Policy initiatives to improve the quality of healthcare under universal health coverage in low- and middle-income countries: the case of Thailand

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Abstract

Background

Universal health coverage (UC) programmes are gaining traction amongst policy makers in low- and middle-income countries (LMICs) as a mean of expanding access to care for their populations, and protecting citizens against catastrophic healthcare expenditure. Access and affordability are important aspects of the quality of healthcare and of health systems, but dimensions such as efficiency, equity and patient safety are also important. The redesign of health systems as a result of UC reforms represents a unique opportunity for policy makers to build in other dimensions of quality at an early stage of design. However, the use of many quality interventions in LMIC settings is poorly documented and in many cases their potential impact is unknown. Literature suggests the impact of such interventions may be highly context specific.

Aims

As such the study aims to describe in detail the use of three policy-led quality improvement initiatives (evidence-based guidance, provider accreditation and financial incentives) in a single country (Thailand). It explores how the interventions have been used and to what extent they have been successfully embedded with the country's UC reforms.

Method

A single case study design was used to gain an in-depth understanding of the use of the three policy initiatives within the Thai health system. Semi-structured interviews were carried out with nine Thai respondents, including healthcare policy makers, academics and clinicians. Interview data were supplemented with collected "grey" policy literature. Thematic analysis of these data was carried out.

Results

Thailand has made substantial use of evidence-based guidance, provider accreditation and financial incentives to improve care quality and the quality of the Thai health system, in particular within the UC scheme. Policy interventions have been designed and implemented to address specific health system problems and have benefited from sustained political and financial backing. Interventions appear to have been well implemented, with all having a dedicated unit or organisation responsible for their oversight. The interventions also appear to be having a positive impact on the health system, and are in a state of continual development. Some challenges remain, particularly surrounding the development and use of locally relevant evidence to support decision-making.

Conclusion

The continuing reforms in Thailand have many implications for policy makers in other countries pursuing UC reforms, and suggest that quality improvement and monitoring should be an integral part of these reforms. In particular, interventions to contain costs during a period of large scale increase in access appear to have been critical in ensuring the scheme's sustainability. However, the shortage of evidence on the long term impact of quality interventions in LMICs, and the potentially negative side effects of some interventions, suggests a need for on-going monitoring in Thailand and elsewhere. Given these ambiguities, further and more detailed country-specific research on the use of quality improvement interventions in LMICs is urgently needed.

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List of acronyms and abbreviations

CG	Clinical Guideline
CSMBS	Civil Service Medical Benefit Scheme (Thailand)
DRG	Diagnosis Related Group
FFS	Fee For Service
HA	Healthcare Accreditation scheme (Thailand)
HAI	Healthcare Accreditation Institute (Thailand)
HIC	High-Income Country
HISRO	Health Insurance Systems Research Office (Thailand)
HITAP	Health Intervention and Technology Assessment Programme (Thailand)
HTA	Health Technology Assessment
IHI	Institute for Healthcare Improvement (United States)
IOM	Institute of Medicine (United States)
JLN	Joint Learning Network
LIC	Low-Income Country
LMIC	Low- or Middle-Income Country
MDG	Millennium Development Goal
MIC	Middle-Income Country
MoH	Ministry of Health
MOPH	Ministry of Public Health (Thailand)
NGO	Non-Government Organisation
NHSO	National Health Security Office (Thailand)
NICE	National Institute for Health and Clinical Excellence (United Kingdom)
P4P	Pay for Performance
PPM	Provider Payment Mechanism
QEI	Quality Enhancing Interventions
QI	Quality Improvement
RBF	Results Based Financing
SSS	Social Security Scheme (Thailand)
UC	Universal (Health) Coverage
UCS	Universal Coverage Scheme (Thailand)
WHO	World Health Organization

1. Introduction

1.1 Background and scope

Despite increasing spending on health from both governments and international aid organisations, significant variation exists in access to and quality of healthcare in many resource-constrained settings[1]. In particular, the poorest in low- and middle-income countries (LMICs) tend to be inadequately covered by healthcare programmes, and as such are more likely to incur large out-of-pocket expenses for care and/or forego important treatment on grounds of cost[2]. Such lack of financial protection has led some LMIC governments to evaluate their systems for health financing and make a political commitment to move towards universal coverage (UC) for their citizens - that is "essential health services and interventions provided at a cost affordable for all[3]."

Making care accessible and affordable is a key step, but says nothing of the quality of care provided[4]. The restructuring of healthcare systems as a result of reforms may represent a unique opportunity for countries to build quality promotion strategies into their systems at an early stage of design, and this study therefore seeks to explore what tools and strategies are available to improve quality as part of universal health coverage reforms.

Promoting and incentivising care quality may take place at a national policy level[5], or a local provider (hospital or other care centre) level[6]. This study limits its scope to discussion of policy level interventions, defined for this purpose as government-led programmes or strategies, designed at a national level, and with a political or legal mandate to be implemented at regional and local levels. The research does not directly examine quality promotion interventions at regional or hospital level, such as staff training or clinical auditing, but any pertinent links with these programmes and policy level initiatives will be explored and discussed.

The research builds on interview data collected as part of the Joint Learning Network (JLN)'s quality track work programme. The JLN[2] is a multi-country platform established in 2009 in response to calls from a number of LMICs for assistance in strengthening and speeding up their reform efforts. It does this through facilitating knowledge sharing, joint problem solving and operational research and analysis [7]. The network is funded and supported by a number of global development donors, including the Rockefeller Foundation and the World Bank.

Within the JLN, the quality track[8] is dedicated to developing and sharing knowledge of quality systems and strategies, and is being delivered by both the US-based Institute for Healthcare Improvement (IHI)[9] and the International division of the UK's National Institute for Health and Clinical Excellence (NICE International)[10] . The interview data analysed here were collected as part of this work. Whilst the JLN work offers broad insight into quality interventions in place in an array of countries, a more in-depth analysis of the interview data from a single country carried out in this study aims to offer a more detailed description and discussion of the in-country situation.

1.2 Aims of study

Specifically, this study provides detailed information on ongoing policy level quality reforms within LMICs moving towards universal health care, which may be used to stimulate further thought and discussion amongst policy makers in these settings. It seeks to do this through a real-world example of how one country moving towards universal coverage has (or has not) begun to embed quality strategies within its policy frameworks. Through a study of ongoing reforms in Thailand, the study will discuss which strategies have been used, how they have been used, and what their impact the health system has been.

The research has been designed to therefore answer the following two questions.

1.3 Research questions

How have policy makers in Thailand attempted to use policy interventions to increase quality of health care within Universal Coverage reforms?

To what extent have these policy interventions been successfully implemented?

1.4 Structure of thesis

The remainder of the study is structured as follows. Section 2 introduces – through a review of key literature – QI interventions in LMICs moving towards UC, with a focus on the interventions available to policy makers, as well as introducing the country and health system of Thailand, which forms the basis of the case study in this thesis. Section 3 describes and justifies the methodological approach taken in carrying out the case study. Section 4 analyses and discusses the case study results. Section 5 summarises the main findings and concludes.

2. Literature review

2.1 Introduction

This chapter critically reviews key literature surrounding quality improvement (QI) interventions in low- and middle-Income countries (LMICs) moving towards universal health coverage (UC), with a focus on interventions available to policy makers. The chapter is structured as follows. Section 2.2 introduces the key players and challenges in the LMIC healthcare environment, and introduces the concept of UC. Section 2.3 introduces the notion of quality in healthcare and discusses the applicability of existing frameworks to LMICs, before introducing and discussing QI interventions in a broad sense. Section 2.4 discusses the use of three specific QI interventions – evidence-based guidance, provider accreditation and financial incentives – commonly in use in LMICs. Gaps identified in the research base from these analyses suggest a need for real-world, country-level analysis of interventions to explore their use and possible impact, and the remainder of the study explores the use of these three interventions within the health system of Thailand. Section 2.5 therefore introduces the country of Thailand and its health system. Section 2.6 concludes the review and summarizes identified gaps in the literature.

2.2 Healthcare in LMICs and Universal Coverage initiatives

In spite of significant achievements in strengthening many aspects of health systems, it is estimated that one billion people worldwide still lack access to health care; and that 100 million people are forced into poverty each year as a results of medical costs[1]. Continuing concern over access to affordable care has led many LMIC governments and donors working in LMICs to commit to UC schemes for their populations. UC, according to one definition is the provision of "essential health services and interventions … at a cost affordable for all[3]."

Table 1 below summarises the key actors involved in developing and implementing UC schemes, who are referred to throughout the remainder of this work.

Table 1: Key actors involved in the design and implementation of UC schemes

Actor	Definition and examples
Healthcare payers	"Entities other than the patient that finance or reimburse the cost of health services[11]" (Kindle edition, no page number). Typically these are insurance companies, employers or governments. Multiple payers may be involved in a single course of treatment for a single patient.
Healthcare providers	"An individual or institution that provides preventive, curative, promotional or rehabilitative health care services in a systematic way to individuals, families or communities"[12]. Individuals may be health workers in the fields of medicine, nursing or other professions. Institutions may be hospitals, clinics or other care centres.
Patients and patient groups	"People receiving or registered to receive medical treatment"[13]. Groups of patients or their family members may form groups to advocate a particular medical condition, group of conditions or other cause[14] (e.g. patient safety)
Donors and aid organisations	National or international organisations responsible for distributing voluntary contributions of money to LMIC governmental or non-governmental organisations, with the intention benefiting the recipient country[15].

2.2.1 National- and international-level commitments to UC in LMICs

Countries at varying levels of income having made a public commitment to move toward UC include Vietnam, Estonia, Colombia, Mali, and Thailand[16]. Furthermore, over 60 countries worldwide are estimated to have committed to the development of a defined basic package of care, guaranteed to be provided to all citizens enrolled under government-run schemes[17].

Significant recent international commitments to UC include the Bangkok statement on UC from donors, ministers and health workers from 68 countries[1]; and the Tunis declaration on Value for Money, Accountability and Sustainability in the Health Sector from ministers of health and finance in Africa[18]. Furthermore, donor-led initiatives such as the Joint Learning Network[2] have emerged to support LMICs in their moves towards UC.

2.2.2 Models for UC

A variety of models for achieving UC have emerged, involving – to various degrees and in various ways – the players outlined above. Access and affordability may be improved, for instance, through the removal of user fees for publicly delivered care[19] ; the development of national health insurance schemes[20]; or through the development of a defined basic package of care which is guaranteed to be funded by the public sector and / or by donors[17]. Funding may come from government tax revenues, social insurance funds, or a combination of the two.

A notable divide exists over whether care should be administered and provided within the private or public sectors. Basu et el[21] note that such a divide appears to be largely ideologically driven, but find that some real differences do occur between publicly and privately delivered care. Private sector delivery, for instance, seems able to deliver more timely care, but levels of efficiency tend to be lower due to perverse incentives created to treat unnecessarily. Public sector providers on the other hand are able to create more equitably accessible treatment centres, but they tend to suffer from limited availability of equipment and adequately trained workers.

Emerging research on the impact of UC reforms suggests that, irrespective of the mode of delivery, they are having substantial impact on population health through increasing access to care[22]. The following section introduces which other aspects of health systems may be important in improving care through UC in LMICs.

2.3 Quality in Healthcare

2.3.1 Definitions and conceptual framework

The concept of quality in healthcare is complex and multi-dimensional and as such lacks a single, universally agreed definition[23]. However, two influential definitions bear many similarities, and a number of common themes emerge from the quality literature. This section discusses these, and highlights areas where controversies and inconsistencies exist.

The two most commonly cited definitions of healthcare quality come from the US-based Institute of Medicine[24] (IOM) and from the World Health Organization[25] (WHO), which bear many similarities and are summarized in Table 2 below. Both definitions are normative and aspirational, and describe six key features that it is argued good health systems ought to have.

Table 2: Dimensions of healthcare quality. Adapted from Institute of Medicine (2001, reference [24]) and World Health Organization (2006, reference [25])

Dimension of health quality	Description
Safety	Delivery of care in a way which avoids harm to patients
Effectiveness	Providing care based on scientific evidence and on medical need. Avoiding overuse or underuse of drugs, procedures and other interventions.
Patient-centredness (IOM) / Acceptability (WHO)	Providing care which is respectful of, and responsive to, patient preferences, aspirations, needs and values.
Timeliness (IOM) / Accessibility (WHO)	Delivering care within reasonable time frames and reducing harmful delays. WHO definition adds geographical and accessibility and provision of care in a setting where appropriate skills and resources are available.
Efficiency	Providing health care in a manner which maximises resource use and reduces waste.
Equity	Providing care which does not vary in quality because of gender, ethnicity or socio-economic status. WHO definition adds geographical location.

Such definitions provide a framework to guide the assessment of health system design and care delivery. However, three significant problems are apparent with this approach, which require further attention.

The first problem surrounds potential conflicts between dimensions, which the above frameworks do not adequately allow for resolution of. For example, patient centeredness may conflict with efficiency in a situation where a patient expects or demands a certain treatment which may not be considered medically necessary or a cost-effective use of resources. Indeed, Gorski[26] finds that patient satisfaction does not correlate well with measures of health outcomes, such as reduced mortality or reduced incidents of hospitalisation.

A second problem concerns the process by which the framework was developed, and whether or not it can claim to be universally valid. The IOM definition was developed in the US specifically for the US health system, which – with its dominance by private payers and providers - is by all accounts a unique system[27]. The framework has gained traction around the world, yet no evidence of its portability exists. The WHO definition, whilst developed for a global audience, appears to have been built on the IOM framework. There is no indication within the framework document of how or if the views of relevant stakeholders in LMICs were involved in its development, nor of its applicability to a range of health systems at varying levels of maturity.

The third problem is that access to care in a timely way is not only impeded by geography or lack of available staff, but in some cases by care being unaffordable to a large proportion of the population[3]. A consideration of affordability could therefore be added.

Notwithstanding the above criticisms, the IOM/WHO framework highlights certain important dimensions of care quality, and the discussion here will focus on these dimensions, drawn

from the adapted table above, and including a consideration of costs within any discussion of access.

2.3.2 Quality improvement in LMICs - key themes

The notion of health quality in LMICs is gaining prominence, both within academic literature and in policy circles[27]. A number of themes emerge from the literature which may explain this growing interest, and which make LMICs worthy of separate analysis.

Firstly, more money than ever before is available for healthcare in LMIC settings[28]. Many LMIC country governments have additional funding available themselves as a result of economic growth. In addition, and in spite of an economic downturn in Western donor countries, many – including the UK[29] - have committed to continued real-terms growth in foreign aid. Additional funding can lead to increased opportunities to expand access to care for LMIC populations.

Secondly, governments and other payers are keen to ensure that growing - but still finite – funds are spent wisely and efficiently to ensure the maximum impact for their populations[30]. An increasing number of pharmaceutical products, medical devices and other health technologies places additional pressure on budgets, and implies a need for fair, equitable and legitimate processes for deciding what will and will not be covered to maintain health system efficiency[30].

Thirdly, a more educated public, and more active civil society movements in LMICs are increasingly demanding accessible, affordable and safe care, which is responsive to their needs. Access to such care is increasingly being regard as a basic right[31], increasing pressure on governments for its effective delivery.

QI interventions in LMICs may be developed and implemented by country governments themselves; or driven by, or in response to, global priorities and targets. QI programmes

have, for example, been cited as necessary in order to reach the Millennium Development Goal (MDG) targets around the reduction of HIV/ AIDS and maternal mortality rates[32]. However, such "top down" programmes risk overlooking local issues, including local disease burdens, and local health system problems.

2.3.3 Interventions to promote quality improvement

Many QI interventions exist, and a number of frameworks have been developed to guide payers, policy makers and managers in making QI decisions[27,33]. A comprehensive and influential framework known as QEI (Quality Enhancing Interventions)[34] has been developed by US and UK researchers, which organizes interventions across five dimensions, including patient focussed interventions, such as schemes to improve health literacy, financial and non-financial incentives, and regulatory inventions such as inspection and target setting. Leatherman[27] identifies three key challenges to the use of QI interventions generally, which are of relevance here.

Firstly, there is a dearth of rigorous studies which evaluate the effectiveness and impact of QI interventions. Secondly, evidence which does exist in this area tends to be dominated by studies from the US, and the generalizability of these findings to differing health systems, health needs and political and business environments is unclear. Thirdly, there is insufficient information on the relative costs and benefits of implementing quality interventions. It can be added to this that evidence on costs and benefits of QI interventions largely focuses on financial return on investment[35] rather than value for money in terms of health outcomes, which would be an important consideration in increasing systemic efficiency.

In spite of uncertainty surrounding the use of QI interventions, one key prerequisite for successful implementation appears to be sustained political backing[33]. A stable and functional government is uniquely placed to have the political legitimacy to develop sustainable pooled

funding sources through taxation and/or social insurance schemes[36], to manage the competing interests of healthcare stakeholders, and to pursue system level reforms required to improve care quality. Practical measures which can be taken by policy makers therefore form the focus of discussions here.

2.4 Three policy initiatives to promote the quality of care

Three policy initiatives form the basis of the remainder of this study: evidence-based guidance, provider accreditation and financial incentives. These were chosen from the wide array of available interventions for three reasons. Firstly, all can be driven at policy level and are therefore suitable for analysis within the scope of this study; secondly, all are documented as being widely used and/or gaining in use in LMICs; and thirdly, the literature reveals limited or mixed evidence of their effectiveness at country level, making further analysis under the case study section of this research particularly useful.

The three initiatives are described in turn in the following sections, along with literature of the use of each in LMICs, and key empirical evidence of their effectiveness.

2.4.1 Evidence-based guidance

Description

Significant amounts of evidence exist on the clinical- and cost-effectiveness of healthcare interventions, including clinical trial results, epidemiological data and information on the costs of delivering services and interventions[37]. However, to be useful to front line health professionals, evidence needs to be sourced, appraised and relevant recommendations extracted and agreed upon[37]. Furthermore, necessary but often difficult and controversial decisions on which drugs and procedures may be routinely funded within limited budgets may be more defensible if made at government level, rather than by those delivering front

line care[38]. This suggests the need for dedicated work programmes to synthesise available evidence and present guidance to clinical staff.

Evidence-based guidance may theoretically improve health system quality across a number of dimensions. Effectiveness may be improved through the adoption of health interventions which have been shown to be useful and appropriate. A consideration of costs may help improve efficiency by promoting the uptake of cost effective interventions, whilst simultaneously reducing the use of interventions which offer little impact in return for their cost. Finally, evidence based guidance offers the chance to improve equity considerations through ensuring the equitable use of resources, and standardising levels of care within countries or regions.

Guidance currently in use in both HICs and LMICs takes a number of forms, summarised in Table 3.

Table 3: Forms of evidence-based guidance

Guidance type	Definition
Clinical Guidelines (CGs)	"Systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances"[39]. Usually cover all or some of the care pathways for a specific disease. Often based on a mixture of systematic evidence reviews and expert opinion, sometimes including patient views.
Health Technology Assessment (HTA)	The study of the "medical, social, ethical and economic implications of the development, diffusion and use of health technology"[40]. Health technologies are commonly defined as "prevention and rehabilitation, vaccines, pharmaceutical and devices, medical and surgical procedures, and the system within which health is protected and maintained"[40].
Pathways	Describe the expected 'journey' of a patient by defining best practice from diagnosis through to treatment and follow-up care[41]. May be a graphic representation of guidance recommendations from various sources[42]
Protocols	Guides to help clinicians in their delivery of care. Often summaries of the most important sections of CGs. Tend to be context-dependent. Often based more on clinical expertise than primary research evidence[43].

Standards	"Concise sets of statements designed to drive and measure priority quality improvements within a particular area of care"[44]. They may be derived from guidelines recommendations or other forms of guidance. Their narrow scope and measurability means they may be used to inform results based financing / pay for performance initiatives (see section 2.4.3).

Documented use in LMICS moving to UC

Evidence-based guidance appears to be widely used by a number of countries in their attempts to improve quality as parts of UC reforms, although differences exist in the extent to which processes have been integrated into reforms. Some notable examples come from across sub-Saharan Africa, China and Brazil. These are discussed in turn in this section.

In the poorest settings, guidance appears primarily concerned with assessing the effectiveness of services to address the most serious causes of death[45]. Baker et al[46], for instance, explored the use of maternal health guidelines in improving care quality in maternal health in Burkina Faso, Ghana and Tanzania. Locally developed guideline recommendations were found to be similar in content to international recommendations. However, in many cases, the format of the guidelines (often lengthy and detailed documents) was cited by professionals as a significant barrier to their use.

In Middle Income Countries (MICs), an increased availability of health funds and a higher burden of chronic disease, means the focus tends to shift to the relative effectiveness and cost-effectiveness of various treatment options[45]. In China, for instance, the Ministry of Health (MoH) had committed to developing institutional capacity for evidence-based clinical guidelines as part of its ongoing rural health reforms, with the intention of reducing ineffective practices and promoting cost-effective care[47]. Furthermore, the MoH intends to use HTA to rationalise its essential drugs package, in an attempt to contain rising drug costs[48].

In Brazil, HTA is used to inform decisions on which drugs should be readily available within the public health system[49]. However, the decision-making process has been criticised for a lack of timeliness in making decisions, and negative funding decisions have been successfully challenged by individuals arguing that the process by which decisions are made is non-transparent[45].

Evidence of effectiveness

Evaluation of the impact of evidence-based guidance is made complicated by the many, often overlapping types of guidance in use; the multifaceted nature of health systems; and the numerous contextual factors that may influence the effectiveness of interventions[37]. Many evaluations therefore remain inconclusive, but a review of high quality impact assessments[50] suggests a positive impact of clinical guidelines in reducing inpatient complications such as wound infections and bleeding; more appropriate length of hospital stays; and reduction in hospital costs when recommendations were implemented. Whilst the review includes studies from a variety of countries, only one of the twenty seven studies included in it relates to an LMIC (Thailand), highlighting the dearth of high quality studies relating to LMICs specifically.

The country case studies briefly reviewed above suggest maximum impact may be achieved by ensuring guidance is practical in its recommendations and presentation, integrated into the health system. The Brazil case in particular highlights that the way in which a decision is made may be as important as the decision itself, with transparency and inclusiveness in the decision-making process important in ensuring decisions are viewed as legitimate in the eyes of the public and other stakeholders.

2.4.2 Provider accreditation

Description

A widely used definition of provider accreditation describes it as "a public recognition by a healthcare accreditation body of the achievement of accreditation standards by a healthcare organization, demonstrated through an independent external peer assessment of that organization's level of performance in relation to the standards"[51] (p. 8). Despite the circularity of this definition, it highlights key features of the process – external peer review and assessment against predefined standards. Accreditation schemes are potentially powerful tools to define and assess current practice across one or more quality dimensions, and thus have the potential to improve standards in areas such as safety, patient satisfaction and / or timeliness of care delivery[52], although in practice programmes appears to have focussed largely on patient safety.

Accreditation is a complex process which varies greatly in its implementation across countries, yet four key elements have been identified, which it is argued are key to developing a strong accreditation system[53]. Firstly, the development of standards, based on the best available evidence and covering high priority areas. Secondly, the process by which surveys are carried out, including the choice of surveyors, the training they receive, and ensuring consistency across surveys and surveyors. Thirdly, the process by which survey data are converted into scores, ensuring reliability and validity, and consideration of whether scores are made public. Finally, thought should be given to whether incentives are necessary to encourage accreditation to be undertaken and/or encourage improvement.

Documented use in LMICS moving to UC

Accreditation programmes are growing in popularity internationally, with the number of new programmes doubling approximately every five years since1990[54]. Schemes may be led at a national or local government level, by insurance companies or other payers. Standards for assessment may be set locally or may draw on internationally defined standards, for example from the US-based Joint Commission International[55]. Government-led programmes are either in place or being developed by countries from a range of income levels and institutional environments, including post-conflict states such as Liberia[56], emerging economies such as Malaysia[57], and relatively stable middle income countries such as South Africa[54].

In addition, a number of providers, particularly in the private sector, have sought to achieve internationally recognised accreditation status in the hope of attracting medical tourists from richer countries[57]. There is potential for positive spillover effects on care quality for the local population, and negative spillovers in terms of crowding out access for local patients. A framework to assess the impact of medical tourism on local care quality has been developed[57], but the impact remains to be investigated.

One review suggests accreditation programmes are relatively expensive to implement and run and take between three and ten years to be fully operational[58].

Evidence of effectiveness

The wide variety of accreditation schemes across countries, as well as a widespread reluctance on the part of accreditation organisations to make data publicly available appears to have hampered the development of research programmes in this area[59]. As such, there does not appear to be any well-defined method to assess impact of programmes, nor to analyse how well they have been integrated into health systems. However, a number of studies have

attempted to explore the impact of accreditation schemes on specific features of health systems and specific health outcomes.

A study of healthcare providers in Canada[58], for example, found accreditation to be a useful tool in initiating the process of change towards putting greater emphasis on safety and efficacy in clinical settings. However, the exact type of change dynamics created was found to be dependent on a number of organisational factors.

In terms of the impact of accreditation schemes on patient safety, a recent international review[60] of levels of adverse incidents causing harm to patients finds these not to have decreased in recent years. Crisp[61] notes that this has happened in the presence of an increase in accreditation schemes, implying that whilst accreditation schemes may have improved the strength of health systems, an associated improvement in outcomes may not have occurred. Crisp also acknowledges, however, that such schemes may have increased the reporting of events which previously went unreported, leading to unrepresentative increases in reported events in some areas, skewing the figures.

There is some evidence, then, to suggest that accreditation schemes may be a useful tool to catalyse change in provider behaviour and that it may have a positive impact on health systems. It is unclear whether accreditation may have the desired possible impact on reducing adverse events, and a lack of LMIC focussed studies means the applicability of the findings identified here to these settings remains uncertain.

2.4.3 Results based financing and other financial incentives

Description

Results Based Financing (RBF) is a blanket term which covers a wide variety of initiatives which link financial payments or material rewards to desired results[62]. Many relationships within healthcare in LMICs - such as relationships between payers and providers, or between donors and recipients of aid – can be seen as principal/agent arrangements[63]. Stark differences often exist in the objectives of different actors, and in the information available to them. In a case where purchasers of care contract providers to deliver care in a specific region, for example, the primary concern of purchasers may be the maximum population level impact in that region. Individual providers, on the other hand, may prioritise the interest of an individual patient or the interest of their unit, and have less concern and less data available to them on the wider population level impact of their practice.

In attempting to improve care quality, policy makers have a role in managing the relationships between purchasers and providers in particular, given the importance of such relationships in the provision of high quality care, in addition to the fact that many governments in LMICs are themselves payers, and have a direct interest in guaranteeing the optimum level of population health outcome for their investment[64]. Ensuring that suitable incentives are created for the promotion of safe, effective care, and the reduction of ineffective or inefficient practices through effective design and /or regulation of healthcare institutions is therefore key[65], and financial incentives represent one means of doing this.

Monetary rewards can help better align the incentives of providers with that of the payer, and may be linked to health outcomes (e.g. improvements in infant mortality levels) or improvements in process (e.g. record keeping)[62]. Incentives provided may be in the form of positive rewards for improved performance against agreed targets (positive incentives), or

penalties for failure to meet such targets (negative incentives)[66]. However, monetary rewards or sanctions are not applied in isolation, and are layered on top of, or mixed with, comprehensive payment mechanisms designed to impact service delivery in other ways[66]. These Provider Payment Mechanisms (PPMs) and their potential impact on service delivery are summarised in Table 4.

Table 4: Advantages and disadvantages of various PPMs, with respect to quality of care
Source: Adapted from Kutzin (1998)[67] annex 2, and information in Musgrove (2011)[62]

Payment mechanism	Description	Advantages	Disadvantages	Steps to minimise disadvantages
Fee for service (FFS)	Providers are paid retrospectively for a specific task or procedure, such as a patient consultation, an immunisation, or a surgical procedure	Incentive to provide services	Unpredictable expenses to payer; Incentives for supply-induced demand and over treatment; high administrative costs	Utilization review to limit overuse
Case-based payments	Providers are paid a fee for each case that is treated, irrespective of the number or intensity of services required. Cases are often defined and purchased as clinically similar categories requiring similar levels of resources, known as Diagnosis Related Groups (DRGs)	Incentives to increase efficiency by increasing number of cases and reducing cost per case	Unpredictable expenses to payer; Provider incentivised to choose low-intensity cases, or under treat; Cases difficult to define in outpatient care; potentially high administrative burden	Adopt well-defined case-mix coding system to reduce administrative burden

Capitation	Providers are paid a fixed amount for each person enrolled in their facility and expected to cover all required services	Predictable expenses for insurer; Eliminates incentive for overtreatment; Moderate administrative costs	Places higher financial risk on provider, who may seek to enrol lower risk patients ("cream skimming"); Incentive to under treat or refer on to other providers	Adjustment of capitated payment to reflect risks within covered population; Agreement and enforcement of service levels; Defined incentives to meet agreed service levels

Documented use in LMICs in UC

RBF initiatives appear to be gaining traction in LMICs as a means of improving health system quality as part of UC schemes, with a number of in country examples available[68]. Two examples – one from a low income setting, and other from a middle income setting – are discussed here. These examples were chosen as being broadly representative of a number of schemes described in the literature.

The first example comes from Rwanda[69], an LIC in Sub-Saharan Africa. Following a period of war and genocide, Rwanda was considered to have one of the weakest health systems in the world in the year 2000[70]. A particular problem surrounded the very low wages of public sector providers, and a key objective behind the introduction of RBF schemes was the motivation and empowerment of front line staff to provide treatments proven to be safe and effective. Pilot schemes were developed by Dutch and Belgian NGOs in 2002 and 2005 respectively. Schemes began on a very small scale, with indicators being developed to incentivise high impact interventions which could be easily delivered and the use of which were easily measurable. The scheme used positive incentives, with care facilities being paid a bonus for meeting indicators. Part of this additional funding was reimbursed by the facility and part paid as a bonus to staff, on top of their regular salary. The donor-led pilots provided

evidence to the government of the feasibility of the schemes, and a national level scale up is underway.

An MIC example comes from Belize [71], where the National Health Insurance scheme, with the support of the MoH, began implementing an RBF scheme in 2001, with the aim of improving access to care and efficiency of treatment of high burden diseases. A positive incentive scheme was designed, with both public and private providers able to receive up to 30% of their funding through meeting agreed indicators in areas such as the rational use of drugs and imaging, responses to patient satisfaction surveys and accuracy in data entry. In addition, an annual bonus of up to 10% of annual funds was available for meeting medium-term indicators such as nurses having received training in the use of clinical protocols. As of 2010, the scheme covered clinics and hospitals responsible for providing care to 40% of the country's population. Challenges in implementing the scheme included initial resistance from private providers, who were concerned the scheme would lead to over-regulation of services; and over-referral to third-party providers due to the incentives created by the capitation payment system. On the latter, a cap on numbers of referral was put in place following a pilot period.

Evidence of effectiveness

Literature on the effectiveness of RBF is growing at a relatively rapid pace[65]. Both country cases described above find a positive impact on care quality. In the Rwandan case, financial incentives were found to have a significant impact on providers' willingness to meet performance targets, with an implied positive effect on health outcomes[30]. In the case of Belize, successes attributed to the scheme include a reduction in maternal mortality rates across a number of regions in the country, and an increase in the number of people visiting a family doctor for the first time[71].

However, in both cases, authors note certain characteristics of both the health system and the country environment, which may have been important in ensuring success. Rwanda, for instance, already benefited from well developed IT systems, which proved useful in maintaining necessary treatment records[72]. In Belize, strong political support was considered crucial in maintaining the scheme in the face of resistance from private providers[71]. Furthermore, both schemes benefited from adequate levels of funding throughout their design and implementation phases.

A large scale review[72] provides further support for a positive impact of RBF schemes, particularly their effect on the process measure of altering provider behaviour towards more efficient working practices. However, the authors note that many impact evaluations last only during the early stages of schemes, and that the longer terms impact of schemes remains largely unknown. Furthermore, they note a lack of research surrounding the impact of schemes of the most vulnerable or geographically isolated groups, suggesting that the impact of schemes on equity of access to care requires further attention.

Glasziou et al[73] discuss the issue of managing unintended consequences of RBF schemes, and suggest designers give careful consideration to how these may be mitigated within their systems. Possible consequences include harm to the clinician-patient relationship through clinicians over-focussing on incentives; or manipulation of data to appear to have met targets. The review however, focuses on schemes in the US, UK and Australia, and no LMIC specific advice appears to be available. Levels and types of unintended consequences may differ in these settings, and the absence of evidence in this area suggests further need for careful monitoring of schemes.

RBF schemes, then, appear to be growing in popularity as a tool to improve access to – and efficiency of - care in LMICs, and good evidence exists to suggest a positive short-term

impact of schemes on altering provider behaviour towards increased efficiency in care delivery. However, the longer term impact of schemes remains unclear, as does the impact of schemes on equity of access to care. Furthermore, evidence suggests that success may be contingent on a number of local country characteristics, including suitable investment in technical and human resource capacity. Designing the scheme at a level appropriate to the existing health system also appears to have been important in these examples.

2.5 Introduction to the case: Thailand

The final part of this chapter introduces the healthcare system of Thailand, which forms the basis of the remainder of this study. A brief overview of the country's socio-economic background is given, and is followed by a review of the country's health status and challenges, as well as recent and ongoing attempts to move towards universal coverage.

2.5.1 Country socio-economic background

Thailand is a constitutional democracy in East Asia, with the King as head of state. In spite of some bouts of political unrest, the country has maintained a democratically elected government since the establishment of a constitution in 1932. There is a clear and functional divide between the judicial and executive branches of government.

Economic growth since the 1980s has been rapid and - with the exception of a temporary dip during the Asian economic crisis of the late 1990s - sustained. In 2010 the country had a Gross Domestic Product (GDP) of US$318.52bn[74] and a Gross National Income (GNI) per capita of US$4150[75], making it an upper-middle income country by the World Bank's classification[76]. The industrial make-up of the country has shifted over this time, from a largely agriculturally-based economy, to one dominated by secondary industries such as the manufacture of electronics and automobiles. In line with many countries which have experienced rapid economic growth in this way, however, much of the new wealth has been

unevenly distributed, and remains largely contained within major cities such as Bangkok, no doubt due in part to the increased urbanisation and increased levels of urban migration associated with the move towards a manufacturing-based economy.

2.5.2 Health status, systems and moves towards Universal Coverage

Economic changes have been accompanied by overall improvements in health, but associated changes in the burden of disease have also created new challenges for Thailand's health system. Sustained efforts to control communicable diseases such as HIV/AIDS have led to a steady decline in their prevalence. This, combined with significant improvements in child and maternal care, led to an overall rise in life expectancy between 1975 and 2005 from 64-78 for women, and from 58-70 for men[77]. Thailand met all health-related Millennium Development Goals (MDGs) in 2000, well ahead of the United Nations' target of 2015, and has pioneered the concept of MDG plus as more advanced and country-specific development targets[78]. However, increasing affluence and the aging population have led to a rise in levels of chronic diseases, particularly Type II diabetes and certain cancers[79].

Thailand's health improvements have been attributed to strong political will to implement health system reforms and to extensive and sustained investment in healthcare over a number of years[77]. From initial commitments to implement universal coverage in the 1970s, by 1998 75% of the population was covered by some kind of insurance scheme. However, throughout the 1980s and early 1990s, Thailand's economic rise led to an increase in private health expenditure[80], compounding income and health inequalities by limiting care in some cases to only those who could afford private cover. In addition, the concentration of wealth in urban areas led to relatively poor access to clinics, hospitals and essential services in more rural regions.

Both supply side (care provider) and demand side (financing) reforms in the years since have been instrumental in addressing these inequalities and extending coverage even further. On the supply side, development of infrastructure within remote areas and mandating clinicians to spend time practicing in rural areas were both key. On the demand side, the development and implementation of the Universal Coverage Scheme (UCS) by the government of the Thai Rak Thai party from 2001 onwards[81] was particularly influential. The 2002 National Health Security Act combined several existing schemes for the poor and underinsured and expanded coverage, funded through general taxation, to those not enrolled in the other government-run schemes for civil service staff and private sector employees[81]. An overview of the three currently government-administered coverage schemes is given in Table 5.

Table 5: Government-run health coverage schemes in Thailand
Source: Adapted from JLN country profile: Thailand[82]

Coverage scheme	Responsibility for funding and administration	Funding source	Population covered	Coverage level (% of population), 2007
Civil Service Medical Benefit Scheme (CSMBS)	Comptroller's General Dept, Ministry of Finance. No steering board	General tax revenue	Government employees and their dependents	8.0
Compulsory Social Security Scheme (SSS)	Social Security Office, Ministry of Labour. Oversight by Social Security Board, chaired by permanent secretary of Ministry.	Contributions from employees, employers and central government	Private employees or temporary public employees	12.9
Universal Coverage Scheme (UCS)	National Health Security Office (NHSO), Ministry of Public Health. Oversight from National Health Security Board, chaired by minister of health	General tax revenue	All Thai citizens not covered by one of the above schemes	74.6

In addition, a further 2% of Thai citizens currently purchase private health insurance, giving an overall coverage rate of approximately 98%[82].

For the sake of clarity, it should be noted that the term 'universal coverage' as it applies to Thailand, would refer to the combination of coverage generated through the three government administered schemes and private insurance. The Universal Coverage Scheme is one specific insurance scheme, so called as it aimed to fill the gaps left by other schemes and achieve universal coverage for the country.

In addition to this expansion in access, the Thai government appears to have designed the UCS with a number of other dimensions of health system quality in mind. For example, the UCS specifically seeks to address equity issues by aiming to be affordable to even the poorest members of Thai society, whilst simultaneously ensuring efficient and effective care through the use of evidence of cost-effectiveness in the selection of treatment interventions. Some of the measures taken to address these aims form the main focus of this study, and are discussed in section 4.

2.6 Conclusions of literature review and evidence gaps

This review has revealed use of evidence-based guidance, provider accreditation and results-based financing as tools to improve care quality by policy makers in a range of LMIC settings moving towards Universal Coverage. The extent to which QI schemes have been integrated into reforms varies considerably, from the development of detailed clinical guidelines which appear to have been little used; to continually developing and expanding guideline and HTA programmes; through to well embedded financing mechanisms and pay-for-performance schemes. A degree of political will to see the intervention implemented appears to be important in sustaining QI policy programmes and embedding them in a meaningful way.

This review has highlighted a number of gaps in the literature, particularly a lack strong evidence of the effectiveness of QI interventions in LMICs. There is some evidence that a number of interventions may be transferrable between countries, and that some of the challenges faced in implementation in LMICs are similar to those already documented in HICs (for instance over-referral within a capitation-based payment system in Belize, or difficulties in getting guideline recommendations into practice in African countries). However, assessments of impact have typically focussed on HICs, and the context-specificity of interventions highlighted by these studies suggests an urgent need to evaluate impact in LMICs broadly, or in specific countries.

3. Methodology

3.1 Research questions

The gaps identified in the research base from the preceding literature review – particularly gaps in country-level assessments of impact - suggest a need for real-world, country-level analyses of interventions to explore their use and possible impact. This study was designed to approach this by exploring the use of specific interventions in the health systems of Thailand, and to explore the extent to which they have been successfully used. The research questions are therefore:

1. *How have policy makers in Thailand attempted to use policy interventions to increase quality of health care within Universal Coverage reforms?*

2. *To what extent have these policy interventions been successfully implemented?*

3.2 Expected research outcomes

The research offers:

1. A case study providing insight into specific strategies in use to improve the quality of health care in Thailand.
2. A series of suggestions for other countries looking to develop or evaluate their policy initiatives around healthcare quality, particularly in the context of any move towards universal health coverage.

3.3 Justification for use of methodology and choice of case

The study used a single case study as an overall research strategy. Within the case, the specific methodologies chosen were interviews and document analyses.

A case study was chosen as a tool to illustrate one of the paths being taken to improve quality within UC movements. Denzin & Lincoln [83] propose that analyses of specific cases can be illustrative of a process of interest, and as such the case chosen here highlighted some of the achievements and challenges of countries aiming to improve the quality of care delivery as part of a move towards UC. A single case was chosen to give a significant depth of insight into the areas of interest within the time and word-limit constraints of this project.

Thailand was chosen specifically as a "revelatory" case[84], that is one with "high potential for offering new insight into an understudied phenomenon"[85]. As outlined in section 2.5, the Thai health system has institutions considered to be at a relatively advanced (compared to other countries in the region) stage of operation. As such, the study was able provide data on a range of processes which may be of interest to policy makers outside of Thailand itself. Thailand was also chosen for practical reasons, including having access to key policy makers, healthcare experts and other stakeholders for interview and follow-up.

Interviews and document analyses were considered to be appropriate research methods within the case for three reasons. Firstly, the concept of quality, as it applies to healthcare, is complex and multi-dimensional[23]. It is therefore necessary to speak to experienced practitioners in the field to gain a rich understanding of the issues involved. Secondly, the move of LMICs to UC systems is relatively new, having only occurred in the last 10 or so years, and is therefore not comprehensively documented. Pope and Mays[86] note that qualitative research such as this can be particularly helpful in providing clarification in new and complex areas. Thirdly, the constantly evolving nature of the policy environment means it is important to gain an understanding of the current situation. Interviews can therefore be useful here by quickly extracting the most up-to-date information from relevant professionals, which would not be possible through other methods. Given these complexities and

ambiguities, the methods employed here will have provided fast, up-to-date and richly detailed data.

3.4 Data collection

Data to inform the case study were collected from two sources. Firstly, analysis of policy documentation and secondly, in-depth semi-structured interviews. Methods of collection each source are discussed in turn here.

3.4.1 Policy documentation ('grey literature')

Grey literature was collected in two ways. Firstly from a search of organisational websites, and secondly interviewees were asked to provide or direct the researchers to important and publicly available documents. Documentation consisted of PowerPoint presentations, policy papers and organisation strategy reports and reviews. Documentation collected before the interviews was used to inform their design.

3.4.2 Interviews

In-depth, semi-structured interviews were carried out with 9 policy makers, academics and healthcare professionals in Thailand between October and November 2011

Interviewees were chosen for approach using a simplified version of Lincoln and Guba's[87] guidelines for "purposeful sampling". Initially, interviewees were chosen to be approached based on three main criteria. Firstly, their knowledge of – or involvement in – on-going quality efforts in their country, whether at a general level, or a specific involvement in one area of quality improvement. Secondly, their profession and area of expertise. Attempts were made to ensure a broadly even mix of policy makers, healthcare professionals, and academics, as well as a mix of areas of expertise of specific quality interventions, to ensure both breadth and depth of knowledge. Patients were not interviewed since the focus of the study is fixed at a policy level, and eliciting patient views directly was therefore deemed non-

essential. Thirdly, interviewees were chosen based on their availability for interview at a suitable time and place. In addition, these interviewees were asked for recommendations of further people to approach, who were assessed on the same criteria and approached if considered suitable.

Potential interviewees were approached by email, and in cases where the person was not already a known contact, attempts were made to connect through a mutual acquaintance in order to increase the likelihood of a positive response. All except one person who was approached agreed to be interviewed, either in person or on the telephone. In-person interviews were prioritised over telephone interviews due to the increased ability to build rapport with the interviewee, and therefore gain more meaningful insight, in a face-to-face situation. All except two interviews were carried out in person. Interviewees were interviewed either individually or in groups of between 2 and 4 practitioners from the same organisation. The pool of nine interviewees consisted of six policy makers, one healthcare professional and two healthcare academics. A full list is given in Appendix II.

Interview protocol

An interview protocol was designed in collaboration with three other researchers to guide the interviewers in carrying out the fieldwork. Since interviews were carried out by a number of different interviewers, the guide provided a means to ensure a balance between consistency of approach in terms of the key themes addressed on the one hand; and the flexibility to explore certain areas more deeply, based on the interviewees' areas of expertise and interest on the other. The protocol is included as Appendix 1.

The choice of questions for the protocol was based on (a) themes emerging from academic and policy literature reviewed as part of this study and (b) the opinions of the designers, all of whom have experience in the field of international health policy. The protocol includes at the

beginning a few reminders for the interviewers to set the scene for the interview, including introducing themselves and explaining the purpose of the interviews. The body of the protocol is broadly divided into two sections. The first section asks background questions aimed at eliciting information on the quality of care in Thailand, including perceived priorities for quality improvement, as well as asking which areas of any recent reforms have worked particularly well in improving care quality. These questions served firstly to verify and complement background information found in the literature, and secondly to provide a basis on which to select questions for section two. Section two asks more detailed and specific questions about interventions which the literature showed may be in use in these countries. Answers to these questions directly informed the analysis of this study. Care was taken during the design of the protocol to ensure detailed information would be obtained on both the mechanics of the interventions (i.e. how they function, who is involved in the processes) and the perceived effect of the interventions. Many of the prompt or follow up questions explore these issues. Questions were also asked exploring the future direction of many interventions and systems.

The protocol also includes a key to highlight which questions may be more appropriate for those working in certain roles (for example, policy makers or healthcare providers) or in certain areas of quality improvement (for example accreditation or clinical guideline development). Interviewers were free to decide which questions to ask and in which order, which probes to follow up with, and to devise new questions or explore other areas during the interviews, in order to ensure that the most useful information - in terms of the research aims - was elicited, as well as ensuring a good flow of conversation and a ensuring that a good rapport was maintained with the interviewee.

The interview protocol was piloted with a senior colleague from the Thai Ministry of Public Health. Following this and discussions amongst the designers, changes were made to both the

structure and content, most notably the introduction of the key to highlight questions most suitable for particular interviewees, described above.

Conduct of interviews

Interviewees were briefed by email on the purpose of the interviews, including the anticipated time to be taken and the topics to be covered, although questions were not sent out in advance. Requests were made for relevant background materials to be seen by interviewers, so that the interviewers could prepare adequately for the interview. Interviewees were assured of anonymity in the reporting of their findings.

The interviews were carried out using the protocol as a guide. Questions were chosen that were thought to fit with the known expertise of the interviewee, and their order was chosen in the process of conducting the interview in order to maintain the flow of the conversation.

Extra care was taken to clarify understanding - both from interviewee to interviewer and vice versa - in cases where English was not the interviewees' first language. For example, interviewers would check their understanding of an issue where this was not clear, by asking "Can I check that I understand this correctly? Are you saying that…?" Extra care was also taken to clarify the meaning of terminology or jargon, as well as acronyms and abbreviations where these were used. Calls or emails were used to follow-up with interviewees on any issue where understanding was not clear at the analysis stage.

Given the seniority of interviewees, techniques proposed by Silverman [88] for interviewing "up" were used in order to maximise the chances of colleagues presenting an accurate picture of their organisation. In particular, piloting the interview protocol before the final interviews; and not asking research questions directly should both have helped with gaining an open and accurate picture of the situation.

Where relevant and practical, comparisons of findings across participants were made. For example, questions were asked such as "Previously x told us that.... Is this consistent with your experience?" This allowed the cross referencing of findings to ensure accuracy, and also formed an early form of analysis by extracting and verifying emergent themes.

Recording and transcription

Consent to record the interview was sought from all interviewees and was granted in all cases. Interviews were recorded using a portable digital tape recorder. Detailed notes were also taken by all interviewers. All interviews were transcribed soon after they took place. Only the words of the interview were transcribed. No analysis was carried out on emphasis, inflection, or other non-verbal cues, since the research aims here (an understanding of practices and opinions) do not require this level of detail.

3.5 Analysis of data

In a similar way to the work of Pitayarangsarit[81], who explored the process of UC policy development in Thailand, this analysis has both a deductive and an inductive component. Deductively, this research aims to provide support (or otherwise) for the theoretical links identified in the literature. Inductively, it aims to build new theories of the practical application of quality improvement interventions in the Thai setting, through the emergence and discussion of key themes.

Interviews were used as the main data source, with policy documents used to triangulate findings to ensure their accuracy. Texts were analyzed in two phases. The first phase involved careful reading and re-reading of transcripts to ensure a full understanding of concepts, ideas and meanings. Recordings were returned to at this point as needed. Phase two involved highlighting extracts of text which represent a common or contrasting perspective or opinion on a particular issue, and therefore the establishment of common themes. The key

themes were then described and discussed in order to provide answers to the research questions which were as comprehensive as possible.

3.6 Limitations of methodology

The steps taken in the design of the study and the interpretation of results will have helped ensure good levels of reliability (the absence of random error, enabling other researchers to arrive at the same conclusions in similar circumstances[89]). Some facets of the nature of the interviewers, interviewees, and the relationship between them may have led to some biases in the results, however, and these are outlined here.

Firstly, the lead researcher and others carrying out the interviews come from a Western liberal background, and although reasonable attempts were made to understand the cultural differences in Thailand, it may not have been possible to capture all the details and nuances of this.

Secondly, achieving an accurate picture of a particular country's current situation through interviews is partly dependent on the interviewees' ability and willingness to address specific issues[88]. Whilst a careful choice of interviewees should have maximised the chances of gaining insight through able individuals, willingness to address certain issues may have been limited for two reasons. First, when discussing issues of quality, there is a natural desire to portray one's own organisation in a good light, either though genuine belief that one's own organisation is performing better than in reality it is, or through fear of being reprimanded for criticising the organisation in which one works. Second, in line with many Asian cultures, public criticism is actively discouraged within the cultural norms of Thailand[90]. For these reasons, interviewees could have been reluctant to discuss the failings and challenges of the current systems and/or overstate the benefits. Techniques for promoting open-endedness in interviewing senior colleagues discussed above will have helped reduce the potential bias

from this, as will triangulation of the interview findings with relevant policy literature. It is not possible to say with confidence, however, that such biases have been completely removed, and care is needed in interpreting the results.

Similarly, whilst the policy documents provide valuable additional insight, they cannot be considered to present a complete picture, as not all policy documentation, especially that still in development or considering more controversial issues, is necessarily made publicly available. Furthermore, policy documentation would not have been subject to academic peer review, potentially reducing its reliability. Again, avoiding being overly dependent on any one data source, and the use of multiple data types, will have helped minimise the possible negative impact of this.

4. Analysis and discussion of case study results

4.1 Introduction

This section of the thesis describes, analyses and discusses the findings from the case study results, relating to the use of specific QI interventions within the health system of Thailand. Given the context specific nature of these interventions, the section begins with a discussion of QI priorities in Thailand which emerged from the interviews. Following this, the use of the three studied interventions – evidence based guidance, accreditation and financial incentives – are discussed. Finally, some findings on work underway in Thailand to share knowledge with other countries are highlighted.

4.2 Local definition of quality and priorities for quality improvement

Interviewees were broadly consistent in their views of the current quality priorities for the health system, as part of a step-by-step process of improvement. The implementation of the UCS has meant that most of the population currently have access to essential care, and the focus is now on effectiveness and appropriateness of care, patient safety and equity in access to - and provision of - care.

Appropriateness of care is seen as important in addressing the growing burden of chronic disease in particular, but also more widely in the suitability of treatment. There is a realisation of the importance of using evidence to inform clinical decisions, but it was noted that good quality evidence is often difficult to source, and that it is difficult to know if international evidence is relevant to the Thai setting. One interviewee gave an example of ultrasounds being routinely used to diagnose appendicitis, which delays diagnosis. Without good evidence of any clinical benefit in terms of increased accuracy in diagnosis, it is not possible to tell whether this is a necessary diagnostic tool.

With respect to efficiency, the reduction of waste in the system and overcrowding in outpatient departments were seen as particular priorities:

"We have seen that we can reduce a lot of waste in the system"

- Senior manager in public QI organisation

"The overcrowding of outpatient departments in hospitals, I think that's probably the limit ... of the system to comprehensively take care of patients."

- Senior figure in government - linked think tank

Demand for increased safety appears to have been partly driven by the public, who, following the implementation of the UCS, expect access to essential care as standard, and now insist that the care meets acceptable safety levels:

"We face a lot of problems when there are adverse events. People will bring them to the mass media or to the medical council and then to the consumer protection groups and lastly to the courts. We are working a lot on risk management and patient safety."

- Senior manager in public QI organisation

Equity in access to and standards of care was cited as a key driver of the UCS since its implementation. Interviewees noted significant progress in this area, but there was a consensus that more financial and human resource investment was needed in rural areas to bring levels of care to a comparable standard to that in urban areas:

"Providing access to everyone has been a major strength, but this 'back office issue' [of how to make health provision more equitable] remains a challenge"

- Senior figure in government - linked think tank

Quality improvement was cited as being particularly important within the UCS to eliminate any perceptions that it is a second class service, and significant efforts have been made both to design a comprehensive package of care equivalent to that of the CSMBS and SSS schemes, and to ensure the financial sustainability of the system

"The UCS cannot be seen as poor health care for the poor"

- HISRO review of UCS

The use of the three interventions of interest - evidence-based guidance, accreditation, and financial incentives - in addressing these quality issues are discussed below in turn.

4.3 Use of evidence – based guidance to improve quality

The interviews found evidence of a number of nationally-led evidence-based guidance production programmes in Thailand. Historically, many programmes were led at a local level, leading to large variations in care quality between regions. Nationally-led programmes have had the joint aims of promoting uniform standards across the country to increase equity and access, ensuring appropriate care by reviewing evidence of effectiveness and promoting the use of interventions shown to be effective, and increasing efficiency through a consideration of costs and cost-effectiveness.

4.3.1 Clinical Practice Guidelines (CPGs)

The quality bureau of the NHSO has a mandate to produce CPGs. These are developed by expert committees, and are often adapted from international guidelines. As with similar organisations in other countries, not all diseases are covered. There is no formal process for selecting disease areas to be reviewed. The selection of topics is based on a combination of clinician interest and politically-defined disease priorities, currently focussed on the high-burden chronic conditions.

"We don't have every guideline for every disease or procedure. We [prioritise] some important disease… or intervention"

- Senior manager in payer organisation

Guideline recommendations are not mandatory, although the NHSO promotes the use of guidelines to providers, and the health system financing structure also provides a number of financial incentives for uptake. For example, a guideline recommendation that the optimum treatment level for renal dialysis is three times weekly would lead to providers being paid to provide exactly this level of treatment.

"We have [a]… group of experts…in renal disease, and they set the…guideline for treatment for providers. We adapt that guideline to … relate to our payment…. We set…how many times activity will be paid"

- Senior manager in payer organisation

In addition, where a particularly effective treatment is considered to be under-utilised, the payment mechanisms have been altered to incentivise the uptake of this treatment. These mechanisms are discussed in further detail in section 4.5 on financial incentives.

4.3.2 Health Technology Assessment and drug funding decisions

Evidence of the effectiveness and cost-effectiveness of health technologies, including screening programmes, vaccinations and pharmaceuticals, is used to inform decisions on whether these technologies should be made available as part of the UCS's basic package of care, provided free to all members.

The government of Thailand had, in the early 2000s, attempted to use compulsory licencing of patented drugs. Compulsory licensing is a flexibility under the World Trade

Organization's agreement on Trade-Related aspects of Intellectual Property rights (TRIPS) agreement, allowing governments to licence and manufacture generic versions of patented drugs in cases of public health emergency. The Thai government had argued that high levels of diseases such as cancers constituted such an emergency and issued licences for a number of high-cost cancer drugs. This move was, however, met with strong resistance from the pharmaceutical industry who - fearing a loss of revenue -threatened to withdraw other products from the Thai market, making this arrangement unsustainable in the long term (NHSO annual report 2008, from NHSO website).

In 2009, a "more systemic and evidence based approach to selection of interventions in the benefits package" (UCS review, p. 71), based around principles of HTA was adopted. The Health Intervention and Technology Assessment Programme (HITAP) was founded and, following a review of international HTA agencies, clearly defined processes were developed for its operation. These processes were developed in consultation with stakeholders, including clinician groups and the health technology industry, and such groups continue to be involved in HITAP's work. HITAP carries out reviews of the clinical effectiveness of a range of selected health interventions using recognised evaluation methods, and its findings directly inform the benefits package committee of the UCS, who consider this evidence of clinical- and cost-effectiveness, together with demand-side factors such as population expectations.

4.3.3 Challenges

A significant challenge to evidence-based guidance production surrounds the sourcing and interpretation of evidence. In sourcing evidence, a lack of local data or locally-run trials was cited as a problem, and is compounded by the fact that it has proven difficult to know what, if any, international evidence is relevant to the Thai setting:

"We would like to learn... what evidence we may adopt, or what evidence we should study in our local context"

- Academic and clinician at large teaching hospital

Interpretation of evidence is also often hindered by a lack of local technical expertise.

It is noted in some of the grey literature that doing evidence reviews and highlighting evidence gaps can significantly drive evidence production. For example, the work of HITAP and the benefits package committee in making evidence-informed decisions on the use of technologies seems to have driven more research in this area:

"This process has not only resulted in evidence-based decisions being produced and applied in a transparent manner, but it has also strengthened and sustained institutional capacities in generating evidence on [cost effectiveness], budget impact assessment and other ethical and social considerations"

- UCS review, p. 44

A second challenge relates to the timeliness of national programmes. One interviewee, an academic and practicing clinician, suggested that nationally-led programmes, which necessarily involve a wide range of stakeholders with differing opinions, took too long to make decisions, leading their hospital to set up its own programme.

"We listen to the national policy, but [it] tends to be too slow"

- Academic and clinician at large teaching hospital

The programme, based on evidence reviews carried out by colleagues at the hospital, was used to directly inform the hospital's formulary policy.

This example highlights the importance of timeliness in national decision-making processes Local decision-making due to real or perceived delays in centrally made decisions has the

potential to undermine the benefits of standardised quality - including agreed-upon standards for appropriate and efficient care – which national programmes aim to achieve.

A third challenge surrounds the processes by which decisions are made. In spite of good levels of stakeholder involvement and transparency in most of the evaluation and decision-making process, concerns have been raised that some decisions on inclusion of high-cost interventions into the benefit package have been overly influenced by professional groups close to committee members, and not necessarily supported by evidence.

> *"There are some concerns of the issue of specific benefit package selection particularly on high cost interventions, which had been approached on an ad hoc basis by some professional communities that had close connections with the subcommittees"*
>
> - NHSO report on the governance of the UC Scheme, p.26

Evidence-based guidance – both in the form of clinical guidelines and health technology assessments – appears to be extensively used within the UCS scheme in Thailand as a tool to improve efficiency and to promote effective and appropriate care. The development of dedicated institutions, directly linked to the health system, appears to have been important in ensuring that these programmes and their recommendations have been implemented and have become well embedded in the health system. Challenges remain around developing guidance for more high-priority diseases, sourcing and interpreting locally relevant evidence, and ensuring that decisions are made in the most open way possible to ensure their legitimacy and defensibility.

4.4 Use of accreditation to improve quality

A number of interviewees cited the national accreditation programme (Hospital Accreditation or HA) as one of the most important interventions in improving care quality in Thailand. Originally administered by various departments of the Health System Research Institute, the programme was formalised in 2009 and has since been run by the semi-autonomous government organisation, the Healthcare Accreditation Institute (HAI). The programme is used by approximately 95% of providers (public and private) across the country. Unless otherwise stated, quotes and themes in this section are extracted from interviews with a senior manager at the HAI.

4.4.1 Accreditation process

Thailand has adopted an accreditation process with three clearly defined tiers.

1. Risk assessment: Initial assessment of the risks to patient care across 12 dimensions, including if and how adverse events are reported, and methods for the recording of patient satisfaction
2. Development of a Quality Assurance plan: Assessment of the purpose, processes and performance of a clinical unit, and assessment of areas for improvement
3. Implementation of recommendations

A provider's accreditation status remains valid for 1 year, at which time they must apply for re-accreditation. Accreditation is voluntary and all insurance schemes will fund unaccredited providers. However, a system of financial incentives has been developed to encourage providers to seek accreditation and to move to higher levels.

4.4.2 Incentives to accredit

Within both the Social Security Scheme and the Universal Coverage Scheme, a provider's payment level is linked to their accreditation status. Under SSS, providers achieve a 10%

increase in their capitation rate on reaching stage 1, 20% on stage 2 and 30% on reaching stage 3. Under the UCS, the accreditation level is combined with scores in other areas as part of a complex weighting system to determine the final payment level. Care has been taken in the design of the incentive structure to ensure incentives are well aligned with the desired outcomes.

> *"We have tried to create a suitable level of incentive. Too much monetary incentive will mean providers work for the money rather than quality"*

4.4.3 Scheme development and political backing

'Soft' incentives, rather than harder policy requirements were initially preferred to encourage providers to gain accreditation, since they were viewed as less susceptible to alteration following a change in government.

> *"From the beginning, what we have done is that… we tried not to use strong policy because we know that…in a country like Thailand…politicians comes and goes. So if it's come from the politician we know that within a few years they will go"*

More recently, however, support from central government appears to have been important in maintaining HA in the face of competition from other accreditation schemes.

> *"The problem is that when we started, we were the only… quality system for hospitals… but [professional and patient organisations] liked to create their own system. This confused the hospitals, then we needed strong policy to say which one would be the one the ministry will [support]"*

HAI is now a semi-autonomous government body, which seems to make it well placed to benefit from political support when required, but has a degree of autonomy to work

appropriately with providers in its day-to-day operations and set its own strategic priorities for the benefit of the health system.

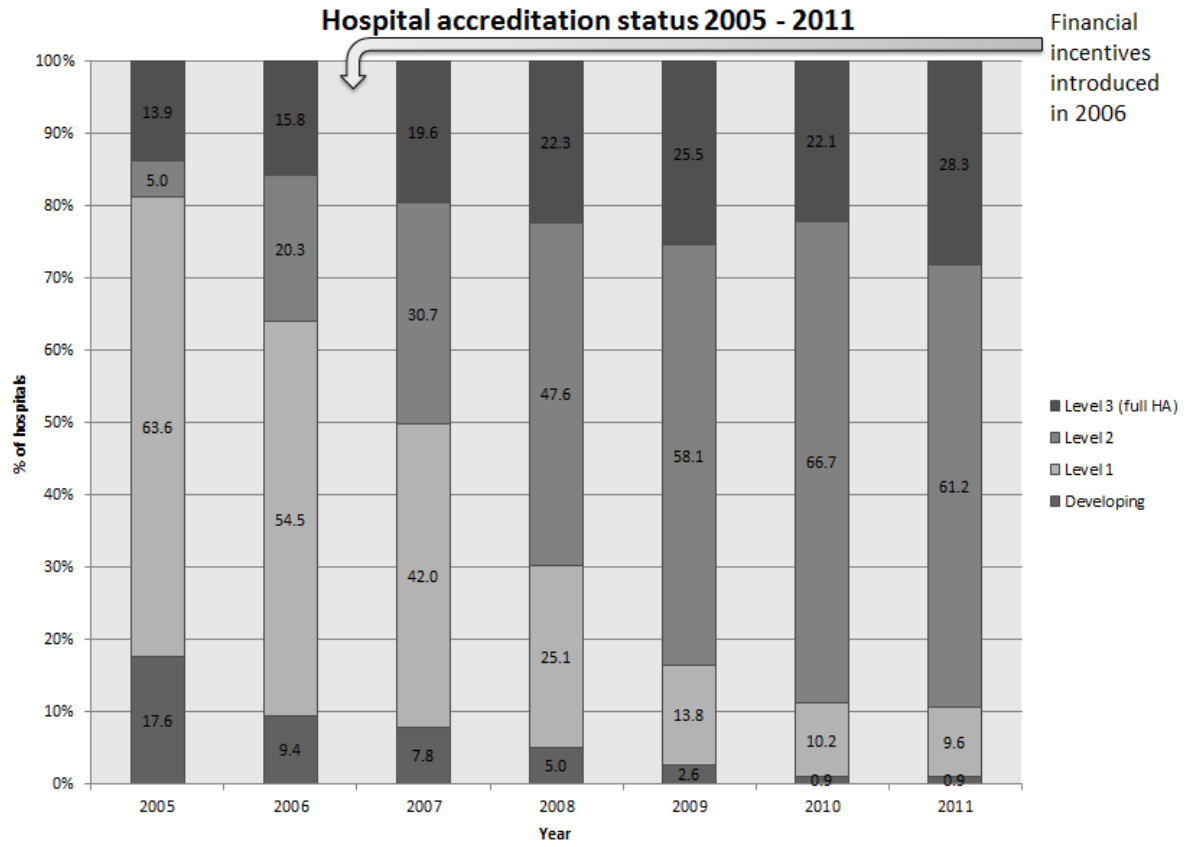
4.4.4 Evidence of impact

Anecdotally, accreditation was cited as a major driver of quality in Thailand by a number of health professionals interviewed for this study and its significant level of uptake by providers, in spite of being a voluntary process, suggests it is both popular and effective. Initial resistance from some clinical staff appears to have passed with time, continued explanation of the importance of the scheme, and development of the scheme to address their concerns:

> *"When they [doctors] study as a medical student, they study… about how to cure the patient, how to solve the problem on a daily basis, but not to look at the system underlying the health service [but]… when they get involved by themselves and they have freedom to determine what they want to do, they will have a better understanding of the quality system and can get the work done really well."*

Figure 1 below shows the percentage of hospitals achieving each level of accreditation from 2005 – 2011. Financial incentives, introduced in 2006, were cited as a major factor in encouraging scheme membership and progression. Relatively little data on levels before the introduction of incentives mean these claims cannot be verified on the basis of this data alone, but these figures, combined with positive feedback from clinical staff, provide some evidence of the scheme's strong popularity.

Figure 1: Hospital accreditation in Thailand before and after the introduction of financial incentives to gain accredited status. Source: Adapted from data supplied by HAI



Some challenges remain around misinterpretation of standards by provider level "quality coordinators" who have tended to interpret standards too strictly, causing some tension with physicians. Training courses in risk management and in the use of standards were cited as being helpful in increasing understanding of the appropriate use of the scheme from all sides.

4.4.5 Accreditation and medical tourism

The government of Thailand has promoted the country as a destination for medical tourism as part of plans to support economic growth, and in turn the local health system. Growth has therefore been seen the number of private hospitals seeking international accreditation standards. HAI have been keen to ensure their service remains of a high standard to remain competitive and attractive to providers:

"With our system of learning… we have tried to compete with our quality (!) so HA is attractive"

Given the potential for both positive and negative spillovers from medical tourism on local health system quality, and the lack of evidence of impact, monitoring of levels of access and equity in standards of care during the medical tourism promotion initiatives may be prudent.

4.4.6 Summary

Thailand has a well developed accreditation scheme which now appears to be well embedded in the health system, with a dedicated organisation unit devoted to its administration. The use of modest financial incentives seems to have been effective in ensuring uptake and continued participation from providers. There was some resistance from front line staff to adopt the system and ensure it is used appropriately. Training appears to have been helpful in overcoming this.

4.5 Use of financial incentives and results-based financing to improve quality

4.5.1 Financing and RBF in the UCS

This section briefly introduces the payment structures within the Universal Coverage Scheme (UCS) of Thailand, before discussing the use of pay for performance (P4P) schemes to incentivise efficient treatment levels in under- or over-treated areas. Finally, the payment structures of the two other insurance schemes are introduced and comparisons are made.

The provider payment structures within the UCS were designed in such a way as to be conducive to containing costs, which was considered a major concern due to the potentially high costs associated with a large increase in access. Providers are assigned a maximum annual budget via a capitation formula based on the average cost of providing a defined basic package of care, multiplied by the number of UCS members. Within this, both inpatient and

outpatient budgets are assigned. Outpatient treatment is funded on a capitation basis, using an annually reviewed fixed rate per patient, and adjusted for local population factors including the age mix and numbers of patients in rural or hard-to-access locations. Inpatient treatment is funded via a DRG-based casemix system, with cases reimbursed at pre-defined rates, up to the defined global budget limit each year. This so-called "closed end" approach to financing is acknowledged as having been crucial in reducing unnecessary spending. However, further intervention has been necessary to mitigate the incentives to under treat created by this system:

> *"Medical providers have no financial incentive to induce unnecessary demand, which they have with a fee-for-service payment method. On the contrary, because providers have a financial incentive to minimize costs, a major concern within the UCS is the under provision of services, about which the NHSO must remain vigilant"*
>
> - HISRO review of UCS

> *"We cannot pay only by capitation and… [meet] the objectives of our system"*
>
> - Senior manager in payer organisation

Measures to ensure appropriate levels of provision have included monitoring of treatment levels, surveys of patient satisfaction and – the focus of the remainder of the discussion here – P4P to incentivise treatment in specific areas where inefficient treatment has been identified.

Pay for performance schemes were introduced in to the UCS in 2007 to *"motivate improvement"* and *"incentivise the use of proven safe and effective treatments"*, such as the use of anti-clotting drugs in the treatment of stroke (NHSO presentation). Specifically, positive financial incentives have been used to target QI in certain high priority disease areas, mainly in high burden chronic diseases such as diabetes and cardiovascular disease.

Indicators serve to describe input measures (such as numbers of personnel or availability of equipment), process measures (such as the level of hospital accreditation achieved) or output measures (such as the number of amputations from diabetes complications). Meeting the standard described by the indicator results in the hospital receiving extra payment. There are no penalties for not meeting indicator targets.

The choice of topics for indicator development has so far been driven by clinicians' areas of interest, political priorities, and some empirical information on disease burdens. Interviewees working in this area expressed desire to work on formalising a prioritisation process to ensure programmes could have the maximum impact on population health.

The schemes have been supported by dedicated budgets from the beginning of their implementation, and in 2011 these accounted for approximately 1% of the total healthcare budget (NHSO presentation). The quality bureau of the NHSO is responsible for the development of quality indicators, which are developed from analysis of retrospective claims data, providing the ability to monitor current practice and highlight areas for improvement:

> *"We have… information from claims…. So we have a resource that we can use… to set the indicators"*
>
> - Senior manager in payer organisation

Furthermore, payment mechanisms have been altered to facilitate or incentivise the adoption of specific treatments or interventions. One interviewee, for instance, described a programme for increasing the effectiveness of diabetes treatment, summarised in Box 1.

Box 1: An example of amending payment structures to incentivise uptake of under used interventions, in this case HbA1c screening to ensure diabetes control

Incentivising the use of HbA1c screening to aid effective diabetes control

Analysis of claims data from providers in 2010 had highlighted under treatment of diabetes, a chronic disease leading to elevated blood sugar levels, which was growing in prevalence in Thailand. Without suitable treatment, complications from diabetes can include loss of vision; and foot ulcers, which in cases can lead to the need for amputation. Such complications bring extra suffering to patients and extra costs to the health systems, and improvement of monitoring and treatment programmes was therefore considered a high priority.

A clinical guideline developed in collaboration with expert physicians recommended a screening of long-term blood sugar levels (HbA1c screening) at least once per year, yet claims data revealed this was happening in less than 10% of outpatient cases under the existing capitation system. To incentivise the use of screening, a separate budget line was created for this, and providers were paid a flat fee per screening taking place, effectively creating a fee-for-service arrangement for this specific procedure, and leading to increased income to the provider where screening took place. This was viewed by NHSO as an investment in prevention to prevent incurring costs in the future.

A follow up survey of 50,000 patients in 2011 showed increased levels of HbA1c testing in the year since the implementation of this scheme.

4.5.2 Payment incentives in other insurance schemes

The SS Scheme for private sector employees has adopted a capitation-based system for both inpatient and outpatient care, and has similar levels of expenditure and comparable outcomes to the UC Scheme (Universal Coverage Scheme review). However, the civil service scheme (CSMBS) retains a fee-for-service structure for inpatient treatment. These differences in payment structures serve as a natural quasi-experiment, highlighting the impact of payment mechanisms on health professional behaviour. Whilst all three schemes cover a full range of essential services, CSMBS expenditure per capita is estimated to be four times higher than the two other schemes, due to incentives created to over treat. CSMBS has, for instance, been found to have higher rates of Caesarean sections and longer hospital stays for most conditions (all figures from UCS review 2010). This provides some evidence that health professionals

do respond to the incentives created through the use of different provider payment mechanisms.

4.5.3 Summary

Finance structures and mechanisms – including results-based financing schemes - have been used as part of quality improvement programmes in Thailand to create incentives for improvement across two dimensions of quality. Firstly, incentives have been created to increase efficiency through containing costs and reducing unnecessary treatment. This appears to have been particularly important at a time when access to care was increasing at a rapid rate. Designing financing structures in such a way as to contain costs may have been important in ensuring financial viability of the system in its early years. Secondly, incentives have been created to increase appropriateness of care through providing enticement to treat in specific situations where under treatment was an issue. This has been particularly important within the capitation-based funding mechanism of the outpatient system in the UCS, where potential incentives to under treat are created.

4.6 Sharing knowledge with other countries moving towards UC

Given that there may be implications of Thailand's reforms for other countries, this section briefly highlights some of the work that Thai health organisations have done so far in order share experiences internationally.

Firstly, the Healthcare Accreditation Institute (HAI) has run training workshops with partner organisations in Nepal and India to share experiences and engage in joint problem solving in developing and running accreditation systems.

Secondly, The National Health Security Office (NHSO) has developed the "NHSO academy" to engage in training and knowledge sharing with other countries implementing UC schemes. The focus so far has been on designing efficient financing systems, addressing resistance to

change and ensuring sustainability in health systems. Memoranda of understanding have been signed with partners in Korea, Taiwan and Vietnam. Such work is considered by NHSO to be mutually beneficial.

"We hope that we can work together in the future to share knowledge or experience with each other, and at the same time we can improve our capacity also"

- Senior manager in NHSO

5 Conclusion

The final chapter of this thesis addresses the research questions by summarising the key findings from the interview and document analysis, before discussing the implications of the findings for policy makers in LMICs. In addition, some of the limitations of the study are noted, and suggestions are made for further research.

5.1 Summary of findings and answers to research questions - use of policy interventions within Thailand's universal coverage reforms

Thailand has made significant use of evidence-based guidance, provider accreditation and financial incentives to increase quality levels, and appears to have successfully implemented them in a way in which they have become sustainable part of its UC reforms.

Evidence-based guidance is used within the UC Scheme, both through the development of clinical guidelines and the use of HTA to inform strategic purchasing and prescribing decisions through the UCS's essential benefit package. The links made between guideline recommendations and provider payments demonstrates that guidance may be particularly powerful when linked to financing mechanisms which can provide both the financial backing required to support implementation and/ or provide direct financial incentives for providers to take guidance recommendations into account.

A national hospital accreditation programme appears to have been an important tool for quality improvement, and its positioning as a semi-autonomous government body seems to have been important in achieving a balance between political and financial control to ensure sustainability on the one hand; and autonomy to set strategic direction and work closely with providers on the other. Financial incentives have been important in encourage providers to join the scheme and progress to higher levels of accreditation.

Significant work has been carried out in designing finance structures in such a ways as to promote efficient and equitable access to care in Thailand. A capitation-based outpatient financing system and DRG-based casemix system for inpatients, together with the use of a global budget, were crucial in containing costs and ensuring efficiency at a time of large scale increase in access. Flexibilities in the financing system have been exploited in order to create incentives to increase or decrease treatment levels in specific areas as needed. Although no evidence was found of unintended consequences from the use of such incentives here, such effects cannot be ruled out and could be explored further.

Thailand is at an advantage in being a middle income country with a growing economy and not overly dependent on donor support, with the associated risks of unsustained funding for projects and skewed priorities. This, combined with functional governance structures and institutions, has meant that the health system of Thailand has been able to respond to genuine local priorities over the medium to long term, which appears to have been important ensuring the use of appropriate interventions in response to locally defined problems, resulting in a stronger health system in recent years.

5.2 Implications for other LMICs moving towards UC

A key concern of policy makers will be knowing how to choose policy interventions which will work to meet their objectives, and ensure that the financial and political investment in them has real impact[91]. The findings here imply the following suggestions for policy makers in other settings looking to use these quality-promoting interventions as part of UC reforms.

1. National evidence-based guidance programmes, when linked with suitable support and incentives for implementation, can be useful tools to improve the efficiency, appropriateness and acceptability of care.

2. Health financing systems, and particularly the mechanisms by which care providers are paid, can be designed with care quality – in particular efficiency and it associated effects on access – in mind. In particular, thought can be given to the incentives created to over- or under-treat and the flexibilities which may be required to adjust incentives in the future.
3. Cost containment may be important in ensuring efficiency, and therefore sustainability, during large scale increases in access to care, such as universal coverage reforms
4. Well-designed accreditation schemes may be useful in improving care across a number of dimensions. A positive impact on patient safety cannot be assumed, and monitoring of levels of adverse incidents could be considered as part of the intervention.
5. The context-specific impact of these interventions suggests that a decision to employ them may need to be based on a good understanding of the local context, including the local health system and wider political and economic environment.
6. Limited good quality evidence on the impact of evidence-based guidance, accreditation and financial incentives in LMICs suggests a need for caution in the design and implementation of interventions. Where appropriate evidence is not available to support the use of an intervention, gradual scaling up and / or careful monitoring could be considered to minimise the impact of unforeseen negative consequences.
7. Evidence, reviews and process expertise can be seen as global public goods, and processes and institutions for sharing knowledge and expertise and learning from the expertise developed by others could be considered.

5.3 Limitations of study

This work has provided some discussion of the use of policy interventions to promote quality in a number of LMICs and - in more depth - of their use in Thailand. However, within the time and word limits of this project, a fully exhaustive account was not possible. Although

care was taken in the choice of interviewees and policy literature, it cannot be claimed with certainty that all facts and viewpoints were captured with this relatively small dataset.

5.4 Recommendations for further research

Several areas for further research are implied from the findings here.

Firstly, there is an urgent need for more empirical evidence of effectiveness of the use of evidence-based guidance, accreditation and financial incentives, particularly in terms of their impact in LMICs on raising quality levels across the six commonly used dimensions. Both primary research and synthesis of existing evidence would be useful in helping to fill this gap. Furthermore, many more quality interventions are available than were discussed here, and other interventions could form the basis of further research.

Secondly, research is needed into what may be done to solve problems of shortage of clinical evidence in LMIC settings, to inform evidence-based guidance development. Such research could cover both how to incentivize and support locally run clinical trials and local data collection where this is required, as well as the development of methods on how to inform decisions on the adoption of internationally produced evidence. Locally relevant research on the most effective ways to ensure implementation of guidance recommendations also seems important.

Finally, given the apparent context dependency of many QI interventions, future work could focus on identifying the context -specific determinants of – and prerequisites for – successful implementation of such particular interventions.

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Appendix I – Interview protocol

Introduction:

1. Thank interviewee(s) for their time and for agreeing to be interviewed
2. Introduce interviewer(s)
3. Provide a brief overview of the JLN and the aims of these interviews
4. Provide an outline of the interview – a few general questions on quality of care in [Thailand], followed by specific questions on their area(s) of expertise
5. Seek consent to record interview. Assure that data will be anonymised, and that interviewee will have the chance to review any quotes used before publication

For all interviews – use existing experience from literature reviews and previous surveys - as well as knowledge of interviewee's role, to (a) influence choice of questions (b) decide how deep to probe on each topic

Key to questions:

All – General quality questions, probably suited to most interviewees
PM – May be more relevant to policy makers
PR – May be more relevant to providers

All	1. What is your understanding of quality of care in [Thailand]? • What are the 3 most important elements, in terms of their impact on improving care? • If needed, prompt with which if any of 6 IOM dimensions seem relevant i. Effectiveness of care ii. Patient Safety iii. Efficiency (value for money) iv. Timeliness (waits and delays) v. Patient Centred-ness vi. Equity
All	2. Are there 1 or 2 aspects of the health system, or recent reforms, which you think have worked well in terms of improving quality? Why do you think this was? • For example: Pay for performance, regulation, licencing, accreditation, patient empowerment, guidelines [most important ones can be picked up with further questions below]
All	3. In the context of the UC reforms, do you know of any reforms which explicitly address quality assurance and improvement? • Are there government organisations with specific responsibilities for quality of care? (if agencies are known already, prompt for more information on their role if necessary) • Can policy/national strategy documents be accessed / viewed?
All	4. Do you know of any available reports on the quality of care in [Thailand] • Who produced them (MoH or external agencies)? • Are there regular reviews?

All	5. Do you know if any information, resources or tools related to improving the quality of care that are made available to care professionals and/or patients to facilitate their work?
PM	6. Do you use evidence of clinical and cost-effectiveness of interventions or treatments to improve quality, for example though (a) listing/delisting decisions for pharmaceutical in the basic package (b) clinical guidelines or performance standards for clinicians • If yes, how well do you think it works? Who develops standards / guidelines? Are they developed at national / hospital level? Who approves final guidelines / standards and what is the process? Are their documented methods and processes? Are the systems likely to be modified or expanded • If not, do you have plans to introduce such systems?
PM / PR	7. Does the health system carry out accreditation of providers (primary or secondary care)? • If yes, how does it function? How well do you think it works? Are there any aspects that work better than others? Are you thinking of modifying it? Expanding it? • If not, do you have plans to introduce such systems?
PM / PR	8. How does the payment mechanism (DRGs, FFS) influence the quality of care? Can you give any examples?
PM / PR	9. Are there incentives (financial or otherwise) for providers to increase the quality of care they provide? • Positive incentive or penalty incentive; non-financial (e.g. career progression / CME points)
PM / PR	10. Are any mechanisms in place for providers to report on their levels of quality of care? • Who are reports sent to? How often? Paper / electronic? What info do they contain? What analysis is done with them? How does this feed back into policy? • Are regular audits on quality of care carried out? Who does them? What info do they contain? What analysis is done with them? How does this feed back into policy?
PM / PR	11. In the healthcare education system (doctors, nurses, paramedics etc), how is the quality of care addressed within the curriculum? • Check information is up to date, particularly if interviewee may not have been involved in education system for some time
PM / PR	12. What efforts have been made (if any) to strengthen patients' and the public's role in healthcare • Presence of patient groups? How many? How are they funded?

	• Involvement in guideline development? (If not, are there plans to?)
All	13. What do you think are the 3 biggest obstacles to improving quality in [Thailand]? • Which one is the most important?

Appendix II – List of interviewees

1. Leader, Health Technology Intervention and Assessment Programme (HITAP), Ministry of Public Health
2. Director, Health Insurance System Research Office (HISRO)
3. Deputy Director, Health Insurance System Research Office (HISRO)
4. Deputy Secretary General, National Health Security Office (NHSO)
5. Deputy Secretary General, National Health Security Office (NHSO)
6. Director of Bureau of Policy and Planning, National Health Security Office (NHSO)
7. Manager, Bureau of Policy and Planning, National Health Security Office (NHSO)
8. Professor, Faculty of Medicine, Naresuan University (via telephone)
9. Chief Executive Officer, Healthcare Accreditation Institute (HAI)

Appendix III – Grey literature included in analysis

1. *Thailand's Universal Coverage Scheme: Achievements and Challenges. An Independent Assessment of the first 10 years.* Nonthaburi, Thailand: Health Insurance System Research Office
2. *Payment for Quality Performance: Experience of Thailand's NHSO.* PowerPoint presentation shared by interviewees 4-7
3. *Quality in Healthcare Delivery: Marching Towards Global Standards with Local Touch.* PowerPoint presentation shared by interviewee 9
4. *UC Budget Estimation: General Principles*. PowerPoint presentation shared by interviewees 6 and 7
5. *Final Report of TOR 4: The Governance of the UC Scheme.* Nonthaburi, Thailand: Health Insurance System Research Office
6. National Health Security Office Website http://www.nhso.go.th/eng/Site/Default.aspx
7. Health Insurance Systems Research Office Website http://www.hisro.or.th/main/index.php
8. Health Intervention and Technology Assessment Programme Website http://www.hitap.net/en