing recognition has partially been in response to work by social scientists including medical anthropologists (discussed further in section 1.2). One such approach that stands to reduce the need for antibiotics, as proposed by the World Bank, involves a deliberate enactment of 'AMR-sensitive' or 'structural' interventions through targeted 'AMR-Smart' investments that address structural drivers of AMR (World Bank, 2019). Such approaches enable an engagement of multiple sectors to improve (1) public health systems, (2) access to clean water, and (3) access to sanitation by deliberately designing in urbanisation and infrastructure that facilitate hygienic living arrangements to curb the transmission of AMR. This would dramatically decrease the disease burden associated particularly with rapidly urbanising cities with a high prevalence of unhygienic conditions, which often make antibiotic use a necessity (Clift, 2019). Like the World Bank, the Interagency Coordination Group on Antimicrobial Resistance (IACG) has also called for structural interventions that prioritise the strengthening of water, sanitation, and waste facilities across a wide range of settings including "health facilities, farms, schools, household and community settings [as] central to minimising disease transmission and the emergence and transmission of antimicrobial resistance in humans" (IACG, 2019:3). A move towards interventions that address 'upstream' factors that influence the emergence, transmission, and infection of AMR are increasingly becoming key in combating AMR.

This PhD work joins a growing call by scholarship across the social and health sciences to transcend narrow behavioural approaches to address the broader ways in which antibiotics have come to stand in for more sustainable approaches to poverty, healthcare, and productivity. While there is increasing appetite to look beyond individual behaviour towards structural and systemic factors, I argue that moving beyond behavioural approaches necessitates in-depth description and analysis of the systems and structures to which we want interventions to be 'sensitive', in order to have specificity in particular contexts. I assess how, through history to the present, public health has enabled the development of systems that rely on the use of antibiotics as an infrastructure integral to the health system, and how, especially now in the era of AMR, we need to bring about systemic and landscape change that designs out antibiotics so that these substances are no longer central to the way we do health. In an article I co-authored, "Antibiotics, rational drug use, and the architecture of global health in Zimbabwe", we note how antibiotics have been written into the architectures of global health, following the observation of other social scientists, medical anthropologists, and historians who have observed that the kind

of healthcare being written into LMICs' health systems is increasingly narrow, technological, and pharmaceuticalised (Dixon and Chandler, 2019; Kirchhelle *et al.*, 2020). This thesis extends this line of research into the informal sector, investigating in depth the 'architecture' of informal living across different interconnected urban spaces.

1.2. Social science approaches to medicines and AMR

This PhD work falls at the intersection of four broad areas of anthropological theory and other social science literature: the commodification and social roles of medicines; the shifting biopolitics of global health; recent social science perspectives on AMR; and the warehousing of informality in Zimbabwe. Taken together, these provide an analytic lens through which to explore the complexities in which antibiotics and AMR are interwoven.

1.3. Commodification and social roles of medicines

Anthropologists and other social scientists have long contested narrow biomedical framings of what constitutes 'good' medicines use and investigated the broader roles that medicines (including antibiotics) take on through their circulation in social, political, and economic life. The renewed concern about everyday illnesses and medicines that has been sparked by AMR compels a rethinking of the way medicines have become commodified. In his influential work *Social Lives of Things*, Appadurai (1986:9) defines a commodity as 'anything intended for exchange'. Appadurai's contention is that things take on bona fide social lives through the process of their commodification, a contention that Whyte and colleagues (2002) apply to medicines in their later work, *Social Lives of Medicines* (Appadurai, 1986; Whyte, van der Geest and Hardon, 2002). Commodification as it relates to medicines, according to Whyte and colleagues (2002), can be understood as two overlapping processes: firstly, in that medicines are commodified, and secondly in the sense that health itself is purchased. Building on Appadurai's (1986) methodological approach, Whyte and colleagues (2002) analytically trace the lives of medicines as commodities that are produced, traded, and consumed before they come to their 'death' through consumption. This connects to how health, like a commodity, is sought and purchased.

Numerous scholars have since documented how the commodification of medicines and health has unfolded in different contexts around the world, including in Africa (Last and Chavunduka, 1986; Bloom and Standing, 2001; Timmermans and Almeling, 2009; Dekker and van Dijk, 2010; Rowe and Moodley, 2013). A common theme running through these accounts is that the commodification of medicines and, by extension, health involves the diffusion of 'expert knowledge' about medicines and 'good' use thereof that is enclaved in the hands of trained

medical personnel into the hands of non-medical lay publics. This has been catalysed by the growing marketisation of healthcare, which, in the African context, was accelerated by structural adjustment programmes and neoliberal economic policy (that is, policies promoting deregulation, privatisation, and decreased public spending – discussed further in chapter 3 (section 3.3.2). This process of commodification has also been facilitated by higher rates of literacy and greater access to social media (Bloom and Standing, 2001; Whyte, van der Geest and Hardon, 2002). Scholars show how medicines, once confined in controlled spaces regulated by professionals, have through these interconnected processes largely escaped their 'confinement' within traditional enclaves and supply chains and are now bought and sold in increasingly unregulated marketplaces (Bloom and Standing, 2001; Whyte, van der Geest and Hardon, 2002). Importantly, because of their materiality, medicines are not simply commodities but have been shown to hold a profound 'charm' as tokens of healing, making them desirable objects with not only health and economic but also great social significance (Whyte, van der Geest and Hardon, 2002) In particular, medicines take on social roles beyond their immediate pharmaceutical properties and are powerful tokens of healing and symbols of care. Because of their social significance as symbols of care, the meaning and use of medicines blurs with other domains and spheres of social life. For example, Whyte and colleagues (2002) demonstrate that being seen to give a particular medicine to a sick child is part of what it means in that context to be a 'good mother', regardless of whether, from a biomedical perspective, the medicine is needed. As a result, what constitutes 'good' use of medicines in practice often far transcends biomedical rationalities of what might constitute 'good' or 'rational' drug use (Wood, 2016).

Antibiotics, at their emergence in the 1940s, were heralded by biomedical scientists as objects with superpowers – 'magic bullets' that tackle the problem of disease (Chandler *et al.,* 2016). Indeed, antibiotics and increasingly common knowledge of their particularly 'strong' healing properties have often featured in anthropological accounts of the commodification and social lives of medicines (Whyte, van der Geest and Hardon, 2002). As such, this body of literature is highly relevant and useful for understanding the predicament of AMR globally, including in Zimbabwe. Before continuing this chain of thought, it is worth noting that while anthropological interest in pharmaceuticals has continued, in the era of 'global health' the majority of anthropological attention has shifted towards understanding this rapidly expanding field and its consequences in people's lives. This has involved less of a focus on how people classify illnesses and medicines, and more on how people are themselves classified and governed via the diseases and biological states they have. Thus, in the next section we turn to AMR and the political economy of global health.

1.4. AMR and the shifting biopolitics of global health

Anthropologists and historians have situated the emergence of 'global health' in relation to fundamental changes to the organisation, funding, and governance of healthcare, particularly in low- and middle-income countries (Biehl, 2007; Prince and Marsland, 2015; Packard, 2016). In Africa, the post-independence era witnessed the rise of centralised governments that assumed the responsibility of public healthcare (Waite, 1987; Manga, 1988; Prince and Marsland, 2015). The focus for post-independence African states was on the promotion of primary healthcare and policies aiming for universal health provision. The realisation of such health systems was facilitated greatly by growing recognition in international health of the importance of comprehensive primary healthcare, a commitment that was concretised in the Declaration of Alma Ata (Manga, 1988). This led to many notable success stories in building strong primary healthcare systems, including in Zimbabwe (see section 1.6). For most of Africa, the 1980s and 1990s were characterised by a decay of government-controlled health services, and this decay was followed by a corresponding growth of organisations that targeted specific healthcare needs in the form of transnational, non-governmental, private, and humanitarian organisations (Dekker and van Dijk, 2010; Prince and Marsland, 2015; Montgomery, 2017). This proliferation of transnational actors on Africa's landscape marked the emergence of global health in Africa. Anthropologists studying global health from a critical perspective have been highly influenced by the theories of Michel Foucault, and for this reason it is necessary to introduce two terms: governmentality and biopower. Literally "mentalities of government", governmentality is a set of organised practices that entails the application of particular mentalities, rationalities, and techniques in the governing of a population (Nadesan, 2008; Sokhi-Bulley, 2014; Carvalho, 2015; Hellberg, 2018). A 'productive' form of power, in contrast to the exercise of sovereign discipline, governmentality draws attention to the diverse actors and institutions within and beyond centralised government bodies involved in optimising and stimulating the vitality of populations (Nadesan, 2008). Biopolitics, a concept closely associated with governmentality, is used by Foucault to describe the administration and regulation of life at the level of populations, central to which is the use of quantitative measures, statistical techniques, and interventions aimed at knowing the whole social body and its constituent groups (Foucault, 1978). The exercise of biopolitical power – or biopower – became central to modern political governance around the 1800s, when there was an explosion of such quantitative measures for knowing the population and its constituent groups, including within the emerging field of public (and later global) health. As Foucault and subsequent scholars have argued, people and groups are made in the process of applying new technologies of population governance, a process that in turn means that people experience new kinds of subjectivity through the exercise of biopower (Foucault,1978; Hacking, 1986) operating at multiple levels of scale, from global and

national right down to the family and care for the self. Biopolitics has become increasingly important as a social theory for understanding the connections between the organisation of social life and, importantly, the place of medicine and public and global health therein.

The emergence of 'global health', in the language of Foucault, has been characterised in terms of a rupture in the biopolitical order as the sovereignty of national governments over their populations was weakened by, among other factors, structural adjustment programmes and related macroeconomic policies in the 1980s and 1990s (Biehl, 2007; Prince and Marsland, 2015; Packard, 2016). Global health emerged in the late 1990s and 2000s (with timelines varying by state) as a set of practices, organisations, and ideas as the world faced new disease threats such as HIV/AIDS (Packard, 2016). Anthropologist Montgomery and colleagues (Montgomery, 2017:4) describe global health now as "a melange of patients, providers, institutions, research subjects and researchers" engaged in research and health programmes. While these 'global' actors were intended to be conducting research and providing emergency support, they stepped into and to an extent began to fill the space that had been vacated by the state, shifting the very way healthcare is organised and funded through their research programmes, advanced medical technology, and interventions organised around high-priority diseases (Packard, 2016; Montgomery, 2017). As anthropologists have shown, this is not necessarily for the better. While much global health research and many interventions were vitally needed, there was a heavy prioritisation of marketable biotechnical solutions focused on the preservation of "bare life" (Biehl, 2007; Prince and Marsland, 2015) by giving prominence to the use of pharmaceuticals on people with certain high-priority pathogens (notably HIV, tuberculosis, and malaria). This greater prioritisation of biotechnical solutions marked an acceleration of the process of 'pharmaceuticalisation', which, while a long-standing process (Greene 2015), has according to medical anthropologists Denyer Willis and Chandler signified a shift towards a pharmaceutical-centric approach to health and care to the "neglect of other health necessities, such as healthy living conditions, preventative care and/or ease of access to physicians, nurses or community health workers" (Denyer Willis and Chandler, 2018:105). Such is the prominence of such pharmaceuticalised interventions in people's everyday lives and subjectivities that Nguyen coined the term "therapeutic citizenship" to capture how people's access to medicines, care, and even other basic resources hinged precariously on having a certain biological status (Nguyen, 2005; Biehl, 2007). Chapter 6, in particular, draws on the notion of therapeutic citizenship (Nguyen, 2005) to explain how sex workers, by virtue of their categorisation as a vulnerable group, are able to access medicines and other resources that are not available through the state. The extent to which states really disappeared and the knowledge engine of global health came to fill their place has since been challenged (Prince and Marsland, 2015). Nonetheless, certainly today's healthcare landscapes in Africa – including in Zimbabwe –

involve global health actors and institutions that feature prominently within the health-seeking practices and social lives of many people.

The emergence of AMR as a global health concern arguably marks yet another decisive shift in the biopolitical arena. It operates according to a new kind of logic that, in contrast to the prior drive to expand access to essential medicines, seeks to withhold and ration them – a logic of restraint and rationalisation that might, in relation to the previous section (1.3), be characterised as a 're-enclaving' of medicines. AMR discourse, enacted particularly through the language of stewardship, reflects new ways of biopolitical control over domains of healthcare and behaviour by exerting more control over the way people use medicines in common arenas that have often escaped notice within global health, especially given the prevailing focus on expanding access to medicines. AMR discourse reflects an attempt to (re)assert control over the way people use 'everyday' medicines for common illnesses, which suddenly are viewed as important – a matter of security, even – because of the risks that antimicrobial prescription may carry if antibiotics are 'irrationally' prescribed and used for colds and coughs. Just as this has become a focus of increasing concern, visibility, and research in public and global health, it has also stimulated a surge of anthropological attention that is similar in many ways to the older anthropological literature on local rationalities of medicines use (e.g Whyte, van der Geest and Hardon, 2002). Here the insights from that older literature – the social roles of antibiotics and their distinctive 'charm' as material tokens of care – become important for thinking through the situated rationalities of antibiotic use in the era of AMR and the dangers of blaming people for bad or 'irrational' behaviours. Against this backdrop, I join a growing number of scholars calling for a shift away from a narrow biomedical rendering of antibiotic use in order to expose the situated rationalities, structural drivers, and subtle networks in which antibiotics feature in everyday lives and livelihoods, especially beyond formal prescriber settings.

1.5. Recent anthropological and social science approaches to AMR

Over the last decade, medical anthropologists and other social scientists have made significant contributions towards the understanding of AMR and how to intervene in it. Lu and colleagues, in their quantification of social science publications on antimicrobials in the last decade, note a significant increase in social science publications, rising from a modest 26 publications in 2011 to 197 publications in 2019 (Lu et al., 2020). In their work "Addressing antibiotic use: insights from social science around the world", Alice Tompson and Clare Chandler (2021) note that although an increase in social science publications has been recorded, the proportion of published work on AMR is very small compared to biomedical publications on AMR. They argue that more investment and commitment in social science research in the area of AMR is required. Tompson and Chandler

go on to provide a detailed account of the progress social science has made in understanding AMR and antibiotic use primarily from an anthropological perspective, and how such a perspective differs from the dominant public health discourse. In this synthesis, Tompson and Chandler divide existing social science literature on antibiotics and AMR into three interconnected domains (indicated in figure 1). These three domains are practices, structures, and networks in which antibiotics are intertwined. My work on antibiotics in Zimbabwe cross-cuts all three, making it useful to provide a brief elaboration of these different domains.

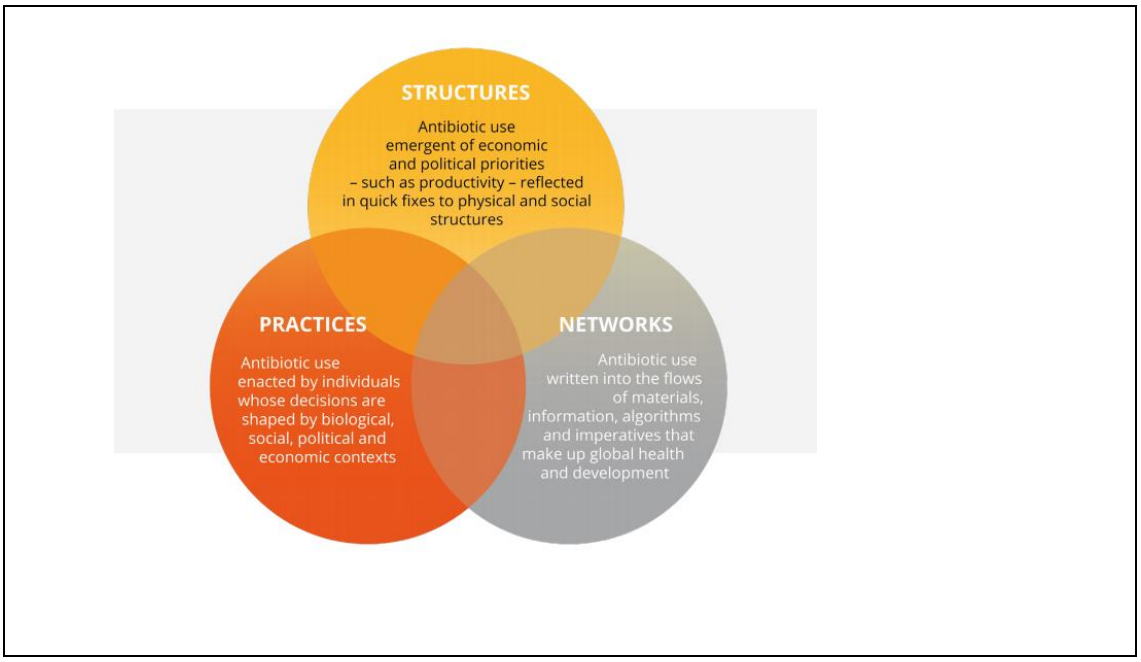


Figure 1: The three overlapping areas of social science focus when studying antibiotic use (reproduced with permission from Tompson and Chandler, 2021)

In the domain of 'practice', Tompson and Chandler (2021) note how major advancements have been made in social research regarding the use of antibiotics by various actors, including patients, clinicians, drug sellers, and farmers. With many drawing insights and theory from older anthropological studies of situated rationalities of medicines use, studies indicate that, far from being irrational, antibiotic use by individuals is influenced by biological, social, political, and economic contexts, and hence any modification of antibiotic use should not be based solely on knowledge deficit models. Instead, consideration of wider issues like social, economic, political, and historical conditions should be applied to support change in practice. In their work, which involved an evaluation of educational schemes based on WHO-derived antibiotic information that was locally adapted for application in villages in Laos and Thailand, Haenssgen and colleagues (2018) and Charoenboon and colleagues (2019) discovered that in both studies, despite the educational material being tailored to suit the local context, the educational schemes had very limited effect on behaviour. In both studies the authors cite the need to address contextual constraints such as precarity and lack of social support, instead of educating people out of

perceived knowledge deficits. Our own work has formed part of this growing body of research in the domain of practices. For instance, the fact that practices considered 'irrational' from a biomedical perspective are often highly rational in context became apparent in our work with Zimbabwean prescribers (Dixon *et al.*, 2020). Prescribers indicated that they used antibiotics as a substitute for more substantive forms of care, often when these were not indicated from a biomedical perspective (ibid.). Antibiotics were also a way of managing uncertainty in a context lacking diagnostics, with insufficient knowledge of local epidemiology and fear of the consequences of non-prescription, especially for more vulnerable patient groups (ibid.).

Growing recognition of the need for structural/beyond-behaviour interventions even within public health discourse, especially in more recent programmatic documents, points towards the need for research specifically into the structural drivers and dimensions of antibiotic use, which has also been the subject of increasing attention (Wilkinson, Ebata and Macgregor, 2019; Dixon *et al.*, 2020; Chandler *et al.*, 2021). Introducing the domain of structures, Tompson, and Chandler (2021:21) ask what if, instead of trying to 'fix' individuals, as has been the focus of behavioral models, "we sought to address the societal structures they are caught up in". This involves a fixing of things like the political economy, water, sanitation, hygiene, and health systems to reduce reliance on antibiotics as a 'quick fix'. In their ethnographic work in East Africa, medical anthropologists Laurie Denyer Willis and Clare Chandler provide an account of the role antibiotics play as a "quick fix" for care, hygiene, productivity, and inequality (Denyer Willis and Chandler, 2019). Their works reflects on how antibiotics have been used like paper to cover up the failings in urban infrastructure. They note that antibiotics have become "interwoven with the ways societies and economies work", to the extent that they have "become infrastructural". The idea of antibiotics as infrastructure warrants particular attention. Infrastructure is defined by anthropologist Brian Larkin (2013:329) as "objects that create the grounds on which other objects operate", and it is a topic currently gaining attention in medical anthropology as a way of thinking through the taken-for-granted but enabling aspects of social and political life, including modern medicine (Jensen 2015; Chandler, Hutchinson and Hutchison 2016; Denyer Willis and Chandler, 2019). Much of this contemporary work has been influenced by the insights of Bowker and Star (1999), who demonstrated that infrastructure becomes increasingly invisible and naturalised the more pervasive it becomes, only becoming fully visible upon its breakdown. Here, antibiotics, like underground pipes – whose active role in transporting sewage, water, or petroleum is not easily seen, but which make transportation possible – can be seen as a form of infrastructure, which enables us to get from one place (ill health) to another (well-being), their continued availability is a necessity to the health and functioning of medicine and society more broadly (Mckenna, 2018). Chandler (2020) argues that AMR can be considered "a moment of infrastructural inversion" in which antibiotics, having been enabled to become part of the fabric of modern life, have suddenly become hyper-visible (Chandler, 2020). The

notion of antibiotics as infrastructure is useful in this thesis for highlighting the 'quick-fix' roles that antibiotics play as substitutes for broken systems in urban Zimbabwe. Investigating the biopolitics of water and sanitation, informal trading, and sex work, and how these intersect with antibiotic use, I look at the infrastructural role that antibiotics have come to play in impoverished settings, in the everyday lives of community members who have come to rely on antibiotics as a 'quick fix' for disease emanating from unhygienic living and working conditions.

Finally, Tompson and Chandler describe how current patterns of antibiotic use not only reflect practices and societal structures but also are a product of "the material, organisational and connective fibres into which antibiotics are stitched" (Tompson and Chandler, 2021:28). Such networks, as Tompson and Chandler describe them, are not a distinct level of analysis but, rather, operate together with and are co-produced by practices and (infra)structures. Drawing on current social science literature, Tompson and Chandler show that antibiotics are woven intricately into medical and social systems, including the 'architecture' of global health within which current concerns around AMR are emerging. Drawing on current social science literature, including our work in Zimbabwe (Dixon *et al.*, 2020) – which will be described in more detail below (section 4.7) – Tompson and Chandler indicate how technical apparatuses including policy, clinical guidelines, essential medicines lists, and medical training, as well as methodologies for quantifying antibiotic use, create the material-semiotic 'grooves' through which both antibiotics and ideas of their 'appropriate' or 'rational' use flow. These 'grooves', themselves a form of antibiotic infrastructure (indeed, when it comes to infrastructures there is considerable overlap between the domains of structures and networks), become gradually retraced over time through subsequent programmes and interventions (e.g. essential medicines, global health interventions, rational drug use programmes, and antimicrobial stewardship), such that they become increasingly hard to see, the values and interests they reflect increasingly obscured. Yet, in the current moment, when the 'gaze' of global health is highly selective, focused on 'bad behaviour' of end users rather than ways in which antibiotics have been designed into health systems globally, it becomes increasingly important to bring into view the power dynamics written into and reinforced through these grooves. Studying networks, in this sense, enables us to gain a deeper, finer-grained appreciation of the current biopolitical formations being ushered in by AMR (discussed in section 1.4) – where it came from, whose interests it reflects, what sustains its intractability, and how we might respond.

In terms of how we might respond, Tompson and Chandler (2021) propose that we must collectively seek to design out antibiotic (and broader pharmaceutical) dependence from systems of care globally (Dixon *et al*., 2020). This could be achieved through the development of a new kind of public and global health architecture that empowers each country to develop and implement country-specific approaches that aim to understand and address antibiotic use at local level (Giles-Vernick *et al.,* 2019; Veepanattu *et al.,* 2020). This shift from

standardised and universalised approaches towards locally defined and implemented ones could help provide local-level in-depth understanding of the networks in which antibiotics are caught up and better understanding of the various routes through which "antibiotics have seeped into networks that form the backdrop to our lives" (Tompson, and Chandler, 2021:33). Importantly, this could also enable us to move from the current highly pharmaceuticalised and medicine-centric model towards putting people back at the centre of our systems of care. A shift from caring for medicines to caring for people lies at the heart of current social science concerns around AMR.

In summary, Tompson and Chandler's review of existing social research observes that (1) practices of antibiotic use are determined by wider social and material dimensions, (2) investment must be made in structures that antibiotics are currently substituting for, and (3) current public and global health architectures and the conventions that define antibiotic consumption must become visible for antibiotics to be designed out. This diverse body of work has been instrumental in compelling a shift away from a narrow biomedical rendering of antibiotic use to rendering visible the situated rationalities, the structural drivers, and the subtle networks in which antibiotics feature in everyday lives and livelihoods. However, while there has been a substantial amount of work on antibiotic use beyond formal prescriber settings, to date we have very few sustained ethnographic accounts that specifically examine the roles of antibiotics in informality. In conversation with existing social science literature, in this thesis I will examine how antibiotics have become embedded in the interconnected formal and informal networks that make up Zimbabwe's health system as a result of their economic, healing, and social properties. In the next section, I provide a brief overview of Zimbabwe, before discussing informality in greater detail.

1.6. Overview of the Zimbabwean healthcare system

Global health discourses, including those around AMR, do not land into or operate within a vacuum. Rather, they intersect with, become woven into, more extensive fabrics of local history, politics, and culture (Simpson and Sariola, 2011). With a steadily growing population estimated at around 14.9 million, of whom 1.5 million are situated in its capital city of Harare, Zimbabwe is a lower-middle-income country in sub-Saharan Africa. It was formerly known as Rhodesia under British colonial rule, and the advent of colonialism brought in Western medicine through missionaries and white settlers, who established a racially biased health system (Mutizwa-Mangiza, 1996). The colour-based health system had an average expenditure of ZWD 144 per person in the white populace compared to ZWD 31 per person for the urban black populace, and ZWD 4 per person for the rural populace (Buzuzi *et al*., 2016). At independence (1980), the Mugabe government set about the ambitious task

of addressing these inequities by delivering primary healthcare (PHC) to the once-deprived majority (Manga, 1988; Agere, 1990; Bassett, Bijlmakers and Sanders, 1997). Huge strides towards addressing these inequities were recorded in the first decade following independence, with a remarkable increase of rural health centres and clinics from 247 in 1980 to 1,062 in 1989 (Auret, 1990). Operating within a universal health mantra that called for health for all, the Mugabe government made health services free for all Zimbabweans earning less than ZWD 150 per month – a move that led to the creation of the first National Health Service scheme and an increase in clinic attendance by two or three times throughout the country as 90% of the population earned less than ZWD 150 (Manga, 1988; Mutizwa-Mangiza, 1996).

The 1980s were also associated with great success as Zimbabwe successfully adopted and implemented an essential drugs programme. On 20 November 1986, the Zimbabwe Essential Drugs Action Programme (ZEDAP) was launched. Established with the support of the Danish government and the WHO, principal among ZEDAP's tasks was to ensure a regular supply of affordable, high-quality drugs to the populace of Zimbabwe (WHO, 1988). Its role was also, importantly, to ensure optimal and 'rational' use of these drugs. Rational drug use (RDU) was defined at the Conference of Experts on the Rational Use of Drugs in Nairobi, held by the World Health Organization 25–29 November 1985, as follows: "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, at the lowest cost to them and their community" (WHO, 1985). Folding in both the essential drugs and RDU concepts, the Essential Drug List for Zimbabwe (EDLIZ) was formulated and endorsed by the National Medicine and Therapeutics Policy Advisory Committee (NMTPAC). EDLIZ was significant not only as a drug list but because, following the principles of RDU, it was also designed as a standard treatment guideline for the medical and pharmaceutical sector. Since 1985, EDLIZ has formed the backbone of the Zimbabwean healthcare system, determining which essential medicines (including antibiotics) would be used where, when, and how, all carefully selected to ensure cost-effective prescribing to meet the health needs of the majority. At the peak of the successful implementation of the essential drugs and RDU programme, every Zimbabwean health facility was equipped with a copy of EDLIZ and it was used as a treatment guideline by nurses, doctors, and pharmacists. So successful was Zimbabwe in implementing the RDU that the nation was commended by the WHO for providing valuable insight for other countries wishing to promote RDU (Dixon *et al.,* 2020).

As the 1990s progressed, the good strides made under the Mugabe regime with primary healthcare, RDU, and essential medicines began to diminish. The Economic Structural Adjustment Programme (ESAP), in conjunction with the devaluation of the local currency, the rise in unemployment, and high inflation rates, contributed to a dramatic decline in the public health budget, leading to an increased reliance on user fees for

health financing. This in turn had a significant impact on impoverished households, which had to rely on out-of-pocket expenses to finance their own healthcare (Buzuzi *et al.,* 2016). The MoHCC, the custodian of public health and largest funder and healthcare provider, began to fall short in its ability to provide medicines to public health facilities. With a steadily crumbling public health sector led by a financially incapacitated MoHCC struggling to provide the funding required for its national stock of medicines, Zimbabwe became increasingly reliant on donor funding for health. From the 2000s, when the full impacts of the HIV epidemic started to be felt, there was a considerable increase in global health programmes, which instead of being driven by EDLIZ tended to bring their own guidelines and medicines and a generally narrow preference for pharmaceutical and technological interventions to solve health challenges (Dixon *et al.*, 2020). These programmes did not significantly improve the overall situation, as donors were selectively blind to the need for other medicines outside their core areas of delivery, which primarily included HIV and AIDS, tuberculosis, and malaria (AMR Core Group, 2017a), Rather, they contributed to the increasing fragmentation of Zimbabwean health services. The increasingly unstable political economy, reduced government spending on health, the fragmentation of services, and poverty of patients catalysed a rapid growth in urban informality (Bond and Manyanya, 2002; Kamete, 2017), which I will describe further below.

During my fieldwork, 'AMR' was a new policy object on the radar of Zimbabwe's public health community but being increasingly discussed. Following the WHO's Global Action Plan, in 2016 an AMR Core Group was established with members from human, animal, and environmental health sectors, supported by the Global Antimicrobial Resistance Partnership (GARP), which was simultaneously working with multiple countries. Firstly, a situation analysis was conducted (Zimbabwe AMR Core Group, 2017), which reported resistance to several first- and second-line antibiotics among key gram-positive and -negative bacteria. In terms of antibiotic use, the situation analysis reports on a knowledge, attitudes, and practice (KAP) survey, which found that knowledge of AMR and antibiotic use among doctors, nurses, and pharmacists was generally high. However, the report also documented widespread 'irrational' prescribing and use, based on an online KAP survey on pharmacy personnel and doctors as part of the situation analysis in 2016 (Zimbabwe AMR Core Group, 2017). The situation analysis also reported 'irrational' use of antibiotics from the 571 members of the general public who participated in a KAP survey, with at least 46 % reporting use of antibiotics when they had a cold, 40% keeping leftover antibiotics for future use when needed, and 38% reporting sharing antibiotics (ibid.). The same participants also indicated sometimes making use of the marketplace (9%) and hair salon (19%) to purchase antibiotics with no prescription. Zimbabwe's National Action Plan was launched in 2017 (Zimbabwe AMR Core Group 2017), which emphasised the need to improve access to antimicrobials but also, with a focus on the behaviours of end users, stressed that "widespread irrational antimicrobial use" needed to be targeted. Proposed stewardship interventions generally

fell into the categories of "surveillance, restriction and correction" (Broom et al., 2020), including surveillance of resistance profiles, hospital therapeutics committees, and education and awareness campaigns. These imperatives to stamp out irrational prescribing and use were echoed during many of the meetings and events I attended, as exemplified during the opening vignette.

Seeking to contest these imaginings of 'irrational' use, our ethnographic work with prescribers in public health facilities in Harare showed how the imperative to prescribe 'rationally' as defined by the EDLIZ guideline was made challenging by shortages of time, diagnostics, and drugs; an impoverished patient population with high rates of infectious disease (e.g. HIV, typhoid, cholera); and a lack of alternatives to medicinal care (Dixon *et al.,* 2020). As has been found in other accounts (see the domain of 'practices' described by Tompson and Chandler, 2021), antibiotics helped clinicians fulfil expectations for medicines, manage diagnostic uncertainty, and show that they cared for their patients. With the 'irrational' use of antibiotics being a product of resource constraints, economic hardship, and the reduction of care to medicines, rather than a lack of knowledge or awareness, we argued that education and awareness interventions alone may have limited benefit for bringing about safe, sustainable reductions in antibiotic use (ibid.). Rather, it requires addressing the systemic gaps antibiotics have come to fill and creating prescribing environments in which clinicians can provide 'good care' without necessarily using antibiotics, by promoting longer consultations, improved guidelines, and better diagnostics (ibid.). While this aspect of our work was focused on prescribing practices, it also started to reveal the extent to which patients and, indeed, the public health system itself were reliant on the private and informal sectors for access to antibiotics, and that antibiotics porously crossed these domains. This was where my PhD fieldwork became important to the broader study: with so much anxiety forming around an abstract imagining of 'irrational' practices beyond the clinic walls, my work involved casting a light on this landscape to reveal the absent details about how informality features in people's attempts to navigate the multiple competing pressures of the Zimbabwean health sector, and, based on this, to try to understand how antibiotic use could best be reduced – or 'stewarded' – in such settings without negatively affecting livelihoods and care. In the next and final section, I will briefly explore the concept of and existing social science literature around informality, especially as it helps us to understand informality in Zimbabwe.

1.7. Informality and the warehousing of informality in Zimbabwe

The informal economy has become the major source of livelihoods in many cities in LMICs (UN Habitat, 2020). Coined by British anthropologist Keith Hart, the term informal economy gained ascendancy in the 1970s with the International Labour Office (ILO) distinguishing the formal from the informal sector, characterising the latter

as largely family-owned with ease of market entry, relying more on local resources whilst operating on a small scale using labour-intensive technology and skills that often do not require formal schooling (Hart, 2009, International Labour Office, 2009). Informality has been widely viewed as one major challenge facing cities in Africa (Grant, 2015; Rogerson, 2016; Banks, Lombard and Mitlin, 2020). It has been characterised as a "problematic unregulated and unplanned reality that must be addressed via regulation" (Banks, Lombard and Mitlin, 2020:223). Academic debates around the concept of informality have highlighted conceptual difficulties and shortcomings in defining informality along a static formal–informal sector dichotomy. Despite heavy critique, informality is a well-recognised concept that has been mobilised as something that is not formal due to its inability to meet set standards that define formality.

Literature on urban informality has increasingly recognised the diversity with which informality manifests across the globe (Roy, 2005; Grant, 2015; Rogerson, 2016; Lopez et al., 2019; Banks, Lombard and Mitlin, 2020). Lopez and colleagues (2019) have identified urban informality as a multidimensional process that features in multiple contexts commonly characterised by the "absence of legal property rights, non-compliance with rules and codes, lack of planning, low-quality and low availability of urban services, as well as the poor environmental conditions of a human settlement" (Lopez et al, 2019:3). In practice urban informality in the cities of the Global South take on multiple forms, including informal settlements/housing, informal governance, and informal economies, all of which are becoming increasingly characteristic of urban realities (Datta, 2001; Roy, 2005; Grant, 2015). Recognising the diversity and breadth of informality within Zimbabwe, in this thesis, I focus on aspects of informality most relevant to antibiotic use, specifically the forms and strategies of informal living among residents, medicine vendors, and sex workers within the overcrowded contested urban spaces of Mbare. I explore how these actors navigate and appropriate urban space (Simone, 2004), recognising the power dynamics and inequalities inherent in urban informality (Banks *et al,* 2020). I also reflect on the informal networks and arrangements of urban infrastructure associated with water and housing scarcity (Datta, 2001), the informal economy of vendors and sex workers and the formal and informal power structures that determine access or lack of access to urban services (Bayat, 2003). I shed light on the complex relationships between informality and urban planners (Roy, 2005) which manifests in governance and planning uncertainties. Following Roy's lead, I explore how the planning and legal apparatus of the state can use its power "to determine what is informal and what is not, and to determine which forms of informality will thrive and which will disappear."(Roy, 2005:3).

In Africa, responses to informality have varied, with some governments adopting inclusive and supportive policies and others adopting an opposite response of zero tolerance. According to Hart, terms like

'underground', 'unregulated', 'hidden', 'black', and 'second' economy have been associated with informality, making the practice of informality seem inferior to that which is formal (Hart, 2009). Scholarship in urban studies shows how informality is imagined as a source of contamination, a danger to the existence of a clean, healthy, hygienic, and orderly urban reality targeted as a site for purification of dirt (Kamete, 1999, 2013, 2017). For instance, as will be described in greater detail in chapter 3, before the 1990s Harare had a reputation as an orderly city with strict planning controls. This reputation was lost due to the massive rise in informality in the 1990s and 2000s that led the city authorities in 2005 to launch the infamous Operation *Murambatsvina* (restore order/get rid of rubbish) across Zimbabwe's urban areas in a bid to rid them of 'filth' (Rogerson, 2016; Kamete, 1999). The informal sector was also identified by the Zimbabwean government as "the hiding place for criminals, people engaging in illegal activities and those who do not practice hygiene, thereby spoiling the image of the towns and country" (ZCTU, 2005:1). This negative framing of informality in Zimbabwe has justified government and municipal authorities' scrutiny aimed at governing informality. Amin Kamete, an insightful author on urban governance in Harare, explores the mechanisms through which informality is governed in urban Zimbabwe. His work was conducted in Mupedzanhamo flea market, one of Zimbabwe's biggest flea markets, situated in Harare's first and oldest ghetto suburb, Mbare, where I too conducted my study (see chapters 2 and 3). In his article, "Governing enclaves of informality: Unscrambling the logic of the camp in urban Zimbabwe" (Kamete, 2017), Kamete analyses the techniques of governance used in the management of 'informals' at the flea market. He draws on a Foucauldian framework to explore the governmental 'mentalities and rationalities' involved in the 'warehousing of informality'. The 'warehousing of informals', Kamete argues, is a common urban strategy used in sub-Saharan Africa to manage 'informals' through a deliberate confinement of informal activities into special enclaves, of which Mbare is one paradigmatic example. The warehousing of informality, Kamete shows, is an exercise of biopower involving the application of spatial technologies to achieve its desired ends of enclaving and rendering governable informality (ibid.:6–8). Importantly, Kamete involves Agamben's notion of 'the camp' to show that the warehousing of informality, rather than being a way of including and accommodating those engaged in informality, as is often claimed, involves the creation of a 'state of exception' that suspends the rule of law in a way that excludes and abandons informals, reducing their rights and value to a state of 'bare life' (Agamben, 1998; Kamete, 2017). This exclusion is enacted through multiple layers of governance, with the central government acting as the 'ultimate sovereign', municipal authorities (run by the main opposition party, elaborated on in chapter 3) as the 'operational sovereign', and multiple political outfits (market stall leaseholders, police, and other authorities) as 'petty sovereigns' – all of which influence the governance of Mupedzanhamo. While I reserve detailed elaboration of the architecture of these arrangements for chapter 3, I

note here that this multiplicity of sovereigns renders the lives of informals unpredictable and dangerous, subject to fluctuating rules, overcrowded and unhygienic conditions, violence, and evictions.

My thesis expands Kamete's analysis to focus specifically on the roles of antibiotics in this vibrant but extremely precarious and inequitable sphere of life. Borrowing Kamete's analytical lens regarding the 'warehousing of informals', I similarly position Mupedzanhamo flea market – and much of the wider residential setting of Mbare – as an enclave or 'warehouse' of informality shaped by a complex biopolitical network into which antibiotics have been threaded. Following antibiotics and those who use and sell them across three interconnected domains – the politics of housing, water, and sanitation infrastructure; informal medicine trading in Mupedzanhamo flea market; and sex work – I bring into view the multiple 'quick-fix' roles antibiotics have taken on in these biopolitical arrangements. This includes not only enabling residents, medicine sellers, and sex workers to manage the contradictions and uncertainties of 'bare life' in a zone of abandonment, but also, in turn, propping up Zimbabwe's once-celebrated healthcare system. In this regard, seeing antibiotics from the perspective of the biopolitics of informality provides a useful vantage point for seeing just how limited and potentially harmful current discourses around AMR and stewardship can be. These discourses, blind to these biopolitical arrangements and situated rationalities of use, further contribute to the construction of informals as 'irrational' and dangerous, while at the same time obscuring the implication of transnational institutions and governments in perpetuating the conditions under which informality and antibiotic 'overuse' thrive. Such a 'thick description' of the connections between transnational, national, and local governmentality provides the starting point for thinking through what more effective and equitable stewardship might look like. As I come to the end of this chapter, below I spell out concisely the main aim and objectives of this thesis, as well as how the thesis is structured.

1.8. Aim and objectives of this thesis

The aim of this thesis is to understand the roles of antibiotics in informal living in Mbare, Harare, to inform the ongoing development of strategies to reduce antibiotic use beyond formal prescriber settings in Zimbabwe. Following antibiotics across homes, pharmacies, marketplaces, and sex workers' hubs, I have the following objectives:

1. To describe the profile of antibiotics being used and traded, as well as pathways of access and availability.
2. To understand the roles antibiotics have come to play in the day-to-day lives of urban residents, medicine providers, and sex workers.

3. To explicate the local histories and biopolitical arrangements that have given rise to these roles and made them so intractable within the networks of informal living.
4. To understand how antibiotic use could be reduced – or 'stewarded' – in Mbare and similar informal environments considering the previous objectives.

1.9. Structure of this thesis

This thesis consists of seven chapters, and below is an outline of the chapters.

Chapter 2

The next chapter provides a description of the field site and study design. It includes information on positionality, research methodology, and ethics.

Chapter 3

This chapter introduces the Zimbabwean health sector and the study setting – Mbare. It provides rich overview of the Zimbabwean health system and historical as well as current insights into a place called Mbare, which is a unique place not only in Harare but in Zimbabwe.

Chapter 4

This chapter introduces residents and their relationship with the public health sector. It begins with a description of the profile of antibiotic use by residents within their community and provides an explanation of this use by describing the relationship of residents to the public health sector. The chapter shows how residents, in the midst of a crumbling health system, navigate poor housing, water, and sanitation infrastructure and health challenges associated with living in unhygienic environments against the backdrop of a failing economy and a dominant political party where access to water, housing, and trading space is heavily politicised. Residents reflect on the 'good old times', and the changes that have occurred in the public health system; how some have been forced to seek alternative care in the informal sector, not by their own choice but because they are forced by circumstances; and how, in preference to current public health services, most hope for a resumption of the 'good old care' they once enjoyed, before systemic failures arose in healthcare provision. Issues around access versus excess of medicine are explored, noting how in this context the problem is not so much of excess but of access.

Chapter 5

The chapter introduces the role that medicine providers have come to play. In the midst of a failing health system and a crumbling economy, the role of medicine, especially antibiotics in the hands of vendors, is assessed. The activities of informal medicine traders, their relationship with the formal health system, and considerations for antibiotics stewardship programmes outside clinical settings in a low-income country like Zimbabwe are explored.

Chapter 6

This chapter provides an insight into the biopolitics of antibiotics in the lives of female sex workers. It draws on historical and ethnographic research on sex work in Harare, Zimbabwe. The chapter examines the role of antibiotics in the construction and management of sex workers, from punitive colonial approaches to current 'empowerment'-based approaches. It illustrates how programmes for sex workers, while valued by these women, are narrow and exclusionary and enact a pharmaceuticalised form of governance that hangs on the efficacy of antibiotics in a context where antibiotics' efficacy is under threat. If antibiotics were no longer a dependable cure for infection, what would this mean for the management of STIs and of sex work?

Chapter 7

This is the final chapter of this thesis. In this chapter I highlight the key themes running through the thesis and discuss the implications of my research findings for AMR policy and practice, public health research, and anthropological studies; this includes describing what stewardship might mean in practice. I also reflect on the strengths and limitations of this research work and how I have changed during the course of my PhD journey.

Chapter 2

2. Introduction: How I got involved in this PhD

I begin with a brief account of how I got involved in this PhD study. It started off with a job advert, which I gladly responded to because this was not just a job – this job was tied to an opportunity for PhD mentorship through the London School of Hygiene and Tropical Medicine (LSHTM), I was eagerly looking for an opportunity to advance my professional and academic profile. Already I was a seasoned researcher with a social science background and over 10 years' experience leading the implementation of numerous research studies. I attended a rigorous job interview where I proved my abilities and commitment to theoretically strong social research and successfully became the Lead Social Scientist and PhD student for a new study. I became part of the social science team that formed part of an interdisciplinary programme of work on febrile illness and antimicrobial use in Africa and Asia that was set to run 2017–2021. This multi-country set of projects, called 'Febrile Illness Evaluation in a Broad Range of Endemicities', or FIEBRE (Hopkins *et al.*, 2020), included clinical and laboratory research as well as three social science studies that took place in Myanmar, Malawi, and Zimbabwe. For a cross-pollination of ideas and richer insights on fever, antibiotics, and AMR, the FIEBRE Social Science study was designed to run collaboratively between countries. It was also designed with capacity strengthening in mind, to recruit and engage Social Science Leads to not only lead the work in their respective countries but also to have the opportunity to study for and gain PhDs, with overall implementation oversight and PhD mentorship coming from the London team, as indicated in figure 2. In Zimbabwe, this worked out broadly as planned, and I led the research that also fulfilled the requirements for submission of this PhD thesis.

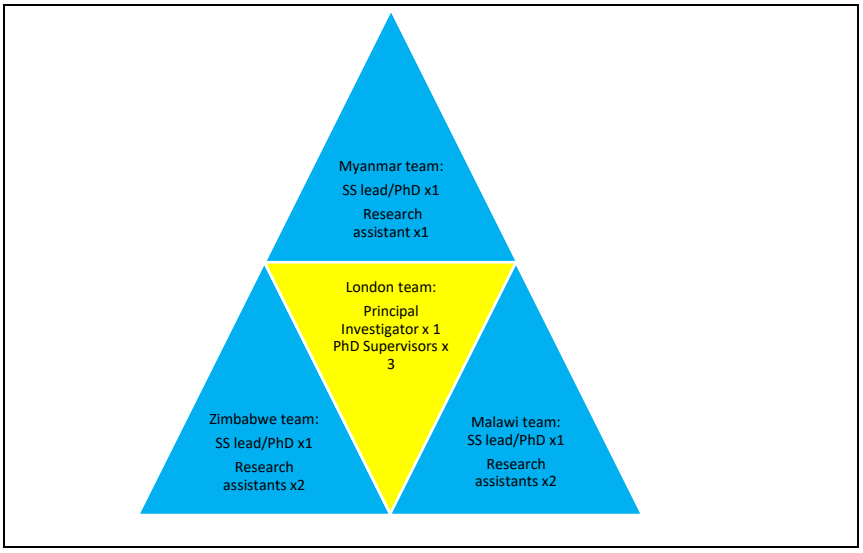


Figure 2: Design of the FIEBRE study social science teams

Based in Zimbabwe as an employee at the Biomedical Research and Training Institute (BRTI), where both the FIEBRE Social Science study and the clinical study were implemented, I took on a dual role as the Zimbabwe Social Science Lead and PhD student under the sponsorship of the FIEBRE study and had the opportunity of working with seasoned research assistants (introduced in section 2.2.3) who assisted me with data collection, data transcription and translation. I was assigned to work with Dr Justin Dixon and Professor Clare Chandler, medical anthropologists who were leading the FIEBRE Social Science work from London (and with whom I have co-authored a number of articles relevant to this thesis). These academics provided support as my PhD supervisors, which included providing core teaching in medical anthropology through the creation of a reading club where we as PhD students were weekly tasked to read anthropological literature, then write up our comments before meeting to discuss as a team. This also included our attendance at the medical anthropology course at LSHTM to equip us with the skills we required before the data collection phase. Working with FIEBRE Social Science Leads from Malawi, Myanmar, and the London team, we engaged in workshops for cross-country objective setting, co-production of the protocol, and regular data analysis. We applied for and obtained ethical approvals to conduct the FIEBRE Social Science study from the LSHTM ethics board and country-specific ethical boards. Throughout the FIEBRE Social Science study we engaged in online weekly meetings for continuous cross-fertilisation of ideas. We participated in the wider Anthropology of AMR group, where I had an opportunity to gain insights into anthropological research on AMR across the globe.

The FIEBRE study's overall concern with fever emerged from the realisation that for many years, a report of fever equated to provision of antimalarial medicines; yet now, with the heightened use of malaria RDTs, studies on malaria have been revealing that many (and in Harare the vast majority of) fevers are not attributable to malaria. There is a potentially wide array of pathogenic and non-pathogenic febrile illness aetiologies, yet there exist few guidelines for health workers on how to treat such fevers (Beisel, 2016; Chandler, 2017; Hopkins, 2017). Hopkins (2017) notes that a reduction in the use of antimalarials was associated with an increase in antibiotics prescription. There is concern that these are not medicines that are required but, rather, that this is about social expectations for 'a' (strong) antimicrobial of some sort, hence the call for social science, in conjunction with clinical/laboratory evidence of what 'should' be considered for treatment. With the high frequency of antibiotic use for fevers there is potential this will drive antibiotic resistance at a time when/in a place where it is hard enough to get first-line antibiotics, let alone next-line treatments if the first line fails. This has given rise to public health urgency around the category of the (non-malarial) febrile patient, amidst fears of rising AMR that if we reduce antimalarials there will be an increase in antibiotics being prescribed (Hopkins 2017). The clinical/laboratory studies in FIEBRE set out to identify the causes of fever with the aim of 'optimising' antibiotic use by improving clinical guidelines in treating fevers. The FIEBRE Social Science study sought to

understand the current practices that explain how and why people so often turn to the use of antibiotics in different settings. The investigator team were keen to include this social science aspect in recognition of the difficulty of improving guidelines and regulations for antibiotic use in isolation from the social contexts that shape how people seek and deliver health. As the social science teams, we set out to understand how fever and AMU are related in practice, as well as the broader question of what roles antimicrobials have come to play in healthcare and everyday life and their interaction with social, economic, and political processes. As the social science country leads/PhD students, we were encouraged to focus on particular places or spaces of antibiotic use that could form case studies for our theses. Whilst we shared some core methodological commitments in our protocols across the three countries, we were encouraged to develop context-specific approaches dependent upon the case studies we were following, as described in the next section.

2.1. Methodology: Study design

In Zimbabwe, ethnographic approaches have been applied in the study of mental health, STIs, HIV, and AIDS (Jackson, 2005; Simmons, 2012; Chidarike *et al*., 2018) and remain open for further application. Medical anthropologists have increasingly been making use of ethnographic approaches in studying health. Led by a team of medical anthropologists, the FIEBRE Social Science research was designed to be primarily ethnographic, to generate an in-depth understanding of why people use medicines in different settings and gain a deep appreciation of lived realities of health seeking and delivery. This involved being immersed for a prolonged period in people's lives as they go about their daily routines and activities in order to find out what they do, as opposed to what they just say, and also to understand why, in context (Geertz, 1973; Bernard, 2011). Geertz, in his description of what doing ethnography means, notes the multifaceted nature of ethnography, citing the fact that it includes among many other things mapping fields, establishing good rapport with participants, taking, and keeping good notes, and transcribing texts in a venture aimed at obtaining a 'thick description' of what was studied and is presented not in the form of "conventionalized graphs … but in transient examples of shaped behavior" (Geertz, 1973:6,10). Early ethnographic work, by anthropologists Malinowski (1922) and Evan-Pritchard (1976), demonstrated the value of prolonged periods of immersion 'in the field' to obtain a deeper insider or 'emic' perspective of the communities they were studying. To date, their ethnographic work using participant observation as the primary method continues to inform ethnography, despite criticisms that such ethnographic work was largely ethnocentric and conducted by white ethnographers far removed from their 'modern' contexts to study 'primitive' societies (Pool and Geissler, 2005). Since the 1980s and 1990s, ethnographic research in anthropology has witnessed a reorientation from studies of 'other cultures' in exotic localities to studies of interconnected local and global systems with an inversion towards conducting

anthropology 'at home', with Western anthropologists, whose previous focus had been on the study of 'others' abroad, gazing back 'home' to study their own communities – as discussed in section 2.4.1 (Narayan, 1993; Peirano, 1998; Jacobs-Huey, 2002; Onyango-Ouma, 2006; Kempny, 2012). Moreover, this reversal of the gaze towards 'home' has extended to the study of Western science, and biomedicine, as a site for ethnographic study.

Ethnographic fieldwork offers a rigorous inductive and iterative approach (Bernard 2011), which makes it ideal for me to capture the roles of antimicrobials across a variety of social spheres and levels of scale and the multiple ways in which antibiotics and AMR are connected. To help us study a global phenomenon like AMR, which unfolds across multiple sites, as the FIEBRE Social Science team we engaged in a multi-sited ethnography across our three Asian and African sites as part of our study design. This also helped us to explore the diverse roles of antibiotics and the plural settings that antimicrobials are connected to by following antibiotics. One of our London-based FIEBRE anthropologists, Coll de Lima Hutchison, notes the value of adopting a following multi-sited approach as it provides researchers with a means to understand and document why antibiotics have come to be used in a particular space in particular quantities and with a certain frequency, to enable researchers to better explain antimicrobial use and AMR in a contextually sensitive manner (de Lima Hutchison, 2019). In our respective countries we began a process of following antibiotics with a comparative focus, and I began following antibiotics within my local context in Harare. Following antibiotics had a snowballing effect as this pointed to a diversity of settings and players engaged in antibiotic use across formal and informal health settings. These connections transcended our initial concern with fever management, as there were many layers beyond fever management that begged exploration. Following antibiotics in Mbare, I spent a long time in both formal and informal settings where antimicrobials were traded and used by pharmacy personnel, sex workers, and residents, paying keen attention to their day-to-day interactions with medicine.

With so much scrutiny on the roles that antimicrobials played in both formal and informal settings, the focus of my thesis somewhat moved away from fever, though the overall work of the FIEBRE Social Science study continued to keep fever in focus. Centring my PhD fieldwork on the informal sector allowed for a deeper exploration into the emergent roles that antibiotics played in this setting. This led to an exclusion from my PhD study of work focussing specifically on the role antibiotics in fever management that was central in the analysis of the FIEBRE Social Science study. Focusing on fever management required clinic ethnography, which demanded more time in formal healthcare settings and may have been counterproductive to the metric focussed analysis of antibiotics beyond clinical settings. Based on this, a decision was made for the FIEBRE Social Study team to explore the formal healthcare system, antibiotics, and clinical guidelines on fever management, while I focused on antibiotics and informality. Both these works complemented each other, with work conducted in clinical

settings investigating the formal architectures that define antibiotic use while my thesis expanded the analysis of such architectures beyond clinical settings. Articles from the core FIEBRE study feature across this thesis. The article. “Antibiotics, rational drug use and the architectures of global health in Zimbabwe” (Dixon *et al*, 2021), for instance, informs my literature review on the Zimbabwean formal health sector and my analysis on ir/rational drug use. Other published articles from the FIEBRE Social Science study cited this thesis including in section 2.2 below have helped to inform the description of my methodology. These articles include, “The ‘Drug Bag’ method: lessons from anthropological studies of antibiotic use in Africa and South-East Asia” (Dixon *et al.*, 2019), and “Antibiotic Stories: A Mixed-Methods, Multi-Country Analysis of Household Antibiotic Use in Malawi, Uganda and Zimbabwe”, which speak into how the medicine survey was conducted and how we captured stories that explain profile of antibiotic use. Central to the results is a published article in Chapter six “Antibiotics and the biopolitics of sex work in Zimbabwe.” (Manyau *et al*., 2022) which provides findings from my ethnographic work conducted with sex workers. Inclusion of all these published articles has added either theoretical, methodological or empirical insights to the enrichment of this thesis.

2.1.1 Site selection and participants

As indicated above, part of the beauty of an ethnographic research design is that it allows for flexibility, which enabled the overall FIEBRE Social Science study design to evolve to accommodate my PhD work. Initially under FIEBRE Social Science, we had planned to conduct the study in two high-density suburbs of Harare: Mbare, one of Harare’s oldest colonial high-density suburbs, and Budiriro, a more recent postcolonial high-density suburb, with the aim of comparing how fevers were managed in these two suburbs. Budiriro was selected because this was where data collection for the FIEBRE clinical and laboratory studies was taking place, and this would lead to the possibility on the ground to connect the social science research to the clinical research. In the selection of another site to compare with Budiriro, Mbare offered scope for a comparative analysis because both settings had a striking resemblance in that both suffered from inadequate water and sanitation infrastructure and both were home to typhoid and cholera outbreaks, some of which had showed resistance to first-line antibiotics. Though data collection began in both Mbare and Budiriro during the medicine survey (which I will describe in the next section), data collection for my PhD study ceased in Budiriro after the medicine survey, when I focused more intensively on issues emerging with antibiotics in Mbare. As a starting point for data collection, the medicine survey had proved instrumental in informing the next stages of the study, and findings from the survey revealed Mbare as very diverse, with antibiotics being traced in homes, streets, hair salons, sex workers zones, bus terminuses, marketplaces, pharmacies, and private and public clinics, compared to Budiriro, which had very little going on in terms of informal sector medicine. It turned out that Mbare was the place where all forms of

medicines were traded openly in the streets, and there was a hyper interest in what was going on in this sector as journalists had already indicated key AMR stakeholders' interest in the activities of medicine vendors. Based on these findings, I decided to hone-in on this suburb – particularly because it was extremely complex and a particular hub of informality. Instead of unnecessarily spreading my time and effort over two settings, I set out to produce a thick description of antibiotic use in Mbare's formal and informal health settings. Figure 3 shows the residential areas of Mbare and Mbare *Musika* (marketplace) in red, where most of my ethnographic work was done.

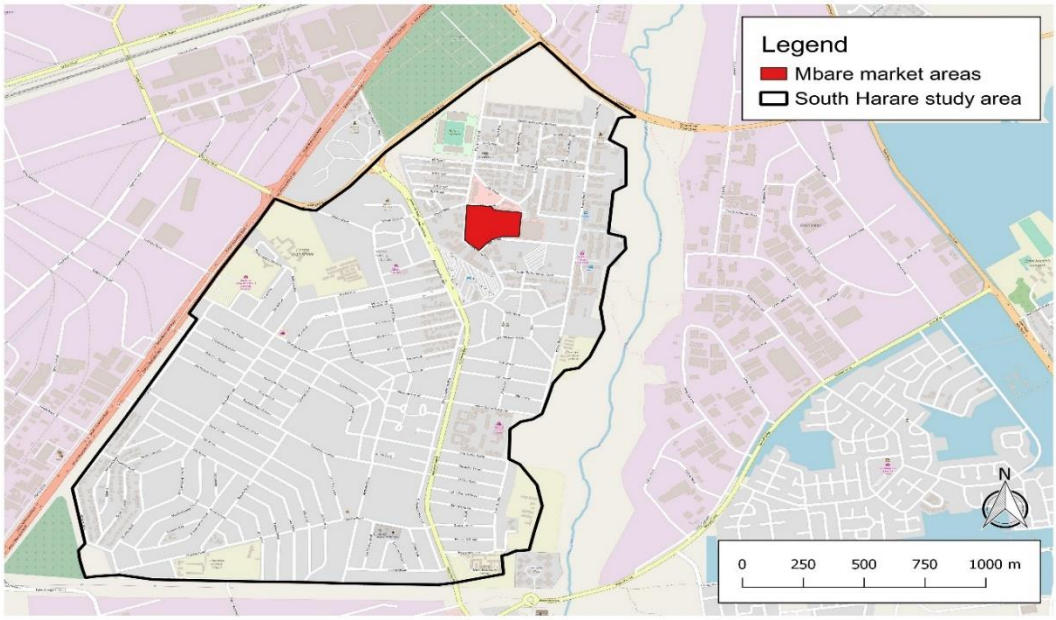


Figure 3: Map showing Mbare residential area and Mbare market

Mbare was a place where I was able to find diverse participants including healthcare workers (doctors, nurses, and pharmacists), lay community members (residents), and market vendors in order to gain a deeper insight into the practices, structures, and networks surrounding antibiotic use in both formal and informal settings in Harare. This thesis draws on the learning across these different actors and settings, but I draw particularly on work done at the community level. During my stay in the community, I met residents in their homes, and this included residents who lived at the flats and residents who lived very close to Mbare *Musika*. I had the opportunity to conduct both pharmacy ethnography and market ethnography, with pharmacists from three pharmacies situated at Mbare *Musika* and market vendors situated at Mupedzanhamo flea market, about 1.7 km away from Mbare *Musika*. My encounters with doctors, nurses, public health practitioners, policymakers, and scientists was brief, limited to one or two encounters during stakeholder interviews, as I worked more in the community. I managed to meet doctors, nurses, public health practitioners, policymakers, and scientists in

their official workplaces outside Mbare, with the exception of a few nurses who worked in Mbare. Part of my ethnographic work within the community involved following antibiotics in different geographical areas of Mbare. As I followed antibiotics, I stayed very close to Mbare *Musika*, where I came to a realisation that I was living in a sex workers' hub where antibiotics had a central role in STI management. Throughout the study I identified participants using a combination of purposive and snowball sampling techniques. These sampling techniques were appropriate for this ethnographic work given that my aim was not to produce a representative sample but rather to enrol particular stakeholders in antimicrobial use (Bernard, 2011). I was able to enrol 150 participants, comprising residents involved in the medicine survey (100), stakeholders (20), pharmacy employees (5), market vendors (5), and sex workers (20).

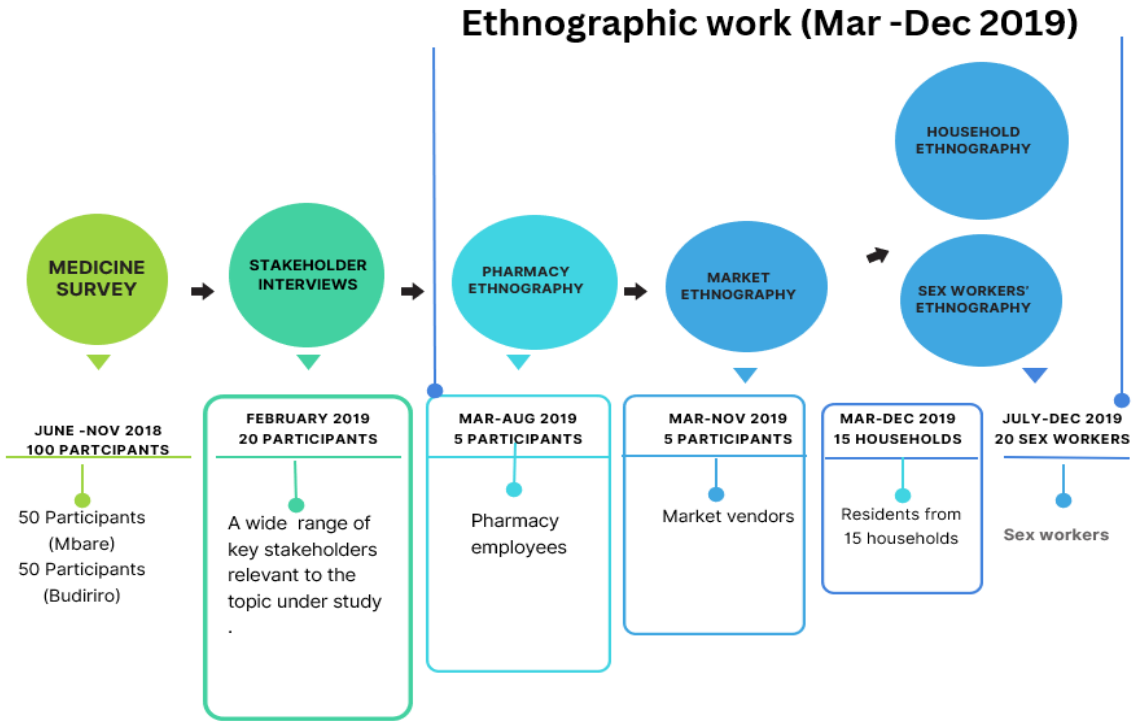


Figure 4: Data collection methods and participants enrolled at each stage

2.1.2. The study team

This study involved collaborative work with the FIEBRE Social Science team, both within and outside Zimbabwe, and this explains why I switch between writing in the first person, as 'I', and using 'we'. In Zimbabwe I worked with a local team of research assistants who assisted me in the various stages of the study. KS joined the study as a qualitative research assistant, and he assisted me with data collection during the medicine survey and pharmacy ethnography. However, he left the team after we had completed the ethnographic work in pharmacies and was replaced by another qualitative researcher, NM, who assisted me with ethnographic work with sex

workers, which resulted in an article on sex work in Zimbabwe, which forms part of this thesis. FK also joined the team at the same time as NM, as part of a wider FIEBRE Social Science team in Zimbabwe and assisted with the clinic-based ethnography that resulted in the clinic-based ethnography paper, which does not form part of my thesis. I also worked with PM, who worked primarily as a transcriber and translator, with help from KS and FK who assisted on days when they were not in the field. Given the centrality of writing to the art of ethnography, training was dedicated towards the writing and storage of field notes. This training also included ethnographic methods and immersion in ethnographic fieldwork, and was conducted by JD, one of our London-based FIEBRE Social Science team members (introduced in section 2), whose role was to provide mentorship and support to the Zimbabwean team. Like me, each qualitative researcher was trained on how to write field notes and how to set aside time to write contact summaries, which we reviewed each Friday during our weekly debrief meetings. The training equipped the FIEBRE Social Science team with skills on how to produce "a written account of what they have seen, heard, and experienced in the field" (Emerson *et al.*, 2011:21). This training covered how to write field notes rich in both descriptive and reflective content. JD taught us the importance of producing field notes that clearly indicated the date when data was collected, where data was collected, and who was present; provided rich description of the context of the setting; and covered the use of pseudonyms for participants' anonymity, and participants' interactions and their behaviour. JD also emphasised the importance of capturing exact quotations or very close approximations of participants' conversations that centred on key themes. The training also covered how to jot down our insights to produce reflective information on our concerns, ideas, and thoughts as part of the fieldnotes. All field notes were in English, and after fieldwork everyone was encouraged to type detailed field notes on contact summary forms, which I imported into NVivo. Other than field notes, I also filed all electronic data in the form of interview transcripts received from PM, and audios and photos taken during fieldwork. All team members were responsible for ensuring data confidentiality, as discussed in section 2.8.3. The research assistants also assisted with data analysis and with the preparation of dissemination meetings for the wider FIEBRE Social Science study.

2.1.3 Photography

As indicated above, we took photos and stored them during the study. We made use of photography as a means of augmenting and complementing the ethnographic methods. Photographs are useful in that they add a visual dimension to the research process and richly convey the context of the fieldwork. During the medicine survey I took photos of medicines available at home at the time of the interview, and copies of antibiotics prescriptions kept by residents. I also took images of medicines and orders for medicines made by customers at the market (see chapter 5). In community settings I took photos of buildings, boreholes, and sewer infrastructure (see

chapters 3 and 4). I also show images of study team members and community health workers taken as training and fieldwork unfolded. In all instances, consent to take photographs was obtained. To protect the identities of study participants, no faces or identifying features are included in any research outputs arising from this study, except for those of non-study-participants such as workmates and community health workers who agreed to have their photos and faces included in this thesis.

2.2. Medicine survey

The starting point of this research was a medicine survey, which we had co-designed collaboratively among the social scientists working across the three FIEBRE Social Science multi- countries, together with our colleagues in the Anthropology of AMR group, who were working on similar studies in Uganda. The aim of the medicine survey was firstly to 'get to know' our study populations and to get a broad sense of the volume, types, and frequency of antibiotic use at the community level. In Zimbabwe, with the assistance of KS, we conducted the medicine survey between June and November 2018 and enrolled 100 participants across two study sites in Mbare (50) and Budiriro (50). To do this as a FIEBRE Social Science study team, we designed the 'drug bag method' as a novel approach to capture data on antibiotic use at household level. The development of the 'drug bag method' is explained in our methods paper "The 'Drug Bag' method: lessons from anthropological studies of antibiotic use

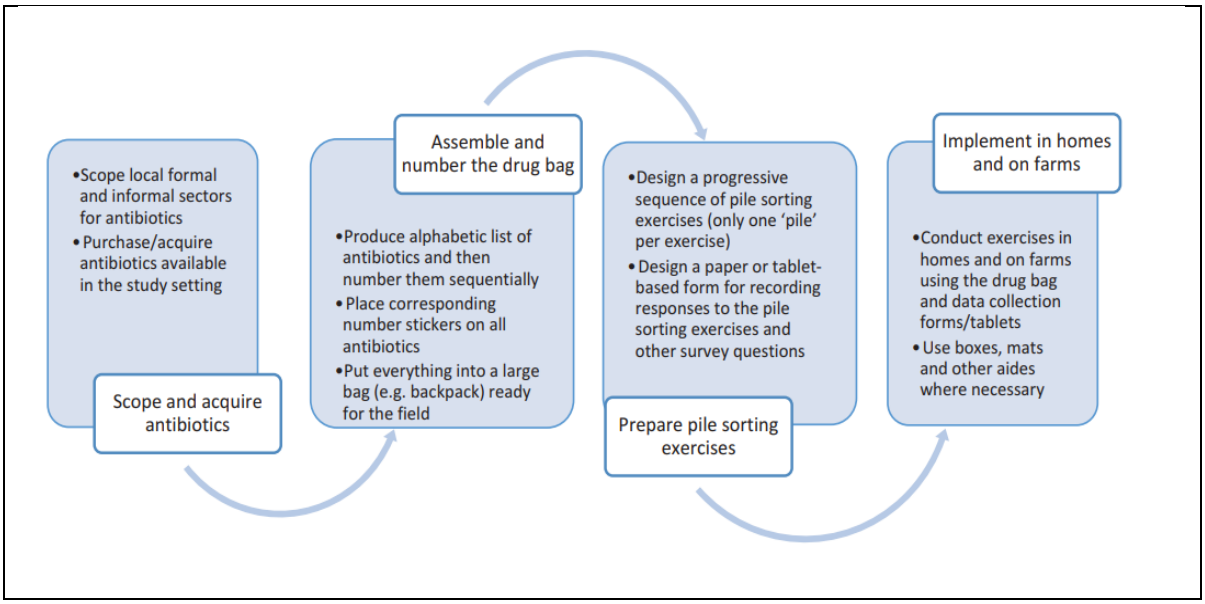


Figure 5: Steps taken to operationalise drug bags (reproduced from Dixon et al., 2019)

in Africa and South-East Asia" (Dixon *et al.*, 2019). Figure 5 shows the steps we took to create the drug bag. Numerous studies, as indicated in our methods paper, have shown that the category 'antibiotic' does not

translate well linguistically or conceptually, which limits the accuracy of reports on antibiotic use (Dixon *et al.*, 2019). To avoid this limitation, we presented participants with physical samples of all the antibiotics we could find that were available in our two study sites (Mbare and Budiriro) to help them to recognise the drugs in a number of ways, including by appearance, generic name, and branding. The 'drug bag method' helped us to build relationships with the community as it provided a good start to a conversation around antibiotics. In Zimbabwe, I took the lead in organising and implementing the drug bag method, following the steps indicated in figure 5. I started with a scoping activity, after which I worked with JD, the lead author of the article that figure 5 was reproduced from, to purchase antibiotics available in our study setting. Satisfied that we had exhaustively purchased all the antibiotics available in the two study settings, we organised the antibiotics alphabetically, numbered them, and packed them in a big bag ready for me and KS to use in the community. At this stage – when the 'drug bag' was ready for use – KS had been recruited and trained and was ready for fieldwork. The photos in figure 6 show KS practising the pile-sorting exercise with the help of a nurse from the FIEBRE clinical team (photos reproduced with permission). The blue bag beside him is the drug bag that we packed our antibiotics in.

Figure 6: KS and the FIEBRE clinical team nurse practising the pile-sorting exercise during a training workshop

We entered the field equipped with a drug bag, hand sanitisers, and an electronic questionnaire loaded on a tablet (see appendix 1 for medicine survey questionnaire). Hand sanitisers were critical, especially in Budiriro as we conducted the medicine survey during a cholera outbreak. For ease of community entry, we obtained the

assistance of community health workers (CHWs), provided by Mbare and Budiriro polyclinics. The CHWs introduced us to the respective households, which we purposively sampled. Efforts were made to ensure that recruitment was done in all the sections of the community by visiting all the sections represented by each CHW. Below are photos taken – and reproduced with permission – with three of the CHWs in Mbare, who, like the other CHWs, helped us to make appointments in homes.

Figure 7: Photos of CHWs who assisted us with community entry in Mbare

Working together with KS, we presented the drug bag to participants who had consented to be in the study, and we actively engaged them in "a series of pile-sorting exercises". Key in the implementation of the 'drug bag method' was the application of the pile-sorting exercise. Pile-sorting is an anthropological method that involves asking people to sort objects into different piles based on similar attributes (Bernard, 2011). This was an interactive process that provided participants with the opportunity to select and heap antibiotics into piles, as indicated in the algorithm in figure 8, reproduced from our methods paper (Dixon *et al*., 2019). Starting with all medicines, I provided each participant with all the antibiotics in our drug bag and gave each the opportunity to select antibiotics they recognised.

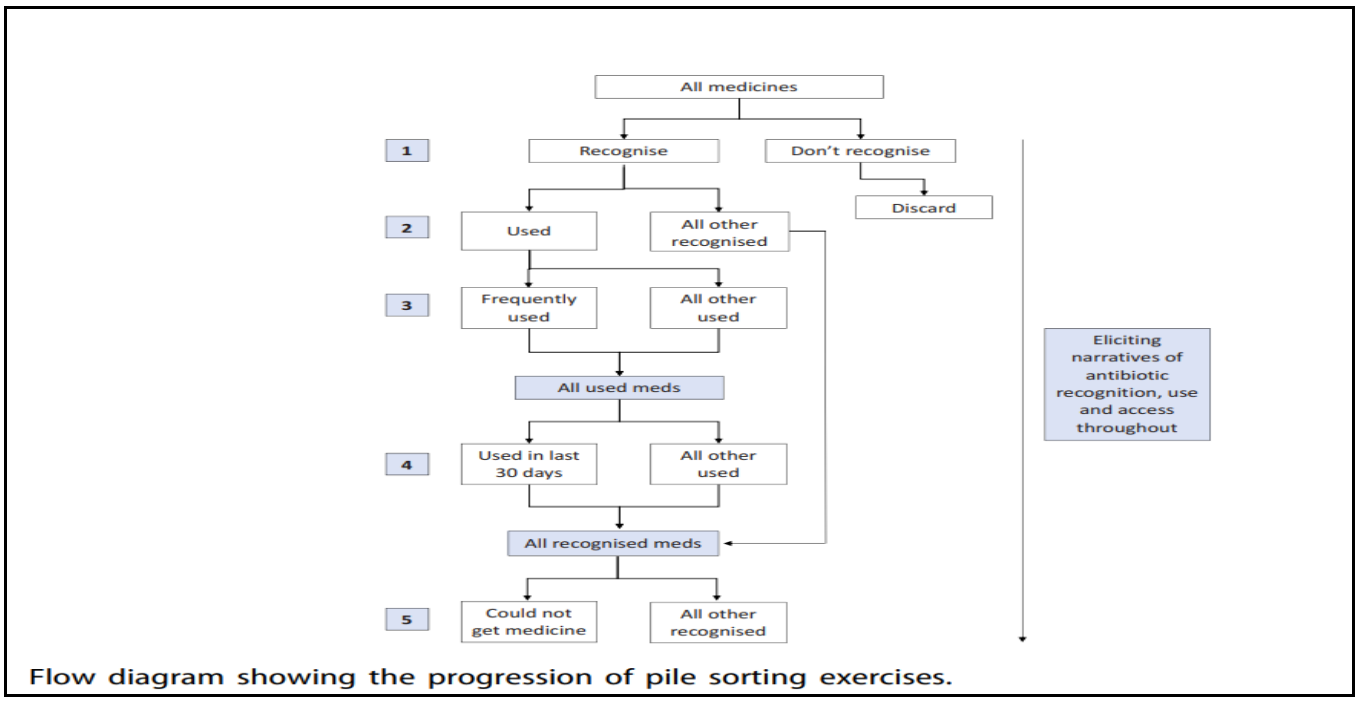


Figure 8: Pile-sorting exercise (reproduced from Dixon et al., 2019)

With ease, participants would quickly pick antibiotics that they recognised, often telling stories about why they recognised these antibiotics. For those antibiotics that they were not so sure about, participants tended to call other household members and ask them for verification. This was often backed up by a story such as "this is the medicine that grandmother used to take", as a family member recited the tale of how they had taken care of their grandmother using this medicine. KS would log the antibiotics selected on ODK while I focused on the piles. The exercise ended after participants had identified all the antibiotics they recognised, had ever used, frequently used, had used in the last 30 days, or had difficulty in getting. This exercise generated both quantitative and qualitative data on patterns of antibiotic use at household level and reasons why antibiotics were used. As KS logged the responses on ODK, I listened attentively and jotted down participants' narratives in my notebook and probed for better responses where clarity was required. We shared some of the qualitative insights from this exercise in a commentary showing how the drug bag method had in Harare proved to be a practical, social, and fun way of engaging people about antibiotics at household level (Dixon, MacPherson and Manyau, 2018). Overall, the drug bag method enabled people to recognise medicines via sight of the medicines and packaging, thereby opening up dialogue on antibiotic use and access. We also inquired about medicines kept at home, and consent was given to take photos using the tablet. Figure 9 shows some of the medicines we found in homes and photographed.

Figure 9: Examples of medicines found in homes during the medicine survey

We published some of the findings from this medicine survey in another paper, "Antibiotic Stories: A Mixed-Methods, Multi-Country Analysis of Household Antibiotic Use in Malawi, Uganda and Zimbabwe", indicating the profile of antibiotic use and the stories that explain this profile (Dixon *et al.*, 2021). Most importantly, the results from the medicine survey were critical in guiding and determining the next course of data collection. As previously indicated, findings from this medicine survey inspired me to select Mbare alone as the study site for my PhD work. As an entry point into the community, the medicine survey enabled me to purposively select 10 out of the 50 households I had enrolled in Mbare for household ethnography, and when I started staying in Mbare and encountered a community of sex workers. I added five more households, and this increased the number of households for ethnographic fieldwork to 15 households. The decision to include sex workers among my study participants is something that emerged during the course of my ethnographic fieldwork. In the section above (2.1), I indicated how following antibiotics had a snowballing effect that led me into contact with actors across formal and informal settings. Following antibiotics in Mbare, I encountered a group of sex workers operating in the margins of the informal sector, who I had not planned to include initially. They emerged as potential participants for my study because of the centrality of antibiotics to their work. Since I was interested in understanding and explaining the pattern and use of antibiotics across different settings in my study area, inclusion of sex workers became a necessity and I thus enlarged my focus on the role of antibiotics in the day-to day lives of residents and vendor to the roles they played in the lives of sex workers. Pile-sorting exercises enabled me to identify three home-based medicine vendors, one of whom was Mai Fadzi (a pseudonym). Mai Fadzi took a very keen interest in my PhD work and was very instrumental in helping me gain access to the

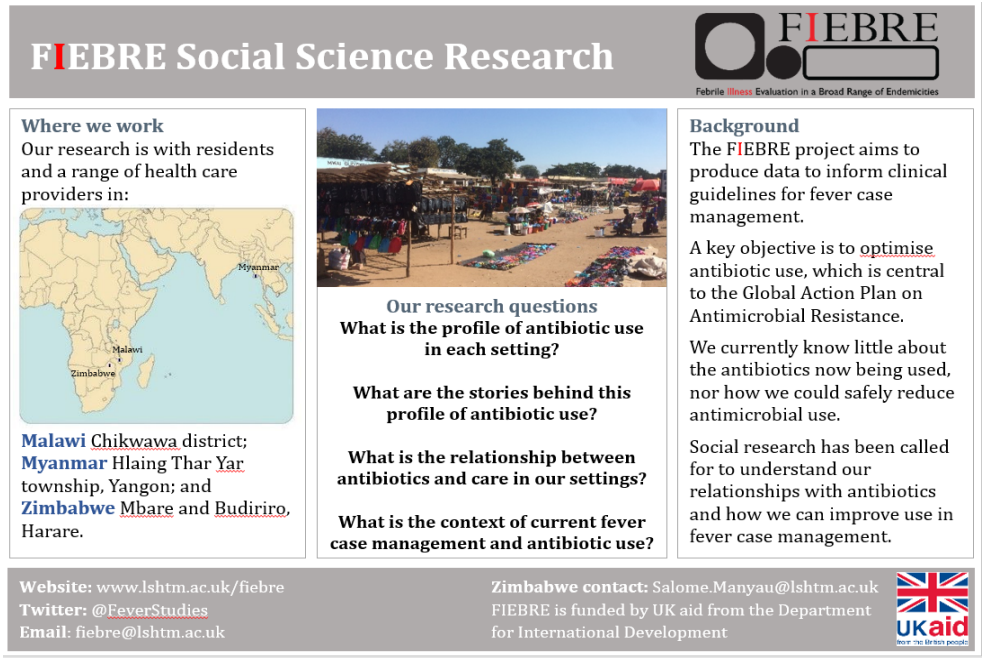
market with medicine vendors. The process of purchasing antibiotics for the drug bag connected me to three pharmacies at Mbare *Musika* and their pharmacists, whom I later worked with during pharmacy ethnography. The medicine survey also paved the way for stakeholder interviews, discussed in the next section.

2.3. Stakeholder interviews

After conversations with residents on antibiotic use in the medicine survey, in February 2019 we engaged stakeholders in discussions around the profile of antibiotic use in Zimbabwe as well as in-depth stakeholder interviews, to obtain their insights on AMR at both global and national levels. I started planning for stakeholder interviews in December 2018, and planning involved identification of key stakeholders who included people knowledgeable in the area of antibiotic use and AMR in the country of Zimbabwe. I identified at least 20 stakeholders, including laboratory scientists (2), senior and junior doctors (4), pharmaceutical company managers (2), AMR Core Group members (5), pharmacists (4), a MoHCC pharmaceutical department representative (1), and nurses (2). I made use of numerous interview guides, each tailored to capture data relevant to each participant's key role (see appendices 2, 3 and 4). I made use of snowballing techniques, capitalising on contacts met through attending meetings on the topic of antimicrobial resistance and through referrals. After compiling a list of possible key stakeholders and their contact details, I sent out emails, and followed them up with telephone calls if they had not responded to emails. I also visited offices for physical appointments where no responses had been obtained via either email or telephone. This enabled me to obtain a diverse group of relevant key informants for the stakeholder interviews. In each email I provided information about the study, requested an appointment with the key stakeholder, and provided a consent form for each person to read. Consent for stakeholder interviews was obtained beforehand and this consent included permission for interviews to be recorded and transcribed. All participants were comfortable with the use of a digital encrypted recorder. Moreover, we ensured that the identities of all participants were protected both in transcriptions and in all subsequent references to interview proceedings, including written accounts.

As we wound down the medicine survey, the FIEBRE Social Science study staff teamed up and shared findings from our various settings – Zimbabwe, Malawi, and Myanmar – and we formulated questions to guide us into the next stage of inquiry. We decided to share our initial findings with stakeholders in our countries,

hence our move towards stakeholder interviews. We packaged and presented our findings from the medicine



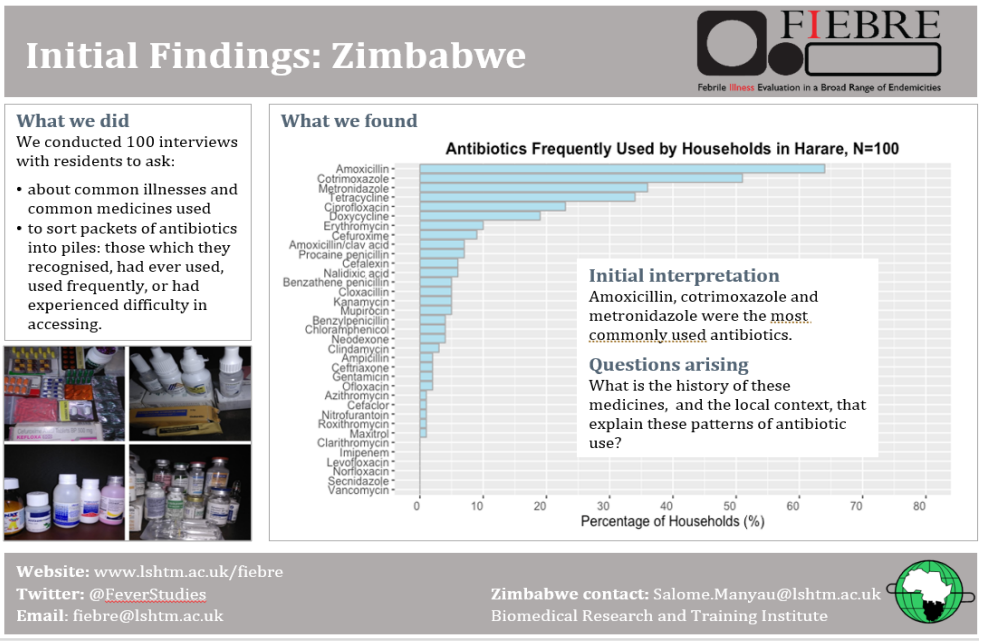


Figure 10: Leaflet used during stakeholder interviews (front page above and back page below)

survey using a leaflet (see figure 10) which contained questions arising from the medicine survey. These questions showed our need to better understand the profile of antibiotic use in each country, to know the local stories/histories that explain the profile of antibiotic use in each setting, and to understand the relationship between antibiotics and care. Just like we used the drug bag to initiate discussion on antibiotics at household level, we used the leaflet to engage stakeholders in discussions around profile of antibiotic use, with the aim of

getting their insights on the pattern of antibiotic use relative to what we had come across during the medicine survey.

In conducting stakeholder interviews, I teamed up with JD and together we designed a flexible interview guide outlining key issues to be discussed. We designed our interview guide bearing in mind Kumar's advice that a flexible interview guide is essential in conducting a qualitative interview with a small, select group of people most likely to possess information or ideas required by the investigator (Kumar, 1989). Teaming up with JD was very important in terms of positionality because JD was a white male who held a more senior position than mine and was in a better position than I was to lead the interviews with high-profile stakeholders. Together we conducted 20 stakeholder interviews with the diverse group of stakeholders I already indicated at the beginning of this section. Figure 11 shows photos of me and JD (reproduced with permission) at a manufacturing company in Harare produces antibiotics, where we not only interviewed pharmaceutical managers running plants but were also able to follow antibiotics into their place of production to obtain an in-depth understanding of the logistics surrounding the production of antibiotics and their marketing in Zimbabwe.

Figure 11: JD and me at a pharmaceutical company that manufactures antibiotics in Harare

On this particular day, we had the opportunity to tour the production plant, guided by the line manager, who responded to our numerous questions: we asked a lot of questions since this was clearly a new arena for us. We managed to learn a lot about how antibiotics are manufactured and the challenges most pharmaceutical companies in the country faced in trying to keep up with the latest technological and regulatory requirements. Conversations with pharmaceutical managers indicated challenges associated with production costs and marketing in the context of a failing economy.

Visiting pharmaceutical representatives, wholesalers, and key government personnel involved in the supply of pharmaceuticals and chatting with them provided richer insights into the current context of

Zimbabwe's formal health system in comparison to the way things used to be. These stakeholders cited how well stocked the pharmaceutical industry was before the drastic national economic meltdown of 2008, which had devastating effects on the public health system.

2.4 Participant observation and reflection on my positionality

Participant observation lies at the heart of ethnography and was the major data collection tool that I used in this study. Anthropologists have long used participant observation to capture a rich account of people's lived experiences whilst gaining deeper insights into what people do in practice compared to what they report (Hammersley, 1992; Bernard, 2011). In choosing participant observation as a major data collection tool, I intended to produce a "thick description" (Geertz, 1973) of the daily lived realities of residents and formal and informal medicine providers as they navigated the formal and informal health systems. Participant observation stood out as the most holistic ethnographic approach, through which I could investigate how antibiotics are interwoven into the day-to-day lives of community members and how these medicines are used as a form of care in the backdrop of a failing economy, a fractured health system, and poor housing, water, sanitation, and waste facilities. I was a participant observer, but the 'participant' in 'participant observation' did not refer to me participating in clinical practices. Rather, it referred to my participation in the social dynamics within the setting, such as engaging in dialogue, asking questions, responding to questions – making sure that I was not disengaged from the observed social phenomena (Hammersley, 1992; Bernard, 2011). Much of the participant observation took place within the community setting and involved participant observation in four community settings: (1) household ethnography in 15 households, (2) pharmacy ethnography in three pharmacies, (3) market-based ethnography with five medicine providers, and (4) ethnographic work with sex workers in their various workplaces.

I was the primary observer in these four settings, with assistance from KS, particularly in the context of pharmacy ethnography as I could not spread my time across three pharmacies. Through participant observations, I was able to become embedded in households, where I had the opportunity to help with daily tasks and to gain an in-depth understanding of how in reality residents sought care. Participant observation also enabled me to become immersed into the numerous settings in Mbare where antibiotics were sold and used in formal pharmacy settings and informal market and community settings. During the course of participant observation, I engaged residents, medicine providers, and sex workers in dialogue, asking questions where necessary and also responding to questions from residents who wanted to understand why I was interested in antibiotics. Since my interest was in antibiotics and antimicrobial use, I followed antibiotics in various settings.

My attention went beyond the medicines themselves to how they have become embedded in and connected to informality, thereby developing into an interest in how antibiotics hold together informal living.

In preparation for my fieldwork, I decided to draw on the experiences of already existing ethnographic work, especially that which (1) was conducted in marginal spaces in urban settings, and (2) involved marginalised populations engaged in illicit activities. I knew I was going to work in a ghetto setting and that part of my work involved medicine vendors whose activities were deemed 'illegal'. Initially my focus was on market vendors, and I had no idea that I would end up working with sex workers, whose activities were also criminalised. Since I was preparing to work with market vendors whose activities were deemed 'illicit', I found inspiration in the works of anthropologists Philippe Bourgois and David Goldstein. I selected ethnography as a research design because, like Bourgois and Goldstein, I wanted to immerse myself in the world of marginalised populations – in this case, those in Mbare, to explore the roles that antibiotics had come to play in various settings, to produce a rich, textured ethnography. For instance, Bourgois (1995), in his 1995 classic ethnography, "In search of respect: Selling crack in El Barrio", had worked with participants involved in 'illicit' drug selling and had succeeded in gaining the trust of crack dealers, which resulted in his immersion in a world of New York crack dealers (Bourgois, 1995). In his book *Owners of the sidewalk: Security and survival in the informal city*, Goldstein (2016) provided a rich ethnography of Cancha market, showing how market vendors operated and survived in an informal economy in a context rife with insecurity and illegality. What stood out to me was how Goldstein began his book by showing how he had gained access to Cancha market by introducing readers to Don Silvio as the influential gatekeeper who represented the street vendors of Cochabamba. This sensitised me to the importance of working with an influential and highly trusted gatekeeper like Don Silvio to gain not just access into a community but also trust and acceptance from the community under study. Writing on the positionality of an anthropologist, Goldstein notes that:

> Anthropologists lead many lives. We are scholars and teachers, researchers, and writers, concerned citizens and professional strangers. To the people we study, we are threats and opportunities, freaks and friends. (Goldstein, 2016:14)

It was Goldstein's last sentence that caught my attention. I did not want to be considered a threat by my research participants and very much wanted to present myself as a researcher who was not out to do any harm. Being reflective about one's positionality, as Goldberg was, matters and I knew it was important for me to be self-aware and reflexive about how I was going to be "located within certain power structures and how this may influence methods, interpretations and knowledge production", as Kempny notes (Kempny, 2012:41). During my PhD upgrading I had acknowledged that I would be entering the field with multiple identities – as a researcher

employed by BRTI, as a PhD student studying overseas, as a woman, as an adult, and as a resident in the study area – and how each identity would impact on the way the community would relate to me and on how I related to the community. I was aware of the power relations that my position might have if I was perceived as a researcher coming from a prestigious non-governmental organisation and as a London-based university student. Anthropologist Onyango-Ouma (2006) hinted in his writings at the danger of being identified as a member of the 'urban elite' and I did not want to be perceived as one. To avoid this, I positioned myself as a fellow resident and blended into the community in a manner that did not reveal that I had a considerably higher socioeconomic status. This meant not driving around in the company vehicle allocated for my project, as well as not wearing project T-shirts branded with institutional logos. How I entered the community and how I presented myself in the community mattered if I wanted to be treated more like an 'insider' than an 'outsider'.

My positionality was such that I was perceived differently in each setting – partly in the way I presented myself, and partly in terms of the role they placed me in. These changes in positionality are reflected on and explained in greater detail in sections 2.4.1 to 2.4.4. Within residential settings, participants knew that I was a researcher, but my identity as a researcher was overshadowed by my status as a resident. Most participants saw me as a typical female within the flats and I was well known as Mai Tanaka which enhanced my status as a female resident as explained in section 2.4.1. As I describe in section 2.4.2 and 2.4.3, within the sex worker and pharmacy contexts, my positionality completely changed as participants in these two settings embraced me as a researcher and preferred relating to me as a professional woman studying the use of antibiotics. At the marketplace, finally, I had two prominent identities. I was widely identified as a student doing research on medicine, but also as a 'relative' of a very prominent market vendor (though not directly related, as explained in detail in section 2.4.4). The latter strengthened my 'insider' status, as vendors were quick to relate to me as one of them.

I had started thinking through the practice of 'anthropology at home', brooding over the notions of a researcher as either an 'insider' or an 'outsider'. Scholarship around the 'insider' and 'outsider' status of anthropologists has raised a lot of debate around the position of anthropologists doing "anthropology from home", within both Western and non-Western settings (Narayan, 1993; Peirano, 1998; Jacobs-Huey, 2002; Henry, 2003; Kempny, 2012). Based on their experiences in conducting "anthropology at home", numerous scholars have cited complexities inherent in the positionality of practising 'anthropology at home' (Greenhouse, 1985; Narayan, 1993; Jacobs-Huey, 2002; Henry, 2003; Onyango-Ouma, 2006; Kempny, 2012). These scholars have pointed to the danger of insiders' familiarity, noting that insiders often have a tendency to take some things for granted, to the extent that their familiarity with social norms may make it difficult to discuss certain issues, simply because of their taken-for-granted reality. Familiarity, for Kempny (2012), has a danger of blurring the

process of knowledge production. As a medical anthropologist who intended to practise "anthropology at home" in a context where I had a good understanding of the prevailing macro-socioeconomic and political environment, as well as familiarity with the value systems, I was alert to the need to avoid falling into the pitfalls of "familiarity", by reflexively asking 'What do I know?' and 'How do I know it?' as knowledge production occurred. I was certain that I was going to be both an 'insider' and an 'outsider' at the same time. Though I assumed that I was less likely to have a culture shock due to my familiarity with the mainstream culture, I kept in mind Kempny's (2012) warning that ethnographers in their home settings are not entirely immune to culture shocks but may encounter a "subculture shock". I opened up to the possibility that I could encounter shocking realities in the "new home under study" because Mbare was known as a place where anything can happen. While I was excited to move into Mbare to begin my fieldwork, my mother was not pleased at all because Mbare had a long-standing reputation for being an unsafe place and she was worried about my well-being.

2.4.1. Households

As I entered Mbare to conduct ethnographic work in households, I was conscious that I was home in my own country, with people who shared the same language, yet, though I was home, Mbare was not exactly my home. I was coming from a suburb just 10 kilometres away from Mbare, where my family lived. I related my situation to that of Joy Owen, who, when writing about her PhD experiences of conducting 'anthropology at home', noted how her study field was situated in a residential area 20 minutes away from her parental home area (Becker, Boonzaier and Owen, 2005). Somehow, I understood why my mother was a bit anxious about my move to Mbare because, in contrast to Mbare, my family home was situated in a low-density area with big yards, with very little contact with neighbours and the public, whilst Mbare was a very busy overpopulated ghetto with crowded homes and streets. Mbare also had very old flats with shared water, toilet, and bathing facilities (see chapter 3), which made a very big contrast to the life that I was used to. Coming from a very quiet neighbourhood I was conscious of the big adjustments I would have to make to live in an overcrowded ghetto environment.

I started my household ethnography living in one of Mbare's old and dilapidated blocks of flats, where I stayed for five months from March to July 2019, before moving to stay near Mbare bus terminus, where I stayed for another five months from August to December 2019, making a total of 10 months. To gain access to the first 10 households for ethnographic work, I used those households that had expressed interest in participating in the ethnographic phase (as mentioned in section 2.2). When I started staying at the flats, I was welcomed as a researcher whose interest was in learning more about the community's health and their day-to-day interactions with medicines. During the medicine survey I had identified six households at the flats to work with. My interactions at the flats were somewhat biased towards women as I encountered few men at home during the

daytime, though I did manage to capture some narratives from the few men that I came across. The women I met at the flats were of different ages, and all were comfortable and very willing to talk to me as a researcher whom they assumed to be educated and knowledgeable in health-related issues. Despite my not wanting to be considered as a member of the 'elite', a few women perceived me as such because of my association with an NGO as a researcher, and one of them expected monetary benefits – a situation I describe as an ethical dilemma in section 2.8. During the time I stayed in Mbare as a resident, the majority of women, though they knew I was a researcher, related to me more as an adult woman – as 'Mai Tanaka', which meant Tanaka's mother, Tanaka being a very common Shona name. As Tanaka's mother I was perceived as 'one of them' to the extent that my position as a researcher existed in the background.

Staying in dilapidated flats that had been deemed not fit for human habitation due to lack of functional sewage and water reticulation facilities was a completely new scenario to me. I was determined to experience the residents' lived realities as they navigated the unhygienic setting and l found ways of making do, central to which was the use of antibiotics. I was determined, like Bourgois, to integrate and fit in, and when I moved into the flats, I moved in with Mai Leo, sharing her one room, which was conveniently divided into two rooms with a kitchen at the front and a small place behind the curtain which served as our bedroom. Six women at these flats (including Mai Leo) had expressed great interest during the medicine survey in being involved in the ethnography component of the study, and when they heard that I was looking for accommodation in the flats they arranged that I live with Mai Leo, who agreed because she was living there alone. Mai Leo was an elderly woman who had lived in Mbare during colonial times as a young girl and, staying with her, I learned a lot about life at the flats before independence and now. I also had very rich interactions with the other five women at the flats who welcomed me at their trading posts situated just outside the entrance of the flats along the road. I spent a lot of time at these trading posts, where we sat and socialised, and during these times, I became intimate with their day-to-day routine, most of which involved a busy life outside their rooms as each escaped the crammed nature of indoor living. This was especially true for two of them, who lived in subdivided rooms shared with other tenants and lacked family privacy. I also washed my clothes along with them and most of the time this entailed fetching water at the borehole due to constant water rationing. Borehole queues were always long, and it was in these queues that I learned a lot about the daily politics of water management in the community. Mai Leo was a committee member at the borehole, and I spent most of my time with her when she was on duty learning a lot about the management of borehole water. Through my lived experiences at the flats, I came to a deeper understanding of the housing arrangements, water and sanitation, and health infrastructure and the politics that revolved around these different material configurations (Brown, 2012; Street, 2012).

At the flats, I learned what residents considered 'clean' and 'dirty' water, the sources of these different kinds of water, and what each type was used for. Upon knowing that I had never received a cholera or typhoid vaccine, participants at the flats oriented me on the importance of getting this done for survival and encouraged me to get vaccinated, and I managed to get my typhoid vaccination as nurses were currently operating in the community vaccinating residents. Mai Leo gave me tips on the importance of maintaining a low profile to avoid being bewitched: discourses around witchcraft were used to account for some illnesses in this context and as a form of social control. Living at the flats I was both at home and also in a very different world to what I was familiar with, yet through ethnography I became, like Bourgois and Goldstein, immersed, in this case in a context where I lived inseparable from residents' way of living in a community deprived of decent living, with toilets with no doors, which stripped any sense of privacy. After all, I too was a resident, and I shared their lived experiences not just by observing but also by going through their daily routines, given the unhygienic conditions and aged infrastructure around us. As I reflect on the situation, I understand that the 'I' in me was dislodged as 'we' navigated the day-to-day uncertainties of life at the flats. When I moved from the flats, my intention was to work with the remaining four households from the 10 households that I had identified in the medicine survey, but I encountered a sex workers' zone (described in the next section) and this led into an expansion of my focus as I ended up engaging five additional households run by sex workers.

2.4.2. Sex work

Given the illegality, sensitivity, and secrecy associated with sex work in Zimbabwe, I had to approach the sex workers' zone with care. Nkala, in her research to ascertain the reasons for the increase in prostitution in Bulawayo (Zimbabwe's second-largest city), made use of a snowball sampling technique, which she identified as chain-referral sampling (Nkala, 2014). Nkala notes how this technique helped her to enter the sex worker community through a chain-referral system that began with one interview with a key informant who then referred her acquaintances in a manner that allowed continual snowballing until she had reached her sample size. Nkala notes how, because of being criminalised, sex workers' activities were done clandestinely. As applied by Nkala (2014), considerations of how best to gain access, trust, and rapport when dealing with marginalised community members, especially those whose activities are at odds with legality, are important. Serena Cruz, in her PhD work with sex workers in the slums of Kampala, Uganda, also echoes Nkala's sentiments on the importance of gaining participants' confidence for successful research. Unlike Nkala, who used only interviews in her study, Cruz identifies the ethnographic approach as the best design for the study of sex workers as a hard-to-reach marginalised population. Cruz notes how, through her ethnographic work with sex workers in the slums of Kampala, the sex workers allowed her to observe and document their day-to-day routine and trusted her with

the documentation of their personal histories. Cognizant of the fact that sex work in Zimbabwe is an illicit activity and comes with particular issues of trust and secrecy, I had to find a way to access my participants, like Nkala did, and I took Cruz's advice that participant observation was an especially good method for learning about such hidden lives.

When I shifted from the flats into the second community setting, I lived in a residential area located just next to the noisy, and busiest, bus terminus at Mbare *Musika* (market). It was in this setting that I that discovered I was staying at the heart of a sex workers' zone, an informal setting where antibiotics were central in the treatment of STIs. This was very significant for my study as it pointed to a connection between antibiotics and informality. As I have already indicated, ethnography allows for methodological flexibility, which enabled me to continue following antibiotics. This opened up an opportunity for me to work with five additional households situated in the sex workers' zone, where I spent a long time learning about the day-to-day realities of sex work in a context of economic austerity. When KS left the study, NM assisted me with entry into the sex workers' community. He was an Mbare resident who had knowledge of the community settings and having him in the team was very advantageous because he knew which gatekeepers to approach. Sex workers' hubs within the zone were run by sex workers' queens and NM was instrumental in introducing me to these gatekeepers, who trusted him because they knew him as a Mbare resident. The two sex workers' queens who led the two areas in which I worked were, through the backing of NM, quick to trust me, and they introduced me to their members. This was a new line of work for me, and being an ethnographer who shared the same language with them and working with someone they trusted I quickly gained acceptance. I was known more by my first name in this setting as most sex workers preferred calling me by my first name and being on a first-name basis helped create rapport. They were comfortable having me as a researcher because it was not unusual for researchers to come into their setting to learn more about their way of living.

Staying in the sex workers' zone gave me more time to interact with sex workers. I moved between various sex workers' settings including the base, Magoshtos, and homes where sex work was conducted (described in depth in chapter 6). At the 'base', sex workers spent most of their daytime sitting outside the two rooms close to the gate where customers spotted them. This was similar to sex workers who rented rooms, who usually sat in their rooms, and in both settings, I joined and sat with them there. At the Magoshtos (a name for the informal structures where sex work occurred), plaiting of hair was a common activity done under the shade of a big tree as sex workers waited for customers. I joined them under the tree where sometimes I helped with plaiting and also had my hair plaited whilst observing and listening in to their day via conversations that brought out their concerns. In all the settings, I observed as sex workers paraded themselves competing for customers.

As I sat, chatted, and observed, I learned a lot about their work, and I asked questions, which they gladly answered. I sat in their meetings as they discussed how to increase their security and maintain their health. From these interactions I purposively selected 20 sex workers for in-depth interviews (see section 2.5). Other than prolonged interactions with sex workers, I also engaged residents living in the sex workers' zone. I had long interactions with Vatete, an elderly woman who had enrolled in the study during the medicine survey, who provided a history of how her community used to be before sex work began, what gave rise to it, and why it continues to exist. I also had interactions with a community health worker who lived very close to the sex workers, who provided rich insights into the relationship between sex workers, the clinic, and her role as a clinic representative in the community.

2.4.3. Pharmacies

One criticism raised against contemporary healthcare ethnography is that researchers tend to rely on periodic, relatively short-term observations and fail to attain a holistic perspective of the lived reality (Pope and May, 2006). With the help of KS, we conducted participant observation in three pharmacies for six months from March 2019 to August 2021. Each day began at 7.30am, ending at 5pm, and we spent the day engaged in the day-to-day activities of pharmacy life, which involved assisting with keeping the pharmacy floors and shelves clean and receiving new stocks of medicine and informal chats with pharmacy employees and customers. Our prolonged presence at the pharmacy enabled us to create good rapport with pharmacy employees and to engage in meaningful conversations on antibiotics which helped us to find out more about types of antibiotics and patterns of antibiotic use in pharmacies. The three pharmacies we worked in were purposively selected out of the six pharmacies in the community of Mbare, mainly because of their proximity to Mbare *Musika* and the bus terminus, where medicines were sold by market vendors. These three pharmacies were not located far from each other, and this made access very easy. KS conducted participant observation in two pharmacies that were very close to each other, owned by one company, situated near the vegetable market at Mbare *Musika*, whilst I conducted participant observation in the third pharmacy, situated very close to Mbare bus terminus. The pharmacy that I worked in was owned by the pharmacist who ran the pharmacy. This was very advantageous to me as I was able to learn about the challenges encountered daily as she strove to stock her pharmacy with affordable medicine. Daily, she made calls checking which medicines were available and comparing prices. This information was very important to her as it enabled her to adequately stock her pharmacy with relatively affordable medicines to enable her to price her medicines affordably. Both KS and I spent most of our time interacting with pharmacy assistants who had direct contact with customers. In this setting we positioned ourselves as researchers and the pharmacy personnel were comfortable working with us as researchers studying

antibiotics in their setting. We strategically moved around the pharmacy and sat with customers in chairs provided for them and we were able to freely engage in casual conversations with both customers and pharmacy assistants. Pharmacy assistants gladly provided us with access to customers' prescriptions, and we listened keenly to conversations around antibiotics as some customers asked for antibiotics with no prescriptions. Because we worked for only three days a week in the pharmacy, each day usually began with pharmacy assistants filling us in with antibiotic stories from the previous day when we were not in. These stories included which antibiotics were sold most, sad stories of people who failed to buy the required antibiotics due to lack of money, and requests by customers to buy a reduced dose for a reduced price. Each time a customer came with a prescription for antibiotics we recorded where the customer had obtained the prescription (private clinic, private doctor, or public clinic/hospital). This enabled us to gain a sense of how many people were coming from public health institutions and the type of antibiotics prescribed. This was very useful as it indicated which antibiotics were not available in public clinics and hospitals. We also interacted with customers and were able to capture antibiotics stories that we encountered at the pharmacy. Daily, KS and I met at lunchtime when we shared and compared our daily encounters. These regular lunch meetings helped us to know what was happening in each pharmacy (i.e. price increases). Through these meetings we shared which antibiotics were commonly sought in each pharmacy and why this was happening, and we shared which antibiotics were out of stock in which pharmacy and why. We captured a lot of antibiotics stories, some of which included pharmacy employees using their money to buy antibiotics for customers whose budgets were too low to afford the much-needed antibiotics. We were also able to share antibiotics stories and identify participants as they moved from one pharmacy to another. After working hours, we each produced a contact summary sheet with a summary of antibiotics stories. Participant observation also occurred at the marketplace with medicine providers in the informal sector (discussed below), in parallel with the pharmacy ethnography, which explains why we spent three days per week in the pharmacy. KS and I visited the pharmacies every Monday, Wednesday, and Friday, whilst market-based ethnography occurred on Tuesday, Thursday, and Saturday. Alternating days enabled me to spend an equal amount of time in the formal pharmacy and the informal medicine market.

2.4.4. Markets

Most pharmaceutical sales were (in theory) following a prescription, but these items could also be purchased directly in the markets just outside the pharmacy. Medicines were sold at Mbare bus terminus, in the streets, and at Mupedzanhamo flea market. I purposively chose to conduct market ethnography at Mupedzanhamo as it proved to be the market that hosted more medicine vendors compared to Mbare bus terminus and street vending. I did most of the market ethnography alone, whilst KS assisted PM with the transcribing of interviews.

I sought to immerse myself in the day-to-day lives of informal medicine providers. Entry into Mupedzanhamo flea market required a lot of trust and secrecy as trading in medicines was illegal. I have already indicated in the medicine survey section how Mai Fadzi, a home-based medicine vendor, introduced us to two vendors at Mupedzanhamo flea market. I make use of pseudonyms for all my participants. Mai Fadzi was Mai Chiedza's customer, and also bought medicine from Mai Tee when Mai Chiedza was out of stock. Due to the illegal nature of this business, Mai Fadzi took the lead and introduced me to Mai Chiedza and Mai Tee. During the introduction, Mai Fadzi did a very good job of describing the study, mentioning that I was a student living at the flats with an interest in studying medicines. To authenticate my story, I showed them my student identity card and study documents including consent forms. We moved to a nearby food outlet where I went through the informed consent process. They noted that the contents of the consent forms proved that I was not associated with the police, and this gave them confidence that I was indeed a research student. They were fascinated that a student would have an interest in their work, and they gladly welcomed me to the market. At the market, Mai Chiedza introduced me to two vendors, Mai Tapona, her business partner, and Mai Chipo, her sister-in-law. Mai Tee introduced me to her cousin Donald, whom she worked with, and I obtained consent to work with all five of these medicine vendors. I will discuss my work with these medicine vendors at Mupedzanhamo flea market in greater detail in chapter 5. Working with Mai Chiedza made it very easy to gain acceptance at the market because she was a very influential person. Coincidentally, my first name was similar to that of Mai Chiedza's mother, and she began calling me 'Mhamha' (Mother). This gained me a status of respect as she introduced me as her mother despite the fact that I was younger than her – something that is culturally acceptable among the Shona people. I became known as Mai Chiedza's mother at the market – this really help me to gain acceptance at the market.

A typical day began with greetings as we set up tables, stools, and the huge umbrella for shade as we lined up and sat outside the flea market. Mai Chiedza would bring me a stool and give me chores, which involved assisting with the packing of customers' orders as well as verifying that they had been supplied with the correct amount of medicines. After setting up, I assisted with displaying empty boxes of medicine to attract customers. As customers trickled in, I assisted with jotting down orders – this was very helpful as it enabled me to jot down notes in my notebook without making anyone suspicious of what I was doing, I had to ensure that I blended in properly, and I did not want to make anyone uncomfortable by visibly jotting down notes. I took advantage of such times to help participants write down their lists of medicines, which gave me access to information on the types of medicines sold, costs of medicines, and where customers came from on a daily basis. As large orders were prepared, I was able to chat with customers about antibiotics, learning where and how the vendors conducted their business and who their customers were. I also assisted with counting money as most customers purchased large orders using local currency, which due to rising inflation usually involved counting big bundles

of money. During the quiet times when business was slow, I had a lot of informal chats with the market vendors, who gladly spoke about their experiences in starting their business, where and how they procured medicines, and how they kept their business running, remaining cautious of the policing agents around them. I captured all the data in a small field notebook and at the end of each day I wrote detailed field notes in the form of contact summary sheets. Ethnographic work in this informal setting, selling 'unlicensed' drugs whilst operating 'illegally' in an undesignated space, raised ethical dilemmas, which I will describe in the ethics section (2.8). To avoid the risk of my being identified and arrested as a medicine vendor, vendors taught me how to daily navigate market life, including how to blend into the crowd during police raids (discussed in chapter 5). In case of an arrest, I kept a letter of approval to conduct research from the local ethics board and my employee identity card, which identified me as a lead social scientist from the Biomedical Research and Training Institute.

2.5. In-depth interviews

Alongside participant observation, I conducted in-depth interviews with at least one household member from each of the 10 households I had initially selected. I also interviewed sex workers (20), pharmacy staff (2), and market-based medicine providers (3), resulting in 35 IDIs. In conducting these interviews I made use of interview guides for community members (appendix 5), interview guide for medicine vendors (appendix 6), interview guide for sex workers (appendix 7) and interview guide for pharmaceutical workers(appendix 3). Interviews allowed for a greater degree of reflection than is possible during participant observation and were useful in helping me to understand what transpired during periods of observation, and also enabled a deeper exploration of meanings, beliefs, and attitudes towards medicines and the context of their use (Bourgeault, Dingwall and de Vries, 2010; Bernard, 2011). IDIs were also excellent for helping me to understand what occurred during periods of participant observation, especially in these quite secretive and/or extremely busy contexts with medicine vendors and sex workers, where there often was limited scope for asking questions. As an experienced researcher l identified with ease suitable places that provided privacy during interviews. This included sitting in a car to conduct interviews with medicine vendors at the marketplace. IDIs also presented an opportunity for learning people's life histories, for instance I managed to learn how they became involved in sex work or in selling medicines, as well as learning more about their work and their experiences. There was a lot of richness to interviewing, especially where it came to the trickier, more ethically loaded groups, notably sex workers and market vendors. Serena Cruz, in her ethnographic work with sex workers in Kampala, made use of IDIs to complement her ethnographic observations (Cruz, 2015). IDIs provided her with the ability to obtain in-depth insights into the risks associated with sex work as sex workers provided their life histories (Cruz, 2015). IDIs enabled Cruz to have a deeper conversation about sensitive topics concerning sex work, and I too was able to

make use of IDIs with sex workers to obtain individual narratives as sex workers opened up and shared their experiences in dealing with STIs.

Interviews with community members were conducted in their homes, while I conducted other interviews at the pharmacy and the marketplace. I conducted interviews with sex workers both in their homes and in secluded areas in their sex work zones. During the process of obtaining consent, I had obtained permission for interviews to be digitally recorded and transcribed. All participants were comfortable with the use of a digital encrypted recorder on the basis that interview recordings would be destroyed once transcribed. Moreover, the identities of all participants were protected in both transcriptions and in all subsequent references to interview proceedings including written accounts.

2.6. Documentary and archival analysis

During the data collection and throughout the course of the study I conducted documentary and archival analysis. While we were still designing the research and waiting for approval from the ethical institutional review boards, and in the build-up to my PhD upgrading process, I devoted a considerable proportion of my preparatory time to analysing global- and national-level AMR documents, including the WHO Global Action Plan on AMR (WHO, 2015a), the Zimbabwe situational analysis on AMR in Zimbabwe (AMR Core Group, 2017a), and the Zimbabwe National Action Plan (AMR Core Group, 2017b), among many others. This enabled me to begin to understand the interconnections and disjuncture between discourses around AMR at a global and national level that I would further explore during primary data collection. By the time I had received approvals, I had included more immersive historical work on Zimbabwe, which involved six weeks in the National archives of Zimbabwe, complemented by online research, where I investigated the history of antibiotics and emerging discourses around rational drug use in Zimbabwe. The medicine survey in the first months of data collection further sparked a greater interest in understanding how these 'materia medica' (antibiotics) had arrived in Zimbabwe, and how they had become so integral to the Zimbabwean health system as a way of living and as substances for healing (Whyte, van der Geest and Hardon, 2002), and yet were now dwindling in efficacy under the threat of drug-resistant bugs. In 2020, we published the paper "Antibiotics, rational drug use and the architecture of global health in Zimbabwe" (Dixon *et al.*, 2020), the first part of which consisted of a historical analysis of rational drug use in Zimbabwe. This included an analysis of the development of rational drug use in Zimbabwe, the successful implementation of the programme in the late 1980s and 1990s, and its demise in the 2000s, to account for the current state of failure. As my research evolved and as I began looking more closely into sex work in Mbare, I found myself immersed in the history of sex workers and antibiotics in Zimbabwe through a series of public

health regimes. This historical analysis involved searching through literature on prostitution, how prostitutes were historically stigmatised as vectors of venereal diseases, and the public health mechanisms enforced to manage prostitution and STIs. This analysis resulted in further archival analysis on the history of antibiotics in Zimbabwe. I sought archival material from a number of sources, including the National archives of Zimbabwe, the MoHCC archives, research institutes, university archives, libraries, non-governmental organisations, newspaper articles, and online repositories. Some of these sources were located within Zimbabwe, whilst others were located in other transnational research and NGO institutional archives. This led to collaborative work with medical anthropologists in the wider Anthropology of AMR group who were interested in the histories of antibiotics. I worked collaboratively with Paula Lopez and Clare Chandler, and insights from my archival work on antibiotics in Zimbabwe was used in their report "Histories of Antibiotics: A one health account of the arrival of antimicrobial drugs to Zimbabwe, Malawi and Uganda" (Lopez and Chandler, 2020). Further interests in antibiotics and the management of STIs resulted in further historical analysis, which resulted in the publishing of another article, "Antibiotics arrivals in Africa: A case study of yaws and syphilis, in Malawi, Zimbabwe and Uganda" (Lopez *et al.*, 2022). In addition to documentary analysis, ongoing attention was paid to media and popular discourse; this included paying attention to snippets from radio programmes, advertisements, documents in the public domain, and other forms of media for the analysis of discourses relating to antibiotic and antimicrobial use.

2.7. Data management and data analysis

During the medicine survey we used Open Data Kit (ODK; https://opendatakit.org) and android devices to collect data. ODK uses symmetrical encryption, thus ensuring data security. All data collected using ODK was transferred onto my computer using the ODK briefcase application. This application was password protected. My computer was also encrypted, and password protected for data security. All data from the medicine survey and ethnographic fieldwork was uploaded and backed up to LSHTM's secure cloud storage, subject to the UK's Data Protection Act. All data collected, including interviews captured during the medicine survey, interview recordings and transcripts from in-depth interviews and stakeholders' interviews, field notes, and photographs, were synced onto LSHTM's secure cloud storage via Filr. All consent forms and forms with participants' names and locator information were kept in a locked cabinet maintained by the data management team situated in Zimbabwe at BRTI, where this PhD project was housed under the FIEBRE Social Science study.

As a FIEBRE Social Science team, we engaged in data analysis on two levels: (1) local level analysis, (2) and cross-site level analysis. Cross-level analysis included analysis across the three FIEBRE Social Science sites,

on a monthly basis, where we engaged in collective learning and analysis to advance theory development during each step of data collection and analysis. Twice a year, we engaged in multi-site data analysis workshops where we developed themes common across our sites. For local level analysis , we met once a month to discuss some of the key themes emerging from ongoing fieldwork. The medicine survey acted as our first level of data analysis. Quantitative data generated from the pile-sorting activity during the medicines survey, were entered into a spreadsheet in Microsoft Excel for analysis and used to produce descriptive statistics. This led to the production of fliers(see figure 10) across three sites that guided the qualitative phase of data collection.

Analysis of qualitative data was conducted iteratively with the help of qualitative data analysis software NVivo 12, which was used to facilitate in the generation of themes or codes. Qualitative data included interviews transcripts and detailed fieldnotes produced daily during participant observation. Daily after fieldwork, I entered field notes and contact summaries into NVivo, identifying, grouping, and hierarchically ordering new themes as they emerged while amending existing ones when needed in the process. This inductive, iterative analysis was conducted with the input and reflections of the research assistants during our bi-weekly team meetings to ensure validity of the analysis. The inclusive approach we took was integral to producing a rigorous, comprehensive analysis.

As the study progressed and more data accumulated, I became more immersed and more engaged in producing a broader, more cohesive analysis which folded in different sets of data in search for connections between them. I checked how data from interviews and fieldnotes, for instance, reflected different aspects of the phenomena related to access to and use of antibiotics. This also involved integrating fieldnotes and interview transcripts with materials from documentary and archival analysis in order interpret findings in context based on political, social, economic, and historical factors. Once every month, I developed analytical memos based on key themes and I shared these with my academic supervisors for discussion which resulted in further refinement. I made use of these refined analytical memos to inform my results and discussion chapters.

2.8. Ethical considerations

Numerous scholars have identified ethics in research as something that has different dimensions. For instance, Marilys Guillemin and Lynn Gillam (2004) identify two dimensions of ethics as consisting of procedural ethics and ethics in practice, whilst Carolyn Ellis (2007) adds relational ethics as a third dimension to ethics. These scholars identify procedural ethics as the kind of ethics that is mandated by institutional review boards that operate through a defined code of ethics, whilst ethics in practice is the kind that speaks of a researcher's situational encounters or experience with ethical issues that are often unpredictable and yet ethically significant

in the conduct of fieldwork. Anthropologist Carolyn Ellis, in her article "Telling secrets, revealing lives: Relational ethics in research with intimate others", describes relational ethics as the kind that "recognizes and values mutual respect, dignity, and connectedness between researcher and researched, and between researchers and the communities in which they live and work" (2007:4). She notes that central in relational ethics is the question "What should I do now?" instead of the statement "This is what you should do now", as the situation at hand may have no predefined set of rules to guide action. Relational ethics may include things like how to deal with the reality of changes in relationships, especially if our relationship with participants evolves during the course of the study. For instance, when I moved into Mai Leo's room at the flats, my relationship with Mai Leo changed from the researcher–participant relationship as we bonded, to the extent that her daughter had become more like my daughter, and I had become to Mai Leo more like a young sister who she could tell all her problems. When it was time for me to move out of the flats to live near the marketplace, I found it difficult to leave the setting as Mai Leo was going through a health crisis and her daughter was in boarding school. I found myself delaying my move by another month, even though according to my set timeframes it was time for me to move. Moving out at that time did not seem ethically right as it would have been emotionally harmful as she was in a state where my presence mattered most. Even after moving out of the flats, I found myself going back to check on her until I was confident that no harm would occur. This is how I found myself tied up in relational ethics. In the next sections, I will describe some of the ethical considerations that I had to abide by, most of them being procedural ethics, though I had to grapple with situational ethics and relational ethics every now and then. For me the overall principle was to do no harm in line with the American Sociological Association (ASA, 2012) code of ethics guidelines.

2.8.1. Harms and benefits

While participant observation and interviews may raise and touch on potentially difficult or emotional topics, I did not encounter many challenges with regard to that component. During the medicine survey, I had an encounter with a woman who, on recalling the injection that her husband used before he died, was a bit emotional as she recalled how the system had failed him. "He got the injection too late", she recalled as she noted how the family had failed to get money on time to buy him the injection, which was not available at the clinic but only at the private doctor's surgery. As a trained counsellor – a hat which I also wore into the field – I listened attentively as she narrated her sad story and patiently waited until she was comfortable to move on to the next stage of the interview. To avoid any form of 'undue inducement' (Ballantyne, 2008), I did not provide any direct financial or material benefits to participants and no coercion of participants to join occurred. I ensured that participants understood that being part of the study was voluntary, and that no harm would occur to them

should they choose not to respond to particular questions, refuse to participate, or withdraw from the study, in accordance with the ethical guidelines. To ensure compliance, I received approval from the local research ethics committees, including the BRTI institutional review board and Medical Research Council Zimbabwe (MRCZ), as well as approval from the LSHTM human subject research ethics committee to conduct this PhD work.

When Rose's mother enrolled in the study during the medicine survey, she understood that her participation in the study was not linked to any form of monetary benefits. Her daughter Rose regarded me as a person affiliated to a rich organisation, and each encounter with Rose, who occupied the first table outside the flats, positioned in a place I had to pass through in order to get out, resulted in her asking for money, a request which I would politely decline, telling her that I had no money to give. During the consent process I had been careful to discuss issues regarding benefits with participants, but I guess this had been well understood by Rose's mother but not her daughter. I dreaded each encounter with Rose as it always brought unnecessary attention on me. I tried by all means to avoid attracting attention, something that Rose enjoyed. To avoid her, l sneaked out of the flats before she had positioned herself in her trading place. One day I was not so lucky in sneaking away from her. I found myself buying roasted peanuts from Rose to avoid her calling me to give her money. After buying Rose's peanuts, I threw them away because Rose cooked these peanuts in a very dirty pan on a fireplace that she built outside the flats. Working at the market with medicine vendors had legal implications. l was not a mere observer in this setting where medicines were sold outside the purview of the law: I was a 'participant' observer, participating in the sales of medicine, where I assisted in taking orders, receiving, and counting large amounts of cash and packing medicines for customers (described in chapter 5). Being situated in this 'undesignated' trading space with medicine vendors meant that, like vendors, I too risked being identified as a vendor and being arrested and this induced some anxiety, though I knew that in the case of an arrest I would not be charged for engagement in 'illegal' trading.

As a researcher from a northern funded project, navigating unequal power relations is a dilemma I had to daily deal with. This was a challenge during the medicine survey when I entered the study setting carrying a bag full of medicine, which likely gave the impression that I was connected to a rich organisation capable of funding said bag full of medicines. This was particularly a challenge in homes where participants could not afford to buy prescribed medicines like antibiotics. Dealing with such situations required careful attention to relational ethics (Ellis 2007; Pollard 2015), key to which was the need for me to practice empathy and compassion towards those in vulnerable positions. This required careful consideration of the situation that each participant was facing and making decisions that ensured that no harm was done to participants.

In one household, a little girl once held on to Pyrimon eye ointment, saying “this is the medicine for my eyes” as she thought I had come to give her the medication; instead, I told her this medicine belonged to my company, it did not belong to me, and l would be in trouble at work if I gave her the medicine. As a seasoned researcher and persuasive mother, I was able to convince the girl to hand the medicine back to me, but I walked away feeling so bad, thinking, “if only I had money on me, maybe I might have left the family money to buy her the medicine, but would that have been ethical?” I quizzed myself over the matter. In conducting this work, I was guided by ethical guidelines for good research. This encounter led me to reflect and come to a realisation that though the nature of my study was observational and did not pose any physical harm to participants, perhaps my methods and the topics had the potential to cause discomfort if conducted insensitively. To avoid doing any harm I decided to take ethics as a relational process (Pollard, 2015), which means I was open and sensitive to the diverse participants and circumstances I encountered, just like I was able to relate to the young girl and make her willingly let go of the antibiotic that she wanted, and just like I related to Rose. Relational ethics also meant that I increasingly had to navigate power dynamics associated with my positionality as a researcher from a rich Northern funded project. I had a responsibility as a researcher not to do any harm.

In another latter occasion, I encountered an old man with a prescription for an antibiotic ointment called mupirocin prescribed for an infectious wound on his left leg. The old man had been able to access the clinic for free without paying user fees because of his age. He had however failed to obtain medicine at the clinic because the clinic did not have mupirocin in stock, and was given a prescription and referred to the pharmacy . At the pharmacy mupirocin costed USD 9.00 and he had failed to buy this medicine which I had bought with ease using the project’s funds. I listened attentively to his sad story as the old man and his wife revealed how they were daily washing wound as this was all they could afford to do. The old man’s wife had during the pile sorting activity happily identified mupirocin and confirmed by showing me a written prescription which was one week old, that this was the medicine that they had failed to buy and, I had brought this much needed medicine into their home. I found myself in a conflicted position not knowing whether or not to release this medicine to help the old man or walk away with my bag full of medicines. I thought of the pain that the old man was going through and the harm associated with further infection. Thinking through the principles of beneficence, l felt morally obligated to do engage in an act of kindness by giving them the medicine to prevent further harm and to promote recovery. During my encounter with the little girl with an eye problem, I did what the protocol said the first time, but felt conflicted, and then when it came to the elderly man, I was unable to do the same again. I had the power to choose to do something about the medicine situation or not to do anything. I made the choice to give the family the medicine, and I walked away from this home knowing that I had showed empathy and respect, elements central in relational ethics and I

had done something to prevent further harm. On the next day, I had a debrief meeting with my supervisors, informed them about the incident, and was given permission to replace the medicine. Debrief meetings provided a channel to communicate unanticipated and difficult events encountered during fieldwork.

While participant observation and interviews may raise and touch on potentially difficult or emotional topics, as a seasoned social scientist I did not encounter any overwhelming challenges, though I was prepared to respond in a manner that did not bring any harm. However, when discussing harm, it is somewhat difficult to say with absolute certainty that as researchers we cause no harm. This is because our presence, our questions to participants and their responses to us, already stand as an intervention. As much as I tried to adhere to the 'do no harm' principle, at times I wondered if I had unintentionally or unknowing caused harm.

2.8.2. Informed consent

Before enrolment, I obtained written informed consent forms and information sheets from all study participants. I did not encounter any illiterate participants and consenting went smoothly. Other than consent to be involved in the study, the consent form also included sections for permission for audio recordings and transcription, and for use of direct quotations and photography. All the participants agreed to and signed all the relevant parts of the consent form, especially after obtaining assurance that privacy and confidentiality would be maintained. Participants had the opportunity to ask questions and discuss details of the study with me. I made it clear during the consent process that participants could withdraw from the study at any time and that this would not affect them in any way. All the consent forms used had received approval from the local institutional review board, MRCZ, and the LSHTM ethical review board.

2.8.3. Privacy and confidentiality

I did my best to ensure that privacy and confidentiality were maintained. Participant observation has prompted concerns about participants' right to privacy. Where participant observation took place in public spaces, I did my best to make it very clear to participants that there would be limits to privacy. In order to ensure privacy was respected and maintained as far as possible, all interviews that I conducted were done in a private space where conversations could not be overheard. During the medicine survey I allocated participants with participant identification numbers. We assigned pseudonyms to all the participants involved in ethnographic work. No first names, addresses, or any contact details were used in the write-up of any paper-based or digital field notes. Contact/locator forms with participant contact details such as name, address, and phone number were captured

at the time of consenting, and these forms were kept in a locked filing cabinet at the office. I had to be very careful to ensure that photos remained anonymous by removing any potential identifiers. In the case of photos that included people's faces, care has been taken to discuss and consider the contexts in which the photos will be used and published. For data confidentiality, all soft copies including field notes, photos, audio files, and interview transcripts were kept securely in digital format on encrypted password-protected computers. For data security all study members had encrypted laptops that were password protected, and as per LSHTM policy all passwords were changed after three months to improve password security. I regularly shared data with JD in London and stored all electronic documents on a secure server at LSHTM using Filr. Access to Filr was only granted to study members.

2.9. Conclusion

In this chapter I provided an insight into the research design and methods that I used for data collection. I discussed some of the ethical dilemmas one can encounter in the field and I provided examples of instances when I encountered ethical dilemmas and how I resolved them. l discussed the importance of avoiding harm to participants, noting how difficult it is for researchers to say with absolute confidence that no harm was done as we are likely, albeit unintentionally and unknowingly, to cause harm. I also showed in this chapter how I paid attention to detail in ensuring proper data storage and data confidentiality. My research evolved to accommodate new research questions for my PhD. For instance, following antibiotics enabled me to discover a group of sex workers, and the flexibility of my research design enabled me to add on sex workers, whom I had not previously planned to include. This expanded the scope of my data collection to allow for new research questions around the role of antibiotics in the lives of sex workers and the central role of antibiotics in STI management.

Chapter 3

3. Mbare, urban medicine and the informal urban economy

> They had no mercy; my friend died from the cold; families were left to sleep outside during that very cold winter in July 2005. During *Murambatsvina* they bulldozed every building not on the city plan. This used to be my bedroom, right here where we are sitting [outside]. We all had built extra rooms which they called illegal, to accommodate our children and to get money from lodgers to make a living. After the destruction, only children slept inside. Me, my husband, my husband's brother and his wife, my eldest son and his wife, we slept in the cold for three nights until Tsvangirai came to the rescue. He brought transport to move people back to their rural homes. Those with no rural homes started building shacks for shelter. These *Magoshtos* next to my house [pointing at the shacks in the figure 12] started as homes for the homeless, but prostitutes have turned them into whoring houses [sic]. The council sometimes destroys these *Magoshtos* [figure 12], just like it destroys the vendors' stalls, but everyone knows that before the council reaches its offices, the *Magoshtos* will be up and running as if the council never came to destroy them. (Vatete – Mbare resident)

Figure 12: Open space with shacks called Magoshtos used for sex work in Mbare

3.1. Introduction

Sitting outside on a cement slab reminded Vatete of her once-beautiful bedroom, now razed to the ground, just like the many other remnants from *Murambatsvina* that I came across during the medicine survey. I listened attentively as Vatete told her story. Vatete, which means 'aunt', was her popular name in the community. I had come to know Vatete as a staunch Movement for Democratic Change (MDC) supporter who took pride in having had a rainwater harvesting plant installed at her house (see figure 13) because of her affiliation to MDC. MDC is a political party that emerged in the 1990s to compete with the ruling party – the Zimbabwe African National Union – Patriotic Front (ZANU-PF) – and has since been its primary opposition. Vatete's place was one place that

I and many other residents frequented for reliable drinking water; clean water, like shelter, was a scarce commodity in Mbare. As she recited her tragic tale, Vatete spoke fondly of how the late former president of the MDC party, Morgan Tsvangirai, had during *Murambatsvina* brought hope to Mbare by freely providing transport to people left homeless, so they could pack their belongings and go back to their rural homes. *Murambatsvina* is a Shona word that means 'we do not want dirt/rubbish'. The (in)famous Operation *Murambatsvina*, also known as operation clean-up or operation drive out rubbish, was according to Shand "a militaristic clearance of illegal and informal urban settlements" by the Mugabe government (Shand, 2018:46). For Potts (2006), *Murambatsvina* was a strategy aimed at eradicating 'illegal' housing and informal jobs that was rolled out in Mbare by the City of Harare Council as a central-government-led initiative to fulfil the ruling party's intentions under the guise of inner-city revitalisation.

Figure 13: Photo showing Vatete's rainwater harvesting plant in Mbare

The fixation of the City of Harare Council on maintaining order through 'clean-up' activities is an offshoot of the colonial logic of town planning standards imported from Zimbabwe's colonial master, Britain, which greatly

esteemed ideals of modernity. The management of the city of Harare is a continuation of colonial town planning policies and punitive policing techniques, typified by *Murambatsvina*, that promoted the use of draconian legislation such as the pass laws and the index card system (described below), which were used to rid the colonial city of 'undesirable elements'. This entailed a systematic separation of employed Africans from the 'unwanted' unemployed Africans who were labelled as "hooligans, loafers and 'spivs' (that is, the 'idle and unemployed')" (Makombe, 2013:63) and the brutal evictions of the latter by the British Southern Africa Police (the Rhodesian police) from African townships to maintain order in the colonial city. The continued reliance on colonial policies by postcolonial cities like Harare reveals how postcolonial urban planning policies are fashioned according to developmental theories of modernisation, replicating Global-North-centric models of urbanisation in the colonies (Banks, Lombard and Mitlin, 2020). The need to emulate Global North models of the modern city is, according to Kamete (2013), ingrained in the planning strategies and urban management systems of many countries in sub-Saharan Africa. Though most countries in the Global South have obtained political freedom, there remains the reality that most are still yoked to the governmentalities of their colonial masters. As Home (2014:75) has argued, "the legacy of colonialism is now etched on the landscape … of the cities of the global south … even though they have grown in extent and population far beyond their colonial origins".

As described in chapter 1 (section 1.7), designations of 'formal and informal' categories have since the 1970s generated much debate, with many scholars objecting to the categorisations of 'formal' and 'informal' both for their artificiality and for fuelling pejorative framings (Roy, 2005; Koster and Nuijten, 2016; Banks, Lombard and Mitlin, 2020). Globally, framings of informality have largely been negative, with informality framed mostly as "unruly, messy and dirty" (Koster and Nuijten, 2016). In sub-Saharan Africa, urban informality has largely been shunned, with designations of 'informal' perpetuating the negative framings that inform urban planning strategies, most of which have leaned heavily on punitive technologies of control aimed at taming and removing informality (Kamete, 2018). Dominant perspectives on informality in sub-Saharan Africa have employed theoretical framings of modernisation, which have largely regarded informality as a "pre-modern phenomenon" and as "a residue, a leftover from a backward pre-modern period" (Kamete, 2018:5). Viewed from this modernisation perspective, informality, with its disorderliness and backwardness, is undesirable, illegal, and something that we ought to be rid of to allow the formal sector to flourish, the latter being the embodiment of modernity and true progress.

In Zimbabwe, attempts to clamp down on informality have been a regular strategy of the City of Harare Council, which has a long history of being engaged in (futile) battles to erase informal activities in Mbare. The failure of the City of Harare Council to completely clamp down on informality in Mbare attests to Koster and

Nuijten's (2016) assertion that the possibility of erasing urban informality is a myth. In many countries, recognition of the importance of informal actors in providing medicines and care has resulted in their being included in limited roles within the formal health sector, enabling both expanded access and greater coordination and regulation (Cross and McGregor, 2009; Cross and McGregor, 2010; Kumah, 2022). However, despite the centrality of informality in the lives of most urban-based Zimbabweans, town planners still hold on to the separatist logic that does not tolerate formal–informal integration. The current outcome of this in Zimbabwe, as mentioned in chapter 1, is a complex scenario in which certain aspects of informality are tolerated, with trading allowed – or, as Kamete (2017) puts it, 'warehoused' – within certain spaces, but without recognising its legitimacy or, by extension, the rights of those living and making a living within it.

In this chapter, l provide a history of current configurations of informality in Mbare. I break this down into three significant phases: from its colonial origins as Harari (1897–1979), to life after independence as Mbare (1980–1995), and finally to more recent dynamics in contemporary Mbare between the mid-1990s and the present day. These sections together chart the origins and development of some of the key dimensions of informal living today, which form the backdrop of the next three chapters. This includes the development (and dilapidation of housing, water, and sanitation (chapter 4); the growth of informal trading (chapter 5); and the rise of sex work (chapter 6). A particular cross-cutting theme is continuity and change between colonial logics and the contemporary political situation, characterised in Mbare by tensions and dynamics between the national government and local government (municipality). These dynamics shape the way people can (and cannot) access housing, water, and sanitation facilities; they shape the various strategies of 'making do' through which Mbare's residents have to navigate an informal urban economy, including informal housing and water arrangements, informal sewage and waste disposal, informal medicine markets, and sex work; and they create the conditions for the spread of infection and the centrality of antibiotics.

Following from chapter 1, I use biopolitics as a theoretical perspective for thinking through the construction and government of informality and those engaged in it in Mbare. Biopolitics has, in fact, been used previously to study aspects of informality relevant to my account. Soffie Hellberg, for instance (2018), draws on biopolitics to study water governance and its effects. She carefully explores water 'stories' from the perspective of water users in the eThekwini community in South Africa, and in doing so exposes the importance of water and, in particular, discourses of its scarcity in the extension of biopolitical power, including shaping how people see themselves and their responsibilities as citizens. In section 3.4.3 I will, like Hellberg, provide an insight into the biopolitics of water in Mbare, and how its scarcity, allocation, and cleanliness lie at the heart of many of the political dynamics and tensions in Mbare today; this forms the backdrop for the next chapter (chapter 4), where

I show how, within the context of politics and power struggles over water, antibiotics have become integral to the way of living in Mbare. Extending my narrative on the biopolitics in Mbare, in section 3.4.4 I explore the governance of informal traders and the place Mupedzanhamo, guided by Kamete's analysis of Mupedzanhamo as a special 'enclave' where informality is deliberately warehoused (Kamete, 2017). Kamete's discussion of Mupedzanhamo is critical as it paves the way for further discussion in chapter 5, where I provide my findings on the informal trade in antibiotics at Mupedzanhamo flea market. Chapter 6, too, is guided by a biopolitical account of how the category of 'prostitute' features in the construction and governance of 'good' (and 'bad') African women, legacies of which shape contemporary healthcare and global health programming today; however, much of that history is provided in the first sections of chapter 6, rather than in this chapter. In section 3.2, I begin my history with the early beginnings of Mbare, with each section progressively weaving a narrative of Mbare, its informal urban economy and its role as an informal warehouse and trading hub for medicines in Zimbabwe.

3.2. Colonial Harari (1897–1979)

3.2.1. Beginnings: The rise of Harari as the first African location in Salisbury

In this section, I begin with a historical gaze into Mbare's rise as the first African township in Harare. Situated in the southern district of Harare, just five kilometres from Harare's central business district, Mbare is Harare's oldest suburb, birthed out of colonialist desire to segregate African labourers away from white settlements. On their arrival in Rhodesia (Zimbabwe) in 1890, colonial administrators designed and built Salisbury (now Harare) as an area restricted for the British white settlers (Seager, 1980; Rakodi and Mutizwa-Mangiza, 1990). This, however, was short-sighted because as soon as the British settled with their families, there emerged a demand for domestic labour, and native Africans were targeted as nannies, cooks, and gardeners (Chirisa, 2010). As Salisbury's industry was booming, it became apparent that white industrialists wanted black labour to provide industrial manpower and were forced to uncomfortably co-exist with the black labourers against their desire for Salisbury to be a 'white city' (Chirisa, 2010). To fence off African labourers from the 'white city', the British settlers created a native location to house black labour and Mbare emerged as the first black location/township in Salisbury.

In 1897, Salisbury witnessed the opening of the first black settlement on 486 hectares of land near the Pioneer cemetery and sanitary works (Bond, 1993; Chirisa, 2010). On its establishment, no effort was made to give this black settlement a name other than 'African location' (Gundani, 2019). It was only in 1907 that this

black settlement was named Harari, following the Native Urban Locations Ordinance of 1907 (No. 4 of 1907), which prohibited 'free residents' into Salisbury (Mandipa, no date). Harari started off as a settlement with 50 kaytor huts to accommodate a small number of male labourers, with no thought whatsoever that this would explode into present-day overpopulated Mbare. The kaytor huts – dubbed '*maTanks*' (the tanks) by black residents – were huts built from leftover iron drums (Bond, 1993; Gundani, 2019). Kaytor huts were equipped with communal latrines, a well, and a refuse collection point.

3.2.2. Early signs of overcrowding and its health risks in Harari

The rapid growth of Harari meant that it quickly became associated with overcrowding and attendant health risks due to lack of adequate housing and sanitary infrastructure. As industrialisation boomed in the 1930s–1960s, the native location of Harari also grew and the need for accommodation for the black labourers intensified (Gwisai, 2002; Chirisa, 2010). Eric Makombe (2013), in his PhD thesis focusing on the changing social life and practices of rural–urban migrants in colonial Mbare, notes how white settlers in Rhodesia adopted a housing policy premised on what Marxist scholars called a "labour reserve model". This model favoured the keeping of "single" men in dormitories/hostels premised on colonialist desire "to turn the urban life of male Africans into a temporary affair and simultaneously reduce the cost of wages by localising social reproduction in the rural area"(Makombe, 2013:61). Preference for male labour was therefore based on the logic that the town life of African male labourers was temporary and would expire once they were no longer productive, at which point they were expected to go back to their rural homes for retirement (Seager, 1980; Chirisa, 2010). Such thinking resulted in colonial hiring practices and housing policy that was biased in favour of males as the dominant sex in Harari. This gave the impression that urban space was a domain for male Africans only. This also meant that men's sexual needs were expected to be met during their brief visits to the rural areas where their wives were resident (Shumba, 2010). This arrangement in association with torrid living conditions and economic precarity resulted in a growing market for sex work, which was associated with an increase in sexual diseases. Holland, a colonial medical doctor, conducted a survey on sexual diseases in Harare, which indicated a sex imbalance in Salisbury of 2.4:1 in favour of men (Holland, 1976). Holland (1976) asserted that 'prostitution'[1] was a vice promoted by the lack of family structures, citing the statistic that 80% of males in his survey with sexually transmitted diseases indicated engagement with sex workers (more detail on sex work is presented in section 3.2.2 and in chapter 6). In 1943, a committee was tasked with investigating the conditions of native urban living,

[1] The term 'prostitution' was commonly used in the literature that I encountered. Moving forward, I will use the term 'sex work' unless it becomes pertinent to mention the use of the more derogatory term. This changing language is something I will also address in more detail in chapter 6.

the findings of which were documented by Howman (1945) in a "Report on Urban Conditions in Southern Rhodesia". This report clearly indicated overcrowding as a challenge in native 'locations' like Harari and the dangers associated with overcrowding in them. The report indicated that the lack of accommodation had not occurred suddenly but had been steady increasing due to short-sightedness on the part of local authorities, who had turned a blind eye to the need for African accommodation. Howman, in this report, cited tuberculosis as a menace resulting from overcrowded living conditions. He also indicated the presence of venereal disease (VD) and malnutrition, stating that:

> Venereal diseases are rife and whatever medical inspection and treatment may be imposed they cannot be expected to cope with a situation in which stable family life is almost impossible. Malnutrition and deficiency diseases are particularly evident among the industrialised bachelor labourers, who are the worst sufferers. They have never been taught to cook, they tend to skimp the preparation of properly cooked food and after the day's work lack the time and energy necessary in the preparation of all those extras with which a wife makes her meals appetising and nutritive. Family life also implies separate living establishments, not to mention the care and cleanliness devoted to their homes by most women whose "house pride" stands out in remarkable contrast to the unhygienic filth of single quarters. (Howman, 1945:13).

While his report largely fell short of challenging the gross inequalities informing this overcrowding, he did argue that stability in family life, instead of rigorous surveillance of VD in African townships (which was ruthless, as described in chapter 6), was the solution to reducing VD. He blamed colonial administrators for "the fundamental failure to plan for family life" that had given rise to negative health impacts on the lives of male labourers (Howman, 1945:13). Howman's report brought to light that life in the single quarters was crowded and unhygienic and called for more accommodation to be built, especially female hostels to house visiting female traders. Despite Howman's suggestions, housing for males continued to be prioritised. This led the Department of African Administration in 1946 to build single men's hostels for African labourers, culminating in the present-day Nenyere/Magaba, Shawasha, Matapi, and Mbare hostels and Matererini (Seager, 1980; Ossai, Henrietta and Omerute, 2014). According to Rakodi and Mutizwa-Mangezi (1990), each room in these hostels had bedspace for four males. Makombe (2013) notes how those living in accommodation meant for singles only nonetheless tended to take in relatives, such that this accommodation was 'single' in name only. Africans in Harari township clearly were not living in accordance with their colonial masters' script, which envisioned Harari as dormitory township for male labourers under the legal employ of colonial settlers.

To deter unauthorised Africans from violating regulations concerning singles' accommodation, mechanisms of surveillance were enacted through constant inspections and raids by colonial police. Makombe (2013) notes how in the municipal year 1951–1952, at least 170 women and 120 children were evicted from the

single quarters through raids. Mai Leo, an elderly participant whom I stayed with in one of the flats during my fieldwork, informed me how as a child she used to hide under the bed during raids, noting that this was a common strategy that saved many women and children from evictions. Mai Leo also cited how most women and children managed to exist illegally in Harari due to rural tribal ties with Africans serving in the colonial police force, whilst those with no rural connections survived on bribes to avoid evictions. A census by the Central African Statistical Office (CASO) in April and May 1962 was conducted in a single-male hostel called Old Bricks in Harari, which was built to house two males in each of the 960 rooms (thus with an official population of 1,920). The survey revealed that the hostel in fact housed more than double the official number of tenants, including 2,610 males, 683 females and 749 children (totalling 4,042). With growing recognition of the need to provide family accommodation, the Department of African Administration built very small semi-detached houses to house families. For instance, a section called 'National' was built in the southern part of Harari in the early 1950s with very small houses to provide for family accommodation. Yet despite this, the disparity between bachelor and family structures was reported in the 1950s as 15:1 in favour of bachelor flats (Kamete, 1999). Moreover, even this small number of family houses in National, though designed to each house one small nuclear family, did not serve the purpose that colonial administrators had in mind. Makombe (2013), in his thesis, notes that despite the small sizes of these houses, in the spirit of 'Ubuntu', the residents in these family units took in not only their extended family members but also anyone who shared the same totem as them or anyone who came from the same village. The Shona had great respect for rural ties and ensured that any rural folk coming into Harari in search of a job had a place to stay. Harari, because it was home to the national bus terminus, proved to be the easiest place for any rural folk to arrive. Makombe (2013) notes that this support among the Shona for rural kin led to the overcrowding of their small residential units and more broadly the increasing population density of Harari.

The population increased, and Rakodi notes that by 1969 the township of Harari "accommodated over half of the African population within the municipal boundary", with approximately 60,000 people (Rakodi 1995:50). In response to the growing population and limited space, Africans in Harari found unofficial and informal ways of making do to accommodate this rising population. They started erecting extra structures to accommodate their extended families and to gain extra cash from renting out to lodgers, since demand for accommodation was high. This was vehemently objected to by the Colonial Municipal, since residents' erection of unauthorised structures ran contrary to the city's modernist masterplan. In 1952, the Director of African Administration stated that Salisbury's Superintendent was working hard to prevent the 'ruination' of Harari. Certain members, he noted, had developed "objectionable practices" that included the building of fowl pens and extra outbuildings using opened tins and drums, to house extra people. Similar sentiments were later expressed

by Mr Marsh, the Secretary of Local Government and Housing, who in the 1964 Annual Report of the Secretary for Local Government and Housing (1964:6) voiced his concern over the rampant practice of illegal housing of lodgers in extensions, which included verandas covered with tin and planks in Harari, and how these extra structures and extra people were expanding Harari without any enlargement of sanitary facilities, and with no consideration for increases in the demand for other social services such as health and education. Demolition was, unsurprisingly, the solution. The demolition of structures deemed 'illegal' has been the predominant strategy for managing illegal housing: it dates back to colonial Harari and continues to be used in present-day Mbare. Makombe (2013) documents how, in 1960, municipal authorities swept into Harari not only to destroy illegal buildings but also to remove old dead cars that served as makeshift bedrooms. Such strategies have formed an integral part of the governmental management strategies since colonial times.

In summary, in this section I have indicated how Harari, because of its advantaged position as a transport hub, attracted rural residents (both kin and extended networks) seeking accommodation as lodgers in the capital, resulting in the early signs of overcrowding I have described here. The health risks associated with this were also quickly picked up on by colonial administrators such as Howman (1945), who associated overcrowding with the rise in diseases like tuberculosis and a breakdown in family stability associated with venereal disease and malnutrition in male hostel dwellers. All this indicates early concerns over the health of Africans, whose needs were not being adequately met. In the next section I provide a brief overview of some of the other ways in which Africans made life bearable in Harari, before turning to the rise of informal trading in the township and how this informality gave rise to a range of further health risks.

3.2.3. Diversity, cultural expression, and moral divisiveness

As Harari expanded, migrant labourers were attracted to the township from a range of neighbouring countries including Malawi and Zambia. These migrant labourers brought cultural diversity, making Harari a vibrant space for cultural expression, as Africans negotiated their multiple identities amidst shifting living conditions (Vambe, 2007). Malawians, for instance, introduced their masked cult dance, *Gule waMkule,* and Mozambicans introduced the *butwa* dance. The Shona, for their part, brought to Harari their controversial *Jerusarema*[2] dance,

[2] The *Jerusarema* dance was perceived as a cultural form of expression as well as a symbol for the struggle for survival and freedom from colonial subjugation. Colonial administrators and missionaries felt threatened by it and despite being banned it was performed in bars in townships like Mbare (Mataga, 2008).

whose performance authorities considered a threat, and it attracted a penalty of hanging. Performance and theatre provided a poetic voice through which political, social, and economic frustrations were aired in Harari. Political movements found expression in Stoddart Hall, a historic community hall in Harari, which became known as the place where all Zimbabwean national heroes were paraded in honour of their heroic acts before burial. Historian and literary scholar Maurice Taonezvi Vambe (2007) shows how, despite being repressed by colonial laws, Africans in Harari found a way of making their township lives bearable through techniques that enabled them to perform their identities at social and cultural gatherings through song, dance, and drama. Through performative dances, Africans ridiculed the values of white settlers and found space for the expression for political nationalism (Vambe, 2007). The social activities that emerged in Harari township are noted to have been demarcated along formal and informal lines, with an emerging class of African elites (those with a degree of inclusion in the formal economy; see section 3.2.3) assimilating legitimated social activities that represented modernity. This included events like tea parties and concerts, and these events were, according to Vambe, the preserve for rich Africans only; poorer Africans who were unsuccessful economically were excluded from these more elite forms of cultural expression. Vambe (2007) notes how economically and culturally marginalised Africans, in a refusal to feel subjugated, carved out physical spaces by identifying gaps in colonial surveillance and operating informally in them. Vambe (2007) and Makombe (2013) describe how within these spaces of emergent informality, they created their own subcultures. These were positioned first in open spaces and later in 'shebeens' under the colonial radar, where they brightened their lives through '*Mahobo*' parties.

'*Mahobo'* parties, as noted by Vambe (2007) and later by Makombe (2013), took place in the bushy areas of Harari township and were famous for informal trade in beer (called *skokiaan*) brewed and sold by women. Music and dance made these parties eventful, and the music that emerged from these parties was called '*MaSaka*'. This music derived its name from the fact that '*masaka*' (sacks) were used to build the shacks where the '*Mahobo'* parties occurred (Vambe, 2007; Makombe, 2013). Vambe notes that these '*Mahobo'* parties later moved from the bush into the sheltered spaces of shebeens, which served as vibrant night clubs and 'brothels'. Vambe notes how the popular song "*Aya Mahobo andakakuchengetera"* (here is the abundance that I have kept for you"), sung at these gatherings by women to men, was offensive to the modernised elites and Christian community of Harari township. In this song, women expressed how they had brought their big breasts and buttocks as gifts to offer men at the party, and it is noted by Vambe (2007) to have become very popular in Harari's informal gatherings.

These parties, while perhaps a form of resistance and way of making life bearable, were morally divisive even among Harari's residents. Lawrence Vambe (a different writer to the aforementioned), a Mbare resident

who witnessed these parties, and who seemed to be on the disapproving side towards the '*Mahobo*' parties in his community, described them – in a manner capturing the moralising discourse of the time and the parties' departure from traditional values – as a 'bedlam of untidiness, filth and noise' (Vambe, 1976:146). Describing one incidence that he observed at a '*Mahobo'* party, Vambe (1976) describes how organised sex work was conducted under the cover of thick grass, with female sex workers chaperoned by a man who had the title 'storekeeper'. This 'storekeeper' collected the money and directed male clients to a spot where they could meet with the desired female for sex in the bush whilst the 'storekeeper' was on guard. According to Vambe:

> These degrading practices were the direct result of the shortage of women and the breakdown of morality that had occurred among the Africans in the wake of massive industrial expansion in this city. Social restraints which had prevailed in the old tribal environment had gone overboard. (Vambe, 1976:188)

If these parties were an affront to many of Harari's residents, they nonetheless certainly further solidified colonial administrators' pejorative framings of African sexuality. In this imagining, African men's desire for sex was wild, depraved, uncontrollable, and in need of civilising, and women in turn were constructed as immoral and promiscuous (Kufakurinani, 2015). The increasing visibility of these parties as a moral and health threat is evidenced by Willcox (1949), a medical doctor who, similarly to Holland, connected 'prostitution' to venereal disease but specifically mentioned *Mahobo* parties. In his "Report on a venereal diseases survey of the African in Southern Rhodesia", Willcox observed that these parties were patronised by prostitutes and identified them as key 'vectors' in the spread of venereal disease (Willcox, 1949). In chapter 6, I provide more detailed historical account of how the category of 'prostitute' was constructed and women labelled as such were negatively framed as "vectors" of venereal disease. I also chart the ways that the colonial public health authorities sought to govern sex work and curb the spread of disease resulting from this practice.

3.2.4. Colonial trends of the urban informal economy in Harari

Since colonial times, the three key sectors of the formal economy – namely, agriculture, manufacturing, and mining – were skewed in favour of the white elites, making it difficult for Africans to participate equally in the formal economy. African participation in the formal economy was achieved through employment as industrial employees or as petty business owners of tuck shops, small retail shops, and grinding mills (Bourne; 2013; Mlambo; 2017). The desire to keep Africans fit for work through the provision of an affordable diet made vegetables an important dietary requisite for industrial male labourers, such that colonial administrators welcomed rural vendors into Harari to provide vegetables at Mbare *Musika* (market).The vegetable market was

designed as a formal place for vegetable trading in a designated space that, in the 1960s, was equipped with 200 concrete stalls for displaying vegetables, 18 fowl coops, and 10 wholesale stands, with the initial 200 stalls rising to 983 by 1978 (Makombe, 2013). Herbal traders selling all forms of traditional medicine were officially recognised and had their space, with stalls situated in a central position between the bus terminus and vegetable market. The herbal stall also accommodated traditional crafts such as baskets, door and sleeping mats, clay pots, and cooking sticks. Fresh vegetables traded at the market included green covo, green rape, tomatoes, onions, potatoes, green mealies, maize for mealie, pumpkins, mushrooms, okra, groundnuts, and fruits.

Harari's vegetable market was situated just a few kilometres from the bus terminus, and its proximity to the bus terminus afforded rural-based vendors ease of transportation. Carter House was strategically built opposite the bus terminus as an overnight hostel for rural-based vendors to find temporary shelter. This was instrumental for the colonial authorities in monitoring the movements of vendors in and out of Harari township. While some trading was welcomed, involvement in unsanctioned informal trading was viewed as a threat to the established colonial order, and in danger of spreading the message that unemployed Africans were welcome in the city and could prosper in Harari without relying on their colonial master. Many of the trading activities that Africans survived on were outlawed through a plethora of regulations, and with this emergent demarcation of formal and informal categories of trading came the marginalisation and criminalisation of Africans whose trading activities did not fit into the formal trading category.

According to Makombe, the persistence of 'illegal' trading led to frequent clashes with colonial police, who were popularly known as *Majoni* (Makombe, 2013). Informal traders developed survival tactics to evade the *Majoni* and municipal scrutiny by operating very early in the morning before the *Majoni* had started working and resuming their trade after the *Majoni* had knocked off (Makombe, 2013). Some women turned to informal cooking and selling of food, whilst some resorted to sex work. Women with beer-brewing skills engaged in making '*skokiaan'* beer, which according to Nyota and colleagues (2009) proved to be a very lucrative business that made many shebeen owners very wealthy. The negative impact of *skokiaan* on Africans' health was quickly picked up on by colonial administrators and resulted in the outlawing of the trade and a clampdown on shebeens. For instance, Howman's report (1945) cited how "illicit and powerful alcoholic brews, such as *skokiaan*" had resulted in limited health gains to African males, as their preference for *skokiaan* over healthy meals had led to high rates of malnutrition among African male labourers. Beer and its sale in shebeens were, in turn, held partially responsible for the growth in prostitution, and were jointly the subject of aggressive crackdowns on shebeens. In 1957, the African Beers Act was passed to criminalise beer brewing by Africans, making beer trading a preserve only for those who obtained the right to sell beer in municipal beerhalls, where prices were hiked to

limit excessive drinking (Howman, 1945; Nyota, Mapara and Mutasa, 2009). At the turn of independence, the imagery of both the bus terminus and the marketplace had devolved from a somewhat orderly and highly monitored space to a relatively overcrowded and less controlled one. Makombe (2013) notes how, at independence, middlemen-wholesalers had emerged and along with them a negative subculture of *Makoronyera* (a group of thieves) among unemployed youth, making the bus terminus and marketplace a very unsafe place. In short, as Harari moved into independence in 1980, early manifestations of a vital informal economy were evident, though not nearly as expansive as they would soon become.

3.3. Mbare in the early independence era (1980–1995)

3.3.1. Opening the floodgates

At independence, in a progressive move the Mugabe government adopted the 'one-city concept', which set out to deracialise cities including Salisbury by overturning all restrictive colonial laws (Muchadenyika, 2017). It was a time of jubilation for the once-repressed black populace, as they gained the freedom to move into previously restricted urban spaces. Like every part of the country, Harari – renamed Mbare in 1982 – was now free from colonial scrutiny and men living in bachelor flats welcomed their wives and children into the hostels in a way that they could not before, whilst those living in family units welcomed extended family members into the city. In what Ossai and colleagues called both the "opening of flood gates" and "an ushering in of disaster", the lifting of restrictions that previously barred the black majority from venturing into the city led to a flooding and overburdening of existing facilities, which presented administrative challenges to the new city municipal authority (Ossai, Henrietta and Omerute, 2014:168). Urban migration accelerated without consideration of Mbare's carrying capacity, exerting pressure on existing urban infrastructure, especially housing, water, sewage, and waste facilities.

Male hostels had been constructed with one washing room (for both clothes and plates), two bathrooms, and eight communal toilets on each floor. Those who moved into flats organised themselves and rearranged the way communal toilets, communal kitchens, and communal halls were to function. For instance, during my stay at one of the hostels, I learned how enthusiastic residents had successfully divided the bathing and toilet facilities along gender lines, with males using facilities on the left side and women using those on the right side. These bathing and toilet arrangements were made across all hostels in Mbare. The uncoordinated move by whole families into bachelors' flats led to a change in the administration, as employers who once oversaw their employees' flats relinquished their role in the management of hostels. The responsibility of

running hostels' communal facilities (e.g. yards, corridors, toilets and bathrooms, and kitchens) was handed to the new City of Harare Council administrators, who, in fear of being labelled the enemies of the newly liberated people, tolerated the move but failed to ensure the smooth running of water, toilet, bathing, and waste facilities. The overcrowding in the hostels brought with it vices such as crime, including vandalism and theft of communal property, made more complex since there was no defined sense of ownership (Kamete, 1999). In an interview with Mai Kumbi, a resident who moved into the flats in 1981, she reflected that at one time these hostels were owned by employers who employed people to clean and keep the place secure. Things suddenly changed when companies ceased control of hostel administration, as Mai Kumbi sadly noted:

> When the company removed its security guard the fence around the flats just disappeared, people stole to fence their rural homes. They were excited about taking things that once belonged to white people, it did not feel like stealing. The stealing continued, thieves stole whatever they could from the toilets and bathrooms until the council got tired of replacing stolen tapes. The system just fell apart, cooking in the [shared] kitchen became a nightmare. If you took your eyes away from your pot, your pot just disappeared. People started cooking inside their rooms and electricity became a problem because the electricity was not for many stoves. Things just deteriorated, there was no control, the beauty just disappeared. (Mai Kumbi – hostel resident since 1981)

Writing on the challenges at Matapi hostels, Chirisa highlighted the health hazards associated with overflowing sewage and garbage problems at Matapi hostels, which is a common feature in all Mbare hostels (Chirisa, 2010). The overcrowding in Mbare was not limited to Mbare hostels alone; places like Mbare National and Ma Jorburg also experienced a population boom post-independence. Rakodi notes that in Mbare there was an "overcrowding of the existing housing stock and extensive illegal lodging" (Rakodi, 1992:130). Before independence, all housing in urban locations was rented as public housing, but at independence a change in housing policy occurred, allowing individuals to own their houses. According to Kamete (1999), when ownership was passed on to individuals, at this point the municipality lost its ability to monitor urban structures (Kamete, 1999). Basking in their new-found political freedom, which removed colonial municipal surveillance, most residents built extensions to existing legal structures and/or extra housing facilities in the form of cabins, most of which were deemed substandard. Mashavira (1999) observed that most fell outside the allocated 200 square metres, encroaching into roads. These extensions, like during the colonial times, were built to allow for large families and to make extra income from renting out to tenants, but this was done on a much larger scale in the free Zimbabwe.

3.3.2. Economic austerity and the rapid growth of the urban informal economy

This section provides an overview of the rapid growth of Mbare as a home to informal entrepreneurship in Zimbabwe. At independence, the incoming government inherited one of the most industrialised economies in sub-Saharan Africa, ranking second only to South Africa (Mlambo, 2017). The economy fared well in the first decade of independence, with incredible growth in the civil service and an expansion of the middle class, though the settlers' continued control over commercial agriculture and the manufacturing sector soon became apparent as black empowerment was not realised. The second decade after independence witnessed a significant slump in the manufacturing sector resulting from negativities associated with ESAP, which led companies to downsize or face closure, as well as the retrenchment of 25,000 employees in 1992 (Mlambo, 2017). The neoliberal ESAP "became synonymous with the growth of the informal sector in Zimbabwe during the period 1990 to 2000" (ZERAPU, 2014:12) as market liberalisation and deregulation triggered a burst of informal entrepreneurship. The retrenchments heralded the growth of small-business enterprises, leading Zimbabwe to gain a reputation as a "nation of traders". This shift is best described by Mlambo in the article "From an industrial powerhouse to a nation of vendors", which details the deindustrialisation process that led to the rise of small-scale business enterprises (Mlambo, 2017). By 2010, the Zimbabwean economy had, according to Bourne, "weakened to only 2 per cent of the value of South Africa's" (Bourne, 2011:129).

It is against this backdrop of a shrinking formal economy and escalating poverty that "the majority of Zimbabwean households turned to the informal sector, selling a wide range of goods from vegetables to backyard manufacturing" (ZEPARU, 2014, p. 12). To mitigate the negative impacts of deindustrialisation resulting from ESAP, in 1994 the government amended legislation to allow for home industries by introducing Statutory Instrument 216, which made acceptable – and thus partially formalised – the conduct of previously 'informal' activities in urban areas (Muchadenyika, 2017). This resulted in a "flourishing of informal activities such as hairdressing, tailoring, book-binding, wood or stone carving as well as welding and carpentry in urban areas" (ZEPARU, 2014:12). In Mbare, this culminated in the establishment of new sites – including *Magaba* home industry and Mupedzanhamo flea market – as a government strategy to absorb skilled labourers whose employment had been terminated following ESAP. The *Magaba* home industrial site attracted artisans, especially those skilled in tinwork. *Magaba* means 'tin', and the place was thus named because a lot of work with this metal is done in this noisy area. It was developed very close to Nenyere flats and due to this proximity, the flats gained the name '*Magaba* flats' and the name Nenyere was somewhat overshadowed. *Magaba* home industry, because of its disorderly nature, is also colloquially known as *Siyaso*, which means 'leave it as it is' – a name given as a clear warning to City of Harare Council authorities not to meddle in the affairs of *Siyaso* home industry. Mupedzanhamo (or 'that which ends poverty') was also popularised during the era of ESAP as an opportunity for small entrepreneurs to take the clothing industry by storm, and quickly gained popularity as a

place where people could get very cheap clothing. Mupedzanhamo was situated on the other side of Magaba flats, and hence there developed a vibrant hub of informal trading around these flats. I will in section 3.4.5 provide an in-depth analysis of Mupedzanhamo flea market. The rise of *Magaba/Siyaso* and Mupedzanhamo flea market enlarged Mbare's informal economy, and traders thronged daily to Mbare's bus terminus, Mbare *Musika*, Mupedzanhamo and *Magaba/Siyaso* home industry, such that Mbare gained fame as a place where one can find and buy almost anything. By the end of the 1990s, the government had successfully promoted neoliberal ideologies of entrepreneurialism that favoured indigenisation and self-employment. Jones (2000) notes how government tolerance of 'home industry' and 'self-help' projects had by the end of the 1990s promoted the emergence of a vibrant informal economy that became more pronounced in the new millennium, when it became common practice for people to engage in economic activities on almost every street corner.

As the new millennium emerged, ESAP had resulted in the erosion of the early 1980s welfare state in favour of neoliberal policies that had negative socioeconomic effects and had paved the way for the informalisation of the Zimbabwean economy. The decade of the 1990s ended with the rise of MDC – Vatete's political party – which I introduced at the beginning of this chapter. The entrance of this opposition party to the arena profoundly impacted the biopolitical governance of Mbare, as will be indicated in the next sections.

3.4. Contemporary Mbare (1995 to the present day)

3.4.1. The new millennium, *Jambanja*, and informal living in Mbare

In this section, I provide a background to the politics of accommodation, water, and sanitation facilities and their impact on health in contemporary Mbare. The ZANU-PF-led government entered the new millennium with its first credible opposition in a context of a deindustrialising economy heading towards more informalisation. Conscious of its waning popularity, the government in 2001 adopted and implemented the Fast Track Land Reform Programme, an infamous land-grab programme led by war veterans that promoted the invasion of white-owned farms. This had an impact of alienating the nation from the international community over the shocking violation and suspension of the rule of the law, the closure of international credit lines, and a sharp decline in the Zimbabwean dollar (Green, 2018). According to Tendai Biti, former Minister of Finance, following the land grab inflation soared: it had reached 100% by 2002, galloped to over 365% by 2003, and skyrocketed to 500 billion per cent in September 2008, to the extent that by December 2008 a 10-trillion dollar note could not buy two cans of Coca-Cola (Biti, 2014). This in turn fuelled major deindustrialisation, leading to further company closures and retrenchments, with unemployment pegged at 85% (ibid.). As deindustrialisation and hyperinflation

gripped the nation, mass impoverishment and a collapse of urban social services occurred, causing the country to lean heavily on the informal economy. This cemented Mbare and its famed spaces – the *Magaba*/*Siyaso* home industry, Mbare *Musika*, Mbare bus terminus, and Mupedzanhamo flea market – as the hubs of informal economic activity.

An exploration of the Fast Track Land Reform Programme reveals that land grabs occurred in a forceful and unruly manner called *Jambanja*, a defining characteristic of which is a militaristic style that completely defied the rule of law (Mbiba, 2022). The word *Jambanja* simply refers to a militant/forceful way of taking/possessing, and in this instance *Jambanja* introduced and condoned a violation of both the provisions of the Town and Country Planning Act and the Urban Councils Act (ibid.). What had started off as a move by disgruntled war veterans to repossess 'their' land from white farmers spilled over into the domain of urban space. This led to the creation of informal (dis)empowerment structures through which Mbare was transformed into a place of great contestation over the governance of urban space. The outstanding victory of the opposition party – MDC – following the 2000 parliamentary election, in which MDC officials secured all council seats available in Harare, gave the ruling party another adversary. In response to this victory and the possibility of further political losses, the ruling ZANU-PF party mounted a sustained campaign to defame MDC through interference in the running of urban council affairs (Musemwa, 2012; Ncube, 2019; Chigudu, 2020). This is an activity that the ruling party is still engaged in and has, indeed, become very good at. This interference has changed the governance of Harare city, with Mbare in particular becoming a site of contestation and power struggles over the administration of council property and services (Matamanda *et al.*, 2019). Informal actors in the form of Chipangano – a ZANU-PF youth-led militaristic outfit – emerged in Mbare (McGregor, 2013), adopting the *Jambanja* way of doing things by forcibly taking control of the governance of Mbare's municipal flats and trading spaces. Figure 14 provides an extract from the Kubatana archives, documented by the Combined Harare Residents Association in 2012 and entitled "Chipangano mutates into Mbare Residents Association". In this extract, the Combined Harare Residents Association highlight the *Jambanja* kind of interference of Chipangano in the administration of houses and trading spaces in Mbare. A quick glance at this article reveals that Chipangano had taken over the entire building – Carter House – previously designated as overnight accommodation for out-of-Harare traders.

Chipangano mutates into Mbare Residents Association
Combined Harare Residents Association (CHRA)
November 09, 2012

With pressure mounting on the infamous Chipangano youth militia group both from within ZANU PF and civil society, the group has resurfaced under the daft guise of Mbare Residents Association. Jim Kunaka who has now become a political mutant, acting as a civic activist during the day and politician by night has been confirmed as the chairman of Mbare residents association. Ironically, residents have dissociated themselves from this bogus residents association adding that it was just another Chipangano in the making save for the for the name only. Instead of representing residents in Mbare, the association has gone unbridled, extorting cash from traders, vendors and further occupying council owned premises. Mbare residents association has started distributing market stalls to undeserving people who have clear links with ZANU PF. Jim Kunaka has on many occasions defended this position basing on the local economic and empowerment drive. However, CHRA can reveal that there has been a massive lapse in local economic development due to the unscrupulous politicization of local business coupled with the fact that Harare city council is collecting less than half of the revenue that it's supposed to be collecting.

We have on many times reported that Harare City Council lost Carter House, an overnight accommodation facility for travelers to Chipangano which has now turned to Mbare residents association. Carter house is being used as a ZANU PF office and a ZANU PF flag has already been put at this premise which is an authentic gesture that this place indeed now belongs to ZANU PF. CHRA can exclusively reveal that Chipangano met at Paget house and made a unanimous decision to return Carter House only after elections. Carter house is the official address that is used by Jim Kunaka.As if that is not enough, Jim Kunaka claims that now he is the rightful owner of number 5 special house. Recent reports by state media indicate that Harare City council has failed to deliver rudimentary services in Mbare which is however by and large a mischievous statement bent on further tarnishing the image of the local authority. Without wanting to protect the compromised image of council, there is need for people to understand that Harare city council is not collecting rates and levies from most of the flats and market stalls. Each time council officials try to come and attend to an issue in Mbare, more often than less, they are chased away by these militants who are always vilifying Harare City councilors. Clement Chimombe Councilor for ward 11 Mbare is on record for having resisted a tour of Mbare headed by the mayor adding that "lives could be lost". This is a stark outlay of how bad things can be in Mbare according to the Councilor.

CHRA reiterates its call for the demilitarization of Mbare. There is nothing wrong with people forming more residents associations for this opens more space for the democratization of local government in the Country, however it defies the principles of civics for political players to nicodimously operate as residents associations under the banner of darkness in a bid to safe-guard their illegal activities. We urge residents of Mbare not to fall prey to this bogus organization which is bent on self driven economic gains without putting the genuine concerns and issues of Mbare residents first.

Visit the CHRA fact sheet

Figure 14: Chipangano takeover http://archive.kubatana.net/html/archive/locgov/121109chra.asp

This article reveals the magnitude of political interference, which is discussed in the following section.

3.4.2. Political interference and the plight of flat-dwellers in Mbare

Post 2000, demand for more accommodation in Mbare found Chipangano at the centre of yet another wave of hostel occupation. This occupation was birthed not out of jubilation about the democratisation of previously off-limits spaces, but the more recent, post-struggle disgruntlement over the lack of adequate housing, vented in the *Jambanja* style. Conversations I had with some flat residents revealed that some residents teamed up with Chipangano to take over the flats in a section they deemed habitable, without municipal approval. This takeover was best expressed by Mai Leo, a resident at Shawasha flats, in an interview as she noted that:

> … Then people said these halls have nothing in there, let's just divide them for our sons so that they have somewhere to sleep. That is when the divisions started. They just divided using card boxes and planks … Some even ended up getting married in those C halls and today they have children going to school living in very small divisions as families.

These halls were popularly called 'C halls' because of their location on the C (or top) floor, with the ground floor known as 'A floor' and the middle floor as 'B floor'. When these hostels were built during colonial times, each hostel had a hall on the top floor that served as a common room. The space that the white administrators had

designed as recreational space turned into homes with an unanticipated spontaneity that left the City of Harare Council in a weakened administrative state. The allocation of residence in the C halls was based on political affiliation to the ruling party ZANU-PF, mediated by Chipangano. In further defiance of council bylaws, illegal subletting of rooms became commonplace in Mbare flats, with single rooms being divided by curtains or wooden boards into 'half' or 'quarter' rooms, with a half room shared by two tenants and a quarter room shared by four tenants. This was the prevailing scenario that I witnessed during my fieldwork. As these allocations and subletting were occurring, no consideration whatsoever was made of the impact this had on existing water, bathing, and toilet facilities, which had already since the 1980s been inadequate following the move of families into bachelors' residences.

Howman's report, as we saw above, had long ago identified health challenges associated with overcrowding in bachelor flats as resulting from local authorities' "fundamental failure to plan for family life" (Howman, 1945). His warning to local city administrators – that "when the local authorities neglect their elementary duties, ill health inevitably increases" (p.7) – remains especially pertinent today. Increasingly powerless to define and enforce regulations that prohibit families in bachelor flats, Harare City Council was unable to fulfil its duties to provide adequate water, toilet, bathroom, and waste facilities to cater for the surging population in Mbare. As more people packed into flats, no provisions were put in place for extra toilets and bathroom facilities, and no extra housing units were built to help decongest the flats. This failure to provide residents with adequate facilities was, in 2010, documented by Precious Shumba, the Coordinator of the Harare Residents Trust Shumba, in her report on the conditions of residents living at Shawasha flats:

> The toilets are unclean, human waste is everywhere on the floors. … The bathroom floors are flooded with dirty water. On the other side of the bathrooms are sinks, which have mostly collapsed. The taps on the sinks have ceased to function. Women were observed washing plates in the filthy sinks, while their feet rested on human waste scattered on the floor. In Block 1, C-Floor, the sinks have fallen, the floors are waterlogged, and the stench nauseating and the whole place is an eyesore. Cast irons have become rotten and there is unending leakages … (Shumba, 2010:3–4)

Public discourse in the media has often decried the inhuman living conditions in the dilapidated Mbare flats. In a national newspaper dated 25 March 2010, the then Mayor of Harare, Muchadeyi Masunda, is quoted as having made a passionate call for the upgrading of the 58 Mbare hostels at the Fifth World Urban Forum, citing the rights of urban dwellers:

> Anybody who gets into a city should expect a roof on their head, potable water …. and access to health. We need to revisit the housing estates in existence. This is where the 58 Mbare hostels come in. They are not habitable. They are not fit for human habitation. The hostels are a source of concern and an embarrassment for me as mayor and knowing that we have our own citizens living in squalid conditions. (*Herald*, 2010)

Under the mayorship of Masunda, the city of Harare had obtained funding from the Bill and Melinda Gates Foundation to build new flats that would take the Matapi residences out of their quandary. However, in 2011, Masunda and his council were forced to divert the funds to a building project in Dzivaresekwa due to political inference, which made city revitalisation in Mbare impossible. The interference by ZANU-PF-backed informal actors, which led to the diversion of funds to Dzivaresekwa, is a prime example of the Mugabe government continuing to deliberately undermine the MDC-led Harare City Council in the eyes of the urban populace. To date, government plans to demolish Mbare hostels and to build standard family accommodation has remained what Chirisa calls "a project that has overstayed the agenda" (Chirisa, 2010:62). For instance, in an online news article, "Govt in ambitious $30 billion urban renewal, new cities project" dated 6 December 2018, journalist Leopold Munhende highlighted plans by the Minister of Local Government July Moyo to "see the rehabilitation and development of some of Zimbabwe's oldest residential suburbs to world class status by 2030", which would involve the demolition of Mbare's dilapidated flats and the relocation of tenants into flats befitting global standards (Munhende, 2018). This, however, remains but a pipe dream, with the upgrading agenda largely being used by ruling ZANU-PF politicians as a campaign strategy aimed at garnering political support.

In 2018, following the demise of the Mugabe regime, the new vice president, Constantino Chiwenga, visited Matapi flats following a fire incident that left 30 residents homeless. The fire was caused by poor electrical wiring, which is common at the flats as residents connect illegally to the power source. During this visit, vice president Chiwenga pledged government support in upgrading Matapi flats, a pledge that was partially fulfilled in 2019. In a move that attracted a heavy military presence, the newly elected president, Emmerson Mnangagwa, graced Matapi flats in May 2019 following the upgrading of a few blocks. The media went wild with stories of the upgrading, which attracted a lot of criticism as it transpired that this highly anticipated and politicised upgrading was not what the Matapi residents had in mind. This upgrading occurred during my stay in Mbare and, on 3 April 2019 when I heard about it, I visited Matapi flats and was able to take two photos (see figure 15). These show a block of flats not yet renovated on the left and a beautifully refurbished Matapi Block 4 in grey and black on the right.

Figure 15: Matapi flats: Block not yet renovated (left) and block that has been renovated (right)

While at face value the renovation looks to have been transformative, journalist Anna Chibamu, from New Zimbabwe, in an article "Matapi flats upgrade: Residents unhappy with gesture" (see figure 16), describes Matapi residents' disgruntlement with the government's complete lack of prioritisation of their desire for a healthy and hygienic living environment. In a context where some residents were practising open defecation due to malfunctioning and overwhelmed toilet and sewer structures, the upgrading, they asserted, had simply aimed to beautify the outside walls instead of upgrading the decayed sewer system (Chibamu, 2019).

Matapi flats upgrade: residents unhappy with gesture
8th April 2019 **By Anna Chibamu**
RESIDENTS of Mbare's Block 4, Matapi Flats, are reportedly not happy with government's move to repaint the outside of the dilapidated structures while they remain inhabitable inside. According to a residents' representative group, the Harare Residents Trust (HRT), local people feel that authorities got their priorities wrong. In a statement HRT said interviews held during a tour of the Blocks of Flats after the re-painting revealed that residents while the outside of the flats now look "nice and beautiful" the structures remain a death trap inside.
"Residents felt that they were the ones who were supposed to give government and the Council their order of priorities within the urban renewal programme to make it more public participatory," said HRT. The HRT added that, whilst government had prioritised the painting of the outside to make the old flats look more appealing, the inside of the blocks were "traumatising."
"Government has prioritised painting the outside of the flats to look nice and beautiful but the inside leaves one shocked and traumatised at how residents live the way they do, with flowing sewer in their toilets and bathrooms. "The sinks are collapsed, and human waste is evident. The walls have huge evident cracks, which threaten their lives every day with three or more families sharing one room with children. There is no privacy, risking sexual harassment," the group said.
Among other issues of concern are that one block of 17 different rooms share one toilet which has deteriorated to the extent that residents now resort to the banks of the nearby Mukuvisi River to relieve themselves. One resident Anne Kawara (67) told HRT that "it is better to take a bath outside at night than to be in these horrible bathrooms". Another resident Sikusakhula Kawamba who lives in a room opposite a toilet complained that for her "it is like living in the toilet". Meanwhile, HRT says it has suggested to that the flats be demolished or be overhauled completely in order to exhaustively deal with the problems.
https://www.newzimbabwe.com/matapi-flats-upgrade-residents-in-unhappy-with-gesture/

Figure 16: Article by Anna Chibamu: Matapi flats upgrade: residents unhappy with gesture

A conversation I had on 3 April 2019 with Matapi residents over the upgrading revealed that what had happened was merely the painting of an old building. As one resident indicated wryly, it was like painting a dead bus and saying it was new, whilst another health-conscious resident complained that:

> Paint does not stop disease, if only they can deal with the sewer and water issues, we don't have regular water, and the sewage leaks every day. We are grateful for the painting, but a clean and healthy environment is what we need most. (Matapi resident)

The need for greater attention to sanitary infrastructure was also echoed by journalist Idha Mhetu who, on 17 May 2019, in the article 'Matapi flats still a long way to go to hygiene', posted images of raw sewage inside Matapi toilets, highlighting the unhealthy state of living despite the renovation (Mhetu, 2019). Concern over the unhygienic living conditions in Mbare is not unique to Matapi flats alone but occurs across most of the flats in Mbare. Reporting an incident not very far from the open defecation reported at Matapi flats, Phyillis Mbanje, on 5 November 2017, wrote an article called 'Flying toilets at Mbare flats', capturing how in the absence of a functional sewer system and with consistent water cuts, some upstairs residents at Matererini flats had resorted to defecating in plastic bags and throwing down the bags with dirt onto the ground. This practice, according to Mbanje (2017), had left residents on the ground floor struggling to live with the filth, whilst those employed by Harare City Council to clean the premises bitterly complained about the habit. Mbanje (2017) reported one cleaner's assertion:

> At times when the plastic bags hit the ground they break, spewing their contents everywhere. Handling your own waste is not pleasant, so just imagine having to touch someone else's. (Mbanje, 2017)

On the same incident, Mbanje (2017) quotes an elderly woman who in remembrance of the good old days noted that:

> Back then these flats were our pride and joy. They were squeaky clean. Supervisors would move around educating people on hygiene. If you failed to conform, they would chuck you out. (Mbanje, 2017)

Figure 17, which presents pictures I took in June 2019 in one of the Mbare flats, exemplifies the dilapidated state of the sewer systems that are a common feature in all Mbare flats built during colonial times. As will be indicated in my findings in the next chapter (chapter 4), community health workers moved through these spaces educating people about hygiene, yet the evident problem for residents was that it was near impossible to be 'hygienic' in a place surrounded by dilapidated sewer systems with sewage overflows. In that chapter, I highlight the role of antibiotics as a quick fix for the issues below the surface of a new paint job. More worrisome in a context

surrounded by dirt, however, are issues of water scarcity. In the next section, I provide an overview of the genesis of boreholes as a solution to water scarcity in Mbare, rather than clean piped water.

Figure 17: Dilapidated sewers and sewage overflow at the flats in Mbare

3.4.3. Biopolitics of water in Mbare and discourses around disease

From the very beginning, colonial Salisbury had difficulty supplying adequate water to its residents, and post-independence not much was done to address colonial city planners' flaws. Numerous scholars have written on Harare's water problems and associated health challenges, notably the infamous cholera outbreak of 2008–2009 that killed over 4,000 people, predominantly in urban areas (Musemwa, 2008; Youde, 2010; Kamete, 2017; Chigudu, 2020). These scholars have generally attributed the failure of Harare City Council to provide water to 'dilapidated and decaying' water and sewage pipes, lack of foreign currency to buy chemicals to treat drinking water, and political interference from the Minister of Local Government, particularly in opposition areas (Chigudu, 2020). The present water shortage, which has seen the mushrooming of boreholes in Mbare, can be traced back to colonial Rhodesia, where the major water supply systems were poorly planned such that the city's water catchment followed the same route as the sewage discharge (Musemwa, 2008; Chigudu, 2020). Musemwa (2008) notes that due to this poor planning, water purification has been a costly exercise to the Harare City Council, mainly due to challenges in obtaining the foreign currency required to procure chemicals for water purification. The eight-month dry period before new rains, coupled with high rates of evapotranspiration, have, according to Chigudu (2020), also compromised Harare City Council's ability to supply water, thereby plunging the city into prolonged periods of water cuts as a way of rationing water. Compared to the situation in other high-density suburbs in Harare, the problem of water in Mbare is a relatively a new phenomenon, as noted by a senior health official who has worked in Mbare since 2007. He noted that Mbare was spared the 2008–2009 cholera outbreak because "the water supply was uninterrupted and the sewer system at that time was okay" (itself connected to the fact that Mbare has long been a ZANU-PF stronghold). The official further explained that

the problem of lack of water only became a reality in 2013, when Mbare started experiencing water rationing, which was quickly followed by an outbreak of typhoid:

> Our 2013 typhoid outbreak was associated with lack of water because that's when we started getting serious water cuts. To prevent future outbreaks boreholes were drilled, that is how we ended up with a lot of boreholes in Mbare. (Senior health official, Mbare)

The Harare City Council health services director is recorded in a national newspaper (*Herald* 27 March 2013) as having noted that 42 typhoid cases were recorded in Mbare in the week ending 3 March 2013 after water taps had run dry for the whole week. Following the 2013 typhoid outbreak in Mbare, there was a dramatic rise in boreholes in Mbare as donors stepped in to alleviate the problem of water shortages. Reflecting on how boreholes were drilled, however, the senior health official in Mbare noted that boreholes were improperly sited due to political interference, leading to a subsequent 2017–2018 typhoid outbreak in Mbare:

> Our 2017 typhoid outbreak was actually associated with contaminated boreholes … what we noticed was that some of the boreholes were drilled where sewer flows over. Burst sewer especially when the rains come actually flows over to the borehole and there was a lot of sewage seeping. Donors when they came in, the city architectures or city plumbers were supposed to be the ones leading the donors, but they were led by the politicians – the councilors and the like. So, each councilor was saying I want a borehole here, I want a borehole here, and donors were just drilling and some of the contractors, their boreholes were substandard. When Oxfam came and their engineers were looking at these boreholes, they found that these boreholes were wrongly positioned along the sewers. That's why we found a lot of faecal matter and numerous coliforms from borehole water samples. (Senior health official, Mbare)

The drilling of boreholes in Mbare without technical insight into the city's architectures, to satisfy the demands of politicians, therefore not only failed to address the lack of water leading to the 2013 outbreak but may have caused another. Figure 18 provides a map created by MSF Zimbabwe, one of the humanitarian organisations that has played a significant role in the promotion of water, sanitation, and hygiene in Mbare. The map shows in black dots the many boreholes scattered around Mbare, and most importantly, in red dots, the contaminated boreholes that the senior health official indicated were the source of the typhoid outbreak.

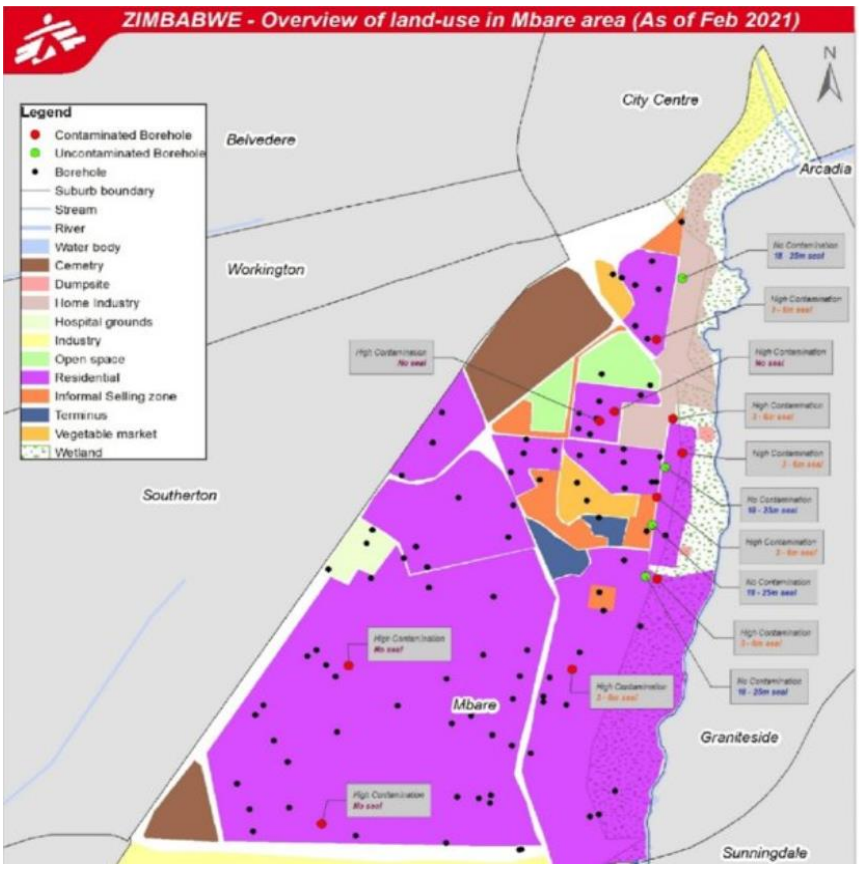


Figure 18: Map showing boreholes in Mbare (Source: MSF Zimbabwe)

In her book *The biopolitics of water*, Hellberg (2018) shows how, in the eThekwini community in South Africa, "water and its functions, and its management and allocation, [were] addressed as inherently political and, more specifically, biopolitical" problems, manifested through tensions and contestations that arose over perceived injustices in the distribution of water (Hellberg, 2018:1). The management of borehole water in Mbare, like in eThekwini, is fraught with political tensions. Jeremy Youde (2010), writing about the cholera epidemic in Zimbabwe and its connections to water politics, notes how the Zimbabwean government deliberately supported the politicisation of clean water provision, making water "a tool in a partisan struggle", as evidenced in the Mbare community (Youde, 2010:700). This politicisation of water in Zimbabwe has been aptly termed 'dirt(y) politics' by Glen Ncube (2019), following Foucault's theories of biopolitics. Ncube showed how dirt(y) politics were enacted by the ZANU-PF-led government through a 'technics' of water management to variously support, undermine, or abandon groups within the urban population. The high stakes and dire consequences of water politics are perhaps most comprehensively described by Simukai Chigudu in his book *The political life of an epidemic*, which focuses on the 2008–2009 cholera outbreak. This shows how political interference led to the deliberate making of urban disorder to the complete disablement of regulations and systems promoting hygiene

and waste management (Chigudu, 2020). The water narratives presented by Chigudu hauntingly describe residents' struggles over bare life as they navigated the cholera epidemic.

My fieldwork reveals that dirt(y) politics remains a feature of residents' lives in Mbare today. A typical day at the flats, I found, began with and revolved around the (non-)availability of water from the tap (piped water), popularly known as '*mvura ye kanzuru*' (council water). Lack of council water at the flats meant that '*murume weku kanzuru'* (the man from the council), who cleaned toilets every morning, could not come to clean or flush toilets, yet the toilets remained in full use. Only the man from the council could flush toilets every morning because only he had the handle that connects to the water cistern used to flush toilets. Due to rampant theft and vandalism of toilet facilities, toilet flushing handles had been removed and residents were expected, if council water was available, to fill a bucket for flushing purposes. Lack of council water at the flats resulted in a foul-smelling odour as one entered the flats, and in the event that council water was unavailable for more than three days women would team up to fetch borehole water to clean toilets, because they feared their children would catch disease from dirty toilets. The day council water came back meant a crowded bathroom and washing room as women competed to access water to wash the dirty clothes that piled up during the absence of water. Lack of council water meant very long queues for drinking and cooking water at the limited number of trusted boreholes, as residents shunned boreholes suspected of having unclean water. The unpredictability of council water meant women had to adopt many 'making do' practices to obtain not just water but 'clean' water, as will be revealed in chapter 4.

Clean water mattered. MSF, taking a sustainable development approach, was noted by residents to have installed and handed over boreholes with clean water for community members to self-manage. As Hellberg (2018) has argued, such discourses are intended to construct 'responsible and efficient' water users able to 'sustainably' manage water in their locality by maintaining their own borehole. Conversations I had with numerous residents, however, indicated that the handing over of boreholes to community members had, unbeknownst to MSF, led to 'borehole wars' among residents – the beneficiaries of the water – fragmented along political lines. Far from the desired 'sustainable and responsible' management of boreholes, accounts of 'unsustainable and irresponsible' management emerged as residents indicated that boreholes became active sites for political contestations. Accounts from residents indicated that if ZANU-PF supporters were in charge of the borehole that day, those from the opposition party would be barred from accessing water, and vice versa. Notions of sustainability were therefore suspended in Mbare as local politics took over, resulting in the eventual shutdown of many boreholes that were poorly maintained or unmaintained.

In this highly emotive political atmosphere, there appeared to be one borehole that prevailed over politics and gained the name "*Umambo hwemvura yakachena*" (the kingdom of clean water). In their pursuit of clean drinking water, borehole committee members who championed this 'kingdom' purified themselves from the politics of the day. Seemingly taking some inspiration from the technical, responsibilising discourses of MSF, they defined and identified themselves not through political affiliation, usually so inescapable in the divisive identity politics of Mbare, but simply as 'water users'. The 'kingdom of clean water' was constructed by these residents as a place where all political identities were stripped away in favour of the co-production and empowerment of a citizenry of 'water users'. In practice, anyone who ascribed to the title 'water user' gained access to clean water, regardless of which part of Mbare they came from, and most importantly political affiliation did not garner access to or denial of water. The creation of this 'kingdom of clean water' came at a cost, as lead borehole committee members who promoted zero tolerance of politics suffered from political harassment and arrests, but nonetheless they succeeded in making their message clear to a politically polarised community that what they wanted was a 'kingdom' where water reigned, not politicians.

Much of this I learned during a borehole tour under the guidance of the borehole committee members, where the photos in figure 19 were taken. During this tour, committee members explained that through effective 'organised practices', citizens organised themselves using duty rosters (see duty roster on a chalkboard in the photo on the right of figure 19). A borehole committee, headed by the chairperson and a team of borehole committee members in Mbare, was responsible for maintaining order and for collecting the money required to

Figure 19: A community borehole managed by residents

buy borehole chemicals and petrol for the water pump in case of electrical power cuts. The water tanks and borehole pump were strategically and deliberately situated inside the church wall for security. The church, as a borehole site, served as a neutral place free from political interference, as well as symbolising the need for oneness and peace. Only the water taps were situated outside the church wall to enable residents' access to

water; but due to high rates of vandalism in Mbare, these taps were fenced, gated, and locked. For effective monitoring, the borehole water was accessed twice a day, in the morning and late afternoon. Birthed from the love of clean water, which residents considered critical for the health of their community, a set of 'mentalities, rationalities, and techniques' of grassroots governmentality were developed by residents, and this enabled the thriving of 'the kingdom of clean water' in a manner that defied political interference. This serves to show that biopolitics in Mbare is not always deterministic or top down, with residents appropriating and adapting water technology and attendant discourses in highly context-specific and creative ways, agencies that I will further explore in relation to the use of antibiotics in chapter 4.

3.4.4. Travel and trade, and their impacts on health and care in Mbare

> The uniqueness of Mbare is that it's a traders' area. During the day everyone comes to Mbare so its population swells. Most of the people that you see during the day don't live in Mbare, they come in for business and they go to their homes. Mbare being a hub, it's like, what do you call an international destination in terms of transport because all buses from all the surrounding countries come to Mbare. You see buses, from Zambia, from Malawi, Mozambique, DRC – they all come to Mbare and in Zimbabwe almost all buses lead to Mbare. That's why here at the clinic we don't only see patients from Mbare, it's all over, we see people from Goromonzi, Murehwa, Chiweshe. They will say but getting here is very easy, it's very easy for us to get here for treatment, because there is no direct connection to the nearest rural clinic where they live. These people are just coming to seek services, it's just that the demand for drugs at this clinic rises because we are seeing a bigger population than planned for. (Nurse in charge, Mbare polyclinic)

That "these people are just coming to seek services", as the senior nurse above put it, was a common sentiment expressed by nurses at Mbare polyclinic. In the last few sections, I have focused on Mbare's residents and the politics of housing and water, but, as should be clear by now, it is impossible to understand Mbare outside of its centrality as a travel and trading hub, the dynamics of which have considerable impacts on health and healthcare as described by clinic nurses. In this section, I describe the implications of travel and trade for health and healthcare, before homing in on the governance of trade.

Conversations with health workers at the two clinics in Mbare – one being the polyclinic, the other its satellite at the foot of Matapi flats – provide insight into the challenges that the daily influx of travellers and traders to Mbare pose for the provision of care. Mbare's accessibility and the proximity of its polyclinic, in particular, to the bus terminus make Mbare polyclinic an ideal place for residents beyond Harare to seek care. One consequence, which the nurse in charge above expressed, is increased demand for medication, a demand that far outstrips the official size of Mbare's catchment population. Highly challenging to plan and procure for,

this partly accounts for the regular stock out of medicines at the clinic that we experienced during our work. However, drug stock outs cannot be solely attributed to Mbare's iterant population and are a common occurrence in most government clinics due to the insufficient availability of medicines for use in public health institutions. Contrasting considerably with the early days of Zimbabwe's health system, the apparent absence of medicines at the clinic compared to the abundance of the open marketplace is the subject of chapter 4.

Clinic nurses and community healthcare workers also stated that the clinics bear the brunt of the negative impacts of trading on health, which they had a lot to say about. Traders flood the suburb during daytime when they come in for trading purposes, which according to a community health worker creates chaos because:

> . When places like *Siyaso* came into existence, there were no public toilets in that area. The business people there never thought of building toilets, so these traders use toilets at Magaba flats or they use Mbare *Musika* public toilets and that creates chaos. (Community health worker, Mbare)

The community health worker's assertions echo section 3.3.2, where I observed that as space was curved out for home industries at *Magaba/Siyaso*, no toilets were constructed. As more vendors annexed the streets, especially those who are not Mbare residents, the demand for toilets grew, and yet nothing was done to add more toilets to cater for the burgeoning Mbare trading population. The photo below shows vendors trading in front of the flats, generally including a mixture of both residents and non-residents.

Figure 20: Vendors trading in front of the flats, with no toilet facilities

Beyond the shortage of public toilets for vendors, concerns have frequently been raised over the filthiness of Mbare *Musika*. Blessing Chidakwa, a municipal reporter, recorded remarks made by Local Government and Public Works Deputy Minister Marian Chombo, during the launching of the Accelerated Refuse Collection Programme. Chombo is reported to have noted that refuse collection at Mbare *Musika* had not occurred for a

long time and called for daily refuse collection at Mbare *Musika* because it is a meeting point for people from all over the country (Chidakwa, 2021). Commenting on the filthness of Mbare *Musika* and surrounding areas, Chidakwa (2021) further notes how rotten fruit and vegetables and overspilling bins are not only an eyesore but also a step backwards in the fight against the cholera and typhoid outbreaks that have become increasingly common in Mbare. Below is a picture taken by Open City Council (figure 21), which shows garbage piled up near residential flats, something that is especially common in spaces where vendors trade in the street, as illustrated above in figure 20.

Figure 21: Garbage dumped near the flats (Source: Open Council Harare)

Because of its lively informal economy, Mbare is considered a place where one can sell or buy anything. Journalist Emmanuel Kafe, intrigued by Mbare's commercial prowess, described Mbare *Musika* as a place where "money never sleeps", likening the way everyone and everything, especially money, moves fast to the famous American Wall Street, with no rests or public holidays; Mbare is a clock that ticks all the time (Kafe, 2018). And as a place where 'too much money' floats around, Mbare has also developed a reputation as a den for thieves, as well as a lucrative twenty-four-hour business place for sex work. As I will describe in chapter 6, sex workers' zones have developed near Mbare *Musika* and Mbare bus terminus in the Majubheki and Tsiga areas. Journalists such as Sithole (2016) have hinted at the existence of stiff competition among sex workers in Mbare given that many women are now resorting to sex work, driving down prices. As shown in the opening vignette of this chapter, Mbare's sex workers' hubs are home to illegal temporary structures built from wood and sacks called *Magoshtos*, where some sex work is conducted, whilst further sex work is conducted in rented rooms. As indicated in section 3.1, the informal trade in sex work has been practiced in Mbare since its colonial origins as Harari. In chapter 6, I describe in further detail how sex work is one of the oldest forms of informal trade in Mbare, whose practice has historically been a key focus in public health discourses around STI control and management, legacies of which persist from the 19th century to the present. As well as further historical analysis, I will present findings

from my ethnographic work with sex workers and discuss the role antibiotics have come to play in their lives and, more broadly, in the management of STIs in Mbare.

As was indicated in chapter 1, the 2008 economic meltdown resulted in a near-collapse of the Zimbabwean health system and lack of foreign currency to procure medicines (Biti, 2014; AMR Core Group, 2017a). This led to erratic drug supplies in Zimbabwe's government-run public health facilities. In this context of medicine scarcity, alternative medicine providers have stepped in to fill this void, making Mbare a vibrant pluralistic healthcare landscape. Medical pluralism is a classic anthropological concept that refers to the coexistence of multiple healing systems and options for healthcare within a society (Leslie, 1980; Cavender, 1991; Jansen, 2001; Meessen *et al.,* 2011; Moshabela, 2017). Anthropological literature points to the existence of a plurality of health providers in which multiple systems of healing exist as "alternative or inter-related systems where patients access care" (Chandler *et al*., 2016:13). The notion of medical pluralism has received numerous criticisms, including that it privileges the perspective of professionals, and that it creates a "false consciousness of choice" and reproduces a "monolithic" concept of biomedicine. Despite criticism, the concept has been evolving and, recently, it has had a resurgence (Gawęcka and Rajtar, 2016). This 'resurgence' of medical pluralism has occurred not only due to the growing popularity of complementary and alternative medicine (CAM) and funding crises in public healthcare settings but also due to "the intensified exchange of people, goods, healing practices", on a global health scale (Gawęcka and Rajtar, 2016:129).

In a weak economy characterised by erratic medicine supplies at the clinic, the use of traditional herbs as an alternative form of care has been on the rise in Zimbabwe (Masiyiwa, 2017), with Mbare hosting the country's largest herbal medicine market at the bus terminus and Mupedzanhamo flea market. Mbare is also home to enterprising traditional healers known for 'modernising' their practices by putting traditional herbs ground into powder into capsules, making them less bitter to swallow (Mapupu, 2015). But it is not just innovative traditional healers who are supplying capsules to health seekers in Mbare; as described in chapter 1, the commodification of health and medicines, and increasing transnational flows of biomedical commodities including pharmaceuticals, has resulted in the rise of drug vendors providing unregulated antibiotics in informal settings in Mbare markets, streets, and homes (Mohammed, 2016; Yikoniko, 2016; AMR Core Group, 2017b). In 2016, journalist Sharleen Mohammed observed the presence of antibiotics in Mbare markets, noting that "there is a booming business in the trade of antibiotics, with vendors practising their trade … selling pharmaceuticals" (Mohammed, 2016). In 2019, the Committee on Health and Child Care expressed its distress in a parliamentary report, indicating that the committee was "greatly disturbed by the proliferation of the unlicensed selling of medicines and drugs in the country's black market", and quizzed the Medical Control Authority in Zimbabwe

(MCAZ) and the Ministry of Home Affairs and Cultural Heritage over the matter (Parliament of Zimbabwe, 5 September 2019). In the same year, the activities of unregistered medicine providers, labelled 'black market' activities, also attracted the attention of the then Minister of Health, Obediah Moyo, who expressed his disapproval of medicine vendors in Mbare. Journalist Kudakwashe Pembere reported Moyo as saying:

> Let's make sure we clear all those people and make sure these people are arrested. Let's go to Mupedzanhamo. They are selling these illicit drugs while we look and allow it to be the norm. It is not the norm. Let us make sure that this stops. (Minister of Health Obediah Moyo, 9 December 2019)

These strong sentiments about eliminating medicine providers at Mbare's Mupedzanhamo flea market shows the extreme antagonistic relations between the MoHCC and unregistered medicine providers. This, as we will see in chapter 4, has created a scenario where residents are depending less on the clinic, which is failing to supply residents with medicines, and often resorting to the marketplace as an alternative health provider. In the next and final section, I provide a brief overview of Mupedzanhamo, the major marketplace where medicines are sold in Mbare, during the time I conducted this study.

3.4.5. Biopolitics and governmentality at Mupedzanhamo flea market

This section, which is especially pertinent for chapter 5, explores Mbare's Mupedzanhamo flea marketplace as a distinct governable space, where the everyday conduct of life is shaped by social and political relations of power. As described in chapter 1, the term governmentality invites us to move away from centralised accounts of power, instead noting how it is increasingly diffuse and decentralised and operating in different places within and beyond the state (Carvalho, 2015). An investigation into the governability of marketplaces in Mbare reveals the existence of multiple governing bodies, each lobbying to achieve its agenda to the making of either disorder, empowering some and disempowering others. In her sensational 'meet the people' rallies in 2014, Grace Mugabe, the then First Lady and wife to former President Robert Mugabe, gained the nickname 'STOP IT' due to her constant application of the phrase 'STOP IT' to rebuke any unwanted behaviour. Specifically, Grace Mugabe raised her voice against the police and blasted them for confiscating wares sold by vendors, instructing them to 'STOP' arresting vendors (Bulawayo24 News, 2014). Grace noted that vendors were operating in line with the country's economic policy, the ZIMASSET, aimed at empowering the majority, especially women, and hence should be allowed to trade. Following these remarks, police activity against vendors immediately stopped, leaving council officials completely helpless as vendors nationwide swelled into Mbare, operating anywhere they deemed fit and selling whatever they had to offer (see figure 22).

Figure 22: Vendors at Mbare markertplace operating in undesignated areas

There arose a scenario of mayhem best described as '*angove madiro aGeorgina*', meaning 'Georgina can do whatever she wills', and headlines such as "Grace Mugabe inspires vendor lawlessness" and "Vendors are not the problem" appeared as journalists tried to account for the proliferation of vendors in the urban streets of Zimbabwe (Misskache, 2015). In what can, following Foucault, be called a 'state of exception', Grace Mugabe stood boldly as the one who could instigate such a state, suspending urban planning and council bylaws regarding trading in undesignated places. Grace's call was, at least explicitly, calling for the inclusivity of vendors. However, as Kamete (2017) and others have noted, while the enclaving or 'warehousing' of informality is often framed as empowering and enabling, it is in fact an oppressive tool of governance that often serves to undermine rights and further cement precarity – something which certainly occurred as informal actors such as Chipangano took over trading in Mbare. Though Mbare has three vibrant markets – Mbare *Musika*, *Siyaso*/*Magaba*, and Mupedzanhamo flea market – for the purpose of this thesis I will dedicate this section to describing the marketplace where I spent most of my time during fieldwork with medicine vendors: Mupedzanhamo.

Mupedzanhamo flea market is situated near the dilapidated flats of Magaba and Shawasha, right next to the Colonial Pioneer Cemetery where World War I heroes are buried. This dilapidated environment is, as Kamete (2017) puts it, 'land that no business desires'. Mupedzanhamo hosts Zimbabwe's largest group of traders, trading in both new and second-hand clothing, traditional medicines, traditional handcrafts, and, not least, pharmaceuticals. Created in the 1990s, Mupedzanhamo is an officially designated flea market owned by Harare City Council. Traders operating at Mupedzanhamo are deemed legal if traders are registered and have paid a levy that gives them the right to trade in council space. Those who are officially registered are allocated

tables to operate from, and instead of using the table space alone, most registered table owners have capitalised on their access to space and have turned into land barons by renting out space on their tables to other vendors (Kamete, 2017; McGregor, 2013). According to McGregor (2013), if a table was two metres long, the table owner would subdivide, sublet, charge, and obtain more money from the fragmented sections of the table, leading to massive overcrowding of the flea market. McGregor notes that, when Harare City Council realised that its space was being unlawfully rented out, it tried to adjust the table sizes to curb the subletting, but this led to an eruption of violence led by the ZANU-PF political militia, Chipangano (McGregor, 2013). The documented history of events at Mupedzanhamo marketplace shows a deliberate interference in council administration by ZANU-PF cell leaders (Kamete, 2017; Mutongwizo, 2016; McGregor, 2013). Ownership of a ZANU-PF card, registration, and membership of the ZANU-PF Mupedzanhamo administrative cell are potent tools in qualifying and justifying a trader's existence, belonging, and protection at the market compared to having official status from being registered as a trader by the Harare City Council.

The decision by some traders to position themselves outside the flea market wall was birthed out of their desire to escape the overcrowded flea market and to operate in a place where they were more visible to their customers. The very first traders to operate outside the wall self-identified and -allocated trading spaces that they currently call 'theirs'; this I learned during my fieldwork with the vendors. Self-allocation of space occurred as traders marked boundaries by drawing lines in the mud and claimed the space within these boundaries as their own. Traders outside the wall are considered 'illegal' by the administrative authority, Harare City Council, and this categorisation causes them to be criminalised for operating in an undesignated area. Their lack of rights over the use of property means that they must set up their tables and chairs every day and dismantle them again at the end of the day. To avoid working in the direct sun, vendors outside the wall possess big umbrellas that they attach daily to their tables for shade. Numerous scholars have conducted studies on Mupedzanhamo flea market, and these studies have focused on traders inside the wall whose primary trade is in clothing. Little research has been done concerning traders operating outside the wall, most of whom are engaged in trading medicines, as will be discussed in chapter 5. Traders operating outside the wall exist in more precarious conditions: they are exposed to harsher conditions than those inside the wall due to their geographical positioning in a space not designated for trading, as well as the fact that most are involved in the sale of drugs deemed illegal by governing authorities. Theirs is a life that revolves more around the logic of '*kukiya kiya'*, a Shona term written about by anthropologist Jeremy Jones in his study of the Zimbabwean economy, which refers to a clever way of 'making do' or self-sustenance through the making of clever deals whilst dodging trouble (Jones, 2010). Traders outside the wall are daily required to dodge trouble, as we will see in chapter 5, Mupambireyi and colleagues (2014), in their study of Mupedzanhamo flea market, note the

existence of a dual administrative structure in the running of the market, with the Harare City Council and the ZANU-PF political committee co-managing market affairs in a decidedly unequal and manipulative relationship characterised by the council's fear of the ZANU-PF administrative cell (Mupambireyi, Chaneta and Maravanyika, 2014). This, according to Mupambireyi and colleagues, made it impossible for the council to get rid of traders illegally operating in the space outside the wall and, in turn, to raise levy fees for better service provision from those operating officially inside the wall (ibid.).

As indicated in chapter 1, Kamete (2017) provides an analysis of Mupedzanhamo flea market as a special enclave where informality is deliberately warehoused. I make use of Kamete's case study and lexicon to provide a description of the market's governing structures. In his study, Kamete identifies the existence of multiple governing authorities and provides insight into the governance structures active at the flea market. He identifies the Harare City Council as an 'operational sovereign' responsible for maintaining order, cleanliness, and service delivery – a task in which it seems to be failing. As an operational sovereign, the Harare City Council is empowered to regulate trading activities through bylaws such as Statutory Instrument 36 of 2017 (No. 3), which indicates that:

> No person shall carry on any business specified in these bylaws or use any premises for any purpose- (a) unless he or she is the holder of a relevant licence; and (b) except on the premises specified in such licence.

In line with the bylaw above, traders operating at Mupedzanhamo flea market are required to register and pay the council fees, which enables them to function as registered traders at the market. Traders who operate outside Mupedzanhamo's wall and are not registered exist in violation of council bylaws. Harare Metropolitan Police is a Public Safety Division within the Harare City Council, commonly known as the council or municipal police, and is responsible for maintaining order and enforcing council bylaws. However, the functionality of this police force is compromised due to political interference from the Minister of Local Government. Kamete (2017) identifies the office and Minister of Local Government as an 'ultimate sovereign' that wields the power of the central government, ultimately determining how council affairs are run. In a 'State of the City Address' dated 11 April 2018, the Mayor of Harare indicated his dismay over this political interference, noting that "municipal police remain hamstrung because they do not have arresting powers". Arresting powers lie in the hands of Zimbabwe Republic Police, the national police force, making the Harare City Council's police force a unit without arresting powers.

Numerous scholars have alluded to the thorny relations between the central government and local authorities, with the central government accused of undermining council authority by deliberately meddling in council affairs to create confusion and inefficiency (Madhekeni and Zhou, 2012; Nyathi and Ncube, 2013; Jonga,

2013). We already began to see this above, in relation to the politics of housing and water in sections 3.4.1. to 3.4.3. The excessive show of power by the Minister of Local Government as an 'ultimate sovereign' has been noted as reducing council administration to "spectators in their own field". This is because the prevailing legal framework allows the minister to legally "enable or disable" local council administrative authority, a practice that Madhekeni and Zhou assert has birthed a "bloodbath" between the central and local authorities (Madhekeni and Zhou, 2012). Jonga, a lecturer at the University of Zimbabwe, alludes to this political interference, stating that strategies employed by the central government are engineered to perpetuate the interests of the ZANU-PF political party regardless of whether the strategies are right or wrong, and are instead deliberately enforced simply to keep matters confused so as to portray council administrators politically affiliated to MDC as incompetent in the eyes of the urban populace (Jonga, 2013). For Jonga (2013), this politicising of council business has incapacitated the council's administrative function, as the office of the Minister of Local Government reigns as an 'ultimate sovereign' over Harare City Council, which affects the running of council business in Mbare.

The state of disorder at central and local levels of governance is further extended at the market level by the existence of another layer of governance in the form of Chipangano, previously indicated in section 3.4.1 as leading the *Jambanja* takeover of C halls at the flats (Jonga, 2013; Mutongwizo, 2014; Kamete, 2017). Kamete (2017) identifies Chipangano as a 'petty sovereign', one that has usurped council authority over all market spaces by violently superimposing itself as the "authority" over market affairs, to the paralysis of council activities. Petty sovereigns, for Kamete, also include those traders mentioned above who rent out council space/table space to other traders such as land barons. Each sovereign, no matter the level, is engaged in a show of power, with the 'ultimate sovereign' shaping the powers of the "administrative sovereign" whilst the 'petty sovereigns' take on (or over) the administrative authority of the council. This is to the disablement of proper governance at the marketplace and, ultimately, the exploitation of bottom-tier traders. Kamete's analysis of Mupedzanhamo reveals how power wrangles have manifested in the malfunctioning of the administration of proper rule of law and order at the marketplace, similar to that which occurred in the 'borehole wars' described above. Failure to fully execute council bylaws has left traders, especially traders operating outside the wall, in a state of partial abandonment. On the one hand, this means those outside the wall are subject to less scrutiny, leading to a state of "*angove madiro aGeorgina*", where the 'Georginas' – that is, traders – are able to do as they will due to poor governance. But on the other, theirs is perhaps the most precarious form of trading of all, subject to none of the protections and exposed to all of the unstable, erratic political environment.

Due to the long-standing politicking that has affected the effectiveness of the council, most traders regard the council police as a toothless dog. When Harare City Council engages the Zimbabwe Republic Police to arrest traders outside designated areas, the fines that traders pay for violating council bylaws are very small and not punitive enough to deter them from operating. Medicine providers at Mupedzanhamo have, within the bounds of their precarious circumstances, made good use of the chaotic governance to build up a vibrant and surprisingly resilient trade in medicines. This is the background to the marketplace where I conducted my ethnography with medicine vendors outside the wall, as will be further expounded in chapter 5.

3.5. Conclusion

Mbare is a dynamic place which, since colonial times, has been unique for its cultural diversity and vibrant economy but also its instability and precarity. In this chapter, l have provided a rich background to Mbare, beginning with its development as a dormitory suburb for migrant labourers with limited housing and sanitary facilities for males, to the exclusion of the women and children who currently make Mbare their home. I have shown how what began as a very controlled, fairly clean, orderly colonial township has, since independence, become an overpopulated ghetto suburb with overstretched, dilapidated sanitary infrastructure overflowing with raw sewage that poses a health hazard to traders and residents. Political interference has hindered progress, as exemplified in the 'borehole wars' and the diversion of funds donated for the building of new housing structures in Matapi to a Dzivaresekwa housing project. Piecemeal efforts to upgrade the flats have occurred, with the Matapi flats renovation raising eyebrows over the prioritisation of painting walls instead of eliminating human waste through a structural revamp of water, bathroom, toilet, and sewer infrastructure. Post 2000, following the rise of MDC as the primary political party opposing ZANU-PF, Mbare emerged as a hotbed for political contestation and interference, with rogue informal actors, particularly Chipangano, becoming notorious for usurping Harare City Council's administrative authority. The informal way of doing things known as *Jambanja* became a pronounced feature in the running of flats and trade in all Mbare's marketplaces. Mbare has been described as a place that swells up with traders during the daytime, but they operate in an ill-designed space with very few public toilet facilities, raising public health concerns over the lack of sanitary facilities. Mbare is a place that begs further exploration of the lived realities of those who live and make a living within it, including residents, traders, and sex workers. In the following chapters, I follow residents, traders (especially medicine providers), and sex workers as they navigate risky living conditions associated with typhoid, cholera, and STIs, as well as an ailing health system. A central part of their strategies to mitigate against the harms inherent in their lived and built environment, I will show, is the use of antimicrobials. What I have presented in this chapter forms

the biopolitical backdrop, not only to antibiotic use, but also the global medicines discourses of AMR and stewardship that are trying to gain traction. Moving forward, in the next three chapters I will zoom in on three spaces – residents/medicines (chapter 4), the informal markets (chapter 5), and sex work (chapter 6) – to draw out how medicines have become embedded into the networks of informal living, and to consider what it would take to extract them without further compromising people's lives, livelihoods, and access to healthcare.

Chapter 4

4. A pursuit for medicine whilst awaiting for the resumption of care

Visibly distraught, Mai Tari led the way, and we found ourselves behind the dilapidated flat building standing a few metres away from foul-smelling sewage that seeped from the broken sewer pipes onto the ground. She pointed at the sewage and said in a shaky voice “This is where it happened”. Though the incident had occurred five months ago, nothing had been done to clear the sewage. A wave of questions flooded my mind as I tried to remain composed. I frantically imagined how a three-year-old could have playfully wandered off from other children and innocently scooped this pungent-smelling sewage into her drinking bottle and swallowed it. Mai Tari continued her story:

> I was selling my knives and dishes at the front of the flats when the children came shouting my name holding my child and a dirty bottle. My heart sank when I heard the children saying in unison *amwa mvura inetsvina* [she has drunk dirty water]. All my strength disappeared when the children led me here to the sewage, straight away I knew that my child was going to have cholera, and two days later the clinic referred me to Beatrice Hospital where she was admitted for severe cholera. The diarrhoea persisted for a week whilst she was on a drip. Thank God, cholera treatment is for free – the hospital gave her cipro [ciprofloxacin] to cleanse the dirty water from her stomach and intestines. Ever since that incident I learned how vulnerable we are to infection especially our children living in this place full of faeces, where there is no hope that pipes will ever be fixed, so *toita zviripo* [we make do with whatever there is] to survive.

Figure 23: The place where Mai Tari’s daughter found and drank dirty water

4.1. Introduction

Metaphors of antibiotics as akin to bleach, as expressed by Mai Tari in the opening vignette, were common during the course of my fieldwork. Ciprofloxacin, fondly known as 'cipro' or 'supro' by community members, is an antibiotic identified as likely to have higher potential for resistance, and hence is placed in the 'watch' category of the WHO's Access, Watch and Reserve (AWaRe) list (WHO, 2015b); however, it is one of the antibiotics that was commonly used in the community. This antibiotic was perceived as a cleansing agent used in dealing with the emergencies associated with the dangers posed by unhygienic conditions, which often predisposed community members to diarrhoeal infections. According to Zimbabwe's standard treatment guidelines, ciprofloxacin is indicated as the drug of choice for the treatment of 'persistent' diarrhoea and cholera. In a study that involved a review of 264 records of patients treated for cholera during the 2018 cholera outbreak in Harare, at Beatrice Road Infectious Disease Hospital (where Mai Tari's daughter was hospitalised), Emmanuel Govha and colleagues noted how, despite showing high levels of resistance, ciprofloxacin was the most commonly prescribed antibiotic, with 63% of the patients having received ciprofloxacin, in comparison to 13% who received ceftriaxone, and 3% who received azithromycin (Govha *et al.*, 2019). These findings led Govha and colleagues to conclude that "there was over prescription of antibiotics" as only 16% of the 264 patients had been managed without any antibiotics, and to recommend the strengthening of rational drug use to curb the 'over prescription of antibiotics'.

As indicated in chapter 1, the social science literature on AMR – especially on practices – has made valuable contributions to showing that 'irrational' medicines use is highly rational in context. In this chapter, I begin by demonstrating how in search of good health residents not only rely on the curative approach to medicine but also make use where necessary of preventative methods to manage the insanitary conditions surrounding them, through 'making do' practices that go beyond medicines use. I also go further to show how, in a fractured health system, residents 'temporarily' fall back on informal ways of 'making do' in pursuit of medicines and how their pursuit of medicines is closely connected to broader aspirations and memories of better times and care. In thinking this through, I draw on a more recent trend in medical anthropological scholarship that has challenged the deterministic imaginings of power running through accounts of global health that have suggested that people's subjectivities are entirely shaped by structures and power (Marsland and Prince, 2012; Geissler, 2015; Dixon and Tameris, 2018). For instance, Kamete's analysis in chapters one and three on the warehousing of informality heavily reflects structural determinism as he explores the 'structural' determinants of informality with very little consideration given to the agencies of the 'informals' operating within the enclaves of informality. Geissler's notion of the para-state in Africa denotes "the ways in which the state, albeit changed

or in unexpected ways, continues to work as structure, people, imaginary, laws, standards" (Geissler, 2015:1). I show the unexpected ways the aspirations of the Mugabe government developmental state (indicated in chapter 1) are now but an absent reality, as suddenly the once-promised 'health for all' has drifted beyond the reach of the people it was intended to benefit, leading Mbare resident-BaKudzi to describe his local clinic during an interview as "a clinic without medicines, that is why we have to manage for ourselves, gone are the days when our clinic had everything". Gogo Moyo, an elderly woman remembering the good old days when the Mugabe government preached "health for all by the year 2000" and when great strides were indeed made in promoting health, also had this to say about her clinic, at a time when President Emmerson Munangangwa had taken the lead in new political dispensation following the demise of the Mugabe government in November 2017:

> The lack of medicine at the clinic is not the clinic's fault, it is the fault of the nation. The nation is very sick, this sickness has seeped everywhere, the government is sick, the city council is sick, the banks are sick, and so is the clinic, how can you expect help from a sick clinic. In the past, when the nation was well, nurses used to give us medicine. They gave medicine because the nation could afford medicine for its people. Now the nation is all crippled up and nurses have nothing to give. If you hear them telling you to go and buy elsewhere, just obey. (Gogo Moyo – 72-year-old Mbare resident)

Gogo Moyo's utilisation of the metaphors of a 'sick' and 'crippled' nation to describe the state of 'sickness' that had seeped into her nation is very insightful as it points to a 'crippled' nation with incapacitated clinics, different from the clinics of the past, which she longed for. This has left behind a 'biopolitical longing' (Geissler, 2013), articulated through residents' desire for the centrally controlled, well-oiled machinery of a state that cares for people (not just medicines). The existence of fractured remnants of the older establishment – which once worked like a well-oiled machine, resulting in effective procurement and distribution of pharmaceuticals, stringent regulation of pharmaceuticals, and the practice of rational drug use – stood as a reference point for the good many residents had enjoyed, and inspired hope that surely their government had not forgotten them. Whilst I am not denying the structural conditions in Mbare, especially conditions at some Mbare flats, as responsible for the perpetuation of disease and as somewhat similar to those that anthropologist Paul Farmer (1997) refers to as "structural violence", what I encountered was not a hopeless and passive community suffering from "structural violence"; instead, though economically and socially marginalised and living under squalid conditions, the community possessed an agency that made its members rise above narratives of victimisation and vulnerability. What I found was that, confronted with failings in the public health sector, people found ways to navigate the fragile public health infrastructure in the best way they could by finding medicines wherever they could, and yet in doing this most did not let go of the once-promised 'right to good health' that they once had access to, as indicated in chapter 1. Navigation, according to Dekker and Dijk (2010), is a term used to analyse

not only the ways in which people cope with their everyday circumstances, but also the numerous creative ways people find to deal with circumstances in which they would otherwise have very little control over, through their own agency.

This chapter contributes to the social science literature that focuses on the ways in which antibiotics and AMR are found to be caught up in a scenario where, despite global calls to re-enclave and restrict antibiotic use, antibiotic use, health, and medicines navigate unstable biomedical infrastructure through 'making do' strategies. For this chapter, I draw on data obtained through ethnographically informed research that includes participant observation, in-depth interviews, and medicine surveys. Between June and November 2018, as indicated in chapter 2, I carried out a medicine survey with 100 residents. The medicine survey was an entry point into the field that enabled me to purposively select the first 10 households from residents who expressed interest in participating in the ethnographic phase of the study. This involved participant observation and in-depth interviews from March 2019 to November 2019. The ethnographic fieldwork also included the pharmacy ethnography, which occurred over a of period of six months from March 2019 to August 2019 (also indicated in chapter 2). In the following sections, I present findings from the pile-sorting activities that provide the profile of antibiotic use in the community, residents' narratives on antibiotic use and availability, health challenges encountered, and ways residents navigated a fractured health system.

4.2. Profile of antibiotic use in the community

In conducting the medicine survey, I wanted to put antibiotics in context to give a sense of proportion and not exaggerate antibiotic use. With this in mind, it is important to first recognise not only a broader diversity of medicines used at the community level beyond antibiotics, but also the pluralistic nature of the Zimbabwean health system, the landscape of which was described in the previous chapter. Traditional medicine providers and faith healers featured very prominently, often as an alternative to biomedicine or a first point of care. Findings from the medicines survey indicated that many residents relied on traditional medicines and faith healers, and some kept home grown-herbs as will be indicated in section 4.3. Though the presence of alternative medicine and practice was evident, I did not directly investigate these practices because this was not in line with my study objectives. Instead, I chose to focus specifically on antibiotics in line with the theory of the social lives of medicines, and my focus on AMR. In what follows, I explain the profile of antibiotic use that we observed during the medicine survey. Pile-sorting activities helped participants to identify which antibiotics they recognised, had used before, had used in the last months, had used 'frequently', or were unable to access when they needed them. The most-used medicines named (prior to showing them the drug bag) were paracetamol, amoxicillin,

cotrimoxazole, and tetracycline, and the medicines kept at home confirmed this. The pile-sorting activities using the drug bag revealed that amoxicillin, cotrimoxazole, metronidazole, tetracycline, and ciprofloxacin (in order of ranking) were the most commonly recognised and used antibiotics in homes. Most participants not only recognised these antibiotics but also reported having used them before. They selected the same set as the most recognised as the antibiotics most 'frequently' used. More details on the pile-sorting exercise can be found in our publication (Dixon *et al.,* 2019) on the drug bag method as indicated in chapter 2. In each house, I encouraged residents to narrate for me examples of antibiotic use and availability of antibiotics, and in the next section I provide residents' accounts of challenges encountered in accessing medicines.

4.3. Challenges in accessing medicines

This was the first point when we opened the door to what is a key theme in this thesis: lack of access to medicines. Access to medicine was notably worse in poorer households, and it was a challenge noted by 95% of Mbare residents. These had no health insurance or formal employment and relied more on vending; only 5% of the Mbare residents interviewed had access to health insurance, and these were mainly elderly people registered under their children's health insurance. The case of Mai Peter, who made her living doing sex work, was illustrative of a lack of resources as a restraint in accessing medicines. In an interview, Mai Peter disclosed that she had an STI and had been struggling to access medicine. In August 2019, Mai Peter discovered she had malaria, a condition that she attributed to standing for long hours in the street with poor drainage and stagnant water. Illness from malaria had disrupted her working schedule as she was too sick to perform her regular duties. Upon recovery, she found herself in a situation where it was impossible to meet her financial obligations and as a sex worker resorted to having sex with no condom as a quick way to make money, because sex with no condom paid more money. Unfortunately for her, due to this unprotected sex, she soon discovered that she had an STI and was also pregnant. Her usual clinic, which provided STI treatment to sex workers (to be discussed in depth in chapter 6), could not provide her with any care because she was pregnant, and she was referred to the antenatal clinic. At the time of my encounter with Mai Peter in October 2019, public health clinics were in their third week of striking. Mai Peter had been turned away from the antenatal clinic two weeks earlier: after reporting that she had an STI, "the clinic is closed, go to a private clinic" was all the response she got. Mai Peter never went to the private clinic: "I had no money, that clinic requires USD10 for consultation", she informed me. Because the strike was still ongoing at the antenatal clinic, Mai Peter was trying to save money but was making very little money because this time she was using condoms to prevent spreading the disease to her customers, and her vaginal itching was getting worse each day with very little money to meet the required consultation fee

at the private clinic or for medicines. Cheap medicines were available in the streets, and she disclosed her fear of buying these medicines, noting that she feared market vendors did not know the right medicine for a pregnant woman with an STI, but trained nurses knew. She noted that "So far, I have raised USD3, which can buy medicine in the street, but I can't buy from street vendors. I have to get help from the clinic, the clinic knows what is good for my baby". Her prayer was that the strike would end soon as she was struggling to raise the money wanted at the private clinic. Accessing care and medicine was difficult for someone in her marginalised economic condition, as was the case with Mai Ruth.

Mai Ruth, after a successful free consultation for her baby at the clinic, was informed that the clinic had no amoxicillin. Children under the age of five did not pay any user fee but Mai Ruth's dilemma began when she arrived at the pharmacy to inquire about the cost of the amoxicillin prescribed to her daughter. She noted how she walked out of the pharmacy empty-handed and in tears because she could not afford to buy the prescribed medicine. Instead, she walked into a tuckshop where, instead of buying antibiotics, bought a packet of local tablets called 'pain eeze' just to ease the pain of her baby, and because she had no confidence in this painkiller had to pray "Dear God, please make these cheap tablets work just as good as the expensive medicine I left in the pharmacy". Mai Ruth hoped the clinic would recover from its challenges and get back to a position of assisting "many poor mums" like her because having no medicine when a child was sick was a mother's nightmare.

My encounter with Mai Tindo, who resided in one of the most impoverished blocks of flats in Mbare, is also illustrative of the great challenges faced by the poor in accessing medicine. Mai Tindo had in the past made use of medicine from the market because market medicine was affordable. Unfortunately, she had developed a nasty itchy rash after using market medicine, leading to her resolve never to use market medicine and rely on medicines from the clinic only. When she fell ill about six months before our encounter, she managed after a spirited struggle to get social welfare to get her exempted from paying user fees at the clinic on condition of poverty. Due to the severity of her wound, the clinic referred her to the hospital, where she was attended to, but the hospital did not have any medicine and she was given a prescription to visit the pharmacy. Despite her love for medicine obtained from a formal institution, accessing the prescribed medicine proved a very big challenge to the extent that six months later, at the time of my visit, all that Mai Tindo had was an unused prescription (see figure 24) to show that she had made efforts not to use street medicine but had failed to obtain the cloxacillin and painkillers that she wanted from the pharmacy.

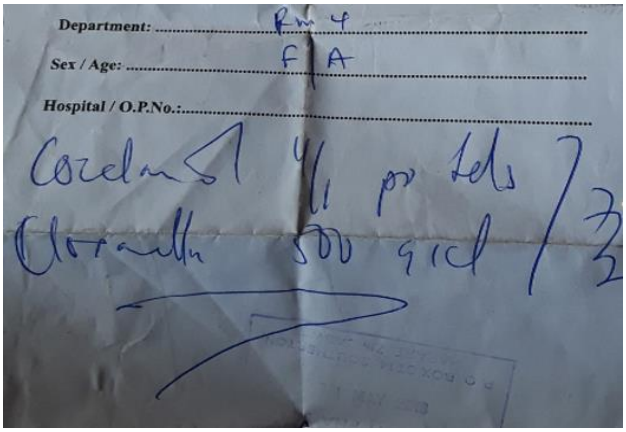


Figure 24: Mai Tindo's unused prescription

Despite taking what may be regarded as a 'rational' decision in saying no antibiotics in the street, her budget could not allow her to buy prescribed medicine. She ended up making use of herbs, obtained for free from a herbalist at the flats. Most residents like Mai Tindo resorted to traditional herbs, when obtaining medicine proved problematic. Some gladly led me to their gardens, where I took photos of herbs they relied on as alternatives to clinic medicine. Sisi Molly showed me mixtures that she was currently using for her asthma, indicated in figure 25; she gladly pulled out the contents in her small bottle and also displayed a green plastic container with a mixture of lemons and garlic she

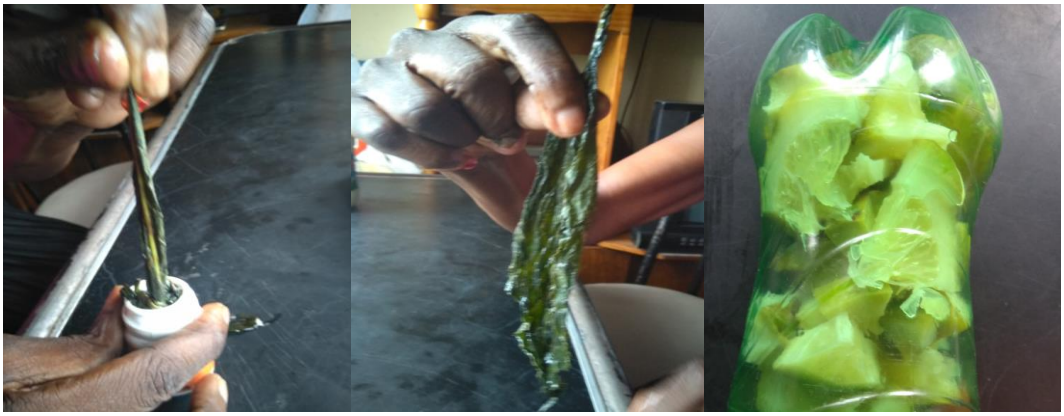


Figure 25: Sisi Molly displays her herbal mixture and a lemon and garlic mixture

used to manage her cough. Later, she demonstrated how she rubbed the oily leaf on her chest to ease breathing problems. She had stopped going to the clinic, which was way too expensive for her, as she had found a way to manage the uncertainties associated with failure to access biomedicine. Medicines were central to care as residents navigated the health landscape rife with challenges, as I witnessed during my stay at the flats, as described in the next section.

4.4. Health challenges at the flats

Dense urban populations living in poor housing and poor sanitation infrastructure have been identified as having greater risk of infectious disease when compared to those in rural areas (Boyce, Katz and Standley, 2019). Writing on behalf of the independent Commission for Human Security, Ogata describes poverty and infectious diseases as "fellow travellers – each feeding on the other"(Ogata, 2004:99). In his opening remarks in the 'World Cities Report 2020', António Guterres, the Secretary-General of the United Nations, noted that:

> The most vulnerable to disease are those living on the margins of our cities. Unplanned urban living leaves people vulnerable … where access to quality healthcare is uneven, housing inadequate, water and sanitation lacking, transport infrastructure patchy and jobs precarious. (UN Habitat, 2020)

The way public health is and has been practised in Mbare reflects government and municipal failure in governing urban space. The health problems faced now by Mbare residents can be traced back to colonial times and associated with lack of adequate housing and overcrowding, as indicated in the previous chapter. Speaking on the health challenges at the flats in an interview, a senior health official at a clinic in Mbare noted that:

> The health challenges in Mbare flats are mainly because of overcrowding, poor sewage system, and lack of refuse collection, which makes the place very unhygienic. Most of the time we are battling with diarrhoeal diseases, the majority of which are just common watery diarrhoeal disease, dysentery here and there, and diseases like cholera and typhoid are worrisome too, but tuberculosis is our major worry because of the way people are living in the flats. We also have malaria during its season and Mbare being what it is we have HIV and that is an area of concern. We have prostitution in Mbare and, ahh, what do you call it, abuse, sexual abuse. (Senior health official, Mbare)

Numerous encounters with Mai Hove, a community health worker who lives at the flats, confirmed the above as being the health challenges encountered at the flats. Mai Hove was responsible for health at the flats where I lived, and she noted that one of her major roles was to promote good hygiene at the flats and to visit tuberculosis (TB) patients to promote drug adherence and completion of TB medicine, as well as to conduct contact tracing. Though waning in centrality, the presence of the community health department run by the community health sister/nurse in charge was an active component of the clinic in the community run using the community health workers popularly known as *mbuya utano* in Shona. *Mbuya* means grandmother and is a common name given to health personnel in respect for their caring role, just like a grandmother cares for her grandchildren, and *utano* means health. Ethnographic work revealed the critical role played by *mbuya utano* in helping community members navigate a fractured health system. Each week Mai Hove welcomed me to her health-related visits, where I tagged along holding her bag of pamphlets (usually funded by donors) as she moved around the 12 blocks of flats, teaching mainly women on disease identification, prevention, control, and management. Men, however, did not want to join these lessons, as Mai Hove had alerted me before my first

visit, noting that “Men say there is nothing you are teaching us, go and tell council to stop sewage from spilling. Will lessons on hygiene make this dirt to go away”. There was a casting of blame, with the council blamed as irresponsible, and in response to this Mai Hove complained that:

> As *mbuya utano* I am made to just come here at the flats and say ahhh this area is not hygienic. The council wants us to do this and that to improve our health. But now people are saying we are tired of doing things for the council, the money is not there. I just continue teaching about hygiene and say yes, money is not there, but for our health to be better let us do something. If we cannot afford buying the pipes to stop the sewage from bursting out, we can dig the trench, look for timber and make some planks, crisscross them, and put a metal roofing sheet, cover it with sand and the sewage will flow beneath instead of spilling on the ground where our children play. (Mai Hove – community health worker)

Gender inequalities were evident in this scenario as men refused to dig trenches – a task which they defined as the council’s duty. Following the refusal by men to engage in this labour-intensive task, women – most of who stayed home and suffered watching their children playing on dirty grounds overflowing with sewage – had no choice but to step in and dig the trenches, to enable the sewage to flow out of the compound. Mai Leo noted how on numerous occasions residents had taken on the responsibility of buying water and sewer pipes and paying plumbers for their services just to promote good health. As a committee member representing residents’ welfare at the flat, Mai Leo retorted how she had become knowledgeable on who the cheapest providers of plumbing materials are. The notion of responsibilisation was evident as residents practised self-governing to improve their health outcomes. The case of Mai Tari in the opening vignette was a concrete situation of how cholera could unexpectedly creep into one’s family and a case that told a story of the importance of keeping sewage and dirt out of the reach of children, which unified women to dig trenches to direct sewage out of the yard and to create duty rosters for cleaning toilets, tasks both assigned as the council’s responsibility. The move for women to clean toilets had been inspired by the fact that young children used female toilets and in the past, when women had no control over the toilets, people used to carelessly defecate and urinate on the floor, and this was a very risky practice, especially to children who, according to Mai Mona, loved visiting the toilet barefoot and often touched the ground for support if without adult supervision. To reduce the risks of infections, which often resulted in diarrhoea in children, Mai Mona noted that women decided to take over the cleaning from the council and to do a thorough cleaning of the toilets, making the place safe for unsupervised visits. Mai Tari confided in an interview how she loathed cleaning the toilets and how she felt trapped within a moral landscape of responsibilities where saying no would be interpreted as being ‘irresponsible’. Since she had three children who used the toilet, she had to play the responsible mum. Her greatest fear was that:

> … we just use our bare hands with no gloves to clean a public toilet, with no toilet chemicals to kill the germs. The council used to supply chemicals for toilets but stopped supplying a long time ago saying there is no money for chemicals. Who knows what germs we get during cleaning toilets. (Mai Tari – flat resident)

Also of great concern was the dumpsite children frequented. Mai Mercy lamented "you don't know what rubbish they touch at the dumpsite, before they sneak into the house, to eat using dirty hands, it's difficult to prevent flies and diarrhoeas here, the council hardly ever collects rubbish on time".

Children playing at the dumpsite. Parents worried about risk of disease

Figure 26: Dumpsite at the flats

Keeping children healthy was at the core of residents' concerns, and Mai Hove noted how in cases of infection she had done a very thorough job in making residents understand the difference between cholera and typhoid, and the importance of rushing to the clinic for early treatment because treatments for these two diseases were donor-funded and medicines were available for free. She expressed her dismay at some residents who had a tendency to mistake cholera for mild diarrhoea and to try to use metronidazole as self-treatment. Metronidazole was the cheapest antibiotic easily purchased from the homes of well-established medicine providers who lived at the flats. This is where most residents readily obtained metronidazole for stomach and diarrhoeal diseases at a very reasonable price, as well other medicines such as amoxicillin for tonsils, doxycycline for sexually transmitted infections, and painkillers for headaches and muscular pains. Most residents valued spending more time selling their merchandise, and getting medicine from a medicine vendor was a more attractive alternative than visiting the clinic, where one was more likely to lose customers whilst waiting in a long clinic queue. Mai Chido, recalling her last visit to the clinic, complained that:

> I lost customers waiting in that long queue. The worst part is while I was in the queue, after two successful visits to the clinic toilet, I failed to control myself the third time and I soiled on myself. It was very embarrassing, everyone in the queue ended up knowing I had diarrhoea. The queue was not moving, nurses were on a go-slow because they had not been paid. Now, I only go there if seriously ill, for diarrhoea I just make the water and salt solution at home, that's what nurses told me to do after the long wait. To get better fast I buy metro or cipro if I have money. Cipro is more expensive and more powerful than metro, it cleanses the stomach very fast.

Metronidazole was called 'metro', just like ciprofloxacin was called 'cipro or supro'. I got to know '*mukadzi we supro'* (supro woman), the nickname of a woman at the flats, because she was good at advertising and selling ciprofloxacin, which she called 'supro'. Other than ciprofloxacin, doxycycline, metronidazole, and amoxicillin were some of the antibiotics that she displayed in her small box, which she neatly organised and packed in a colourful manner to attract customers. Each morning, making her way to Mbare *Musika* and the bus terminus where she sold her medicines, she passed through the flats, where her arrival was announced by a very loud voice that thundered in the air as she approached, shouting "Supro, supro, I am back again to give you medicine to keep you healthy and free from disease, buy supro and keep your family free from diarrhoea". Metronidazole and ciprofloxacin were the two antibiotics used as a quick fix to the health challenges emerging from the unhygienic environment and inequity experienced by residents at the flats. However, of the two antibiotics, most residents preferred metronidazole for their stomach problems because metronidazole was more affordable than ciprofloxacin: 10 tablets of metronidazole cost USD1 whilst ciprofloxacin cost double the price. The first time I met the 'supro woman', I watched with keen interest as she marketed 'supro' as an effective cleansing remedy to a group of women, informing them that "supro is for women with naughty husbands who always bring dirty diseases from prostitutes". Later, I learned how the 'naughty husband' speech often caught the attention of certain women who suspected their husbands were cheating on them. She also encouraged adding metronidazole and doxycycline to help 'supro' to get rid of what she called 'dirt from naughty cheating husbands', referring to STIs. In this setting, ciprofloxacin was known by residents as the tablet for diarrhoeal diseases and STIs. When I spoke to a health official at a clinic in Mbare on the profile of diseases and antibiotics commonly used, the official noted that:

> The commonest antibiotic I think that is used or abused is ciprofloxacin, because ciprofloxacin is used for any fever, any cough, and diarrhoea, or for typhoid, so it's almost always ciprofloxacin, then we have got our amoxicillin, that's another common antibiotic. People use doxycycline and metronidazole for STIs. But availability of antibiotics is challenging, except for cotrimoxazole, which we are using as prophylaxis in people who are HIV-positive. (Mbare health official)

Indeed, ciprofloxacin was one of the common medicines used in homes, as previously indicated in the profile of antibiotic use above. The statement given by the health official in the above quotation hints at the challenges faced by clinics in the provision of medicines, in the next section I look at the role of clinics in the provision of medicines.

4.5. Navigating a fractured health system

During the medicine survey, community members compared the current health landscape with that of the 1980s and early 1990s. In their comparison, residents made a clear distinction between "*kiriniki yekare*" (clinic of the past) and "*kiriniki yemazuva ano*" (clinic of nowadays). The 'clinic of the past' represented the good old days when the Mugabe socialist government, as indicated in the previous chapter, made great strides towards the delivery of 'health for all', signified by the way access to healthcare was made free for low-income earners. Below are residents' insights into the waning centrality of the 'clinic of nowadays', which stood in stark contrast to the clinic introduced at independence.

4.5.1. Drug stock outs and a decentring of the clinic

BaKudzi, in the introductory section of this chapter, spoke of a "clinic without medicines", and his wife Mai Kudzi had this to say about her current local clinic:

> In the past we used to get everything in one place, now you only go there to pay five dollars just to get a paper to take to the pharmacy where you are expected to buy medicine. The clinics are now after our money not health, imagine paying five dollars [she lifts up her hand to show five fingers], that is five plates of *sadza* just to be given a piece of paper, not medicine, I can't sell five plates only to waste the money on a clinic visit. (Mai Kudzi – 35-year-old Mbare resident)

The lack of medicines at the clinics was the most common complaint raised by residents as they cited challenges in accessing medicines at the clinic. What Mai Kudzi referred to as a "piece of paper" was a prescription, and what she and other residents wanted from the clinic was not a 'paper' but medicines. Just like a traditional healer's reputation grew if he/she had a diversity of medicine that the community believed to be effective in healing disease, the centrality of the clinic was premised on its ability to provide medicines which, according to Susan Whyte and colleagues, had "powers to transform bodies" and stood as "potent symbols and tokens of hope for people in distress" (Whyte, van der Geest and Hardon, 2002:5). As documented by Whyte and colleagues (2002), medicines stood as the primary means of healing that gave the clinic its 'charm'. Many residents reported that it was the clinic's duty to provide medicines, failure in which was regarded as an anomaly

by the community. Residents expressed their thorough dislike of being made to pay a user fee (USD5) to access a consultation, to the extent that some residents thought that the clinic was more interested in fundraising than it was in the plight of the patients. What worried the residents most was that 'this paper' had replaced clinic medicines as most clinic encounters terminated with one holding a 'paper' and not medicines. The 'paper' filtered them out of the clinic and into the retail pharmacy.

From the residents' perspective, the clinic's lack of medicines was a new thing that never happened in 'the clinic of the past'. In our published work based on findings from stakeholder interviews and clinic ethnography (Dixon *et al.*, 2020) we note how, like residents, clinicians also identified clinic stock outs as one of the major challenges in their daily activities. In the same article, we capture Dr Ndou's warm feelings towards the 1980s–1990s, as Dr Ndou stated that "We used to have all the antibiotics, long ago we had all of them – cloxacillin, you name it" (ibid.p7). This lack of medicines in public health institutions caught parliamentary attention, as indicated in a report on the 'State of Medicines and Drugs Supply in the Public Health Institutions of Zimbabwe', presented in parliament on 5 September 2019. The report highlighted the MoHCC's acknowledgement of the shortage of medicines in public health facilities as parliamentarian Mr Tongofa noted that:

> During the oral evidence meeting on the 10th of April 2019, the Minister of Health and Child Care confirmed that the public health institutions in the country were in a dire state. He further stated that shortages of medicines and drugs, among other medical supplies, were being experienced right from the primary healthcare level to the tertiary institutions. (Mr Tongofa – parliamentarian speaker)

A huge financing gap existed at the time of the parliamentary report in September 2019 as the report stated that Zimbabwe owed manufacturers outside the country about USD50 million for medicines that long ago had been imported and used (Parliament of Zimbabwe, 2019). The report further noted that this lack of medicine in the public health sector could not simply be solved by referring patients to retail pharmacies (as was the current clinic practice indicated by residents), where prices of medicines were "beyond the reach of an average citizen in Zimbabwe, let alone the poor and vulnerable population in the country" (Parliament of Zimbabwe, 2019). Honourable Ndiweni, during the same parliamentary meeting, expressed his view of the pharmacy as follows:

> When I was growing up, private pharmacies were not meant for us. We were even scared to walk in because we never used them, they were used by the rich and our health provision was done by the public sector. That means the private sector is not meant for the ordinary person, the ordinary person is supposed to get all their health provisions from the public sector. The shortage of drugs in the public sector …, there are plenty of causes … If we

> channel all the foreign currency to NatPharm, you will find that all the public sector pharmacies will be well stocked and then the poor person will be able to access their drugs. (Honourable Ndiweni – parliamentarian speaker)

These sentiments by Honourable Ndiweni indicate the newness of the retail pharmacy as a place for public health patients and mirror residents' concern over their clinic referrals to the pharmacy due to clinic stock outs. Whilst Honourable Ndiweni hinted at the existence of plenty of causes of the stock outs, residents had their reasons for the perceived inability of the clinic to provide medicine. Some residents hinted that some clinic staff were stealing medicines for resale outside the clinic and that corruption was one of the reasons for erratic medicine supplies at the clinic. Joyce believed that:

> Some clinic stock outs are manufactured by nurses; they are involved in selling clinic medicines outside the clinic through their contact person. One day I was approached by a woman soon after getting out of the clinic gate. She said I heard you talking to that nurse about erythromycin, I have it, I can give you at a price cheaper than pharmacy price. Her price was low and so I bought, the medicine was from the clinic because it was packed in those plastic papers from the clinic with clear instructions on how many tablets to take and how many times a day. (Joyce – 37-year-old Mbare resident)

Fiona, a home-based hairdresser, alluded to the insincerity on the part of the current government, stating that the government had no desire to 'better the lives of the poor' because no caring government would leave the poor at the mercy of "heartless pharmacies".

Asked how residents were dealing with the current clinic landscape of stock outs and user fees, BaKudzi indicated that "it's your pocket that tells you what to do, whether to go to the clinic or not, your pocket speaks". Visiting the clinic was portrayed as a luxury by some residents, who cited harsh economic conditions as an impediment to seeking clinic care. Bypassing the clinic had become a common strategy for some residents, given the resource limitations. Those bypassing the clinic felt that to save money the best thing was to go straight to where one was guaranteed to get the medicine; after all, "it was the medicines that did the healing", as Chipo noted. Following medicines was regarded as a very good move by residents who lived a bit further away from the clinic but very close to a retail pharmacy that was well known for not demanding prescriptions, as was the case with other pharmacies; one saved money by visiting this pharmacy, as described by Chipo:

> If I go to the clinic, I spend two dollars on transport, then I pay five dollars to get my book stamped, then the nurses send me to the pharmacy after I have wasted seven dollars. I just go to the pharmacy and buy amoxicillin for my tonsils for four dollars and that is less than money given to the clinic. (Chipo – 28-year-old Mbare resident)

As deliberate efforts were made to avoid clinics, others who lived near pharmacies that required prescriptions, such as Sisi Molly, identified other options for care available in the community. Sisi Molly noted that:

> Nowadays it's difficult because of the costs of living. If I want amoxicillin for my tonsils, I avoid wasting money by skipping both the clinic and chemist. I can buy amoxicillin without prescription just across the street at that market. The chemist will not sell you medicine without a prescription, which forces us to buy in the market. Pills are cheaper at the market; you can get a packet of 10 amoxicillin for 50 cents. (Sisi Molly – 48-year-old Mbare resident)

The light was cast on the private health sector, where residents could find medicines. The private retail pharmacy was now receiving a lot of patients with prescriptions from the public health sector, whilst residents like Sisi Molly resorted to the informal sector for affordable medicine at the marketplace. Residents at the flats who disliked the long clinic queues and clinic bureaucracy that robbed them of their precious time relied on home-based vendors. There was an advantage to using home-based medicine providers like Mai Temba compared to the clinic, as noted by Adam who admitted that at times when he was ill and cash-strapped, Mai Temba allowed him to get medicine on credit and pay when financially able – a thing the clinic could not feasibly do. It was evident that though the clinic occupied a central place in health provision, the clinic was losing some of its patients to the private health sector as indicated above. The next section provides an account of residents' experiences using medicines as a practice of care.

4.5.2. Antibiotics sharing in the community as a practice of care

Due to the close living arrangements, there was a tendency among residents of knowing what was happening in each other's homes. Neighbours were quick to know if anyone was sick and to engage in acts of kindness such as visiting and assisting the sick person if need be. These acts of kindness allowed the existence of a form of 'communal care' based on the African ethic of *'Ubuntu'* (humanness), which values community relationships and requires community members to identify with one another and engage in acts of solidarity (Metz, 2019). I witnessed community members assisting each other by sharing knowledge on medicine, sharing prescriptions, and sharing medicines, as acts of *'Ubuntu'* reflecting the fact that they cared about the wellness of others. The recourse to *'Ubuntu'* in sharing medicine is something that is particularly acute and peculiar at times when public services are not functional. During one moment of illness while suffering from flu, I was offered medicines by a concerned neighbour, who gave me tablets called 'Stop Flu'. Politely I accepted the tablets, which she had bought from the market; any refusal would have been interpreted by the community as a snub. Sharing medicine was used as a way of caring for one another in the community. While the sharing of medicines is deemed irrational by current biomedical discourses, especially AMR discourses on rational use of medicines, sharing of medicines in this community at a time of great economic austerity was a way of caring: it brought togetherness in a way that said 'here is medicine to make you well'. In this context, not to share, when you had the medicine or knowledge to make one get better, was not a good display of 'ubuntu'. There was societal pressure to conform

and to display virtues of ‘ubuntu’, to the extent that at times sharing of medicines was done out of fear that one could be blamed for lack of care and that the community would hold a grudge against you if you failed to live up to the societal value that ‘one good turn deserves another’. In caring for others, there was a shared understanding that you were investing in medicine that in due time would be returned to you when you and your family were in need. The notion of reciprocity was at work in line with the Shona proverb *‘kandiro kanoenda kunobva kanwe’* (a plate goes where another plate has come from, in this case ‘medicine goes where some medicine has come from’). Medicine was regarded as a vital lifesaving commodity and sharing medicine as a form of care had become embedded in their way of doing things; sharing was a rational act to promote and save life. It was one of the ‘making do’ strategies that brought community members into conversations about medicine.

Cotrimoxazole was commonly used and shared by residents, just like amoxicillin and tetracycline eye ointment. Fondly called ‘cotri’ by residents, cotrimoxazole was one of the most common antibiotics I saw kept in homes. The number of people living with HIV (PLHIV) in this community was high. PLHIV were issued cotrimoxazole for free in combination with their HIV medication, making it commonly available in most homes. I was able to take numerous photos like the one in figure 27, which indicated this combination.

Figure 27: An empty packet of 'cotri' on the left and a bottle of ART on the extreme right

The situation analysis on AMR in Zimbabwe (AMR Core Group, 2017a) indicate donors’ vast interest in supplying programmatic drugs such as cotrimoxazole for use in HIV/AIDS programmes. On the other hand, there was a complete lack of donor interest in non-programme antibiotics such as amoxicillin, though amoxicillin was widely used and needed in clinics and hospitals. Homes with HIV patients were blessed, was the sentiment expressed by Gogo Dee:

> These are useful in the family [she lifts up a pack full of cotrimoxazole], anyone who requires cotri can get them from the girl's supply, the young boy who suffers from chest pains usually gets cotri from his big sister, we are lucky because of the girl, she gets them for free when she goes for her ART refill. (Gogo Dee – 74-year-old Mbare resident)

Patients on HIV medication who were benefiting from cotrimoxazole, a broad-spectrum drug, also shared their pills with friends and relatives other than immediate members in their homes: whenever they perceived an inability on the part of their friends and relatives to access medicine, they came in to help. Speaking about the help she gets from her friend on HIV medication, Mai Chido, a widow with four children, was well versed in the dangers of drug resistance and the importance of taking a full course of antibiotics. The desire to treat medicines rationally was evident in Mai Chido's actions. She indicated that whenever she borrowed cotrimoxazole from her friend, "I tell her to give me enough to cover two tablets a day for five days, otherwise the medication is useless if I do not take the tablets properly".

A commodification of medical knowledge and medicine was evident in the community as people shared knowledge about medicine. Commodification of medical knowledge was promoted through practices of sharing prescriptions. If one mother obtained a prescription from the clinic to buy medicine, information on the prescription could be shared by women whose children were suffering from the same illness. The shared prescription usually found its way to MaDube's house. MaDube was regarded by the community as one of the 'community doctors': my findings revealed that there were three popular 'community doctors' with no medical qualifications who knew a lot about medicines. MaDube, who sold medicine in the community, had learned the trade from her late father, who used to work as a cleaner at the hospital. MaDube obtained her medicines from three sources: at the Mupedzanhamo market (see next chapter), from her daughter in South Africa, and from community members who gave her medicines to sell. In avoiding the pharmacy, community members who received prescriptions from the clinic came to her house and she supplied almost everything. She was rumoured to have links at the hospital where her late father once worked, who provided her with injectibles and other rare medicines. What made MaDube very appealing to the community is that she had taken the trade over from her father, who was known to be kind-hearted as he would treat the poor for free. MaDube still followed in her father's footsteps, though she indicated that due to economic austerity she now limited free offers, but she provided medicine on credit and practised barter trade to help those who did not have cash in hand. 'I always make a plan' was MaDube's motto, as she found ways to ensure medicine delivery to her community.

At household level, women tended to shoulder more caring roles than men and were especially active in the caring of children. This extended to the use of antibiotics. Amoxicillin, for instance, was most shared among children. Mothers had received excellent teaching from the clinic that amoxicillin syrup expires after

seven days, and any leftover syrup should be thrown away on day 8. This according to most mothers was a waste because the bottle contained enough mixture for two children to use over seven days. In a context of scarcity, it was rational for two children to share the contents equally over seven days to avoid throwing away medicine. Gogo Moyo told her story of how she always kept an empty bottle of amoxicillin to use each time her granddaughter had a nasty cough and difficulty in breathing. Gogo Moyo had this to say:

> These diseases are in the air, when a child has a nasty cough and is failing to breathe, every other child of the same age will be suffering from the same disease. It is better to share children's medicines instead of throwing leftovers away. (Gogo Moyo – 72-year-old Mbare resident)

Children below the age of five were considered as having weak immunity compared to adults. Due to this weakness, community members prioritised communal sharing and caring, and amoxicillin was the drug of choice for treating children with fever, colds, flus, difficulty in breathing, and stomach problems. MaDube played a critical role in supplying cheaper amoxicillin paediatric syrup for children to the community. She always mixed the syrup for them to avoid the risk of contamination. The community loved her; she was a real grandmother to all the children.

> Some of these women are terrible when it comes to hygiene, before selling amoxicillin or erythromycin to them I mix the powder using clean bottled water just like they do at the clinic and pharmacy. (MaDube – 46-year-old Mbare resident)

In adults the major use of amoxicillin in the community was described by MaDube as being for wounds, tonsils, colds, chest pains, and stomach pains. She was always well stocked in winter because that was when many people suffered from colds and chest pains and needed amoxicillin.

Tetracycline was another commonly used and shared antibiotic. I found tetracycline eye ointment in almost every home because Mbare was a very dusty place, and this triggered eye problems. Tetracycycline was also used by community members in treating ringworm, common in children, and wounds. Mai Kumbi, who lived two doors away from where we lived, offered Mai Leo, the woman I used to stay with, her tetracycline. She noted that tetracycline was no longer working on her eyes but she was keeping this one for her children, just in case. Mai Kumbi was the third resident I had heard complaining of tetracycline not working (drug resistance). Mai Kumbi was now using pyrimon, which she obtained every third month from her brother who works at a mission hospital in the rural areas, who sent her medicine via bus drivers for collection at Mbare bus terminus. As we were chatting, she noted how every time the third month was coming to an end, she had to add water into the eyedrop container to increase the eyedrop level, to avoid running out. Her brother was taking a risk stealing this medicine for her and she did not want increase the risk by asking for more.

So, what I discovered from the community was that though it appeared that people were using a lot of antibiotics, that was not the case. It was not simply a case of 'excess' but rather infection-prone living conditions that exposed residents and their children to diarrhoeal disease, ringworm, boils, and eye problems and a profound lack of access to medicine, as well as an extensive informal sector with champions like MaDube, who provided cheap medicines informally in her home. I also discovered that most residents were well aware of the risks of using medicines without a prescription and the dangers of the marketplace medicines, but theirs was an empty choice. With a clinic suffering from stock outs, the pharmacy was the formal route to obtaining medicine. In the next section I provide findings from ethnographic work conducted at the pharmacy.

4.6. Seeking medicines at the pharmacy

As indicated in chapter 1, the retail pharmacies whose main role, historically, had been to cater for private sector patients had widened their catchment area to accommodate patients referred from public health institutions. This seemed like a public and private health sector partnership in which the public health sector was offering its patients to the private retail pharmacies as a solution to its failure to provide its patients with medicine. This was to the advantage of private retail pharmacies. Mrs Dee, a pharmacy owner and pharmacist at one of the pharmacies in Mbare where I conducted pharmacy ethnography, admitted that in the past her pharmacy relied more on prescriptions from private surgeries, with very few prescriptions coming from the public health institutions, and yet the current lack of medicine in public health facilities had prompted a rise in pharmacy customers referred from local clinics and two major hospitals, and this was something new. During the pharmacy ethnography I encountered at least 15 customers per day with prescriptions from public health institutions. For patients, though they wanted medicines, this sudden shift to the retail pharmacy was not welcome, especially for residents with empty pockets.

During the six months I conducted pharmacy ethnography, between March 2019 and August 2019, the many hours I spent in the pharmacy revealed that the retail pharmacy was a place where tempers flared: 70% of the customers who came in inquiring about medicines walked out empty-handed, and only 30% bought medicines. Each day, insults were thrown both at the pharmacy staff and at the new Munangangwa government, as angry customers stormed out of the pharmacy empty-handed, in a temper over the pricing system and cost of medicines. An investigation into why medicines were expensive in the private sector revealed that pharmaceutical manufacturers, wholesalers, and pharmacies were involved in the game/art of 'making do' that enabled them to restock. As NatPharm, the main pharmaceutical giant for public sector medicines, was completely crippled by lack of the foreign currency required to import adequate medicines for the nation, local

pharmaceutical manufacturers devised new ways of marketing and pricing their products. In the past these local pharmaceutical manufacturers sold medicines only to pharmaceutical wholesalers, but now their marketing strategy had changed as they had opened their doors to allow pharmacies to purchase directly from them. Working at the pharmacy, I had become accustomed to Mrs Dee's exploits as she daily made calls to numerous pharmaceutical manufacturers and wholesalers, inquiring what medicines were in stock and how much these cost. This enabled her to compare prices every day and to restock daily whatever she could get hold of at a cheaper price. She had to move fast before a wholesaler bought medicine on demand in bulk and added a high markup. She avoided buying from wholesalers whose prices were a bit high to enable her to get cheaper medicines that she could then sell at reasonable prices given the economic status of her community. Although sale of medicines in United States dollars (USD) was discouraged and criminalised by government during the time of the study, interviews conducted with senior pharmaceutical manufacturers indicated that most medicines were sold by manufacturers in foreign currency. Only a few lines of medicines were sold in the local currency, to enable manufacturers to obtain local currency for production costs such as water, electricity, and salary bills. Foreign currency was needed to import ingredients for making medicines, as indicated by one of the pharmaceutical managers, who stated that 'the only local products that we have in making medicines are water and sugar'.

Whilst the private pharmacy retail sector was doing very well in ensuring medicine availability, the pricing of medicine in this sector rendered medicines inaccessible to most residents not on health insurance. Requesting USD from someone who did not earn foreign currency was what residents called a 'death sentence'. A dual pricing system existed in pharmacies, and residents were furious upon discovering that medicine costs were higher if pricing was done in the local currency compared to USD prices. The pricing of medicines in local currency was deliberately set high beyond the USD black-market rate, creating a 'pharmacy rate', which, according to Mrs Dee, made it easy for the pharmacy to maintain one price over one or two weeks because the local currency was unstable. The reaction of Melody, a local resident to this high pricing was "The pharmacy will give you a go-away price that says get out of here if you don't have money". Presented with these "go-away" prices, most residents' immediate response was to ask for the USD price: "*Ko ma* US?" (What about in US?) This was the most common question at the pharmacy. Insults were thrown at pharmacy assistants, who were at times accused of being murderers with responses such as "You are killers, who will buy your medicine when we are dead?" or "This year we are going to die; this pharmacy does not want the poor to survive?". To deal with high prices, residents requested the number of tablets to be cut down to reduce costs. The pharmacy ended up packing small quantities of pills, such as 10 tablets, to cater for patients who could afford just a little to keep them going whilst looking for more cash. However, this cutting down was not available for antibiotics, where the

pharmacist insisted on selling a full dose. To enable some patients with no foreign currency to buy certain lines of other medicines in local currency instead of USD, the pharmacy only sold one week's supply instead of one month's supply of medicine, and this also enabled the pharmacy to avoid huge sales in local currency. This rule did not apply to customers buying in USD as this enabled the pharmacy to have adequate foreign currency to restock. Overall, there were very minor shortages of medicine in the formal private health sector, whilst the retail pharmacy proved too expensive for some residents, so a new branch of medicine providers selling cheap medicines emerged within the private sector outside the formally established structures, in the informal sector, taking the public health sector run by the MoHCC by surprise. The MoHCC had not envisioned the proliferation of medicine providers in the streets and marketplace. The response of residents to the availability of medicines outside clinical and retail pharmacy settings is discussed in the next section.

4.7. Medicines at the market: a temporary situation?

Medicines available at the market were viewed with suspicion by many residents, as most reiterated that clinic medicine was better than market medicine because the clinic stored medicine in a safe place away from the sun, in contrast to market medicine, which they indicated was kept in the sun, exposed to the heat. From a residents' perspective this diminished the healing abilities of market medicine, hence their preference for clinic medicines. One resident stated that these medicines were not for urban residents but for rural-based residents because "if they see cheap medicine sold at the bus terminus they think they have seen gold, since clinics in rural areas are too far for them to get medicine". Some residents did not like the source of medicines sold at the market, which they assumed to come from China through the Zambian market. There was a general feeling that everything that came from China was 'zhing-zhong', an expression commonly used in Zimbabwe to express the view that Chinese products are substandard and not strong. This made residents doubt the strength of medicine they suspected to be 'zhing-zhong'. Residents indicated that clinic medicine came from a trusted source such as India and were highly in favour of Indian medicines, perceived as strong medicines found in the clinic. These residents credited the MoHCC for procuring the best medicines from India and longed for the clinic to be well stocked to provide them with effective medicines. The case of Mai Peter, elaborated in section 4.3, shows a woman with great determination to use clinic-based medicine following a nasty rash after using amoxicillin bought on the street. Like many other residents with little money, Mai Peter had obtained her medicine from the informal sector because it was very affordable. Sisi Molly made it very clear that "I am forced to buy amoxicillin for my tonsils in the street because I cannot afford paying the clinic to see a nurse, even to buy medicine at the chemist". Gogo Moyo admitted buying metronidazole from a resident who lived on the upper floor because the medicine was cheap there. Those using these medicines, as well as other community members, hoped this was just a

temporary situation, and that a return to normalcy would occur one day and the clinic would bounce back into a position where it was able to provide free care and free medicine for the economically disadvantaged, just like it used to.

4.8. Aspirations for the revival and resumption of care at the clinic

The clinic that BaKudzi alluded to as a 'clinic without medicines' used to be a one-stop shop where patients consulted staff and obtained medicines to treat their ailments. This is what participants expressed, especially elderly participants who had firsthand experience of using the clinic, whilst the younger generation shared the same sentiments because the demise of the clinic was a fairly recent phenomenon. There was a nostalgia for the 'clinic of the past', which was described as never lacking anything, which was the opposite of the erratic drug supplies, stock outs, and demands for user fees characteristic of the clinic now. Residents utilised the word 'normal' to describe the way the 'clinic of the past' functioned and 'abnormal' to describe the way the clinic was currently operating, hoping that the clinic would soon return to normalcy. It was in the residents' eyes 'abnormal' to have a clinic with no medicine, hence there was a feeling among many residents that what they were encountering at the clinic was but a temporary phase of 'sickness' and 'abnormalcy', which many hoped would be phased out into the rebirthing of 'health and normalcy'. Whilst waiting for the resumption of care, residents resorted to different pathways to obtain medicine. Mai Susan noted that the current economic hardship had turned her towards using *Mapostori* (apostolic faith healers) as her clinic because the prophets in these churches did not require cash. The most that they asked for was milk, salt, a lemon, and an egg, which were usually mixed and given to people who were not well and cost less than USD2. She allowed me to take a photo (see figure 28) of the things *Madzibaba* (name given to a male prophet) had told her to bring for her healing. Mai Susan noted that though she considered these *Madzibaba* as cunning and disliked their methods she had no option.

Figure 28: Mai Susan shows ingredients required by Madzibaba for healing

Mai Susan had this to say about the *Madzibaba* :

> They have this science of making people vomit, which I hate. They know that mixing the egg, milk, lemon, and salt will create a revolting mixture that will make one vomit to clean and rid the body of whatever contamination is responsible for disease.

Though she disliked being forced to vomit, she did feel better after vomiting. She laughed as she said that "their science works after all". At present, the free services of *Madzibaba* were her only option for survival, and she hoped that the clinic would become accessible again so she could avoid being made to vomit. She mentioned how in the past she enjoyed being referred to the doctor and how she now longed she could see a doctor and stop this *Madzibaba* business. She had stopped going to the clinic because being referred to a doctor had become more costly as the clinic continued to raise consultation fees. At the time of our encounter in June 2018 (during the medicine survey), seeing a nurse required USD5 and if the nurse referred you to the doctor the price doubled to USD10. This was a lot of money for Susan, and she longed for the old days when seeing the doctor was free. Her last remark as we discussed this issue was "It is not that we like going to *Mapostori* or to the streets, we know the clinic offers the best care, who does not like seeing a doctor, we all want the doctor, but the doctor is expensive to see". The desire to have the best healthcare, which many residents believed the clinic could offer, kept alive their aspirations for the revival and resumption of care at the clinic as many residents yearned for the glory of the past clinic to be restored.

4.9. Conclusion

Historically, the Zimbabwean government has performed well as a developmental state, recording notable achievements in the provision and regulation of public sector medicines, an achievement well remembered by community members whose narratives indicate a nostalgia for the way things were when the country could afford to procure, distribute, and rationalise access to antibiotics and other medicines at the right level of care. However, unexpectedly, the nation has evolved to signify Geissler's para-state (Geissler, 2015) following public health sector failure due to economic and political shocks resulting from structural adjustment programmes, infighting between major political parties, and corrupt government, all of which have resulted in a nation with a well-written and well-regulated but 'empty' formal health sector with no medicine. In this context, where availability of medicine is erratic and scarce in the public health sector, and abundant yet expensive in private retail pharmacies, a world 'beyond formal health provision' has become more visible, casting the spotlight on

informal sector activities where a commodification of medicine and freedom of knowledge of medicines is evident, practised by market vendors and their customers.

This ultimately explains why people are living in an antibiotic world populated by a few 'simple', 'cheap' oral antibiotics such as amoxicillin, cotrimoxazole, and others, especially after not finding them in the clinic where EDLIZ wants them to be. This requires serious thinking about how we might imagine and push towards more inclusive approaches, to better understand the role of community and market-based medicine providers, given the centrality of antibiotics beyond clinical settings. Findings in this chapter have also indicated that people were trying to use medicines 'rationally', and to avoid the informal sector, yet theirs was an empty choice causing them to resort to the informal medicine suppliers. Memories of the well-stocked clinics of the 1980s and 1990s lingered in the minds of the elderly, whilst the younger generation yearned for the clinics that their elders spoke of; hence the desire for the clinics to recover and offer them a full package of health services at an affordable cost or for free was very strong. Resumption of care is a longing that I have captured in this chapter as residents meandered through the current harsh landscape through engagement with various techniques of self-governance, 'making do' by always 'making a plan', hoping that the state will soon bounce back and resume its duties of taking care of the health of its citizens, especially impoverished citizens.

Chapter 5

5. Medicine vendors and informal medicine trading in Mbare

5.1. Introduction

In the last chapter, I ended by showing how, despite people's feelings to the contrary, people were channelled towards the informal sector to purchase needed medicines. If one were to take a snapshot image of the use of antibiotics now, one would see a picture of antibiotics being widely 'misused' and illegally distributed. Conversations with senior health practitioners in Harare, however, indicate that the illegal sale of medicines, as with informality more broadly, is something relatively new in Zimbabwe, a belief tied to the pride that many have about the historic strength of its health system and tight regulatory environment (Nyazema *et al.*, 2007; Dixon *et al*., 2021). Whether or not this is entirely correct (as we saw chapter 3, informality has long characterised Zimbabwe's urban economy), there is a valid point here that Zimbabwe contrasts with neighbouring countries in sub-Saharan Africa that have historically had looser regulatory environments and more prominent informal pharmaceutical markets (Whyte, van der Geest and Hardon, 2002). Only 10 years ago, if you walked into a pharmacy in Zimbabwe and asked for an antibiotic without a prescription, the chances were very high that you would not get it. Nyazema and colleagues (2007), in a study of private pharmacies in four Zimbabwean cities, indicated "strong adherence to regulation on the sale of antibiotics" (2007:723) due to the country's effective punitive regulative framework that enforced adherence (ibid.). A global systematic review of non-prescription use, moreover, showed that Zimbabwe had among the lowest rates of non-prescription sales of any country and the lowest of any surveyed LMIC (Morgan *et al*., 2011).

The situation is very different today. Since Nyazema and colleagues' (2007) study, drastic changes have occurred in the health sector following the massive collapse of the economy in 2008, which resulted in a lack of foreign currency to import either medicines or raw materials required for local production of medicines, thereby creating a huge gap in the delivery of essential medicines (AMR Core Group, 2017a; *Zimbabwe Situation*, 2019). Gaps in public health institutions' ability to secure essential medicines have created a huge demand for medicines in the private health sector, which has placed pressure on pharmacists as well as informal traders to illegally prescribe and dispense antibiotics. A situation analysis of antimicrobial use and resistance in humans and animals in Zimbabwe conducted in 2016 (AMR Core Group, 2017a) cited a significant rise in sales of prescription-only antimicrobials without prescription, and also highlighted a sharp increase in the percentage of pharmacists willing to sell antibiotics without a prescription, from 19% in 2011 to 50% in 2013 to 57.1% in 2015,

based on unpublished data from a 2016 Knowledge, Attitudes and Practices survey (AMR Core Group, 2017a). As indicated in chapter 1, AMR discourse in Zimbabwe, with its emphasis on the need to preserve antibiotics, has cast a spotlight on the 'irrational' practices of providers and users. As the opening vignette of the chapter showed, informal medicine providers in particular have captured the imagination as a poignant threat to medicine safety, quality, and efficacy, thereby justifying the need for redoubled policing.

In this chapter, I focus on Mbare's vibrant informal economy of antibiotics and other medicines. My account follows a rich vein of anthropological research documenting the processes through which prescription medicines, once enclaved in the hands of licensed and regulated professionals, have become common (Whyte, 1992; Whyte, van der Geest and Hardon, 2002). The commodification of medicines has long been a focus in anthropology (Timmermans and Almeling, 2009; Dekker and Rijk, 2010; Rowe and Moodley, 2013) but, as argued in chapter 1, concern specifically over informality took something of a back seat in the 2000s as anthropologists turned their attention towards mapping the political economic landscape of global health and how pharmaceuticals figured therein. My account, following a renewed interest in 'irrational' informal medicines sales in the wake of AMR (Wadge *et al*., 2017), is specifically concerned with current attempts to re-enclave – in today's AMR language, 'steward' – antibiotics, occurring as part of the AMR discussion. In the following, I provide a rich ethnographic account of the heterogenous group of suppliers, 'street doctors', and other actors that make up Mbare's informal antibiotics economy, the biopolitical arrangements that both necessitate and enable them, and how in the process informal antibiotics trading tenuously holds together not only the informal but also the 'formal' parts of Zimbabwe's health system. Defying easy ascriptions of 'irrational' use that have tended to inform proposed interventions in Zimbabwe, as well as neat delineations of formal and informal, this rich account of antibiotics networks will enable me in chapter 7 to consider what it would realistically take to steward antibiotics in this scenario without compromising lives, livelihoods, and access to medicines.

To support my arguments, I draw on rich data obtained through ethnographically informed research conducted over a nine-month period between March 2019 and November 2019 with four medicine providers at Mupedzanhamo flea market and six home-based medicine providers (also indicated in chapter 2). Ethnographic work included participant observation and in-depth interviews with market-based and home-based medicine providers. This work, as I described in chapter 2, was extremely challenging given the illegality of the trade, and, as I will describe below, involved several close encounters with the law. In the process, however, I built up trust with the vendors that enabled me to learn a great deal about the trade that could not be learned by other methods. To complement what I learned from the market vendors, I also draw on insights from stakeholders' interviews as well as secondary data from intensive desk review on matters around informality within the health

sector. I begin first with a description of the various 'business models' and biopolitical relations that make up the antibiotic medicines trade, before moving on to a description of supply chains, and interdependencies of formal and informal.

5.2. Commodification of antibiotics and the rise of 'doctors' in the street

As indicated in chapter 3, since the destabilisation of the economy, Zimbabweans have been living in what anthropologist Jeremy Jones (2010) has called a '*kukiya kiya'* economy. This refers to multiple forms of 'making do', where in the name of survival an informal way of doing things characterises one's 'zigzag deals' to the extent that nothing seems 'straight' (Jones, 2010). This zigzag way of doing things has become internalised and normalised in the day-to-day lives of Zimbabweans as a way of navigating the country's collapsing and malfunctioning political, economic, and social systems.

Mai Tapona is an elderly woman who has succeeded in putting her three children through university and building a six-roomed house through income earned from '*kukiya kiya'* at Mupedzanhamo flea market as a medicine trader. She suggested to me that the demand for medicines at the market began around 2008, following the breakdown of the economic and healthcare systems. What started off as trade in beauty products and family planning pills in 2004 turned into more lucrative business as demand for painkillers and antibiotics grew in 2008. Asked how medicines appeared at the market, Mai Tapona had this to say:

> The request for medicines came from some doctors, when they saw us selling family planning pills they started asking if we sold other pills. One person tried it and started selling painkillers and when people saw that her medicine was selling fast, people started joining her bit by bit. Antibiotics started appearing on the market around 2008 when the country was lacking everything. When I started selling medicines in 2010, we were still few then, but now we are too many. Everyone knows it is us who sell medicine who make a lot of money here [marketplace], our stuff moves faster than clothes.

Mai Tapona is one of the medicine vendors I worked with during my fieldwork at Mupedzanhamo flea market wall, where I spent many hours working with her and other medicine vendors like Mai Chiedza, Mai Tee, and Donald, as they daily navigated marketplace politics and harsh economic realities through '*kukiya kiya'* practices. At the start of the study in 2018, the number of traders selling medicines on their small makeshift tables was already high, and during the course of the study I watched as the numbers of medicine traders and the volumes of their medicines tangibly increased.

Mai Chiedza was a self-professed gambler. She was the first medicine trader who welcomed me and introduced me to others at the marketplace. Coincidentally, I shared the same name as her mother, and this

instantly created a bond between us as she was quick to embrace me as her '*amai*' (mother), whilst I responded by calling her '*mwana wangu'* (my child). Being associated with Mai Chiedza made my induction at the marketplace easy, as she was very influential. The marketplace was a geography of uncertainty where risk takers like Mai Chiedza thrived on '*kukiya kiya'* through zigzag deals. This entailed being able to navigate the daily market routine no matter what uncertainties each day ushered in. Bribery and the right political affiliations were the currency that enabled traders to sail through whatever political, economic, and legislative policies that threatened their existence. The thorny relations between the central government and local authorities we began to see in chapter 3, which showed how Chipangano usurped the administrative authority of Mbare municipal authority (Madhekeni and Zhou, 2012; Jonga, 2013). Having usurped the municipal authority at the market, Chipangano expected every trader to be affiliated to the ZANU-PF political cell available at Mupedzanhamo, and ownership of a ZANU-PF card was a great asset that garnered traders' protection from municipal interference. Medicine providers took advantage of tensions between the government and municipality by deliberately aligning themselves to Chipangano. Chipangano, in its militia style, stood as the defender of traders protecting them from municipal authorities and aligned to a political party, and traders occupied a special place as an enclave deliberately warehoused for political gain (Kamete: 2017). This deliberate 'warehousing of informals' (Kamete, 2017) empowered Chipangano to attain its objective of usurping municipal control, whilst also empowering informal traders to conduct their business in undesignated space on municipal land. These biopolitical dynamics we will discuss in more detail later (section 5.5).

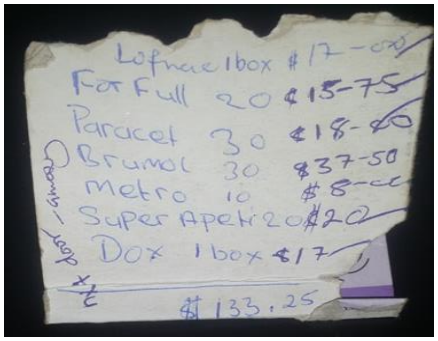
Despite the perpetual uncertainties of the trade, it was considered rewarding by several of those I engaged with. For instance, Donald, a recently married man in his mid-twenties, and whose table was positioned close to his male friends of the same age group, took great pride in his job. This I got to learn on my first encounter with Donald, when a young man selling belts waved enthusiastically from across the street at Donald and his two friends in salutation, shouting "doctors! doctors!", a greeting that Donald and his friends enthusiastically welcomed as they shouted back at the young man "belt man, belt man". The belt man waved his belts in acknowledgement of his title, bowed down, then saluted the 'doctors' in a military style – moves that indicated that doctors held a position of great respect at the marketplace. I was soon to learn that market traders identified and gave each other titles based on what they traded, and some medicine providers were identified as doctors, whilst those who sold medicines in large quantities were identified as suppliers. Donald, after this grand salutation from the belt man, noted how:

> At school, I used to wish to become a doctor, the teachers thought I was a nobody. Now look at me, I have become a doctor in the street selling and practising medicine here with my friends. (Donald – 25-year-old market-based medicine provider)

The notion of medicine providers as 'street doctors' has been documented in several settings in Africa and in other LMICs, and it is a title that affords traders a degree of legitimacy and validation for work that is, while formally deemed illegal, quite obviously valued and needed in the context of severe resource shortage (Kumah, 2022). Certainly, this title was widely shared by those at the market who identified with the trade, and who saw themselves playing a critical role in the 'healing' of their communities. Donald's customer MaSiziba, an elderly rural-based vendor, believed that:

> All of us selling medicine, we have now become street doctors who walk the streets with our bags of medicine. When people see me they say, there goes the old woman with her bag that saves us just like traditional doctors used to save us with their medicine. (MaSiziba – elderly rural-based medicine provider)

Her community had named her "doctor with medicines in a bag", a role that she was eager to perform. After scribbling her order on the inside of a torn old box, as was the common practice at the marketplace, MaSiziba made this request to Donald: "My child, please tell me what each of these medicine are used for; I don't want to kill people". Donald noted she was in the habit of asking this question each time she visited the market, but Donald did not mind repeating his usual teachings to her. I listened attentively as Donald went over the uses of each medicine as I packed MaSiziba's 'bag of medicine', which had gained her popularity as a lifesaving doctor. MaSiziba repeated what she had learned, placing a tick on her list for each item learned (see figure 29). Gaining accurate knowledge of medicines seemed important to MaSiziba, who jokingly expressed her desire for accurate knowledge to avoid "killing people".



List of medicine has some names that are misspelt or not written in full, we have indicated full/correct name next to incomplete and misspelt names.

1. Lofnac- (1box) $17:00
2. For Full- For Flue (30) $15:75
3. Paracet- Paracetamol (30) $18:00
4. Brumol (30) $37-50
5. Metro- Metronidazole (10) $8:00
6. Super Apetito (20) $20
7. Dox- Doxycycline (1 box) $17-00

Total cost $ZWL 133.25

Figure 29: Medicine ordered by MaSiziba

Impressed by how Donald had explained when and how to use metronidazole and doxycycline, I inquired how he had come to know so much about antibiotics, to which he responded that he had learned some of this from reading instructions on medicine packages, but most of what he knew came from his aunt Mai Tee, whom he described as a 'medical dictionary'. Mai Tee, Donald's tutor, was known at the marketplace as the 'moving pharmacy' because she was always well stocked with a wide variety of medicine. She revealed that most of her knowledge on medicines emanated from medical doctors. Mai Tee as a 'supplier' sold medicine in bulk to a wide

range of customers including doctors. Each time she went to deliver medicine to a doctor's surgery, if not familiar with the use of any medicine for which the doctor had placed an order, she had the habit of innocently inquiring "Doctor, what is this medicine used for?", she informed me. She noted how doctors were very willing to share their knowledge on medicine and were good at explaining how each medicine worked. She pulled out a small book and offered it to me to read; the book had doctors' medicine orders at the front whilst the back part of the book had been reserved for notes divided into three columns, with the first column indicating name of medicine, followed by what the medicine treats, with the final column indicating dose and duration. She had a way of always writing notes to enlarge her knowledge on medicine. After going through her notes, l understood then why Donald called her a 'medical dictionary', judging from the many pages where she had scribbled notes. She often introduced new drugs at the marketplace after buying and learning about them from doctors. Indeed, knowledge about medicines disseminated through the process of their commodification. It is perhaps unsurprising, given the way information was imparted, that the medicines stocked at the market overlapped considerably with those identified in the guidelines used in clinics and surgeries, notably the EDLIZ guideline, which dictated availability and use within the formal health sector. The majority of medicines stocked, especially by the 'street doctors', were oral agents on the WHO's 'access' list (WHO 2017) – especially amoxicillin, metronidazole, and doxycycline – but also included those on the watchlist, notably ciprofloxacin (which are in turn the same medicines that were most recognised and used by residents – see chapter 3), as well as injectable agents. The guidance provided by the 'doctors', too, was broadly consistent with the EDLIZ guideline. Mai Tapona was well known at the market as the 'lecturer'. She fancied herself as a senior doctor with a large cohort of medical students – customers who required knowledge on how to use the medicines they supplied. On numerous occasions, I watched as she went through her usual routine of orienting new customers. This often started with her lifting a packet of amoxicillin followed by ciprofloxacin (cipro), showing them to her customer as she announced:

> This pill is called an antibiotic [waving amoxicillin], it deals with chest problems, side pains, cough, and any stubborn flu which refuses to go away, it also works on wounds like tonsils and this one, cipro, is good at cleansing the system. It cleans the stomach and is good for things like diarrhoea. (Mai Tapona – 52-year-old market-based medicine provider)

Each teaching often ended with her holding doxycycline (doxy) and metronidazole (metro), saying:

> These are good for *siki* [STIs] but they work well if you combine them with cipro. You combine the three together. You take one tablet of doxy and one tablet of cipro twice a day, in the morning and in the evening, for seven days, so for these two pills one must take 14 tablets, but metro is different, one must take two pills, three times a day,

> this means that one must take 42 tablets for seven days. (Mai Tapona – 52-year-old market-based medicine provider)

There was indeed a partial overlap of Mai Tapona's antibiotic teachings with recommendations in EDLIZ. The market was, therefore, a place where traders became familiar with antibiotics and thereby not only joined the supply chain for the distribution of antibiotics but also became custodians and purveyors of knowledge about their use. It was, according to Mai Tapona, important to equip her customers with knowledge about medicines to enable them to give their own customers the right medicine, just like doctors and nurses did. "You must always know your medicine", she often said. Teaching them well was a strategy that benefited her because it made her customers very efficient in selling their medicines, which in turn made them come back to her early for restocking.

BaNommie, another of Mai Tapona's customers, represented a slightly different model of informal medicines sales. Like Donald, he knew his medicines and prided himself on being an excellent 'community doctor' who was doing a lot of good in providing care in his community. His house, situated in one of Harare's high-density suburbs, had become a "community pharmacy", he said, as community members preferred buying medicines from him because, unlike the clinic, he was always well stocked. "Can you imagine the clinic is empty, people bring prescriptions from the clinic to me", he said, beating his chest with his fist and laughing as he did so. He had become an important man in his neighbourhood as people preferred his cheaper medicines to those offered at the retail pharmacy. He was making a lot of money compared to what he used to get when he was employed as a teacher. He had quit teaching to join his sister Mai Joy, a retired nurse who had introduced him to the trade and had taught him the importance of telling his customers the need to take a full course of antibiotics even when they felt well. Mai Joy offered nursing services illegally to community members who could not afford user fees at the clinic. She had stopped registering for a nursing practising certificate with the Nurses Council of Zimbabwe four years ago when she retired. Mai Tapona often kept kanamycin, which she sold to "customers with serious STIs", and she relied on Mai Joy, the retired nurse, to administer the injections. This was conveniently done at Mupedzanhamo flea market inside the public toilet or inside the customer's car.

Another business was run from a hair salon just across the marketplace, where a very popular man known as 'the doctor' provided services to the community of Mbare. I encountered this 'doctor' during my stay at a flat near the marketplace and had the opportunity to visit his workplace, where he kept medicine locked up in a metal locker at the salon. This doctor was a trained nurse who was no longer formally employed but was running his own nursing business informally. Residents at the flats believed that he had links with someone at the local clinic who provided him with medicines. He was known to have ample supplies of medicines, which in

addition to the more commonly used oral antibiotics also included injectable ones, in the interests of which he made home visits to patients to administer the drug. Though the origin of his medicine was rumoured to be from the clinic where he used to work, and deemed legitimate, his medicines were traded informally outside the clinic walls at the hair salon.

In this section, I have sketched the business models through which antibiotics move at the market, enabling these medicines, now undoubtedly 'common', to 'thrive' as a source of livelihood for traders. Playing the informal role of 'doctors', informal traders used a combination of informally and formally acquired pharmaceutical and medical knowledge to help them provide better service to their customers and ultimately preserve lives. In the next section I expand this picture to bring into view the local, national, and transnational pharmaceutical supply chains in which Mupedzanhamo flea market has become a key intersection as an informal pharmaceutical wholesaler, a passage point both into Harare's formal sector and onwards to other provinces in the country. At the heart of this lies the 'zig zag' deals that constitute the practice of '*kukiya kiya'*.

5.3. Plugging the gap in pharmaceutical supplies – "name it and I supply it"

Being an informal pharmaceutical trader meant being deft at moving between and manipulating the exchange rates between local and foreign currency. Medicines at the market were traded in local currency at a 'black-market' rate: that is, at a more expensive rate that matched the 'real' value of the USD against local currency, rather than the government's official rate, which consistently overestimated the strength of the local currency. Trading at this rate made it easy to convert money back into USD, to the benefit of traders. Despite the local currency being pegged at the black-market rate, medicines at the market were still relatively cheap compared to medicines sold in the pharmacy. Mai Chiedza, the self-professed gambler and my first point of entry into the community of traders introduced above, played a dual role at the marketplace. She was a medicine provider but was, in fact, better known for her role as a 'money changer' selling foreign currency. True to the ironic labelling practices at the market, her money-making ventures earned her the names 'minister of finance' and the 'reserve bank'. She kept huge amounts of both local and foreign currency. People like her were instrumental at the marketplace, as they ensured that the foreign currency required by other traders to import medicine from Zambia was readily available. In Zambia, medicines were purchased in USD and this, according to Mai Tee, made Zimbabwean traders a welcome presence in the Zambian market. Mai Tee noted that "Zambian wholesalers like us because we bring them USD, not Kwacha, but we get our change in Kwacha". Unlike Zimbabwe's pharmaceutical supplier NatPharm, which was failing to restock due to lack of foreign currency, foreign currency and restocking was not a problem at Mupedzanhamo marketplace. Whilst poverty was characteristic of the community surrounding the market, Mupedzanhamo was an island of considerable wealth as cash flowed freely

in the hands of traders, which made capitalisation of large volumes of medicines possible. Medicines at Mupedzanhamo were not registered for use in Zimbabwe and were smuggled into the country from Zambia through a well-coordinated web of corruption that relied heavily on bribing officials in key positions to ensure the safe passage of medicine from the border post to Mbare. Bribing was the currency that made the control of border posts difficult. Upon arrival in Mbare, medicines were kept in a large room called the 'clock room', situated a few kilometres from the marketplace, making Mupedzanhamo a well-stocked pharmaceutical warehouse. Middlemen were paid to travel and procure medicine in Zambia once every week. Men featured prominently as middlemen and took the lead role in taking orders from other vendors at the market. Most female vendors liked engaging these middlemen because this eased the hassle of traveling long distances for restocking in Zambia. Mai Chiedza and Mai Tapona noted that they had been cross border traders for a long time and had raised their families as breadwinners who spent most of their time away from home. These two women noted that they had reached a stage in their lives where they were now tired of travelling and wanted to spend more time home and benefited from engaging middlemen to do the travelling for them. Middlemen benefited from charging a fee for items delivered. This collaboration was perceived by both the middleman and those receiving services as a win-win situation. This, however, was not always the case due to elements of mistrust described below.

Major medicine suppliers like Mai Tee and others in her league, who bought things in bulk did not make use of middlemen because of the risks associated with giving someone else a lot of money; they instead travelled to Zambia themselves twice a month for restocking. Aiding her in distributing the fruits of these trips, she had what she called a "pharmacy *mubhutu mangu*" (pharmacy in my boot), which referred to a pharmacy in the boot of her car. Each time after her Zambian trip, she packed her boot and made deliveries to her customers. Her business motto was, "name it and I supply it". Moving large quantities of drugs, however, meant being especially careful with where she stored medicines. During my fieldwork, Mai Tee never made the mistake of leaving large quantities of medicine in her car because:

> The moment those prostitutes [pointing at two women across the street] know I have a pharmacy *mubhutu mangu* [in my boot], they tip the police to raid my car, then they pay the police and get my medicine back from the police, share and sell it there as if it is their medicine. They did that to me twice, now I offload my pharmacy and l leave a few medicines and hide it at the base. (Mai Tee – medicine supplier)

The base, as Mai Tee called it, was a hiding place inside the Mupedzanhamo wall where large quantities of medicine were stored. This was a safe space because those trading inside the wall – or what Kamete (2017) calls the 'warehouse' of informality – had permission to trade and the right to keep their goods, whilst medicine

providers trading outside the wall had no permission to trade and were often subject to raids by the police. To avoid loss, most traders merely displayed empty medicine boxes whilst hiding the real medicine inside the wall. This was a strategy that Mai Tee used, but she kept bulk supplies at her house for daily transportation to the marketplace. Through this arrangement, Mai Tee had the capacity to supply medicine and other medical supplies to a wide range of customers, whatever their location. This included 'street doctors' in Harare who largely traded in cheap oral antibiotics, but she also supplied large orders for private doctors, including injectable medicines such as Rocephin (ceftriaxone), benzathine, kanamycin, morphine, and diazepam, as well as pills like amoxicillin, ciprofloxacin, metronidazole, ibuprofen, and paracetamol. Pharmacies, too, were in need of her service, and usually bought various painkillers, antibiotics, and paediatric syrups such as amoxicillin, erythromycin, and ciprofloxacin. Beyond pharmaceuticals themselves, she also supplied drips, pill packaging papers, and gloves to pharmacies and doctors. Her catchment population also included employees from the government clinics and hospitals, who bought medicines from her for sale in their workplaces without the approval of their employers. Her medicines, though unregistered and deemed illegal, thus circulated within a variety of informal and formal health settings.

Mai Tee's networks also extended far beyond Harare. Demand for medicine was huge at the marketplace; both she and Mai Tapona supplied community-based medicine providers who came from all the 10 provinces of the country. These travelling customers sold medicines in different community settings ranging from bus terminuses, local shops, urban and rural-based homes, industrial, and farming and mining settings, in so doing playing an important if not invaluable role in bringing medicine to the people. Demand for antibiotics was very high in farming and mining communities, where most of Mai Tapona and Mai Tee's regular customers came from. Three of Mai Tapona's customers sold their medicines to the Midlands-based *'makorokoza'* community. *Makorokoza* refers to informal artisanal miners, most of whom were involved in gold panning. Zvishavane, one of Mai Tapona's customers, was named after the mining town where he traded, and he always bought large quantities of doxycycline, ciprofloxacin, and metronidazole, which he noted were 'fast movers' in the mining community as these were used in treating sexually transmitted infections. Most traders in farming communities came from Mashonaland Central, one of the rich farming zones that, like the rest of the country, had witnessed land invasions following the Fast Track Land Reform Programme of the early 2000s. Five of the medicine providers I encountered came from Mashonaland Central farming communities. Conversations with them indicated that newly resettled farmers had settled into areas with no health facilities and that the government may have, according to BaJozi, "forgotten that new farmers also want clinics"; hence, due to the demand for medicines, BaJozi the farmer had seized the opportunity to become a medicine provider to bring medicine to the farming community, selling medicine from his tuckshop. Other medicine providers in such

settings moved around with medicines in their bags, like MaSiziba, the old woman with her bag of medicine previously mentioned in section 5.2. Traders like BaJozi saw themselves on a national mission bringing medicine to the "forgotten" newly resettled communities.

As I began to allude to above, the idea of doing the nation an important service was a common rhetoric among the traders. Mai Tee, for instance, had the confidence to say, "If you want medicine, you come to me. I am doing what the clinics are failing to do. I am doing it for them". To this she added that she half-hoped the current disorder and failings in the public health system would persist so that she could continue her role as a pharmaceutical 'supplier'. Other traders aired the same sentiments as Mai Tee's; this for them was a beautiful 'window of opportunity', not only to get rich but also to be viewed as worthy, as those who stood in the gap and made cheap medicine available to the nation's ailing health system. What was clear from their language was that each medicine vendor had a role in assisting the failing government to meet the health needs of the country. They perceived themselves as a solid bridge over the gap. Mai Tapona, for instance, strongly believed that "We are on standby helping the clinic. If we don't bring medicine to the people, people will die". Mai Tapona's customers were so numerous that Mai Chiedza, the 'minister of finance', had partnered with her to procure the medicine that Mai Tapona could not supply.

5.4. Obscuring the 'informal' origins of antibiotics

All medicines at the marketplace were deemed 'illegal' and were, to a large extent, suspected of being substandard or fake by the Zimbabwean government, as these were not approved by MCAZ to be on the market. Yet, how did medicines that often had origins in other countries end up on shelves in the formal sector, which were subject to inspection? The case of Mai Thandi, a pharmacy owner in one of Harare's high-density areas, provides a window into the 'formalisation' of informal medicines – specifically, how unregistered medicines were made to look like registered medicines in Mai Thandi's pharmacy. Mai Thandi was a regular customer of Mai Tee and obtained supplies from the latter twice a month. On one such visit she was not happy because Mai Tee had brought her pills in blister packs. She informed Mai Tee that this was not acceptable as the backs of the blister packs contained incriminating information that showed that these pills were not approved for sale in the country. To resolve the problem, Mai Thandi summoned three ladies and paid them to help her pull the tablets out of their packs into a plastic paper bag. As much as she wanted cheap pills from the market, she was not going to risk taking these pills to her pharmacy in those packets. She was, indeed, scared of losing her pharmacy licence if found selling unregistered medicine. As she called for more hands to assist her in getting rid of the packaging, she anxiously repeated, "Let us get rid of this, this will make me lose my licence". MCAZ had a tendency of visiting

retail pharmacies to monitor compliance, and unregistered medicines in a pharmacy resulted in pharmacy deregistration and closure. To avoid being caught by MCAZ, Mai Thandi preferred buying tablets stored in huge containers because it was easy to transfer them to empty containers with valid expiration dates and registration details (see figure 30 below).

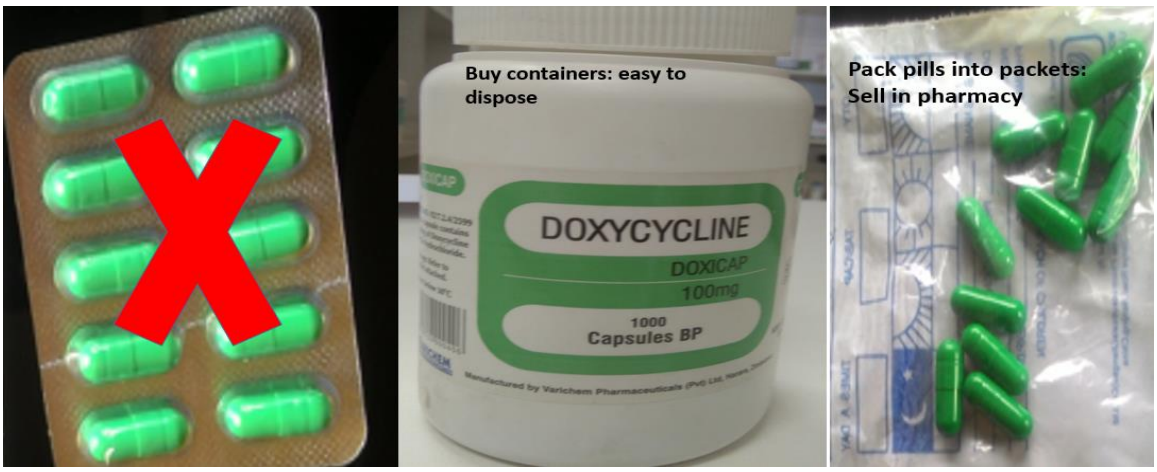


Figure 30: Unregistered pills in blister packs big container preferred by Mai Thandi pills repacked in plastic packets

This is what Mai Thandi preferred, she confirmed, as she continued bitterly complaining over the doxycycline in blister packs that Mai Tee had brought her. All this repackaging was done to give medicines bought from market an appearance or identity similar to that of medicines authorised for use by MCAZ. This was also the case with medicines bought from dispensing doctors. Patients visiting these places bought these medicines without the knowledge that these were medicines from the marketplace. Despite the availability of good regulatory mechanisms to police medicines in formal settings, the informal way of procuring unregistered medicines for use in formal setting was frequently at play. Asked why she purchased medicine at the market, Mai Thandi noted that "doing it straight" was not profitable given the high costs of medicines in Zimbabwe's pharmaceutical wholesalers and the ever-changing prices in response to the unstable local currency. She noted that prices from Zambia were stable, which made it easy to budget and she was prepared to take the risk of stocking her pharmacy with unregistered medicine because:

> It is easy to cheat monitors; I just destroy the containers from Zambia immediately after pouring the pills into empty containers from Zimbabwean wholesalers. If I don't have the right container, I just pack the medicine in plastic packages similar to those used at the clinic, they will just think it's the correct medicine. (Mai Thandi – pharmacy owner)

Using the logic of '*kukiya kiya'*, Mai Thandi had found a way of bringing medicines from the informal sector more in line with the expectations of the regulatory authorities. What Mai Thandi was doing was making the strange familiar, bringing the medicines that supposedly should occupy informal space into formal space. Whilst regulatory authorities like MCAZ were doing their best to police medicines in pharmacy settings, profit-seeking entrepreneurs like Mai Thandi were doing their best to survive economic instability by cheating the system through "*kukiya kiya"* to keep their profit margins high. Mai Thandi justified her actions, noting that she had to bring affordable medicines to her community, which could not afford highly priced medicines typical of other pharmacies that relied on Zimbabwean pharmaceutical wholesalers. In the next section, I focus on attempts made to regulate the informal medicine providers.

5.5. Performing policing/policing informal medicine providers

As indicated in chapter 3, trading outside Mupedzanhamo wall was conducted in violation of council bylaws, as no traders operating in this space were registered to operate outside the flea market's wall. Thus, if the lives of those within what Kamete (2017) calls the informality 'warehouse' of Mupedzanhamo were precarious enough, this was even more the case for those operating on its outskirts. At the same time, as I noted in chapter 3, the municipal police actually had no arresting power, which instead lay in the hands of the national police force, who had to be co-opted as the legal muscle to enforce any arrest. And as we also saw in chapter 3, the national government tended to look more favourably on informality for its political ends, especially if it undercut the (opposition-led) municipality. Municipal police raids therefore most often resulted in the confiscation of traders' commodities but with no arrests. Traders despised this, considering it theft, and accused municipal police of selling their medicine to city-based traders after confiscating them from Mbare. At the time of my study, local municipality officials played a very minimal role at the market. They had ceased harassing traders for trading in an undesignated space because the market chairperson had stood in their defence. The chairperson was a political figure – a ZANU-PF cadre – who ran the affairs of the flea market. His office was greatly respected by vendors who knew that, through Chipangano, the office would always shield them from municipal police brutality. The traders and Mbare municipal police had, in any case, come to a mutual arrangement, as I learned from Mai Tapona, who revealed how each week all traders in the contested space beyond the wall collected money that was delivered to local authorities as 'payment to be left alone'. Mai Tapona happily pointed out that "it is common knowledge that it is us who sell medicine who make a lot of money at the market". Medicine providers, due to their advantaged financial status, made occasional donations to local authorities. Mai Tee noted how "last year we bought floor tiles and donated them to the police" to create good relations with the local police station. It was therefore prudent for both municipal and national police to turn a blind eye to the

activities of medicine traders to keep them in business, since a lot of money could be made out of them to supplement the low police renumeration packages.

Though safe from arrests by local authorities, traders' greatest challenge came from municipal officials from the Harare City Council head office, situated in the Rowan Martin building. These officials, in conjunction with the Criminal Investigation Department for drugs (CID drugs), organised surprise raids. Raids occasionally targeted traders outside the wall, starting with the arrival of plain-clothed policemen from the CID drugs unit, who unexpectedly apprehended traders before the grand entrance of a large municipal lorry full of municipal police. This strategy had caught Donald and Mai Tee on several occasions because their tables were situated right at the beginning of the market wall, where they were easily spotted. Traders believed that municipal officials at the head office were greedy and complained that they organised such raids merely to boost their revenue. During one such raid, I was almost arrested by a plain-clothed policeman who, whilst I was watching the proceedings, grabbed both my arms and announced, "Madam you have been arrested". I had no idea this was a policeman and, seeing my confusion, he released me, thinking I was just a customer visiting the marketplace. This particular operation was very big, and Mai Tee was arrested and taken to the Rowan Martin building with her bag of medicines, which the officials had seized. Upon arrival at Rowan Martin building, she and many others were fined for conducting business in an undesignated place without trading licences. Those in possession of medicine were taken to the CID drugs department where they were fined for illegal possession of drugs. Mai Tee paid her way out and never went to the police station. Fines paid at the police station for illegal possession of drugs were usually not reviewed on time to match the ever-increasing inflation and were too low to be a deterrent for traders who made a lot of money through medicine. After my near arrest, I soon learned how to blend into the crowd by hiding inside the market wall to avoid arrests and Donald gave me tips on how to identify plain-clothed police as these were often taller and better-dressed compared to ordinary market traders.

Within a month of suffering from these raids, traders had strategically mapped a way around heavy policing. Through a meeting organised and chaired by the chairperson, policing officials and traders' representatives came to an agreement that a form of payment should be paid to ease traders' woes. Mai Tapona said joyously after the deal that "We are going to pay them, now they can leave us alone". The agreement, however, required that once in a while, policing officials would effect a 'mini' raid where a few traders would voluntarily be arrested and taken to the police station. This performance was choreographed to give the appearance that the policing of traders was still ongoing to avoid queries from top officials. Indeed, this was a 'win-win' situation that enabled traders to continue their business, whilst officials boosted their low salaries to

make ends meet. In short, while even these head office/CID raids were still ultimately subject to the same political protection as before, it became increasingly apparent to me that antibiotics would not easily be extracted from the extended 'warehouse' of informal living at Mupedzanhamo (Kamete, 2017): those who trade in them, well versed in the practice of "*kukiya kiya"* and empowered by the economic and healing power these medicines bring*,* are able to make the most of the weaknesses inherent in this system to secure their livelihoods. Thus, any attempt to regulate medicines in this place, without far broader changes to the macroeconomic and political context that fuels corruption and to the health system failings that create demand for them, began to seem increasingly futile to me.

5.6. Conclusion

This chapter shows how antibiotics have become part of the infrastructure and networks of informality. It also shows how interconnected the informal and formal sectors are, as unregistered medicines deemed 'illegal' co-mingle with registered approved medicines in a context where medicines are made to navigate zigzag deals typical of the '*kukiya kiya'* survival strategy. Evidently, with informal medicine trading so deeply woven into the fabric of the Zimbabwean health system and wider economy, stewardship interventions focusing on 'irrational' use will not work and could make matters worse. In chapter 7, I propose as a short-to-medium-term goal a more inclusive environment that recognises, protects, and promotes the role of informal traders in supporting the formal public health sector in such times of frailty – thus folding informal traders into the formal economy. However, as I will go on to argue, in the longer term we may look to a bolder and more ambitious overall strategy that ultimately provides a more realistic vision for stewardship in Zimbabwe. Before looking into this vision for stewardship, I turn to the third and final part of my ethnographic work in the next chapter, where I cast a light on sex workers who, like medicine vendors, are considered 'informal' actors whose activities are not formally recognised in Zimbabwe. I explore the role antibiotics play in the management of STIs in this group, which in the global health arena has been categorised as a 'risky' category in the spread of STIs.

Chapter 6

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Student ID Number	1704662	**Title**	Mrs
First Name(s)	Salome		
Surname/Family Name	Manyau		
Thesis Title	An ethnography of antibiotics and antimicrobial resistance, in the lives of medicine providers, residents, and sex workers, in Harare, Zimbabwe		
Primary Supervisor	Dr Justin Dixon		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

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Where was the work published?	Medical Antropology: Cross-Cultural Studies of Health and Illness		
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SECTION E

Student Signature	[redacted]
Date	[redacted]

Supervisor Signature	[redacted]
Date	[redacted]

Antibiotics and the biopolitics of sex work in Zimbabwe

Salome Manyau, Justin Dixon, Norest Mutukwa, Faith Kandiye, Paula Palanco Lopez, Eleanor E. MacPherson, Rashida A. Ferrand, and Clare I. R. Chandler

6. Preamble

This chapter is a version of a published paper, 'Antibiotics and the biopolitics of sex work in Zimbabwe', published in the journal *Medical Anthropology* in 2022, with me as the first author in collaboration with the above-listed authors. What I present as chapter 6 is an exact extract of the published article, with no alterations to the wording. American English is used, as per *Medical Anthropology* journal requirements. The major change from the published article is that I have inserted section numbering, with numbered sections 6.1 to 6.9. I refer the reader to the published article for other details that I have excluded such as the abstract, media teaser, acknowledgements, disclosure statement, funding declaration, notes on contributors, and bibliography. I have excluded these for consistency with other chapters. I have inserted references used in this article in the bibliography at the end of this thesis. As indicated at the end of the previous chapter, this is my final empirical chapter, where I present findings from my ethnographic work with sex workers. I decided to conclude my empirical chapters with this work because it is different from the empirical chapters 4 and 5 in that this is a published article that is structured differently, and it involves the voices of other authors (listed above) who are represented as 'we' throughout the chapter. Since I set out to explore the three dimensions of informality in which antibiotics and AMR are caught up, I have in chapters 4 and 5 showed (1) how residents navigate poor water and sanitation infrastructure through the use of antibiotics; and (2) the role of informal market vendors in supplying antibiotics in the recesses of an under-resourced and frequently collapsing public healthcare sector. This chapter focuses on the third and final dimension of my analysis, reflecting on the role of antibiotics in the informal economy of sex work. I led all research efforts in the conceptualisation and designing of the research methodology. I oversaw all data collection and I conducted participant observation and interviews with sex workers on my own. For archival data, I collaborated with Palanco Lopez who researched in British libraries while I focused on Zimbabwean libraries. Kandiye and Mutukwa played a valuable role with data translation and transcription and assisted me with data analysis, while I took the lead role in interpreting results, and drawing conclusions. I also collaborated with co-authors with varied expertise, drawing into their expertise to enrich my analysis by incorporating valuable insights on medical anthropology (Dr Dixon and Prof Chandler), gender theory (Dr MacPherson), and STI guidelines and management (Prof Ferrand). As first author, I drafted the paper and integrated coauthors inputs and I played a lead role responding to reviewers' feedback and revisions.

> We all went to see her; she had been chased away from Magoshto. They did not want her there; they were afraid she would scare off customers. When she came to stay in our street, word travelled very fast that all should go and see "*hure rakaura nesiki*" [a prostitute in agony because of a sexually transmitted infection]. Tumi did not care anymore, all shame had disappeared, she was in pain, all she wanted was help … She had been taken to the clinic by our peer educator,[3] but the clinic could not treat her. They told her to go to the hospital, but she had no money for the hospital. You cannot do business with a vagina like that, a wound down there kills all work! We united as prostitutes, gathered money, sent Tumi off to the hospital hoping the hospital would give her the solution she wanted. (Mai Fau – sex worker)

6.1. Introduction

A central part of the solution alluded to by Mai Fau was antibiotics. Not only would antibiotics help cure Tumi's sexually transmitted infection (STI); they would enable her to go back to work. Mai Fau and other sex workers informed us that, had Tumi moved into the area earlier before her disease had advanced, she would have benefitted from care and antibiotics from a clinic created specifically for sex workers, where treatment for STIs was more easily accessible and free of charge. STIs, viewed as detrimental to productivity by the female sex workers we worked with, were inimical to the levels of productivity demanded in their line of work, and thus access to free antibiotics formed an important part of their ability to make ends meet.

The notion of antibiotics as an enabler of sex work sits uncomfortably with rising concerns over the contribution of the overuse and misuse of antibiotics to the development of antimicrobial resistance (AMR). While AMR encapsulates resistance in a broad range of microbial organisms, of particular significance here is the way AMR threatens to undermine current and future strategies to manage STIs. STIs are caused by pathogens acquired predominantly by sexual contact and differ from sexually transmitted diseases (STDs) in that one can have an STI with no symptom of a disease (WHO, 2019). STIs are among the most prevalent infections globally, with more than one million people estimated to become infected with a curable STI daily and at least 357 million new infections of gonorrhoea, chlamydia, syphilis, and trichomoniasis annually (WHO, 2018). The efficacy of antibiotics to treat STIs is waning, with warnings that soon there may be few medicines left to treat these highly prevalent infections (WHO, 2018). Multiple drug-resistant strains of gonorrhoea have been found in countries participating in the WHO Gonococcal Antimicrobial Surveillance Program, with ceftriaxone, other cephalosporins and azithromycin having crossed the WHO's threshold for discontinuation (≥5% isolates resistant or treatment failure) (WHO-GASP, 2018). This has led gonorrhoea to be classified as a high priority antibiotic-resistant

[3] Peer educators are frontline healthcare workers with a good understanding of the sex worker community's needs and priorities who help in building acceptance and service uptake in the community.

pathogen by WHO (2018) and an "urgent threat" by CDC (CDC, 2019:4). In Zimbabwe, available evidence suggests that resistance to antibiotic regimens for STIs remains relatively low, but emerging signs of drug resistance in gonorrhoea are a cause for concern. The 2016 Zimbabwe situation analysis on AMR warned of mounting AMR among STIs and reported that 4 (6.1%) of 66 gonococci isolated were resistant to fluoroquinolones, although all were susceptible to kanamycin, cefixime, and ceftriaxone. In Zimbabwe, as in many low-resource settings, drug pressure on antibiotics is significant because STIs are generally managed syndromically (that is, on the basis of signs and symptoms rather than diagnostic tests) and thus frequently overtreated (WHO, 2019). An older study focusing on AMR in gonococci isolated from patients and from sex workers in Harare suggested that the latter experience significantly higher rates of resistant disease and are thus especially vulnerable to increases in AMR (Mason *et al.* 1998).

Female sex workers occupy an ambiguous position in public health through intersecting discourses of vulnerability and risk. Sex workers have historically been and continue to be shunned as a deviant population relegated to the bottom of societal stratification for their morally polarizing occupation. Public health and activist communities have long grappled with the problem of how to frame and manage this "high-risk" group, which has taken on particular salience since the emergence of HIV in the 1980s and the framing of sex workers as "vectors" of disease spread and a threat to public health (Nova, 2016:196; see also Scott, 2011). Literature on sex work indicates tensions in feminist interpretations of gender and sexuality around two opposing paradigms of "oppression and empowerment" (Scott, 2011:53). Sylvia Tamale's work with sex workers in Uganda brings to the fore thorny debates around the theorization of sex work as either "work or abuse" (Tamale, 2011:148). Tamale draws out distinctions between these narratives, with the major school of thought framing sex work as abuse and sex workers as victims of a patriarchal system that promotes the extension of gender-based violence and slavery, and the opposing school of thought contending that sex work is "real work" (p148) protected by sexual, reproductive, and legal rights, voluntarily engaged in by adults in a context free from coercion and trafficking. Regarding the former, Schulze and colleagues note that since the nineteenth century, abolitionists have advocated for a complete abolition of the trade, while neo- abolitionists today call for governments to penalize the demand for sex work (Schulze *et al.,* 2014). The latter camp has focused on empowering and protecting sex workers. While recognizing the vulnerable position of many such workers, proponents advocate for the recognition of sex work as legitimate and have strongly contested the stigmatizing terms of "prostitution" and "prostitute", popularized in previous eras, in favor of the more labor-focused terms, "sex work" and "sex workers". This camp calls for a regulatory approach to sex work that includes access to sexual health services in a supportive environment, while promoting safe working conditions, as exemplified by the NGO clinic for sex workers described in the opening vignette.

An expanding body of critical social science scholarship has sought to understand sex work in its historical, social, and political context and to reveal how sex workers grapple with the diverse and often contradictory processes of criminalization and stigmatization, empowerment, and responsibilization (Nichter, 2001; Scott, 2011; Tamale, 2011; Cruz , 2015; Tadesse *et al.,* 2017). Responsibilization here refers to the processes through which individuals are rendered responsible for ensuring their own health (Scott, 2011). Common across this literature are efforts to expose imperatives to control the bodies of sex workers, not only through punitive measures but also more subtly through the rights- and empowerment-based discourses characteristic of HIV programming, including behavior change initiatives to produce healthy, ordered, and docile working bodies (Scott, 2011; Cruz, 2015). Immersive ethnographic studies in the context of AMR, mean-while, have highlighted the centrality of antimicrobial medicines, particularly antibiotics, in enabling the work and productivity of impoverished and marginalized groups (e.g. Denyer- Willis and Chandler, 2019), as well as how these groups have been foregrounded and rendered responsible for mounting resistance (Nichter, 2001; Chandler and Hutchison, 2016; Brown and Nettleton, 2017). Such allocations of responsibility obscure how antibiotic overreliance has been systematically designed-in to health systems in the global south as "quick fixes" for care, for instance through simple syndromic case management approaches mentioned above (Denyer- Willis and Chandler, 2019:1; Dixon and Chandler, 2019; Dixon *et al*., 2021). To date, very few anthropological studies have explored the roles and meanings of antibiotics for sex workers in the management of STIs. In one of the few ethnographic studies to date, Mark Nichter (2001) examined the roles of antibiotics in the lives of sex workers in Cebu, Philippines. Nichter found that antibiotics enabled sex workers to take initiative in managing their risk of contracting STIs by using antibiotics as prophylaxis. Nichter's study alludes to the significant role that antibiotics can play in enabling sex work in an analogous way to that documented by anthropologists in relation to other forms of productivity.

In this article, we converge and develop these bodies of critical scholarship on sex work and antibiotics as "quick fixes" through historical and ethnographic research on commercial sex work conducted in Harare, Zimbabwe. We demonstrate that antibiotics have become infrastructural to the management of STIs and, by extension, to the conduct of sex work, as a product of successive regimes, governments, and bureaucracies that have sought to categorize and intervene upon sex workers. We show that sex workers have been caught between two public health logics – colonial discipline and punish models, and the more recent empowerment and rights-based discourses. Importantly however, the overt differences between these two logics obscure deeper historical continuity and interdependencies, with colonial logics of domination and control continuous with neoliberal processes of pharmaceuticalisation and responsibilisation, specifically in enabling the continued bypassing of structural and systemic inequities shaping the demands and risks of sex work. Reflecting on these

continuities in light of our historical and ethnographic findings, we go on to consider what will happen if antibiotics continue losing their efficacy. We suggest that public health approaches that more explicitly seek to prohibit and control in the name of population health lie latent and are poised to be reactivated, much like with COVID-19, which could further exacerbate inequities in access to medicines and care.

6.2. Approach

Methods

The research on which this article is based occurred within an interdisciplinary study on febrile illness and antimicrobial use in Africa and South-East Asia between 2017 and 2021 called FIEBRE (Hopkins, 2020). The Zimbabwean component of the study included ethnographic research in clinics, hospitals, pharmacies, informal markets, and residential settings in Harare; interviews with key stakeholders; documentary and media analysis; and archival history. We draw from across these interconnected data sources but focus here primarily on participant-observation and interviews conducted by SM and NM with 20 sex workers and 5 households in Mbare, Harare, between June and November 2019. This was complemented by historical data from the Zimbabwe National Archives and other relevant online sources. Our focus on sex workers emerged from learning of the existence of a sex workers' zone while conducting ethnographic research with vendors and pharmacies near Mbare's marketplace. Mbare is home to Zimbabwe's largest bus terminus where travellers from rural and urban Zimbabwe congregate. The sex workers' zone and its constituent illegal shacks, we learned, rapidly developed first as temporary structures for those left homeless soon after the 2005 Murambatsvina (Operation Clean Up), which destroyed illegal structures, and later turned into hubs for sex work. Sex workers operated in three distinct spaces: home-based in a rented room; based at the illegal shacks made of plastics and sticks; and lastly based at "the base". The base was a house owned by Mai Fau (narrator of the opening vignette), with three rooms each subdivided by curtains to create 12 units in which sex work was conducted. We obtained consent to work with sex workers in each of these three workspaces.

During the 6 months of research with sex workers, SM rented a room within the sex workers' zone and immersed herself within their networks. She purposively included sex workers working in the three aforementioned spaces and spent considerable time observing, socializing and talking with participants, who were very welcoming and open to discussing their work. Observations focused on the day-to-day lives of sex workers. We were able to gain an in-depth understanding of how they sought care for STIs and the roles of antibiotics. Interviews were conducted in rooms/homes used for sex work and focused on their experiences of sex work, the identification and management of STIs, and roles of antibiotics. Except for one 18-year-old, most

sex workers we came into contact with were in their thirties. They had many years' experience in sex work and managing STIs and possessed a wealth of accumulated expertise and insight to share. While we were able to generate valuable insights into the roles of antibiotics in sex work through this iterative approach, one limitation was that our sample was concentrated on Mbare, limiting the generalizability of our findings.

Field notes were captured during the process of participant-observation. Recordings from inter-views were transcribed verbatim in Shona and translated into English. English transcripts and field notes were analyzed by SM with periodic analysis meetings during the project with other authors and the broader FIEBRE study team. Themes were identified through an iterative analytic approach using qualitative data analysis software NVivo 12, through which codes of progressively higher orders of abstraction were generated to explain and theorize observed social phenomena. Ethical approval was obtained from the Medical Research Council of Zimbabwe (MRCZ/A/2288) and the London School of Hygiene and Tropical Medicine Ethics Committee (Ref: 14616). Permission and written consent were sought from all participants engaged in the study. To protect their identities, all participants' names are anonymized.

6.3. Theoretical framework

Across both historical and ethnographic data presented in this article, we apply a biopolitical analytical lens to the topic of antibiotics, STIs, and sex work. Developed by Michel Foucault, biopolitics refers to the administration of life at the level of populations, central to which is the use of quantitative measures, statistical techniques, and interventions aimed at knowing the whole social body and constituent groups (Foucault,1978). Of the scholars who have built on Foucault's theories, we draw first upon Ian Hacking's observation that categories of people, including "deviant" populations such as the mad, criminal, and prostitutes, are "made up" in the process of coming to know them (Hacking 1982:168). This attentiveness to categories has been applied to epidemiology by David Reubi (2020), who has shown how epidemiological imaginings, in his example the "African smoker," have historically trained attention on individual lifestyles and behavior at the expense of wider structural processes, contributing to the reproduction of racial stereotypes and colonial logics. Developing the insights of Hacking and Reubi, in the first part of this article, we offer a brief history of the category of "prostitute" as it features in public health discourses in colonial Rhodesia. In doing so, we pay attention to the emergent role of antibiotics in STI management and the novel possibilities and problems these substances brought about, ambiguities and tensions which we will go on to show have endured through to current formations around global public health in present-day Zimbabwe.

In the second part of this article, we explore ethnographically how sex workers in our study sought medicines and care for STIs, which included how they engaged with the category of "sex worker" as deployed by an NGO anonymized as Sex Workers' Clinic (SWC). In doing so, we draw secondly on the concept of "therapeutic citizenship" as developed by Vinh-Kim Nguyen (Nguyen, 2005:126). This is one among several concepts, including "biological citizenship" (Petryna, 2004:263), developed to capture forms of belonging mediated by biological categories. Our use of therapeutic citizenship refers to a precarious form of citizenship in which northern-funded NGOs – in this case SWC and the categories in which they trade – become points of access to the only stable sources of medicines and care available for this vulnerable group. As such, we illustrate how the historically conditioned construct of the sex worker has become absorbed within the lexicon of global health, and how antibiotics have taken on a central but ambiguous role as both care and vehicle for the extension of power over the sex worker's body.

6.4. Venereal disease and prostitution in Zimbabwe

In the 1920s, concern rose among British colonial administrators in Africa about the rise in STIs, then known as venereal disease (VD), in the "native" African population (Callahan, 2002:30). Gonorrhoea and syphilis were the most common VDs and, while gonorrhoea was generally less serious and by the 1930s was treatable with sulfonamides, the treatment of syphilis remained a long, toxic, and painful procedure until the advent of antibiotics. It entailed treatment with heavy metal (salvarsan or neosalvarsan injections), which was costly and required hospitalization to deal with toxicity and to assist in the completion of a full dose of 20 injections (Callahan, 2002). The Wasserman blood test was introduced in 1906 for syphilis, but in practice resource constraints meant that diagnosis of VD was restricted to visual and physical checks of sexual organs for symptoms associated with a particular infection. The challenges inherent in the diagnosis and treatment of VD and its alleged rapid spread in the African population led VD to be deemed a "serious threat" to the colonies (Havik, 2018:492). In this first section, we describe the epidemiological imaginary (Reubi, 2020) of the Rhodesian colonial administration regarding VD, which focused narrowly on behavior and moral failing rather than rapid urbanization, extractive labor, and racial discrimination, in ways that legitimized intrusive, segregatory, and punitive measures (Steele, 1972; Callahan, 2002). We then hone in on how prostitutes were configured as particular moral and health threats and thus a key focus of moral and physical policing. Finally, we show how antibiotics entered and inflected the control of VD and prostitutes, presenting both solutions and new problems for colonial administrators, traces of which we continue to see in contemporary Harare.

In response to the public health threat posed by VD, between 1924 and 1930 the Rhodesian government imposed a "draconian venereal disease surveillance and treatment system" (Callahan, 2002: 230) pursued under the framework of social hygiene: a movement to study and address problems of basic social relations that influence the welfare of families and homes, including divorce, illegitimacy, prostitution, and other forms of sex-delinquency (Everett,1923). Social hygiene was championed by Andrew Milroy Fleming, a medical doctor from the University of Edinburgh with a Diploma in Public Health from Cambridge, who was Rhodesia's longest serving Medical Director from 1897 to 1931. Fleming's engagement with VD in Rhodesia began in 1907 following a syphilis outbreak that called his office into action. His investigation resulted in a detailed report, which pronounced the aetiology of venereal syphilis as a disease imported by miners from South Africa "after contracting the disease via sexual contacts with prostitutes on the Johannesburg mines" (Callahan, 2002:30). To Fleming, these diseased miners had infected their spouses with VD upon their return home. He further noted that the appalling unhygienic communal practices of Africans had enabled venereal syphilis to adapt into a non-venereal disease leading to its transmission to other family members (Callahan, 2002). This, for Fleming, legitimized the imposition of what he called social hygiene, made possible through the country's first Public Health Act in 1924 (Steele, 1972; Callahan, 2002). This system entailed the forcible examination of Africans for VD, accompanied by mandatory hospitalizations and treatment in locked hospitals operating as lazaretto quarantine stations (Callahan, 2002). The Public Health Act criminalized any attempt to conceal VD and enabled colonial authorities to investigate cases of VD in urban locations like Salisbury (now Harare). Section 52 of the Act empowered the colonial secretary to impose quarantine in areas deemed to be VD-infested and for medical officers to conduct genital examinations on all persons within the quarantined zone. Fleming further warned the white community to practice segregation from the African community and to employ only healthy Africans in possession of a "clean bill of health" (Jackson, 2002:200).

Africans, especially African women, are documented to have resisted forced medical examinations, gaining the name chibeura which, according to Lynette Jackson (2002:192), meant "to open some-thing, often with force," and in this context referred to the way women were forced to open their legs for inspection. In her article on chibeura practices, Jackson notes how "raids" on African women were made, and how these raids were resented especially by the "respectable" married women, giving rise to protests (Jackson, 2002:201). Martha Ngano, leader of Rhodesian Bantu Women's Association, is noted for leading a protest against the medical examination of African women in May 1925 (Callahan, 2002; Jackson, 2002). Growing protests made Fleming revise his position on "native wives", exempting them from medical inspections (Callahan, 2002:201). As observed by Hungwe, these women were dignified, married, and fitted into the category of "respectable" within the colonial social strata, in contrast to unattached single women, who were pathologized as deviant

"unrespectable" prostitutes (Hungwe, 2006:38). Directing his attention toward the emergent corollary of the respectable native wife, the unrespectable prostitute, Fleming targeted the "travelling native prostitute" as deserving VD inspection (Barnes, 1992:600). Colonial labor policies had resulted in a separation of men from their families, who remained in the rural areas, creating a gender imbalance in urban spaces skewed toward men (Jeater, 2010). The "travelling native prostitute" gained the Shona name *pfambi,* which meant a "woman who walks around" (Nzenza, 2015:1). The term *pfambi was* a demeaning word aimed at "unruly women," (Jackson, 2002:199) unattached to men, who exhibited male-like behavior by wandering into urban spaces like men.

This category of *pfambi* in which women were, to use Douglas' (1966:415) terminology, "matter out of place," was "made up" (Hacking, 1982:168) and pathologized through the discourses and technologies of biomedicine and public health. Jackson (2005:117), for instance, has observed how "stray, wandering and loitering" women were often labelled as mad and sent to mental asylums. In the context of infectious disease, meanwhile, the "travelling native prostitute" was in Fleming's epidemiological imaginary a primary source of VD among native Africans (Barnes, 1992; Callahan, 2002; Jackson, 2002). This was perpetuated by colonial officials and missionaries who blamed African women for adultery and was later borne out in Holland's (1976) survey on STIs in Salisbury, which revealed high incidences of VD in which "80% of male infections were contracted from prostitutes" (Holland,1976:218). Such findings detracted attention away from the exploitative practices of the colonial enterprise onto the behaviors and moral failings of this classification of women. The meaning of VD itself came to be associated with prostitution. VD gained the Shona name *chirwere chepfambi/ chechihure,* which means "prostitute's disease" (Chipfakacha, 1993:40). Following Fleming's exemption of "native wives" from forced inspections, prostitutes were made to bear the brunt of the colonial administration's authoritarian chibeura practices. Mandatory travel passes were introduced, empowering police officers with the right to deny entry of women suspected of prostitution into the locations (Barnes, 1992). Fleming further promoted contact tracing, which largely targeted prostitutes as sources of contagion, and arrest warrants were issued to prostitutes who evaded medical examinations. Prostitutes became the primary object of the framework of social hygiene and for defining the boundaries between "good" and "bad" African women.

The advent of antibiotics served to unsettle such sanitationist modes of public health. The discovery of penicillin in 1928 and its introduction into colonial medical practices in Rhodesia in the 1940s (Palanco Lopez and Chandler 2020) enabled an unprecedented cheap, rapid, and outpatient curative approach to the problem of VD (Stokes, 1950; Willcox , 1950). This approach enabled to a certain degree the displacement of more authoritarian social hygienist approaches. Sharing his experiences as a medical practitioner when antibiotics were introduced, Stokes (1950) observed that the advent of antibiotics provided a simple and rapid treatment of VD, yet in

refocusing VD from a public health lens to the immediacy of the clinical encounter, the importance of minimizing transmission fell to the background, making reinfection commonplace (Stokes, 1950). While antibiotics proved a reliable cure for VD, the colonial regime did not wish to subsidize this, leading to the question of how antibiotic therapy could be embedded within a broader public health approach that incorporated curative and preventative approaches to VD.

As antibiotics became increasingly prominent in colonial health care, several approaches were devised and variously implemented during the 1940s and 1950s. Stokes regarded VD as a problem springing from man's social conduct and strongly called for the need to pay attention to "the development of human idealism, self-control and responsibility in the sexual life" (Stokes,1950:13). Another approach advocated by Fleming was that employed Africans should partly pay to get treatment instead of signing off all costs to their departments (Steele, 1972). A further intervention which deployed antibiotics to perform the public health work of reducing the VD burden was mass administration of a single sterilizing dose of penicillin, an intervention that begs further elaboration because of the ways in which it revealed the moral undertones and tensions over how best to use limited antibiotic stock to intervene. Willcox, a British physician, was commissioned by the Rhodesian government in 1949 "to determine how new methods of treatment could, consistent with cost and local conditions, advise on the best therapy" (Willcox, 1952:107) for VD management. Rhodesian health administrators had endorsed the use of neoarsphenamine, instead of penicillin, in treating early syphilis and chancroid as this was believed to be a cheaper option than using penicillin. Willcox's experiments proved that this was inefficient in treating syphilis and chancroid. He experimented on numerous antibiotic therapeutics, noting that though most doctors were confident and comfortable with using a single dose of penicillin with aluminium monostearate (PAM), single dosing was not the best therapy and could only be recommended for rural African clinics lacking doctors. This prophy-lactic use of antibiotics was aimed at reducing the "common infectious pool" and not at curing the individual (Willcox,1950:256, 1952). He recommended eight injections of 600,000 units of PAM taken daily as a more effective therapy than the single dose (Willcox,1952). Jackson (2002:200) sadly notes Willcox's lack of concern over the raids and chibeura practices on African women, as he like Fleming singled out women as carriers of VD, citing in his report that "girls on the move frequent the road camps and infect the transport drivers while in transit." The moral construction of the prostitute as the "diseased body" and the central but ambiguous role of antibiotics in its management persisted through the 1960s and 1970s into independent Zimbabwe (from 1980), as we demonstrate in the next section.

6.5. STIs, sex work, and antibiotics in Zimbabwe

In contemporary Zimbabwe, sex work is commonly practiced, particularly in urban areas such as Harare, yet remains illegal. While Women's Action Groups have successfully battled against a police tendency to arrest women suspected of loitering for purposes of prostitution, sex workers remain highly scorned and stigmatized, as they were in the colonial era, and are perceived by much of society, particularly church organizations, as a breach of society's moral, and spiritual standards (Mahamba, 2018). In an article entitled "Prostitution: what an insult to our people," former liberation struggle heroine Ireene Mahamba denounces "sex work" as "an anathema to our culture" (Mahamba, 2018:1). Mahamba rejects the term "sex worker" – that has gained prominence globally – as a term that "does not originate from among our people," noting that "it is borrowed from Western capitalists who reduce the human to a commodity that can be bought and sold" (Mahamba, 2018:1). She calls for "mankind to be human and not objects" and decries the selling of one's own body as reductionist and as a move away from God's design for a woman. The way Mahamba denounces sex work as an "insult to our people" reflects our experiences of the way sex workers are perceived by a large proportion of Zimbabwean society and the stigma that remains attached to sex work.

The landscape of health care and development in Zimbabwe today, like many low- to middle- income countries (LMICs) in Africa, is hybrid and fragmented, with a great diversity of local and international governments, research institutions, and NGOs active in the country (Prince and Marsland, 2013; Ndori-Mharadze *et al*., 2018; Dixon *et al.,* 2021). Thus, in practice, a variety of moral economies, legal frameworks, and governmentalities coalesce uneasily upon this "high-risk" group. Public polyclinics tend to reflect discipline, punish, and abolitionist logics, whereas NGOs and transnational actors represent the empowerment approach. Reflecting the growing influence of the latter approach in Zimbabwe, several academics in Zimbabwe have argued for the need to provide HIV/AIDS, sexual and reproductive health services through "sex worker friendly" clinics (Ndori- Mharadze *et al.,* 2018:95). The rationale for separate facilities for sex workers is that they have historically been criminalized and stigmatized, making them vulnerable to ill-treatment in public health facilities, thereby compromising their uptake of vital sexual and reproductive health care. Since 2009, rights-based discourses aimed at protecting and empowering sex workers have emerged and are particularly evident in the work of NGOs, including one in particular that we became aware of during our fieldwork. This NGO runs a free clinic to provide sexual and reproductive health services to sex workers with the aim of achieving a stigma-free, friendly, and non-judgmental environment. In the following sections, we illustrate ethnographically how individuals categorized as "sex workers" navigated fragmented landscapes of NGO and state health care in the face of regular occupational exposure to STIs. At the same time, we suggest how older colonial governmentalities have endured within these biopolitical configurations, partially substituting explicitly punitive public health approaches for pharmaceuticals and the responsibilization of working women, while continuing to neglect

structural and systemic inequities. This provokes unsettling questions about how and by whom sex work will be governed if the antibiotics that are so central to current pharmaceuticalized regimes continue to lose their efficacy.

6.6. Sex work and the inevitability of STIs

The reality of sex work we encountered in Harare was a diverse and vibrant sphere of informal economic activity, with several business models operational in different spaces where we conducted research: "the base" (run by Mai Fau); homes within the sex zone; and the Magoshto shacks, which were open to business 24 hours a day, enabling sex workers to capitalize on the high demand for sex work. Common across the business models was the high volume of clients that sex workers would typically see during each shift: this could be as many as 50 clients per day/night, charging for a short time only. "Short time" was sex for at least two minutes, and in this process, sex workers were regularly exposed to STIs. In theory, sex workers could choose to engage only in protected sex. However, this was an "empty choice" for most, due to the significant difference in price between protected and unprotected sex. Engagement in unprotected sex fetched a higher income of ZWL400 (USD20) in one encounter compared to sex using a condom, which raised between ZWL5-10 (USD0.25–0.50). Fadzi, a sex worker at the Magoshto shacks explained the rationale behind this choice:

> I get 5 or 7 bond for one customer using a condom, imagine the hard work involved to get 100bond per night? If you get someone who wants to spend the night with you, the cost for the whole night is 100 bond, but the person can ask for sex without a condom, and you tell him he must top up the money to 400 bond and you get a lot of money in one night. Why not get better money pay my bills and feed my children? Only those with less responsibilities have the luxury to play it safe. (Fadzi, Sex Worker 32 years)

Sex workers were aware of the risks associated with unprotected sex and engaged in meticulous acts of bodily surveillance to identify signs and symptoms. Yet ultimately, given this harsh reality, STIs were reported by the sex workers we engaged with as a regular occupational hazard. When this occurred, the most common first point of health care was SWC, as described by Mai Fau:

> Most of my girls do not keep STIs in hiding. If l see that one of them is not well, I ask is there any pain anywhere in you and tell them when you are not well, go to [SWC]. If one cannot walk, I will accompany them to [SWC].

6.7. Contestations over our clinic

The sex worker's program run by SWC was situated within a public health facility in Mbare. The program provided free clinical and preventative services exclusively to sex workers and their clients. When asking about

the outcome of the thrice-yearly STI episodes, most sex workers reported having received – and been successfully treated with – antibiotics. Sex workers had a keen familiarity with different kinds of antibiotics, including “doxy” (doxycycline), “cipro” (ciprofloxacin), “metro” (metronidazole) and Rocephin (ceftriaxone) – all commonly used in the treatment of STIs. These were the preferred mode of treatment because they enabled healing with minimal disruption to their work.

Services available at SWC contrasted starkly with services at the public polyclinic. This was both in terms of services provided – usual clinic attendees had to pay a user fee and for any medicines prescribed – and the mode of care provided by the NGO staff, who were perceived as friendly, understanding, and tolerant of the plight of sex workers:

> [SWC] was made for us, they saw that in our job, people were suffering, we had no money for medicine, and the nurses at the clinics were treating us like we were not human, so [SWC] provides us with medicine and care for free. (Fadzi, Sex Worker, 32 years)

> Whenever we feel like we need care, here we just think of [SWC], we don’t really bother about the polyclinic. My most recent visit to [SWC] was two months ago. I was given an injection and tablets. (Judy, Sex Worker, 36 years).

Perceptions of better treatment in NGO clinics that were well resourced in comparison to over-stretched government health-care facilities has been well documented in critical global health literature (Geissler et al., 2008). The sense of belonging created and its associated resources, entry to which required fitting the category of “sex worker,” is characteristic of “therapeutic citizenship” documented in the context of HIV. A key difference here is that antibiotics (rather than antiretrovirals) lay at the center of this emergent citizenship, which helped to sustain the legitimacy and sustainability of the social category that one was required to fit into to gain access. Belonging to SWC exposed sex workers to particular forms of subjectification, in which they were recast as responsibilized health seekers in ways analogous to the lifestyle changes that have been associated with antiretrovirals (Nguyen, 2005).

Knowledge of the existence of free health care for sex workers generated strong feelings, both because of the exclusionary nature of this citizenship, as well as whether sex workers deserved free care. That sex workers proudly called themselves “sisters” was to the dismay of some community members, who felt that this was an “evil” sisterhood. MaMoyo, a resident whose house is situated near the Magoshto, said:

> This clinic for prostitutes is evil, it condones the evil work of prostitutes, freely dishing medicine for their siki [STI] allowing them to continue polluting our area with their evil work.

Such ill-feelings and resentment were compounded by the fact that, while male clients of sex workers could receive free care, other women, including the wives of said men, had to attend the public services for treatment. Interviews with community members indicated that seeking STI care at the public clinic subjected them to shame. “Walking into the clinic to report that you have a disease for prostitutes makes you feel like a common prostitute,” said Mai Tonde, a married woman who had contracted an STI from her husband. Though there were other ways people had got STIs that were not from prostitution (e.g. casual unprotected sex with an infected partner), Mai Tonde’s framing of STIs as a “prostitute’s disease” suggests the enduring legacy of older colonial era framings of VD and prostitutes. While women feared being accused of being a prostitute, SWC was an attractive option they could not access: SWC only admitted “sisters” and their partners. Women not fitting into this category felt they also deserved free treatment since they too were prone to STIs, which they identified as originating from sex workers who contaminated their husbands. Mai Shane, a community health worker, noted that there was something deeply problematic about dividing women who required sexual health services, noting that they had rescued sex workers only from shame associated with siki (STIs) at the polyclinic:

> This clinic for sisters turns a blind eye on wives who gets siki from their husbands saying we want sisters only. What about those wives infected by husbands who have been infected by sisters? Who will rescue them from the shame they suffer at the clinic and who will assist them to buy treatment? Who is their helper? The clinic does not care. (Mai Shane, Community Health Worker)

The exclusions of the sex worker’s program described by Mai Shane are the necessary corollary of such siloed approaches to global health. As critical global health scholars have observed, northern-funded programs tend to narrowly focus on priority pathogens and “high-risk” groups through narrow technological solutions – in this case, sex workers and antibiotics – at the expense of broader structural challenges. Such problems are pushed onto government services and, while we have no doubt that practices of shaming and scolding occurred, this was certainly exacerbated by the chronic under-funding of the public sector not only by governments but also northern donors.

6.8. Body surveillance and responsibilization

While sex workers were not subjected to punitive and stigmatizing treatment that many other women received at government facilities, we observed subtler ways in which power was extended over sex workers through SWC’s curative and preventative interventions. Of significance was a network of community peer educators hired by SWC to educate sex workers to become responsibilized workers and health seekers. These peer educators invested their time in teaching sex workers about the values of safe sex (which, as described

above, was often financially damaging), to identify signs and symptoms of common STIs (as exhibited both by themselves and by clients), to seek early treatment upon finding signs and symptoms, and to adhere to antibiotic regimens and other treatment like antiretroviral therapy provided by SWC and other health providers.

In practice, we observed how these routines, techniques, and values were taken up and embedded within a broader regime of inspections, cleaning, and maintenance centered on genital hygiene. Sex workers related how their vaginal areas were required to be forever shaved, daily cleaned, and inspected for unusual odors, lice, bruising, and growths. Regular checks for STI symptoms on the self and on clients were done, in the event of which the first step was to seek treatment, convince clients of the need for treatment and inform them where to obtain treatment (i.e. SWC). If a customer refused to go for treatment, the whistle would be blown: the sex worker would alert others not to entertain this client as he had potential to spread disease. Keeping the work environment sanitized was thus made possible by regular inspection, early identification, and cutting off services to customers refusing to go for treatment.

Sex workers indicated the existence of two local classifications of STIs, the first "siki yedrop" (an STI called "drop" that likely referred to vaginal discharge syndrome/gonorrhoea) and "siki yemaronda" (meaning "STI of the wound," which likely referred to syphilis). The latter was feared, as indicated by several sex workers who expressed that wounds on the vaginal area were a major "killer" of work. Mai Fau, for example, explained:

> It starts off as a very small wound, but I will neglect the small wound thinking this small wound would heal on its own but no, this thing develops into a big wound or wounds. You then realise you have very painful wounds. Now working with painful wounds, it is no longer possible for you to work, how can you work, with this kind of work, not even a small wound is wanted down there, when you are in this business your work just dies. When your work dies, it may take you time before you are able to use your vagina again.

Prompt treatment with antibiotics may have been able to prevent the condition from getting too severe. However, with the imperative to make money often taking precedence over longer-term health interests, this was not always the case, leading to situations such as that described in this article's opening vignette.

Tumi had recently moved from the city into the Mbare area to conduct sex work at the Magoshto. All the sex workers we spoke to characterize the big, odorous warts resembling cauli-flowers which had developed on her vagina as a product of delayed treatment. We attended a meeting at the Magoshtos where other workers decided to chase out Tumi to protect their workspace. Reasons for this were laid down: customers were recycled and Tumi risked spreading her disease onward to other customers and back to them. She was identified as a threat to business, and two women were selected to evict Tumi. Evicted, she found comfort at her friend's home in the sex zone. Word spread very fast about her STI: community members laughed, calling this a good example

of the evils of "prostitution," while the community peer educator saw this as an opportunity to teach other sex workers the dangers of noncompliance. The educator called for all sex workers in the area to witness Tumi's wound to show to them the "wages" of having sex with no condoms and the dangers of not seeking treatment early, as taught by the SWC. Tumi was escorted to the SWC and, because of the severity of her condition, was referred onwards to the hospital. Tumi's case demonstrates how techniques of surveillance and control not dissimilar from the chibeura practices of the British colonial regime form a key part of the regulation of sex work in the present day, although now shifted from the remit of a central government or public health body and onto individual and collective bodies of practicing sex workers.

6.9. Conclusion: Future pasts of STI control

In this article, we have brought anthropological and social science scholarship on sex work into conversation with that on antibiotics as "quick fixes" for care and productivity through a rare ethnographic and historical investigation into the roles of antibiotics in STI management among sex workers in Zimbabwe. Deploying a biopolitical theoretical lens, our aim has been to demonstrate how antibiotics have become increasingly central to the rationalities and technologies of public health and in turn the framing and governance of the category of the prostitute/ sex worker. Our key finding is that, although there have been clear and applaudable reasons for working to destigmatize and legitimize sex work, provide such women with strategies to mitigate harms including STIs and improve access to medicines and care, the ways in which these advancements have been pursued have been premised on the availability and continued efficacy of antibiotics. As other critical global health scholarship has similarly noted (Prince and Marsland, 2013; Packard, 2016), such substances have enabled a subtle bypassing of the question of wider structural and systemic vulnerabilities responsible for gendered inequalities that make women's options for paid work extremely limited (i.e. leading women into sex work and regular exposure to STIs) in favor of governance through antimicrobial "quick fixes." Not only is the architecture of contemporary global health today fragmented, erratic and tunnel-visioned; as we showed, many women fell outside of SWC's classifications. Moreover, the sanitized neoliberal lexicon of empowerment and responsibility inculcated in those falling within SWC's remit belies a subtle reality of monitoring, surveillance, and control. Although many of these practices were appropriated by sex workers precisely to gain a measure of control over the challenging circumstances in which they worked, they nonetheless remained focused on the policing of bodies and behavior in ways not so dissimilar from the technologies of "social hygiene" deployed in colonial Rhodesia.

The unsustainability of this systemic reliance on antibiotics has, however, been thrown into relief by the phenomenon of AMR. It has previously been argued, building on the theories of Bowker and Star (Bowker and

Star, 1999), that antibiotics have become "infrastructural" to our ways of thinking about and intervening upon ill health (Chandler, 2020:9). Such is their centrality to health care and indeed modern life that they have, until recently, become almost invisible. We previously demonstrated how antibiotics have become subtly and cumulatively written into the architecture of global health and LMIC health systems such as Zimbabwe's (Dixon *et al.*, 2021). In the present article, we have specifically honed in on how antibiotics have become caught up in the "making up" and governance of sex workers – exposing how these substances have subtly come to shape the ways in which this sub-population has been intervened upon through successive regimes of public and global health. Antibiotics, characteristically of infrastructure, are becoming increasingly visible again as their ability to fight bacteria weakens. This is palpable in the context of STIs, with many organisms such as gonorrhoea – or "STI of the drop" – having been reported as resistant to first- and second-line drugs (WHO-GASP 2009–2018). AMR, in other words, presents a moment of "infrastructural inversion" (Bowker and Star, 1999:33) that compels us to recognize the myriad ways we have come to depend on antibiotics and how we might think and act moving forward from here.

However, the ways in which AMR has been framed as a policy object suggest that there is cause for concern. As Hutchinson argues, AMR discourse has paradoxically only reinforced the centrality of antibiotics to modern living and, as this discussion of medicines expands, "vulnerable people seem to disappear, and instead vulnerable medicines take their place" (Hutchinson *et al.*, 2016:22). While imperfect, the laudable successes in expanding access to medicines and care in the twenty-first century for historically disadvantaged populations are already being undone through discourses of irrational use that place responsibility and blame for the dwindling efficacy of antibiotics on Other people in Other places. We suggest that this is no more the case than the historically scorned category of the prostitute/sex worker, which with a long history of being the symbol of moral decay is likely to be among the first to be blamed for AMR and last to gain access to the scant number of new antibiotics. The COVID-19 pandemic demonstrated how fast imperatives of access and equity have been superseded by securitized concerns around containment and control, with drastic and detrimental effects in LMICs (Leach *et al.*, 2021). As we have shown here, for all the progressive discourses around rights and empowerment of sex workers (Cowan *et al.*, 2013), public health only partially engaged with the structural and systemic determinants of sex work because of the advent of antimicrobial "quick fixes." Such approaches contain latent fragments of colonial governmentality calibrated toward surveying and policing behavior, morality, and hygiene, which we propose stand to be reactivated by those assuming authority and responsibility for protecting medicines were STI superbugs to become a greater threat.

Ethnographic and historical approaches, such as those we have taken in this article, are well placed to shed light on the cumulative processes forming the grooves within which we currently work, and in doing so reveal their historical contingency and how things could have been otherwise. We have previously argued that what are needed are bold, reflexive attempts to design-out antibiotics from the architecture of global health (Dixon *et al.*, 2021; Tompson and Chandler, 2021), an argument we might usefully extend to the pharmaceuticalized approach to the management of STIs enacted by SWC and similar organizations. In this context, this means greater engagement in public health circles with those structural and systemic issues surrounding sex work that have been allowed to fade from view through substitution with antibiotics. Neither the draconian techniques of colonial public health, the "empowerment" logics of contemporary global health nor the "abolitionist" stance enacted by Zimbabwean public clinics have anything close to a sustainable, equitable solution. Perhaps indeed all hold clues; yet any lessons need to be carefully disentangled from the moralizing, individualized framings that lead to all-too-easy targeting of vulnerable women. What are needed are systems-level approaches that consider the ways in which STIs move within wider networks where sex work constitutes connective tissue. Any narrow focus on sex workers – whether empowering or abolishing – obscures the socio-logical, economic, and epidemiological connections between sex workers, wives, husbands, health systems, and society at large that have been co-constituted with substances that can no longer be relied upon. It is these networks, not a reified category of "sex worker," that require attention and intervention moving forward.

Chapter 7

7. Discussion

7.1. Introduction

In this thesis, relative to the broader FIEBRE study, which focused on the roles of antimicrobials in case fever management, my thesis explored the roles that antibiotics have come to play beyond formal prescriber settings. As indicated in section 1.8 in chapter 1, the aim of this thesis was to better understand the roles of antibiotics in informal living to inform the ongoing development of strategies to reduce antibiotic use beyond formal prescriber settings in Zimbabwe. Using ethnographic methods, which are ideal for bringing into view easily overlooked aspects of healthcare, I investigated the use, accessibility, emergent roles, and local histories of antibiotics in three interconnected aspects of informal living in Mbare, Zimbabwe: residential settings, marketplaces, and sex worker hubs. In this final chapter, l consider my final objective, which is to use my findings on the emergent informal roles of antibiotics to begin thinking through what it might mean to implement antibiotics stewardship outside formalised institutions, in the informal sector. Below is a summary of key themes emerging across the empirical chapters, before I move on to implications of this PhD work for AMR policy and practice, anthropology, and critical global health, and reflections on my PhD journey.

7.2. Summary of findings and key themes

The key data emerging in this thesis centre on antibiotics, informality, and politics. Chapter 3 began by detailing the history of Mbare (formerly Harari) and the multiple layers of biopolitics that have produced both the conditions under which infectious diseases thrive, substandard healthcare access, and enclaved informality that includes antibiotic sales. This set the backdrop for the immersive ethnographic fieldwork (chapters 4–6), which showed how residents, including sex workers, were making use of antibiotics to manage infectious disease and broader conditions of precarity. Here, a first key theme is how seemingly 'irrational' acts of antibiotic use – notably non-prescription use – were in fact highly 'rational' in context, contrary to popular imaginings fuelled by AMR discourse. Against the backdrop of a failing economy, and the downfall of Zimbabwe's once-celebrated health system, informal medicine providers have emerged to fill in the medicine gap beyond the clinic walls. With a profound lack of medicines in the formal public clinics, work with residents revealed a 'decentring' of the clinic, forcing residents, especially those who could not afford 'highly' priced medicines in private retail pharmacies, to rely on 'cheap' informal sector medicines (indicated in chapter 4 and elaborated in chapter 5). This led to a scenario where people learn to navigate in an antibiotic 'world' populated by a few 'simple', 'cheap' oral antibiotics (amoxicillin, cotrimoxazole, metronidazole, tetracycline, and ciprofloxacin) largely on the WHO

access list and the Zimbabwe's essential medicines list (EDLIZ). Except for ciprofloxacin, there was limited use of antibiotics on the WHO watchlist. My ethnographic findings showed that, despite the appearance of 'excess', it was more a case of residents living in infection-prone conditions shaped by the deeply set historical processes described in chapter 3, who were managing infections using antibiotics.

A second major theme that emerged is the way antibiotics have become 'infrastructural' to the workings of the healthcare system and informal economic networks, compensating for deeply embedded social and economic failures. Ethnographic work revealed how, in an unstable urban context, antibiotics have come to occupy an integral role in sustaining an informal economy characterised by chaotic governance, broken water and sanitary infrastructure, and a broken health system, with antibiotic use varying by setting to suit these roles. Antibiotics, notably ciprofloxacin, metronidazole, and amoxicillin, partly enabled residents to live in crowded, dilapidated flats with broken sewer systems, compensating for literally painted-over infrastructural failings (contested by residents in chapter 3) that stem from colonial legacies perpetuated by ongoing contestations between local and national sovereigns. Antibiotics trading, partially protected (albeit on precarious terms) by these same biopolitical assemblages, not only ensures a steady supply of antibiotics to these informal residents, but also further props up the formal healthcare system, thus partially 'painting over' the need for a more robust health system. Antibiotics, finally, have played a central role in the way public health has, over successive regimes, managed STIs and continues to manage STIs using technical 'quick fixes' for care and productivity so that sex work can continue despite regular occupational exposure to STIs as described in the previous chapter. 'Global health', while laudably seeking to expand access to care for historically vulnerable groups, plays its own unintended role in enabling informal modes of living rather than addressing the deeper underlying forces that lead people into sex work, while simultaneously neglecting those who fall outside its risk categories.

A third major theme is that, while the determining forces acting on Mbare's residents are often overwhelming, they do not accept these processes passively; their practices demonstrate great 'agency' in navigating complex biopolitical arrangements. This is evidenced by the 'borehole wars' (chapter 3), engaging in 'making do' mechanisms to substitute for care not found at the clinic (chapter 4), the resilience of medicine providers in navigating multiple layers of petty and operational sovereigns (chapter 5), and the ways sex workers found to monitor their work environment and exclude unwanted clients and diseased sex workers from operating in their hubs (chapter 6). Crucially, also, a part of the agency revealed in this thesis is people's hopes and aspirations, and imaginings of better care. For many, the current status quo – and the roles of antibiotics therein – remain a temporary scenario in anticipation of a resumption of normality. Chapter 4 showed how even though the sinking

of the health system has persisted over decades, a nostalgia or 'biopolitical longing' (Geissler, 2013) for the well-stocked 'clinic of the past' remained in the imaginings of residents. They regarded the current brokenness of the public health system as temporary, with high aspirations for the resumption of quality care at the clinic. Residents resorting to medicines at the market considered the use of market medicine to be a temporary solution, expressing a mistrust in the efficacy of market medicines. While it would be easy to point out that antibiotics have been 'quick fixes' for so long that they have become part of the system itself, there is a politics of temporality kept alive among residents that needs to be taken seriously and, as I will argue, may hold the key to longer-term solutions to antimicrobial stewardship.

7.3. Implications for antibiotics stewardship

7.3.1. From top-down to bottom-up approaches to stewardship

The development and implementation of national action plans has been hailed as a strategic move in curbing AMR across nations. Willemsen and colleagues, in their review of existing NAPs, showed that the implementation of NAPs has been uneven, with greater progression in the achievements of GAP objectives recorded by high-income countries compared to LMICs (Willemsen, Reid and Assefa, 2022). Implementation gaps, especially in LMICs, have been attributed to constraints in human and financial resources (Mpundu, 2020; Willemsen, Reid and Assefa, 2022). This has not been the case for high-income countries, which indicated fewer human or financial constraints in the establishment of their national surveillance systems (ibid.). While the GAP recognised the need for countries to develop context-sensitive NAPs, with limited resources invested in the development of NAPs many countries' plans were modelled heavily on the GAP with further heavy influence from external partners (e.g. CDDEP). Such a universal, 'cut and paste' approach to AMR policy across different settings with differing levels of local capacity carries dangers as it may fail to address the historical, biological, political, economic, and social dimensions of AMR in different contexts (Kirchhelle, 2020). What has been lacking, arguably, has been a rigorous 'bottom-up' perspective such as the approach taken in this thesis, which starts with a deep appraisal of the local context that situates the 'problem' of AMR within local worlds. In the following sections, I juxtapose possible interventions that emerge from a top-down, externally imposed approach with the suggestions based on my immersive ethnographic approach.

7.3.2. From behaviour change to AMR-sensitive interventions

Following the trend in the international community, AMR discourse in Zimbabwe has, as identified, via its situation analysis pointed to widespread 'irrational' use (AMR Core Group, 2017). In Zimbabwe, as in many other

settings, this has steered ongoing conversations around stewardship towards the need for restrictive and corrective interventions, including education and awareness campaigns and crackdowns on informal antibiotics trading, which it is hoped will serve as a corrective for irrational distribution and use of antibiotics. I have found throughout my study an all-too-common script rehearsed among the AMR community in Zimbabwe that the general public are abusing antibiotics through ignorance and that informal medicine vendors can and should be cracked down upon. Part of this is undoubtedly pride in the well-documented historical strength of Zimbabwe's health system and regulatory apparatus, which systematically denies the pervasiveness of informality and the conditions that necessitate its existence. But the quickness to endorse the blame of end users has also been facilitated by the knowledge apparatus through which AMU continues to be made known, which tends only to allow professionals to 'see' certain aspects of use, notably individual 'behaviour'.

The challenge, however, is that there have been drastic and detrimental changes to the social, political, and epidemiological landscape of Zimbabwe that select for bacterial infection and non-prescription antibiotic use, and to which current AMR discourses are not currently sensitive. What we need is to slowly design out these scripts of blame and begin to rethink our schema of categorisation, because what may appear to be 'irrational use' or 'irrational prescribing' may indeed be rational in context. These situated rationalities are precisely what my rigorous ethnographic approach has been calibrated to bring into view, as demonstrated in particular in chapters 4, 5, and 6, which presented evidence of seemingly 'irrational' acts of antibiotic use that, upon critical analysis, were rational in context. The context here was a life of precarity in which antibiotics function as technological 'quick fixes' to the inevitable bacterial infections prevalent in the environment. Far from being irrational, using antibiotics as a safety net for adverse health outcomes is highly rational in this setting. We cannot expect to educate patients out of their current strategies of 'making do' as a way of surviving the precarious conditions surrounding them. Chandler and Nayiga, in their recent work that highlights AMR in cities as an overlooked problem, warn that failure to address structural drivers to reduce AMR in such marginalised cities where life "operates informally" has "implications for health locally and globally" (Chandler and Nayiga, 2022:2). My work similarly suggests that although education and awareness interventions and other behaviour change interventions may be important, they will not work alone and indeed should not be the primary focus of stewardship in Zimbabwe. Rather, we need to direct attention towards the systems that shape how people use and depend on antibiotics. In Zimbabwe, rapid urbanisation, neglect of infrastructure to cater for its growing population, and substandard investment in healthcare have resulted in compromised hygiene and sanitation, demand for and the dangers of sex work, and markets for informal medicine trading, more substantial solutions to which antibiotics have come to 'stand in' for. We need to simply recognise that 'antibiotic dependence' is

beyond the control of even the most 'educated' or 'aware' community and a characteristic of the system, not individuals. Attempts to curtail antibiotic use are therefore best targeted at other parts of the system.

This thesis joins a growing call for structural or 'AMR-sensitive' interventions that might not be specifically related to antibiotic use and AMR but may have the most substantial impact, with the least negative consequences for lives and livelihoods (World Bank, IACG). One commonly proposed 'AMR-sensitive' intervention that is paradigmatically relevant to the Zimbabwean context is improvement in water, sanitation, and hygiene infrastructure. Water is often managed outside of the health umbrella, yet it is a significant driver of the spread of infection and dovetails with health and with Zimbabwe's particular history of cholera outbreaks in urban settings including Mbare (Cuneo, 2009; Makoni, 2018; Ncube, 2019; Chigudu, 2020). Infrastructural improvement in a setting like Mbare, however, requires far more than piecemeal approaches – as illustrated in chapter 4, where residents were trying to organise borehole water, but in the absence of political commitment to a complete revamp of unfunctional systems. This also includes a sanitation of governance structures to enable the municipality to operate in such a way that local politics does not impede the municipality's administrative functioning in the provision of adequate water, toilet, and sewer facilities for both residents and traders. To avoid financial commitments that further strain the already overstretched national budget, mainstreaming of AMR into already funded activities, as suggested by Mpundu (2020), could be a starting point, and in this case improvement of water and sanitation could be achieved through the promotion of donor-funded WASH programmes. These targeted interventions could act as strong levers in addressing the problem of AMR in Zimbabwe.

7.3.3. Stewardship of informal medicines trading and use

While the improvement of water and sanitation infrastructure could make significant contributions in preventing the burden of infection that leads to antibiotic use, this thesis also has implications for regulating the use of medicines, not simply through 'restrictive' measures but also through interventions in the deeply interconnected formal and informal systems that characterise Zimbabwe's healthcare landscape and wider economy. As noted in chapters 1 and 5, current AMR discourse in Zimbabwe has hyper-focused on 'irrational' antibiotic use, with particular anxiety expressed about the circulation and non-prescription use of medicines through the informal sector. Thus, I centre my discussion around this concern.

As argued in chapter 1, stewardship planning for the informal sector remains at a very early stage. It often involves discouraging people from buying from illicit sources or without a prescription and calls for better regulation. Stewardship frameworks have predominantly focused on the formal parts of health and economic

systems, with little attention paid to the role that the informal sector plays in healthcare provision in relation to AMU and AMR. Interventions that look into the stewardship of informal markets beyond the formal health system are much needed. Illicit medicine vendors, whom I have shown have long been the subject of highly ambiguous and often contradictory governance practices, land at the heart of these debates. Efforts to crack down on informal trading, particularly beyond the (formally) sanctioned trading 'warehouse' of Mupedzanhamo, certainly predate (and will likely outlive) specific concerns around AMR. However, the way in which informal medicine providers are being framed as threats to the efficacy of medicines, without adequate consideration of the broader context within which they operate, adds another layer to the construction of these actors that further demonises them and invites punitive measures to control and remove them. In the following section, I draw on the ethnographic findings presented in chapter 5 to propose two alternative possibilities for antimicrobial stewardship.

7.3.4. Inclusion and regulation

In several countries in sub-Saharan Africa, for instance in Uganda and Nigeria, informal traders are being folded into discussions about universal health coverage, with a view to greater formalisation and regulation of their practices (Baxerres and Le Hasran, 2011; Horton and Clark, 2016; Wadge *et al.,* 2017). It is hoped this will expand access to healthcare while ensuring safe and appropriate use of medicines. Over the years, we have as a nation been involved in the production of the situation that we now find ourselves in. We are currently struggling to deal with informal sector medicines situated within the ungovernable markets in Mbare. With traders becoming increasingly intractable in Zimbabwe from a health system perspective, not to mention increasingly powerful in terms of capital, one course of action for the Zimbabwean government is to adopt a similar approach to the greater inclusion of informal traders in the formal healthcare system. But, interestingly, this is not occurring; and this is in part because all of this is still very recent and people are still holding on to the ideal of a health system without this deeply entrenched informality. Of course, one of the preconditions of taking such an approach is recognition of how central informality has become to the functioning of the healthcare system and how it is implicitly enabled to continue despite its formal illegitimacy, something that remains something of a 'public secret' (Geissler, 2013) in Zimbabwe's public health community. Because of the silence and secrecy, no thoughts of inclusivity are on the table within the current AMR discussions, and instead those working on AMR have generally advocated further punitive policing of vendors – a strategy that, as I have shown, is not only ineffective but misdirected. As thinking around stewardship in informal settings is limited in Zimbabwe, as elsewhere, my work can be seen as a starting point for better understanding and accommodation of the role of community-

and market-based medicine providers in the provision of antibiotics. (A similar argument can, of course, be made of sex workers, which was considered extensively towards the end of chapter 6, to which I direct the reader.)

Approaches beyond the current punitive measures in place might include, in the first instance, inviting informal traders to the table in formal discussions around the use and regulation of pharmaceuticals including antibiotics (which is clearly already happening informally with policing authorities on much more precarious terms). Such discussions, potentially actioned through one of the technical working groups formed following the AMR National Action Plan (2017), could foster dialogue between medicine vendors, community pharmacists, clinicians, MCAZ (the medicines regulatory authority), and the MoHCC, to map a strategy or framework for deciding which, if any, medicines could be sold legitimately either with or without a prescription (a rule that would presumably apply equally to community pharmacies). Such a framework may, for instance, be organised around the WHO's Access, Watch and Reserve list, and might result in, for example, a very limited list of antibiotics on the WHO access list being legitimate for sale, whilst the sale of medicines in the watch and reserve list was restricted. Traders – who, as I have shown already, have a great wealth and thirst for pharmaceutical knowledge – could then be empowered with accurate, up-to-date knowledge on how to dispense or prescribe antibiotics while being informed about the problem of AMR. These medicine vendors could even potentially be trained to become 'antibiotic guardians' (Newitt et al., 2018) in their various informal settings. This would limit the haphazard prescription of medicines if correct information were relayed to them. In return, the MoHCC could relax legislation that outlaws trade in medicine and end the policing of medicines. The municipality could be drawn in to create appropriate stalls for traders to operate from and to store their medicine in. While even the formal 'warehouse' of informality that is Mupedzanhamo remains problematic, being formally recognised within this enclave could protect vendors' medicine from the vagaries of weather and enable MCAZ to step in and monitor compliance according to set guidelines developed at the negotiation table. Antimicrobial stewardship (AMS) is therefore made possible in this scenario as the restrictive hand of MCAZ is enabled to stretch into this 'formalised' domain existing outside clinical settings. In a way, this is the typical strategy of warehousing the 'informals' by putting them in a corner where it is possible to have control of their activities, problematic as this remains. Finally, legislative changes could be made to allow for the importation into the country of certain medicines deemed appropriate to cut off corrupt tendencies that currently promote smuggling. Inclusion, integration, and regulation, in sum, could be one way to ensure the nation is not deprived of much-needed medicine, instead of continuing the current game of cat-and-mouse between vendors and police in which nobody ultimately wins.

7.3.5. Stewardship of medicines: Back to the future

In the paragraphs above I have looked at the inclusion of vendors within the formal healthcare system as one way to achieve greater regulation of antibiotics in the informal sector. In this section I would like to propose that a bolder and more ambitious, but perhaps more realistic, vision of antimicrobial stewardship in Zimbabwe can be found by looking back to what 'rational' drug use meant in the context of Zimbabwe's early postcolonial healthcare system in the 1980s and 1990s, which was described in chapter 1. With discussions around AMR, especially on the global stage, gradually recognising the importance of structural and 'AMR-sensitive' interventions to address AMR (IACG, 2017; World Bank, 2020), it is noteworthy that many such interventions hark back to what Zimbabwe already *had* in the early postcolonial era. That system, under-resourced as it was and contending with the legacies of colonialism as it did, nonetheless succeeded in creating a well-regulated environment where there was far less demand or need for informal medicines than there is now, which is reflected in low non-prescription use at least until the 2008–2009 meltdown (Morgan *et al.,* 2011). Underfunded and overwhelmed though Zimbabwe's health system is, it nonetheless retains the skeleton of the older system within its contemporary architecture. What we need is AMR-related research and priority setting to connect up with the 'bottom-up' essential medicines and rational drug use infrastructure put in place since the 1980s, which has endured even through economic decline, rather than the top-down, externally driven approach that characterises current AMR activity in the country (which, as argued above in section 7.3.1, needs to characterise any stewardship approach). Back in the 1980s and 1990s Zimbabwe had a well-regulated system that allowed excellent stewardship of medicines (indicated in chapter 5). People back then were not simply 'behaving well' – there was a strong healthcare system and regulatory infrastructure that promoted the conditions under which drugs were used 'rationally' in the medical sense. Zimbabwe had the best ever, drugs management system including an integrated essential medicines list and national treatment guideline (EDLIZ) with strong emphasis on rational drug use, and in many ways had attained the developmentalist/international health ideals of antibiotics being available at the right level of care at an affordable price to the country and community.

7.3.5.1 Zimbabwe's success story - rational drug use

I provided some detail about Zimbabwe's healthcare system architecture in chapter 1, but it is worth further revisiting and elaboration, with further details about how 'rational use' was achieved within this system. As previously indicated in chapter 1, the fundamental push of the Mugabe government was to expand access to healthcare among those most historically deprived through a primary-healthcare-centred system. Recognising the importance of essential drugs to primary care, Zimbabwe's first National Medicines Policy in 1987 was built around the WHO's essential drugs concept. This concept was taken forward by the Zimbabwe Essential Drugs Action Programme (ZEDAP), resulting in the first iteration of the EDLIZ guideline in the late 1980s. Crucially for

our purposes, the concept of rational drug use was embedded in the essential drugs movement from the beginning, perhaps evidenced most simply by the fact that EDLIZ was not just a medicine list but also the national treatment guideline mandating how the drugs should be used (a characteristic actually quite particular to Zimbabwe). Based on this conjoined list and guideline, a series of countrywide, grassroots-led training workshops and manuals were developed and rolled out, as well as regular national medicine surveys to monitor progress. The success of ZEDAP's endeavours was lauded by Mr Aidan Chidarikire, the then Director of Pharmacy Services in Zimbabwe, in 1995 in the article 'Towards a rational drug policy'. In this article, he listed ZEDAP's successes as:

> … including accurate quantification of drug needs …, use of a modified list of WHO indicators in essential drug surveys to monitor progress, and the development and extensive use of training materials – with which 160 workshops trained over 6000 health workers! (Chidarikire, 1995:29)

This emerging essential drugs and rational use architecture was further supported by robust mechanisms for pharmaceutical manufacture, procurement, distribution, and quality assurance. The National Medicines Policy advocated a strong place for local manufacture in making generic drugs available, and at one stage Zimbabwe had one of the region's largest pharmaceutical sectors. Today, only a few of the country's pharmaceutical companies, such as CAPS, are still functioning, and they are not as vibrant as in the 1990s. The National Medicines Policy mandated the government medical stores (now NatPharm) to procure medicines for public sector use. With medicines stemming from NatPharm, Zimbabwe also boasted a well-functioning distribution system for essential medicines, the Zimbabwe Informed Push system, modelled after the Delivery Team Topping Up distribution network used by the family planning unit for contraceptive delivery (AMR Core Group, 2017a). And the National Medicines Policy gave the country's medicines regulatory authority (now MCAZ) the responsibility for ensuring the quality of both locally produced and internationally imported medicines and ingredients. Because of this sophisticated regulatory architecture, public health facilities were, as evidenced by ZEDAP's regular surveys, always well stocked and well resourced, with staff highly trained in the implementation of the integrated essential medicines list and national treatment guideline, which placed a very strong emphasis on rational drug use. Ultimately, medicines (antibiotics included) were available at the right level of care at an affordable price to patients using public health facilities. While today's surveys have indicated a decline in availability of medicines, according to the Zimbabwe AMR Core Group (AMR Core Group, 2017a), compliance with EDLIZ remains relatively high in the public sector. During my conduct of stakeholder interviews, most health officials I spoke to referred to EDLIZ as their "medical bible" and every premise had a copy of EDLIZ that guided the rational use of medicines in clinical settings.

In our article on rational drug use in Zimbabwe (Dixon et al., 2021), the point that we were trying to make was that 'rational', in this context, had a much broader meaning than it seems to have today. Rather than being narrowly focused on the end use of these medicines, which current stewardship frameworks often focus on, rational drug use was inseparable from the expansion of access to medicines in Zimbabwe through ZEDAP, the National Medicines Policy, and broader health system strengthening. With a balanced focus on expanding 'access' and restricting 'excess', Zimbabwe had by the mid-1990s succeeded in setting up a holistic RDU programme with sustainable structures including the procurement, provision, prescription, sales, and promotion of pharmaceuticals countrywide, backed by information and education activities that made the country's government medical stores (now NatPharm) very efficient in drug supply management. Programmes embedded in this effective RDU framework owed their success to the supportive infrastructure and ways of doing things that made feasible the implementation of the National Medicines Policy. In our work, we also argued that many of the reasons for increasing 'irrational' use – not only within but also beyond the formal sector (Dixon et al., 2022) – are tied to the systematic undermining of the wider system within which antibiotics are used by a plethora of interconnected factors: structural adjustment (and the resulting lack of government spending), political turmoil, hyperinflation and devaluation of the local currency, fragmentation of the health system, and misaligned donor prioritisation of certain diseases and risk groups rather than comprehensive care (Dixon et al., 2022). The latter of course includes the prioritisation of the category of 'sex worker', which, while laudable in many respects, was as exclusionary as it was inclusionary.

7.3.5.2 Challenges in the stewardship of medicine in the informal sector

With these processes undoubtedly being the root causes of the limited stocks of essential antibiotics at clinics today, these medicines, once well-regulated and 'rationally' organised and used, are becoming less available within the formal sector, which in turn drives their commodification through the private pharmacy retail sector and private informal sectors, and there are also compartmentalised areas of antibiotic abundance driven by northern 'global health' partners (see chapter 6). As a nation we are currently seeing a proliferation of informal sector medicines situated within the ungovernable markets in Mbare – an enclave for informality rife with political interference. In the informal sector these medicines are found especially in the hands of retail-market-based traders, home-based medicine providers, 'community doctors', and retired unregistered nurses – all self-regulated through the biopolitical arrangements that I described in chapter 5. The scarcity of medicines in public health institutions tells a very sad story where stewardship of medicine is concerned, as there is very little or no medicine to police. On the other hand, the abundance of medicines at Mupedzanhamo market, which has given it the status of a shadow national pharmaceutical wholesaler, makes more visible the presence of medicines in

'unregulated' spaces, which I have demonstrated through my ethnographic work to be medicines that are very difficult to police.

Efforts aimed at aligning with the global agenda for universal health coverage have emphasised the value of mixed health systems that recognise the role of private informal providers in health provision (Mackintosh *et al*., 2016). Informal providers are often filling the gaps where so-called legitimate public health institutions have been too weakened to operate. While informal medicines trade presents a formidable challenge from a stewardship perspective, this is all the more challenging given the second major theme identified above (section 7.2): that antibiotics have become 'infrastructural' to the workings of the healthcare system and informal economic networks. As demonstrated in chapters 4 and 5, both formal sectors (public and private) are propped up by the informal drug trade. Formal recognition of the role played by the informal medicine providers in propping up the formal health sector has varied across different settings. For instance, private informal health providers in India, Bangladesh, Thailand, Tanzania and Nigeria play a substantial role in healthcare provision in their countries (Sudhinaraset *et al, 2013;* Sieverding and Beyeler, 2016; Wadge *et al* , 2017). Compared to other countries where informal health providers have long been established, Zimbabwean informal health providers are fairly a new on the market, lack formal recognition , and their work is trivialised.

This has hindered recognition of their role in supplying the much needed medicines to prop up failings in the formal health sector. Findings from this thesis indicate that both formal sectors (public and private) are propped up by the informal drug trade. Though their reach is not as wide and not comparable to that of NatPharm – the national medicine supplier, medicine vendors have a nationwide coverage and are providing medicine not only in urban settings but also in underserved farming and mining communities which promotes universal health coverage. Though not formally recognised findings from this thesis indicated that patients who fail to access medicines from public health clinics/hospitals, and private pharmacies are depending on informal sector medicines. Well-funded informal medicine providers have stepped into the health sector to supply the much needed medicine covering medicine gaps in the public health clinics/hospitals and providing cheaper medicines than those found in private pharmacies. Informal medicine suppliers have also extended their reach into the formal private health sector by supplying medicine to some privately owned surgeries run by dispensing doctors and pharmacies. These privately owned surgeries and pharmacies prefer and depend on cheaper informal sector medicines for profitable business instead of purchasing medicines from legal pharmaceutical wholesalers. This shows the extent to which the informal sector is propping up the formal health sectors (public and private).

There is no legitimacy given to the informal sector in playing such a role, and Zimbabwe is in more of a deadlock scenario than other countries that are leaning into informality more as part of universal health

coverage. As previously indicated, the public health sector before the economic failings of the nation provided very affordable quality services and was highly esteemed. Longings for the clinic of the past still exists with informal medicine vendors perceived by urban residents as a temporary 'make do' strategy for now while waiting for the resumption of the clinic of the past. This brings us back to the discussion in the previous section on the building back the centrality of the clinic. What are required are efforts mentioned above aimed at restoring the centrality of the clinic, if the role played by informal traders in the health sector is to be regarded as a temporary 'make do' strategy for navigating the ailing health sector while waiting for the efficient clinic of the past.

The problem is that the subtle networks and formal-informal dependencies that have developed and in which antibiotics move are invisible to the formal surveillance apparatus that in turn advocates for restrictive and punitive interventions, which, as I have shown, simply perpetuate the problem. The logic behind AMR – a logic of restraint, rationalisation, and rationing of medicines, which in chapter 1 l called a 're-enclaving' of medicines – threatens to legitimise the continued policing and crackdowns on informality, but we need to not simply 'crack down'. Our regulatory systems, which are excellent at regulating medicines situated in formal health settings, are not geared towards regulating medicines in informal settings. And indeed, the formal regulatory apparatus is toothless in this scenario. MCAZ's greatest weakness is that it relies solely on a script set for the regulation of medicine in formal, 'regulated' outlets that operate based on legal accreditation and, faced with a dynamic group of informal traders whose existence does not hinge on the existence of a licence to enable them to trade, the ability of MCAZ to 'discipline and punish' is rendered non-existent in this setting. As I suggested in the previous section, one avenue for stewardship is to extend the remit of formality through more inclusive licencing, and thereby give MCAZ greater purchase on the informal sector. However, as I have argued, much of the reason we are in the current predicament is the systematic undermining of the health system and its ability to care comprehensively for Zimbabwe's population.

7.3.6. Can we rebuild? Restoring the centrality of the clinic

Given this state of affairs, I propose that stewardship in Zimbabwe should have as its first and most pressing concern the strengthening of the health system, to get back into a state where the primary care clinic – the bedrock of Zimbabwe's once-celebrated public healthcare system – returns to playing a central role in medicine provision. In a workshop focusing on AMR that I attended in 2020, referenced at the beginning of chapter 1, for instance, a community health worker expressed her dismay at the current lack of medicines at the clinics, citing how some people were being forced to buy medicines from home-based traders whose quality was questionable. To this she responded with a plea that the MoHCC should "bring back medicine where it used to

belong, we grew up getting medicine from the clinic not the street". Findings in chapter 4 reveal how residents like Mai Peter (section 4.3) expressed their great dislike of street medicine, which she, like other residents, deemed substandard, preferring clinic medicine, which they viewed as quality medicine. Moreover, as we saw in chapter 4, residents themselves largely treated the informal sector as a last resort, as clearly articulated by Sisi Molly; indeed, they strongly remembered and, as I showed, expressed a sense of "biopolitical longing" (Geissler 2013) for a return to the day when the state and specifically the clinic lay at the centre of health seeking. Thus, far from being an abstract, far-off goal, this maps precisely onto the sentiments expressed by my participants and colleagues. For instance, Gogo Moyo's yearnings in chapter 4 were for the healing of the 'sick' and 'crippled' nation of Zimbabwe, whose illness had infected and disabled the existence of a well-stocked 'clinic of the past'. Much of this is, of course, because this is relatively recent in the national memory – a source of pride, nostalgia, and yearning for a scenario that was still very real for most not even 20 years ago. Given the recent rise to prominence of informality in the health sector, I would suggest that there remains a window of opportunity for 'undoing' the comparatively recent historical trajectory that has favoured the emergence of informal pharmaceutical markets, perhaps in contrast to the context in some other countries, where they are being imagined as central to aims to achieve universal health coverage.

7.3.6.1 Considerations for rebuilding.

To rebuild the credibility of the clinic, it is critical for a number of changes to occur. Clearly, it is important to restore widespread access to health financing mechanisms for supplies of essential medicines, but also, crucially, to remove user fees, the demand for which has pushed many patients who cannot afford them out of the clinics. Several further factors within the current clinic set-up that promote reliance on the informal sector have to be weeded out of the health system to make clinics efficient. Long queues at the clinic due to understaffing and due to each clinic serving a big catchment area are issues that need to be addressed. Furthermore, while the Zimbabwe government has done a tremendous job in building clinics both in urban and rural areas, there is still a need, given the increasing size and shifting needs of the population, for more satellite clinics in densely populated areas, and entirely new clinics in currently 'neglected' areas such as farming communities with recently resettled farmers and areas that attract artisanal miners (as revealed in my ethnographic work). Such an increase in clinics could both help cut down on time spent at the clinic and bring formal care to people in 'neglected' places, as well as reducing the role of community-based medicine providers if access to clinics with quality care is improved. Rebuilding to make clinics attractive places also requires human resources management that ensures that clinics are adequately staffed with well-renumerated employees.

Bringing medicines back into public health service institutions, as was the case in the 1980s–1990s, could work as a better strategy to paralyse the informal sector. Getting medicine back into the clinics is guaranteed to cripple competition from the informal sector, making the marketplace unattractive. With the demand for medicines reduced, chances are very high that trading in medicine will become less of an attractive adventure for business-oriented traders, who are more likely to look for yet another 'window' of opportunity and focus their attention on trading in something that will guarantee quick returns. The evidence in chapter 4 showed that people were aware of the dangers of using medicines in the informal sector and were trying to avoid it, and their resort to the informal sector was but an 'empty choice', and that most yearned for the resumption of care in the clinic under trained hands. Recentralising medicines back in their defined place of credibility within clinical settings where RDU guidelines apply would not only help tame the informal medicine sector but also reposition medicines where they are easy to monitor.

7.3.6.2 Political support and functional governance structures

Recentring clinics will require substantial organisation and political will, not only on the part of the public health system but also on the part of all sectors that interconnect with the health sector. My ventures beyond the clinic walls suggest that rebuilding will require a holistic approach and not piecemeal solutions that target one sector. A multisectoral approach that focuses on the entire system is required to identify weaknesses and gaps. For instance, if NatPharm is to return to its functional state, gaps in the availability of foreign currency need to be addressed to enable it to procure enough medicines to coordinate with the Delivery Team Topping Up structure that used to pump medicines so efficiently into public health institutions. At independence, the Mugabe government inherited a country whose currency was stronger than that of its British coloniser, with a ratio of 2:1 in favour of Zimbabwe (Manga, 1988). Today the country does not have a valid local currency to trade on the international market and relies instead on the United States of America's dollar. Addressing the lack of foreign currency requires looking into what led the once-strong currency of Zimbabwe to be reduced to its current state. But in fact, the problem NatPharm faces in terms of a lack of foreign currency to procure medicines would be partially addressed through restoring the country's once-strong pharmaceutical manufacturing sector. Local pharmaceutical companies have high capacity and are highly able to produce generic medicines, including antibiotics, that could have a crucial part to play in putting medicines back on clinic shelves.

Efforts aimed at recentring the clinic will also require the undoing of some unfavourable political moves that have steered people into participating in a '*kukiya kiya*' economy, which includes, among other aspects of informality, vending, and illicit sex work. There is a need to reactivate the governmentality of a developmental

state, as witnessed at independence, that strived for (and largely succeeded in delivering) the economic and social improvement of the nation. Doing so requires engagement with and resolution of unsustainable local governance disputes between the two major political parties. The consequences of these tensions have long been documented, perhaps most notably by Simukai Chigudu (2020), who showed the wilful neglect of water and sanitation infrastructure, especially (but not exclusively) in opposition areas of the city, which led to the infamous cholera outbreak of 2008–2009, with Harare having since experienced frequent outbreaks of increasingly drug-resistant cholera and typhoid (Olaru *et al.,* 2019). This same interference continues to inform the water politics and need for antibiotics that we saw in chapter 4. But in the context of my work at the markets, this same political interference, as indicated in chapter 3, has turned Mupedzanhamo into an ungovernable place with multiple governing authorities, with the effect of stripping away Harare City Council's administrative authority and leading to a suspension of municipal bylaws on vending and urban land use (Kamete, 2017). In tandem with protective measures for informal traders (discussed above), there is great need to restore Harare City Council's administrative control and to remove the multiplicity of governing authorities at the marketplace, especially those embedded in political structures, to allow for effective management of trading.

7.3.6.3 Strengthening the national economy

These same political moves, I might add, have brought much almost irreparable damage to the economy, which in turn has destroyed international confidence and led to capital flight. Restoring international confidence requires a deep clean of the legal environment to rid the country of mechanisms that have hampered democracy and the rule of law. This requires bold steps from political leaders, civic society, and the population at large to advocate for change in the fight against corruption to create an environment that promotes transparency and accountability to attract more trade with the international community. Emerson Mnangagwa, the current president of Zimbabwe, on his arrival in power in 2018 made numerous calls to the international community that Zimbabwe is 'open for business', calls that have been ignored as there still remains a lot of uncertainty concerning the rule of law and investor confidence is still low. To rebuild the health sector, we have to rebuild the economy and investor confidence as a critical component of putting back the pieces of the jigsaw puzzle that fell away. This may seem like a naive 'wish list', but the reality is that if no bold steps are taken to address the political and economic decay, systems that promote disorder will continue and shortages in foreign currency will continue to rock the nation, and the health system will continue to struggle and the informal sector will continue to thrive on the decay of formal structures. Undoing bottlenecks within the political environment, such as those that have promoted the suppression by the local government and informal actors within Chipangano of the

administrative function of municipality in regulating traders at the market, is therefore a necessity for successful stewardship.

A rationalisation of prices of medicines sold in the private pharmaceutical sector also has potential to resolve scarcity in medicine. This could be achieved through the strengthening of the Zimbabwean economy/currency to enable pharmaceutical companies to obtain with ease the foreign currency required for producing medicines locally, as well as enabling government support of the pharmaceutical sector through subsidies to increase local production of medicines. This could result in a reduction in the costs of local medicines and thus (1) make medicines available in the private pharmacies more affordable, thereby cutting off reliance on cheap informal sector medicine, and (2) reduce the tendency to buy cheaper medicine from informal markets for use in formal settings, as exhibited by some doctors running private clinics and some pharmacy owners. Making high-quality medicines approved for use in the country available in public health institutions and affordable in private sector pharmacies could increase reliance on the formal health system, which could help reduce probable harm caused to people using antibiotics obtained from the informal sector that have not been subjected to any pharmacovigilance and whose safety is not known. Rebuilding could indeed bring the nation back to its former status as a model postcolonial healthcare system.

7.4. Implications for anthropological, social science, and critical global health research

In examining informality, antibiotic use, and its implications for stewardship in Zimbabwe, my research furthers and expands existing anthropological and social science literature working towards interventions that address the broader ways in which antibiotics have come to stand in for more sustainable approaches to poverty, healthcare, and productivity. While a considerable body exists of qualitative and ethnographic scholarship on antibiotic prescribing and community-level antibiotic use, little work has approached community antibiotic use through the lens of informality (Denyer Willis and Chandler, 2019; Pearson and Chandler, 2019; Nabirye *et al.*, 2021). In providing such an account, I have put the literature on informality, including informal medicines use, into conversation with more recent debates in the field of AMR (Tompson and Chandler, 2021; Nabirye *et al.*, 2021). Although I have had the opportunity only to touch on this within the scope of this thesis, my work also has implications across other disciplines interested in informality and urban informality, including geography, urban and regional planning, settlement, and urban development.

7.4.1. Contribution beyond formal health architectures

To revisit Tompson and Chandler's (2021) schemata, my work on informality in Mbare contributes to knowledge across the domains of the situated practices, the structural drivers, and the subtle networks in which antibiotics feature. In terms of the former, as I have already argued, attention to the situated practices of Mbare's urban residents speak not to individual choices or behaviour but, rather, reflect the impoverished circumstances in which most residents live. This point has been made repeatedly across the literature (Alividza *et al*., 2018; Broom and Doron, 2020; Nabirye *et al.*, 2021). However, as I went further to show, and taking us into the domain of structures, the practices of residents reflect not simply lack but rather the wider social, political, and economic structures that we have enabled antibiotics to become 'quick fixes' for (Denyer Willis and Chandler 2021). As Denyer Willis and Chandler (2021) have similarly shown, antibiotic use among Mbare's residents speaks to the roles that antibiotics have taken on, working as a technical 'quick fix' for hygiene challenges and inequality (chapter 4), a 'quick fix' for care (chapters 4 and 5), and a 'quick fix' for productivity (chapters 4 and 6). Through this I have further been able to add empirical depth to recent theoretical assertions that antibiotics have been quick fixes for so long that they have themselves "become infrastructural" (Chandler, 2019), an observation that bridges the domains of 'structures' and 'networks'. In the broader FIEBRE study focused on the formal parts of Zimbabwe's healthcare system, attention to networks took us into the world of the clinical guidelines and scripts through which antibiotics have been subtly 'designed into' the healthcare system and its ways of doing care (Dixon *et al*., 2021). My work, expanding this work beyond the formal health system architecture, examined the subtle networks into which antibiotics have been stitched and which join its formal and informal components.

7.4.2. Contribution towards urban informality

Accordingly, while our work on formal health system 'networks' meant engaging primarily with the biopolitics of global health (Dixon *et al.,* 2020), my work led me to put this somewhat more well-rehearsed literature into conversation with Zimbabwean-specific scholarship on the biopolitics of urban informality. Zimbabwean scholars from various disciplines have worked on urban informality in Mbare. Mupambireyi and colleagues (2014) and Kamete (2017), for instance, focused on informality at Mupedzanhamo, while Chikulo and colleagues (2020) focused on vegetable vendors at Mbare *Musika* (Mupambireyi, Chaneta and Maravanyika, 2014; Kamete, 2017; Chikulo, Hebinck and Kinsey, 2020). I have found Kamete's analysis particularly helpful for framing the roles of antibiotics in Mbare, specifically his understanding of informality as being deliberately warehoused within special enclaves (as described in chapters 1 and 3). I have taken Kamete's theory on the warehousing of informality and expanded on it to take a 'whole-Mbare' perspective, shedding light not only on the informal lives of market vendors but also on residents and sex workers operating within the 'enclaves' of informality. The significance of this for me has been to show how the informal antibiotics trade is implicitly sanctioned (despite

its formal illegitimacy), which enables it to serve various roles in enabling informal living and propping up the wider health system, while at the same time remaining a 'zone of abandonment' whose inhabitants are denied the benefits of social and economic development. This implicit legitimacy and explicit denouncement is a tension that arguably lies at the heart of the predicament of antimicrobial stewardship beyond formal prescriber settings.

My thesis also offers much to the discussion around urban informality. As Banks and colleagues argue, informality produces winners and losers, and new forms of inequality (Banks *et al*, 2020) ; my thesis suggests that in the Zimbabwean context, greater inclusion of informal within formal might break down some of the informal power struggles, but equally given the lack of appetite from the government for this, my proposal to really focus on strengthening the public sector is the stronger long term aim for reducing dependence on informality.

7.4.3. Agency and resistance to biopolitical power

I have also expanded Kamete's approach to take into consideration the agencies of Mbare's residents (as was highlighted as a key theme in section 7.2). Like many biopolitical accounts, Kamete's is limited in that it focuses almost exclusively on the determining aspects of biopolitical power without showing how it is resisted, negotiated, or repudiated (a limitation that Kamete himself acknowledges (Kamete, 2017:5). Through my sustained ethnographic engagements with the residents of Mbare, I have certainly sought to show the (at times overwhelming) biopolitical power in Mbare, specifically developing the notion of warehousing beyond the formal market structure. But in the process I have tried also to capture the 'world building' attempts of the warehoused or abandoned (Ross, 2010). This includes how people daily navigate informality through 'making do' ('*kukiya kiya*') strategies, paying greater attention to people's agency, as indicated in the introductory section of chapter 4 (and revisited here). And part of this, as highlighted above, and forming the backbone of the stewardship recommendations of section 7.3, is people's hopes and aspirations for better healthcare, grounded in Zimbabwe's once-strong health and economic system.

7.4.4. Methodological contribution

Finally, I have also added value methodologically, pushing the boundaries of ethnographic inquiry in Zimbabwe. Mupambireyi's work at Mbare's flea market leaned heavily on qualitative interviews (Mupambireyi, Chaneta and Maravanyika, 2014), whilst Chikulo and Kamete's work, though largely informed by qualitative interviews, did have ethnographic components (Kamete, 2017; Chikulo, Hebinck and Kinsey, 2020). Chikulo and colleagues

(2020), for instance, conducted weekly observations of vendors' stalls and similar observations during peak periods such as public holidays, whilst Kamete included some ethnographic accounts from two vendors. To a greater extent than in previous research, however, I placed ethnography at the centre of my approach, making it uniquely well positioned for learning firsthand about the lived experience of those within the enclaves of informality. As described in chapter 2, immersing myself within the lives of residents, informal vendors, and sex workers was often highly demanding – physically, spiritually, and logistically – but this was what enabled me to produce, from an anthropological perspective, uniquely rich insights into the multiple dimensions of informality in which antibiotics and AMR are caught up, which formed the basis of my interpretations, analysis, and theoretical contributions. This is something that I may not have been able to do had I relied on reported accounts from interviews alone. My work shows that this kind of immersive research can be done, and the value of doing it. As such, it can serve as a model for future work seeking to genuinely understand and thereby disrupt some of the common misconceptions about this vibrant space.

7.5. Wider implications for health equity and health system strengthening

This work has wider implications beyond AMR, including in the following areas: urban informality, health systems strengthening and universal health coverage, and decolonising global health. My proposed approach to stewarding medicines in the informal sector is largely equivalent to health system strengthening at large, at the heart of which lies comprehensive primary care within the public sector. While the previous sections were dedicated to 'looking back', we also have to be cognizant of new challenges posed on the health system , like COVID-19, as well as rises in non-communicable diseases, and drug resistant STIs. Health systems strengthening requires restoration or rebuilding of a strong health system that takes into consideration increase in demographic pressure on urban health systems characteristic of the post Covid 19 era. In Zimbabwe, restoration of the national economy is imperative in promoting robust health sector financing schemes to ensure regular supplies of affordable essential medicines that cover the needs of the whole population in line with the principles of universal health coverage. Other non medicine-centered approaches could also be activated through the strengthening the health promotion department as was evident in the Covid 19 era. Health promotion initiatives could be strengthened through digital health platforms using accessible digital tools like mobile phones to improve access to health related information. This could help in 'designing out', our current reliance on medicines (especially antibiotics) if the health promotion department is strengthen to actively promote preventative measures that lead to a reduction in infection.

Finally, strengthening health systems with decolonisation in mind requires an acknowledgement of the negative impact of colonialism in shaping current health inequities, and actively working on undoing structures that disempower and limit access to health. Previous research has strongly indicated how global health is not an unassailable good, this thesis has added to an appreciation of the way 'irrational' subjects are constructed while failing to address the underlying structural determinants that force people to use antibiotics the way that they do. This thesis contends the broader need to address the ways in which global health selectively operates and the north-south inequalities that it perpetuates in the process.

7.6. Reflections: My PhD journey

7.6.1. How the journey began

In this section I reflect on what has been an eventful and exciting, life-changing few years ever since I embarked on this PhD journey. This has been a journey where my world opened up to learning and doing new things. Upon enrolment at LSHTM, I was required to have an academic advisor and I identified the late Dr Zinyowera as one of my academic advisors as she was at that time the chairperson of the Zimbabwe AMR Core Group. This was the beginning of an exciting journey. Dr Zinyowera was very happy that I was working on a new study focusing on AMR and was highly instrumental in introducing me to other AMR Core Group members. With me as a PhD student under her mentorship, she ensured that I participated in relevant AMR conferences, where I was able to meet experts in the One Health AMR community in Zimbabwe from various fields such as environmental management, pharmacy, agriculture, veterinary medicine, and medical microbiology. I became a member of the One Health AMR team and joined their WhatsApp platform, where information concerning AMR at national, regional, and international levels is constantly shared. I was also selected as a member of the education and awareness team, an arm of the AMR Core Group. This PhD enabled me to engage with people that I would not have encountered and enabled me to visit places that I never would have visited, for instance pharmaceutical companies producing antibiotics (indicated in chapter 2). This PhD gave me the unique opportunity to work in community spaces with vendors at Mupedzanhamo, sex workers in their numerous community hubs, and community members in their homes in way that enlarged my community engagement skills. I was able to find out which gatekeepers to approach, and this ability to work very well with gatekeepers was a great strength of my study as it enabled me to gain access to work with market vendors and sex workers, as indicated in chapter 2. I began my fieldwork working in a politically charged environment, and the ability to engage the right community structures enabled me to navigate this politically volatile environment with ease as I made use of community health workers to escort and introduce us into the field, as indicated in chapter 2. I had great

familiarity with how to navigate the Zimbabwean ethical regulatory terrain. This was a strength because I was able to obtain all the ethics approvals on time and this made the start-up of my study very easy. Fortunately for me, I was based in a research organisation called BRTI, affiliated to the Health Research Unit in Zimbabwe (THRU ZIM) and this provided me with the infrastructure I needed to carry out my PhD.

7.6.2. Getting others to understand anthropology

Numerous social science studies existed at my workplace, but the nature of my work differed from everyone else's. My study differed in that it applied an anthropological approach, unlike other qualitative studies, and it turned out that I was the primary data collector. This came as a surprise to most people in my organisation as there was an assumption that my role was to supervise research assistants while they collected all the data for me. When I started my PhD, the first thing I learned about medical anthropology from my supervisor was that I was going to be the primary data collector, and my supervisor made it crystal clear that the two research assistants that I was going to work with would provide support while I did the major work. Being a primary data collector was a great strength in this study because it allowed for greater engagement with the community. One of the limitations, however, was that there were numerous times when I desired to be in a different places but could not split myself in two. This is when the research assistants helped most, just like in the work we did sharing pharmacies. It turned out that ethnographic fieldwork required that I, not the research assistants, would have to stay in Mbare. While I was excited about the prospect of doing ethnographic work in Mbare and had no problem with staying there, the move to Mbare came as a surprise to some work colleagues, who failed to understand that a person like me could stay in Mbare. Mbare, as indicated in chapter 3, has generally been regarded as a ghetto suburb rife with criminals, a home for those ranked among the lowest on the social ladder. I suddenly became a weirdo to others who thought that I had lost it, to the extent that one PhD student with a biomedical background approached me and asked "Why are you doing this to yourself" in a chilling voice, after a PhD meeting at THRUZIM where I had presented my work as an ethnographer in Mbare. I was stuck in this position where, as a social scientist, I was completely under-appreciated and not well understood by some of my colleagues, who held certain expectations of a London-based PhD student, and I did not live up to those expectations. The way some of my work collegues reacted really signals the need to rethink how social science is positioned in a country like Zimbabwe, where anthropology is marginalised and not well understood, and it makes me wonder what the next steps are for the next generation of social scientists.

7.6.3. Benefits of engaging in anthropology

Though most around me did not understand the benefits to the researcher of living in their study community for an extended period of time, I was fully aware of the benefits of this research design as it enabled me to gain deeper insights in understanding everyday antibiotic use in an urban setting rife with informality. Staying within my study setting allowed for firsthand observation of the day-by-day lived realities of urban residents, and the roles that antibiotics played and how they were enmeshed within the networks of informality. I realise that, through the ethnographic work that I did, I was able to resist falling into the traps of painting people as ignorant or painting the situation in more simplified terms. For instance, insights from my work showed how sex workers become more than a simple group. The nuance that emerged in my analysis was enabled by the methodology I used. Potentially I could have taken a non-anthropological approach just to fit in, and I could have consulted data from a large range of antibiotic use studies across Africa to inform my findings. I could have engaged in a large survey and used structured questionnaires to produce interview data that would have produced a superficial view lacking the 'thick description' produced by anthropological approaches. The additional value of my work is that it showed how communities are often portrayed as a homogeneous whole in these antibiotic use studies. Also, pharmacists and medicine sellers tend to be demonised in public health accounts that, often, spend a limited time doing a short survey and trying to capture what happens or to catch out the dispensers doing 'wrong practices'. I avoided falling into that trap by taking time to better understand the lived realities of these formal and informal medicine providers. Because of the way I paid great attention to pharmacy ethnography, I was able to paint a picture of pharmacists as being on the receiving end of a lot of abuse from customers, who felt that they were being let down by the system in the prices that pharmacists were compelled to charge for their drugs. Because of the anthropological approach I engaged in, there are specific differences in the accounts that I have produced compared to the accounts traditionally produced by the apparatus we use in global health around this topic of antibiotic use.

7.6.4. Achievements and future plans

As this journey comes to an end, it is very exciting to note that my presence at THRU ZIM as one of the first scholars to take a completely anthropological approach cultivated an awareness of what anthropology entails, and that new studies have emerged that adopt ethnographic techniques. I have emerged from that position of being an isolated anthropologist and I am currently mentoring two PhD students who are making use of participant observation in their PhD studies. Indeed, I have witnessed progressive change in THRUZIM in the appreciation of medical anthropology as a platform for research. Very near-future plans for me include engaging with the University of Zimbabwe and Midlands State University, the two Zimbabwean universities currently offering anthropology, and working towards a collaboration between anthropologists in research units such as

THRUZIM and in universities so that, together, we can make anthropology more visible in Zimbabwe. This would involve opening up THRUZIM's doors to provide placements to university students interested in the discipline of anthropology, as well as the formation of an association for anthropologists to bring anthropologists together for collaborative research.

Thinking about what the future holds is important, but before I move on to that I would like to reflect on the state of Mbare now, post fieldwork, as I draw closer to the conclusion of this thesis.

7.7. Nothing stays still

Nothing stays still, least of all in Mbare and its ever-fluctuating markets. Since my fieldwork, the fluctuating political environment that determines how Mbare's marketplaces are governed has undergone continuous changes. Since the former president Mugabe fell from power in 2018, the once-notorious ZANU-PF Chipangano, which frustrated Harare City Council's efforts to administer residential flats and marketplaces, has lost its fervency. The political interference in the running of Harare City Council's affairs by the current Minister of Local Government has increasingly come under scrutiny, with calls to reduce the minister's influence in city affairs. Due to protracted infighting within the MDC party, the party first split into MDC and MDC Alliance. When squabbles intensified between these MDC factions, on 22 January 2022 Nelson Chamisa, the president of MDC Alliance, left MDC Alliance and formed the Citizens' Coalition for Change (popularly known as Triple C). Chamisa moved with his loyal followers from MDC Alliance into Triple C, and all previous mentions of MDC in this thesis refer to activity by those now involved in Triple C.

COVID-19 has also drastically and irreparably changed the landscape of Zimbabwe. During the first wave of COVID-19, Mupedzanhamo flea market was closed, and when it was reopened in 2021 the ruling ZANU-PF party had lost its reign over Mupedzanhamo to Chamisa's supporters, who claimed "it is now our turn to rule" the market. Chamisa's supporters had turned the market into a car park and were collecting revenue from the cars parked inside the wall. This, however, was short-lived as the tables were soon turned due to the ever-occurring power wrangles between supporters of the two main political parties. Under a new governing political authority, the market is currently suspended in a state of temporary closure. Vendors previously operating inside the wall (once deemed official) have been forced outside the wall, leading to an increase in the volume of vendors outside the wall. Despite these chaotic conditions outside Mupedzanhamo wall, the informal sale of medicine still persists in this space. The inability to govern informal traders at the market continues due to party politics, and antibiotics are interconnected with these networks of informality. I have included this postscript in

this thesis, not to substantially alter my conclusions, but to avoid giving readers the impression that any one party – ZANU-PF, MDC/Triple C, or otherwise – has the ability to perpetually control this unpredictable space. What I have sought to show is that things are always dynamic due to unexpected changes, and I anticipate that more changes will occur. These, I am sure, will continue to influence the meaning and significance of antibiotics within this space. I move to the final section of this thesis to consider what the future holds.

7.8. Future research directions

Since the completion of this research, the field of AMR has moved on somewhat. Notably, FIEBRE was conducted in the context of the first round of NAPs, and in the pre-COVID-19 era. Policymakers are regrouping and looking into progress made in the implementation of the first NAPs whilst planning for the second phase of NAPs. Before moving into a second generation of NAPs, there is a need to take stock of achievements, to identify implementation gaps, and to reflect lucidly on why implementation of NAPs in LMICs has been decidedly slow compared to high-income countries (Mpundu, 2020). While a lack of resources to implement NAPs is part of the reason, almost certainly another key reason is a lack of genuinely context-sensitive interventions that are capable of gaining purchase on the problem and its underlying causes.

While it may have made sense for proposed surveillance and intervention to be blueprinted across all NAPs from the GAP, such blueprinting is not a panacea and needs to be adapted to particular places and contexts. Social scientists have repeatedly called for more detailed case studies in different places to point us to different and unexpected sites of intervention. As a growing body of research, including this thesis, demonstrates, social science needs to form a part of our 'global' research architecture, providing detailed case studies that can inform the production and implementation of context-specific interventions. Future AMR research feeding into strategy should centre on the experiences of people living in low-income resource contexts, including those relating to the implementation of the first round of NAPs. Evidence from this thesis, for instance, shows that stewardship of antibiotics outside clinical settings is a challenge because antibiotics are entangled in so many different aspects of informality as it affects lives and livelihoods, hence 'optimising' antibiotic use requires more than restrictive and corrective interventions, as has been the emphasis of stewardship to date. Instead, it requires the disentanglement of our reliance on antibiotics across multiple interconnected formal and informal domains. In the Zimbabwean case, I have suggested that this means looking 'back to the future', back to the centrality of the primary clinic focused on disease prevention and holistic community-based care, rather than the current hyper-focus on individual behaviour and (ir)rationality.

It is encouraging that there is an increasing drive towards 'AMR-sensitive' interventions among the global AMR community (World Bank; IACG), a reorientation that has been contributed to by social scientists, including those within our group. Part of this reorientation, which has formed a core observation and learning within the FIEBRE study, is looking seriously at who, or what, we are trying to provide care for (Dixon *et al.,* 2021). The focus in the first round of NAPs on restrictive and corrective interventions suggests that medicines, rather than people, are the subjects of care, a focus that we are expecting people in LMICs to adopt. But under what circumstances can we or should we require someone in Southern Africa, in an impoverished setting such as Mbare, to be an 'antibiotic guardian', and to be held responsible for 'protecting antibiotics'? Such efforts make saving antibiotics the focus and distract effort – of people, systems, services – from saving and caring for patients, particularly if it denies the realities of people operating in systems without safety nets. Where resources are scarce (as is the case in Zimbabwe), care needs to be reconstituted as more than provision of or gatekeeping of medicines; this thesis argues that stewardship must exist as a component of rather than a driver of good care. A decisive return to caring for people, particularly in urban spaces with inadequate water and sanitary facilities and unregulated informal markets for medicines, needs to be built into the AMR agenda moving forward.

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Appendices

Appendix 1. Medicines Survey Questionnaire

Medicine Survey	
1. Interviewer ID: **2. Date of interview:** **3. Household Number:** **4. Has the adult consented to the survey? Yes/No**	
Section 1: Demographics **Gender of respondent Male /Female** **Who lives in this household?** (Hint: Comments about the household constitution, such as number of adults, number of children and relations to one another) a. What are the main occupations of the household members? Comments on the household context: b) Who is present during the survey? c) Any comments about survey atmosphere and context	
Section 2: Illnesses and Medicines. Thank you for the information you have provided for us so far. We would now like to ask you about the illnesses that people in your household experience frequently and the medicines you use to treat them. The reason that we are asking about this is that most of what we know about illness and medicines comes from doctors. We want to learn more about what people think about illnesses and the use of medicines. We also wish to find out what medicines people have difficulty getting. There are no right or wrong answers. We are interested in your opinions and experiences. a. What illnesses do people in your household frequently experience? b. Do people in your household ever experience a hot body when they are sick? c. What are the most common medicines you use in your household? d. Can you possibly show us the medicines that you keep in your home? (Hint: Probe about what the medicines are used to treat, experiences of using them, and where they got them from. Also ask	

if you can take photos of the medicines (if they say yes, switch to the tablet's camera and take photos, then return to ODK) **Open Text** e. Do you always get the medicines you need in your household? Yes/No f. Can you tell me more about any difficulties that you have accessing medicines? (*Hint: Probe about what medicines that they have trouble accessing and what makes them unavailable (e.g. user fees, prescriptions, affordability, stock-outs)) Open text*	
Section 3: Pile Sorting Exercises. We would now like to continue asking you about medicines. To do this, we would like to show you some medicines that we have brought with us. (*Present the antibiotic library to participant*). Doctors often call these kinds of medicine 'antibiotics'. We would like to do some exercises with you, where we will ask you to sort these medicines into different piles. The exercises are not to test your knowledge, but to find out whether you have seen any of these before and which you have used. The reason that we are doing the exercises is that it helps to actually show you these medicines to help you remember which ones you have seen. As you will see, the exercises do not take very long. If you are OK to continue, we will begin. For each pile sorting exercise, encourage the participant to narrate to you the stories behind the relevant piles (e.g. the story of not being able to access a particular medicine). **Sorting Medicines activity one:** a. Which of these medicines have you seen or heard of before? Please pick out the ones that you have seen or heard of before and put them into one pile. **Sorting Medicines activity two:** b. We would now like you to pick out the medicines that you have ever used before in your household. Please place them together in a pile. **Sorting Medicines activity three**: c. We would now like you to pick out the medicines that you use frequently when someone in your household is sick. Please place them together in a pile. **Sorting Medicines activity four:** d. We would now like you to pick out any medicines that you have needed before in your household but you could not get. To say this another way, for each medicine here, has there ever been a time when you have needed the medicine but could not get it? Please place them together in a pile. e. For each medicine here, can you tell us why were you unable to get the medicine?	

- Hint: Pick out the unavailable medicines one by one and encourage them to speak about why they were unable to get the medicine. • Facility access • User fee • No prescription • Not afford med • Stock out **Sorting Medicines activity five:** f. We would now like you to pick out any medicines that you have used before in your household but they have not worked. To say this another way, for each medicine here, has there ever been a time where you have used this medicine in your household and it did not work? Please place them together in a pile. g. For each medicine here, can you tell us why you think the medicine did not work? **Hint:** *Pick out the unavailable medicines one by one and encourage them to speak about why they were unable to get the medicine.* Sub standard Fake Resistant Course factors	
THE END Thank the participant for their participation in the medicine survey	

Appendix 2. In-depth interview topic guide – Health workers

IN-DEPTH INTERVIEW – HEALTH WORKERS	
Study ID _____ Participant Study ID_____ Date _____ **Demographic information** Age_____ Gender (circle) M/F Number of years on this job _____ Highest Level of education_____ **1.Senior doctor/policy maker** **2. Junior doctor** **3. Nurse**	
1. Your role at the health facility	**Topic and Probes** a) Can you tell me how you came to work at this health facility? (Probe when they joined the health facility and previous position held if any) b) What is the most important thing to you personally about doing this job? c) What does your usual day at this health facility consist of?
2. Common illnesses presenting at the health facility	a) Drawing from your experience working at this health facility, what are the common illnesses that people present with at this health centre? b) Why are these illnesses common in this area? Have they always been common in this area?
3. Experience managing patients for the illnesses they present with at the health facility	a) Can you tell me about your experience managing patients that present at the health centre? (Probe for w*hat works well in their job managing patients that present with different health problems like fever, typhoid and cholera?)* b) Can you tell me more about your experiences managing patients that present with fever? c) Can you tell me more about current guidelines in the management of cholera and typhoid? d) Can you tell me about your experiences in managing cholera and typhoid outbreaks and challenges faced in managing these conditions? e) *Can you share what has been to* overcome challenges encountered?
4. Medicine and Supplies at the health facility	*We did a medicine survey in the community talking to community members about medicines, there was a lot of talk about medicines stock outs at clinic level and recent strikes from doctors are also showing issues concerning stock outs at hospital level.*

	a) Can you describe the way that medicines are stocked at this health facility (*Probe for how the delivery of medicine has been in the past compared to now and what the challenges are)* b) Can you tell me about the most recent stock out encountered by this facility and what where the reasons for the most recent stock out? c) What do you do at this health facility when you run out of medicines?
5. Essential medicines and policy	a) Are you familiar with the essential medicines list in Zimbabwe commonly referred to as the EDLIZ ? If Yes proceed to next question, b) Do you mind telling me about the EDLIZ and how is it used in your radar? (*The following questions are for senior health officials/ policymakers*) c) Can you tell me what role EDLIZ has played in determining which essential medicines the Zimbabwe health sector should use? d) Looking at our current stock of antibiotics, what has changed in the kinds of antibiotics that have been on the shelves since EDLIZ came into use? e) Are these changes reflective of the changes that have been happening each time the EDLIZ is updated? f) Antibiotics are now available sold on the streets, when did the informal sector come on your radar and what does this mean to you as a policy maker?
6. Antibiotics	*The following leaflet provides a profile of medicine use based on a household based medicine survey we conducted in this community.* a) What do you think about the profile of antibiotic use in this scenario – within household settings? b) How does this compare with the profile of antibiotic use at this health facility? c) What antibiotics are commonly used at this health facility and why? d) What do you know about the resistance patterns of antibiotics commonly used at your health facility? e) How is that affecting what drugs you either procure or are able to prescribe? *During fieldwork in the community, I observed a lot medicines including antibiotics being sold at the market place, bus terminus and in the streets.* f) What do you think about antibiotics being traded outside clinical settings?

6. Views on AMR and medicines	a) Have you ever heard anything around the idea of antimicrobial resistance? IF YES what does this word mean to you? b) Do people in your line of work talk about AMR and how do they talk about it? c) Is AMR something that has been spoken of more in your radar in the past five years or has it being the same for the last 5 years? d) What do you think is the right way forward in dealing with the problem of AMR in the country? e) Is there anything else you think is important about managing patients at this health facility or use of medicines in this community and at this health facility medicines at that we have not talked about? *Thank the participant*

Appendix 3 . In-depth interview topic guide – Pharmaceutical Personnel

IN-DEPTH INTERVIEW – PHARMACEUTICAL PERSONNEL	
Study ID _____ Participant Study ID_____ Date _____ **Demographic information** Age_____ Gender (circle) M/F Number of years on this job _____ Highest Level of education_____ **1 Hospital based pharmacist 2 Community based pharmacist 3. Pharmaceutical Manager**	
Domain	Topic and Probes
1. Your role at work	a) Can you briefly tell me a little bit about yourself for instance how did you get into the pharmaceutical industry b) What is the most important thing to you like about this job? c) What does your usual day at the pharmacy consist of?
2. Common illnesses and prescriptions at pharmacy settings (*for pharmacists only)*	a) Drawing from your experience working at this pharmacy, who is coming to this pharmacy and what are the things that are people coming for? b) What common illnesses do these people come with? c) Can you tell me about your experience dealing customers with conditions that require over the counter medicines and customers whose conditions require prescriptions *?* d) For those that come in with prescriptions, can you give me a rough estimate of a percentage of prescriptions prescribed from the public health sector and those from the private sector. e) What antibiotics are commonly sold in this pharmacy and what do you think accounts for this antibiotic profile. f) Does your pharmacy experience stock outs and how do you deal with or avoid stock outs?
3. History of the pharmaceutical industry (*for pharmaceutical managers only)*	We would appreciate if you shared your knowledge of the pharmaceutical industry. a) Can you tell us a little bit about the history of the pharmaceutical industry before independence, after independence into the current state of the industry?

	b) Can you briefly share your knowledge on the major changes that have happened in the pharmaceutical sector since you started working in this industry? c) What antibiotics are made locally and what medicines are coming from overseas and why?
Essential medicines and procurement of medicine	a) Are you familiar with the essential medicines list in Zimbabwe which is commonly referred to as the EDLIZ ? *If Yes proceed to next question,* b) Do you mind telling me about the EDLIZ? c) Is the EDLIZ used in your business setting, if YES how is it used in your radar? *If no go to (d)* d) Recently there has been a lot of talk in the media about NatPharm , and the availability of medicines at pharmacy level. What is the role of NatPharm in the supply of medicine in Zimbabwe? e) How are medicines distributed to various health institutions in Zimbabwe?
Antibiotics and AMR	a) What is your I experience working with antimicrobials in particular antibiotics in Zimbabwe? *This leaflet shows a profile of use in the two high density suburbs of Harare where were conducted a medicines survey:* b) What do you think about the profile of antibiotic use in this scenario – within household settings? c) What do you know about the resistance patterns of these commonly used drugs? d) How does this compare with the profile of antibiotic use in clinics and hospital settings e. Have you ever heard anything around the idea of antimicrobial resistance? If YES proceed to next question, *if no interview ends here* f) What does this word mean to you? h) In the last 5 years, is AMR something that has been spoken of more and more on your radar or has it being the same for the last 5 years i) What do you think is the right way forward in dealing with the problem of AMR in the country? *Thank the participant*

Appendix 4. In-depth interview topic guide – Policy makers

PART 2: IN-DEPTH INTERVIEW – POLICY MAKERS	
Study ID _____ Participant Study ID_____ Date _____ Demographic information Age_____ Gender (circle) M/F Number of years on this job _____ Highest Level of education_____ **1 Policy maker** **2 Medicines regulatory official**	
1. Your role at work	**Topic and Probes** a) Can you tell me how you came to work in this industry? (Probe when they joined this industry and previous position held if any) b) What is the most important thing to you personally about doing this job? c) What does your usual day consist of? (*For medicine regulatory officials only)* d) Can you tell me about your organisation. When was it formed and how has the role of your organisation changed over time? e) What is the role of your organisation when it comes to medicine regulation? f) What is the role of your organisation in regulating medicines in these areas? i) pharmaceutical companies (ii) pharmaceutical wholesalers, (iii) pharmacies g) How do you ensure compliance in these three sectors ? h What are the penalties for those found non-compliant?
2. Common illnesses and antibiotics	a) Drawing from your experience in the Zimbabwean health sector, what are the common illnesses leading to antibiotic use? b) What are the antibiotics used to deal with these illnesses? *The following leaflet provides a profile of medicine use based on a household based medicine survey we conducted in this community.* c) What do you think about the profile of antibiotic use in this scenario – within household settings? d) How does this compare with the profile for antibiotic use you are used to ?

	e) What antibiotics are most imported and where are they imported from? f) What antibiotics are manufactured in the country and what can be done to promote local production?
3. Informal sector medicines	*During fieldwork in the community, I observed a lot medicines including antibiotics being sold at the market place, bus terminus and in the streets.* a) What do you think about antibiotics being traded outside clinical settings? b) What role does the medicines regulatory authorities play when it comes to informal sector medicines? c) What measures do you think should be set in place to regulate the sale and use of medicines in informal settings?
4. Views on AMR and medicines	a) What do you know about the resistance patterns of antibiotics commonly used in this country? b) Have you ever heard anything around the idea of antimicrobial resistance? IF YES what does this word mean to you? c) Do people in your line of work talk about AMR and how do they talk about it? d) Is AMR something that has been spoken of more in your radar in the past five years or has it being the same for the last 5 years? e) What do you think is the right way forward in dealing with the problem of AMR in the country? f) Is there anything else you think is important about managing patients at this health facility or use of medicines in this community and at this health facility medicines at that we have not talked about? *Thank the participant*

Appendix 5. Interview guide for community members

IN-DEPTH INTERVIEW – COMMUNITY MEMBERS	
1. Interviewer ID: _____ 2. Date of interview: _____ 3. Participant Pseudonym _____ 4. Area Interview conducted _____	
Background *Thank the participant for welcoming you in their home and for the numerous times participant has accommodated you in their busy schedules. Inform participant how all the information the participant shares during this interview will be kept in confidentiality. Begin by asking how they are doing, inquire about their family members and their business.*	
Section 1: Common illnesses and their management Before asking these questions, remind the participant about your desire to know more about their health, what they and their family do if anyone is not feeling well and the medicine they use. 1. What are the common illnesses in this place? 2. What do you and your family do in case of an illness? 3. What medicines do you commonly use to deal with common diseases? 4. During our previous visit, a lot of residents indicated shortage of medicine at the clinic . What is the situation now? (*probe if situation has improved , is still the same or has gone worse*) 5. If not improved- what are you and your family doing to deal with illness?	
Section 2: Experiences in accessing medicine 1. Let us talk about you and your family's experience in using any of the following; - Medicine from the clinic (are there any challenges in accessing these) - Medicine from the pharmacy (are there any challenges in accessing these) - Medicine from informal traders (are there any challenges in accessing these) - Medicine to faith healers or traditional healers (are there any challenges in accessing these) 2. In instances where you encountered challenges in obtaining medicines why was access difficult and what did you do to solve the problem? 3. I understand there are community doctors and medicine vendors who provide medicine including antibiotics in this area, can you please tell me of any experiences you have had obtaining services from these or what you have heard from others who have made use of these medicine providers	
Section 3: Typhoid and cholera outbreaks in the community Currently there is a typhoid vaccination campaign taking place in this area.	

1. Can you tell me what you think of the ongoing vaccination campaign? 2. Have you and your family been vaccinated? *(probe why)* 3. What do you think are the reason for typhoid and cholera outbreaks in this area ? 4. What role does the community health worker play in times of such outbreaks ? 5. Have you or any of your family member ever suffered from cholera or typhoid? 6. If yes- how did you know it was (pick the appropriate) typhoid / cholera 7. What medicine was used to treat this disease? 8. What do you think should be done to avoid future occurrences of typhoid and cholera in this area	
Section 4: Water availability Last time we visited there had been no piped water for more than 3 days in this area 1. What is the current water situation? 2. What other water sources are available other than piped water? 3. Is water from these other sources safe for drinking human ? (If not safe- ask next question) 4. What do you do to ensure that water is safe for drinking?	
Section 5 : Life at the flats- (for residents staying at the flats) 1. Can you tell us about the history of these flats, how things once were and what changes have occurred over the years? 2. Can you tell us the reasons for the major changes that have occurred? 3. At present there are burst pipes with overflowing sewage outside the building, how long has this been for and what do you think are the reasons for the current state of dilapidation of sewer systems? 4. Can you tell us about health challenges faced by residents living at the flats? 5. Last month, renovations started taking place at Matapi flats, what do you think of the ongoing renovations? 6. What if any renovations would you want done if this building was like Matapi targeted for renovation? 7. What impact would such renovations have on the way of living at the flats?	
Summarise and thank the participant	

Appendix 6. Interview guide for medicine vendors

IN-DEPTH INTERVIEW – MEDICINE VENDORS	
1. Interviewer ID: _____ 2. Date of interview: _____ 3. Participant Pseudonym _____ 4. Area Interview conducted _____	
Background *Thank participant for the time they have shared with you at the market and for taking their time to participate in the interview. Inform participant that all they share in this interview will be kept in confidentiality. Decide with the participant where to conduct the interview in privacy. Begin by inquiring about their family and how business is doing.*	
Section 1: Selling medicine as a business 1. Can you tell me how you came into this business? 2. Before you got into this business what business were you doing ? 3. How did you get this space that you use every day as your working area? 4. What inspired you to trade in medicines? 5. Can you describe for me a typical market day, how your day starts and the things that go on throughout the day? 6. Can you describe to me what you would consider a good day and why? 7. Can you describe to me what you would consider a bad day and why?	
Section 2: Customers at the market During the time that I have worked with you at the market, I have noticed that they are customers who buy medicine from you on a regular basis, can you tell me about your engagement with these customers. 1. Who are your customers and where do they come from? 2. I noticed that you have customers who place big orders who run surgeries and pharmacies, can you tell what medicines they buy and how their products differ from other customers? 3. Working with you I have come to learn that you have customers operating in urban, mining and in agricultural settings can you tell me about how these customers operate and what medicines they buy from you? 4. Which antibiotics are most purchased by your customers and why? 5. Which antibiotics are least purchased and why?	

6. Can you share with me a story about your favourite customer and why this customer your favourite?	
Section 3: Medicine procurement and quality of medicine 1. Where do you obtain the medicines that you sell to your customers? 2. What do you do to ensure a regular supply of medicines? 3. What do you do in case of a stock out? 4. I noticed that the prices you charge for your medicines are much lower than prices of medicines at the pharmacy, why are your prices very low compared to prices at the pharmacy? 5. Are your medicine the same quality as those sold at the pharmacy? 6. I noticed that you only display empty packets of medicine on your tables, why do you display empty packets? 7. Where do you your store the medicines and why ?	
Section 4: Knowledge on medicine Working with you I have learned that you provide orientation to your customers on the use of medicines. 1. Why do you provide orientation on medicine to your customers? 2. How did you become knowledgeable about medicines especially antibiotics? 3. Is there any additional knowledge that you think you should have to be more effective in your business and what should be done to increase this knowledge?	
Section 5: Medicine outside clinical settings 1. If you were to position yourself in the Zimbabwean health sector, what role do you see yourself playing in this sector? 2. In your opinion , what do you think is causing people to obtain medicines not at the clinic or pharmacy and to rely on your service? 3. What are the major challenges associated with selling medicine in this place? 4. What do you think should be done to ease these challenges? 5. Have you ever been arrested or harassed by authorities for selling medicines in this area? 6. Do you think there is room in the near future for medicine vendors like you to work together with nurses, doctors, and pharmacists providing medicine to the nation. (Please explain why) **Summarise and thank the participant**	

Appendix 7. Interview guide for sex workers

IN-DEPTH INTERVIEW – SEX WORKERS	
1. Interviewer ID: _____ 2. Date of interview: _____ 3. Participant Pseudonym _____ 4. Area Interview conducted _____	
Background Thank participant for taking their time to conduct the interview . Remind them that everything that they share with you will be kept in confidentiality. Decide with the participant where to conduct the interview in privacy. -Greet participant , inquire how business is going on today, ask if they have had any lucky in getting clients.	
Section 1: Life as a sex worker 1. Can you tell me how you came into this business? 2. Before you got into this business what business were you doing? 3. What made you to get into this business? 4. I have noticed that there are different areas where sex work can be done. What made you to select this place? *5.* Can you describe a typical day for you going about your usual business (*from the beginning to the end of day).* 6. Can you describe to me what you would consider a good working day and why? 7. Can you describe to me what you would consider a bad working day and why?	
Section 2: Customers and risks associated with the job 1. Who are your customers and how do you find them or how do they find you? 2. What kind of services do you offer and how do you price your customers? 3. What service do most of your customers prefer and why? 4. What service do you prefer offering and why? 5. On a good day how many customers do you see and how much money do you get? 6. On a bad day how many customers do you see and what accounts for a few customers? 7. Have you ever encountered customers who are violent? If yes- please describe one incidence and how you dealt with the situation? 8. How do you minimise risk associated with abuse by customers?	

Section 3: Health concerns associated with sex work 1. Are there any health challenges associated with your line of work? (please explain) 2. What can you say are the major health risks? 3. I have heard a number of women working in this area talking about customers who prefer sex with no condoms. What health concerns are associated with having sex with no protection? 4. How common is the practice of sex with no condoms in your line of work and what are the factors that promote this habit?	
Section 4: STIs and STI management 1 What STIs are common in this place and what medicines are commonly used to treat these STIs? 2 Have you ever had an STI? 3 How did you know you had an STI ? 4 What did you do to manage the STI? If you used antibiotics where did you obtain these antibiotics and what were the names of the antibiotics? 5 How long did it take you to seek treatment? 6 What are the reasons for delays in seeking early treatment? 7 What health facilities provide treatment for STIs in this area? 8 Which health facility do you prefer and why? 9 How many times have you had an STI since you started this work? 10 How many times have you had an STI in the last 12 months? 11 Have you ever heard of or experienced an STI that was difficult to heal even after using medicine and what was done to deal with such an STI? 12 What do you think are the causes for such stubborn STIs?	
Section 5: Minimising risk of infection 1 Is it possible to tell if a customer has an STI – if yes how do you know if a customer has an STI? 2 What do you do if you suspect a customer of having an STI? 3 What do you do if you suspect a fellow sex worker of having an untreated STI? 4 I noticed that there are organisations that work with sex workers in this area, what services are these organisations providing ? 5 What do you think is the best way to minimise the risk of infection ? **Summarise and thank the participant**	

Appendix 8. List of participants

Participant's pseudonym	Description of participant and chapter participant mentioned	Gender	Age
Vatete	Resident who stays near the market (chapter 3)	Female	55
BaKudzi	Resident who stays near the market (chapter 4)	Male	37
Mai Kudzi	Resident who stays near the market (chapter 4)	Female	35
Sisi Molly	Resident who stays near the market (chapter 4)	Female	48
Gogo Moyo	Resident who stays near the market (chapter 4)	Female	72
Gogo Dee	Resident who stays near the market (chapter 4)	Female	74
Mai Susan	Resident who stays near the market (chapter 4)	Female	33
Mai Ruth	Resident who stays near the market (chapter 4)	Female	25
Mai Tindo	Resident who stays near the market (chapter 4)	Female	33
Mai Chido	Resident who stays near the market (chapter 4)	Female	24
Joyce	Resident who stays near the market (chapter 4)	Female	37
Chipo	Resident who stays near the market (chapter 4)	Female	28
Adam	Resident who stays near the market (chapter 4)	Male	34
MaMoyo	Resident who stays near sex workers' hub (chapter 6)	Female	46
Mai Tonde	Resident who stays near sex workers' hub (chapter 6)	Female	31
Mai Hove	Community health worker who stays atflats/hostels (chapter 4)	Female	53
Rose	Resident who stays at the f/hostel resident (chapter 2)	Female	20
Mai Leo	Resident who stays at the flat /hostel resident (chapter 2, 4)	Female	58
Mai Kumbi	Resident who stays at the flat /hostel resident (chapter 3, 4)	Female	62
Mai Tari	Resident who stays at the flat /hostel resident (chapter 4)	Female	31
Mai Peter	Resident who stays at the flat /hostel resident (chapter 4)	Female	36
Mai Mona	Resident who stays at the flat /hostel resident (chapter 4)	Female	27
Mai Fadzi	Home based medicine provider- near the market (chapter 2)	Female	34
MaDube	Home based medicine provider- near the market (chapter 4)	Female	46
Mai Temba	Home based medicine provider-near the market (chapter 4)	Female	38
BaNommie	Home based medicine provider outside Mbare (chapter 5)	Male	42
Mai Chipo	Market based medicine provider (chapter 2)	Female	25
Mai Chiedza	Market based medicine provider (chapter 2, 5)	Female	32
Donald	Market based medicine provider (chapter 2, 5)	Male	25
Mai Tapona	Market based medicine provider (chapter 2, 5)	Female	52
Mai Tee	Market based medicine provider (chapter 2, 5)	Female	35
MaSiziba	Rural based medicine provider (chapter 5)	Female	54
BaJozi	Rural based medicine provider (chapter 5)	Male	32
Zvishavane	Mine based medicine provider (chapter 5)	Male	35
Mai Joy	Retired nurse- homebased care (chapter 5)	Female	67
Mai Thandi	Pharmacy owner who uses market medicines (chapter 5)	Female	39
'doctor'	Trained nurse who operates at the hair salon (chapter 5)	Male	43
Senior health official	Doctor -Mbare Polyclinic (chapter 3)	Male	50
Health official	Nurse- Mbare Polyclinic (chapter 3)	Male	37
Nurse in charge	Senior nurse- Mbare Polyclinic (chapter 3)	Female	43
Dr Ndou	Stakeholder (chapter 4)	Male	47
Mrs Dee	Pharmacist and pharmacy owner (chapter5)	Female	45

Mai Shane	Community health worker (chapter 6)	Female	52
Mai Fau	Sex worker (chapter 6)	Female	34
Tumi	Sex worker (chapter 6)	Female	26
Fadzi	Sex worker (chapter 6)	Female	32
Judy	Sex worker (chapter 6)	Female	36