Medical Pluralism among the Indigenous Peoples of Meghalaya, Northeast India – Implications for Health Policy

Sandra Albert

Thesis submitted for the degree of Doctor of Public Health (DrPH)

2014

Faculty of Public Health & Policy

London School of Hygiene & Tropical Medicine

University of London

Declaration by Candidate

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

Signed:

Date: 13/05/2014

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Acknowledgements

There are many persons who enriched my journey throughout the DrPH course. I was extremely fortunate to have Prof. John Porter as my principal supervisor. He had an open door policy that allowed me to drop in for a quick word whenever I felt the need. Conversations with John always made me ponder on larger issues around values and institutional ethics. John's humility, sensitivity and respectful manner continue to inspire me.

I am grateful to Prof. Judith Green who agreed to be on my advisory committee at very short notice. Her guidance during the development of my DrPH review document was invaluable. Judy patiently advised me throughout my qualitative data collection and analysis. Her feedback and incisive comments helped me understand the nuances of qualitative data analysis.

Dr Emily Webb walked me through the intricacies of using Stata statistical software. She was always available to lend a helping hand with generating coding instructions and helped unravel problems that I got into.

This study and my entire DrPH were funded by the Wellcome Trust through a capacity strengthening grant awarded to the Public Health Foundation of India (PHFI). The Wellcome Trust Programme (WTP) is a collaborative grant made to PHFI and a consortium of institutions in the UK for improving public health in India.

I thank Prof. Lalit Dandona, the WTP-PHFI India Supervisor, for his inputs. His timely exhortations helped me finish this study within the stipulated period. I also thank Prof. Diana Lockwood for her support. Diana kindly carved out a comfortable office space at LSHTM for me.

The Martin Luther Christian University gave me access to and permission for using the household survey data. Ms Badalam Dkhar and other faculty at the university introduced my team to healers and supported us in many ways. MLCU generously gave me access to various documents like correspondence and research reports pertaining to Khasi traditional medicine.

My research team in Meghalaya requires special mention. I could not have done this study without the assistance of Ms Darisuk Kharlyngdoh and Mr Ivanhoe Marak in the field. They diligently interviewed healers, conducted the focus group discussions, transcribed and translated data. I also thank Ms Candida Thangkhiew, Ms Badashisha Marbaniang and Ms Hepzibah Jungai for their assistance with transcriptions.

I am indebted to my dear friend Marion Lesage, who opened her home to me at very short notice for extended periods. This act of generosity removed worry and allowed me the freedom to work efficiently during my sojourns in London. Marion cooked many hot meals, engaged in long conversations on the practical aspects of public health and also very kindly read through my drafts. Her suggestions on using short sentences rather than my penchant for long winding ones were especially pertinent.

The peer debriefing sessions that I had with Sarah Milton were particularly useful in my qualitative data analysis. Anastasia Polycarpou and Saba Lambert read through sections of my thesis. At LSHTM there are many more colleagues and faculty who I have learnt from and who have supported me. I apologise for not thanking you all by name here.

Conversations with Patricia Mukhim helped me ‘see’ Khasi society from an insider’s perspective. I could turn to her at a moment’s notice to debrief or talk about cultural and contextual aspects of the study. Her discussions with my young research team demonstrated the challenges of translation even among those who spoke the same language.

I extend heartfelt gratitude to all the participants in this study. Your candid conversations and generosity with your time is sincerely appreciated. I got in touch with some of you for follow-up questions and clarifications. Thank you for your patience and tolerance.

And finally I thank Glenn, without whose encouragement and support I would not have embarked on this journey. His positive energy inspires those around him and he continues to be an embodiment of leadership skills that are worthy of emulation. Glenn constantly demonstrates that encouragement and nurture are superior to criticism. And I continue to learn...

To Glenn who introduced me to the fascinating world of the Khasis.

To our children Kynsai and Janai – amma went to Meghalaya in search of your roots. This is a tiny contribution to assist you in your own journey.

DrPH Integrating Statement

I joined the Public Health Foundation of India (PHFI) with the intention of playing a leadership role in establishing the Indian Institute of Public Health (IIPH) in Shillong. As my previous training was primarily in biomedicine I decided to pursue a research degree in public health as preparation. The Doctor of Public Health (DrPH) programme at the London School of Hygiene and Tropical Medicine (LSHTM) was particularly appealing to me as it is designed to develop the knowledge, skills and experience necessary for public health leadership. It differed from a PhD programme in that it aimed to strengthen leadership and management skills in addition to research skills provided in the academic PhD programmes.

The DrPH programme at LSHTM is delivered through a combination of taught courses, an Organizational and Policy Analysis (OPA) project and a research thesis project. The three components are done sequentially with successful completion of one being a prerequisite for progressing to the next.

Taught Component: The compulsory taught component is delivered through two modules. The Evidence Based Public Health Policy module dealt with skills to critically appraise literature and promoting the uptake of evidence into public health policy. It emphasised the dynamics and conflicts between the worlds of research, policy and practice. The skills gained were reinforced through two assignments: one involved doing a systematic review on the effectiveness of health warnings on tobacco products and then writing up a policy briefing report to the Health Minister of India. The second assignment involved designing an influencing and knowledge transfer strategy to get a research-based issue onto the policy agenda. Rather than choose a hypothetical situation as advised in the module I analysed the then ongoing agenda setting process that eventually led to the passing of the 'Protection and Promotion of the Khasi Traditional Medicine Act' by the Autonomous District Council in Meghalaya.

The Leadership Management and Professional Development module focussed on the theoretical underpinning of organisational management and leadership. In addition to lecture and seminar based teachings, a personal and professional development course was delivered through a retreat in November 2010. I particularly enjoyed this retreat

as it gave me an opportunity to engage in self evaluation exercises that helped me understand my own strengths and management style while also becoming more sensitive to other personality types. This will assist me in planning, forming and developing effective teams for the new institution. For one of the assignments in this module I documented the role of leadership and management in setting up of a new University in Meghalaya.

Organisational and Policy Analysis (OPA): the second component involved doing the first of the two research projects. My OPA project entitled 'Change management in the development of an institution – a case study of the Foundation for Revitalisation of Local Health Traditions (FRLHT)' was carried out in Bangalore, India from April-September 2011. FRLHT, represented a noteworthy model of a public health institution in the non-governmental sector in India. FRLHT was a highly successful organisation under the leadership of its iconic and visionary founder director, Shri Darshan Shankar. In the period prior to my OPA the organisation had re-invented itself as the Institution for Ayurveda and Integrative Medicine (I-AIM). Its interests had broadened to Ayurveda from the original emphasis on folk healing traditions. During my OPA the organisation was in the midst of a difficult change management process as it attempted to execute new strategies. A lacuna in leadership skills development at different levels and several human resources management issues were identified as potential areas for improvement. Of particular interest was how misunderstanding cropped up between administration and employees due to gaps in communication within a growing institution.

The success of FRLHT in promoting traditional knowledge at the community and academic levels is reflected in its influencing of government policy, the piloting of integrative models and in bringing together of practitioners from different streams of medicine. FRLHT's work resonated with my own research interest in Meghalaya. My conversations with Shri Darshan Shankar and with many other influential academics who visited FRLHT during my OPA, revealed the central role that he and his institution played in bringing folk traditions into national policy. FRLHT's work influenced the use of the term 'Local Health Traditions' to refer to folk health traditions.

Research Thesis Project: Thus the second project and the final component of the DrPH course, was linked to FRLHT's founding principles of seeing traditional medicine, particularly folk traditions as a way of providing affordable and culturally appropriate health care in India. This component helped develop my research skills especially in qualitative methods. I had very little experience in qualitative research prior to my DrPH. I now recognise that qualitative methods are epistemologically closer to Eastern world views and have particular relevance for our future research. During the course of data collection I got to interact with many policy makers. On these occasions we began conversations about different approaches to health, different understandings of the concept of health and the relevance of research in policy making. I have also interacted with them in an official capacity as I was engaged as the development officer of IIPH-Shillong during my period as research scholar. I will continue to interact with many of them in our future work in promoting public health and in framing evidence based policy.

Getting highly-qualified people, with specific expertise, while being desirable, is difficult in most areas of the developing world. It is certainly true of northeast India. Often many skills have to be rolled into one person, at least in the initial stages. Persons who bring in multiple skills and the right attitude are particularly desirable in such teams. The DrPH at LSHTM permits candidates to attend MSc modules at the School in addition to the compulsory components. During the course of the three years I did the following MSc modules: Qualitative Research Methods, Medical Anthropology, Sexual Health, Ethics, Introduction to Health Economics, Statistics for Epidemiology and Population Health, Health Systems and Economic Analysis for Health Policy. Some of these modules were done as preparation for my research projects. But I also chose modules that did not have direct relevance to my thesis so as to gain a broader understanding of public health that would be useful in my future role in the Indian Institute of Public Health. In these modules I tried to be aware of pedagogical aspects; how it was taught in addition to what was taught.

I am convinced that the DrPH programme is one of the best research degree courses that the School is offering. So I was rather puzzled on realising how undervalued it appeared to be within LSHTM. While both a PhD and a DrPH thesis have the same academic rigour, the negative perceptions of the latter were seemingly associated

with the difference in word count. Yet most scientists will agree that it would be preposterous to judge a piece of work based only on its word count! Most research degree students that I met in LSHTM from the developing world were not intending to go back to purely academic careers. I couldn't help thinking that they and their countries would gain so much more if these students did a DrPH rather than a PhD! A colleague and I discussed these issues with senior administrators which lead to the creation of a DrPH visibility committee, of which we were members. The committee undertook a survey of current and past students, worked with the faculty and provided feedback to the administration. It was encouraging to observe the increased visibility of the course in the following years and small grants being instituted for future DrPH students.

Over all my time at LSHTM has been a rewarding experience. It gave me opportunities to listen to some wonderful thinkers, opportunities for dialogue and time to think. As I pursue my career in public health through the PHFI and the Indian Institute of Public Health, it will involve teaching, mentoring, research and advocacy. I believe the three components of the DrPH have collectively given me skills in all these areas.

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1. Abstract

Introduction: Meghalaya is a state in northeast India that has a predominantly indigenous population and an age-old system of tribal medicine. There are practitioners of this system in most villages, who use medicinal plants sourced from the state's vast forest bio-resources. This project studied the tribal medicine of Meghalaya from three perspectives, the healer, the community and the policy maker. It locates tribal medicine within the government's policy on medical pluralism and seeks to understand how tribal medicine of a local context fits into the national policy of the Government of India.

Methods: A mixed methods study design was employed. Estimates of awareness and use of traditional medicine in the community were obtained from the analysis of a household survey. For the qualitative component tribal healers, policy makers, and influential members of the community were interviewed. A combination of in-depth interviews, observations and focus group discussions was employed in the field with healers, while in-depth interviews were the main source of data from policy actors. Qualitative data was analysed using a thematic content analysis approach that incorporated elements of the grounded theory approach.

Results: The community - tribal medicine has wide acceptance across the state, 87% believed it to be efficacious and 46 % reported using it in the 3 months prior to the survey. In comparison only 31% had heard of any of the AYUSH (Ayurveda, Yoga, Unani, Siddha and Homeopathy) systems that are being promoted by the state and only 10.5% had ever used it in their lifetime.

Healers - tribal healers are a heterogeneous group who treat a wide variety of ailments. Their expertise is well regarded in the community for certain ailments such as musculoskeletal disorders, but often their services were sought when patients were dissatisfied with biomedicine. For physical ailments that are culturally understood their services are often the preferred option. Their expertise niches have evolved through their interactions with, and the perceived needs of the community.

Policy actors – although there were some appreciative voices, several biomedical doctors and policy makers in the government department of health derided tribal medicine's unscientific nature. In comparison other systems like Ayurveda and homeopathy were assumed to have scientific merit mainly because of institutionalisation and government recognition of these systems. The comparison with homeopathy is pertinent as its scientific credentials are being increasingly questioned in scientific literature. In contrast those outside the health department, academics, biomedical doctors and other influential members of the community favoured tribal medicine because of its widely regarded efficacy and its cultural value. Neglect of tribal medicine while promoting the imported AYUSH systems was seen as illogical and disrespectful to their culture by the latter group.

Conclusions: the current policy in Meghalaya of mainstreaming AYUSH medicine is not supported by locally relevant evidence. It has led to a disproportionate increase in AYUSH doctors in the public sector. It represents a top down approach to policy formulation that ignores local realities. This study demonstrates the importance of contextualising policy to cultural milieus. It emphasises the importance of research in health system development and questions the generalising of policy in a country as diverse as India. The study illustrates the complexities, but points to the potential benefits of supporting tribal medicine in Meghalaya.

2. Abbreviations and Glossary

ADC	Autonomous District Council
AHPSR	Alliance for Health Policy and Systems Research
APF	Asia Pacific Forum of National Human Rights Institutions
AYUSH	Ayurveda, Yoga, Unani, Sidda and Homeopathy
BAMS	Bachelors in Ayurveda Medicine and Surgery
CAM	Complementary and Alternative Medicine
CI	Confidence Interval
CHC	Community Health Centre
DHS	Directorate of Health Services
DrPH	Doctor of Public Health
EMRI	Emergency Management and Research Institute
FRLHT	Foundation for Revitalisation of Local Health Traditions
GoI	Government of India
GoM	Government of Meghalaya
HPSR	Health Policy & Systems Research
HIV	Human Immunodeficiency Virus
IIPH	Indian Institute of Public Health
IIPS	International Institute for Population Sciences
ILO	International Labour Organisation
ISM	Indian Systems of Medicine
ISM & H	Indian Systems of Medicine and Homeopathy
ITM	Indigenous Traditional Medicine
KHADC	Khasi Hills Autonomous District Council
LHT	Local Health Traditions
LSHTM	London School of Hygiene and Tropical Medicine
MLCU	Martin Luther Christian University
MoH&FW	Ministry of Health and Family Welfare
NCST	National Commission for Scheduled Tribes
NEHU	North Eastern Hill University
NRHM	National Rural Health Mission
NBSAP	National Biodiversity Strategy Action Plan

NFHS	National Family Health Survey
NGO	Non Governmental Organisation
OPA	Organisational and Policy Analysis
PAHO	Pan American Health Organization
PHC	Primary Health Centre
PhD	Doctor of Philosophy
PHFI	Public Health Foundation of India
PPP	Public Private Partnership
TM	Traditional Medicine
TCAM	Traditional, Complementary and Alternative Medicine
T&CM	Traditional and Complementary Medicine
SC	Sub Centre
SPIKAP	Society for the Promotion of Indigenous Knowledge and Practices
SMPB	State Medicinal Plants Board
SBSAP	State Biodiversity Strategy Action Plan
ST	Scheduled Tribe
TFR	Total Fertility Rate
OHCHR	Office of the United Nations High Commissioner for Human Rights
UN	United Nations
UNDG	United Nations Development Group
UNHR	United Nations Human Rights
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
WHO	World Health Organization
WTP	Wellcome Trust Programme

Abbreviations used in the results section in association with quotes:

FGD = Focus Group Discussion
KH = Khasi Healer
PG = Policy actor / respondent from the policy group
I = Interviewer
R = Respondent
M = Male
F = Female

Glossary

AYUSH: is an acronym for Ayurveda, Yoga, Unani, Sidda & Homeopathy. Although each of these represents a distinct medical tradition, the term AYUSH is often used in the singular by the Government of India to denote all the codified traditional medical systems[1]other than biomedicine.

Biomedicine: refers to Western biomedicine, the primary system offered within the formal/ public health system. In India it is also referred to as allopathy or allopathic medicine.

P**olicy actors**: refers to persons with potential to influence policy whether a policy maker or an influential member of the community. They include policy makers (elected representatives of the government as well as of traditional institutions), bureaucrats, technocrats and other influential members of the community.

Public health sector/system: refers to the government controlled network of medical services and institutions. Typically the services provided include Western biomedicine as well as Ayurveda and or homeopathy. The term formal sector has also been used synonymously in some places in this document.

Bureaucrats: Public servants who work in the government's administrative machinery after being trained in the Indian Administrative Services (IAS) and its equivalents or at the state level in the Meghalaya Civil Services (MCS)

Technocrats: Doctors of biomedicine and of AYUSH systems who perform key administrative roles within the Health Departments of the Government of India.

Influential elites: influential members of the community eg. ex-bureaucrats, media, academics and prominent biomedical doctors outside the public sector.

Policy maker: is used in this document to refer to bureaucrats and technocrats in the GoM as well as members of the traditional governance institution the Khasi Hills

[1]Homeopathy is of German origin and was introduced in Indian around the time that biomedicine was but is adopted and grouped along with traditional systems in the public sector as evident in the acronym AYUSH by which the government department concerned is referred to.

Autonomous District Council (KHADC). [note: When reference is made to policy makers from the KHADC a distinction is indicated in the report].

Scheduled Tribe: Term used to refer to tribal ethnic groups in India in government policy documents. Scheduled Tribes as listed as per provisions contained in Clause 1 of Articles 342 of the Constitution of India.

Traditional medicine: is used to refer to any traditional medical system. Eg. Ayurveda, Siddha, Unnani Tibb

Tribal healer: or tribal traditional healer is a practitioner of tribal medicine. Also shortened as healer and used synonymously here.

Tribal medicine: is used here to refer to the indigenous tribal traditional medicine practised by the tribal healers using medicinal plants. The term tribal is used in preference to traditional as a mean of distinguishing it from other traditional systems.

Tribal: is used synonymously with indigenous. Tribal is the preferred term used in policy documents by the government to refer to the indigenous peoples in India.

3. Statement of the Problem

In 2011 Meghalaya's Khasi Hills Autonomous District Council passed legislation to protect and promote indigenous Khasi traditional medicine; probably the first legislative Act on indigenous traditional medicine in the country. The practice of indigenous traditional medicine has been enshrined in article 24 of the United Nations declaration on the rights of indigenous peoples; "Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals"(United Nations, 2008). Tribal indigenous traditional healers in Meghalaya are informally acknowledged as relevant to health care but they are largely ignored by the public health sector.

Although traditional medical systems were relatively neglected by the public sector for decades, India does have a policy commitment to medical pluralism in its health systems (Mukhopadhyay, 1992). A recent impetus was the launching of the National Rural Health Mission (NRHM) by the Government in 2005, as a strategy towards achieving universal health coverage and improving the primary health care delivery system (MoH&FW, 2005b). One of the strategies adopted by NRHM is to "mainstream AYUSH[2] and revitalise Local Health Traditions (LHT)" to strengthen the public health care system at all levels and also to integrate them with existing allopathic services. Within the national policy guidelines the individual states do have an opportunity to promote their own Local Health Traditions which, in Meghalaya, would be the folk medicine practiced by its indigenous tribal traditional healers (for example Khasi Traditional Medicine). Although "revitalise LHT" is a stated strategy of the NRHM, if or how it is being interpreted or implemented at the state level is unclear.

The World Health Organisation (WHO) in its traditional medicine strategy, advocates integration of traditional medicine into health systems and lists some of the challenges (WHO, 2002). These include inadequate data in the knowledge base

[2] A term coined recently by the Government of India to indicate the traditional and alternative medical systems. The health department in charge of medical systems other than biomedicine has also been renamed AYUSH department from the previous Indian Systems of Medicine. It is also an acronym for Ayurveda, Yoga, Unnai, Sidda and Homeopathy.

of traditional medicine and gaps in communication between systems. As integrative systems are becoming more prevalent across the world, so researchers have highlighted challenges and problems, an important one being the difficulty in communication between practitioners of different medical systems (Caspi et al., 2000, Hollenberg, 2006, Frenkel and Borkan, 2003, Shelley et al., 2009).

This thesis was initiated on the basis of three premises: 1) Meghalaya state has a predominantly indigenous population with its own systems of indigenous traditional medicine or tribal medicine 2) the United Nation's declaration of indigenous people's right to practice their traditional medicines and 3) India has a declared policy on inclusive medical pluralism. Within this context this study set out to answer questions on how the tribal medicine of Meghalaya is perceived by its users (community), by tribal healers and by policy actors. It attempted to locate tribal medicine of Meghalaya within the policy on medical pluralism being implemented in the state and sought to understand how tribal medicine of a local area fits into the agenda of medical pluralism espoused by the Government of India (GoI)(MoH&FW, 2005a).

For an integrative health system that is locally relevant to evolve in Meghalaya, it is important to document and understand who the tribal healers are and what they do. The perceptions of the policy actors including policy makers, doctors in the public sector and other influential members of the society towards Meghalaya's tribal medicine have also not been studied and needs to be looked at. It is also pertinent to locate tribal medicine within the health policy and the health system of the state. This study aims to fill these gaps in knowledge.

4. Specific Objectives

1. To estimate the use of tribal medicine in rural households of Meghalaya
    i. What proportion of people in rural Meghalaya use tribal medicine?
    ii. What proportions of people are aware of and use traditional medicine of the AYUSH streams?
2. To document and understand how traditional healers in Meghalaya perceive their role as health care providers in the community.
    i. How do they become healers?
    ii. What kind of services do they provide?
    iii. Do they interact with the public/formal sector? If so how and when?
3. To understand the views and attitudes of policy actors and the health department towards Meghalaya's tribal medicine and its practitioners.
    i. What are their perceptions and experiences with tribal medicine?
    ii. Do they think tribal medicine is or can be relevant?
4. To interpret these findings and make recommendations to inform health policy for health system strengthening in Meghalaya

4.1. Framework of the Study - Schematic Representation

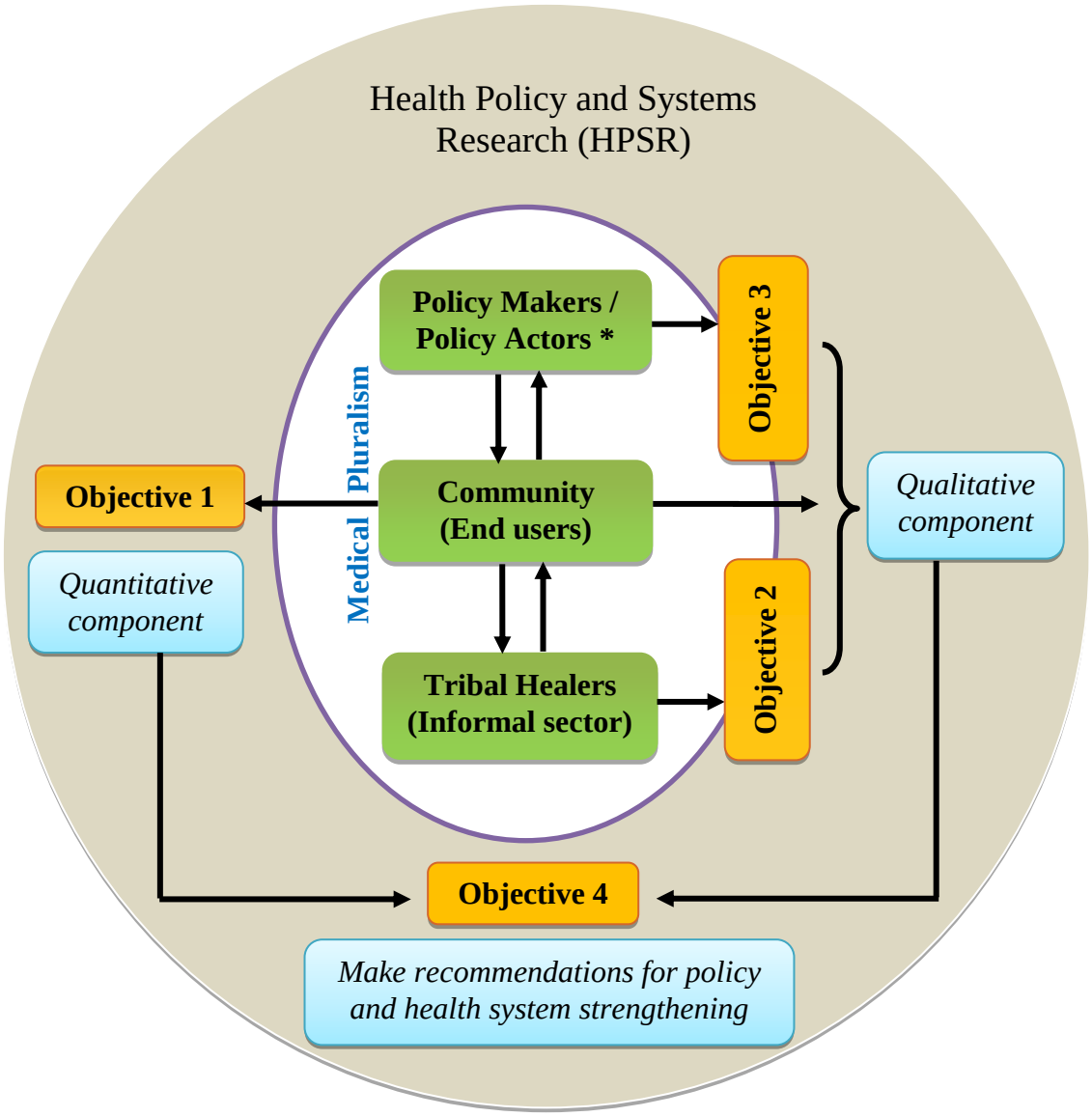


Figure 1. Elements of this mixed methods study – a schematic representation

* **Policy Actors** – include policy makers or elected representatives and bureaucrats, technocrats (doctors of biomedicine and AYUSH systems who work in the public sector / government service) and other influential members of the community. Influential members include persons from media, ex-bureaucrats, academics and prominent biomedical doctors in the private sector.

5. Background and Review of Literature

This chapter briefly highlights the relevant literature in the discipline of Health Policy and Health Systems in order to frame the area of medical pluralism in which this thesis is located. Relevant theories on health systems and medical pluralism and the use of traditional and complementary medicine are described. The current policies on medical pluralism in India are reviewed. An overview of indigenous peoples at the global, national and local levels is then provided, closing with a brief note on indigenous people's right to health and medical pluralism.

5.1. Health Policy and Health Systems

Health policy and health systems are closely interrelated and have become a combined discipline referred to as Health Policy and Systems Research (HPSR) recently (Gilson, 2012). This field has received renewed interest in the past decade as an approach to improve health and health systems in developing countries (Ghaffar et al., 2012, Sheikh et al., 2011). The World Health Report 2000 highlighted the potential role of HPSR in improving health systems (Ghaffar et al., 2012).

Well-functioning health systems are recognized as being of central importance to address health inequity (World Health Organization, 2008). Weak health systems are also recognized as a major factor for the lagging behind in reaching the millennium development goals (Fryatt et al., 2010). In 1999 the Alliance for Health Policy and Systems Research (AHPSR) was established as a partnership hosted by the WHO for promoting the generation and use of HPSR. This contributed to raising awareness and resources for HPSR by WHO and global funding agencies for this growing field (Ghaffar et al., 2012).

Research in health policy and health systems has evolved and become inter-disciplinary with the realisation that a linear, positivist focus on treatment and prevention of diseases alone is inadequate to meet public health goals (Gilson et al., 2011). The field of HPSR has thus developed with the acknowledgement that a health system is complex and needs to be adequately understood before one can apply measures to strengthen it. HPSR is a multidisciplinary field that draws from disciplines as diverse as epidemiology, biomedicine, health economics, sociology, anthropology and political science (Sheikh et al., 2011, Gilson et al., 2011). An

important area pertinent to this study is 'critical medical anthropology', which has been defined as a "theoretical and practical effort to understand and respond to issues and problems of health, illness, and treatments in terms of the interactions between the macro level of political economy, the national level of political and class structure, the institutional level of the health care system, the community level of popular and folk beliefs and actions, the micro level of illness experiences, behaviour, and meaning, human physiology, and environmental factors" (Singer, 1995, Lock and Scheper-Hughes, 1996). However, policy researchers also caution against disciplinary capture (Gilson et al., 2011, Sheikh et al., 2011). They argue that the field of HPSR is defined by the topic and research questions asked, rather than the approach suggested by a particular discipline. It has been noted that the role of social science perspectives in HPSR is especially pertinent considering that health policies and health systems are "social and political constructions"(Gilson et al., 2011).

Policy has been defined in different ways in the literature ranging from a course of action or inaction to formal written documents made by governments (Dye, 2001, Buse et al., 2012, p.5-7, Heclo, 1972). It is acknowledged that sometimes it is difficult to pinpoint how a policy decision was taken as an explicit decision may never have been made (Barker, 1996, p.5). But a common understanding of **health policy** is "written documents, rules and guidelines that present policy-makers' decisions about what actions are deemed legitimate and necessary to strengthen the health system and improve health"(Gilson, 2012, p.28).

Health policy analysis has been defined as a "multi-disciplinary approach to public policy that aims to explain the interactions between institutions, interests and ideas" (Walt et al., 2008). Policy analyses have been characterised as those that seek to improve understanding of policy and those that look to improve its quality for strengthening the policy process (Barker, 1996, p.35, Hill, 2009, p.4-5). Health policy analysis can be used retrospectively to understand past policy or prospectively for planning for the future (Walt et al., 2008). In a recent systematic review that analysed the health policy processes in low and middle income countries (LMICs) Gilson and Raphaely (2008) highlight the limited number of studies in the field.

They also note the methodological weaknesses and lack of use of relevant theories and concepts in the body of work.

Walt and Gilson (1994) emphasised that health policy analysis had a major role in reforming the health sector in developing counties. They presented an influential framework for health policy analysis that recommended moving away from analysing just the content of policy to addressing process, context and policy actors (Walt and Gilson, 1994, Gilson et al., 2008). Process refers to ways in which policies may be initiated, developed, implemented and evaluated. Context refers to broader political, social or economic factors that may impact the process, for instance ideology, history and culture (Buse et al., 2012, p.4-19). Contextual factors can be further categorised as structural, cultural and external or environmental factors (Collins et al., 1999, Leichter, 1979). Policy actors are considered to be central to the health policy framework and have been described as those who make or influence policy directly or indirectly. While those working within the government are important policy actors, those outside or 'non-state actors' are also recognised to have a role (Tantivess and Walt, 2008). Health policy actors have been further categorised as individual, groups and organisations while recognising that groups and organisation are made of individuals who are in turn influenced by the context within which they work (Buse et al., 2012).

5.2. Health Systems and Medical Pluralism

Health systems have been defined in different ways. A health systems can be defined by what it seeks to achieve and by its components (Gilson, 2012). They have been described as "complex technical systems for organising specialised services (prevention, diagnostics and treatment) and goods (pharmaceuticals and equipment)"(Bloom and Standing, 2008). Alternatively they have also been described as knowledge economies or mechanisms of organising access to expertise (Bloom et al., 2008). A widely accepted definition in the HPSR literature is the one used by the World Health Organisation (WHO); "Health System consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities."(WHO, 2007a, p.2). It emphasises that a health system is more than the pyramid of publicly owned health facilities that

deliver health services and includes the broader network of care givers in the home and the community. According to the World Health Report 2000 the overall goals of a health system include "improving health and health equity in ways that are responsive, financially fair, and make the best, or most efficient, use of available resources" (WHO, 2007a). The WHO framework for action defines a set of six 'building blocks' for strengthening health systems. The building blocks are health services, health workforce, health information system, medical products, vaccines and technologies, health financing and leadership and governance (WHO, 2007a, p.3-4). A subsequent document on systems thinking emphasised the importance of highlighting the role of people "not just at the centre of the system as mediators and beneficiaries but as actors in driving the system itself" (WHO, 2009, p.31-32). Thus it is argued that it is not just the building blocks that constitute a system, but the multiple interactions between them and the people involved that are crucial.

Anthropologists have used the terms medical system, health system and health care system interchangeably to represent conceptual models that enable researchers to understand people's ideas and practices about health and illness within a cultural context (Pool and Geissler, 2005, p.39-51). Many decades ago medical anthropologist Charles Leslie (1980) argued that the seemingly simple concept of a medical system was not straightforward. He suggested that the prevailing idea stemmed from "an artefact of the division of labor in nation states" whereby bureaucratically ordered set of hospitals, training institutions, professional associations and regulatory agencies with a biomedical orientation claimed responsibility for the health of populations. From this perspective other forms of health care were ignored, considered inferior or dismissed as quackery (Leslie, 1980).

Arthur Kleinman (Kleinman, 1985, Kleinman, 1978b, Kleinman, 1980) suggested that in every culture individuals and institutions experiencing and or responding to illness were interconnected. He referred to the "totality of these interrelationships" as the health care system. The need for descriptive terminology that is not limited to biomedicine was noted. He argued that conceptualising a medical system as a cultural system helped "operationalize the concept of culture in the health domain". He suggested that this could enable cross cultural comparison, for instance by

relating folk healing traditions to biomedicine (Kleinman, 1978a). Kleinman categorised the health system into three sectors, the professional sector, a folk or traditional sector and the popular sector (Kleinman, 1980, p.53-59). The professional sector includes the organised, professionalised groups which in most countries is Western biomedicine but in other countries could include professionalised indigenous medicine such as Ayurveda in India (Leslie, 1976). The folk sector includes specialists who are neither professionalised nor bureaucratised, for example herbalists and bone-setters. The third is the popular sector which represents people's choices influenced by popular culture; decisions influenced by their interactions in the community. Kleinman argued that it was lay people who organised their health care by making decisions on what, when, where and how treatments should be sought or adhered to. For instance once they have made a choice of provider, professional or folk, the effectiveness of these choices is weighted in the popular sector to enable decisions on next steps (Kleinman, 1980, p.50-59).

A closely related concept is that of **medical pluralism** which represents the existence of different medical traditions within one society or one health system (Pool and Geissler, 2005, p.39-51, Leslie, 1980). The term was introduced in social sciences literature in the 1970s to describe the situation in the developing world where people resorted to different medical systems other than the biomedicine based health care system provided by governments (Sujatha and Abraham, 2009). Although 'folk medicine' existed in western society, it got progressively usurped by biomedicine and was variously described as quack, complementary, alternative, non-conventional and marginal (Bakx, 1991). From the seemingly inferior position that non-biomedical practices were held in, they have had a resurgence and now-a-days the biomedical profession does not uniformly label them as being marginal, fraudulent or of little consequence (Kaptchuk and Eisenberg, 2001). With growing acceptance of non-biomedical approaches, these medical systems and practices have been referred to in a less pejorative manner using diverse terms in different parts of the world as outlined under the next sub-heading.

5.2.1. Traditional, Complementary and Alternative Medicine

In most places across the world biomedicine is the predominant type of medicine that is practised and promoted by governments. Medical streams other than Western

biomedicine have been referred to by different terms such as 'Traditional Medicine', 'Complementary' or 'Alternative' Medicine (WHO, 2002). The term traditional medicine has been used for medical systems that are indigenous to a particular culture as opposed to an introduced one such as Western biomedicine. Complementary and alternative have been used for practices that are not part of the country's tradition and or is not part of mainstream health care delivery (Broom et al., 2009, Broom et al., 2010). Thus what is indigenous/traditional in one country eg. Chinese medicine in China would be considered alternative or complimentary in other places like Britain. The acronyms TM/CAM and TCAM have been used as general terms encompassing these various medical streams (WHO, 2002, Sheikh and Nambiar, 2011, Fink, 2002). Despite the dominance of biomedicine in the developed world, TM/CAM is also widely used; studies have reported high percentages of the population, 48% in Australia, 70% in Canada, 42% in USA, 38% in Belgium and 75% in France, to have used CAM at some point (WHO, 2002). In recent years increasing trends in the use of CAM have been reported from many western societies (Sundberg et al., 2007, Tindle et al., 2005, Kaptchuk and Eisenberg, 2001).

The terms integration and integrative have been use interchangeably in contemporary literature to mean slightly different things. One meaning is with reference to the provision of multiple forms of health care usually traditional medicines along with Western biomedicine (Bodeker, 2001, Maizes et al., 2009, Sundberg et al., 2007, Bell et al., 2002, Frenkel and Borkan, 2003, Kemper et al., 2008). Integrative medicine has also been described as a holistic approach to health care that focuses on prevention, wellness and healing (Coulter et al., 2010). Bodeker (2001) states that consumers often seek 'integrated services' from different systems irrespective of whether integration is officially present.

The WHO (2002) in its document 'Traditional Medicine Strategy 2002-2005' has used the term 'integrative' as one category of three: integrative, inclusive or tolerant, to indicate the degree to which traditional medicine (TM) is an officially recognized element of a country's healthcare system. The criteria used were: inclusion of TM in national drug policy, regulation of providers and products, availability of TM/CAM at hospitals, a reimbursement strategy for such therapy under health insurance and the availability of research and education in TM/CAM. Only four countries namely

China, the Democratic People's Republic of Korea, the Republic of Korea and Vietnam were thus grouped in the integrative category. India was listed under the inclusive category as it failed in one criterion that of reimbursement and insurance coverage for TM. In May 2009 at the 62nd World Health Assembly it was recommended that the traditional medicine strategy should be revised by taking into account the progress made by member states and the Beijing declaration on Traditional Medicine (WHA62.13, 2009).

The Beijing declaration on traditional medicine notes that the term traditional medicine covers a variety of therapies and practices which may vary greatly between different countries and different regions of the world. It observes that traditional medicine may also be referred to as alternative or complementary medicine. It recognises traditional medicine as a resource for increasing the availability and affordability of primary health care services to improve health outcomes and recommends its integration into national health systems (WHO, 2008a). The declaration also states that "The knowledge of traditional medicine, treatments and practices should be respected, preserved, promoted and communicated widely and appropriately based on the circumstances in each country".

In the updated 'Traditional Medicine Strategy 2014-2023' document published a few months ago by the WHO the acronym T&CM is used to refer to traditional and complementary medicine. It describes T&CM as a global phenomenon. It highlights the need for research in different aspects including those that improve understanding of T&CM practitioners (WHO, 2013a).

5.2.2. Medical Pluralism in India

India has a pluralistic health care tradition with the co-existence of multiple systems of traditional medicine along with biomedicine (also referred to as allopathy) (Berman, 1998, Shankar, 1992, Leslie, 1976). Unlike several other nations which have one traditional system along with biomedicine, the Indian subcontinent has multiple traditional systems existing in different regions of the county. Thus in India the different streams such as Ayurveda, Unnai and Siddha are recognised as different systems of medicine; collectively referred to as Indian Systems of Medicine (ISM) (Sujatha and Abraham, 2012).

Ayurveda is the ancient medical science of India that has been practiced for over 2000 years (Valiathan, 2006). Its beginnings have been lost in antiquity but its history and development are closely interwoven with the history and culture of the Indian subcontinent (Jayasundar, 2012a, Prasad, 2007). It is backed by a corpus of ancient medical manuscripts; the Sanskrit texts, Charaka Samhita and Sushruta Samhita form key texts of Ayurvedic medicine. It is based on complex theoretical and philosophical foundations (Gangadharan and Manohar, 1994, Manohar, 2006). The *tridosha* theory (of *vata, pitta* and *kapha*) forms the basis of Ayurvedic understanding of health, ill-health and treatment. Ayurvedic diagnosis assesses deviation from a state of equilibrium of *dosas* (functions/dynamic forces). Treatment involves a combination of medicines, medical procedures (*panchakarmas*), diet and activities that aims to remove disease causing factors, correction of imbalance and restoration of the healthy status (Jayasundar, 2012a, Chopra and Doiphode, 2002). Although references to Ayurveda suggest homogeneity in the system, there exist regional variations in practice. An example is the Ayurveda of the Kerala region, where textual sources and contemporary practices indicate that there was a well developed medical tradition prior to the arrival of the Sanskritic textual traditions. The preferred Ayurvedic text used in Kerala is the Ashtanga Samgraha of Vagbhata. Ayurveda of this region relies almost exclusively on plant sources and include preparations from local plants that are not mentioned in the key Ayurvedic texts (Abraham, 2012).

Unani has its origins in the Graeco-Roman system of medicine and was developed by the Arabs in the Islamic empires during the eighth to thirteenth centuries (Sujatha and Abraham, 2012). It reached India in the twelfth century and was subsequently indigenised in the subcontinent through interactions with Ayurveda leading to assimilation and adaptation (Quaiser, 2012, Sujatha and Abraham, 2012, p.5).

Siddha medicine is a traditional system practiced in southern India largely in the state of Tamil Nadu (Sujatha, 2012). Previously it was referred to as Tamil Medicine or Tamil Ayurveda. The term Siddha first appeared in 1923 in the Usman Committee Report submitted to the British government to evaluate the relevance of establishing a school of indigenous medicine in Madras (Sebastia, 2012). Siddha shares several features with Ayurveda such as physiological theories, concepts, diagnosis and

therapy. But it also differs from Ayurveda for instance, in its extensive use of metals and minerals and its allegiance to tantric philosophy (Sebastia, 2012).

Homeopathy and naturopathy arrived in colonial India about two centuries ago alongside biomedicine (Sujatha and Abraham, 2012). They have found considerable support in the country and have become formally grouped together with the Indian Systems of Medicine in the current acronym of AYUSH. Homeopathy has the second largest number of practitioners after Ayurveda in the country. Naturopathy is linked with Yoga in the public health sector as Yoga & Naturopathy(Sujatha and Abraham, 2012).

The word yoga is derived from the Sanskrit word *yug* 'to join', man's quest to enjoin the individual consciousness to the universal consciousness. Yoga aims to enable individuals to overcome the limitations of the body, to become self aware and to rise to a higher consciousness. There are many branches of yoga such as *raja yoga, hatha yoga, karma yoga, bhakti yoga, kundalini yoga and Jnana yoga* (Desikachar, 1987, Iyengar, 1993, Muktibodhananda, 1998).

In India some of the non-biomedical systems have become selectively institutionalised and professionalised (Hardiman, 2009, Prasad, 2007). There are numerous medical colleges in the country that offer undergraduate training in Ayurveda, Unani and Siddha, for example the Bachelors in Ayurveda Medicine and Surgery (BAMS) (Sujatha and Abraham, 2012, Priya, 2012). The professionalised indigenous systems can be considered as part of the 'professional sector' in India if one were to use Kleinman's classification (1985).

But the professionalised forms of traditional medicine are not the only traditional systems that exist in the country (Prasad, 2007, Lambert, 2012, Payyappallimana and Hariramamurthi, 2012). In India traditional medicine can be broadly divided into the codified and the non-codified medical streams. The codified systems such as Ayurveda, Unani, and Siddha are supported by numerous ancient medical manuscripts while the non-codified systems are primarily transmitted through oral traditions (Shankar and Unnikrishnan, 2004, Balasubramaniam, 2004). The non-codified streams would be what Kleinman (1985) referred to as the folk sector. This non-professionalised sector is increasingly being referred to as Local Health

Traditions (LHT) in policy documents (GoI, 2002). LHT is a broad term that is currently being used in India to cover home remedies, treatments offered by folk healers including medicine systems of different tribal (indigenous) ethnic groups. Prasad (2007)observes that the tendency of surveys to classify all herbal practitioners (folk healers) as practitioners of Ayurvedic medicine has contributed to a misleading generalisation about the presence and practice of Ayurveda in rural India. From his work in southern India, Nichter (1980) argues that the notion that systematic Ayurveda (codified) is readily available and inexpensive in rural India is unfounded (Prasad, 2007).

In India health care is provided through the State funded public sector, the private sector and the private not-for-profit sector (Govil and Purohit, 2011, p.583-589). The proportion of public and private providers of both biomedicine and different traditional systems varies greatly between the different regions and between different states of India (Priya and Shweta, 2010, Berman, 1998).

In Meghalaya the health market in rural areas mainly comprises of formal state funded public sector and an informal sector of tribal traditional healers. The private sector that is increasingly playing a major role in health services elsewhere in the country is small and relatively confined to the urban areas of the capital city of Shillong (GoM, 2009). Prior to the National Rural Health Mission (NRHM) initiative of the government the public health sector primarily focussed on providing biomedical services through the network of sub-centres, primary health centres and community health centres.

In Meghalaya state the tribal traditional healers are likely the largest group of health care providers in the informal sector. However, the wide use of indigenous Khasi and Garo traditional tribal medicine in Meghalaya is not reflected in the National Family Health Survey (NFHS-3) an important primary source of data on health statistics. NFHS-3 reports that 0.7% in rural and 0% of urban households seek care from traditional healers (IIPS, 2009, p.99). This appears to be a gross under estimate.

Biomedicine and Traditional Medicine in India – Historical Background

Traditional systems have had a see-sawing relationship within the public formal health system following the introduction of allopathic medicine (Western or

biomedicine) during colonial times. Alok Mukhopadyaya (1992, p.53-54) states that during the process of establishing allopathic systems in India no attention was paid to promote indigenous systems nor to incorporate local health traditions. He argued that this had damaging effects that contributed to the decline of indigenous systems. Such that an "essentially holistic outlook on health was eroded and gradually replaced by the drug-disease-doctor orientation". He also comments that it heralded the start of "elitism in health services" in the county. In India, although traditional systems of knowledge are supported and celebrated as indigenous forms of knowledge that should be promoted, biomedicine is argued to have achieved hegemonic status (Broom et al., 2009, Naraindas, 2006). Khan (2006) further argues that although the "hegemony of biomedicine over indigenous science and knowledge" was initiated by colonial rule, it was extended and supported to "devastating effect" by the national government and its leadership.

Allopathic medicine based state sponsored public health services were first initiated in India to meet the needs of the colonisers during India's colonial period. Basic services were later extended to Indian civilians in urban areas (Mukhopadhyay, 1992). When India won Independence in 1947, hunger and malnutrition were rampant and over 40% of children died before attaining 5 years of age. The government was faced with the daunting task of dealing with a tremendous public health burden. The Bhore Committee report published in 1946, was one of the documents that has most influenced post-independence India's public health delivery system and training of its personnel. At the time, health care provision in the public sector was led by two types of registered medical practitioners, graduates (5.5 years training) and mid-level practitioners or licentiates (3-4years training). Most of the services were provided by the licentiates, who formed two-thirds of the medical practitioners in the public sector at the time. The committee proposed abolishing the licentiate training programme and establishing a three-tier district health scheme, the Primary Health Centre being the most peripheral unit. The scheme was implemented although it was designed to cover less than half of the projected population over the next 10 years and was silent on how the health care needs of the rest of the country would be met (Gautham and Shyamprasad, 2009, Rao et al., 2013). India's widespread and extensive indigenous health care traditions in the informal sector

possibly made up for the lacunae in the formal primary health care system that was established.

5.2.3. Medical Pluralism in National Health Policy – Professional Sector

India's first national health policy in 1983 formally recognised the potential role that Indian Systems of Medicine (ISM) could contribute to public health care and recommended efforts to integrate ISM into health care delivery systems (Govil and Purohit, 2011, p.601). Little was done over the next decade, only in 1995 was the Department of Indian Systems of Medicine and Homeopathy (ISM&H) set up (Govil and Purohit, 2011). It was renamed in 2003 as the department of AYUSH (Ayurveda, Yoga, Unani, Sidda & Homeopathy) (Sujatha and Abraham, 2012, p.22-32). A major impetus for traditional medicine was the launching of the National Rural Health Mission (NRHM) in 2005 "to carry out necessary architectural correction in the basic health care delivery system"(MoH&FW, 2005a). One of the seven goals listed is "Revitalize local health traditions and mainstream AYUSH" (more details in sections 5.2.4 and 5.2.5)

In the public sector in India, services of the AYUSH systems of medicine are provided either through stand-alone institutions or co-located with allopathic establishments. The degree to which it was supported differed from state to state within the country, ranging from a very high degree to none at all. Prior to the start of the National Rural Health Mission (NRHM), State governments often promoted the Indian System of Medicine that was locally preferred, for example Ayurveda in Kerala and Siddha in Tamilnadu. The state of Kerala has some of the best health indices in the country, comparable to many developed western nations and has been upheld as an example of providing 'good health at low cost' (Halstead et al., 1985, Palafox, 2011). Kerala had a long tradition of Ayurveda, and similarly Tamil Nadu promotes the Sidda system. The Kerala government uses the stand-alone option for providing AYUSH services. Overall Kerala has more AYUSH institutions than allopathic institutions in the public sector. Interestingly this is the case in the private sector as well there being 4922 Ayurveda institutes compared to 4825 allopathic institutes in 2004 in the state (Priya and Shweta, 2010).

5.2.4. The Folk Sector in National Policy

Folk health traditions have been referred to as Local Health Traditions (LHT) more recently in policy documents. They vary from region to region and are widespread across the country (Balasubramanian, 2006, Payyappallimana, 2010). In India and elsewhere in the world it is acknowledged that indigenous and folk healers have kept alive and passed on indigenous knowledge for centuries through their oral traditions (Balasubramanian, 2006, Andrade-Neto et al., 2003, Stephens et al., 2006, Hafeel et al., 2003, Alves and Rosa, 2007).

The classical texts of Ayurveda refer to a complementary relationship between the codified knowledge and local knowledge; the *Charaka Samhita* refers to the knowledge of forest dwellers about medicinal materials (Payyappallimana and Hariramamurthi, 2012). It has been argued that in earlier periods the distinction between folk healers and practitioners of the codified traditional system was not so marked. This distinction became "politically significant" after the introduction of institutionalisation and registration of traditional medicine practitioners (Payyappallimana and Hariramamurthi, 2012).

Although folk healers have an enormous presence in the country, it is only as recently as 2002 that they were officially recognised in national policy in India (Payyappallimana, 2010, GoI, 2002, Payyappallimana and Hariramamurthi, 2012). Organisations like the Foundation for Revitalisation of Local Health Traditions (FRLHT) played a key role in getting LHT into national policy. The national policy on ISM (GoI, 2002) states:

> 9.1 In addition to the documented knowledge, indigenous traditional medical knowledge available with the individuals, communities, tribals have not been fully tapped, documented and validated. Such knowledge over the years gets eroded causing irreversible harm. Our Research Councils have documented over 10,000 such folk medicine but tens of thousands of such knowledge remain to be documented. The providers of such knowledge have not been given due acknowledgement, financial benefit and support to patent their knowledge.

Subsequently LHT found mention in the stated goals of the NRHM. And one of the strategies adopted was to mainstream AYUSH and revitalize local health traditions (GoI, 2005). However, it is unclear what exactly 'revitalize' represents in practice.

It is in this scenario that it becomes prudent to ask what kind of medical pluralism is being employed in the north eastern region of India, a region that is distinctly different in ethnicity from the rest of India with many tribes having their own indigenous health traditions.

5.2.5. National Policy and the 'Mainstreaming AYUSH ' strategy

One of the stated goals and strategies of the NRHM is to mainstream AYUSH (Ayurveda, Yoga, Unani, Siddha & Homeopathy) and revitalise Local Health Traditions (LHT) in order to strengthen the public health care system at all levels and also to integrate them with existing allopathic services (MoH&FW, 2005a). In a recent nationwide study on the role of 'AYUSH and Local Health Traditions (LHT) under NRHM' conducted in 18 of 29 Indian States, 60-90% of the population reported use of AYUSH services in the preceding 3 months in various parts of the country (Priya and Shweta, 2010). Their study was commissioned by the government, and the authors explain that "there is little literature available on the AYUSH services in the public system prior to NRHM, and almost none after its implementation has begun". The study reported that contrary to a common argument that traditional medicine is used by people because of allopathic health services being inaccessible or unaffordable, they documented high utilisation of traditional systems in Kerala and Tamilnadu two of the Indian states with the best functioning free public health care services. The authors conclude that this pluralistic health seeking behaviour reflects "the inherent strengths and limitations" of different health systems. Community knowledge of medicinal plants, home remedies and the medicinal value of foods were seen in all states. The reasons reported for using AYUSH and LHT in the above study were: previous experience of getting cured, belief in the traditional system, side effects of the allopathic medicine, perceived effectiveness in chronic diseases, affordability, easy to use, and the unavailability of other health services (Priya and Shweta, 2010). It should be pointed out that Meghalaya state was not part of this study and to date there are no published studies that evaluated the mainstreaming of AYUSH strategy pertaining to the state.

The strategy of mainstreaming AYUSH provides for co-location of AYUSH doctors and paramedics at the Primary Health Centres (PHCs), Community Health Centres (CHCs) and District Hospitals. Since NRHM recommends co-location of traditional

systems, in recent times the trend is to establish co-located facilities in many of the other states. However, co-located facilities in many states tended to be less well developed than the allopathic facilities (Priya and Shweta, 2010).

5.2.6. Human Resources for Health and the Informal Sector

India's primary health care system is besieged by many problems as highlighted in the recent call towards achievement of universal health care in India, in the Lancet series on the topic (Horton and Das, 2011, Reddy et al., 2011). One of the major problems is the chronic shortage of human resources for health (Rao et al., 2011a). Increasing the numbers, diversity and distribution of human resources for health is one of the recommended strategies (Reddy et al., 2011). At the heart of primary health care as expressed in the Alma Atta declaration is the community health worker, epitomised by Werner's influential book 'Where There is No Doctor' first published in 1977 and reprinted many times (Werner et al., 1993, WHO, 2008b). Standing and colleagues (Standing and Chowdhury, 2008) have argued that the concept of the community health worker must be emphasised so as to produce effective knowledge agents in today's pluralistic environment. Rao and colleagues (2011) assert that despite the many recommendations of policy and planning documents, India has not developed a coherent human resources policy for health. The call to action thus recommends that India move away from the centrality of the allopathic doctors in delivering primary health services. They suggest that other cadres and personnel including those from traditional systems be incorporated with suitable training (Rao et al., 2011a). While practitioners of the codified traditional medicine systems (AYUSH) are being increasingly incorporated into the public health system following the NRHM, only a few pilot projects have looked at involving LHT or folk healers into the public system in India (Kambo et al., 1994, Karuna Trust, 2010).

The informal sector or informal health providers are gaining attention in HPSR literature. There is no clear definition of who is an informal health care provider, they include a wide spectrum of persons who have variable training, are typically not registered with any regulatory body and provide health care in the private sector (Cross and MacGregor, 2009, Sudhinaraset et al., 2013, Conteh and Hanson, 2003).

Traditional healers are also included in this group although there has been some debate whether traditional healers should be included in this category (Cross and MacGregor, 2009). Medical anthropologists have also refrained from using precise definitions based on their characteristics and instead considered them as providers who work in the margins of legitimacy (Pinto, 2004, Cross and MacGregor, 2010). In Meghalaya state the indigenous tribal traditional healers are perhaps the largest group of health care providers in the informal sector.

5.3. Indigenous Peoples – an Overview

This section provides an overview of indigenous peoples at the global, national and regional level, with emphasis on the indigenous people of Meghalaya. A description of the traditional governance structures and allied institutions of Meghalaya's tribal people are also provided.

Indigenous peoples are a widely diverse group, spread all over the globe. There are more than 370 million indigenous people living in about 70 countries, representing about 5% of the world's population (UN Factsheet, UNHR and APF, 2013). Most indigenous peoples live in the geographical fringes of the planet, sparse communities inhabiting forests, hills and mountains, deserts, the circumpolar regions and small islands. They reached their destinations through ancient migrations and over the course of history, yielded much of their spaces to more dominant societies. Isolation and strong self-identity enabled many of these communities to sustain their cultural uniqueness for millennia, sometimes even in the absence of written forms of communication. From antiquity to contemporary times, indigenous peoples have suffered from invasions, wars, colonization and forced relocation and resettlement (UNDG, 2008, Horton, 2006, Anderson et al., 2006, Montenegro and Stephens, 2006). In many ways, the diminution of their cultures is ongoing, and includes permanent loss of language, loss of lands, encroachment of traditional territories, and disruption of traditional lifestyles (UNHR and APF, 2013). In recent years the rights and development of indigenous peoples have been taken up by various United Nations bodies and the United Nations Permanent Forum on Indigenous Issues was established in 2000.

The decimating effects of invasion, colonization, post-colonial wars and political oppressions on the health of indigenous peoples around the world have been described. These historical factors and their connection with contemporary socio-economic issues including health have been reviewed in recent accounts (Kunitz, 2000, Gracey and King, 2009, Anderson et al., 2006, Montenegro and Stephens, 2006, Ohenjo et al., 2006). About 70% of the worlds indigenous peoples live in Asia. There is higher incidence of poverty among indigenous peoples in Asia than the rest of the population (Nathan et al., 2012).

Although disaggregated data is often not available (Stephens et al., 2005, WHO, 2007b) there are wide differences in health indices of indigenous populations when compared to non-indigenous populations. These differences have been observed in both developed and developing countries (Durie, 2003, Anderson et al., 2006, Montenegro and Stephens, 2006, Ohenjo et al., 2006, Stephens et al., 2006, Stephens et al., 2005, Subramanian et al., 2006). Improving indigenous peoples' health remains a difficult and complex challenge (Stephens et al., 2005, Horton, 2006).

In India as elsewhere, indigenous groups have higher mortality (odds ratio 1.3; 95% CI: 1.2–1.4) compared to non-indigenous groups. There are also substantial variations within indigenous groups, for instance indigenous peoples in the bottom quintile of the indigenous-peoples-specific standard of living index have an odds ratio for mortality of 1.6 (95% CI: 1.33–1.95) when compared to indigenous peoples in the top fifth of the wealth distribution (Subramanian et al., 2006).

On September 13, 2007, the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted by the General Assembly (United Nations, 2008). This decision was the result of more than twenty years of work by indigenous peoples and the United Nations system. According to the UN the most fruitful approach is to identify, rather than define indigenous peoples (UNHR and APF, 2013). This is based on the fundamental criterion of self-identification as underlined in a number of human rights documents (United Nations, 2008).

In recent years the World Health Organization has taken a focused cognizance of the health of indigenous peoples and has used a human rights approach as a major strategy to address the low health status of indigenous peoples (WHO, 2007b).

Through a number of World Health Assembly resolutions, WHO is mandated to devote special attention to the issue of indigenous peoples' health (WHO, web page-b).

Definition and identifying terminologies

A definition of indigenous peoples has proved difficult. No single definition seems to capture the diversity of their cultures, histories and current circumstances. However, attempts to define the concept recognize the linkages between people, their land and culture (UNHR and APF, 2013). The World Health Organization (WHO) uses the following definition: "Indigenous populations are communities that live within, or are attached to, geographically distinct traditional habitats or ancestral territories, and who identify themselves as being part of a distinct cultural group, descended from groups present in the area before modern states were created and current borders defined. They generally maintain cultural and social identities, and social, economic, cultural and political institutions, separate from the mainstream or dominant society or culture" (WHO).

A well cited working definition of indigenous peoples used by the UN Working Group on Indigenous Populations, states that indigenous populations are "*those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present, non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems"* (Martínez Cobo, 1986).

Though the term 'indigenous peoples' has become widely used in literature, other terms also continue to be used. In some regions, there is a preference to use the word tribes, first peoples/nations, aboriginals or minority ethnic groups. Some of these terms have been defined in the official documents of countries to the exclusion of other terms. The Bangladesh Government has stated that there are "no Indigenous Peoples in Bangladesh" (UNPO, 2011). The Government of India, on the other hand adopts the stand that all citizens of India are indigenous (ILO, 2009b). But the

government uses the term tribals and Scheduled Tribes (STs) (Constitution of India). According to the Ministry of Tribal Affairs, the Constitution of India does not define Scheduled Tribes but "Article 366(25) refers to scheduled tribes as those communities who are scheduled in accordance with Article 342 of the Constitution. According to Article 342 of the Constitution, the Scheduled Tribes are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification" (Ministry of Tribal Affairs, web page).

5.3.1. Indigenous Peoples in India

The Indian government uses the term 'tribals' or the constitutionally recognised category of 'Scheduled Tribes' to refer to these communities in a countrywide sense (NCST, 2005). The government has recognized tribals as a separate demographic entity in the census. Tribal ethnic groups are notified as Scheduled Tribes as per provisions contained in Clause 1 of Articles 342 of the Constitution of India (NCST, 2005).

India has a population of 1.21 billion, of which 104.3 million or 8.6% of the population belong to Scheduled Tribes (Registrar General & Census Commissioner, 2013). There are 705 ethnic groups listed as Scheduled Tribes in the 2011 census of India. The country has one of the largest indigenous and tribal population in the world, more than a quarter of the world total. Scheduled Tribes are found across the country, but are mainly concentrated in the north-central and north-eastern parts of India (sometimes referred to as the tribal belts) (Ministry of Tribal Affairs, 2013).

Tribal is a colonial designation that once had pejorative connotations of being uncivilised, but is widely accepted in India now. The three terms *adivasis*, tribals and more recently indigenous peoples have come to be used in India at different points of time for different reasons (Karlsson and Subba, 2006). The oldest being *adivasis*, is of Sanskrit derivation and means original inhabitants. However, this term has limited acceptance in the northeast region of India, where it is used only to refer to specific communities from central India. Those who claim indigenous status in the northeast prefer the term tribal or the more recent indigenous peoples (Karlsson and Subba,

2006). Anthropologist Bengt Karlsson (2006) argues that the notion of indigenous peoples is rather controversial in India with the government and some social scientists claiming that such categorisation is undesirable. He suggests that "the fear is that the indigenous rights' agenda will lead to further divisions in society and fuel violent ethnic separatism".

Recognizing the need for the upliftment of the tribal people, on account of their deprivation and centuries of exclusion, they are accorded special status in the Indian Constitution (Constitution of India). The Scheduled Tribe (ST) status provides that seats are reserved for them in Parliament and state legislatures, jobs reserved in the civil services and government departments, and in admissions to government educational institutions. The Constitutional safeguards, policies and welfare schemes for STs are administered by the Ministry of Tribal Affairs (Ministry of Tribal Affairs).

There is considerable concern that the welfare and development schemes for STs in India have not yielded the desired outcomes (Gang et al., 2008, North East Council, 2008, Meenakshi et al., 2000). In the twelve-year span between 1993-94 and 2004-05, the proportion of the population below the poverty line in India declined from 36% to 28%. But among STs, it declined only marginally from 51% to 47% (Xaxa, 2011). Major gaps continue to exist between the tribal populations and the national average in literacy, health indices and education enrolments (Xaxa, 2011).

The northeast region of the country is made up of eight states, together bordered by Nepal, Bhutan, China, Myanmar and Bangladesh and is largely populated by indigenous peoples. The proportion of tribal populations in the eight states range from 12.4 per cent in Assam to 94.4 per cent in Mizoram (Ministry of Tribal Affairs, 2013). The region has over 160 scheduled tribes and over 400 other tribal and sub-tribal communities and groups (North East Council, 2008, p.4). This region was a corridor for early migrations between the Indian landmass and Southeast Asia, China and Australasia. It is a genetic melting pot of Mongoloid, Australoid and Caucasoid peoples and has been populated from the Middle Paleolithic Era, perhaps for sixty thousand years (Reddy et al., 2007). The cultural diversity is reflected in language, religion, livelihoods, ethnicity and relationship with the environment. The region is commonly lumped together in the media and even academic publications. While

there are important similarities in their tribal social organizations and history of relatively independent existence, it has been argued that the common label of the northeast is a mistaken homogeneity (Karlsson, 2011, p.28). Each tribe has its own language, cultural traditions, social institutions and legal system. In this region, colonization, Westernisation, the influence of Christianity, pressures of assimilation with mainstream India, rapid urbanization and uneven economic development have caused seismic social upheavals (Das, 1989, Singh, 1972, Karlsson, 2011).

Distinct ethnicities and the history of relative independence have led to separatist and nationalist movements which have persisted to this day. Insurgent groups of various hues of ideology and differing degrees of anti-Indian feeling exist in all the states of the northeast and these insurgent groups often jostle among themselves in inter-tribal rivalries (Karlsson, 2011, p.49-61).

Though most indigenous societies are in transition, many have retained a closeness to nature, and many occupations that are dependent on the natural environment. The Meghalaya subtropical forests are considered one of the most species-rich in the eco-region (World Wildlife Fund, n.d.). Traditional agricultural methods, such as shifting cultivation (called *jhum*, farming the forest), were first practiced in northeast India about 7000 years ago and are still being practiced (Jeeva et al., 2006).

5.3.2. Meghalaya and its Indigenous Peoples

Figure 2. Location map of Meghalaya

Meghalaya is one of eight Indian states in the north-eastern region of India. It became a state within the republic of India in 1972. It is a landlocked area of 22,429 square kilometres with predominantly hilly terrain at the foothills of the Himalayas. It shares a long southern border with Bangladesh (GoM, 2009, p.7-14). According to the 2011 census Meghalaya has a population of 2.9 million, 86 % of whom are identified as Scheduled Tribes or indigenous peoples (Ministry of Tribal Affairs, 2013). The main tribes of Meghalaya are Khasi, Jaintia and Garo, with Khasis being the largest (GoM, 2009). The main languages are Khasi and Garo. The Khasi language belongs to the Austro-Asiatic group of languages, the oldest in India (Reddy et al., 2007).

Although politically a distinction has been made in recent decades, between Khasis and Jaintias, the latter may be considered as a sub-tribe of the former. Both Khasis and Jaintias are considered to have descended from the *hynniewtrep*, seven families that come to earth on a celestial ladder according to folklore (Nongkynrih, 2007). Recent genetic evidence shows that the Khasi-Jaintia tribe came from an ancient

Austro-Asiatic migratory group that arrived in India from the west about 65,000 years ago and settled in east India (Kumar et al., 2007, Reddy et al., 2007).

Meghalaya's Khasi and Garo tribes are matrilineal and children take their mothers' clan name. Among Khasis the youngest daughter, the *khatduh*, inherits the ancestral property (Mukim, 2007, Nongbri, 2000). Unlike in other parts of India, there is no caste system here and it is a more gender equal society (Albert and Kharkongor, 2010, Gneezy et al., 2009)

The prevalence of poor maternal health is high despite some indicators of women's empowerment being high. According to the third National Family Health Survey (NFHS-3) 77 % married women in Meghalaya participate in household decision making (national average is 37%) and sexual violence against women is low (1% versus 9% for India). The literacy level at 70 % is higher than the Indian average of 55 % among women aged 15-49 years. However, there is poor health awareness; only 24 % women knew that consistent condom use can reduce the chances of getting HIV. The fertility rate of 3.8 is one of the highest in the country (national average 2.7, and 3.1 for STs in general) and the unmet need for contraception is high at 35%. Anaemia in pregnant women is 64% and most pregnant women do not take the recommended dose of iron and folic acid. Only 63% of rural women received antenatal care from a doctor or other health care personnel and 71% births take place in homes (IIPS, 2007, IIPS, 2009).

5.3.3. Traditional Governance Structure of the Khasi Tribe

Meghalaya has traditional governance institutions in addition to the state government machinery. A brief overview of the traditional governance structure is provided, followed by some historical background to the creation of the Autonomous District Councils under Schedule VI of the Constitution of India.

At the centre of Khasi traditional governance are the *syiems*, dynastic rulers of kingdoms called *himas*. The *himas* were formed from amalgamations of village clusters during the span of a few hundred years between the twelfth and sixteenth centuries AD. The origins of the *himas* and their first *syiems* are shrouded in legend and fable. Prior to the setting up of the *himas*, villages were headed by elected *basans* and *lyngdohs*, members of noble families, some of whom perform the

sacerdotal duties of the clan to this day. In the Jaintia Hills, the traditional governance structure is similar to that in the Khasi Hills, with the village clusters being called *elakas* and the rulers being called *dollois* (Bareh, 1997).

The *syiem* is assisted by council of ministers called *mintris*, who are elected from particular clans. As king, the *syiem* is ruler, judge and commander-in-chief. But this is a limited monarchy. In the daily chores of administration he functions more as a prime minister, relying on the counsel of his *mintris*, who have delegated functions. The *mintris* also are a jury that assists him in the disposal of judicial cases. His decisions and judgments are collectively arrived at. The *syiems* perform both executive and judicial functions. They manage markets and forests under their jurisdiction and also administer justice. They also perform functions associated with the indigenous religious practices of the tribals of the state. At the village level, the village headman and the village council play an important role in local dispute resolution (Gassah, 2012).

At the village level, there is the *dorbar shnong*, a village council headed by the *rangbah shnong*, headman, who is elected by the adult male residents of the village, but serves under the supervision of the *syiem* and the *mintris*. The headman can be removed by the *syiem* for maladministration. Every adult male is a member of the village council and is expected to participate in decision making. In some areas, there is a *dorbar raid*, a council of a group of villages presided over by a *basan* or *lyngdoh* (Nongkinrih, 2002, Syiemlieh, 2006).

5.3.4. The Autonomous District Councils of Meghalaya

Soon after India gained Independence in 1947, all the 25 *himas* joined the Indian Union, on the condition that the Khasi kingdoms be given special protection of their culture and traditions, especially the continuance of their traditional administrative systems, in order to preserve their ethnic identity. This protection was granted by the Constituent Assembly of India through the Sixth Schedule to the Constitution of India, in which provision was made for the Khasi and Jaintia hill areas to become an autonomous district with its own council (Constitution of India).

Thus, the United Khasi-Jaintia Hills Autonomous District Council was created on June 27, 1952, in recognition of their ancient polity, customs, practices and economic

systems and conferring on them executive, legislative and judicial powers along with developmental and financial powers and functions. In the succeeding years, the Jaintia representatives pleaded for a separate council, citing differences in the traditional governance customs and taxation practices between the Khasis and Jaintias. A Commission was appointed by the governor to study the matter. The Commission concluded that there were no good grounds to consider the Khasis and Jaintias as two different tribes, but nonetheless recommended the creation of a separate council. On November 23, 1964, the Jaintia Hills Autonomous District Council came into existence (Jyrwa, 2002).

The Khasi Hills Autonomous District Council (KHADC) has territorial jurisdiction over an area of 10,443 sq km (Syiemlieh, 2006), with a population of 1, 468, 040 and the Jaintia Hills Autonomous District Council has an area of 8167 sq km and a population of 392, 852 (Rao et al., 2011b, KHADC official website, GoI, 2012).

Each Council has 30 members, 29 of whom are elected by the people and one is nominated by the Governor. All members take an oath as provided in the Third Amendment of the Constitution and serve for a term of five years. The sessions are conducted by the Chairman in accordance with normal parliamentary practice. All laws, rules and regulations made by the Council are published in the official gazette of the state government and have the force of law. The legislative and administrative powers of the Council include land ownership and use, management of forests, except reserved forests, establishment and management of villages and towns, regulation of shifting cultivation, trade and commerce, appointment and removal of heads of *himas* and *dorbar shnongs*, inheritance of property, marriage, divorce, social customs, primary schools, markets, taxation, mining, public health and sanitation and water resources (KHADC official website).

The creation of the District Councils, ostensibly to preserve the traditional system of governance, has in fact introduced a non-traditional apex administrative institution that has executive powers over the *himas* and *dorbar shnongs* and their leaders. The Acts, Rules and Regulations of the District Council have inevitably curtailed and subordinated the powers and privileges of the traditional bodies, especially with respect to the appointment and succession of *syiems* and *rangbah shnongs* (Synniang, 2010). At the same time, the state government has overriding and

overlapping powers vis a vis the Autonomous District Councils and this creates an anomalous governance system (Chatopadhyay, 2013). There are also some misgivings about the relevance of the Autonomous District Councils especially when considering its record of achievements (GoM, 2009, p.9).

The KHADC has so far passed 58 pieces of legislation including 18 Rules and Regulations and 40 Acts, 32 of which pertain to administration and succession. Of the other Acts, three pertain to social customs, two to health, two to trade and one on land use (Syiemlieh, 2006).

5.3.5. The Protection and Promotion of Khasi Traditional Medicine Act

The KHADC passed the "Protection and Promotion of Khasi Traditional Medicine Act" in 2011 (KHADC, 2011). The preamble to this Act states that Khasi Traditional Medicine is accessible, affordable and efficacious, that it provides opportunities for livelihoods and trade and helps in the conservation of biodiversity. The preamble also avers that Khasi traditional medicine is under threat from depletion of medicinal plants, inadequate documentation and transmission, and domination by other systems of healthcare.

The Act has provisions for setting up medicinal plant sanctuaries, protection of knowledge rights pertaining to Khasi tribal medicine and the promotion of this system of medicine through training and registration of healers. The Act provides for the establishment of accredited institutes of Khasi traditional medicine that will offer courses leading to diplomas and degrees.

The Act legislated the setting up of a Khasi Traditional Medicine Commission to assist the KHADC in framing policies and regulations for education and training, norms of practice and codes of professional conduct, and standards for medical plants and medicinal formulations. The Commission also has the mandate to conduct the voluntary registration of qualified Khasi traditional medicine practitioners.

5.3.6. Indigenous Knowledge, Worldviews and Biodiversity

A worldview is considered to be the fundamental cognitive orientation of an individual or society encompassing the entirety of the individual or society's knowledge and point-of-view. The term has its origins in the German words *Welt*, world and *Anschauung*, outlook (Koltko-Rivera, 2004, Wikipedia). Additionally, it refers to the framework of ideas and beliefs through which an individual, group or culture interprets the world and interacts with it. A worldview is a more or less coherent understanding of the nature of reality, which permits its holders to interpret new information in the light of their preconceptions.

In a treatise on indigenous worldviews Royal (2002), describes three worldview systems: Eastern, Western and Indigenous. According to him, the indigenous worldview is explainable by reference to the natural phenomena of the world. Hence, indigenous worldviews give rise to a unique set of values and behaviors which seek to foster this sense of oneness and unity with the world. The predominant themes in indigenous worldviews arise from the people's close relationship with the environment, nature and the community. Within indigenous cultures, most have a high valuation of relationships. Awareness of self means understanding one's relationship with the physical environment, the spiritual world and other people. Self-esteem derives from individual contributions to collective goals.

Bird-David (1999) suggests that animism is still commonly defined as religious beliefs or worldviews of indigenous peoples involving the attribution of life to natural bodies or phenomena. She argues that the success of anthropology in universalizing the word animism has reinforced derogatory images of indigenous peoples that imply a cognitively underdeveloped culture. As a solution to this problem she suggests drawing on current environment theory that does not see a dichotomy between humans and the physical world.

Perhaps the best explanation of the Khasi worldview is by Onderson Mawrie[3](1981). In the introduction to his book, Sujata Miri decries the work of earlier authors who

[3] The book was written in the Khasi language and translated by the Department of Philosophy of NEHU under the supervision of Prof Sujata Miri, who was awarded a grant from the Indian Council of Social Sciences Research for the purpose. In the biographical note after the preface, Mr M Wahlang the main translator states that Mawrie's work "surpasses all the preceding accounts" in its portrayal of the Khasi worldview.

took the easy path of the "muddled anthropology of animism" in their efforts to explain the Khasi worldview and religion. Mawrie describes the unity of Man, God and Nature as being central to Khasi philosophy and religion (Mawrie, 1981, p.1-23). This concept underlies and permeates the Khasi ethos. However, there are no literal manifestations of God, he is described in the folklore as being seen in the many forms of nature. There are no temples of worship as he resides everywhere. According to Mawrie, a Khasi lives with nature and nature lives in him. He points out that the Khasi language is replete with metaphors from nature which have been anthropomorphized into human personality and character traits (Mawrie, 1981, p.102-105).

Nongbri (2006) a contemporary Khasi sociologist says that the Khasi tribe closely identifies with nature which is a source of their material and spiritual needs. A common theme in their folklore is the close link between man and God and the close harmony between man and nature. This unity and interconnectedness between man, nature and God finds expression in many examples, most notably the sacred groves, preserved to this day around villages. In these sacred groves, considered the abode of deities and spirits, hunting, fishing, foraging or felling of trees is forbidden, though one may eat fruit and other wild edibles, provided they are not taken out of the sacred forest. Only traditional healers are permitted to take plants out of the sacred forests. This deep respect for nature motivates a sense of custodianship for the preservation of nature and the use of natural resources. Nongbri goes on to express her deep concern about the erosion of the traditional beliefs and practices because of modernity and change. She avers that Christianity and the spread of Western education has undermined indigenous beliefs and knowledge, and views these as superstitions. This has diminished the ecological ethos that gives recognition to the interdependence between humans and the importance of the environment.

In the Lancet series on indigenous health Carolyn Stephens and co-authors argue that indigenous systems have a more holistic view of health and disease and that their notion of health and well being is closer to WHO's "aspirational" definition of health (Stephens et al., 2006, Montenegro and Stephens, 2006). Indigenous peoples have been described as "the guardians of the natural world, protecting many of the plants that form the basis of our most important medicines" (Stephens et al 2006).

Indigenous knowledge has made significant contributions to global knowledge especially in medicine (Bala and Joseph, 2007, Subba Rao, 2006). Ethnobotanical studies have documented numerous medicinal plants used by indigenous traditional healers in northeast India including Meghalaya (Mao et al., 2009, Dolui et al., 2004).

India is one of the 12 most bio-diverse countries in the world, having 16 agro-climatic zones and two biodiversity 'hotspots', biologically rich and endangered terrestrial regions, namely the Western Ghats and the northeast region. Both the 'hotspot' areas are inhabited by tribal societies. Meghalaya comes under the Eastern Himalaya or Indo-Burma 'hotspot', one of the largest biodiversity hotspots in the world (Myers et al., 2000). Healers in this region, therefore have access to a tremendous variety of flora and fauna, often endemic to these parts alone. (Ramakantha et al., 2003, Yogendra Kumar, 2008).

The State Biodiversity Strategy Action Plan (SBSAP) under the National Biodiversity Strategy Action Plan (NBSAP) has included in its action plan "the recognition of the role of traditional medicines and to ensure their appropriate and sustainable use by instituting a State Medicinal Plants Board" (Chatterjee et al., 2006). The State Medicinal Plants Board was established in 2006 and has taken up the promotion of medicinal plants with special focus on 32 species. The SBSAP also declares that "traditional medicinal practitioners should be given due recognition and their efforts and activities supported". Earlier efforts included the establishment of the Northeast Biodiversity Research Cell under North Eastern Hill University (NEHU) which has undertaken several research projects on medicinal plants, especially in the departments of biochemistry and botany (Rao, 1981, Tynsong and Tiwari, 2010, Roy et al., 2010, Syiem et al., 2002). Most of the studies done with tribal healers in Meghalaya are ethno-botanical in nature.

5.3.7. Indigenous Peoples' Right to Health and Medical Pluralism

Many indigenous peoples have ancient systems of traditional medicine which are well-established and well-accepted within their communities. The right of indigenous peoples' to their traditional systems of medicine has been affirmed by several international agencies. The United Nations General Assembly adopted the United Nations Declaration on the Rights of Indigenous Peoples in September 2007 (United

Nations, 2008). Article 24 of this resolution states that *Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals*.

The International Labour Organisation (ILO) adopted the Indigenous and Tribal Peoples Convention in 1989. The ILO in its manual on Indigenous & Tribal Peoples' Rights in Practice recognises that traditional health systems have developed over generations to meet the particular needs of indigenous peoples within their local environment (ILO, 2009a).

The Pan American Health Organization (PAHO) emphasises the need to harmonise indigenous health systems with the conventional health system by incorporating indigenous perspectives, medicines, and therapies into primary health care (Pan American Health Organization, 2002). This is acknowledged as a means to achieve equitable access and utilization of existing health resources.

The WHO states that in all regions of the world, traditional healing systems and biomedical care co-exist. And further notes that for indigenous peoples in particular their traditional systems play a vital role in their healing strategies (WHO, 2007b, WHO, 1999). This knowledge is part of their worldview of physical, mental and social harmony and embedded in the context of their natural environment.

6. Methodology and Methods

This chapter describes the rationale behind the approaches used in the field work and the data analysis. First the study design is discussed and placed within the methodological theories. The details of the methods, data collection tools, sampling strategy and the data analysis strategy used for the quantitative and qualitative parts of the study are then provided. Strategies employed for achieving credibility, clarity in translation and, the researcher's position and reflexivity during the data collection process for the qualitative work are also described.

6.1. Study Design

This project aimed to study the indigenous tribal medicine of Meghalaya from three perspectives: the community (end user), the tribal healer and the policy maker/ policy actor. First it was important to understand to what extent medical pluralism was practised by the people; in other words was tribal medicine relevant to the people in the community? Did they actually use it? Thus for achieving objective 1; to make estimates of awareness and use of tribal medicine, a quantitative method was required. Data from an existing household survey[4] that I helped with designing and executing in 2010 was analysed to make these estimates. This data set was appropriate as it was drawn from a probability sample, thus allowing for making estimates that can be generalised to the population using inferential statistics (De Vaus, 2002). This dataset had not been analysed previously for making estimates. It was used in this study to provide some descriptive estimates on perceptions and use of traditional medicine in particular the indigenous tribal medicine within the community.

The second part of the study, objectives 2 and 3, attempted to understand the perceptions of tribal healers and policy actors respectively regarding tribal medicine and its practitioners. This required qualitative approaches for data collection and analysis. Creswell and Garrett (2008) summarised a widely accepted idea that quantitative research is traditionally associated with a measurement orientation while

[4] The survey was conducted by the Martin Luther Christian University in April-May 2010. It was funded by the Government of Meghalaya as part of a consultancy to draw up a draft health policy document.

qualitative research tends to report the contextualised voices and experiences of the participants.

Quantitative and qualitative approaches are based on different philosophical positions; objectivism and positivism in the former and relativism or subjectivism and interpretivism for the latter (Green and Browne, 2005, p.15-22, Sale et al., 2002). Epistemologically the quantitative methodology is based on the assumption that there is one truth or reality and this truth can be studied objectively. The positivist position maintains that reality can be studied objectively by a researcher without in anyway influencing it or being influenced by it (Sale et al., 2002). On the other hand qualitative research is based on a subjectivist epistemology, where reality is understood to be subjective and can be both individually and socially constructed. Different people may construct meaning in different ways about the same phenomena. It recognises that both researcher and researched are together involved in the creation of meaning and understanding (Denzin and Lincoln, 2011).

An interpretive approach is especially helpful when the questions being asked focus on human perceptions, intent, meaning or people's interpretations of reality. An interpretive approach sees reality as subjective and relative, as opposed to seeing reality as completely objective from a positivist standpoint (Green and Thorogood, 2009, p.7-27). It recognises that knowledge is also culturally derived and historically situated. It takes into consideration that human beings are different and that different aspect of social life has its own meaning, intention and motivation. This approach has also been referred to as a constructivist-interpretative paradigm located within the subjective epistemology (Denzin and Lincoln, 2011). Knowledge and reality are thus constructed in and out of interaction between humans and their world and are developed and transmitted in a social context. The interpretative approach requires the researcher to engage with the participants. Green and Thorogood argue that taking a critical approach to subjective and analytical accounts potentially differentiates qualitative research from other activities that provides descriptions of society (2009).

Thus a **mixed methods** approach was adopted for this study. From the two polar positions of quantitative (positivist) and qualitative (interpretativist/subjective) approaches it has been argued that mixed methods research has emerged as a third

alternative that allows the pragmatic mixture of the two (Creswell, 2009, Johnson and Onwuegbuzie, 2004, Tashakkori and Creswell, 2007). There is considerable debate in literature about the appropriateness of combining different methods that are based on different philosophies. Despite differences in philosophical underpinnings there is agreement that quantitative and qualitative methods can be combined for complementary purposes in health research (Sale et al., 2002, Casebeer and Verhoef, 1997). Drawing on the philosophy of pragmatism Johnson et al argue that the primary philosophy of mixed methods research is that of pragmatism (Johnson et al., 2007, Johnson and Onwuegbuzie, 2004).

Mixed methods are increasingly being used in several fields including health research as it is believed to contribute to a better understanding of a problem than either approach alone (Creswell and Garrett, 2008, Murphy and Dingwall, 2003, O'Cathain, 2009, O'Cathain et al., 2007, O'Cathain et al., 2009). It allows for selecting the most suitable research approaches and methods to best answer the research question/s (Teddlie and Tashakkori, 2011). In this study quantitative and qualitative methods were mixed pragmatically (Johnson and Onwuegbuzie, 2004) in a complementary manner so as to answer a set of related questions that could inform policy on medical pluralism in Meghalaya. Different typologies of mixed methods research have also been described for instance based on the timing (sequentially or concurrent) of quantitative and qualitative data collection, relative weighting given to the two components and the kind of mixing of the data (Johnson and Onwuegbuzie, 2004, Creswell, 2009, p.206-220). In this study the quantitative data (objective 1) was collected first but its detailed analysis took place during the qualitative data collection phase (objectives 2 and 3). Analyses from both the quantitative and qualitative studies were used for making inferences related to objective 4.

Although the term mixed methods is generally used when quantitative and qualitative methods are used in the same study, some researchers also use the term when employing different methods in a qualitative study (Johnson et al., 2007). A mix of different methods (interviews, focus group discussions, observations, documents) was also used for the qualitative part of this study.

The research study design linking objectives, methods, tools and sampling are summarised in Table 1.

Table 1: Study design - overview of objectives, methods, sampling and tools

Objective	**Method**	**Respondents**	**Sampling/ tools**
1. To estimate use of tribal medicine in rural households	Household survey data collected in 2010. Analysis using statistical software Stata 11.	Female head of household / mother (Sample size - 588)	Multistage cluster sampling/ Survey questionnaire with closed and open ended questions
2. To document and understand tribal traditional healers' perceptions of their role as health care providers in the community	In-depth interviews Observations Focus group discussions Field notes	Tribal traditional healers: - Male and female healers -from different districts (Sample- in Khasi Hills region, 24 interviews, total including FGD = 36. See appendix 7 for details) *Note*: Data from Garo healers (21 interviews, total including a FGD =23) from the Garo Hills region is not presented in this thesis	Purposive/ Interview topic guide
3. To document the views and attitudes of policy makers / policy actors and doctors towards tribal medicine and its practitioners	In-depth interviews Field notes Documents	Bureaucrats Technocrats: Directors of Health Services, State and district level officials from the health department Biomedical doctors AYUSH doctors Officials of the KHADC Other influential members in the community (Sample-46. Appendix 11)	Purposive/ Interview topic guides Documents Compilation of events chronologically that led up to the passing of the Khasi TM Act

6.2. Methods used in Quantitative Work

For objective 1, data collected though a household survey drawn from a probability sample that was done in 2010 was analysed. This data set was not analysed previously for making estimates, especially the questions pertaining to traditional medicine.

In the household survey, data was collected through structured interviews with closed and open-ended questions. The questionnaires were administered to a senior female family member, usually the mother, and in her absence another female elder. Interviews were conducted in the local language by indigenous research assistants who spoke the language. The questionnaire used for the survey was adapted from the ones used in the National Family Health Surveys (NFHS, web page). The questions on use of traditional medicine were generated anew as the NFHS survey does not deal specifically with this aspect. However, some of the questions on awareness and use of tribal medicine were informed by a pilot household health survey that was done in a village in Meghalaya (Lyngdoh, 2007). But new exploratory open-ended questions like diseases for which tribal medicine was used were also added. An English version of the relevant section of the questionnaire that was used is provided (please see appendix 1).

6.2.1. Sampling for Household Survey (Objective 1)

Meghalaya is divided into seven administrative districts (see Figure 3), which are further subdivided into a total of 39 blocks, encompassing a total of 6839 villages (Registrar General & Census Commissioner, 2011). The two main ethnic tribes Khasis and Garos largely inhabit separate areas of rural Meghalaya referred to as Khasi Hills region and Garo Hills region. Four of the districts (22 blocks and 3262 villages) are in the Khasi Hills region and three districts (17 blocks, 3577 villages) are in the Garo Hills region. A cross sectional survey of households from 24 villages in the seven districts was conducted in April-May 2010. Households were selected using a multistage cluster sample design. The numbers sampled at each stage are shown in Table 2.

Figure 3. Map Showing Administrartive Districts of Meghalaya

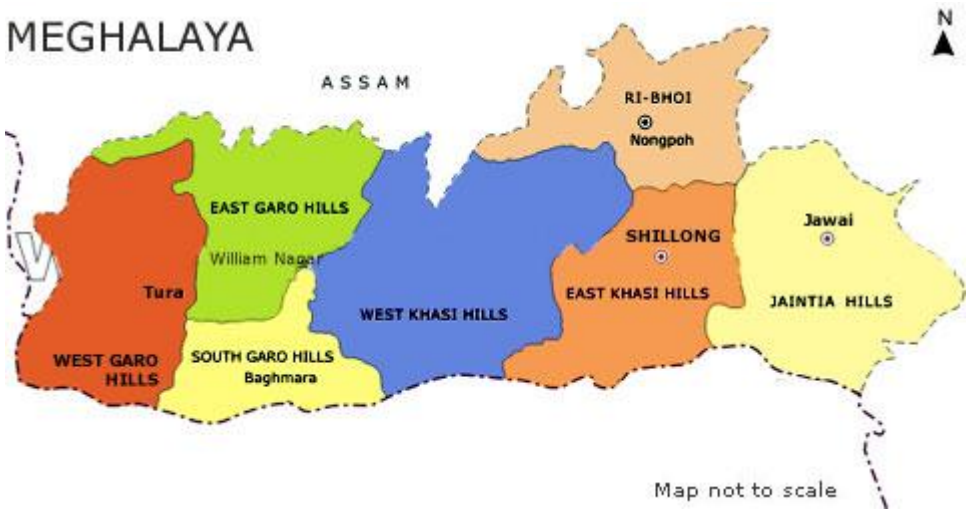


Table 2: Numbers Sampled at Each Stage of Sampling

Stage of sampling	**Khasi-Jaintia Hills**	**Garo Hills**	**Total**
Districts	4/4	3/3	7/7
Blocks	8/22	4/17	12/39
Villages	16/3262	8/3577	24/6839
Households (HH)	388/1861	200/504	588/2365

Note: For districts, blocks and villages, denominators show the total number of units in the study area, for that stage of sampling. For households, denominators show the total number of households in the selected villages.

A total of eight blocks from the four districts in the Khasi Hills region and four blocks from the three Garo hills districts were selected (Table 1). The two blocks with large urban areas, Mylliem Block in the East Khasi Hills District, where the capital city Shillong is located and Rongram Block in West Garo Hills District where Tura, the largest town in the Garo Hills is located were excluded from the sample. With the assistance of the Block Development Officers, the Primary Health Centre and Sub Centres (SC) in the selected blocks were listed and one SC selected from each block at random. The SC location was used as a guide to select two villages from each block, one relatively close to the SC (but not the village in which the SC was located) was defined as accessible and the other much further away was defined as remote as reported by key informants; the Block Development Officer and the headmen.

Permission for conducting the survey was obtained from the village headman and members of the local traditional administrative bodies. Approximately 25 households were randomly selected from each village, using lists provided by the village headman or secretary. Where no lists of households existed the selection was done with the assistance of the headman and his assistants using pathways and areas within the village as a guide.

6.2.2. Data Analysis

A part of the data set was already entered into Excel spreadsheets in 2010. We completed the data entry on Excel, re-coded some of the variables, performed data cleaning and then imported to Stata version 11 (StataCorp, College Station, Texas, US) program for analysis. All analyses were adjusted for the multistage sampling design[5]. To enable appropriate estimates of the use of tribal medicine in the whole of rural Meghalaya to be made, the data were weighted to allow for the probability of selection at each stage of the sampling process. We calculated sampling probabilities for each stage (block, village, household) of the selection process, and then multiplied them together to arrive at a final sampling probability for each household being selected. Weights were then calculated as the reciprocal of these values (Please see appendix 8 for calculations).

Estimates of preference for type or system of medicine such as biomedicine, tribal medicine, home remedies, pharmacy or others were calculated from responses to choice expressed for minor or major ailments. The differentiation of minor and major was left to the interpretation of the respondent. Estimates of the prevalence of use of tribal medicine in rural Meghalaya were calculated from responses to a four point Likert scale on frequency of use (Patten, 2001). Distributions of reported effectiveness of tribal medicine, actual use in the previous three months, efficacy, and cost were also tabulated. Prevalence of awareness and use of AYUSH systems were also calculated. To evaluate difference in use of tribal medicine between accessible and remote villages, the proportions between these sets of villages were compared using design-based F-tests[6].

[5] by use of the svy commands in Stata
[6] A statistical test that is equivalent to a Chi Square test but allows for the survey design

6.2.3. Strengths and Limitations of Quantitative Study

The data collection tool included many open-ended questions, thus increasing the complexity of data management and allowing for multiple responses to be given to some questions. For instance diseases were free listed using open ended questions in several questions. This posed considerable challenges in developing a uniform coding strategy for analysis. During initial data entry, responses were entered verbatim but they had to be re-coded during data cleaning and a more uniform coding strategy developed. Thus although time consuming, these open-ended questions did allow better understanding of choices.

Recall and reporting bias can interfere with the validity of survey results (Fenton et al., 2001). In this instance tribal medicine is likely to be under-reported rather than over-reported as it is associated with being 'not modern' when compared to biomedicine, hence it is possible that the figures presented are more likely to be an underestimation rather than overestimation. Recall bias or the inaccurate reporting of facts and figures, especially in cost of care and use were reduced by restricting the recall period to the previous 3 months. Some internal validity was observed in the similarity in responses attained through different questions, for example, expressed preference and actual use reported.

A strength of this household survey was its probability-based design which allowed estimates of the prevalence of tribal medicine usage to be made for rural Meghalaya. The sampling was influenced by local factors (terrain, logistics) and was thus not ideal in that it was not self-weighting[7]. However information on numbers of sampling units were available at each stage of the process, thus appropriate weights were used in the analysis to allow estimates for the entire state to be generated. Appropriate statistical techniques were used to allow for the clustering created by the multi-stage sampling strategy.

Although the total number of households was reasonably high, these came from a relatively small number of villages for logistical reasons, thus analyses involving village-level characteristics and characteristics that showed strong clustering at the village level were under-powered. For example, when making comparisons between

[7] A fixed number of households in the study area was sampled rather than a proportionate number

accessible and remote villages, some seemingly large differences in outcome prevalence of over 10% did not attain statistical significance at the 5% level. Sampling the same number of households but from a greater number of villages would have improved power to detect such differences.

6.3. Methods used in Qualitative Work

For objectives 2 and 3, methods that are widely acknowledged as appropriate to qualitative research were used. Most of the data was collected through in-depth interviews as opposed to the structured interviews used in the household survey. Audio-recordings were made of all in-depth interviews and focus group discussions after getting informed consent of the participants. Most of the qualitative data was collected between April to December 2012, data analysis continued into 2013. Some questions and clarifications were posed to participants through email, phone and follow-up meetings in 2013 during data analysis.

In-depth interviews allow the interviewer to use probes to explore and get a deeper and more detailed understanding of what interviewees say and mean (Green and Thorogood, 2009, p.93-122). The pitfalls of interview data have been elaborated by Silverman and others (2011, p.161-206). In this study in-depth interviews with tribal healers were largely conducted in their own local language after a brief initial meeting or following preliminary talks over the phone after which a date and time was usually selected for the more in-depth interview/s. Most interviews lasted for more than an hour but a couple of them were cut short due to waiting patients. Multiple interviews were conducted with one healer who permitted me to witness her interactions with patients. Her patients consented to my presence during the consultation and also shared narratives of their experiences. Interviews were conducted close to or within the healer's practice environment to keep the setting as natural as possible and improve comfort and rapport building (Patton, 2002, p.39). Twenty four tribal traditional healers from the four districts of the Khasi region were interviewed.

Figure 4. Research assistants crossing a river to meet a healer in a distant village

Briefly, career histories, types of ailments usually treated, memorable experiences with patients, medications used, sources of medicinal plants and practice patterns were probed. In addition narratives of challenging cases were elicited as descriptions of critical incidents (Green and Thorogood, 2009, p.115) would potentially give insights into abstract concepts during analysis. Topic guides were used during interviews (for samples of topic guides please see appendices). They were further refined iteratively in the field. For instance the question "What is your approach to treating a patient?" elicited a rather puzzled look from healers. After discussing within our team it was decided that this could be elicited from descriptions of treatment/actions with the most recent patient seen. Topic guides were also modified after preliminary analysis and open coding of the initial interviews.

Forty six interviews were also conducted with policy actors, including bureaucrats, allopathic doctors, practitioners of Ayurveda and homeopathy, academics and other influential members of the community. These interviews were all conducted in English. They aimed to elicit views, experiences and attitudes to the indigenous tribal traditional system and its healers. Views on tribal medicine's relevance and potential

for contribution to the public health system were explored. Perceptions and experiences with other traditional systems (AYUSH) were also probed.

Focus Group Discussions (FGDs) by providing a forum for interactions can generate narratives that are close to conversations in daily life. They are thus one method of studying the generation of social knowledge (Flick, 2009a). Three FGDs, two with 6 participants each and a third with 13 participants lasting between 1.5 to 2.5 hours were conducted. In all 25 tribal healers participated in FGDs of whom 12 healers were also interviewed before they participated in FGDs. Focus group sessions were useful in clarifying topics that had potentially complex cultural interpretations eg. an ailment referred to as *niañgsohpet* and the influence of Christianisation on the practice of tribal medicine. In some instances such issues raised debate and mild disagreement. FGDs when used in combination with other methods can be used for triangulating data (Patton, 2002, p-555-62). As mentioned in the section on triangulation (under 6.3.4.) we used these sessions for corroboration of perspectives got from interviews. FGD were also used for eliciting views on potential future roles within the health system. We believed these issues were possibly better dealt within a focus group setting as it would give the healers an opportunity for discussion between themselves (Kitzinger, 1994).

Non-participant observation: while interviews and narratives mainly provide accounts of practices, it is widely agreed that observations provide useful insights into actual practices (Flick, 2009c). In this study non-participant observations helped to improve the understanding of context, for example: observations of healer interactions with patients, clinic facilities, herbal gardens, interaction between healer and medical plant supplier and interactions between healers. It also assisted in corroborating what was said in the interviews for instance from observation of interactions of healers with patients and with peers it could be inferred that there were similarities in healer accounts with their actions. It was therefore also a means of triangulation of data (Patton, 2002, p.247-248).

Document review: Documents pertinent to the study were obtained from the websites of the Ministry of Health, GoI, New Delhi and the Department of Health, Meghalaya. These included policy statements, organograms, programme descriptions and national 5 year plan documents. In addition research project reports, media clips,

some correspondence from the health department as well as MLCU were obtained. Documents analysis (McCulloch, 2011) was mainly used for collecting background information pertaining to this study. It was also used for corroboration of what respondents had said in interviews (Teddlie and Tashakkori, 2011, Cohen et al., 2011).

6.3.1. Sampling Strategy for Healers (Objective 2)

A representative sample from different districts that would be deemed credible by policy makers was aimed for (Patton, 2002, p.230-42). Preliminary discussions with key informants, namely office bearers of grass roots organisation of healers, civil society activists, and researchers who were familiar with indigenous healers was used to develop criteria for inclusion and exclusion. Healers who were considered as those with expertise in a single disorder and those who practised occasionally or infrequently were excluded from this study. Those who specialised exclusively in mental health (*nongkñia*)[8] or as traditional birth attendants were also excluded. Healers who were considered proficient by peers and by civil society representatives were considered for inclusion. Those who worked full time rather than occasional or infrequent practice were included. However we used a pragmatic definition of 'full time'. Healers who also worked in their fields or held another job but also devoted several hours in a week to their healing practice were included. An initial set of 9 healers were selected based on information held in a database of healers available at the MLC University in Shillong. In 2011 the university had conferred honorary doctorates on 9 indigenous healers belonging to four of the seven districts in Meghalaya. These healers were identified by a search committee that was appointed for this purpose. All of these 9 healers were approached and 8 were interviewed for this study.

Following this, both male and female healers from different districts who were well known or popular practitioners in the community, as well as those with skill sets in multiple ailments or specialised skills such as bone setting were selected. Healers

[8] This study did not focus on the *nongkñia* for several pragmatic reasons. They represent a much smaller almost subaltern group that potentially requires different research approaches and training (eg. in psychology). The counselling psychology department of MLCU was planning on studying this sub-group of practitioners. The key informants that I consulted with at the beginning also suggested that there was so much to be documented that it was best I focus on the obvious largest group the herbalists/ *nongai dawai*.

were also identified using a snowballing technique based on information provided by key informants, peers and the community (Biernacki and Waldorf, 1981). Although thematic saturation rather than a pre-selected sample size was aimed for (Pope et al., 2000), political credibility or sampling that would be seen as representative by policy makers was also considered (Patton, 2002, p.230-42). Although the study included 23 healers from the Garo hills region, this data is not presented in this thesis. The results section for objective 2 largely draws from data gathered from the 36 healers sampled from the four districts of the Khasi hills region.

6.3.2. Sampling Strategy for Policy Actors (Objective 3)

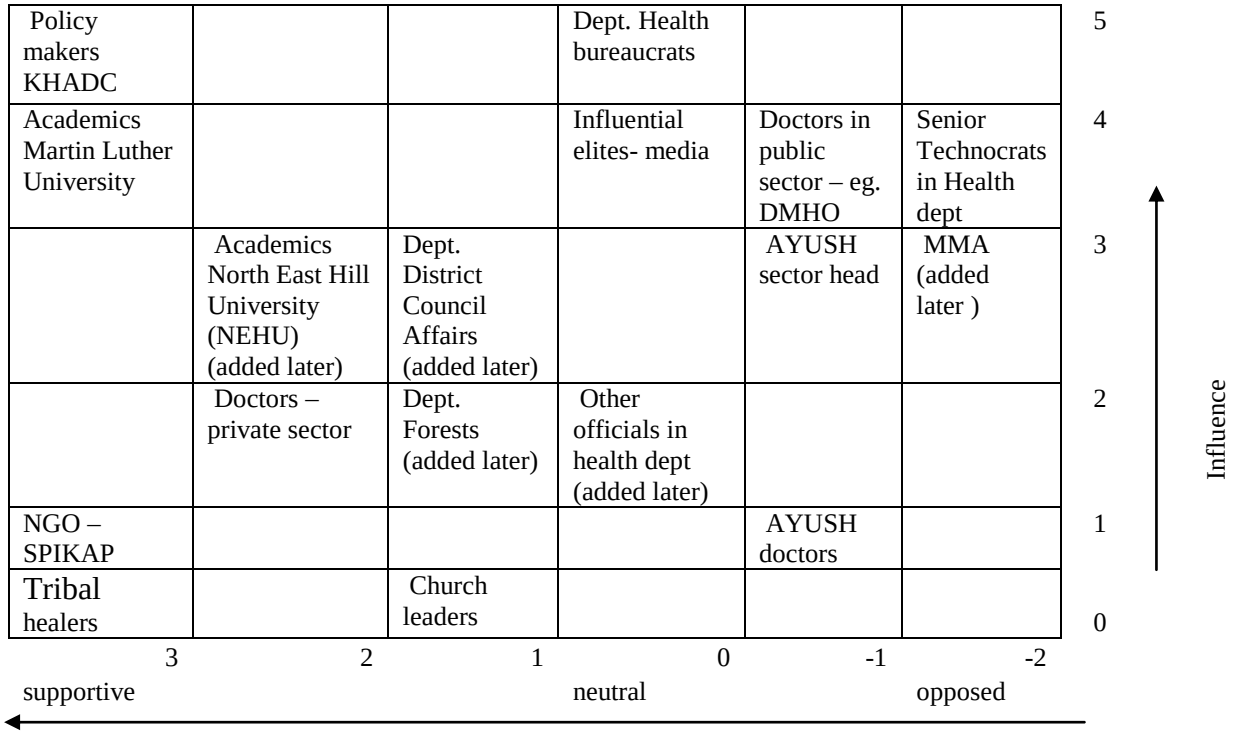
To assist with the sampling of policy actors a stakeholder mapping was done initially based on the initial steps of a stakeholder analysis (Brugha and Varvasovszky, 2000). This was done primarily as a mapping exercise rather than as an analytical tool for this thesis, but it helped me gain understanding of the various actors who could influence policy on medical pluralism in the state. A focal point used was the 'Protection and Promotion of Khasi Traditional Medicine Act' that was passed by the Khasi Hills Autonomous District Council (KHADC, 2011). Those who contributed either directly or indirectly to the passing of Act were mapped out. The various events that potentially influenced the agenda setting process were also drawn up chronologically and an analysis of the agenda setting process was done using Kingdon's (1995, ch. 5-8, p.90-193) widely cited three streams model(Zahariadis, 2007, Sabatier, 2007). The analysis was presented as a poster (please see appendix 9) at the LSHTM annual symposium (Albert et al., 2013). But this part of the study is discussed only very briefly (in section 11.4) in this thesis although it contributed to my understanding of the issue. The individuals and groups to be interviewed were mapped on a matrix by taking into consideration their influence/power within the public system and interest or position on tribal medicine if known. The development of the matrix involved making subjective judgements, which were made following discussions with a few influential elites. A matrix charting relative influence and support was developed (Figure 3) and representative individual/group was added iteratively. For example, during interviews of policy makers in the health department it emerged that representatives of the Meghalaya Medical Doctors Association

(MMA) held views that needed to be incorporated. Consequently the MMA was added to the interviewee list.

In Meghalaya policy makers could be categorised as those directly under the government of Meghalaya (GoM) and the representatives of the traditional governance body, the Autonomous District Councils (ADC). The District Council Affairs Department has been created within the state machinery to act as a link between the GoM and the traditional institutions, here the Khasi Hills Autonomous District Councils (KHADC). For this study policy makers of GoM and the KHADC were interviewed. In the GoM category bureaucrats from the Department of Health, the Department of District Council Affairs and the Department of Forests & Environment were interviewed. Policy matters related to health are dealt with by bureaucrats as well as technocrats and other officials of the Department of Health. Technocrat refers to doctors with administrative duties within the health department, they were largely biomedical doctors and a few were doctors from the AYUSH systems. Bureaucrats and technocrats interviewed were largely indigenous/tribals; mostly Khasi and some Garos and a couple of non-tribals (please see appendix 11 for details).

Health policy actors include individuals, groups and organisations that influence policy and participate in the policy process (Buse et al., 2012, p.4-19). Influential members of the community such as academics from two universities, researchers, prominent biomedical practitioners in the private sector, ex-bureaucrats, an editor of a widely read newspaper in the state and representatives of grass-roots non-governmental organisations (NGO) were selected for interviews as part of the wider circle of policy actors.

Figure 5. Stakeholder mapping – matrix charting influence and support



Note: KHADC - Khasi Hills Autonomous District Council
AYUSH- Ayurveda, Yoga, Unani, Sidda and Homeopathy
DMHO - District Medical & Health Officer
NGO - Non Governmental Organisation
SPIKAP- Society for the Promotion of Indigenous Knowledge And Practices
MMA - Meghalaya Medical Doctors Association

6.3.3. Reflexivity in Data collection and Data Analysis

The principle of reflexivity in qualitative research represents the ability of the researcher to be self aware and to subject one's own perspectives and potential biases to critical analysis (Patton, 2002, p.63-73, Green and Thorogood, 2009, p.23-25). Reflexivity and attention to the composition of the research team can strengthen the research. In health policy research the importance of explicitly stating the positionality of the researcher has been made (Walt et al., 2008). It can influence the ability to gain access to and collect data and also in its analysis.

The research team: Two local indigenous research assistants, who spoke a local language (Khasi and Garo), with post graduate degrees in social sciences were employed to help conduct the interviews and focus groups discussions with the healers. For shorter intervals they were assisted by indigenous colleagues who were

engaged for assistance in transcription. All but one healer was interviewed by my research assistants. The research assistants were trained in qualitative data collection methods relevant to this research using a combination of didactic and role playing sessions. The techniques that were employed for this purpose were based on insights that were gained during the process of development of a culturally appropriate reproductive health, sexuality and life skills course for indigenous students (War and Albert, 2013). From the life skills courses we were aware that Christianisation and urbanisation has left the urban youth of Meghalaya with biases towards their indigenous culture. Thus exploratory self awareness and critical thinking sessions were conducted to help the research assistants review their own stance and to become as open-minded as possible. During interviews we were conscious of maintaining what Patton (2002, p.49-50) referred to as empathic neutrality or a middle ground of being engaged so as to understand but without becoming too involved.

I conducted regular reviews and debriefing sessions with my research assistants. The interviewers maintained field notebooks in which observations, brief notes during/immediately after the interviews were made. These were used during team debriefing sessions and helped enhance reflexivity (Murphy and Dingwall, 2003, Green and Thorogood, 2009, p.219-227) over the course of the research. Reflexivity can be achieved in different ways, we used introspection and reflection at a personal level and as a group collaboration within the team (Finlay, 2002, Mauthner and Doucet, 2003). An example of how reflexivity helped in bringing about an attitudinal change is evident from this account by my research assistant:

> When I was interviewing him [tribal healer], my mind was thinking he must be a bad healer, I'm wasting my time here. Then suddenly I thought about what we discussed and I thought I'm thinking he is a bad healer just because he is not explaining things properly to me – that does not make him a bad healer, look at all his patients, it just that he cannot explain very well to me... - team meeting notes

Researchers stance / Positionality: Although my background is in biomedicine, my interest in public health and also traditional medicine came with the gradual realisation of the limitations of biomedicine in providing affordable care to Indian society. Largely an interpretative approach was used while maintaining the position that indigenous systems could potentially contribute to strengthening the health

system. My association with the MLC University, which has a 5 year history of working with indigenous healers also assisted in rapport building with healers.

However, my interpretation of disease conditions and patient problems were influenced by my biomedical background. I illustrate this with a problem confronted in one of the transcripts. A healer used both the Khasi word s*uhjyndong* and its common English translation UTI (urinary tract infection) interchangeably when referring to a host of unrelated disorders in different anatomical locations. My biomedical training made it difficult for me to link a wide range of disorders ranging from gastric problems to uterine problems to UTI. I was anxious that my biomedical perspective affected my decision to be interpretative and non-judgemental. So I was relieved when at the translation verification stage, in addition to checking the quality of the translation the expert added a comment on this particular transcript, "I think this term is over used and might not mean UTI but other related ailments causing internal aches". Interestingly, three months later at a focus group discussion when this healer linked UTI to gastric problems, another healer pointed out to him "UTI and gastric – there is no relation at all" and a third healer politely added that while it could be his findings, their experience was very different.

We did our best to remain open-minded in documenting and interpreting what healers said. The involvement of indigenous research assistants (RA) in the team helped me in understanding the participants' responses within their cultural context, the emic approach (Patton, 2002, p.454). Not being Khasi, essentially made me have an outsider's (etic) perspective but having lived in Meghalaya for several years, I am also familiar with the culture. During team meetings we used the approach that the RA would explain the situation or condition so that I could explain it to colleagues in London who we all agreed were unfamiliar with Meghalaya's culture. Such discussions were especially useful in understanding ailments that were referred to by indigenous terms as explained in the section on indigenous terms (see 9.2.3).

I did most (44/46) of the interviews with the policy actors, occasionally accompanied by one of my research assistants. It was anticipated that it would be easier for me to gain access to policy makers and influential elites (ex-civil servants, doctors, academics etc) than it would be for my research assistants. I was aware of the potential problem that officials in public position are likely to voice only official

positions (Green and Thorogood, 2009). However, in reality I found most participants expressing their views quite candidly. Perhaps my emphasis during the consenting process, that I was not a journalist and that I was bound by research ethics helped put participants at ease. Most officials were able to speak quite frankly and said so, on the rare occasion when an individual made critical comments after the recorder was turned off, I was usually able to switch it on after reaffirming my position on confidentiality - that all material would be anonymised and confidentiality would be ensured to the best of my ability. My background in biomedicine plus previous interactions with policy makers and influential elites also contributed to gaining access and acceptance among the participants. It did add to developing rapport, additionally it also helped that I had met several of the interviewees previously in an official capacity.

6.3.4. Validity, Reliability, Credibility and Quality Issues

Validity and reliability in quantitative research deal with the concepts of accuracy and replicability. Central to the understanding of validity in research is our notion of truth, and conflicts arise from a lack of consensus concerning a particular philosophy of truth (Winter, 2000). Validity in qualitative research is based on principles that are different from those arising from positivism in quantitative research (Cohen et al., 2011). The concepts of credibility to replace internal validity of quantitative research, dependability instead of reliability and confirmability rather than objectivity have been suggested as alternative criteria for achieving validity in qualitative data (Cohen et al., 2011). Many measures have been described to improve credibility of qualitative research as applicable to different stages of the research. A noteworthy technique described is triangulation (Jick, 1979, Denzin, 1989). Although triangulation has its critics (Silverman, 2011, p.351-395), Flick (2009b, p.444-452) and others suggest that it can be seen as measures that add quality, rigour and depth to inquiry (Denzin and Lincoln, 2000, p.5).

Triangulation involving the use of more than one data source, research method or data collection technique and researchers has been described as a means to improve validity of qualitative data (Jick, 1979, Teddlie and Tashakkori, 2011, Johnson et al., 2007, Denzin, 1989). While different ways to achieve triangulation have been described in literature, the commonest application is the use of multiple methods

(Silverman, 2011, p.369). In this study multiple methods like in-depth interviews, focus group discussions (FGD), observations and document review were used. While in-depth interviews and FGDs were the primary methods used for data collection, observations and documents were used mainly for corroboration and triangulation. We used focus group sessions both for generating data and as an opportunity to provide feedback to participants. Preliminary descriptive summaries of the data generated from interviews with healers were presented to participants during two of the three focus group discussions for their views (Patton, 2002, p.555-62).

Rigour: Green and Thorogood (2009, p.219-228) refer to rigour in qualitative research, and provide guidelines to add credibility to the analysis. They list transparency, validity, reliability, comparability and reflexivity as features of rigour in analysis. Transparency refers to the explicitness about the methods used and processes followed; some details of these aspects have been outlined in this chapter. Providing evidence from the data for interpretations is described as a method of maximising validity (Green and Thorogood, 2009), in this thesis illustrative quotes have been provided extensively, the codes provided with each quote illustrate the source of the data for example FDG2, R1 KH030, F implies that the quote is from focus group discussion number 2, respondent number 1 in the group, who is a female Khasi tribal healer with the unique identifier code KH030. Unless otherwise specified, quotes used illustrate what was said or implied by multiple respondents. Using more than one analyst is described as a means to maximise reliability. A related idea is of peer debriefing or engaging in discussion with someone who reviews and asks questions about the study (Creswell, 2009, p.190-193). In this study I debriefed and discussed the process and steps followed with my qualitative methods adviser as well as with a medical anthropologist colleague.

Translation: The challenges posed by language in cross-cultural research settings have been pointed out by some researchers (Green et al., 2010, Larkin et al., 2007, Pitchforth and van Teijlingen, 2005). In this study the involvement of bilingual indigenous research assistants who conducted the interviews as well as translated them reduced the problem of translation to some extent. But they did face difficulties in some geographic areas when participants used different dialects. All interviews and focus group discussions were recorded using an audio recorder. They were then

transcribed onto a word processor for analysis. Interviews conducted in a local language were first transcribed verbatim and then translated into English by the interviewer. When words that were difficult to translate were used by participants they were retained as is and a possible meaning typed in parentheses. This was later rechecked and the translation arrived at after consultation with knowledgeable persons in the community. An additional step was used in the process to reduce translation errors. Approximately half the Khasi transcripts as well as their translation into English were compared and checked by an elder who was competent in English and Khasi for verifying the accuracy of translation.

6.3.5. Data Analysis – Thematic Analysis and Grounded Theory

The qualitative data collected was analysed using a thematic content analysis approach that incorporated elements of the grounded theory approach (Green and Thorogood, 2009, p.198-208). Thematic content analysis involves the analysis of the content of the data to categorise them into themes. It is a comparative process through which the various accounts collected are compared with each other and the common themes that emerge are identified (Green and Thorogood, 2009, p.198-203). The grounded theory method developed by sociologists Glaser and Strauss (1967), is a systematic method of analysing qualitative data. It involves a cyclical process of collecting data, analysing it, developing an initial coding scheme, using this for further sampling, more analysis, checking out emerging themes until a point where no further constructs emerge is reached (Glaser and Strauss, 1967). Following a grounded approach I initiated my analysis during field work rather than at the end of it (Charmaz, 2006). Line by line coding of the first set of transcripts was done after reading and familiarising myself with the transcripts. Line coding and initial analysis allowed new themes to be explored iteratively (Charmaz, 2006, p.42-71). For example words such as emergency and serious used by a healer in an initial transcript were explored in subsequent interviews with the same healer as well as with others.

As Charmaz (2006, 2012) explains codes consist of short labels that a researcher constructs as we interact with the data. As far as possible I coded using verbs or gerunds in order to retain the processes that were implicitly or explicitly happening. The first set of codes informed further data collection as well as in fine-tuning the topic guides. As analysis progressed codes were modified, regrouped and

categorised. For example references to *sap* (talent) were initially line coded as rationalising the practice of tribal medicine, but later, on observing that it was frequently used both within and between transcripts it became an in-vivo code and an analytical theme. Related codes were clustered and then grouped together to develop categories. Once preliminary coding on the initial three to five transcripts was done analysis was accompanied by writing analytical memos. A code or a category was used as a preliminary title for a memo (Charmaz, 2012). Later categories and analytical memos were rearranged, regrouped and linked together for producing the report. One of the disadvantages of the grounded theory approach is that achieving theoretical saturation of categories can require a lot of time. Although theoretical saturation was attempted initially, the time lag between data collection, transcription and translation hindered this approach.

Initial data analysis was done manually but Nvivo-10 software was used in later stages to manage some of the data (Richards, 2002). The use of the software was particularly useful in rearranging and recoding categories. It also made comparing codes between and within transcripts more manageable.

For data analysis the 'policy actors' interviewed were categorised into the groups or organisations that they represent as illustrated in Table 3. During analysis comparisons were made both within and between these groups. Biomedical doctors represented an area of overlap, they were seen across the board, they were both policy makers (technocrats) as well as influential elites in society, and falling between the two broad categories were clinicians in the government sector and members of the Meghalaya Medical doctors Association (MMA). Hence the doctors were also analysed as a distinct group in addition and comparisons made within and between the sub-groups.

Table 3: Groups and sub-groups that policy actors belonged to

	Policy Makers	**Influential members of the community / influential elites**
1	Bureaucrats of Government Officials in Department of Health Technocrats: - Doctors of Biomedicine - Doctors of AYUSH	Ex-bureaucrats and ex-technocrats Biomedical doctors (private sector) Academics from universities Media NGO office bearers
2	Representatives of KHADC	
	Clinicians in the Government sector (Biomedical & AYUSH doctors) Meghalaya Medical Association (Biomedical doctors – government & private)	

6.4. Ethics

This project was given approval by the ethics committee at LSHTM and the ethics committee of the Public Health Foundation of India, New Delhi, India, the parent body of IIPH, Shillong, Meghalaya (please see appendix 10). Persons to be interviewed received verbal and written information about the aims and process of the project (see appendix 5). They were informed of the option to discontinue his/her participation at any time (see appendix 6 for consent form). All interview respondents provided verbal and signed consent for their participation. They also consented to an audio-recording of the interview to be made.

Interviews were transcribed and the final transcripts were coded and anonymised. In order to maintain confidentiality the following steps were taken:

a. To protect the confidentiality of the participants, each participant was assigned a unique study identification number. At the completion of the study, the identification numbers were de-linked from personal identifiers.

b. Data in general are presented in aggregate form in this report. When quotations are used to illustrate a point, all personal identifiers are blanked out to protect privacy and confidentiality of the individual as far as possible. Instead the study identification number is used as identifier.

Anonymising in small geographic areas has challenges, although it would have been useful to present official positions to help contextualise perspectives, this was avoided in most instances to protect privacy. Some details have been provided in a few instances for those who said that they were not particular about maintaining anonymity.

Indigenous knowledge can come within the realm of intellectual property rights and issues of who owns it (Montenegro and Stephens, 2006, Subba Rao, 2006). To avoid intellectual property rights issues we refrained from collecting specific details of medicinal plants and knowledge that could fall within this area.

7. Results: Format of Presentation

The results are presented in four chapters. Each chapter follows the objectives that were set out in the study and presents the perspectives of the community, the tribal healer and the policy makers / policy actors as follows:

Quantitative data:

Chapter 8. The Community (Objective 1): Presents the estimates of use of tribal medicine by rural households of Meghalaya. The comparative figures for preference and use of biomedicine and AYUSH medicines in the community are also presented.

Qualitative data:

Qualitative methods were used for exploring the perspectives of the tribal healers (objectives 2) and that of the policy actors (objective 3). The sub-objectives (questions) for each of the main objectives are presented as subheadings and the emerging themes as the next level of subheadings. Some influential members of the community (policy actors) were also users of the different medical systems, their views along with those of patients provided community perspectives in addition to the quantitative data. These voices are presented in a few instances as corroborative evidence.

Chapter 9. The Tribal Healer (Objective 2): Presents an analysis of perspectives of Khasi tribal healers, how they become healers, what they do and their relationship with the public/formal sector.

Chapter 10. Policy makers / policy actors (Objective 3): Presents perspectives of the various policy actors on tribal medicine and the AYUSH systems.

Chapter 11. Implications for health policy and health system (Objective 4): Presents an assessment of the policy on medical pluralism that is currently being implemented in the state and locates tribal medicine within the policy. It also provides relevant background information about the health system in Meghalaya that is drawn from document review and supplemented by interview data. During field work the context and current implementation of the policy on mainstreaming AYUSH was explored iteratively.

8. Results - The Community (Objective 1)

To Estimate the Use of Tribal Medicine in Rural Households of Meghalaya

The objectives of this part of the study were to estimate the use of tribal medicine in rural Meghalaya, to assess the reported acceptability, efficacy and cost of tribal medicine, and to ascertain the awareness of other traditional systems, especially Ayurveda and homeopathy, which are being introduced in Meghalaya through the government's public health care system. The health-seeking behaviours of rural households with respect to reported use, acceptability, efficacy and cost of tribal medicine in the state have been estimated. The estimates of preference and use of tribal medicine as well as comparative figures for biomedicine and AYUSH medicines in the community are presented. The data for this part of the study was collected in 2010 as part of a larger household health survey.

Demographics and sample characteristics

A total of 588 households were surveyed, the total number of persons resident in the households surveyed was 3633. Among the 588 respondents 63% were from the Khasi tribe and 37% from the Garo tribe. Those that follow the Christian religion were 82%, and those that follow the indigenous tribal religions were 18%. The mean age of the respondents was 33.8 years (95% CI: 31.9 - 35.6). The main source of income of the majority was farming. The demographic details of the sample are presented in Table 4. The ethnicity of the population followed regional lines, that is all the people sampled from the Garo Hills belonged to the Garo tribe and those from the Khasi Hills belonged to the Khasi tribe, the only exception was one village that fell in a border area in West Khasi Hills which had a Garo population. Twenty-two of the 24 villages sampled had one or more tribal medicine practitioner (healers).

Table 4: Characteristics of Sample

Characteristic	Region		Full Study Area
	Khasi Hills n=388 (%)	Garo Hills n=200 (%)	n=588 (%)
Tribe			
Khasi	363 (97.5)	0	363 (62.8)
Garo	25 (2.5)	200 (100)	225 (37.2)
Religion (2 mv)			
Christian	326 (72.0)	197 (99.5)	523 (81.8)
Indigenous	61 (28.0)	0	61 (18.0)
Other	0	2 (0.5)	2 (0.2)
Age in years, mean (4 mv)	33.6	34.0	33.8
Education (34 mv)			
Illiterate	144 (23.4)	43 (23.5)	187 (23.5)
< 7 years	167 (48.6)	77 (43.0)	244 (46.8)
≥ 7 years	68 (28.0)	55 (33.5)	123 (29.8)
Occupation (35 mv)			
Farming	295 (66.0)	118 (72.0)	413 (67.9)
Other	87 (34.0)	53 (28.0)	140 (32.1)

Note: Data in % are after allowing for survey design unless otherwise indicated; mv: missing values.

The prevalence of reported preference and use of tribal medicine and biomedicine for major and minor ailments, and prevalence of health-seeking behaviour and beliefs are summarised in Table 5. The number of individuals reporting each outcome and prevalence estimates before and after allowing for the survey design[9] are presented. The prevalence estimates disaggregated by region (Khasi-Jaintia Hills and Garo Hills) are also presented.

8.1. What Proportion of People in Rural Meghalaya use Tribal Medicine?

The estimated reported use of tribal medicine across rural households in Meghalaya was 79.1% (95% CI: 66.3-88.0), with 13.5% reporting frequent use and 65.6% reporting that they sometimes used it. Tribal medicine was believed to be efficacious by 87.5% (95% CI: 74.2-94.1); 30% said it was very effective and 57% believed it to be somewhat effective, while 7% did not believe in its efficacy and 6% were unsure. Forty-six per cent (95% CI: 30.5-62.8) had used tribal medicine in the previous three months, during which period an average expenditure of Rs 189/- (around £2 sterling) was reported to have been incurred on tribal medicine (95% CI: 89.4-287.9). Of those who had used tribal medicine in the previous 3 months, 91% (95% CI: 68.5-

[9] Using svy commands in Stata to take into account the multistage cluster sample design

97.9) reported it as beneficial, with 58% reporting cure and 33% some improvement. The reported average expenditure on biomedicine that included doctor's fee, medicines, transportation, and or laboratory tests in the previous three months was Rs 1417 (approximately £15) (95% CI: 1060-1773 Rs).

Tribal medicine was reported to be used for both minor ailments and major diseases. The prevalence of reported preference for tribal medicine was higher for minor ailments (34%) than for major (23%) diseases (please see Table 5). In contrast there was a high preference for biomedicine for major diseases (84%), while 52% said they would use it for minor ailments as well. It was apparent that respondents would choose biomedicine and tribal medicine either in parallel or sequentially depending on the response to therapy of their first choice. This preference for biomedicine could be corroborated through responses of visiting a formal health care facility, 91% (95% CI: 73.8-97.4) had reported visiting either a sub-centre (SC), primary health centre (PHC) or a community health centre (CHC) while 85% (95% CI 64.2-94.8) visited either a PHC or a CHC. Although there were some differences between the Garo and Khasi regions in reported preference for and usage of each system of medicine, these differences were not statistically significant (all $p>0.05$).

Table 5: Prevalence of use of tribal medicine and biomedicine/allopathy

	Disaggregated by tribal region		Full study area		
Outcome	Khasi Hills* %	Garo Hills* %	No. giving response /total no. responders	Prevalence without allowing for survey design %	Prevalence allowing for survey design* % (95% CI)
Use of tribal medicine					
very often	16.6	7.9	62/585	10.6	13.5 (6.9-24.9)
sometimes	61.1	73.8	368/585	62.9	65.6 (55.6-74.4)
rarely/never	22.3	18.3	155/585	26.5	20.9 (12.0-33.7)
Belief in efficacy:					
very effective	30.0	30.2	140/525	26.7	30.0 (17.3-46.8)
somewhat effective	52.2	68.6	296/525	56.4	57.4 (41.5-72.0)
not effective/don't know	17.9	1.2	89/525	16.9	12.5 (5.9-24.8)
Used tribal medicine in previous 3 months	44.9	49.6	171/497	34.4	46.2 (30.5-62.8)
Outcome of tribal medicine therapy: cure	58.1	57.5	99/171	57.9	57.9 (48.3-67.0)
some improvement	31.1	36.9	40/171	23.4	33.1 (22.4-46.0)
no improvement/don't know	10.7	5.6	32/171	18.7	9.0 (2.1-31.5)
Average cost of tribal medicine in Indian Rs	156.9	239.2	-	215.7	188.6 (89.4-287.9)
Tribal medicine preferred for minor ailments	28.5	42.4	173/572	30.2	33.7 (21.7-48.3)
Tribal medicine preferred for major ailments	12.0	39.5	116/560	20.7	23.0 (9.4-46.4)
Biomedicine preferred for minor ailments	62.6	35.3	354/572	61.9	52.4 (33.8-70.4)
Biomedicine preferred for major ailments	10.8	25.0	488/560	87.1	83.5 (64.3-93.5)
Visited SC/PHC/CHC	86.5	99.7	520/554	93.9	91.1 (73.8-97.4)

* Prevalence after allowing for the survey design[10]

Common ailments for which tribal medicine was reportedly used included diarrhoeal disorders, indigestion or gastric problems also referred to as *gastric* locally, a childhood condition called *niañgsohpet,* injuries, joint problems, jaundice and fractures. Over 40 disorders were reported by respondents for which tribal medicine was believed to be efficacious. Table 6 documents the most frequently mentioned conditions for which tribal medicine or biomedicine would be the preferred treatment, and conditions for which tribal medicine was used in the previous 3 months.

[10] Estimates calculated using svy commands on Stata to allow for the multistage cluster sample design

Table 6: Ranking of disorders for which tribal medicine and biomedicine is used

Ranking	Disorder for which Tribal Medicine usually used	n	Disorder for which Biomedicine usually used	n	Disorders for which tribal medicine used in previous 3 months	n
1	Diarrhoeal disorders	108	Fevers	185	*niañgsohpet*[11]	40
2	Fevers	97	Malaria	145	Diarrhoeal disorders	29
3	*niañgsohpet*	83	Diarrhoeal disorders	137	Stomach problems, *gastric*	23
4	Stomach problems/ *gastric*	69	Cough	91	Fevers	14
5	Malaria	47	Headache	66	Injuries	10
6	Headache	43	Stomach problems, *gastric*	32	Pneumonia	10
7	Cough	38	Jaundice	20	Jaundice	10
8	Jaundice	37	Vomiting	16	Headache	9
9	Pneumonia	25	Pregnancy, childbirth	13	Body pains/back pain	3
10	Injuries	19	Colds	10	Colds	2
11	Fracture	16	Joint problems	3	Skin diseases	2
12	Joint problems	13	Heart problem	3	Food poisoning	1

Tribal medicine was reportedly used by 73% (95% CI: 59.5-82.7) in the accessible villages and by 84% (95% CI: 62.5-94.2) of respondents in the remote villages (p=0.29). The use of tribal medicine in the previous three months was 34% (95% CI: 26.5-42.8) in the accessible villages and 54% (95% CI: 30.9-75.0) in the remote ones (p=0.15), the difference was not statistically significant at the 5% level. Villages were initially defined as accessible or remote by the key informants; to validate this definition the mean travel time reported to nearest sub-centre was calculated. It was found to be 24 minutes (95% CI: 10.2-38.0) for accessible and 39 minutes (95% CI: 24.1-53.9) for remote villages. More distant households relied on motorised vehicles for transportation while others often walked. Thus there was considerable variation in travel time for households even within villages due to the scattered and sparsely populated nature of the terrain, which could be factors why the difference in outcome based on accessibility and remoteness as defined here were not statistically significant. In addition despite the relatively large number of households in this instance the power was reduced by the clustered nature of the sampling frame especially for village level characteristics.

[11] Possibly an infantile diarrhoeal disorder, for more details please qualitative results in section 9.2.3.

8.2. What Proportion of People are Aware of and Use AYUSH?

A majority of the respondents (69%, 95% CI: 51.9-81.7) had not heard of the AYUSH systems and reported no awareness of these systems of traditional medicine. Only 28% had heard of Ayurveda, while 31% had heard of homeopathy, 5% Yoga and even lower numbers for Unnani and Sidda systems. Only 47 respondents (10.5%) reported having ever used one of the AYUSH systems. These findings are summarised in Table 7.

Table 7: Awareness and use of AYUSH systems

	Disaggregated by tribal region		Full study area		
	Khasi Hills*	Garo Hills*	No. giving response/ total no. responders	Prevalence without allowing for survey design %	Prevalence allowing for survey design* % (95%CI)
Heard of AYUSH	35.4	24.0	130/577	22.5	31.3 (18.3-48.1)
Awareness of: (n=571) Ayurveda	27.7	16.0	79	13.8	23.5(10.9-43.6)
Yoga	2.1	12.0	28	4.9	5.6 (2.6-11.8)
Unani	0.0	0.3	1	0.18	0.1 (0.0-1.0)
Siddha	0.0	0.8	2	0.35	0.3 (0.0-1.5)
Homeopathy	31.3	22.0	100	17.5	28.0 (15.1-46.0)
Ever **used** any AYUSH	13.3	5.2	47/572	8.2	10.5 (6.1-17.6)

* Values in % after allowing for the survey design

8.3. Summary

Our findings show high utilization of tribal medicine among rural indigenous households in Meghalaya. There is strong belief in the efficacy of tribal medicine and it is felt to be both accessible and economical. The utilisation of tribal medicine in Meghalaya is comparable to the figure for the use of traditional medicine in developing countries in general (WHO, 2002). It is also similar to figures estimated for the use of traditional medicine in other states in India (Priya and Shweta, 2010).

As in the 18-state Indian study in which Meghalaya was not included (Priya and Shweta, 2010), we also found the pluralistic use of health services in rural Meghalaya. This indicates a community 'felt need' for a pluralistic health system. While 79% of our respondents used tribal medicine and most of them (87.5%) believed it to be effective, almost all were aware of biomedicine and a majority had visited a formal/public healthcare facility at some point. The majority of respondents indicated biomedicine and tribal medicine as their top choices. Only about one-third of households had heard of Ayurveda and/or homeopathy and only 10.5% reported ever having used any of these systems of medicine. None of the AYUSH streams were named as a preference for any particular ailment. Meghalaya differs in a significant way from the states in the national study, in many of those 18 states, AYUSH is well-accepted (Priya and Shweta, 2010) but in Meghalaya there is little knowledge and acceptance of AYUSH among the indigenous communities.

9. Results - The Tribal Healer (Objective 2)

To document and understand how tribal traditional healers in Meghalaya perceive their role as health care providers in the community:[12]

In the Khasi hills of Meghalaya the tribal medicine practiced is referred to as *nongai dawai* and the medicines and medicinal plants that the healers use are referred to as *dawai khasi*. A summary of demographic details and characteristics of healers who participated in this study is provided (please see appendix 7). Both men and women practiced tribal medicine (interviews F=7, M=17) and were well known in the community as practitioners. Six had no formal education while 10 had seven or more years of formal education, including four who had a bachelors or diploma qualification. Many (16/24) of the healers interviewed had a clinic from which they practiced either adjacent to or away from their homes. Their experience ranged from 7-25 year. Most healers obtained medicinal plants from nearby forests or sometimes from more distant forests in other districts. More than half of them (14/24) relied on a network of suppliers and or assistants who collected medicinal plants for them.

The *nongai dawai* or tribal healers who are herbalists often made a clear distinction between themselves and the ritualistic healers, the *nongkñia*[13]. A majority of the tribal healers in this study were Christian (21/24) and they often were quick to distance and differentiate themselves from the ritualistic healers, who are usually associated with the indigenous religions.

> A *nongai dawai* traditional healer can be from any religion. [...] He dispenses medicines to people who need it. He can be a priest or a pastor or an ordinary man it does not matter. But a *nongkñia* does not give medicine but he performs prayers, rituals to find out the cause of the sickness and the cure to it. For example if a patient comes to me and asked me to pray for him, I will pray but I will not know how to perform rites and rituals. KH 035, M

[12] Although we interviewed healers from all districts, including healers from the three Garo Hills districts, for reasons of brevity this chapter draws on data from tribal healers in the Khasi Hills region alone. From provisional analysis it may be noted that there was much similarity but also some differences between Khasi and Garo healers. The differences were specially observed in the terminologies used and cultural understanding of different diseases.

[13] As mentioned in the methods chapter this study did not focus on the *nongkñia* for several pragmatic reasons. They represent a much smaller almost subaltern group that potentially requires different research approaches and training. The counselling psychology department of MLCU is currently engaged in studying this sub-group of practitioners. The key informants that I consulted with at the beginning also suggested that it was best I focus on the obvious largest group the *nongai dawai*.

Several of the Christian tribal healers claimed that performing chanting and ritualistic healing methods would go against their religion. But religious beliefs did not prevent people from seeking out ritualistic therapies. At least one Christian healer acknowledged seeking out a ritualistic healer when she failed to get relief with biomedicine for severe chicken pox (in FGD3, KH 020). A widely regarded tribal healer (KH 001) who still practiced the indigenous religion reported using prayers and chants in his treatment depending on the patient's condition. So there was less demarcation of borders in his practice.

9.1. How Do They Become Healers?

9.1.1. Ancestry

Ancestors were reported to have played a major role in transference of knowledge and skills by a majority of healers in this study. Most healers (15/24 interviews and 25/36 including FGD participants) reported having an older family member usually a parent, grandparent or uncle who was a traditional healer. For these healers introduction and exposure to tribal medicine began within the family and thereafter there was a gradual progression from assisting, to taking over or continuing with the practices of the forebears. Thus for some it was reportedly an obvious career option from an early age. But in some instances despite having assisted parents or grandparents in the craft, a few healers reported that they had not considered traditional medicine as a career initially. Their training happened inadvertently through helping and assisting the ancestor.

> Even me, I did not dream that I would become a traditional healer [the healer had initially chosen a different career]. My grandmother and grandfather were both traditional healers. After my grandfather died, my grandmother took over. But as she grew older, she was not in good health for most of the time. Whenever people come to her for treatment, she would always ask me to go and prepare medicines for them. And as time passed, people started recognising me and they started looking for me whenever they came for treatment to our house. Eventually I thought this is what I wanted to do, and I told myself - when people are benefiting from what I did, why should I stop. I think that is how I became a traditional healer. FGD3, R10 KH 019, F

The importance of the ability to claim ancestry within the community can be illustrated with an example of what could be labelled as a deviant or extreme case

(Green and Thorogood, 2009, p.219-220). One healer claimed to have learnt and inherited her talents from an ancestor in the distant past who had not actually trained her in a tangible practical sense. Claims to a link with a skilled ancestor appeared to give this healer some confidence and perhaps credibility within society and among peers.

> My talent/skills (sap) are a gift from God (jingai U blei). It is not that I had or went for any training....From my mother's clan but not actually my real mother. But I inherited my talent/skills from her. KH018, F

Often *sap* a tacitly understood concept that exists in the community was mentioned along with ancestry. The concept is discussed below.

9.1.2. *Sap,* Talent

Even if healers learnt from ancestors an important concept recounted was that of *sap*. The word *sap* was used by almost all healers in the interviews and in focus group discussions. The Khasi word *sap* can be loosely translated as talent, gift or skill. Healers used the concept of *sap* as an explanation for the knowledge and skills that they had acquired, which they found difficult to explain.

> It is inherited, my talents (*sap*) are inherited (*hiar pateng*) or passed down through the generations and I can't explain it [laughs] KH 004, M
> For me it is passed down from my ancestors (*ai pateng*) for three generations and it is also the skills/talents (*ka sap ka phong*) that are gifted to me by God (*ai U blei*). FGD2, R5. KH 028, M

The term *sap* as used by the healers appeared to represent the abstract concept of an inherent or intrinsic ability. Talent has been defined as natural aptitude or skill in the Oxford English Dictionary (http://oxforddictionaries.com). The words and phrases used by healers were also discussed with bilingual experts. They translated *sap* as "an inborn potential", "a sort of instinct" and said that it could also mean skills. It was said that it could be translated as talent but possibly represented a lot more than just talent. Referring to *sap* was used as an explanation and as a motivation for practicing tribal medicine.

The recognition of *sap* was especially important to those who did not have an ancestry of healing. Healers' reported that their initial successes contributed to them being recognised or acknowledged within the community as having the required

talent/skills. This led to verbal encouragement from patients and elders in the community. The following is an excerpt from a healer who did not have healer ancestors:

> But I did not focus on it much until I reached 18 years of age and that is when I started realising my capabilities/potential and talents (*jinglah ka sap)* for treating people. My friends used to tell me that I have the talent/potential (*ka sap*) but I never took it seriously then because I thought it was boring. But when I was 35 years of age I treated a man and cured him. He then kind of forced me to take up this practice as he brought patients to me regularly and also took me to several places to treat people. It is because of him that I am successful and I give him credit for making me realise my own potential (*ka jinglah)* KH 005, M

On being asked if there was any means of knowing if a person had *sap* a few elder healers responded that it was possible. They claimed that they would be able to do so by observing a person in action "just by his touch I will be able to understand if he is capable for this profession". On further enquiring how one would determine if a person has *sap* or not, healers tried to explain by using examples, and discussed steps they would take to decide as illustrated in the following set of quotes.

> For example, let us take the case of a male child. A male child who loves carpentry, on seeing the tools of a carpenter, he would take those tools and do something with it. Likewise, we look at the person's interests and determine the potentials. KH 004, M
>
> A master can recognize whether a person has the potential needed. We can determine a healer by observing the way of treatment, asking questions. A teacher can recognize if his student has the potentials or not. KH 010, M

Sap could be inferred from a person's interest and observable behaviours. Thus *sap* or talent is somewhat intangible, that an established healer will look for before deeming someone worthy of receiving his/her knowledge and teaching. Desirable behaviours described included attitudes like concern and care for the sick. One cognitive skill attributed to *sap* appeared to be the ability to memorise and identify different medicinal plants and to recall their properties as needed.

> He [father] once told me that if you feel /understand (*sngew*) that you are unable to remember all these herbs, then it is better that you do not become a traditional healer [.....] If God does not give us the skills and talents we will not be able to remember everything, because in our treatment there are hundreds of species of plants that we use.
>
> FDG2, R1 KH 030, F

It was apparent that *sap* was not something that healers believed would be always inherited. A few healers, especially those who professed interest in starting training institutions did say that they needed to observe their children and see who had interest and potential. It was said that they would be wasting their time in training someone if the person did not have *sap*.

9.1.3. The Community and the Healer

Acknowledgement and support

The healer's success is experienced and witnessed by the patient and the community. The resulting acknowledgement of the healer's skills raises the expectations of the community. Healers report that they are influenced by pressure from people who expect them to provide help to relieve suffering. As evident in an earlier quote these expectations came from the community even before the healer had considered tribal medicine practice as a career. On observing a young family member assisting her relative, members of the community also become convinced of the novice's healing abilities.

When discussing their beginnings, healers often recollect a successful first case or cases that tested their abilities. For those without ancestral claims the initial successes were recounted as factors that encouraged them to persist in the healing profession. Their reputation reportedly spreads by word of mouth and more people seek their help. Influential members in the community averred that a good reputation was crucial to a healer. Accessibility and the trust that develops within the community in the healer's ability were considered as contributory to the building of the reputation.

> ...this is their strength; people have faith in them [the traditional healers] because they are there and they [the people] feel that they are not there to exploit anyone. Secondly, the second thing is that ehhh since they are a part of society and they move freely among these people and ehh their reputation is by word of mouth and [....citing an example of one healer] people go there and he is good and they get cured and that's again by word of mouth. -Respected elder and NGO leader PG 002, M

Knowledge in the community

Closely observing the plants that more experienced healers picked from the forests, imbibing information through assisting and later using this information to tentatively help people in the community were common first steps. For those without ancestors, acquiring knowledge without an apprenticeship is possible as there is considerable knowledge of medicinal plants existing within the community, especially in rural areas. The existence of this knowledge within the community was corroborated and inferred from our interactions with academics and policy makers. An example is illustrated below that implies certain geographically bound existence of knowledge within communities.

> Yes, just anybody from this village [could treat]. When they migrate to Ri Bhoi or to West Khasi on account of marriage or anything, they will also carry that knowledge there. So, we'll always say that people from Thynroid can cure this. -Policy maker KHADC, PG 004, M

Healers also report collating information from others in the community. Many said they seek out medicinal plants that were outside their usual repertoire, they would look for medicinal plants in the forests that they had heard of and also try out or experiment with new medicinal plants when they were faced with unusual ailments that did not respond to their usual therapies.

9.1.4. Experimenting, Empiricism and Experience

In rural areas, especially those engaged in agrarian occupations, reported learning from their observation of animal behaviour. They recalled situations where elders guided them in administering medicinal plants to sick animals. The observation of effectiveness of the medicinal plants on animals was said to prompt them to give it to humans as well. Healers also reported experimenting with medications on farm animal. Invariably this progresses to a trial on themselves and/or a family member to assess efficacy in human beings before progressing to prescribing to the larger community.

> When the goats were bitten by snakes our grandfather instructed us to pluck a plant and feed it to the goats. So when people were bitten by a snake we went to pluck the same kind of herb and gave it to them and they were cured. Right from childhood people came to seek our help and we started helping them. Now I am 68 or 70 years of age. When a goat or

> a cow had a fracture I applied medicines on them and after that I try on humans as well. KH 012, M

It was noteworthy that some healers were aware of both the usefulness and potential limitation of animal experiments. A healer with barely seven years of school education explained that animals also fall ill like humans, with similar disorders like fever. So he would try his medication on the sick animals first and learn from the animal's response to the herbal remedies. He also acknowledged that what works in animals may not work in humans. He reasoned therefore that trials on animals must proceed to self tests and trying out on a few humans before giving to the larger community.

In the absence of animal experiments herbal remedies or a new use for a particular plant are reportedly also discovered after a trial on themselves and/or family members. This happens for instance when a particular medication fails to provide adequate relief and the healer tries out new medicinal plants for the condition.

> Even for coughs, stomach aches I try different medicinal plants on my children because at night it is difficult to find doctors in our village. When there is improvement and they are cured I give it to other people with similar problems. Then my neighbours came to know about it and whenever they have some kind of problem they come and take my medicines. KH 012, M

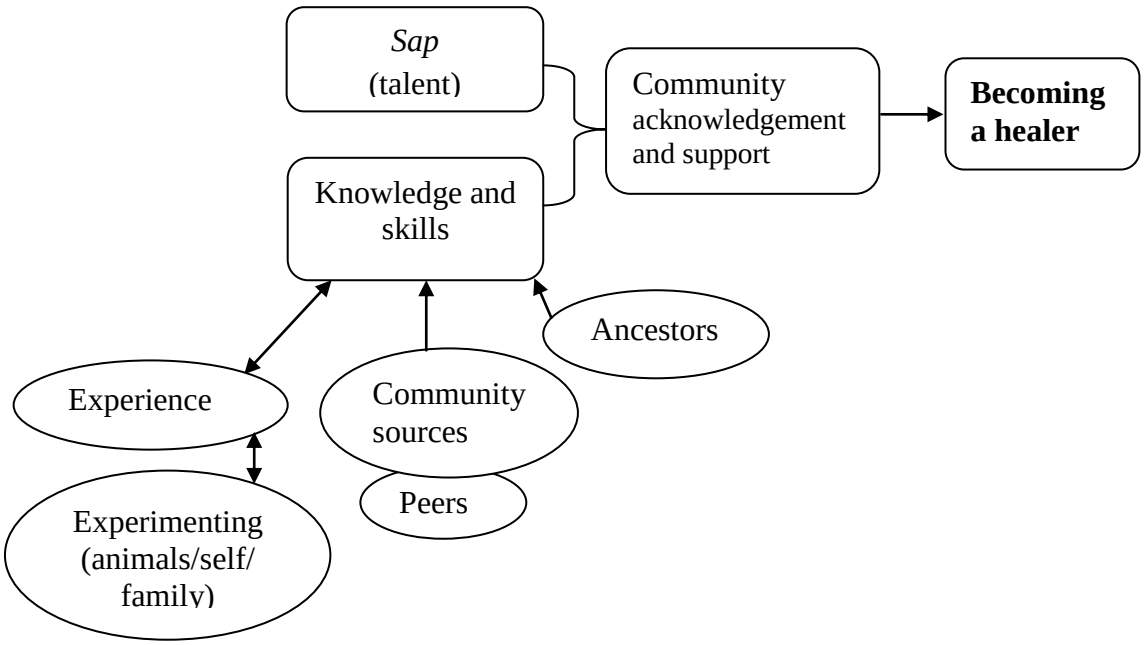
Thus tribal medicine healers experiment in different settings, it may involve going into the forests looking for new herbs or rare herbs and trying them out. Or it may involve trying out herbs that they are familiar with on new ailments and learning from the experience. It may involve conducting a loose cycle of uncontrolled experiments involving farm animals and pets and humans.

Although, watching, imbibing and apprenticing skills from another healer is the usual mode of early learning, the actual practice of the craft by themselves reportedly adds to their learning. When they start practicing on their own, they report becoming more aware of the nuances of healing and claim to "understand" better. It was stated that the art could not be learnt in one day rather that it took "years of training and experience". The following two quotes are from a healer who learnt from an ancestor and one who did not:

> It is the same for me, like she said. I learnt everything from my mother and when I started treating patients, I could learn and understand even better through my experiences. FGD2, R4. KH 031, F
> When I started I did not know much about what to do but as the years progressed, my work started to help me understand and helped me do the needful things accordingly. KH 018, F

Thus becoming a healer comprised of different interrelated elements of learning from ancestors and peers, experimenting and experience that was held together by a concept of *sap* or inherent potential that was recognised by both healers and community. These aspects have been summarised and the interconnections represented schematically in Figure 6 below.

Figure 6. Elements contributing to the making of a tribal healer



9.2. What Kind of Services do Healers Provide?

9.2.1. Expertise – Diseases and Disorders

Tribal traditional healers reported treating a wide variety of disorders. Some healers are recognised (by patients and other healers) for being especially skilled in dealing with certain conditions such as burns, spinal problems or fractures. But even healers who consider themselves well known for (*tip bha*) or 'a specialist' would also treat

other ailments. Most healers have a wide repertoire of treatments akin to a general practitioner.

Disorders that healers treat include stomach problems, diarrhoeas, skin diseases, boils, abscesses, bites and stings, fevers including malaria, injuries, jaundice, cancers, childhood ailments (eg. *niañgsohpet*), pregnancy related ailments, 'intestinal fevers', piles, intestinal prolapse, strokes, high blood pressure, kidney stones, urinary tract infections, infertility, fractures, slipped disc, other musculo-skeletal problems etc. These conditions were listed when the healers were asked specifically about conditions they see or were mentioned in passing during the course of describing patients and management practices. In fact, most healers did not provide exhaustive lists on being asked about conditions they see, rather two or three conditions were listed first and more conditions were mentioned during the course of the interview during their narratives. Even within this spectrum some healers demarcated the limits of their expertise and said for other conditions they would send patients elsewhere.

> When I cannot treat a patient I tell them "you can go where ever you want" but I inform about other healers. Especially for cancer because I don't treat it so I tell them about other healers who treat cancer.
>
> KH 018, F

From healer accounts (corroborated by observations) it was apparent that observing, questioning and feeling the patient were part of assessing the patient. This initial assessment assisted the healer in weighing potential success and in making a decision on whether to accept a patient for treatment or not.

> But one thing is that I don't lose hope because from the first visit just by feeling and within two minutes I can understand whether I can help that patient or not and I don't lose hope easily and I even tell my patients that they will be cured. But if I understand that I cannot help them, I send them to allopathic doctors. KH 005, M

The healer may take time to reflect on whether he/she has the ability to treat the illness. This process of both patient and self assessment is an important part in establishing an informal agreement between the healer and the patient. Trust and faith in the healers' ability and tribal medicine system underpin this implicit agreement.

> Oh today I treated a woman who had stroke. She was already treated by another healer for 6 months and she was not cured. One of her relatives

> asked me to come and treat her but I went that day just to see the patient, [to check] if I can still treat her or not because it was already six months' time and today I started the treatment with her. One of my patients from Laitumkhrah she is cured, and I have treated many patients suffering from stroke. KH 018, F

Healers also reported giving medication without actually seeing or assessing a patient. They listen to a representative who reports the signs and symptoms of the patient or even presents a diagnosis to the healer for which medication is then dispensed.

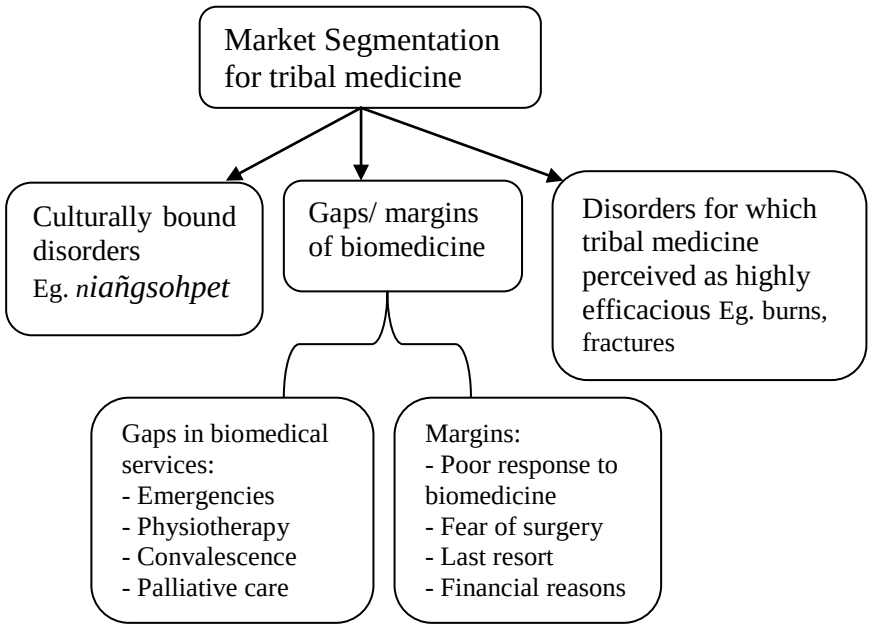
> But there are some patients who come to us and ask for medicines for dysentery (*suhot)*, fever, loose stools or diarrhoea (*pynhiar*) without us diagnosing their problems. So when they ask we give them medicines. FGD2, R1 KH 030, F

9.2.2. Market Segments and Niches for Tribal Medicine

A useful way of understanding the medical market place for tribal medicine is to map healers narratives of the different situations in which clients sought their services. The health care marketplace in developing countries has been described as highly differentiated (Berman, 1998, Bloom et al., 2008, Standing et al., 2001). The health care (medical) market place represents the totality of health goods and services that consumers seek. The various contexts and situations in which healers reported patients' seeking tribal medicine was mapped out for analysis. From healer and consumer accounts it was evident that the medical market place was dominated by biomedicine on one side and tribal medicine on the other. Healers and their families were themselves consumers of biomedicine and tribal medicine to varying degrees. Similarly policy actors and their families were also consumers of these services.

Several healers reported that many of their patients resorted to tribal medicine as a second option after trying biomedicine. Patients reportedly sought one or the other or both, either at the same time or sequentially. It was apparent that healers respond to demands arising from patients. The use of tribal medicine could be grouped into three main contexts as illustrated schematically in Figure 7. This sub-section presents the three categories and use examples to illustrate how the medical market for tribal medicine was segmented.

Figure 7. Market segmentation for tribal medicine - a schematic representation



A good example of a market segment, indicating the proficiency of tribal medicine is the management of fractures and other musculoskeletal disorders. Incidentally healers did not make comparisons or report that they had superior skills, rather this impression was gained from narratives of policy actors, they being consumers of the system too. Although this chapter primarily deals with perspectives of tribal healers, views of the policy actors are mentioned in a few instances as corroborative data. Especially noteworthy were statements from biomedical doctors who acknowledged that they were aware of many patients who preferred tribal medicine for the treatment of fractures.

I had the opportunity to witness the interaction of a healer with an elderly lady who had fractured her wrist. The healer first examined the patient using gentle massage techniques, then made an emulsion using a teaspoonful of a powdered tree bark, and gently applied the emulsion to the patient's wrist. Then she used a roll of gauze to bind the wrist and applied a layer of emulsion on to the gauze. This process continued alternately with emulsion being applied on each layer of gauze (please see Figure 8 below). Eventually, on drying it was said that the material would harden to become something akin to a light plaster cast.

Figure 8. Tribal healer tending to a patient with a fractured wrist

9.2.3. Indigenous Terms and Cultural Interpretations

A striking area of the medical market that healers catered to was for diseases that were commonly referred to by their indigenous terms. An expertise niche is established in the background of a tacit cultural understanding of the disorder that exists within the community. When referring to such conditions, for example *lait thied sohpet* healers expected the indigenous research assistants to understand the term. And they did, but the research assistants struggled to explain to me what exactly it meant, they explained that it was well known in Khasi culture. The term described a condition of the navel affecting the nerves. The condition occurs when a person lifts something heavier than their own body weight. To understand this better we discussed it with other knowledgeable persons, one person said that this could be a displacement of the solar plexus. A biomedical practitioner suggested it could be damage or distortion of the ligaments of the internal organs.

There are other disorders for which tribal medicine is perceived as a natural choice, especially in rural areas. Other examples of conditions with culturally bound understanding were the concept of *ka bih* translated as poison or toxin and *jingshit ha kasnier* translated literally as intestinal fever or fever of the intestines. In the household survey one of the commonly cited conditions was *niañgsohpet*. It is a term for a problem of infancy or childhood that could represent anything from infantile colic to indigestion or diarrhoeal disease in early childhood.

> Us rural people do not use foreign medicines [biomedicine] especially for *niañgsohpet* we give our own herbal medicines. KH011, M

The slightly conflicting versions prompted us to further explore this condition during the focus group discussions. And indeed healers' understanding of the disease was more complex; clearly the condition as they understood it went beyond being merely infantile colic. They agreed that it had primarily to do with the gastrointestinal tract but their explanations appeared to be steeped in customs and culture. Some mothers reportedly gave the medicine to children because of custom. It was claimed that if this condition was left untreated or incompletely treated, health problems would arise later in life (for a sample of excerpts on *niañgsohpet* please see appendix 12). During the third FGD, healers entered into a debate on their cultural understanding of possible etiological causes and dissonance with more modern notions.

Although the concept of a physical ailment is tacitly understood in the community, often there is no equivalent biomedical term for the condition. Healers did make efforts to understand if biomedical names existed for the condition. Occasionally some healers make efforts to check how a biomedical practitioner may interpret or diagnose the condition by referring the patient to a hospital. Failure of biomedical doctors to come up with a satisfactory diagnosis or therapy potentially reinforces the credibility of tribal medicine.

> ...*jingshit ha kasnier* [intestinal fever], I send them to the [biomedical] doctors and the doctors try to figure out with their tools what a person is suffering from, but they cannot figure out. But for us traditional healers we have the talents and we try to figure out what the person is suffering from. If we suspect a person having *jingshit ha kasnier* [fever in the intestine], we treat the patient with the herbs for that particular disease. If there is any kind of relief and improvement in the patient, then that means the person had *jingshit ha kasnier* is treated for it [...] Yes, in order to search for the truth we take the help of herbs. KH 004, M

In such situations the healer interprets a successful outcome as further confirmation of their diagnosis and the effectiveness of their medical system. Thus culturally bound conditions or those disorders that are especially understood within the culture could be regarded as special expertise and market niches for a traditional healer.

9.2.4. Working in the Gaps and Margins of Biomedicine

A large category of the market for tribal medicine could be loosely grouped as services that fill in ‘gaps’ that were either inadequately or not currently catered to by biomedical services. Healers acknowledge that many of their patients had tried biomedicine without successful or satisfactory results.

> Only few patients come to me directly with their problems without first seeking any other medical help. KH 004, M

Healers describe some patients as those who are “fed up” of using biomedicine, because of non-response to medication or side-effects.

For chronic ailments and convalescence periods, tribal medicine and biomedicine are reportedly used together. In such situations it is claimed that additional treatment on the “side” with tribal medicine would help in making the patient well. Healers used a concept of eliminating diseases from its “roots” to rationalise concurrent use of tribal

medicine. The implication is that biomedicine is useful in treating but there is a certain incompleteness of treatment that may result in recurrence of symptoms or because overall well being was not achieved. Partial cure is attributed to persistence of the roots of the disease that has not been fully eliminated and thus requiring traditional medicine such as massaging or herbal potions.

> R13: One thing it is also that Khasi medicine can cure diseases right from its roots.
> R12: Yes from its roots.
> R13: Most of the time doctors prescribed painkillers just to provide temporary relief, but Khasi medicine if you are regular in taking it, it can cure right from its roots.
> R3: Yes, yes. FGD3: R13 KH 020 F, R12 KH007 F, R3 KH 014 M

The use of analgesics and the temporary relief they provide, and the side-effects such as gastric irritation that they cause were cited as examples to contrast the difference between biomedicine and tribal medicine.

The inability to perform bodily functions normally or a lack of wellbeing after biomedical treatment is taken as indicators of persisting ill health. A culturally accepted concept of poison or toxin (*ka bih*) is used as justification for the need of tribal medicine. The concept implies that toxins can accumulate and persist in the body and cause problems if not fully eliminated.

An example of tribal medicine functioning along the margins of biomedicine was when patients reportedly feared surgical interventions in biomedical settings. While healers do acknowledge that surgical intervention is sometimes required, the ability of a healer to manage a case without surgery was claimed as an expertise that patients look for. Healers reported using non-surgical measures to manage abscesses, a condition that is invariably managed with incision and drainage in biomedical settings. Likewise their ability to manage fractures without surgery was reported as sought after.

> Here in my village most of the people prefer traditional medicine especially for '*thung*' [kind of an abscess] or for '*bampong*' [cancer]. If there is an abscess and pus started forming around it, I treat by applying herbs and gave the patients some medicine to take it orally and all the pus will come out by itself and the patient gets cured KH 036, F

The fear of surgery was experienced even for seemingly minor procedures (from a biomedical perspective) such as a biopsy. This fear as a reason for opting for tribal medicine could be corroborated through the experiences of patients as well as biomedical doctors' narratives of their patients. But healers also report using prior surgery as a reason for not accepting a patient; as surgery was claimed to interferes with effectiveness of some tribal medicine.

"When all doors have shut for them"

There is a market niche for tribal medicine in terminal care. In those who have lost hope in biomedicine because of end stage disease such as terminal cancer and when patients have been told that nothing more could be done in biomedical settings. Healers reported providing care to ease suffering during terminal stages of diseases. Thus palliative care is provided in situations seemingly neglected by biomedicine.

> Still there are people who don't come to us [initially]. They come when all doors have shut for them, then they come to us, so it is very late then. There are cases that are very very late. KH 019, F

Another group of clients are those who have sought biomedical care but have been referred to tertiary care facilities that are too far or too expensive. When a healer is asked to talk about a success story, usually s/he is likely to narrate a complex case. Complexity encompasses elements of difficulty in diagnosis, treatment, severity or rareness of the case. Often such patients have been referred by a biomedical institution to a specialist tertiary care centre outside the state. There is a certain pride in the words and the body language of the healer while narrating these success stories.

> I examined the child and told the parents that I could not take any chances, because this was my first experience with such a case and if anything goes wrong the child might die....The child did not have skin over his abdomen and his entire intestines could be seen. [....] The mother took the child to Guwahati Medical College for treatment... KH 008, M

But apparently it was not just the poor who sought them out, according to one healer "the rich find costlier ways first" and turn to tribal medicine when biomedicine fails. Another healer who worked in an urban setting said a majority of her patients were economically well off.

"Emergency" and "serious"

There are different roles that healers perform based on the situation. They provide temporary care in the absence of other expertise. "Emergency" and "serious" are words that healers used to describe difficult situations that needed urgent attention. The words were used interchangeably in some instances but healers were able to explain this on further probing. Both situations could go together too. An "emergency" was described as a situation that demanded immediate attention.

> R: It is like when the room is full of people but when certain patients come we have to examine them first.
> I: What are those types of illnesses?
> R: There are many types of such illnesses even when I am home and sleeping I have to get up, like people who have a fracture, who have severe pain in the stomach, women in labour. But people do not disturb me if it is something they can tolerate. KH 018, F

A "serious case" would be a complex condition or a deteriorating patient who required urgent attention to avoid possible death. The serious case, implying end stage disease or weak, fading pulse were specifically mentioned as conditions for immediate referral to a biomedical facility. In situations where reaching a formal health care facility would take a long time healers will give treatment to provide some relief until the distant health facility can be reached.

> But for us especially in the rural areas we are there just to aid them, so that they can reach the hospital and not die half way. KH 008, M

In remote areas the healer is often the most accessible help at hand at odd hours of the night. They reported that patients would seek help from a biomedical facility later in the morning. Healers are aware of and accept pluralistic health seeking behaviour among their patients.

> Most of the people who think that the case is very serious they will take traditional medicine only for some relief or improvement until they reach the hospital. For example if it was at night and somebody is sick they will come to my house asking for medicine but early in the morning they will go to the hospital for treatment. KH 036, F

Thus expertise and market niches are formed and managed in terms of conceptualisation of illness, selection of the 'right' treatment (biomedicine or tribal) and/or negotiated depending on the situation i.e. sometimes for temporary relief

until biomedical care can be accessed. Khasi tribal medicine healers adapt to the acceptance and preference for biomedicine in the community and worked in its margins and filled in the gaps in services offered by the formal/public sector.

9.3. Do Healers Interact with the Formal Sector? How and when?

9.3.1. *Doktor Kot, Doctor Sla* – Book Doctors and Plant Doctors

Practitioners of tribal medicine acknowledge the relevance and prominence of biomedicine in the health system. They refer to biomedical practitioners as *doktor kot* book doctors, or doctors who rely on knowledge acquired from books while traditional healers are *doktor sla,* doctors who rely on knowledge acquired from plants and the forests.

> Biomedical doctors are *doktor kot* [book doctors] where they learn in a proper setting whereas we are *doktor sla* [leaves/plants doctor] whose knowledge has been passed down from one generation to the other.
>
> FDG2, R5 KH 028, M

Tribal traditional healers said they considered biomedical doctors to know a lot more as they studied from books. The institutional setting in which biomedical doctors were educated was referred to as a "proper setting" and held in higher esteem than the informal setting of tribal medicine learning. Healers expressed disappointment at the circumstances that contributed to their own lack of formal education. When some healers compared themselves to biomedical doctors, their words and body language appeared to convey a certain 'lower status' perception of the traditional healer.

> Yes I have mentioned to you earlier that we consider them as *doktor kot* [book doctors / biomedical practitioners] who knows a lot more than we do. KH 013, M

Healers acknowledge that cases that do not respond to their therapy could be helped by biomedicine and they sometimes sought biomedical interventions for themselves or their family. As demonstrated in the previous section there is a tacit understanding in the community of certain illness for which tribal medicine is preferred. For instance healers mentioned that the type of disorder would be a factor that helps in deciding the best approach, whether tribal medicine or biomedicine was appropriate.

> It depends on what kind of a condition one is suffering from. Some conditions can be cured by using Khasi herbal medicine (*dawai khasi*) whereas some conditions are cured by using foreign/ biomedicine (*dawai phareng)*. If I understand that I cannot treat them, I send them to others accordingly. FGD2, R1 KH 030, F

While tribal medicine was the first option for culturally bound disorders in other instances it is used as an alternative. The preferred alternative is invariably biomedical services. Overall tribal healers were appreciative of biomedicine's usefulness. In fact healers often accepted the dominant role of biomedicine and defined their practise alongside it.

9.3.2. Co-opting Biomedical Investigations

That tribal healers use biomedical investigations was evident in the healers narratives and by copies of test reports that some healers kept. Referring patients for investigations to a biomedical centre, although not frequent, did occur under certain circumstances. Healers pointed out that the ability to perform investigations was an advantage of biomedicine as "We only use our hands and our eyes" to examine a patient and to diagnose. Investigations that allow a healer to 'see' the pathology within, such as X-rays for fractures and scans for kidney stones were especially appreciated.

> I send my patients for X rays and/or scanning, and treat them based on the reports. FGD3, R11 KH 021, M

Investigations were reportedly recommended when a patient failed to respond to a healer's therapy within a reasonable time. The time intervals mentioned varied with the condition being discussed.

> But if patients who have been taking my medicines and if they feel that it is not helping them I asked them to go for tests.... KH 008, M

Some healers pointed out that they did not rely on tests to make their diagnosis rather it was done as a means to reassure patients. Some patients are reportedly sceptical of a healer's ability to diagnose conditions without tests. Healers are sensitive to such situations and report encouraging patients to get confirmation of the diagnosis through tests, so that the patient is reassured. Healers are especially pleased when tests confirm their prior diagnosis – they recount these instances as proof of their own skill and the usefulness of their system.

> Yes there are lots of patients that I send for further testing in the hospitals because they do not believe me because I used only my hands and they are scared because they think that my diagnoses might be wrong especially for cyst, tumors and even stones. But if they bring me the report it is exactly what I told them. So first I tell them about what I found out just by touching and looking and if they do not believe me, then I tell them on the same day to have themselves tested in hospitals.
>
> KH 010, M

Healers also felt that biomedical practitioners were unlikely to be aware that many patients were referred for treatment by healers, as such 'referrals' were made orally and were not accompanied by any written notes.

> Yes, I do send patients to doctors and even to Shillong [capital city]. But they [doctors] do not know that we sent them because we do not give them [the patients] a slip saying that this patient has been sent by me to you for treatment or go for an X-ray and scanning in this hospital.
>
> KH 016, M

Thus biomedical investigations though used to a limited extent to assist in making and confirming diagnoses, are also used to reassure patients and gain their confidence.

9.3.3. Managing Difficult Cases and Sending to Others - 'Referrals'

One of the early steps in a tribal healer's approach to a patient is to evaluate the patient from the perspective of the healer's expertise. From their narratives it could be inferred that the case is taken up if the healer 'sees' potential success. And often, if the case is considered to be outside his/her expertise, a recommendation to seek help from others is made. This process could be loosely interpreted as a 'referral'. The literal translation of the Khasi word that healers used to convey this is 'to send'. Healers reported 'referring' patients to other healers or to biomedical doctors.

> I feel sad when I cannot treat a patient, but I tell them that if you feel that it is not helping you, come and inform me so that I can send (*phah*) you to another *doktor sla* traditional healer or to a *doktor kot* a biomedical doctor. FDG2, R1 KH 030, F

Often healers would try a treatment and refer the patient if there was no response. An explicit or tacit understanding appears to be reached between the healer and the clients in such situations. There is acknowledgement that their treatments do not

always work. Reference to the patient's 'luck' takes into account the chance factor involved in any therapy.

> I will not say that everybody is cured from my medicine because if a patient comes with severe stomach pain, and if there is no improvement after half an hour I would refer them to seek medical attention from the hospital because it depends on the luck of the person as well. KH 015, M

The excerpt below illustrates how a healer deals with clients who need referral. Time is a key factor in assessing improvement, for instance in conditions associated with acute pain, referral may be recommended within the same day if there is no improvement, while in other situations a trial of treatment may continue for days or weeks. Thus the approach is to remain positive and be encouraging and hopeful about a good outcome.

> But we cannot discourage them too, so we say that we will try our best. And if in a span of three days if the treatment does not help, we tell them to seek help [*pyrshang*] from others and not to waste their time and money with us. If I understand that I cannot treat this particular condition I tell them to go and visit doctors who are specialized in that particular condition like those *doktor kot* [biomedical doctors].
>
> KH 013, M

Generally speaking there appeared to be little direct interaction between healers and biomedical doctors. Healers appeared eager to learn and improve themselves. There were accounts of referrals made when they suspected tuberculosis (TB). From the narratives of those who attended awareness and training workshops on TB, it was evident that they were able to discuss the diagnostic tests and the expected biomedical approaches for TB.

> In the training they told us that they had to do testing for the saliva of the patient. If from the saliva they cannot diagnose that it is TB then the patient had to go for an x-ray, scanning. They asked us to refer patients to Pongtung PHC and if they cannot find anything there then they have to go to Civil Hospital, Shillong. KH 036, F

The following extract gives insights on how a healer persuades patients who are otherwise reluctant to seek biomedical care. It also demonstrates that the healer had belief in the benefit of biomedical interventions while also managing to protect his niche, in which his expertise could still be used to support or fill in the gaps of biomedical treatment.

> I told my patient to visit the CHC and have her sputum tested because it might be a symptom of TB. There are some patients who will not go and insist on me treating them. I tell them that it is better to go to the hospital for a thorough examination and if the reports are positive, then at least for 6 months you have to continue those medicines provided by the CHC because allopathic medicine are also important and they can cure certain diseases which herbal medicine would take a long time to cure. But there are also some patients who came back to me for treatment after taking allopathic treatment for 6 months because they say that the medicines prescribed to them are too strong and they feel very weak.
>
> KH 013, M

Referrals of TB patients may be influenced by the awareness programmes conducted by the government as parts of the DOTS (Directly Observed Treatment, Short course for TB) initiative. Another influence was the work of Martin Luther Christian University (MLCU) that recently collaborated with the health department in organising training workshops as part of a pilot project that explored training healers to become DOTS providers in rural areas.

However, a few healers narrated their confrontation with biomedical doctors at such meetings. Healers expressed resentment at biomedical practitioners talking down to them and not listening to them. Their views appeared to stem from both perplexity at the refusal of the public sector to acknowledge tribal medicine's contribution to the community and a perceived lack of respect.

> I told them "you come here to make us understand but when we are suggesting something, you throw away our suggestions." ...I went there because I thought that it will be a kind of training for us to improve ourselves, but instead as they are more educated than us, they criticise and look down at us. FGD 2, R5 KH 028, M

It was apparent during FGDs that healers did not expect to be treated at par with biomedical practitioners but they did want to be treated with respect. They hoped for an interactive relationship from which they could learn while also being helpful to their communities.

One possible explanation is that healers often acknowledge patient preferences and tailor their approach to treatment based on those preferences. These sometimes contradict policy guidelines followed by the public health sector; such as promoting institutional delivery of babies. Thus these situations become areas of potential conflict and misunderstanding.

> But, Dr. xxx [a gynaecologist in a Govt. referral hospital in Shillong] told us that you should not massage a pregnant woman, but people in our place especially pregnant woman seek it and come for a massage. Other doctors, a paediatrician told us that if a child has diarrhoea/dysentery and vomiting, you should take the child immediately to the hospital, but we give the child herbal medicine and the child is cured. KH 036, F

9.3.4. Practicing Covertly in the Margins of Biomedicine

Healers report that patients use biomedicine and tribal medicine consecutively or at the same time. There is a tacit understanding between the patient and healer where in both acknowledge medical pluralism as beneficial. The biomedical doctor alone is kept in the dark, as a defence against criticism by the doctor.

> No because the doctors do not know, when patients go to them and the patients say they are taking the herbal practitioners medicines they become furious. When these patients come back from the doctors, we have to massage them. KH 011, M

Both healers and patients sense mistrust of tribal medicine from the formal sector and carry on their activities covertly. The following excerpt illustrates how clients and healers co-opt both biomedicine and tribal medicine. The healer describes administering tribal medicine covertly within a biomedical setting. This example further demonstrates the pluralistic health seeking behaviour of patients.

> I go to xxx hospital [large tertiary care referral centre in the State, located in the capital city, Shillong] frequently to visit the patients with fractures, I apply my medicine on them pretending I am their relative because I am afraid and timid of the nurses and the doctors if they find out I am a herbal [tribal medicine] practitioner. KH 018, F

The topic of institutional versus home deliveries of babies is a contentious issue from the perspective of the public sector. Home deliveries (71%) rather than institutional deliveries (29%) continue to be the norm in rural Meghalaya according to the National Family Health Survey (IIPS, 2007). Although it was not the intention of this study to include traditional birth attendants (TBA), some tribal healers both males and females also conduct deliveries in villages. These healers reported providing both antenatal care and assisting in labour and delivery.

> I have to go if I am in the village, if I am not here they have to go and deliver in hospitals. KH 018, F

But accounts of fairly prompt referral were provided by some healers. These accounts were possibly also made as a defence against potential criticism, as institutional delivery is being advocated in the public sector as part of a drive to reduce the currently high maternal mortality and infant mortality rates in the state.

> Yes. Now some of the patients especially pregnant women where they have problem in the womb I tell them to take medicine from the doctor. If the baby inside the mother does not move I look at it and if it is too weak then I ask them to go and visit a gynaecologist. KH 004, M

Interestingly some healers reportedly found ways to persuade women to seek institutional deliveries. In the quote below a healer uses her inability to provide certificates for the newborn as a persuasive tool. Although healers acknowledge that in rural areas they continue to be called when a woman is in labour, a pragmatic decision is claimed to be made taking into account different aspects of the patients' situation.

> There are some of my patients who tell me that they did not want to go to the hospital and give birth in a hospital, instead they ask me to assist them during labour. I explain to them that if you gave birth at home I cannot issue birth certificates and even immunization of the baby, later is also difficult. KH 006, F

Healers reported that there was a range of attitudes among doctors, varying from a few who were willing to work with tribal healers and many who were dismissive of them. Senior doctors were reported to be more open while the younger, inexperienced doctors were said to be more critical of indigenous tribal medicine. The healers were called by certain words in Khasi which could be loosely translated as "quacks" and other derogatory meanings.

> I say this because out of ten doctors in the hospital I think only two doctors are ready to work with us. They call us *doktor jakoid* [implying inferior status, possibly quacks]. [...] I think those doctors are very young in terms of their service. When doctors from different hospitals come to interview me, usually elder doctors in terms of experience would come and ask about my work and my experiences. KH 004, M

9.3.5. Perceptions about the AYUSH sector

Unlike with biomedicine, Khasi traditional healers had little awareness of the AYUSH streams and there was almost no interaction with the AYUSH practitioners of Meghalaya.

> For me I never seek their help [Ayurveda, homeopathy] but some people who did seek their help told me that there is no improvement and it is just a waste of money and time. KH 036, F

A couple of healers claimed that their system was similar to Ayurveda as both systems used plants in their treatments. It was observed that one of these healers used the term Ayurveda on the sign board advertising his clinic. However a few prominent healers who had interactions with Ayurvedic practitioners in south India said that Khasi traditional medicine was considerably different from Ayurveda. One senior healer in particular found differences between the formulations as well as the kinds of plants that were used in Khasi tribal medicine and Ayurveda, while agreeing that there were some common plants.

It was considered pertinent therefore to get the views of Ayurveda doctors who belonged to the Khasi tribe for corroboration. These voices were pertinent as they were familiar with tribal medicine and were trained in the Ayurvedic traditions. Although the views of doctors are being presented in the next chapter, in this instance their views are presented here. Ayurveda doctors insisted that there was little similarity. According to them healers' and the wider community's claims of tribal medicine being similar to Ayurveda was misguided as it was based on a simplistic explanation of both systems using medicinal plants. Ayurveda practitioners were keen on indicating the 'separateness' of their system as mentioned in the extract below from a conversation with the first and senior most Ayurveda doctor appointed in the government Department of Health.

> In my early [days of] practicing I have observed that especially the Khasi people meaning the locals, they used to class us with the local practitioners that is the traditional [tribal healer]. I don't know from where this wrong conception comes, those local practitioners, they used to say that they are giving Ayurvedic medicine. They [healers] understand that herbal means everything is Ayurvedic and all that.... there is a wide difference between the local traditional medicine and the Ayurvedic medicine PG 035, F

9.4. Summary

A descriptive analysis of an under researched group of indigenous traditional healers, the Khasi tribal healers of Meghalaya was presented in the chapter. Khasi tribal healers who use herbal remedies (*dawai khasi*) are called *nongai dawai.* They distinguish themselves from those who perform ritualistic healing (*nongkñia*).

Becoming a well known healer in the community results from a combination of factors working together: The person must be recognised as having *sap*, a kind of intrinsic talent, in addition to the requisite knowledge and skills obtained from ancestors or other elders. This must be acknowledged by the community by their witnessing successful treatments of patients. Ancestry and/or the community recognition of his/her talent are accompanied by a growing self realisation that encourages the healer to practice. The continuation of practice as a career occurs when there is acceptance and appreciation from the community as evidenced through an increasing demand for their services. For Khasi tribal healers it appears important that they detect both interest and aptitude in a person as a requisite for training a person. This is especially important when the recipient is not a family member.

Tribal healers catered to the expressed needs of patients. Their services varied from simply prescribing the equivalent of the over-the-counter remedies, to providing full diagnostic assessments and specific treatments. The notion of expertise is an understanding that is arrived at within the community and accepted between healer and client. Expertise is recognised in terms of conceptualisation of illness, conceptualisation and formulation of the 'right' treatment (tribal and/or biomedicine) and modified depending on the situation i.e. sometimes it is used as a standby until biomedical care can be accessed. Conditions for which tribal medicine was sought could be broadly categorised as those in which tribal medicine is considered highly efficacious, culturally bound disorders, and situations in which tribal medicine fills in 'gaps' in biomedical services or treatments that are offered alongside biomedicine.

Healers had minimal interactions with the formal/public sector. However they acknowledged and accepted the popularity and importance of biomedicine for the community. Although healers reported making 'referrals', it was not apparent that they fully realised their positive contribution to the health system in making referrals.

10. Results - The Policy Maker / Policy Actors (Objective 3)

10.1. What are their Perceptions and Experiences with Tribal Medicine?

10.1.1. Aversion and Appreciation

Policy actors conveyed a spectrum of opinions about tribal medicine[14]. Bureaucrats and technocrats (biomedical doctors) in the health department tended to refer to traditional healers as unskilled and unscientific and indicated that they contributed to the high maternal and infant mortality statistics of the state. The excerpt below is from an interview with a senior, quite influential bureaucrat. It reveals both the stance of officials in the department of Health as well as dilemmas that they face. He believed that traditional healers were working against the government's policy to increase institutional deliveries in rural areas. He went on to contrast the accessibility of healers to villagers with the government's difficulties in providing 'last mile services' in rural areas of the state.

> Now there are the people who go out in the village, the last mile and telling people there's no need for you to go the hospital for delivery and all, ''we'll take care''[they say]. Now, they're spreading this message which is an antithesis of what we are trying to project from the government side. From the health and family welfare side that we are saying, 'please come and deliver in the hospital because we'll take care of your, you know, ante-natal check up, we'll take care of post natal check up, we'll take care of delivery, we'll ensure 48 hours stay, we'll give you free diet.' All these things we're trying to take care. All these things we are trying to take care but they go out to the villages, they go out to the last mile and tell the villages who are totally illiterate saying, there is no need of going to government hospital, it is better that I take care of you I'm there, you're like my own brother, you're like my sister, I'll take care. Now when an emergency situation arises they cannot cope up with that emergency... Senior Bureaucrat, PG 028, M

But other influential members of the community said that people were too quick to blame traditional healers and cited the many home deliveries conducted by traditional healers as evidence of their good services. For instance in the excerpt below an influential elite said that complications and even deaths occurred in hospitals so why are judgements being made against tribal traditional healers.

[14] Most of the policy makers were indigenous, either Khasi or Garo (please see appendix 11). When discussing perspectives about tribal medicine, they drew upon their own memories and experiences of their own tribal medicine (either Khasi or Garo).

> I've heard people saying, you know, referring to traditional healers as quacks. And I've heard some allopathic doctors say that our people tend to go to quacks and then when they are too far gone and then they come to the hospitals, especially for child birth and all that. But I think things can go wrong even in hospitals so. I don't know why we are so quick to pass judgement on traditional healers. Because child birth is always, you know, it is a critical thing. So then, you know, there are people who have given birth at home to all their children and they've never had problems and then there are people who died during child birth in hospitals, so what do you say about that. - Journalist PG 001, F

It is useful to contrast the criticism of the public sector with ground realities as expressed by a leader of an NGO in the excerpt below. He narrated how the advocacy programmes of the government to promote institutional deliveries of babies resulted in healers becoming fearful and secretive about their interventions. In the past few years emergency transport services for rural areas referred to as EMRI 108[15] have been introduced for first aid and quick transport to a referral centre for tertiary care. The difficult terrain and the spread out population and lack of year round accessible roads were claimed as factors that hindered health services. The difficult situations that healers and patients faced are highlighted in the following except. The narrative recounts interactions with a large group of healers in a remote location on the topic of home deliveries:

> They [healers] said what to do, people trust us. If it happens at night, there's no vehicle to go to the PHC. [...] We are not sure the nurse will be there, we are not sure the doctor will be there, we are not sure the medicine will be there. So, we have to do it at home. They said what to do? And there was another person who said, someone in the gathering who said, "oh you call 108" [emergency services] right, how will 108 come when the road is only available, when you can only come in the winter. So I think these are, these are the challenges for Meghalaya, one, one hand, it is our terrain, right, we have our altitude, this is very important. I keep talking to lot of policy people in Delhi and all that. You must always remember our altitude starts from 240 feet above sea level, which is somewhere near Bangladesh right at Bholaganj [block] at Nongjri [village] and it climbs up to almost 5000 feet.
> - leader of NGO, PG 011, M

The perceived professional responsibility of an individual in the health department influenced his/her attitudes towards tribal medicine. The tribal healer was identified as a problem that stood in the way of the department reaching its targets to improve

[15] The term is derived from an acronym of the organisation that provides ambulance services and the helpline contact number 108. The Emergency Management and Research Institute (EMRI) is a not-for-profit NGO that works in a Public Private Partnership (PPP) arrangement with the Government.

health indices. But their personal opinions and attitudes were sometimes different. Even these critical officials reported using the treatment of a healer for a personal aliment. The incident quoted is from a senior bureaucrat who was persuaded to try therapy from a healer for an injured foot is indicative. The bureaucrat's reasoning was that since he perceived the externally applied medications of the healer to be harmless he decided to give it a try on the advice of friends. He added that the treatment was inexpensive and over all found the intervention to be rather soothing.

> the advice I was getting from all the people who come to see me was that, why don't you look at traditional healer, they said it would set it [damaged foot] straight, by using a sort of a massage therapy and putting some local ointments and all that. So since I envisaged that there was no side effect, there was no harmful effects, so why not try it. I tried and it was giving a good feeling at the end of the day because you don't have to put any efforts. So why not and it was very inexpensive at the same time, so I used it and I felt good at the end of the day, at the end of the treatment , so I'm quite okay now
>
> Policy maker, Senior bureaucrat PG 028, M

Biomedical doctors and bureaucrats were more open accepting of externally applied medicaments of tribal medicine over internally consumed medicines. This was particularly so for the medicaments used for massaging and giving relief for muscle and joint disorders. This perhaps reflects the prevailing knowledge that topical biomedical preparations are safer and less likely to cause systemic side effects than an oral medication. Even biomedical doctors who were otherwise critical of tribal medicine said that their treatments of musculoskeletal disorders that required external medications and massage were quite acceptable.

> I see the weakness in oral medicine but if they do physiotherapy they are very good Policy maker, Biomedical doctor PG 032, F

Critics were also irked by the alleged tendency of healers to make claims of success. Implied in the criticism was that the claims were not substantiated. The need for "proper diagnosis" and documentation were often expressed. However, it was also acknowledged that no agency or department had made any efforts thus far to verify, document or otherwise investigate the claims of tribal medicine.

Interestingly biomedical doctors reported that when they blamed tribal healers for a medical complication that a patient developed, the patient reportedly refused to reveal details about the healer involved.

10.1.2. Beliefs around Efficacy

The appreciation of tribal medicine that was explicitly stated or implied by many respondents was centred in their belief in the efficacy of the system. Beliefs about efficacy were formed primarily through personal experiences with indigenous tribal medicine. Respondents often provided narratives of either personal use or use within their circle of family and friends. They ranged from childhood memories of being taken to a healer to turning to tribal medicine when biomedicine failed.

> Yes, I have experienced personally also the effectiveness of traditional healing system especially with the broken bones, sprains and wounds...
>
> Policy maker in KHADC, PG 004, M

Comparing and contrasting their experiences with biomedicine was a basis used by respondents to illustrate efficacy. For instance the policy maker quoted below while saying that he did not have any personal experience of Khasi tribal medicine went on to narrate his wife's experience with it. He contrasted her initial, prolonged and relatively fruitless trial of biomedical treatments for a blistering skin condition on her hands, with that of successful treatments with tribal medicine.

> She had a, I don't know, allergy in the hand, blisters and all. She had, she's gone for allopathy treatment, she got so many injections for almost a year about. There is one healer in our locality, she went to her. She [TH] just gave her, her own medicine, she [client] applied every evening for a week, and in one week it disappeared!
>
> Policy maker, KHADC PG 029, M

Apart from personal and familial use some influential elites had explored this issue through their own interactions with healers and patients. For example a senior journalist's belief in the efficacy of the system was supplemented by her observations and conversations with healers as well as with patients. According to her patients often travelled long distances to seek out a particular healer. Our own observations corroborated this, as we were able to talk to patients from other parts of the country when we went to the well-known healer who is referred to in the following extract by the journalist:

> I have not sought their treatment but I have appreciated their works, done by the people like XXX [TH] because I have visited and seen him treat other people, and people swear by his treatment. You know I have interviewed quite a lot of people who have come all the way, they stay there, there must be something to it and there is something to it, it's just

that we are just so disdainful of traditional healing.

Journalist, PG 001, F

Impressions of efficacy were further illustrated using specific examples of ailments. An area of expertise described as noteworthy by policy actors included tribal medicine treatments for burns, fractures and other musculoskeletal disorders. Especially pertinent were statements from biomedical doctors who acknowledged that they were aware of many patients who preferred tribal medicine in fractures. They further acknowledged that healers were able to mend fractures faster, reportedly patients obtained functional use of their limbs more quickly than with the usual plaster-of-Paris casts used in biomedicine (please see appendix 12 case 2 for an example of use in a fracture). Comments about people's dislike of "stiff, heavy plaster" implied a cultural preference for the reportedly more comfortable material (moistened tree bark extract that hardens on drying) used by tribal healers. The quote below from a biomedical doctor who was otherwise not too keen on tribal medicine illustrates the point:

I don't know some people if they get fracture or something they don't come to medical doctors because, they [traditional healers] will do their massage, align the bone or if it is dislocation put it back and then they'll give some, apply some medicine and it really heals very, very fast.

Policy maker, biomedical doctor PG 032, F

Some academics shared views that were similar to healers' that tribal medications were largely safe and free from side-effects. They reasoned that "poisonous plants" were often filtered out from use or modified by trial and error over the centuries. It was mooted that knowledge of poisonous plants or plant toxins have long existed in the communities and although this knowledge may not be documented in books they were "written" in the minds of the healers. That since healers lived and practiced in the community they could be held accountable. And so they were unlikely to do harm wilfully. The notion of side-effects among policy actors (non-medical) appeared to be influenced largely by experiences of the side effects of biomedical drugs.

Overall there was general agreement that tribal medicine needed to be documented, researched and subjected to validation studies.

10.1.3. Concerns and Limitations

Cultural concepts in tribal medicine (such as *ka bih*) were considered "unscientific" by biomedical doctors in the public sector. The negative attitudes of doctors were influenced by their biomedical worldview of health. One doctor with very strong views against tribal medicine at first dismissed tribal medicine as only providing placebo benefits and claimed that healers obtained "true effects" only when they mixed their preparations with biomedical drugs. However, at a later point in the interview when he was recounting his negative experiences with tribal medicine, he narrated an encounter with a patient who had sought treatment from a healer after a foot injury that resulted in profuse bleeding. When the doctor uncovered the treated area, the bleeding had stopped but the tissues around the raw wound appeared to have been eaten away. The preparation was apparently applied to stem the bleeding but was believed to have done so to such an extent that it had stopped all blood supply to the area and damaged the tissues.

> He applied those herbs to stop the bleeding but it seemed that the bleeding was so profuse, was heavy, he applied double the usual dose than which he usually does. So when I went that night you know what happened when I opened that, the skin, the muscles all gone I can see only the phalanges [bones]! So I would say, I was telling my colleagues that time that- THAT medicine would have been VERY good had it been given in the correct proportion, because it stopped the bleeding, it stopped everything. But had it been given in a proper proportion maybe the bleeding would have stopped and would have been saved but I had to send that case to Shillong and they had to do an amputation for that.
>
> Policy maker, biomedical doctor PG 030, M

From the above quote it can be inferred that the doctor was very surprised by the strength of the medicinal herbs. So despite his critical views, in this instance he also appeared to acknowledge that some tribal medicine preparations had strong properties such as anti-haemorrhagic effects that could be beneficial. It also indicates that improper use could be dangerous. Thus on the one hand herbal medicines were considered benign with only 'placebo' effects, other experiences provided accounts of potency and efficacy.

One cause for misunderstanding appeared to arise out of the inappropriate use of English biomedical terminology by some healers. This occurred especially when they attempted to explain their approaches to biomedical practitioners as evident in the

quote below from a biomedical doctor. As also noted in the methods section some healers used medical terms that were understood differently by others and thus potentially contributed to misunderstanding.

> yea we heard so many, like we went to one of the nursing home also in Thangsning where that doctor XXX is there, but when they explain something when they try to explain something medically [with biomedical terms] which is not relevant to our findings so I can't say anything to them -Policy maker, biomedical doctor PG 032, F

The word gastric is used interchangeably with the Khasi word *dap lyer* by many healers. In fact most healers used the English term rather than the Khasi term in conversation. Gastric means 'with reference to the stomach' in biomedicine, but it is used as a diagnosis by traditional healers (as well as by patients). Healers use the term 'gastric' for a set of signs and symptoms that in a biomedical setting could be interpreted as any of the following conditions; indigestion, dyspepsia, gastric ulcers, hyperacidity (heart-burn) or peptic ulcer disease.

Several doctors claimed that healers mixed allopathic drugs along with their herbal remedies. The excerpt below is from a biomedical doctor with the most critical views who claimed that most healers did so. This doctor went so far as to call a respected traditional healer a fraud. His accusation appeared to be influenced by the healer's ability to read a medical textbook used for training biomedical doctors. There was implied criticism that the healer had left his traditions and was an interloper into the biomedical stream by reading medical textbooks. During the interview even seemingly appreciative initial lines were made in a critical and disparaging tone of voice.

> XXX he's a fraud, that I know, because I have worked in xxx, I've seen him reading this medical textbook and he brought that medical textbook also once when we had a seminar. This, what is this- this medicine text, Harrisons , Harrisons, he brought Harrisons and he was reading from Harrisons and then once we had started raising certain doubts about him, what he did was he disappeared for two-three months I mean he brought a certificate saying that he has done a course in alternative medicine. But he's a fraud I can say it in his face also that he's a fraud.
> - Policy maker, biomedical doctor PG 030, M

The view that all tribal healers mixed allopathic drugs into their medicinal preparation appeared to be a hasty generalisation. Many healers themselves agreed

that a few who they referred to as “not genuine healers” resorted to such practices and they as a group were concerned about such practitioners.

An often repeated concern was the lack of hygiene and cleanliness among tribal healers. This was an area that was mentioned as needing improvement by policy actors across the board including doctors.

10.2. What is the Relevance of Tribal Medicine in Meghalaya?

10.2.1. Human Resources for Health

Policy makers recognised that tribal healers were present in large numbers across the state. Although the government did not have an estimate of number of the number of healers in society, policy makers stated that healers numbered in the “thousands” by making rough calculations based on the number of villages. Thus it was acknowledged that healers had a large presence in rural areas and were accessible to the people. The MLC University said they had made a conservative estimate of over 10,000 healers based on a project done in 2008 in one block of East Khasi Hills.

Several influential elites and policy makers of KHADC said that tribal healers provided accessible and affordable health care in rural areas. It was claimed that traditionally, tribal medicine was considered a voluntary service for which no fees are demanded. Although the service was provided free of cost, it was also noted that it was customary to give the healer a token amount in cash or kind. From interviewee accounts it could be inferred that there was flexibility of payment, both in what was paid and when it would be paid; where people chose to pay in cash or kind or even nothing at all depending on their circumstances. Not demanding payment appeared to be an important distinction, the payment could be decided by the patient on the basis of their financial status and satisfaction with the treatment. These perceptions were corroborated to some extent by healers and by our observations of healer interactions with patients.

A few biomedical doctors acknowledged that healers did refer patients although the majority of doctors in the public sector failed to see this as a potential area for future interactions.

> There are smart ones, some of them refer cases to us, they do refer. That's what we appreciate such people, we really appreciate them but not all of them. - Orthopaedic doctor, Tertiary Care Hospital PG 040, F

On the contrary doctors outside the public sector highlighted the importance of engaging with healers for early detection and reduction of complications. A respected psychiatrist who headed a tertiary referral institution for mental health (in the not-for-profit sector) highlighted the importance of their role. He said that his institution got as many referrals from traditional healers as they did from biomedical practitioners. He explained how healers filled a gap in existing services in mental health care using the example of depression. He explained that healers try their own methods often successfully but if symptoms persisted beyond a week or so they "should" and many did refer to doctors. Besides the lack of biomedical doctors in the community with the skills to deal with psychological and psychiatric problems was a key reason cited by this senior and highly regarded psychiatrist as a reason for the relevance of traditional healers.

> Yeah because, because diseases which affects the mind are not understandable to let's say to a medical practitioner, a usual [bio] medical practitioner, because he will not see the psychological reasons behind the person's illness. So most of the time that they don't find any physical reasons for the distress, they say that you are shamming and what happens to people is that when they are in distress they would obviously look around, turn around like, where can I get some help. And the only people who can provide some help to them at that point of time are the traditional healers.
>
> Biomedical doctor PG 003, M

A senior ophthalmologist provided accounts of observing increased early referral from tribal healers in her institution after she conducted awareness building sessions with tribal healers. It was claimed that this helped avoid complications developing in the patients with eye disorders.

10.2.2. Identity and Alienation

Identity and alienation were themes that emerged from narratives of influential elites and from members of the traditional governance institution (KHADC). Their expressed support for the system came from identifying with tribal medicine as part of their culture. And in a sense it was a way of exploring their own indigenous identities as evident in this quote from an elite:

> oh yes, that is there not only with me but with many many people. Like I said it is there, there's a soft corner for, for medicinal plants and local healers. I think basically because we identify it with our own unique culture. okay, so it's something that we, we're proud of.
>
> - Academic, PG 008, M

Tribal societies in northeast India consider themselves distinct from the non-tribals and sometimes express a sense of alienation from 'mainland' India (Shillong Times, 2014). Perhaps this is why one often hears tribals from the region say they are "going to India" when they convey their intention of visiting some part of mainland India. Indigenous traditional healers refer to biomedicine as *dawai phareng* foreign medicine. This in a way is a remnant of the history of medicine in this culture, where the new system that was introduced during colonial times was referred to as foreign in comparison to their own indigenous system.

Among policy makers of KHADC and influential elites, while biomedicine was referred to as medicine or allopathy, the term 'alien' was used or implied in several instances when referring to the AYUSH systems. Thus while biomedicine was considered acceptable and useful other traditional systems that are being recently promoted were regarded as 'alien'. However as an afterthought it was conceded that those traditions could be useful, on the basis that if the new systems were useful in other parts of the country they "could be useful for our people as well".

> So both of these are not popular systems [Ayurveda, homeopathy]. After allopathy [biomedicine] then it is again the traditional healers. That's how I will grade it- that the traditional system be promoted, be nurtured, be given enough space to progress rather than bringing in these alien systems. Influential elite PG 001, F

Dominance by other systems and neglect were described as external threats to the indigenous system by influential elites and policy makers of the KHADC. Both external and internal threats to tribal medicine were highlighted. An internal threat that was cited was the diminishing interest in tribal medicine by the younger generation. While this lack of interest was recognised as caused by urbanisation and modernisation the apparent fall in the prestige of tribal medicine was seen as contributory. The lowering of prestige was attributed to the lack of recognition and support of tribal medicine by the public sector. The recognition and promotion of one system at the cost of another appeared to be described as domination. The promotion of a system was accompanied by resource allocation [evident from official

documents], thus domination was closely related to funding issues. To those believing in the cause of tribal medicine, this was interpreted as disproportionate funding to other systems which took resources away from their own indigenous traditions.

> The external threat come mainly from commission and omission, I think the main threat would be domination of other systems of medicine which have downgraded the importance and because of this domination, one manifestation is that the government gives it more importance and that translates into allocation of funds for other system of medication not only allopathic but ayurvedic and yoga, homeopathy. So this kind of domination on the one hand and neglect on the other hand is the biggest external threat. - Biomedical doctor PG 007, M

Influential elites who identified with the tribal medicine appeared to interpret the lack of attention to their tribal medicine as a lack of respect for the indigenous peoples and their indigenous wisdom. While recognising that some of this is an almost inevitable consequence of the "march of development" it was also stated that this need not be the case as "valuable indigenous knowledge systems like medicine are being unnecessarily lost in the process" [PG 007]. The sentiment was that if we dismissed it without giving tribal medicine a reasonable chance, we would be losing potentially valuable knowledge.

> So it is important therefore that we made a consolidated effort to protect bio-diversity, protect the stakeholders, and that's where we come in into the Local Health Traditional Practices here, because we've seen that over the years, the intrusion I would say by allopathic [biomedicine] and the disregard - absence of respect, okay, for the services rendered by the Local Health Practices has kind of, you know, irritated me in many ways. -Academic PG 008, M

One facet of this discourse is a sense of alienation in the perception of the dominance of biomedicine and the inferior status afforded to tribal medicine by the public sector. The inferior status was evident from the reference to the practitioners as quacks, and the relative absence of indigenous practitioners in the discourses of the public health system.

These views were also articulated in the preamble to the Khasi Traditional Medicine Act that was passed in 2011 " Khasi traditional medicine is under threat from depletion of medicinal plants, inadequate documentation and transmission, and domination by other systems of healthcare"

Official discouragement or lack of support combined with negative advocacy by the public sector was pointed out as one of the reasons that influenced people to turn to other systems. It was implied that such advocacy had succeeded in reducing the popularity of tribal medicine.

> Uhh, you see the thing is uhh, they have been discouraged for the past say, 50- 60 – 70 years, people have been discouraged to attend the traditional healers. So, but then they have to attend when the emergency comes but they have been discouraged to have faith in it [...]
> I: Okay, I'd like to understand what you mean by this 'discouraged'.
> R: Discouraged, uhh, they have been sensitized by the health department of the state, [through] awareness campaigns, when you get this attack, don't go to these people [tribal medicine], go to hospital. All this type like, this continuously sensitization was done.
> - Policy maker KHADC PG 004, M

It is only as recently as 2002 that the non-codified traditional systems also referred to as folk traditions and Local Health Traditions (LHT) were officially recognised in national policy in India (Payyappallimana, 2010). Subsequently it was adopted in the NRHM mission statement. Academics regretted the combining of LHT with AYUSH. They had apparently rejoiced at first in the assumption that a neglected area was finally getting attention at the policy level. But they claimed that the clubbing together of LHT with AYUSH was detrimental in hindsight as the codified systems of AYUSH got all the attention; seemingly at the cost of tribal medicine in Meghalaya. The quote below illustrates the resentment of policy elites in the labelling of their tribal medicine as folk traditions. This kind of labelling and grouping into AYUSH was attributed to have caused tribal medicine to be subsumed by AYUSH in Meghalaya.

> But there is no specific policy on this ancient form or folk medicine, there's no. Even in AYUSH, we were thrilled when AYUSH came, but when we look into the paper they have totally neglected our art form the tribal systems of healing or the indigenous knowledge which we have. It was just being clubbed as folk medicine. So AYUSH [policy] will not be able to help us there. -Academic PG 012, M

Academics expressed the need and importance of respecting different knowledge bases whether formal or informal. In 2011 nine tribal healers were awarded honorary doctorates by MLC University. According to the Vice Chancellor of the university one of the reasons that the university did this was to recognise that much useful knowledge existed in the community and traditional healers were one such

repository. The following extract from a convocation document that was read to the public corroborates these sentiments.

> MLCU recognizes our wise elders, the holders of our rich indigenous knowledge. Undocumented and lacking official recognition, traditional healers have been the mainstay of rural health care in the northeast for centuries. They have provided healthcare that is accessible, affordable and efficacious. Indigenous knowledge is the unique knowledge of a culture or society, which is useful for agriculture, human and animal healthcare, food preparation, education, natural resource management and social interaction. It is the intuition and creativity of a community developed over centuries of experience, of intimate relationship with the land and environment. On other planes, it is expressed in the arts and crafts, legends and folklore, and in the value and belief systems. Indigenous knowledge is the basis of a holistic worldview which maintains the equilibrium of the way of life of the individual and community. - MLCU Convocation document, 2011

During interviews with influential elites who were supportive of tribal medicine, attempts were made to understand if their expressed need for protection of tribal medicine was arising primarily from a desire to preserve their culture. My intention was to understand if there was more to it than just a feeling of wanting to protect and preserve heritage. In the accounts of policy makers as well as influential elites including clinicians, beliefs around efficacy and utility outweighed those of cultural relevance. Conditions for which tribal medicine was considered inadequate were contrasted with disorders for which it was useful, and thus demonstrated the need for co-existence of systems rather than dominance by one.

The important biodiversity of Meghalaya and northeast India were highlighted by academics. It was suggested that the presence of biodiversity has potentially contributed to the development of indigenous wisdom and the tribal medicine of Meghalaya.

10.3. Summary

The attitudes towards traditional healers ranged from appreciation to aversion with policy actors in the health department tending to be critical while other were more appreciative.

The presence of healers across the state even in areas considered remote by the public sector was widely acknowledged. But there were split views on the utility of their services. While policy makers of the traditional institutions and influential members of the society considered tribal medicine to provide accessible and affordable health care, policy makers in the department of health were more likely to view them as a problem.

The appreciation for tribal medicine was primarily centred on belief in the efficacy of the system, formed mainly through personal experiences with indigenous traditional medicine. A noteworthy area of expertise described by both policy makers and biomedical doctors was treatments of fractures and musculoskeletal disorders.. Those with very critical views of tribal medicine were more likely to accept external therapies such as massages.

Although policy makers and doctors in the public sector acknowledged that healers had a particular ability to gain the trust of people in their communities, they did not see healers as a human resource that could be potentially beneficial to the health system. The ability of healers to cater to the psychological needs of patients was especially appreciated by biomedical doctors outside the public sector. Their current contribution towards mental health and potential to act as bridges to formal health care sector was highlighted by doctors.

Policy makers in the health department expressed concern at the role played by healers in home births and believed that it contributed to the high maternal mortality and infant mortality of the state. Others criticised the lack of hygiene and sanitation. Those in the health department also reported the lack of documentation and codification of tribal medicine as a major stumbling block.

From the perspective of the traditional governance institution (KHADC) and influential members of the community tribal medicine was a part of their cultural

identity. The neglect of tribal medicine was seen as disrespectful and as a form of external domination. These perceptions were aggravated because the public sector promoted AYUSH systems which were perceived as ‘alien’ in comparison to tribal medicine. However their belief in the efficacy of tribal medicine was the most important factor for the support of the system. The need for co-existence of systems rather than dominance by some was advocated as a better option.

Meghalaya’s geographic location within the biodiversity hotspot of northeast India offered immense possibilities. For instance research and development of drugs could be carried out based on leads from tribal medicine.

11. Results - Medical Pluralism in Meghalaya: Policy Aspects (Objective 4)

This chapter presents the themes arising from efforts to locate tribal medicine within the policy of medical pluralism currently being implemented in Meghalaya. A brief outline of the administrative structure of the Health & Family Welfare Department sourced from documents as well as corroborated by interviews is presented first. This is followed by an analysis of the implementation of 'mainstreaming of AYUSH' policy strategy that is adopted in the state.

Administrative structure

The Health & Family Welfare Department, Government of Meghalaya (GoM) is the administrative department responsible for maintaining and developing the health system in the state. At the top of the organisational hierarchy is the Secretariat (bureaucrats) responsible for coordinating the functions of the three directorates of health. The three Directorates of Health Services (DHS), as listed below, are headed by the respective Director of Health Services who are usually technocrats (doctors). Technocrats are promoted to the position of Director of Health Service based on their seniority within the system. All the three directorates are headed by biomedical doctors in Meghalaya.

- Directorate of Health Services, MI (Medical Institutions)
- Directorate of Health Services, MCH&FW (Maternal and Child Health and Family Welfare)
- Directorate of Health Services, R (Research)

From observations of the dates of appointments and duration of service displayed on boards in the office of the three directors of health services it was evident that there was high turnover in those positions, often the postings lasted under a year. During the course of this research heads of two DHS retired and the posts were filled through promotions of the next senior person in line. For instance one of the joint secretaries interviewed was promoted to Director of Health Service a few months later.

11.1. Mainstreaming of AYUSH in Meghalaya

In 2005 the Ministry of Health & Family Welfare, Government of India (GoI), launched the National Rural Health Mission (NRHM). The NRHM mission document stated seven goals of which one of was to "Revitalize LHT and mainstream AYUSH" (GoI, 2005).

An analysis of documents along with information from interviews was collated to understand the implementation of AYUSH policy in Meghalaya. In Meghalaya there is no separate department of AYUSH, doctors belonging to these streams come under the Directorate of Health Services - MI. In 2009 a 'nodal officer' for AYUSH was appointed following a central directive from the Ministry of Health, GoI. The nodal officer was expected to facilitate the implementation of AYUSH programmes under the NRHM. This officer functions under the Director of Health Services - MI.

AYUSH doctors are appointed through two channels in the Department of Health; permanent posts in the department or as contractual staff through the National Rural Health Mission initiative. Currently there are homoeopathic and Ayurvedic sections at the referral hospital in the capital and in hospitals in the districts. Doctors from AYUSH streams have been appointed to all three tiers of the health services provided by the public sector. At the lowest level are the Primary Health Centres (PHC), AYUSH doctors are posted in PHCs in all seven districts.

The health statistics handbook 2011-2012 (GoM, 2012) secured from the Department of Health during data collection, reports there are 73 AYUSH treatment centres across the state in the district hospitals, community health centres and primary health centres (GoM, 2012). These figures have grown since; by 2013 there were 102 co-located facilities for homeopathy and Ayurveda across the state[16], 87 of these are funded through NRHM. None of the co-located Ayurveda facilities in Meghalaya are currently offering *panchakarma* procedures, an integral part of Ayurveda (Conboy et al., 2009, Gupta and Shaw, 2009, Rawal et al., 2010).

The district wise distribution of doctors in health facilities in the different districts of the state has been collated from the handbook (GoM, 2012, p.149-165, 174-177) and

[16] During my follow-up interactions with personnel in the state health department, a power-point document with updated information on co-located facilities in 2013 was shared with me.

presented in tabular form (Table 8). As per interviews conducted in the latter half of 2012 with persons in the directorate of health services, AYUSH doctors in the public sector have now increased to more than 100 in the state. Thus the number of AYUSH doctors reflected in the health statistics handbook of 2012 is an underestimation.

> Up to now, under the state level, we have 26 [AYUSH doctors] persons [,,,] Now, under NRHM we have another 85 doctors. - DHS, GoM

Exact figures for biomedical and AYUSH doctors could not be ascertained; in table 8 the possible numbers from the health statistics hand book has been collated. The lists of names provided also included dentists but disaggregated data was not provided in all districts hence an exact calculation of biomedical doctors could not be made. The lower number of AYUSH doctors in the statistics handbook compared to the figures stated in the interviews is probably due to the missing names for West Garo Hills district. In addition AYUSH doctors probably joined the health department after publication of the handbook, and their names are not being reflected. Thus from less than 20 AYUSH doctors prior to the implementation of the NRHM initiative, AYUSH doctors have increased several fold and comprise over a quarter of doctors in the workforce at the district level.

Table 8: District wise distribution of doctors of biomedicine and AYUSH

District	**Dentists**	**AYUSH**	**Total Doctors (MBBS, AYUSH and Dentists)**
West Garo Hills	*	*	32
Ri Bhoi	3	10	45
Jaintia Hills	7	12	61
East Khasi Hills	6	18	84
East Garo Hills	2	3	45
West Khasi Hills	6	14	50
South Garo Hills	*	7	24
Total	24	64	341

*Disaggregated data could not be collated as it is not provided in the handbook

There were additional financial allocations to AYUSH streams from the central government. In 2010 the North Eastern Institute of Ayurveda & Homoeopathy (NEIAH) was established as an autonomous body under the Department of AYUSH,

Ministry of Health and Family Welfare, Government of India in Shillong the capital of Meghalaya. Part of its stated goals is to promote and popularize Ayurveda and homoeopathy "To generate public awareness about the potential of Ayurveda and Homeopathy systems of medicine for enhancing health security of rural communities including disease prevention and health promotion. To propagate Ayurveda and Homeopathy towards improvement of health care and mainstreaming of AYUSH systems in the region"(NEIAH website). An initial allocation of 6.75 million Indian rupees has been sanctioned towards the establishment of this institution. To understand the basis of how decisions that involved large financial commitments for infrastructure were made, the founder director of NEIAH was also interviewed. He had played a key role in the establishment of the institution.

> These decisions have been made as per,[pause] because our decision is from the government of India. Government of India wants to establish AYUSH everywhere. They want [it] to spread. They [states] themselves have not done, it is Government of India.
>
> AYUSH doctor, Senior Technocrat, PG 042, M

11.2. Relevance of AYUSH and the Basis of Policy Decisions

Within the federal political structure in India, health is a state subject and states have powers to make their own health policies. The state of Meghalaya is yet to publish a health policy by the GoM. In the absence of a formal state health policy document, it is difficult to understand how decisions were being made with regards to medical pluralism in the state. Considering that policy has been defined in different ways in literature ranging from a course of action or inaction to formal written documents made by governments (Buse et al., 2012), it was pertinent to understand what the basis of Meghalaya's decision to promote the use of Ayurveda and homeopathy across the state was.

The documents that were available in the state from it official websites were mainly about the NRHM mission statement, guidelines and those relating to implementation of goals as part of the NRHM initiative. There were no documents available to show that policy decisions on AYUSH strategy were based on evidence from Meghalaya

state. The issue was further explored through interviews with policy makers including biomedical doctors and AYUSH practitioners in the health department.

On being asked about the formulation of a state health policy, the policy makers insisted that a state policy had just been compiled and it had been sent to the government for approval. The word "government" was used to refer to the political establishment; the ministers, cabinet and members of the legislative assembly of the GoM. Although many of the policy makers interviewed were senior government officials, several of whom were directly involved with drawing up of the draft health policy, they appeared to differentiate themselves from the politicians by using the word "government".

From official correspondence and interviews with officials in the directorates of health it was inferred that the decisions to promote AYUSH in the state was based on the national policy and directives/guidelines of the Ministry of Health & Family Welfare, GoI.

> Mainstreaming AYUSH is GoI [Centre's] NRHM initiative
> - Senior Bureaucrat, PG 028, M

The state government depends almost completely on central funding for its health budget. This appeared to be a major factor influencing decision making and health service implementation. That the central government's funding is a major factor in decision making is evident from this quote from a Director of Health Services, Dept. of Health, GoM. He was describing the plans for setting up an AYUSH hospital in a district.

> I:Okay, so is this an implementation of a Central scheme rather than something which the State thought that they needed?
> R: It is a Central scheme [scheme of the Ministry of Health, GoI]
> I: A central scheme, and you are implementing it?
> R: We are implementing it
> Policy maker, biomedical doctor PG17, M

Generally there was also acknowledgement by both policy makers and among influential members of the community that AYUSH systems were relatively new to the state. It was said that after biomedicine tribal people preferred their own indigenous traditional system.

> I think this ehh people especially in the villages are absolutely ignorant about the system of Ayurveda. May be people in the urban areas people have heard about it, they know about it not so in rural areas.
>
> Influential elite PG 002, M

Technocrats and bureaucrats in the government provided accounts from which it could be inferred that they were aware that Ayurveda and homeopathy were not popular systems in the state; Ayurveda less so than homeopathy. Senior doctors in the health department claimed that AYUSH was slowly becoming more popular. The AYUSH doctors were currently providing only out-patient care. It was said that awareness programmes and ongoing efforts such as building a stand-alone Ayurveda hospital (rather than co-located) would demonstrate to people that Ayurveda was good for in-patient care as well. Most officials appeared to have an accepting attitude that was non-critical or unquestioning towards the relevance of the 'mainstreaming AYUSH' policy in the state. The technocrats tended to single out a few examples of AYUSH doctors who were "doing a good job". The following extract from an interview is indicative of several aspects of the policy makers' impressions and attitudes towards AYUSH and its practitioners:

> R: there are more challenges because you know like we are getting them the same pay so some of them they are scared to do emergency duty. they cannot deliver, they cannot do like ante natal cases, which is very, very difficult. But there are some AYUSH doctors who is better than the medical doctor also, because a medical doctor is not just looking after patients, now they have to see administration also in the small PHC or CHC. So, I see there's one doctor in xxx the AYUSH doctor, he's doing so well, so well, I prefer to talk to him better than to engage with the MBBS one.
> I:So tell me why is that? What is wrong with the MBBS one?
> R: in that particular [place], because the MBBS he's, they are so, like, I don't know, but he's not a good, a good administrator
>
> Policy maker, biomedical doctor PG 032, F

It appeared as if the administrative skills of the AYUSH doctors as well as their ability to provide services as substitutes for biomedical doctors were particularly appreciated. There appeared to be a mismatch between what health care service was expected of the AYUSH practitioners in general and what they were trained to do. A few policy makers, sometimes off the record, were candid enough to mention that all was not well with the system and not all doctors were performing well; but they tempered this observation by pointing out that not all biomedical practitioners were performing well either. Schemes to train AYUSH doctors in managing conditions

like malaria, immunisation schemes and pregnancy care are reportedly being attempted. An attempt to train AYUSH doctors as skilled birth attendants was initiated in 2011 but it is reportedly yet to be done due to lack of acceptance from AYUSH doctors.

11.2.1. Institutionalisation and Recognition

In India formal training of doctors of AYUSH systems is conducted in government recognised medical institutions, whereas, there are no 'institutions' for training tribal healers. For policy makers and doctors in the public sector a major rationale for their acceptance of AYUSH systems is that they are institutionalised. Their opinion of efficacy and acceptability of Ayurveda and homeopathy was strongly influenced by the institutionalisation of these streams of medicine. Institutionalisation appeared to be associated with notions of the "scientific" authenticity of Ayurveda and homeopathy. Homeopathy which has been subjected to criticism in the medical literature for its lack of scientific bases (Renckens and Dorlo, 2013) was also thus labelled as scientific on the basis of institutionalisation. These notions were based on a series of assumptions: institutionalisation was equated with safety, efficacy and capability. Candidates who passed out from these "recognised institutions" were assumed to be capable of treating patients adequately.

> Ya-ya those are, those people [AYUSH doctors] they have come from, from recognised institutions. -Biomedical doctor PG 030, M

Another factor suggested was the notion of safety of medications. The perception was that AYUSH drugs were already tested and proved to be safe elsewhere and thus they were acceptable here.

> R: Ayurveda, yes they are quite okay Ayurveda they have their own line and I think most of their drugs are already tested
> I: Is Ayurveda popular among our people?
> R: Now, it is picking up now.
> Policy maker, biomedical doctor PG 033, M

More recently positions have been created for naturopathy in Meghalaya's public sector. On being asked why systems that are not popular are being promoted in northeast India, a senior technocrat who was involved with initiating several AYUSH institutions in the region used the metaphor of a Blackberry mobile device to explain

that a 'medical system' must also be marketed and promoted before gaining acceptance. From his narrative other reasons such as the importance of the northeast for its biodiversity underlying the thinking of the GoI could be ascertained.

> Why Ayurveda is important here? because this is the hotspot of the biodiversity, one of the hotspot of the biodiversity. Being biodiversity this is a very potential area of resourceful area of medicinal plants. [...]These decisions have been made as per [pause] because our decision is from the government of India.
>
> -Senior Technocrat, AYUSH Dept, PG 042, M

Within AYUSH the medical background of a technocrat was claimed to influence the system that each promoted; a homeopath in an administrative position was more likely to promote homeopathy and an Ayurveda physician to promote Ayurveda.

For bureaucrats the lack of structure and "codification" were stumbling blocks for engaging with tribal medicine. Government officials agreed that documentation and detailed data were expected from healers if they were to avail of any government schemes. The secrecy of practitioners was claimed to be an obstacle for engagement. In the quote below a policy maker indicates the lack of a statutory body to monitor or regulate healers made it difficult from the government's perspective. That the state itself had the powers to create these mechanisms were not mentioned.

> the only problem is like ehh what we are facing is like we want a statutory body like Indian Medical Council or the Homeopathic Council or the Ayurveda Council, see those things are not there, and it has not been brought under the legislative, usually to have this you have to, it comes under the legislative point of view, to from a statutory body so till now that statutory body has not yet been formed. So, how to form? Government is thinking how to bring these people under the fold
>
> -Policy maker, AYUSH doctor PG 018, M

11.2.2. Inclusion and Complementarity

In contrast the views of policy makers of the traditional institution (KHADC) and influential members of the community differed from those of the policy makers and biomedical doctors in the public sector. There were voices of concern; they explicitly stated that while they accepted that AYUSH systems could be beneficial for their people too, it could not be at the cost of their own traditional system getting neglected. It was suggested that the purpose of medical pluralism was to get the best out of different systems, as no system was "complete" in itself. The notion that

introduction of AYUSH in the present format was a sort of 'forced pluralism' was also alluded to as evident in the quote below:

> Whatever is introduced by the formal health system, people have to accept. When a doctor prescribes, they do not know whether this is Ayurvedic or this is this, they will just believe and buy that medicine. So, but, but it has, it has had effectiveness somewhere else. So, it may, Ayurvedic may be effective here also. It doesn't mean that we, we don't like the Ayurvedic because it is AYUSH, it is under AYUSH or any other system. It helps in Kerala then it should help here also. So, they can accept it but the thing is eh, that is not the only system, so any system is not complete in itself, so by putting this system and that system together then they can at least reach to 90% completion. no? [respondent laughs]
>
> Policy maker in KHADC PG 004, M

Inclusion and complementarity of tribal medicine with biomedicine rather than exclusion was the alternative suggested. They had no objections to the AYUSH streams being introduced if it was perceived as being helpful by their people, but insisted that it should not be at the cost of what was seen as their own tradition of tribal medicine.

> But at the sam**e** time when we have our own systems, we should see that this is not done away with, by replacing with an outside system. If it [tribal medicine] is as efficacious, it serves a certain purpose and it solves the problem of the people and in today's world that it gives livelihood to persons I think there is every reason why we should support it. At the same time I am not saying don't support Ayurveda, don't support homeopathy, let it be there if they serve the people, the more the merrier.
>
> Influential elite PG 002, M

Even within codified traditional medicine streams of the AYUSH the regional preferences for different streams was pointed out. Some states in India had promoted what was relevant and popular among their people rather than promoting all the different streams. In the quote below a policy elite succinctly argues that AYUSH should be promoted in places where it is popular for instance in southern India. However, its introduction to the north-eastern region of India where AYUSH was relatively unknown must be carefully considered.

> AYUSH is useful where it is known where it is used where it is respected [...] Siddha definitely is practiced more in southern India, Tamilnadu especially than in other parts of India. [...] AYUSH is hardly known in the northeast [region of India], hardly known in the tribal areas. There may be pockets of non-tribal populations which are familiar with ayurveda but the vast majorities of the tribals are not familiar. So if one

> brings in an alien system of medicine it's difficult to see how the people will accept it or have faith in it, if they had no system of medicine at all then of course it would be worthwhile to introduce something but since they have their own tribal system of medicine I don't see the necessity of bringing in AYUSH into the tribal areas.
>
> Academic, Biomedical doctor PG 007, M

11.3. Tribal Medicine and the Disconnect in Policy

The vision statement of NRHM "seeks to revitalize local health traditions and mainstream AYUSH into the public health system". "Mainstreaming AYUSH – revitalizing local health traditions" is also listed as a strategy in achieving the NRHM goals (GoI, 2008). However one half of the statement "revitalize local health traditions" largely remains on paper at the moment. On ground "revitalising local health traditions" was not perceived as part of the NRHM strategy as evident in this quote:

> R: LHT[local health traditions], NRHM is not exploring at all. NRHM is not exploring LHT at all, who said they are?
> I: Well in that Mission it says that [interrupted]
> R: Mission is there but here [northeast India] we are not implementing
>
> - Senior technocrat, GoI. PG 042

One argument from influential elites was that there was a lack of vision in the state regarding tribal medicine. It was implied that the bureaucratic state machinery which was used to following prescribed guidelines were possibly unable to engage with tribal healers as it would require thinking innovatively. It was also suggested that the budget guidelines for revitalising LHT was unclear, hence the bureaucratic machinery was limited in what it could do. Although the national policy encouraged the revitalisation of local health traditions it was apparent that the state government had not leveraged this possibility. The NRHM mission document lists 18 states, including Meghalaya and all the eight states of northeast India for special focus. These states are chosen as they have "weak public health indicators and/or weak infrastructure". Meghalaya state has not allocated any of its health budget towards revitalising its local health tradition. The quote below from an academic and public health expert illustrates the perceived difficulties that could be confronting the government; on where to start and how to utilise the funds appropriately.

> In a sense one could say they [government] are not entirely to be blamed because when they would have a discussion about including something some allocations, some funding for traditional medications they're not sure exactly where to put it, give it to the healers, set up an institute, set up a hospital for traditional medicine and there is a perception that there is lack of data and documentation on which certain specific allocations for programmes and schemes can be based. So in that sense there are difficulties even for the government to take it up.
>
> -Academic PG 007, M

It was said that since NRHM was mainly oriented towards providing health services, it was unclear if finances for documentation and validation of tribal medicine could be factored in.

Thus there is a disconnect between national policy and state policy, of the stated goals of the GoI's National Rural Health Mission (NRHM) to mainstream AYUSH and revitalize local health traditions. The latter more pertinent aspect is ignored while the first part is disproportionately promoted in Meghalaya.

11.4. The Protection and Promotion of Khasi Traditional Medicine Act

The Autonomous District Councils (ADC) have legislative and administrative powers over several areas like land ownership, management of forests, trade and commerce, management of villages and towns, social customs, public health and sanitation and water resources. Although public health is listed as one of the mandates of the ADC in reality not much has been done by the ADC in this area. The formal public health system works independently of the ADC and is managed exclusively by the state government through the department of health. Despite constitutional powers given to the ADC, it is largely subordinate to the state government. The ADC relies on the centre and the state for much of their funding and often there are overlapping roles, poor demarcation of responsibilities and a mismatch in resource allocation and capacities as is evident in this excerpt from an official of the Khasi Hills ADC (KHADC).

> All are ruling the same people, the state government is ruling the same people, the District Council is ruling the same people [....] But here what we have is overlapping of powers. See I'll just give an example of forest, 96% of the forest area in Meghalaya is owned by the District Councils, okay, 96%, 4% is state government but maximum funding goes to the state government, we, we get 10, 00,000 to run the forest department so

> actually the money the centre should realize that the forest department belongs to District Council so that means the state government should not have the forest department anymore that means the whole forest wing of the state government should be under the District Council. So finance and all should come directly to us so we have a problem... PG 005, M

The Protection and Promotion of Khasi Traditional Medicine Act is one of the first initiatives in public health that the KHADC has undertaken. The Act (KHADC, 2011) was passed by the KHADC on March 2, 2011, and subsequently gazetted on October 7, 2011 after securing cabinet approval, and then the governor's assent was given on 22nd September 2011.

> That is very important, the government [state] should [support tribal medicine]. If they see, see now that the law has been passed and it is under the KHADC the Commission is under us so basically, I feel like the government should not look at us as a competitive group, in fact they should encourage us by funding. KHADC official, PG 005, M

For an analysis of the agenda setting process using Kingdon's (1995) multiple streams framework (Zahariadis, 2007) that preceded the passing of this Act, please see appendix 9 (Albert et al., 2013). Briefly, disparate stakeholders from civil society came together to discuss issues confronting indigenous tribal medicine. The central 'policy entrepreneur' was a local university (MLCU) that initiated research and documentation, workshops, and the forming of healer associations in collaboration with grassroots organizations. Policy makers, policy elites and the media were engaged. This helped to shape elite and public perceptions of the problem. Other influential elites brought MLCU and the KHADC together. These processes led to the KHADC requesting the university's assistance in drafting a Bill to protect and promote traditional medicine. The agenda-setting process culminated in the passing of the Act. The key role played by the university was noteworthy. Besides bringing together the different stakeholders, it contributed to the documentation and research process. This was combined with a steady building of awareness through engagement with the political stream and the media. MLCU, in consultation with academics from NEHU and other influential members of the community, provided the KHADC with the professional capacity to frame and develop this policy. This quote from an influential elite who is also a leader of an NGO that supports tribal medicine illustrates MLCU's contribution and the wide support that the Bill secured in the KHADC:

> Martin Luther University has been a very important factor in helping in framing this, you know, this law, and we are grateful, the District Council also, a unique, rare occasion where all 30 members unanimously passed and agreed to this Act. It will make a world of political difference, it's a strange rare situation where all 30, there are 30 members, and all 30 have passed the Bill. Influential elite PG 011, M

The Act was described as one of its kind for the state and the country. Both influential elites and the KHADC members said that it was something that was long overdue.

The Khasi Traditional Medicine Commission's mandate includes advising the KHADC on policies and regulations on education, training, and standards of practice and professional conduct. The commission also will coordinate the registration of healers. During the period of this study this commission was indeed set up in 2012 and notified by government order. From a series of correspondence with MLCU it was also evident that KHADC has further worked on framing a set of rules and regulations pertaining to tribal medicine that is expected to be approved in late 2013 following which the Khasi Traditional Medicine Committee will hold its first meeting.

Most policy makers and doctors in the public sector were unaware of the Act that was passed to promote and protect Khasi Traditional Medicine despite the Act being gazetted and covered in the print media by all major newspapers. Neither were they aware of its implications. This was a mechanism that could potentially provide both recognition and regulation of tribal medicine.

11.4.1. Recognition and Regulation of Tribal Medicine

Several policy actors agreed that it was important to recognise tribal medicine and to devise a mechanism to provide some form of recognition to the healers.

> These people who are already there, they are already dispensing, they are already prescribing, and they are already helping people. So since they are already there, we might as well bring them into the system. But, when we bring them into the system, there has to be some kind of regulation. Biomedical doctor PG 003, M

Formal recognition was indicated to be important for healers to avail of incentives and schemes from the government. Since tribal medicine is not officially recognised

this hampered healers from developing and improving their practice. When healers were asked what would be the support that they most needed, they invariably said they needed help with securing small loans to develop either medicinal plant gardens or small clinics, by which they usually meant a couple of rooms where patients could stay during treatment.

> So only with the recognition of healers and the health services that they provide can they come into the radar of the government so that they can receive incentives for financial support, incentives for setting up herbal gardens, incentives for setting up clinics and perhaps even incentives and methods for integrating them into the formal health care system .
>
> Influential elite PG 007, M

Biomedical practitioners in particular expressed unease about the lack of regulation. But all respondents agreed that some form of regulation was required from the viewpoint of ensuring safety. Interestingly some healers themselves said there was need for regulation. Healers saw regulation as a means to take action against undesirable practices such as mixing of biomedicine with tribal medicine preparations. Both healers and influential elites remarked that the commercialisation that was entering into the practice of an otherwise more altruistic profession was potentially harmful. They invariably used terms like "genuine" healers indicating that there were healers who were not genuine.

While regulation along with recognition was seen as appropriate, there were words of caution too about regulation or rather of over regulation. It was felt that excessive do's and don'ts at the start would be detrimental, that regulation should be well thought out and not copied from other systems lest it becomes another bureaucratic agency. The following quote from an academic illustrates some of the points raised:

> I mean see it is still very unorganised and it is susceptible to a lot of exploitation, okay. So I would like to, not that it is to be completely eh formalised, it has to have its degree of independence because that actually promotes creativity, okay. So if you tighten the noose on them then it become like any other Government activity so, in that sense, I think they should give them some degree of freedom but YES, I think it should be also slightly organised because eh, we've seen instances where you know there are some unscrupulous people who, naturally sharks are always there, you know, who go for the money there is a lot of money there, so we will have to. Academic PG 008, M

Another academic pointed out that the heterogeneity of healers should be seen as the strength of tribal traditional systems and explained that tribal medicine's diversity must be respected and maintained in any efforts towards regulation. Influential elites pointed out that regulation as currently practiced in India had a tendency to bring uniformity or to homogenise things in the name of standardisation.

> they are heterogeneous but to me the heterogeneity is actually a strength because when you look at the diversity of treatment, diversities of plants used- to me this is a strength and in any attempt of regulation this diversity should not be lost because then there will be an attempt to bring uniformity, to create baseline of knowledge would be the minimum expectation of say, the registration of healers but the recognition of healers in some shape or form is very important.
>
> -Influential elite, Biomedical doctor PG 007, M

Even a couple of senior bureaucrats said they believed that regulation must come well after recognition. They highlighted that healers are currently able to practice fairly independently without interference from any organisation. Hence they insisted that regulation must come much later if we were realistic about it working.

> I think so, some recognition is something which is ehh very, very important and both in terms of encouragement and in terms of I mean taking the way forward. [interrupted by phone call] you know I believe for this system to work, the regulations should come later not immediately, because you know this carrot and stick policy may not work because the traditional healer is basically an independent person.
>
> Senior bureaucrat PG 023, M

Regulating through empowerment of the healers themselves through a mechanism of peer evaluation was mentioned as a possible method that could work rather than imposing external norms by those outside the system. Influential elites believed that creating awareness among healers to see the benefit of peer evaluation and self regulation was important.

> Empower them. Actually that is the main thing we need to empower them to be able to understand that, look, this is as far as I can go. Beyond this there is a danger for the patient and I'm not here to harm anyone, I'm here to help people, so I should be able to recognise my limitations and then refer […] I can't regulate them because I don't know what they are using. So it'll have to be among themselves [peer evaluation].
>
> Influential elite, Biomedical doctor PG 003, M

11.4.2. Tribal Medicine, Livelihoods and Biodiversity

A number of influential elites and members of the KHADC discussed the wider benefits of tribal medicine. Healers with busy practices were reportedly also supporting livelihoods of a network of helpers, plant collectors and suppliers. It was also believed that tribal medicine contributed in a small but significant way towards health tourism. Members of the KHADC were especially keen on exploring the tourism possibilities of tribal medicine.

> We have at least about I can say more than 100 of them [healers] who are very- very busy, huge number of patients. They are employing, not less than 15 people, each person you know. Yesterday also I asked the prominent healers, "Do you have time to go and pluck the herbs?" He said, no more, no-no-no if we go and do that, we cannot look at the patients, so we have to engage [others]. Then one employment has come up, right. So this activity has a spill over to employment, livelihoods.
>
> PG 011, M

Most of the healers that we interviewed relied on others for medicinal plant collection or assistance in preparing medicines. Although many of them would also gather plants themselves, the busy practitioners also employed others. I witnessed the supply network that a healer had talked about in a prior interview. While observing her at work there was a call at the back door which turned out to be a supplier from a distant village. He had brought a sack full of tree bark that would be used for the treatment of musculoskeletal disorders.

Other issues such as the role of healers as stakeholders in the preservation of biodiversity and its potential for bio-prospecting and drug development were also mentioned by some policy actors.

Academics from the North East Hill University (NEHU), the oldest university in the region, highlighted the potential of traditional knowledge to contribute to science, especially biomedical knowledge. They cited examples of plant derived drugs and their own research. For instance an academic referred to recent review articles that emphasised the importance of biodiversity conservation in drug development. It was suggested that the initial leads of a majority of drugs in current use came from natural products and traditional knowledge. He argued that several claims of traditional healers stand vindicated by modern science. Examples were provided

from their own research that drew upon indigenous wisdom eg. a medicinal plant *Potentilla fulgens* (*lyniang* in Khasi) that was shown through laboratory studies to have multiple properties such as anti-diabetic, anti-oxidant and anti-cancer properties. Healers use the same plant for different conditions because one plant can have multiple properties.

> So, we're looking for blueprints in plants, you know, blueprints for drugs in plants. So, Traditional practitioners have been there for hundreds of thousands of years, they know the trade, they know the, its empirical knowledge, it's through trial and error. But you see if I am to look for shortcuts, then that is where I should be looking for because that has been filtered information, okay. I can't, I cannot screen all the thousands of species but filtered information is a starting part, great. So from that perspective, I'll give you an example... Academician PG 008, M

Thus several respondents' particularly academics and policy makers of the KHADC and a few bureaucrats (other than from the health department) expressed the need to respect different knowledge sources and emphasised that indigenous knowledge needs to be recognised as an important resource in the state.

11.4.3. Trust and Respect – A Way Forward

The tendency of tribal healers to maintain secrecy about their practices was an often repeated issue among policy actors and doctors.

> But the question is these local traditional healers never disclose what they are using, that is the main problem, they are afraid that if it is disclosed, it will be known to everybody and nobody will come to them. So that is the another problem -Policy maker, biomedical doctor PG 017, M

In contrast to this general view of secrecy about practitioners of Khasi tribal medicine, there was one institutional example, where this barrier seemed to have been overcome. During informal discussion researchers at MLC University recounted their initial difficulties and later successful interactions with healers. One of the researchers, who is now a faculty member in the university was interviewed; a short extract from the interview is given below. The researcher narrated that it took her over a year to build rapport and gain the trust of the healers. She recounted their initial fears about sharing their knowledge and then went on to say how healers now shared information even about their medicinal preparation without hesitation.

> Even for me also in the initial stage I find it very difficult to communicate and ask them about their treatments, about their plants, used for their treatment. But then it takes me around one or one and a half years to build rapport with them because after that they started believing me and then now I can say that till now they have trusted me so much that they can share with me everything whatever they have in their mind especially the medicine, the procedure used for making medicines and then the plants used. Everything, now they share with me.
>
> Researcher PG 045, F

My own research team of indigenous persons could corroborate this trust and rapport shared by healers with PG 045. They narrated how several healers had apparently called PG 045 and cross-checked with her on the trustworthiness and intentions of my team before agreeing to speak with them.

Healers were reported to be more willing to share and document their knowledge now than they perhaps were in earlier days. It was implied that healers were more likely to share information with those they trusted and respected. The head of MLCU said "yes, many healers are reluctant to share their information there is a perception that this may be because of holding so called trade secrets but we found that's generally not the case. Traditional healing is usually felt to be a gift that is bestowed on the traditional healer therefore in that sense it is sacred and the knowledge that one's been gifted is not to be easily shared. However, that thinking is undergoing a change, we are finding that more and more healers are now more open to sharing mainly because of discussions that we have had with them and they have had among themselves in the last 2-3 years which they realize that unless they share their knowledge, the subsequent generation may not have the benefit of this knowledge and so for the sake of the benefit of the wider community we are finding them to be more open now a days".

11.5. Summary

The AYUSH systems of traditional medicines are being advocated and promoted across the country through the centre's NRHM goal of mainstreaming AYUSH. The national policy and the accompanying funding for this purpose has been a key impetus for the adoption of this policy in Meghalaya. Following the NRHM initiative AYUSH doctors have increased over five fold and make up over a quarter of the doctors in the rural areas of Meghalaya. Despite policy makers and doctors in the public sector being aware of the low awareness and interest in AYUSH systems amongst the people of Meghalaya, recruitment of AYUSH doctors continues. From analysis of available documents as well as interviews it was evident that the decisions for implementation of AYUSH largely stemmed from a top down approach of using national policy as a guide to designing the state's health system (Buse et al., 2012, p.128-47, Pressman and Wildavsky, 1984).

Tribal medicine's lack of organisation, lack of documentation, lack of codification, and the lack of a legal entity or regulatory institution were highlighted as deterrents to engagement by policy makers. Most personnel in the public sector and the department of health were unaware of the Act that was passed by the KHADC to protect and promote Khasi traditional medicine. This was a mechanism that could potentially provide both recognition and regulation of tribal medicine. The need for regulation was widely articulated but cautionary notes on over-regulation, the complexities involved and the potential pitfalls of over regulation were also made.

Influential members of the community and policy makers of the traditional governance institutions largely perceived AYUSH to be alien systems that had limited acceptance in the state. The neglect of tribal medicine was seen as disrespectful and as a form of domination of indigenous peoples. This appeared to be aggravated in the context of the public sector promoting other traditional systems of AYUSH which were perceived as alien in comparison. Institutionalisation and professionalization of the AYUSH systems contributed to these systems being perceived as scientific by the public health sector. This illustrates the value of professionalization of traditional medicine as suggested by Last (1996).

12. Discussion

The first three objectives of this project aimed to study the tribal medicine of the state of Meghalaya in India from three perspectives: the users (community), the tribal healers and the policy actors including doctors in the government sector. The study then attempted to situate tribal medicine within the government's policy strategy on medical pluralism. This section first discusses the findings of the first three objectives and then discusses the policy implications, which is the fourth and final objective.

12.1. The Community (Objective 1)

As no published study of the perceptions and use of tribal medicine in Meghalaya existed, the first objective was to obtain some basic background information on awareness and use of tribal medicine. The analysis of data from a household survey found an estimated reported use of tribal medicine across rural households in Meghalaya to be 79% with 46% reporting use in the previous 3 months. A majority of the people reported belief in the efficacy of tribal medicine; 30% said it was very effective and 57% believed it to be somewhat effective. In contrast a majority (69%) reported they had not heard about any of the AYUSH medical systems. Only 23.5% reported hearing about Ayurveda, while 28% had heard of homeopathy. Only 47 persons (10.5 %) reported having ever used at least one of the AYUSH systems. In Meghalaya, the use of tribal medicine is high and the pattern of pluralistic health seeking behaviour is similar to that described in other parts of India by Priya and Shweta (2010). But there is a significant difference, very few tribals (indigenous peoples) in Meghalaya state are familiar with AYUSH systems and the preferred choice of combination of health services are primarily biomedicine and tribal medicine. Despite this the state government continues to promote AYUSH across the state. This raises questions about the basis of the current policy on medical pluralism that is being implemented in Meghalaya.

12.2. The Tribal Healer (Objective 2)

The second objective was to document and understand how tribal traditional healers in Meghalaya perceive their role as health care providers in the community. This part

of the study addressed questions on how do they become healers? What do they do? And how do they interact with the formal sector? These questions were answered using a mix of qualitative methods such as in-depth interviews, focus group discussions and observations.

Most healers said they acquired their knowledge and skills from ancestors but acquisition of knowledge from community members and peers also took place to a limited extent. Khasi tribal medicine is learnt from the elder healer through observation and didactics similar to folk healer traditions reported in other societies (Rubel and Hass, 1996, p.113-130, Prince and Geissler, 2001). Khasi healers without hereditary antecedents often embarked on a healing career by early practice on family and friends before expanding their practice to non-relatives as reported in other ethnic groups (Rubel and Hass, 1996, Metzger and Williams, 1963). Regardless of from whom knowledge and skills were acquired, a more important concept among Khasi healers was the notion of *sap* or intrinsic talent. The concept has several facets like interests, aptitude and potential. These concepts reported by tribal healers have resonance with those that are described in the domain of career psychology. The career psychology literature refers to interest and aptitude as key constructs that form the basis of career guidance interventions (Arulmani, 2007, Arulmani, 2009, Gottfredson, 2003). More recently the notion of potential as a blend of interests and aptitudes has been proposed (Arulmani, 2014). Thus becoming an established healer is dependent on several interrelated elements coming together. These include acquiring knowledge and skills by learning from ancestors and others and a concept of *sap* or inherent potential that is recognised by both healers and the community.

In homes learning seemingly occurred in an experiential setting, initially by observing and listening, which then progressed to imitation and doing as reported elsewhere in indigenous societies (Rubel and Hass, 1996). Tribal healers also provided accounts of learning while practicing through experience, empiricism and experimentation. This resonated with elements of the learning cycle described in the highly influential experiential learning theory (Kolb, 1984, Kolb et al., 2000). Kolb (1984, p.41) defined learning as "the process whereby knowledge is created through the transformation of experience". Healers reported experimenting with medicinal plant preparations on farm animals, on family members and on themselves before

administering to others. Thus Khasi tribal medicine is not a static system restricted to what is learnt from ancestors, but a dynamic one where healers continually 'experiment' with therapies. Such dynamism in practices although not widely recognised in literature has been documented among folk healers in other parts of India (Payyappallimana and Hariramamurthi, 2012).

Similar to the Christian majority in the state, most tribal healers in this study were Christians. The influence of Christianisation was apparent in the negative attitude of tribal healers towards ritualistic healers (*nongkñia*). The latter use practices that would be described as 'shamanism' in the anthropology literature (Jenkins, 1996). The main distinction that Khasi tribal healers made was that their healing was primarily through medicinal plant based remedies rather than the rituals and chants of the *nongkñia.* However this distinction was less clear among those who practiced the indigenous religion. Christianity's influence on the culture of indigenous communities has been reported from other parts of the world (Smith, 2004, Aspin and Hutchings, 2007, Van Binsbergen, 1994). Khasi historians and sociologists note that Khasi society underwent radical social and cultural transformation after the advent of Christianity (Bareh, 1997, Nongbri, 2006). Khasi educationist Bamon (2004) argues that the teachings of the missionaries triggered feelings of inferiority among the Khasis as their customs were labelled sinful. Despite the influence of Christianity and modernisation this study found that tribal medicine is still practised and widely accepted even among Christians in the state.

The relevance of cultural understanding of health practises was especially pertinent, as noted in the narratives of certain ailments that were culturally understood within the tribe. The concept of culture-bound syndromes has been used in ethnopsychiatry to describe behaviour patterns that are to some extent determined by the socio-cultural context and could be interpreted as mental disorders (Hughes, 1996, Guarnaccia and Rogler, 1999). Medical anthropologist Kleinman (Kleinman, 1980, Pool and Geissler, 2005, p.59-62) offered the concept of an explanatory model to facilitate understanding of different medical systems. In Khasi society disorders such as *niañgsohpet* and *lait thied sohpet* are illnesses that are understood within the community. They are not mental disorders but physical ailments. The Khasi terms used were not only a name for the disorder, but tacitly may also convey cause,

treatment and prognosis. These disorders that are culturally understood contribute to the creation of expertise niches among tribal healers and a place for tribal medicine in a market that is dominated by biomedicine. Often these conditions did not have an easily translatable biomedical disease equivalent.

In Khasi society the health sector is a mixed market place for biomedicine and tribal medicine. As noted in other places a trial and error approach to seeking of treatment is common among patients here and they are influenced by costs, time and empathy rather than just the system of medicine (Leslie, 1980, Nichter, 1980). Tribal healers in Meghalaya are aware of this pattern of behaviour by their clients and adapt their practice to client demands. The services of tribal healers fill in the gaps and margins of biomedicine. In rural India the major gap in the medical market is lack of availability of biomedical services. The deficit is filled by the informal sector in many rural areas in India (Sen et al., 2007, Bloom et al., 2011). In Meghalaya tribal healers cater to 'emergencies' as a first provider until biomedical services can be reached. They fill in the gaps and work along the 'margins' of biomedicine as they provide palliative care and supportive services for instance physiotherapy, during convalescence. Such services are largely unavailable in the public sector.

Despite the general lack of official or formal interaction with the formal sector healers do refer patients for biomedical care.

12.3. The Policy Actors / Policy Makers (Objective 3)

The third objective was to assess the perceptions of policy actors and doctors to traditional medicine in general and the tribal medicine of Meghalaya in particular. This objective was primarily achieved through in-depth interviews.

The attitudes towards tribal medicine ranged from appreciation to aversion. Ignorance, uneducatability, unsanitary habits, quackery are common prejudices about traditional healers that anthropologists have documented decades ago elsewhere (Leslie, 1980). Such attitudes towards tribal healers were documented in this study as well, especially within the public sector. Biomedical doctors in the public sector were mostly sceptical, with a few being highly critical. The view that most tribal healers mixed allopathic drugs into their medicinal preparation is at best a hasty

generalisation. Many healers themselves agreed that a few who they referred to as "not genuine healers" resorted to such practices and they as a group were concerned about such practitioners.

A biomedical worldview and the official role of administrators in the health department influenced their positions. For instance those responsible for implementing programmes to reach targets on maternal and child health attributed the poor health indices to tribal healers. In public health the fallacies of drawing causal inferences based on association alone is well known. Health is dependent on many social determinants (World Health Organization, 2008) and health outcomes are influenced by multiple factors (Bhutta et al., 2013, Victora et al., 2008). For example it is well accepted that poor nutrition has a negative influence on maternal and child health outcomes (Black et al., 2008, Black et al., 2013). Meghalaya has extremely high prevalence of poor health indicators like anaemia in women (64%) which has an effect on poor health outcomes (IIPS, 2007). Despite this healers got singled out for blame by personnel in the health department for the negative maternal and child outcomes. However this does not mean that safety issues pertaining to tribal medicine should not be a cause for concern. Doctors concerns were often based on complications seen in patients who had used tribal medicine. These concerns underline the need for systematic assessment and evaluation. The need for research, documentation and regulation of tribal medicine was widely acknowledged in this study.

The presence of healers across the state even in remote areas was also widely accepted. But there were split views on the utility of their services with officials in the public sector tending to view them as a problem while policy makers of the traditional institutions and influential elites considered tribal medicine as providing accessible and affordable health care.

Professionalization of indigenous systems

Historians and social scientists have documented processes where particular traditions of indigenous medicine undergo a process of becoming accredited through professionalization (Attewell, 2005, Hardiman, 2009, Leslie, 1976, Lambert, 2012). Last (1996) argues that national medical cultures are the product of a nation's

dominant political philosophy and the way that people express and find solutions to their health needs. He observes that the spread of professionalization of medicine in many countries is modelled on British and American organisations (Last, 1996). Last suggests that medical professions function within a 'national medical culture, with certain professions claiming for themselves a universal validity'. Indian historian Panikkar (1995, p.174-75) notes that in post colonial India "the quest to revitalize indigenous medicine reflected a multipronged struggle for cultural hegemony, not only between the coloniser and the colonised, but also between different classes within the colonised society". He also observes that a large number of healers who were not literate and did not posses textual knowledge were marginalised in the process of traditions like Ayurveda gaining precedence.

In India a selective professionalization has happened with Ayurveda and Unani, possibly because they are codified systems that have written documents (Lambert, 2012, Hardiman, 2009, Payyappallimana and Hariramamurthi, 2012). The unequal power relations between different medical systems in India have been commented on (Khan, 2006, Prasad, 2007). Lambert (2012) in her study of bone doctors in Rajasthan argues that treatment modalities in India that would be categorised under the new terminology of Local Health Traditions (LHT) have become marginalised through exclusion by the state. Weinstein (1993) in his examination of the nature of expertise, argues that a distinction can be made between experts based on what they know (epistemic expertise) and what they do (performative expertise). Lambert (2012) argues that the performative expertise of bone doctors in Rajasthan has been progressively delegitimized in preference for the accredited qualifications of the professionalized AYUSH sector. Although institutionalisation of traditional medicine was intended to improve the quality of medical education, it is often perceived that this has failed to do so (Shankar, 2004). The quality of Ayurveda education in India is patchy and it is even believed to have deteriorated through institutionalisation (Patwardhan et al., 2010, Shankar, 2004, Patwardhan et al., 2011).

The scientific basis or the lack of it, from a biomedical perspective was a key argument used against tribal medicine by the public sector. It is worth pitching this argument against their acceptance of homeopathy, a system whose scientific bases has been questioned by the evidence based movement (Sehon and Stanley, 2003,

Bewley, 2011, Australian Govenment, 2013). Thus it would appear that it was not the value of science or evidence that was the basis of the public sector's acceptance of the AYUSH systems, rather the institutionalisation and professionalization of the AYUSH systems that has secured their favoured positions.

The public sector regards institutionally granted qualifications to be the criterion for recognition of expertise. Last (1996) observes that traditional medicine faces unequal competition from the more dominant systems of medicine. He suggests that professionalization of folk traditions will assist in gaining legitimacy. Last and Chavunduka (1988) in their work on traditional healers in Africa comment that self-professionalization would assist in precluding a more stringent professionalization by external others thus implying that professionalization of traditional healers is needed. There are ongoing efforts to bring about peer evaluation, accreditation and regulation of healers in Meghalaya (KHADC, 2011). The legislation of the Khasi Traditional Medicine Act has opened a door to the regulation and institutionalisation of tribal medicine. However, most personnel in the public sector and the department of health were unaware of the Act.

The tribal medicine of the Khasis is a yet un-codified system of medicine which continues to provide a substantial proportion of health care in the state. Thus far it has existed at the margins of the formal/public health system and outside state recognition. The regulation and evaluation of oral medical traditions is fraught with challenges, but lessons can be gained from the experiences of organisations such as the Foundation for Revitalisation of Local Health Traditions (FRLHT) who have developed and tested validation protocols for documenting and assessing local health traditions (Payyappallimana and Hariramamurthi, 2012, Sujatha, 2011).

Tribal Medicine distinct from AYUSH

There is a line of thinking in India that the folk traditions have similarities with the codified tradition of Ayurveda (Shankar and Unnikrishnan, 2004, Balasubramanian, 2006, Payyappallimana and Hariramamurthi, 2012). Supporters of LHT have demonstrated the interconnectedness between health practices that have been termed LHT/folk traditions to more codified knowledge such as Ayurveda, Siddha and Unnai (Sujatha and Abraham, 2012, Balasubramanian, 2006, Payyappallimana and

Hariramamurthi, 2012). The Foundation for Revitalisation of Local Health Traditions (FRLHT) have argued that LHT is epistemologically related to the codified systems like Ayurveda in many parts of India (Payyappallimana and Hariramamurthi, 2012, Shankar and Unnikrishnan, 2004). The existence of concepts, notions and words in folk practices that have resonance with the theoretical framework of codified systems, for instance *vata, pitta, kapha* concepts or the *tridosha* theory of Ayurveda have been demonstrated in other parts of India (Shankar and Unnikrishnan, 2004, Balasubramanian, 2006). Khasi tribal healers in this study did not use words or concepts that could in any way be linked to such Ayurvedic concepts. Prasad (2007) argues that the conclusion that response to illness by lay persons in rural India reflects an Ayurvedic approach to health is an over-generalisation. He suggests that the supposed ubiquitousness of Ayurveda in rural India is a 'myth' that is spread by surveys which classify all herbalists as practitioners of Ayurveda. In Meghalaya there are no obvious similarities seen between Ayurveda and Khasi tribal medicine. The few healers who had a chance to interact with Ayurveda institutions insisted that other than commonality of use of a few medicinal plants by the two systems there was little similarity. A similar argument was put forward by Khasis who have undergone formal training in Ayurvedic medicine. Thus the tribal medicine of Meghalaya appears to have neither historical nor epistemological links to Ayurveda.

Although there are no existing ancient records of tribal medicine in Meghalaya, the possibility of the development of indigenous knowledge in relative isolation can be deduced from the ancient Khasis' knowledge and skills in iron smelting. In a recent study based on radiocarbon dating of charcoal from iron slag from ancient iron smelting sites in Meghalaya provided evidence of iron smelting in the Khasi Hills two thousand years ago. The authors argue that the relative isolation of the Khasi people in the past most likely contributed to the independent development of their manufacturing technology (Prokop and Suliga, 2013). Thus based on the rich biodiversity of the region and the relative isolation of this tribe in ancient times, it is possible that the indigenous tribal medical traditions of Meghalaya possibly evolved relatively independently.

12.4. Implications for Health Policy and Health System Strengthening in Meghalaya (Objective 4)

In an effort to mitigate the poor health status of much of rural India the Government of India (GoI) initiated the National Rural Health Mission in 2005. The stated goal and strategy of NRHM of 'mainstreaming AYUSH' is being implemented in Meghalaya rather unquestioningly. Influential members of the community as well as policy makers of the traditional governance institutions largely perceived AYUSH to be alien systems that had limited acceptance in the state. This study demonstrates that 'mainstreaming of AYUSH' has been implemented in Meghalaya without considering the community's preferences or evaluating what is appropriate for the state. In the process medical systems that are relatively alien to the people are being introduced and relentlessly promoted at high cost to the health system. The relationship between patient and health care provider is of importance in the provision of effective health. This relationship is central in preventing health problems, in promoting healthy behaviour and also contributes to effective therapeutic outcomes (Mechanic, 1998, Mechanic, 1999, Perry et al., 1999). Thus the effective delivery of care requires not just the supply of care but also the acceptance and use of services by the patients (Blaauw et al., 2003, Mechanic, 1998, Mechanic, 1999). Gilson's (2003) argument that effective delivery of health services requires not just the supply of care but also the acceptance and use of services by the patient, appears to be missed within the department of health in Meghalaya.

Proponents of Ayurveda emphasise its holistic preventive and health promotive potential that moves away from an emphasis of drugs alone in treatments (Jayasundar, 2012b, Patwardhan, 2012, Valiathan, 2009). Ayurvedic treatments involve identifying disease-causing factors (*doshas*) and the restoration of the equilibrium of bodily functions and tissues using a variety of treatment modalities from medicines, medical procedures (*panchakarma*), special diets and activities (Jayasundar, 2010, Jayasundar, 2012a, Jayasundar, 2012b, Valiathan, 2009). An essential aspect of prevention and treatment is the knowledge of *ritucarya* or seasonal regimens and adoption of appropriate dietary regimes (Jayasundar, 2012a, Balasubramaniam, 2004). In regions of India where Ayurveda is part of the culture awareness of concepts such as *ritucarya* already exists within communities

(Balasubramaniam, 2004). This potentially enables adoption of dietary regimes and non-drug based therapeutics of Ayurveda more amenable to the people. The absence of such cultural understanding of relevant concepts would make the practice of Ayurveda sub-optimal in Meghalaya.

Policy analysts have highlighted the importance of contextual factors in policy (Leichter, 1979, Walt and Gilson, 1994). But Meghalaya's policy on medical pluralism is being implemented with little consideration of contextual factors related to the history and culture of the region. It is widely acknowledged in policy literature that the way in which policy is implemented can differ considerably from the ideal that was intended, often referred to as the implementation gap (Buse et al., 2012, p.128-47). This implementation of national policy in Meghalaya state, without any evidence of relevance can be seen as an example of a 'top down' approach to policy implementation (Pressman and Wildavsky, 1984). There are numerous case studies in the literature demonstrating the poor implementation or undesirable outcomes of well meaning policy that has been 'imposed' by international donors on developing countries (Buse et al., 2012p, 128-147). In Meghalaya it is not international donors but the national government that is supporting the implementation of a well meaning but questionable policy. The state machinery has become a willing partner in implementing the policy without making attempts to source evidence to support the decisions. The phrase 'forced pluralism' had been used to describe the situation of patients with limited choices who are 'forced' to seek whatever is available (Sheehan, 2009, Sen et al., 2007). In Meghalaya it appears that the state is inadvertently causing 'forced pluralism', albeit in a slightly different manner.

In the preamble to the report of the study on AYUSH and LHT by Ritu Priya and Shweta (2010), the authors acknowledge that within the Ministry of Health, GoI, there is lack of clarity and divergent views on the primary objectives of the mainstreaming AYUSH strategy. It is viewed either as a way of securing doctors for rural areas where biomedical/allopathic doctors are not available or unwilling to be posted, or as a way of increasing access to and strengthening the services of the AYUSH systems. The observation that state governments are using AYUSH as a fall back to meet the acute shortage of doctors appears to be the case in Meghalaya.

In Meghalaya's public sector it is apparent that AYUSH doctors are seen as substitutes for biomedical doctors. A pertinent question then arises about the competence of AYUSH doctors. In this light a recent study is noteworthy, a comparative evaluation of the competence of different health care providers in rural settings found AYUSH doctors to be less competent than MBBS doctors and also less competent than those practitioners who had a shorter (3 year) training in rural medicine (Rao et al., 2013). Thus AYUSH doctors were relatively under par in providing primary health services (Rao et al., 2013). In this regard another question arises: what does the strategy of employing AYUSH doctors as replacement for biomedical doctors actually achieve if they are not sufficiently competent? The approach of the neighbouring state of Assam to train and engage a specific cadre (rural medical practitioners) after a 3 year training programme is noteworthy considering that this cadre was found to be more effective than AYUSH practitioners in the comparative study (Rao et al., 2013).

Human resources for health

For much of the last four decades Meghalaya has been grappling unsuccessfully with meeting its human resources for health deficit (GoM, 2009). According to a recent review in the Lancet on human resources for health in India, Meghalaya at 2.5 has the lowest number of health workers per 10,000 population (Rao et al., 2011a). In the listing of problems and challenges faced by health care services in the state of Meghalaya, "Persistent gaps in manpower and infrastructure especially at the secondary and tertiary health care levels and poor referral services" is top on the list (GoM, 2009). Meghalaya's vast network of tribal healers in the informal sector could potentially be used to strengthen the public health care system. The Khasi Hills Autonomous District Council Act for the protection and promotion of Khasi traditional medicine (KHADC, 2011) could pave the way for action. Further lessons can be drawn from the state of Kerala from its initiatives in promotion of and training in tribal medicine (Nair, 2004, Nair, 2008).

In this study many policy makers and doctors in the public sector did not see healers as a human resource that could be beneficial to the health system. On the rare occasion when they are taken note of in the government's health department it appears to be from the perspective of the harm that tribal medicine and its

practitioners are potentially causing. But biomedical doctors outside the public sector recognise this valuable role of healers. Tribal healers' current contribution to physical and mental health and their potential to act as links to referral centres was highlighted by those outside the public sector. The example of the neighbouring state of Nagaland may be useful for Meghalaya's policy makers (Pandey, 2012). Nagaland has initiated training and incorporating bonesetters and traditional birth attendants into their health workforce through the NRHM.

WHO's definition of health recognises and places considerable importance on the psychological well being of people. Increasingly traditional healers' contribution to mental health in Africa and other places is being documented and appreciated (Patel, 2011). Although not widely acknowledged this study documented that Meghalaya's tribal healers also contribute towards mental health care in the state and are a potential human resource who could be co-opted for strengthening mental health services.

Although the health ministry of India has recognized LHTs in the last decade, tribal medicine remains poorly supported compared to the AYUSH systems. The state government of Meghalaya has not recognized tribal medicine and no budgetary allocations have been made. Addressing these issues can strengthen the health system.

Paucity of health policy and health systems research

Health Policy and Systems Research (HSPR) has been described as a field that is driven by questions that arise from the ground. The questions can be wide ranging either at the levels of enquiry, macro, meso, micro or in the purpose of the question; normative, evaluative, exploratory or explanatory (Sheikh et al., 2011). The importance of framing the right question so as to convert information needs into answerable questions has been demonstrated in evidence based medicine (Sackett and Rosenberg, 1995, Sackett et al., 1996, Thomas and Paul, 2009). The seemingly simple question: is mainstreaming AYUSH the right policy for Meghalaya was not asked before this policy was implemented. If it was, perhaps the approach towards health system strengthening would have been quite different for Meghalaya. This is possibly also why the national level evaluative study on the mainstreaming AYUSH

strategy, despite observing the low utilisation of AYUSH in the northeast region, still recommended strengthening of AYUSH services in the region (Priya and Shweta, 2010).

Health departments are organised on bureaucratic and hierarchical lines represented in classical organisational management theory. Mintzberg and others (Mintzberg and McHugh, 1985, Mintzberg and Waters, 1985) say that the bureaucracy persists as it is suitable for organisations that perform standardised activities on a large scale in stable environments. Indeed health departments are organisations that have to perform several standardised activities on a state-wide scale. In this study it was implied that the bureaucratic state machinery which is used to following prescribed guidelines was possibly unable to engage with healers as it would require thinking innovatively. It is widely accepted that health systems in developing countries need to be reformed (Walt and Gilson, 1994, Blaauw et al., 2003). The central role that policy analysis and research could contribute to health systems strengthening has been well articulated (Walt and Gilson, 1994, WHO, 2007a). Walt and Gilson (1994) talked of a period when national governments 'played a strong development role' and health policies were relatively uncontroversial; policies received passive support and were mainly concerned with issues such as how to improve access. Although these lines were used to describe a bygone past, they are an apt description of the present in Meghalaya. Just as dependence on donor funding has undermined national health policy making in several developing countries (Walt and Gilson, 1994), within India's federal systems a state's dependence on central funding also affect its choices.

The importance of the role of research in health systems strengthening has been emphasised in recent years (Remme et al., 2010, WHO, 2013b). It is possible that the unintended consequences of the well intentioned 'mainstreaming AYUSH' policy will become more apparent in years to come. However if evaluation studies are not designed well enough, it will be near impossible to discern the actual benefits of AYUSH in Meghalaya. According to WHO's document on systems thinking, even simple interventions targeting one area of a health system can have counter intuitive effects elsewhere in the system. Many health systems in low and middle income countries lack the capacity to measure or understand their own weaknesses and

constraints. Measuring the effectiveness of multi-faceted and complex interventions is not easy and approaches to evaluating are often weak or entirely absent in these countries (WHO, 2009). Increased deployment of AYUSH cadre in Meghalaya took place along with the introduction of other health system strengthening measures such as providing a network of emergency ambulance services for rural areas. These services are more likely to have directly benefited the community. In the absence of research, improvements in health indices will most likely be attributed to the health systems strengthening measures (including mainstreaming AYUSH) that were employed. But to extend this conclusion to the mainstreaming AYUSH strategy without sufficient disaggregated evidence would be a mistake.

The need to contextualise policy to local needs has been repeatedly made (Bosch-Capblanch et al., 2012, Remme et al., 2010). However, generalisability of policy has been assumed in this instance without taking into consideration local contextual factors. This study presents an example where a policy strategy was adopted and implemented for 3 million people without any supporting research on the suitability of the approach. It is a situation where the generalisability of policy has been assumed without an evidence base or supporting local research.

This study has documented benefits of tribal medicine and recommends that it be supported. But it is not suggesting that tribal medicine is preferable to other systems. Healers themselves acknowledged the limitations in scope of tribal medicine and potentially some of their practices are undesirable. Doctors' experiences of complications seen in patients with prior use of tribal medicine re-emphasises the urgent need for research and documentation. In a place with high infant mortality even cultural practices that involve the long term administration of medicinal preparations in children (eg. *niañgsohpet*) is a cause for concern and needs further study from a public health perspective.

Strengths and limitations: This is the first study that estimates the use of tribal medicine and other systems of medicine across the state. The sampling frame of the quantitative part of the study, the household survey, allowed for selection of villages that are fairly representative of the state's rural area hence findings are generalisable

to rural Meghalaya. As the two blocks with urban areas were not included in the sampling frame there are some limitations to generalising the findings to all of Meghalaya. However most of Meghalaya is rural and it is only the capital Shillong that is different in terms of infrastructure and health facilities. And both blocks that were excluded from the sampling have large rural areas. Hence we believe this survey is generalisable to the indigenous people of Meghalaya as a whole. Meghalaya has consistently fallen between the cracks in national surveys on use of traditional medicine (Singh et al., 2005, Priya and Shweta, 2010). Thus this is the first study to provide estimates for the state.

Empirically this study has provided a comprehensive view of tribal medicine in the tribal state of Meghalaya. Using a mixed methods approach provided a more complete picture by giving three perspectives, that of the community, the healers and the policy actors. This is also probably the first study on health systems from the state, a search of several databases (Medline, Embase, Web of Science, Jstor and Cochrane) elicited no empirical studies related to health systems from Meghalaya. The qualitative study of healers provided in-depth understanding on an under researched area, the tribal medicine of Meghalaya. The multiple elements that contributed to the making of a tribal healer and the market segments that they catered to could be inferred from the qualitative data. It also brought out the tensions that exist between the public sector and the informal sector. It provided an understanding of the context in which policy on medical pluralism was being implemented in Meghalaya state. This study of Meghalaya potentially offers a microcosm of the current scenario of tribal medicine in northeast India. Methodological weaknesses of the qualitative aspect included the inability to perform theoretical sampling to achieve theoretical saturation, a key feature of the grounded theory approach (Charmaz, 2006, Charmaz, 2012).

13. Conclusions and Recommendations (Objective 4)

The tribal medicine of Meghalaya is an oral tradition distinct from the codified traditional streams of medicine in India such as Ayurveda, Yoga, Unani and Siddha (AYUSH). In Meghalaya the traditional medicine of the indigenous peoples is well accepted and widely used. In comparison there is little knowledge of or acceptance of AYUSH systems. Unlike most states in India, AYUSH has little relevance in Meghalaya. However, the state health department has set up a large number of co-located facilities for AYUSH systems along with Western biomedicine and continues to provide increasing support for AYUSH. Considering the low awareness and use of AYUSH, the importance given to AYUSH systems is markedly disproportionate.

The WHO recommends "culturally appropriate health care" for indigenous peoples (WHO, 2007b). Given the high prevalence of use of tribal medicine in Meghalaya, it stands to reason that indigenous peoples of Meghalaya will benefit from continuing to use their system of medicine in addition to having access to modern biomedical health services. To optimally realize the benefits of medical pluralism, the cultural milieu must be respected. So, Meghalaya's indigenous tribal medicine needs to be recognised and engaged with by the public sector. It is essential that state policy formulation take cognisance of the medical pluralism that already exists in the community, rather than imposing a 'forced pluralism' on them. As tribal medicine is the mainstay of rural health care it merits recognition, documentation and resource support.

A respectful dialogue with traditional healers will enable a better understanding of their role and potential contribution to the public health sector. Engaging with tribal healers may lead to improved referral for timely interventions for illnesses for which Western biomedicine has better treatment. The health department should create platforms that will develop interactions between tribal healers and doctors in the public sector. Skill development and capacity building of tribal healers could enhance human resources for health in the state. They could be trained to deliver last mile services of the public health schemes and services of the government. An example of this is the recent initiative of employing tribal healers as village level

health workers and skilled birth attendants in the neighbouring state of Nagaland. In Kerala state in south India, the government has supported training in tribal medicine.

Many tribal healers are present in places which are considered inaccessible by government services. Rural communities should continue to have access to these trusted and accessible providers of health care. Co-location of facilities may not be the most appropriate solution for Meghalaya.

Further work on culturally-related health behaviours and health determinants needs to be done through qualitative studies. There needs to be more research and documentation of concepts and practices in tribal medicine. Its contribution to indigenous knowledge, biodiversity preservation and livelihoods need to be considered urgently. Most of all, it is important to recognise that the promotion and use of their traditional medicine is a right of the indigenous peoples.

Many of these issues have been acknowledged by the KHADC and are included in the Act that was passed in 2011(KHADC, 2011). This piece of legislation has provided the legal framework for promoting tribal medicine within the health system. The KHADC however, is subordinate to the state government and the health department. The state government is the most important policy actor in the state. Hence support for tribal medicine should be demonstrated by appropriate policy formulation and budget allocation by the state government.

The long neglect of tribal medicine and exclusive channelling of health budgets to other systems have contributed to the loss of indigenous knowledge and the diminishing of its importance. This neglect has been further compounded by the introduction of AYUSH and the importance given to these imported systems. This study is not suggesting that tribal medicine is preferable to other systems, but that it could be used beneficially alongside them. Healers themselves acknowledged the limitations in scope of tribal medicine and potentially some of their practices are undesirable. Biomedical doctors' experiences of complications seen in patients with prior use of tribal medicine re-emphasises the urgent need for research and documentation.

This study demonstrates the importance of contextualising policy within an evidence-based framework, underlining the importance of research in health system

development. It questions the assumption that policy can be generalised in a diverse and heterogeneous country such as India. It also demonstrates the need for taking into consideration the cultural context as a necessary part of policy formulation.

The current policy in Meghalaya of mainstreaming AYUSH medicine is not supported by locally relevant evidence. It has led to a disproportionate increase in AYUSH doctors in the public sector. It represents a top down approach to policy formulation that ignores local realities. The study also illustrates the complexities and potential benefits of mainstreaming tribal medicine in Meghalaya. The example of Meghalaya also holds promise for drawing broader lessons for the formulation of a pluralistic and inclusive health policy for the state and the northeast region of India, which is largely populated by indigenous peoples.

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15. Appendices

15.1. Appendix 1: Questionnaire for Household Survey (English version)

Questionnaire for Households (Mothers age 15-49 years)

Village: District: Block: House No:

Name: Age:

Marital status: Never/ Ever married

A. Socio demographics

I. Religion: _____ _____

2. Occupation: _____ _____
(what kind of work have you done in the last 1 year for cash or kind or both)

3. Current status: Living with 'husband'/ separated/deserted / divorced/ widow/other

Woman Partner/ husband

4.Highest Education: _____ _____

5.Family: Nuclear/ joint _____

6. Housing status (please check and circle appropriate)
a. Roof: terrace/ tile/ thatch (plant material), corrugated iron/ other metal
b. Floor: concrete/ tiled/ mud/ other please specify
c. Walls: concrete plaster/ open bricks/ mud/ tin/ other please specify
d. Toilet: open defecation/ toilet within household/ within compound

7. Number of People in the Household:
Adults (18 years and above): Males: Females:

Adolescents (11-17 yrs):
Children <1 year: 2 -5 years: 6-10 years:

8. What is the main source of income for your family?

9. If agriculture, what are the main crops that you grow?

10. Where do you usually get seeds from?

11. Do you own a: TV/ Radio / Fan / mobile phone/ bicycle/ motor vehicle

B. Traditional Medicine

1. What is the system of medicine you/your family usually prefer to take for **minor** ailments? (system of medicine not facility): eg. Home remedies/ Khasi,GaroTraditional medicine/ allopathic medicine/ from a chemist shop / others (please specify)

a. If the system of medicine you chose does not work, what would you do?

2. What is the system of medicine you/your family usually prefer to take for **major** ailments? Home remedies/ Khasi, Garo Traditional medicine/ allopathic medicine/ medicine from a chemist shop/ others (please specify)

a. If the system of medicine you chose does not work, what would you do?

3. How often do members in your home seek local TM (*dawai Khasi)* for health problems?
Very often *sometimes* *rarely* *never*

4. What are some health problems that you use traditional medicine for?

5. Total number of traditional medicine (TM) practitioners in the village: ____

6. Can you give me the names of some popular traditional healers around here and what they specialise in treating (or usually treat)
Names of popular TM practitioners: Common ailments that they treat

a)
b)
c)
d)

7. Overall how effective do you think TM is in helping people of your village for their health problems?
Very *somewhat* *not useful*

8. Are there some diseases for which TM it is good and some not so good? Please explain, can you give some examples.
Good *Not good*

a)
b)
c)

9. Have you or your family used traditional medicine for any health problem in the past 3 months? Yes/No.

If yes, what did it cost you? And what was the outcome:

Health problem	*Cost*	*Outcome*
		Cured/ some improvement/ no improve

C. Government Allopathic Health Care Services

1. How far away in kilometres is the nearest
Sub centre_____ PHC_____ CHC_____

2. Have you or a member of your family ever been to a: SC, PHC, CHC
3. If yes, how did you go to the nearest:

	Mode of transport	*time it takes to reach*	*Cost*
Sub Centre			
PHC			
CHC			

4. What kind of health problems do people go to PHC/ CHC for?

5. Is there sufficient staff available in the nearest:
   Sub-Centre? *YES/NO/ DK* PHC: *YES/NO/ DK* CHC: *YES/NO/ DK*

6. Does the health centres provide prompt services to the patients?
   SC: *YES/NO/ DK* PHC: *YES/NO/ DK* CHC: *YES/NO/ DK*

7. Are there doctors available when people need to see them in the nearest
   PHC: *YES/NO/ DK* CHC: *YES/NO/ DK*

8. Overall are the villagers here satisfied by the services provided by the:
SC_____ PHC_____ CHC:_____

D. AYUSH

1. Have you heard of any of the following before? Yes / No

		If yes, what do you understand by the term
a.	Ayurveda	
b.	Yoga	
c.	Unani	
d.	Homeopathy	
e.	Siddha	

2. Have you tried any of these treatments before (AYUSH)? _____

4. Does the nearest SC or PHC provide any of these AYUSH services? *YES/ NO/ DK*

E. Hygiene and Sanitation

1. Where do you get drinking water for your household?

2. Where is the drinking water stored?

3. Do you do anything to the water to make it suitable for drinking? Yes/No
   (if yes, boiling, filtering, others please specify_____)

5. Do you have piped water supply?

6. What are the toilet facilities in your home? *Open air/ community toilets/ toilet in the house/ other (please specify)*

7. Where does the waste water from your home go?

8. What (treatment) do you do if your child gets diarrhoea/loose motions?

9. Do you think mosquitoes cause diseases?

10. Do you use any mosquito prevention measures? If yes what?

11. Do you use bed nets? Y/ N . if yes, where did you get it from?

12. Has anyone in the family suffered from high fever of more than 1 week duration in the past 3 months: Yes / No

13. What treatment/s did he/she receive for the fever

14. How long did it take for him/her to recover

F. Government Schemes in health

1. Have you heard about ANM and Male Health Worker (MHW/MPHW)?

2. Has any ANM and Male Health Worker (MHW/MPHW) visited your household in the last one month?

3. Are there ASHA workers in this village? If yes, name/s_____

4. How often has the ASHA worker visited your home in the last year?_____

5. What has the ASHA worker discussed *(health, sanitation, family planning, malaria prevention, any other please specify)*

6. Where do women from this village usually go for deliveries?

7. For deliveries at home, who is called to assist usually?

8. Are there any traditional birth attendants here? Names:

9. Are you aware that women get cash benefits (JSY scheme) for delivering in a hospital?

10. Are you aware of EMRI 108? Yes/ No b. Have you ever used EMRI? Yes/ No

G. Health Expenditure

1. What would be the approximate amount you would spend on health in an average month (in cash or kind) On any diseases For fevers

2. In all how much money was spent on health care during the **last 3 months** ?

Please include expenditure incurred for all members of households (including expenditure on medicines, tests, doctor fee, transport etc.)

Doctors fees_____
Medicines _____
Special food_____
Transport _____
Lab tests _____
Others _____
Total _____

15.2. Appendix 2: Interview Guide for Traditional Healers (*nongai dawai*)

- Introductions
- Explain purpose
- Information sheet
- Any further clarifications from interviewer
- Consent process

Career history:

1. Please tell me about when and how you become a traditional healer?
2. How long have you been a traditional healer? Who did you learn your craft/skills from?

Ailments cared for:

3. What are the kinds of problems that people come to you with usually?
4. Can you list for me all the conditions that you are confident of treating? Do you specialise in any particular condition?

Approach to healing:

5. What does your treatment usually involve?
6. Help me understand your approach to treating a patient? For example when a person approaches you what is going on in your mind? After that what steps do you use...
7. How often do you use medicinal plants? Where do you get the medicinal plants from?

Experiences

8. Help me understand what you do by describing what you did with your last patient?
9. Please tell me about one/two of your best experiences (with patient)
10. Please tell me about one of your most difficult cases...

Referral patterns

11. Do you come across patients that you cannot treat or are not confident of treating? What happens in such situations?
12. Do you ever refer patients to the PHC or to allopathic doctors? What situations do you refer?
13. Do MBBS doctors ever refer patients to you? If yes, what are the usual conditions that get referred to you?
14. Do other traditional healers ever refer patients to you? Explore reasons/ interest to discuss?

Strengths and weakness

15. Why do you think people use traditional medicine?
16. What are the strengths of TM in Meghalaya? Are there any weaknesses?

Recognition and support

17. Do you think TM practitioners should be recognised by the government?
18. What kind of healers do you think should be recognised? Can you think of anyone who should not? Why not?
19. What kind of support would be beneficial to healers? How/ why?
20. Should some of the practitioners be supported to provide health care in the formal sector?

Livelihood, Demographics etc

21. Is this your main profession? Do you have other means of earning your livelihood?
22. Document average cost to patient: What do patients usually give in return for treatment? Demographics: education, religion, etc of healer
23. Anything else that you would like to tell me about TM? Is there anyone else that you think I should talk to?

15.3. Appendix 3: Interview Guide for Doctors

- Introductions
- Explain purpose
- Information sheet
- Any further clarifications from interviewer
- Consent process (verbal/written)

1. Are you aware of the traditional medicine and healers (*nongai dawai*) in Meghalaya?
2. Please tell me about your experiences of indigenous traditional medicine (Khasi/Garo) of Meghalaya?
3. Do patients get referred to you from traditional healers?
4. How often does this happen and what are the conditions/ disorders for which referral happens?
5. Do you ever refer or advise your patients to try out traditional medicine?
6. Are you aware of any of your family members using TM?
7. What in your opinion are the strengths of TM in Meghalaya?
8. What in your opinion are its weaknesses?
9. Do you think TM healers should be supported by the government?
10. Should some of the practitioners be supported to provide health care in the formal system? Eg. at the Village level? in the Sub-Centre?
11. In general what criteria would you use to decide if a TM practitioner should become part of the system?
12. Do you have any opinions on Ayurveda and Homeopathy?
13. AYUSH doctors are being introduced into Meghalaya, what are your comments on this? How popular are these systems here?
14. Do you recommend AYUSH to any patients?
15. Anything else that you would like to tell me about TM and Meghalaya?
16. Is there anyone else that you think I should talk to?
17. Demographics: title, professional position, education, religion etc

If AYUSH practitioner **Avoid 12-14, i**nstead explore the following

Are you able to practices you own system well here?

Any challenges to practising ayurveda/homeopathy?

Do you prescribe some allopathic medicines eg pain killers?

15.4. Appendix 4: Interview Guide for Policy Actors

- Introductions
- Explain purpose
- Information sheet
- Any further clarifications from interviewer
- Consent process (verbal/written)

1. Are you aware of the traditional medicine and healers (*nongai dawai kynbat*) in Meghalaya?
2. Could you please tell me about your experience with Meghalaya's traditional medicine- Khasi (or Garo) TM?
    a. Are you aware of any of your family members using Khasi (or Garo) TM?
3. In your opinion is traditional medicine relevant to the Khasis (Garo) people today?
4. What in your opinion are the strengths of TM in Meghalaya?
5. What in your opinion are its weaknesses?
6. Is traditional medicine currently supported by the government?
    a. Has NRHM or the state health dept. given any funds or allocated any towards Khasi (or Garo) TM in Meghalaya?
7. Do you think TM healers need to be supported by the government? How?
    a. Eg. in the village, to grow medicinal plants? in the Sub-Centre?
8. What criteria would you use to decide if a practitioner should become part of the system?
9. Do you think there should be some form of regulation of healers? Any opinions on how this should be done?
10. Do you have any opinions on Ayurveda and Homeopathy? What do you think about AYUSH being introduced in Meghalaya? How popular are these systems here?
11. For key informants / policy elites aware of policy level events or KHADC bill:
12. Could you give me some background to how Khasi traditional medicine came to be discussed at policy level?
13. Who were the main people involved? Policy level, civil society level, media role
14. What factors helped?
15. What were the challenges if any?
16. Dynamic s between the State Government and KHADC
17. Health policy status
18. Anything else that you would like to tell me about TM and Meghalaya?
19. Is there anyone else that you think I should talk to about this research?

Official Title/position:

Note: for KHADC officials - explore and document the process/history of the policy document (how, why, who were the main people, etc) as above.

15.5. Appendix 5: Information Sheet

London School of Hygiene & Tropical Medicine
Keppel Street, London, WC1E 7HT, UK

Title: Indigenous Traditional Healers in the Healthcare System of Meghalaya

Name of Principal Investigator**:** Sandra Albert

Contact Details: Sandra.albert@lshtm.ac.uk Tel: 9436716938, 09448515244

Objectives and method:
Purposes: this study aims to document and understand how indigenous traditional healers of Meghalaya understand their role as health care providers in the community and their views on participation in the formal primary health care system of the State. It will also seek views of allopathic practitioners and others involved either directly or indirectly in policy decisions.

The principal investigator will be assisted by a team of research assistants. We will be conducting interviews, both individually and in groups.

Participation and confidentiality
Participation is entirely voluntary, and should you agree to participate you may withdraw at any time. I would like to record the interview and have it transcribed to aid in analysis, but if you prefer not to be recorded I will take notes during the interview instead.

We will tell you if you are taking part in an individual or group interview before you agree to take part. There will be one researcher leading the discussion and one researcher taking notes. Please note that the group discussions will be recorded so we can make a careful analysis of the discussions. These recordings will be transcribed and kept securely. The transcripts (written record of what you say) will be anonymised and seen only by the research team.

As a participant in the research you can expect that all the information you provide will be treated in confidence. This means that your name will not be used when we write our reports about the research. It also means that no one outside the research team will know how you as an individual answered the questions. No named quotes or other results arising from your participation in this study will be included in any reports.

For the group interviews, however, we cannot guarantee absolute confidentiality as other participants may tell others outside the group what was said. Nevertheless, we will discuss the importance of respecting the confidentiality of the group to all participants before we start the discussion.

Ethics Approval The Ethics Committee at the London School of Hygiene and Tropical Medicine and the Public Health Foundation of India have approved this research

15.6. Appendix 6: Consent Form

London School of Hygiene & Tropical Medicine
Keppel Street, London, WC1E 7HT, UK

Title: Indigenous Traditional Healers in the Healthcare System of Meghalaya

Name of Principal Investigator**:** Sandra Albert

To the Participant:
This study aims to document and understand indigenous traditional medicine and healers of Meghalaya. The purpose of this form is to allow the use of our discussion and interview/s for research. Please fill in the form according to your wishes.

☐ I have read the information sheet concerning this study and I understand what will be required of me if I take part in it.

☐ My questions concerning this study have been answered by the research team member. Name of member: _____

☐ I understand that at any time I may withdraw from this study without giving a reason

☐ I agree to take part in this study

Use of Audiotape: Please *tick one* as appropriate:

☐ I agree to be tape-recorded during the interview

☐ I do not agree to be tape-recorded during the interview

Photography
☐ I understand that photographs taken may be used for research and education. They may also be used in reports and publications that arise from this research.

Participant's name (please print): _____ Date:_____

Participant's signature: _____

Researcher's name (please print): _____ Date:_____

Researcher's signature: _____

☐ Participant has given verbal consent. (Prefers not to sign a document) **Witness** _____

15.7. Appendix 7: Healer Demographics and other Variables

No	Study ID code	Distr ict	i/ FGD	Se x	Age year s	Tribe/ sub tribe	Relig ion	Formal Educatio n	Experie nce in years	Has healer ancesto rs	Person/s learnt from
1	KH001	JH	i	M	49	Jaintia	Ind	class XII	15	yes	mother,uncles
2	KH002	WKH	i	M	55	Khasi	Chr	Bachelor s Degree	18	no	Self taught
3	KH003	JH	i	F	65	Jaintia	Ind	nil	25	yes	mother, self taught
4	KH 004	EKH	i+FGD	M	67	Khasi	Chr	nil	25	yes	Uncles, self taught
5	KH005	EKH	i	M	56	Khasi	Chr	class XII	17	no	Self taught
6	KH006	EKH	i	F	46	Khasi	Chr	class VI	7	yes	mother, self taught
7	KH007	EKH	i	M	59	Khasi	Chr	NA	12	yes	Uncles, self taught
8	KH008	RB	i+FGD	M	53	Bhoi	Chr	class V	20	no	friend
9	KH009	RB	i	M	34	Bhoi	Chr	nil	5	no	Self taught
10	KH010	EKH	i	M	58	Khasi	Chr	class IX	20	no	Self taught
11	KH011	WKH	i+FGD	M	67	Khasi	Chr	nil	25	no	Self taught
12	KH012	WKH	i+FGD	M	70	Khasi	Chr	class III	15	yes	Father, uncles
13	KH013	WKH	i+FGD	M	48	Khasi	Chr	class IV	7	yes	father
14	KH014	WKH	i+FGD	M	65	Khasi	Ind	nil	20	yes	mother, father, self taught
15	KH015	WKH	i+FGD	M	27	Khasi	Chr	class VII	9	yes	mother
16	KH016	WKH	i+FGD	M	51	Khasi	Chr	Bachelor s Degree	15	yes	Self taught
17	KH017	EKH	i+FGD	F	49	Khasi	Chr	class IX	10	yes	mother, self taught
18	KH018	EKH	i+FGD	F	50	Khasi	Chr	class II	13	yes	mother, aunts, self taught
19	KH019	EKH	i+FGD	F	44	Khasi	Chr	XII, Diploma	10	yes	grandmother
20	KH024	JH	i+FGD	M	49	Pnar	Chr	class XII	6	no	Self taught
21	KH028	RB	i+FGD	M	49	Bhoi	Chr	class I	7	yes	father, friends
22	KH034	EKH	i	F	60	Khasi	Chr	nil	25	yes	mother
23	KH035	EKH	i	M	57	Khasi	Chr	class XII	10	no	Self taught
24	KH 036	EKH	i	F	47	Khasi	Chr	class II	10	yes	father
25	KH020	EKH	FGD	F	49	Khasi	Chr	class XII	20	no	Other healer
26	KH021	EKH	FGD	M	52	khasi	Chr	NA	15	no	self taught
27	KH022	JH	FGD	M	72	Pnar	Chr	nil	30	yes	ancestors
28	KH023	JH	FGD	M	51	Pnar	Ind	class V	20	yes	ancestors
29	KH025	JH	FGD	M	60	Pnar	Chr	nil	20	yes	ancestors
30	KH026	JH	FGD	M	58	Pnar	Ind	NA	15	yes	ancestors
31	KH027	JH	FGD	F	50	Pnar	Ind	NA	10	yes	ancestors
32	KH029	RB	FGD	F	48	Bhoi	Chr	class VI	15	yes	father
33	KH030	RB	FGD	F	50	Bhoi	Chr	class V	16	yes	mother
34	KH031	RB	FGD	F	49	Bhoi	NA	class II	12	yes	mother
35	KH032	RB	FGD	F	29	Bhoi	Chr	class II	10	yes	mother
36	KH033	RB	FGD	F	27	Bhoi	Chr	class II	NA	yes	mother

FGD= Focus Group Discussion, i= interview, M= Male, F= Female, Chr= Christian, Ind= Indigenous religion, EKH = East Khasi Hills, WKH = West Khasi Hills, RB= Ribhoi, ID= Study Identifier Code.

Study ID code	Location of practice	Has own clinic	practice setting, urban/rural/both	Full Time /Part Time	approx duration practice hours/day	other livelihood source/ career	Charges to patients	Source of Medicinal plants	Has med plants garden
KH001	home & clinic	Yes	semi-urban	FT	8	no	100-200	forest, suppliers	yes
KH002	home & clinic	Yes	Rural	FT	8	no	150-200	forest, suppliers	yes
KH003	Home	no	Rural	FT	6	no	50-60	forest	no
KH 004	home & clinic	Yes	Rural	FT	8	no	100-500	forest, suppliers	yes
KH005	home & clinic	Yes	urban	PT	5	yes	100-200	garden	no
KH006	clinic	Yes	urban	FT	8	no	50-100	forest, suppliers	no
KH007	home & clinic	Yes	urban	FT	8	no	250-1000	forest, suppliers	yes
KH008	home & Clinic	Yes	semi-urban	FT	8	no	100-200	forest, suppliers	yes
KH009	home	no	Rural	PT	2 to 3	yes, Farmer	Flexible*	forest	no
KH010	home & clinic	Yes	urban	FT	8 to 9	NO	200-250	forest, suppliers	yes
KH011	home	no	Rural	FT	9 to 10	no	Flexible*		no
KH012	home	no	Rural	PT	4 to 5	yes, Farmer	Flexible*	forest	no
KH013	clinic	Yes	Rural	FT	8	no	150-200	forest, suppliers	no
KH014	home	no	Rural	FT	8 to 9	no	Flexible*	forest	yes
KH015	clinic	Yes	Rural	FT	8	no	100-200	forest, suppliers	NA
KH016	clinic	Yes	Rural	FT	8	yes	100-500	forest, suppliers	yes
KH017	clinic	Yes	Rural	FT	8 to 9	no	200-300	forest, suppliers	no
KH018	clinic	Yes	urban	FT	8	no	200-300	forest, suppliers	yes
KH019	clinic	yes	urban	FT	8	no	100-200	suppliers	no
KH024	home	no	Rural	PT	flexible	yes	Flexible*	forest	no
KH028	home	no	Rural	PT	4 to 5	yes	Flexible*	forest	no
KH034	clinic	Yes	urban	FT	8	no	150-200	forest	no
KH035	clinic	Yes	semi-urban	FT	8	yes	depends on cost of medicines	forest, suppliers	yes
KH 036	home	no	Rural	PT	flexible	yes	Flexible*	forest	no
KH020	clinic	yes	urban	FT	8	no	200-300	other healer	no
KH021	clinic	yes	rural	FT	7 to 8	no	200-300	forest, suppliers	no
KH022	home	no	rural	PT	4	yes, farmer	Flexible*	forest	no
KH023	home	no	rural	PT	flexible	yes, farmer	Flexible*	forest	yes
KH025	home	no	rural	PT	flexible	yes, farmer	Flexible*	forest	no
KH026	home	no	rural	PT	flexible	yes, farmer	Flexible*	forest	no
KH027	home	no	rural	PT	flexible	yes store grocery	Flexible*	forest	no
KH029	home	no	rural	PT	flexible	NA	Flexible*	forest	no
KH030	home	no	rural	PT	flexible	NA	Flexible*	NA	NA
KH031	home	no	rural	PT	flexible	NA	Flexible*	NA	NA
KH032	home	no	rural	PT	flexible	NA	Flexible*	NA	NA
KH033	home	no	rural	PT	flexible	NA	Flexible*	NA	NA

Note: Flexible* = claimed to accept whatever patient gave, NA = not available, Suppliers = are from villages

15.8. Appendix 8: Calculations of Weights

Adjusting for multistage cluster sample design

District	Total No. of Blocks in district	No.of rural blocks	No. of blocks selected	Block probabiliy of being selected	Block selected	No. of villages in block	Village code	No. of villages selected	Village probability of being selected	No. of household s in villlage	No. of household s selected	Household probability of being selected	Overall probability of household being selected, taking all stages of sampling into account	weight (=1/sampling probability)
East Khasi H	8	7	2	0.2857143	Pynursla	156	4	2	0.0128205	96	22	0.229166667	0.000839438	1191.272727
	8	7	2	0.2857143		156	3	2	0.0128205	400	25	0.0625	0.000228938	4368
	8	7	2	0.2857143	Mawkynrew	71	2	2	0.028169	77	25	0.324675325	0.002613081	382.69
	8	7	2	0.2857143		71	1	2	0.028169	270	25	0.092592593	0.000745212	1341.9
West Khasi	6	6	2	0.3333333	Mairang	144	6	2	0.0138889	46	25	0.543478261	0.002516103	397.44
	6	6	2	0.3333333		144	5	2	0.0138889	86	25	0.290697674	0.001345823	743.04
	6	6	2	0.3333333	Ranikor	161	8	2	0.0124224	40	25	0.625	0.002587992	386.4
	6	6	2	0.3333333		161	7	2	0.0124224	61	25	0.409836066	0.001697044	589.26
Jaintia Hills	5	5	2	0.4	Thadlaskein	133	15	2	0.0150376	78	25	0.320512821	0.001927897	518.7
	5	5	2	0.4		133	16	2	0.0150376	75	25	0.333333333	0.002005013	498.75
	5	5	2	0.4	Laskein	100	13	2	0.02	116	25	0.215517241	0.001724138	580
	5	5	2	0.4		100	14	2	0.02	135	25	0.185185185	0.001481481	675
Ri-Bhoi	3	3	2	0.6666667	Jirang	107	9	2	0.0186916	148	23	0.155405405	0.001936516	516.3913043
	3	3	2	0.6666667		107	10	2	0.0186916	33	23	0.696969697	0.008684981	115.1413043
	3	3	2	0.6666667	Umsning	305	11	2	0.0065574	152	23	0.151315789	0.00066149	1511.73913
	3	3	2	0.6666667		305	12	2	0.0065574	48	22	0.458333333	0.002003643	499.0909091
West GH	8	7	2	0.2857143	Dadengre	132	21	2	0.0151515	50	25	0.5	0.002164502	462
	8	7	2	0.2857143		132	23	2	0.0151515	57	25	0.438596491	0.001898686	526.68
	8	7	2	0.2857143	Dalu	201	22	2	0.0099502	60	25	0.416666667	0.001184553	844.2
	8	7	2	0.2857143		201	24	2	0.0099502	50	25	0.5	0.001421464	703.5
East GH	5	5	1	0.2	Samanda	159	17	2	0.0125786	125	25	0.2	0.000503145	1987.5
	5	5	1	0.2		159	18	2	0.0125786	53	25	0.471698113	0.001186662	842.7
South GH	4	4	1	0.25	Gasuapara	180	19	2	0.0111111	65	25	0.384615385	0.001068376	936
	4	4	1	0.25		180	20	2	0.0111111	44	25	0.568181818	0.001578283	633.6

15.9. Appendix 9: Policy Agenda Setting Poster at LSHTM Symposium

Khasi Indigenous Traditional Medicine - Policy Agenda Setting in Meghalaya, India

***Sandra Albert*[1,2,3] *John Porter*[1] *Lalit Dandona*[2]**

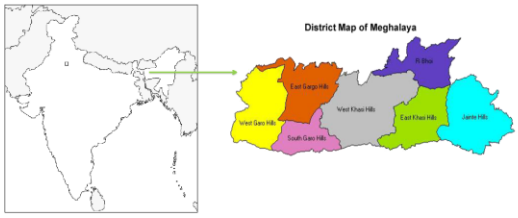
[1] London School of Hygiene and Tropical Medicine, London
[2] Public Health Foundation of India [3] Indian Institute of Public Health-Shillong, Meghalaya

Acknowledgement: This work was supported by a Wellcome Trust Capacity Strengthening Strategic Award to the Public Health Foundation of India and a consortium of UK universities

Introduction

• Meghalaya is a state in northeast India, with a predominantly indigenous (tribal) population.
• In 2011 Meghalaya's Khasi Hills Autonomous District Council (KHADC), a local constitutional body set up to protect tribal culture, passed legislation for the Protection & Promotion of Khasi Traditional Medicine; possibly the first legislative Act on indigenous traditional medicine in the country.
• In a recent review of literature on health policy analysis in low and middle income (LMIC) countries, the authors (Gilson, Raphaely 2008), highlight the limited number of studies in the field. They also note the methodological weaknesses and lack of use of relevant theories and concepts in the body of work.
• The policy agenda setting process that preceded the KHADC Act was documented and analysed in order to understand the process and context of the passing of this Act.

Figure1. Location: Meghalaya State in northeast India



Methods

Objectives
To document and analyse the policy formulation process leading up to the passing of the Act
What are the positions of the different actors, and what were the influencing strategies used?
What was the context and conditions within which these processes took place?

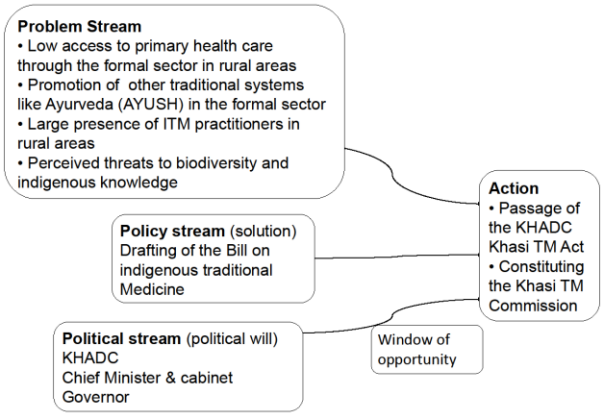
Methods:
• Data was collected from documents and through in-depth interviews of policy makers, influential elites and other stakeholders.
• An initial list of 'policy actors,' individuals and organisations was drawn up and widened iteratively as the data collection progressed (Walt, Gilson 1994). Those to be interviewed were also mapped using the principles of stakeholder analysis (Brugha R, Varvasovsky 2000).
• Official documents as well as documents from university records, KHADC and media were collected.
• Events were arranged chronologically to get an overview of what events or processes contributed.
• Interview data was analysed using a thematic content analysis approach.

Results

• Kingdon's theory of agenda setting suggests that policy development occurs when the problem stream, political stream and policy stream are brought together by policy 'entrepreneurs'.
• A local university assumed this role through a series of activities that brought stakeholders together to deliberate on issues pertaining to indigenous traditional medicine (ITM) and its practitioners – these included workshops, collaborations with grassroots organisations, formation of healer associations, research and documentation and engagement with political leaders, bureaucrats and the media.
• These processes helped to shape elite and public perceptions of the problems and their likely solutions. None of the policy actors involved were professionally trained in policy making.
• The agenda-setting process contributed in bringing ITM from relative obscurity into an area of public debate in the state of Meghalaya.
• It culminated in the passing of the Khasi Traditional Medicine Act. Follow up actions to implement the Act have been initiated.

"they've scaled our activities because we don't have the facilities, we don't have the scholars, we don't have the researchers, we don't have the lecturers, we're just grassroots workers, right, so that is their power… So I should say, Martin Luther Christian University has been a very important factor in helping in framing this….a unique, rare occasions where all 30 members unanimously passed and agreed to this Act " – influential elite and leader of NGO

Figure 2. Adaptation of Kingdon's three streams model



Conclusions

The key role played by a university is noteworthy. Besides bringing together the different stakeholders, it contributed to documentation and research to build up a body of evidence. This was combined with a steady building of awareness through engagement with the political stream and the media
Local institutions often lack professional capacity in framing and developing policy. The academic institution was able to provide the expertise in this case.

References
Gilson L, Raphaely N. The terrain of health policy analysis in low and middle income countries: a review of published literature 1994–2007. Health Policy Plan.2008; 23 (5): 294-307
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Brugha R, Varvasovsky. Stakeholder analysis: a review Health Policy Plan. 2000); 5 (3): 239-246
Kingdon J W. Agendas, alternatives and public policies. Second edition. New York. Longman. 2003. p. 90-193

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15.10. Appendix 10. Ethics Approvals – UK and India

3 April Sandra Albert

Dear Sandra

Study Title: **Indigenous Traditional Healers in the Healthcare System of Meghalaya**

LSHTM ethics ref: **6152**

Department: **Infectious and Tropical Diseases**

Thank you for your application of 1 March for the above research, which has now been considered by the Committee.

Confirmation of ethical opinion

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

Conditions of the favourable opinion

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

Approved documents

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

Document	*Version*	*Date*	
LSHTM ethics application	n/a	01/03/12	
Protocol	V1.0	01/03/12	
Information Sheet	V1.0	01/03/12	
Consent form	V1.0	01/03/12	

After ethical review

Any subsequent changes to the application must be submitted to the Committee via an E2 amendment form.

Yours sincerely,

Professor Andrew J Hall

Chair

PUBLIC HEALTH FOUNDATION OF INDIA

Institutional Ethics Committee

Public Health Foundation of India

Public Health Foundation of India (PHFI) | 4, Institutional Area | Vasant Kunj| New Delhi - 110 070 | INDIA

Communication of Decision of the IEC[1]
Form II

TRC-IEC No:	TRC-IEC-146/12	**Date:**	August 16, 2012		
Project Title:	Indigenous Traditional Healers in the Healthcare System of Meghalaya				
Principal Investigator:	Sandra Albert				
Review	**Full review**	☐	**Expedited review**	☒	
Date of review:	Not applicable	(DD/MM/YYYY)			
Date of previous review:	Not applicable	*(in case of re-submitted applications)* (DD/MM/YYYY)			
Decision of the IEC:	Approval ☒	**Study can begin** ☒	**Resubmission**	☐	
	Conditional Approval ☐		**Study cannot begin**	☐	
Requirements to be fulfilled in case of conditional approval:	Not applicable				
Suggested alterations in case of resubmission:	Not applicable				
In case of approval, ***recommended for a period of :***	Duration of study (1.5 years)				
Comments:	**The PI will address the following:** **1. Validity of methodology needs to be established** **2. If information about medicinal plants is exploited, ensure that the community which provided knowledge should be benefited**				

Please note: Beginning of the research based on this approval implies acceptance of the following conditions:

1. *PI will inform the Secretariat of the start date of the study.*
2. *The PI will inform the IEC in case of any adverse events.*
3. *The PI will inform the TRC (Technical Review Committee) and IEC in case of any change of study procedure (including changes in the informed consent form, recruitment procedure, potential research participant information), site and investigator.*
4. *The PI will inform the TRC - IEC Secretariat on termination of the study and submit a final report within 3 months of completion of the study.*
5. *Members of the IEC have the right to monitor the study with prior intimation.*
6. *Progress report to be submitted to the TRC-IEC Secretariat every 6 months from the date of start of study.*
7. *This permission is only for the period mentioned above.*

INSTITUTIONAL ETHICS COMMITTEE

Prof. Ramanan Laxminarayan
Name and Signature of Member Secretary

APPROVED
CHAIRMAN / MEMBER SECRETARY
PUBLIC HEALTH FOUNDATION OF INDIA

[1] Adapted from the ICMR forms available at [illegible]

15.11. Appendix 11. List of Policy Actors Interviewed

No.	Study ID	Bureaucrat/ Technocrat	Employed in Govt. Health Dept.	KHADC/ Elected Representative	NGO	Influential elite in community	Biomedical Doctor/ Allopath	AYUSH doctor	Academic	Tribe /sub-tribe
1	PG001					1				Khasi
2	PG002				1	1				K/J
3	PG003					1	1			Khasi
4	PG004			1						Khasi
5	PG005			1						Khasi
6	PG006					1	1			Khasi
7	PG007					1	1		1	Khasi
8	PG008					1			1	Khasi
9	PG009					1				Khasi
10	PG010				1					Khasi
11	PG011				1	1				Khasi
12	PG012					1			1	Khasi
13	PG013								1	Khasi
14	PG014								1	Khasi
15	PG015								1	NT
16	PG016					1			1	Khasi
17	PG017	1	1				1			NA
18	PG018	1	1					1		NT
19	PG019		1							Khasi
20	PG020	1	1					1		Khasi
21	PG021	1								Garo
22	PG022	1								Khasi
23	PG023	1								Khasi
24	PG024	1	1				1			Garo
25	PG025	1	1				1			Garo
26	PG026								1	Khasi
27	PG027		1				1			Khasi
28	PG028	1	1							Khasi
29	PG029	1		1						Khasi
30	PG030	1	1				1			Khasi
31	PG031	1	1				1			K/J
32	PG032	1	1				1			Khasi
33	PG033		1				1			Khasi
34	PG034		1				1			Khasi
35	PG035		1					1		K/J
36	PG036		1					1		Khasi
37	PG037		1					1		K/J
38	PG038	1	1				1			Khasi
39	PG039	1	1				1			Khasi
40	PG040		1				1			Khasi
41	PG041	1	1				1			Garo
42	PG042	1						1		NT
43	PG043		1				1			Khasi
44	PG044				1					Garo
45	PG045								1	Khasi
46	PG046		1				1			Khasi
	Total	17	22	3	4	9	18	6	9	

Note: ID =Identifier Code, KHADC=Khasi Hills Autonomous District Council, K/J=Khasi/Jaintia, NT=Non Tribal, NA=Not Available, NGO = Non Governmental Organisation

15.12. Appendix 12. Case Studies

Case Study 1: *Niañgsohpet*

Niañgsohpet is a disorder that is culturally understood among Khasis. It usually involves infantile or childhood diarrhoea and or digestive problems. Although healers reported that in rural areas tribal medicine is preferred for this condition, influential elites including biomedical specialists acknowledged that such practices are not just prevalent in rural areas but are popular among urbanites as well.

> My children have never had colic pain. I dread to think of the concoctions that go into the *dawai niañgsohpet* [medicine for n*iañgsohpet*] and what it does to a new born child. But Khasis swear by it, including my modern, educated daughter-in-law and her family.
>
> Influential elite PG 001, F

The topic was probed during focus group discussions (FGDs). The following is an extract from FGD2:

> R3: It is like all mothers here seeks the *dawai niañgsohpet*. When a baby passes stool some of it is green in color, some it is watery in nature, in some blood is mixed along with it. For my son when he passed stools, there was blood mixed along with it. If you go to an allopathic doctor, they will tell you that it is dysentry. If it is really dysentery, how can the baby survive? But if you go to a traditional healer they will tell you that it is the *niañgsohpet* and they have their own names, *ba saw* red, *ba jyrngam* green and they also have different medicines for each of them.
> R5: *Niang saw* red, *niang stem* yellow, *niang iong* black.
> R1: The *niang stem* yellow niañgsohpet if it is not treated/cured properly, later on it can turn into *jingpang stem* [Khasi for jaundice as stem is yellow], and if the *niangsaw* red niañgsohpet if it is not cured properly, the person can have skin diseases later. ....
> R3: That is why it is important that parents should seek traditional help. If they seek help from allopathic doctors, babies will gain weight and look like they are healthy but it can affect them later on in their life.
> I: What are the symptoms of *niañgsohpet*?
> R1: some parents they come to us for treatment by just guessing that it is *niañgsohpet*. But if we examine we know if they really have the *niañgsohpet*. But some people, it seems like they are just following the *dustur* customs or tradition to make a baby take *niañgsohpet* medicine, and they give their baby this medicine. But some they look at the stools of the baby.
>
> FGD2: KH 029 F, KH 028 F, KH 030 M

In another FGD more details emerged. Some extracts from FGD 3:

I: Ok, lets talk about something else. What is *niañgsohpet*?
R5: According to my findings, it is the digestive system that is not functioning properly.
R9: Even I agree.
R12: It is the *jakhlia* [unwanted/impure substance] that enters the baby's mouth during birth. There is something in the baby's mouth and it enters into his system while opening his mouth for the first time while crying. We do not have a name, therefore we called it *niañgsohpet*. But traditional birth attendants (TBA) know about it very well.
R10: It is the *jingjakhlia*. Now they have started some research on it especially when you cut the umbilical cord, there is some kind of bacteria in it.
R1: I am a TBA and to explain it to you especially in English is very difficult. At the time of birth, when you look into the baby's mouth you will find something is there. Doctors advise us to take a clean muslin cloth and wipe it. If you apply any kind of medicine or if you do not know how to wipe it, then the baby will swallow it, which can later form other kinds of diseases like TB glands and many others if not treated properly.
R10, R12, R13: Yes, yes.
R1: Especially in children if not treated properly you will find a lump in the neck and it can also affect when the child is older and becoming an adult.
R12,R13: Yes, yes.
R1: You will see many children and teenagers are suffering from this kind of a condition. You know some healers they will tell their patient that they are suffering from *thung* abscess. But for me I tell them it is the *niañgsohpet* and I give them medicines which cured many children. If they go to a doctor they will tell them that it is TB glands. This can be prevented at the time of birth as in hospitals they do not clean properly the mouth of the baby whereas TBA can clean it well in order to prevent other problems in life.
R13: Doctors they used to tell us wipe the baby's mouth with a clean cloth and borax glycerine. I think they know about it.
R1: If there is any TBA present here I would like to tell you that as soon as the baby is born you should take it out, because if he started breathing it will enter inside the baby's system.
R12: Yes, I agree that it is present in each and every baby. But out of 10 babies born we can do that at least in 5 babies.
R9: It is the *jakhlia* [unwanted/impure substance] that enters the baby's stomach.
R1: And another thing why they call it *niañgsohpet* because whenever a baby passes stool, it is either black or green in colour.
R10,R9: Green colour.
R1: You know that kind of faeces is very sticky and difficult to come out and it is similar to a chewing gum and if not treated it will form other kind of diseases later on his life. Therefore it is very important to treat a baby for *niañgsohpet* so as to avoid different other problems in life.

R10, R13: Yes, definitely it will cause different other diseases.
R13: The main thing is from the liver that causes the stool of the baby to become green or yellow. I believe in the Khasis when they say *khniang* (insects/organism casing diseases) but if a test is done (referring to the different test done by doctors) they cannot find any *khniang*, and if they find anything wrong they start giving the baby antibiotics. 6 months they have to take, how can a small baby take in so much of medicine?
R8: They called it *niañgsohpet*. If it is really *niang* insect/ organism causing diseases, don't you think the child will not die?
R5: Ok when we say eye infection or ear infection, it affects the eyes and ears only. But when we say *niañgsohpet*, it should affect the navel but instead it affects the stomach. Why is it so? But different healers term it according to their experiences. But the main thing about *niañgsohpet* is that it affects the stomach of the baby.
R1: Yes, the first thing is the problem in passing stool.
R8: The main area that is affected is the stomach.
R9: Yes it is the stomach.
R10, R12, R13: Yes.

Case study 2: A Biomedical doctor's experience with a tribal healer

While most biomedical doctors did not use traditional medicine personally, a few did. I use an excerpt from one such narrative of a biomedical practitioner's rather reluctant encounter with a traditional healer to illustrate some facets of tribal medicine that biomedical practitioners grapple with. This doctor was almost 'forced' by family members into seeking help for her young son. The child had sustained a minor fracture following he was in obvious discomfort; crying and unable to place his foot on the ground. A paediatrician reassured them that the fracture was minor and would heal itself in time without intervention. The child's extreme discomfort prompted the rest of the family to seek help from a traditional healer[17]. In her narrative the doctor expressed awe at the ability of the rather unkempt and inebriated healer to make a correct diagnosis just by feeling the injured limb. On examining the child the healer informed her that the bone was indeed broken but that it was quite a minor fracture, he used a Khasi word that indicated the bone had a small crack but was relatively intact and not displaced. At the time the doctor possessed an X-ray from which she was aware of the nature of the fracture. Apparently the healer did not bother to look at the X-ray when he made his diagnosis. The healer proceeded to treat the child by applying a dressing similar to the one described previously. The doctor expressed amazement at how quickly the child recovered after treatment.

[17] This healer had previously treated another child in the extended family for a fractured shoulder

During our interview she then went on to think aloud and analyse that event. She alluded to one of the assumptions of biomedicine to attribute benefit of tribal medicine to the placebo effect and reasoned that in her child's case it could not have been a psychological or placebo effect as the child's display of signs like not placing his foot on the ground was a reflection of the pain and the reversal of the sign to be attributed to psychology would be stretching logic. Her assumption was that a child in distress was less likely to fake recovery that an adult would be. Her training in medicine possibly influenced her need for a logical medically sound explanation, and she attributed the pain relief to possible anti-inflammatory agent in the medicament that the healer applied topically.

> for my son, he saw and he said, oh, this one, this is nothing, this is just, you know he used that Khasi words you know,[for] ''it is just a crack''. He didn't even have the x-ray. I took the x-ray, but he didn't even look yet at the x-ray. The he said that, oh, this is, in Khasi we used that words *ka pait ksah*, that means it's broken, but it is still remaining there [fairly intact][.....] And he just made one paste, and a very dirty cloth [...] The moment you put it is like a plaster, it remains there and then after that, my son you know, [it was]so funny, within 10 minutes of putting that one [medication] he's running. [...]. How not to believe? [...] but to be able to walk like that, and this is a small child, he doesn't know what is happening to say it is [a] psychological thing or something that he's not putting his foot down. But, I think he was having pain and once he put that [the healer's medicament], I don't know, it could be anti-inflammatory, not having pain, I don't know what is the cause but after that he just walked and we did not have to bother. And he [the healer] told me, don't come here anymore, the moment this cloth will fall [off], it is over [implying the treatment is done and child will be fine]
>
> Biomedical doctor PG 006, F