SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A PROVIDER DRIVEN MI CROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

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A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy Program in Public Health
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ประสิทธิผลของระบบประกันสุขภาพชุมชน ต่อการพัฒนาความเท่าเทียมในการเข้าถึงบริการสุขภาพระดับปฐมภูมิ และผลลัพธ์ทางสุขภาพของประชาชนในกรุงกัวลาลัมเปอร์ ประเทศมาเลเซีย

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรดุษฎีบัณฑิต
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Thesis Title	SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A PROVIDER DRIVEN MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA
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มูราลี่ทาราน มูนิซามี่ : ประสิทธิผลของระบบประกันสุขภาพชุมชน ต่อการพัฒนาความเท่าเทียมในการเข้าถึงบริการสุขภาพระดับปฐมภูมิ และผลลัพธ์ทางสุขภาพของประชาชนในกรุงกัวลาลัมเปอร์ ประเทศมาเลเซีย (SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A PROVIDER DRIVEN MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ศ. ดร. สถิรกร พงศ์พานิช, หน้า.

ระบบการดูแลสุขภาพของประเทศมาเลเซีย ในปัจจุบัน มีการสถานบริการดูแลสุขภาพประชาชน ทั้งหน่วยงานภาครัฐและภาคเอกชน ประชาชนส่วนใหญ่นิยมเข้ารับบริการรักษาในคลินิกเอกชน ที่กระจายอยู่ในชุมชนต่างๆ จากพฤติกรรมการใช้บริการด้านสุขภาพดังกล่าว ก่อให้เกิดภาระค่าใช้จ่ายที่นอกเหนือจากสวัสดิการด้านการรักษาที่ภาครัฐจัดการดูแลให้กับประชาชน การศึกษาในครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาถึงระบบการประกันสุขภาพในระดับปฐมภูมิ ที่เหมาะสม ได้รับการยอมรับ และ มีประสิทธิผล ต่อผลลัพธ์ด้านสุขภาพของประชาชนในเมืองจาลันอีบู กรุงกัวลาลัมเปอร์ ประเทศมาเลเซีย

การศึกษาครั้งนี้ แบ่งเป็น 3 ระยะ ระยะที่ 1 เป็นการศึกษาข้อมูลย้อนหลัง เพื่อวิเคราะห์ต้นทุนการบริการรักษาผู้ป่วยระดับปฐมภูมิในคลินิกเอกชน ประกอบการอภิปรายกลุ่มกำหนดอัตราค่าบริการ กรอบการให้บริการ ในระดับพรีเมี่ยม สิทธิประโยชน์ของบริการประกันสุขภาพในคลินิกเอกชน ระยะที่ 2 เป็นการสำรวจ ประเมินความพึงพอใจ ความคิดเห็นต่อการยอมรับการบริการประกันสุขภาพดังกล่าว และในระยะที่ 3 เป็นการทดลองนำการบริการประกันสุขภาพไปใช้ เพื่อประเมินประสิทธิผล โดยมุ่งเน้นการวิเคราะห์ค่าใช้จ่ายด้านสุขภาพต่อเดือนของประชาชนในระดับครัวเรือน สิทธิประโยชน์ที่ประชาชนได้รับ และผลลัพธ์ด้านการรักษาภายใต้การประกันสุขภาพของคลินิกเอกชน กำหนดกรอบราคาของประกันสุขภาพในระดับพรีเมี่ยม 1,500 ริงกิต ครอบคลุมสิทธิประโยชน์ 5 คนต่อครัวเรือน จากการประเมินประสิทธิผลของผู้ซื้อประกันสุขภาพพบว่าร้อยละ 81.8 ให้การยอมรับราคาดังกล่าวเหมาะสมกับสิทธิประโยชน์ด้านการรักษาที่ได้รับ จากการติดตามค่าใช้จ่ายด้านการรักษาของ 57 ครัวเรือนที่ใช้บริการประกันสุขภาพเป็นเวลา 6 เดือน พบว่าค่าใช้จ่ายด้านสุขภาพของครัวเรือนลดลงเฉลี่ย 217.36 ริงกิตต่อครัวเรือน ในระดับความเชื่อมั่น 95 % (187.84-246.70) หรือลดลงร้อยละ 9.6 ความล่าช้าของการรับการรักษาลดลงเฉลี่ย 2 วัน และมีการใช้บริการคลินิกเอกชนที่มีระบบประกันสุขภาพดังกล่าว เพิ่มขึ้น ร้อยละ 62 ผลลัพธ์ด้านสุขภาพ พบช่วงเวลาการเจ็บป่วยลดลงอย่างมีนัยสำคัญทางสถิติ ด้านผู้ป่วยเบาหวานที่ใช้บริการดูแลรักษาภายใต้การประกันสุขภาพในคลินิกเอกชน มีระดับน้ำตาลในเลือดสะสม เอชบี เอ วัน ซี ลดลง 1.2 นอกจากนี้ผลตรวจทางห้องปฏิบัติการของผู้ป่วยโรคเรื้อรังอื่นๆ อาทิ โรคไต ไตวายเรื้อรัง โรคหอบหืด ความดันโลหิต เป็นไปในทิศทางที่ดีขึ้น อย่างมีนัยสำคัญทางสถิติ เมื่อเปรียบเทียบกับกลุ่มผู้ป่วยที่ไม่ได้ใช้บริการดูแลรักษาภายใต้การประกันสุขภาพดังกล่าว

การศึกษาในครั้งนี้ มีข้อค้นพบที่เป็นทางเลือกใหม่ให้กับประชาชน เพื่อช่วยเติมเต็ม ระบบบริการดูแลรักษา ในระดับปฐมภูมิ ที่ประชาชนในทุกระดับสามารถเข้าถึงได้ ควบคู่ไปกับการพัฒนาขีดความสามารถ และคุณภาพการบริการภายใต้หลักประกันสุขภาพของภาครัฐ เพื่อประโยชน์สูงสุดด้านสุขภาพของประชาชนชาวมาเลเซียต่อไป

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2558 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

5679155753 : MAJOR PUBLIC HEALTH
KEYWORDS: HEALTH INSURANCE / MICRO INSURANCE / HEALTH EQUITY / OUT-OF-POCKET / HEALTH SYSTEMS / MALAYSIA

MURALLITHARAN MUNISAMY: SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A PROVIDER DRIVEN MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA. ADVISOR: PROF. SATHIRAKORN PONGPANICH, Ph.D., pp.

Malaysia has two parallel systems of healthcare. Many Malaysians seek care in private settings, especially in private primary care clinics, largely funded by Out-of-Pocket (OOP) payments. This study assessed the feasibility, acceptability and efficacy of a health microinsurance scheme (HMI) for private primary care clinics in Kuala Lumpur. This study was set in Jalan Ipoh, Kuala Lumpur and had three phases. Phase 1 consisted of a retrospective cohort cost analysis study determining annual average patient treatment costs and focus group discussions to establish the premium price, list of offered services and rules of provision for a feasible HMI. Phase 2 evaluated the acceptability of the scheme via a cross-sectional willingness/ability to pay study. Phase 3 was a quasi-experimental study which tested the scheme's efficacy on monthly health expenditures, utilization of health services and disease outcomes among sampled households. HMI premium price was set at RM 1500.00 for a family of five, with a defined benefit package and terms of service provision. 81.8% of the potential users surveyed found this price acceptable. From the 57 households followed-up over 6 months, those in the experimental arm (with microinsurance) had an average reduction of RM217.36 (95%CI 187.84-246.70) alongside a 9.6% (95%CI 8.2-11.3) reduction in % of health expenditure as % of total household expenditure. Delay in care seeking also reduced by 1.9 days (95%CI 1.3-2.4) and an increase of 62.4% (95%CI 56.8-66.7) in choice of private primary clinic as first choice for treatment. Almost all length of disease episodes decreased significantly for surveyed acute diseases. Diabetic patients in the experimental arm had an HbA1c reduction of 1.2 (95% CI 0.9-1.5) while reductions in other chronic diseases such as nephropathy (microalbuminuria levels reduced 73.4mg/L, 95%CI 38.5-99.4); bronchial asthma (% predicted of peak expiratory flow rates improved by 9.8%, 95%CI 7.1-11.4); systolic blood pressure (reduced 29mmHg, 95%CI 26-32); and chronic renal disease (4.0% reduction in creatine as % predicted from normal, 95%CI 2.2-7.6) This study established evidence on the implementation of health microinsurance schemes in Malaysia and other LMICs. This could provide a viable solution to fill gaps in healthcare provision in LMICs and hasten the road to universal healthcare coverage (UHC).

Field of Study: Public Health Student's Signature .....

Academic Year: 2015 Advisor's Signature .....

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Introduction

1.1 Background/Rationale

The Malaysian healthcare system is a unique one, having developed two parallel arms namely the public healthcare sector and an equally widespread highly evolved private healthcare system. The public sector, funded by general taxation and revenue, is open to all Malaysians with minimal (RM1) fees at ambulatory access points and heavily subsidised costs for other inpatient costs. The public healthcare sector comprises an intricate network of healthcare facilities; from rural health clinics to district hospitals, and tertiary multi-speciality hospitals as well as university hospitals in which patients can be referred from one centre to another depending on need for treatment via an established referral mechanism (Jaafar et al., 2013).

The public primary care clinic setup vary in size and generally has medical officers, a pharmacist, nurses and basic laboratory and radiology services. However the medical officers in the clinic not only manage chronic conditions but also acute medical conditions, pediatric cases and antenatal care, sometimes seeing up to 100 patients per day. Naturally these are poor working conditions in which mostly junior doctors work and causing rightly so, a high staff turnover as well (Jaafar et al., 2013). In an overcrowded healthcare setting, it is difficult for a physician to effectively manage patients, especially those with chronic diseases. Attending physicians try their best to deal with the reality of treating these patients as they know that the limited time they have in meeting with them as well as the frequency of these patients' visits are inadequate for the true medical care and attention needed for them (Mafauzy, 2005). The private healthcare sector, in the meanwhile, has also evolved a number of stand-alone multi-speciality hospitals and a wide range of

private primary care clinics which are independent of each other and run by medical officers or family physicians. They perform almost the same role as the government primary care clinics but far outnumber the latter although they are mostly concentrated in urban areas of the country. Patients going to private primary care clinics can either pay as out-of-pocket, use private insurance coverage or as part of a managed-care organisation/ panel-clinic scheme under their employers (Ministry of Health Malaysia, 2012)

Due to improving socio-economic conditions, the utilisation of services, especially in the primary care area, has shifted from being dependent on the public healthcare sector to the private healthcare sector as many patients, especially for ambulatory and outpatient treatment refuse to wait in long queues and see different doctors every at every visit. Many patients (including those with chronic diseases such as diabetes) now also begin to be treated in private primary care settings as they are located nearby their homes, have much-lesser waiting times and better quality of service and personalised care(David Quek, 2009).

Source	RM million	%
Private household out-of-pocket expenditures	10 607	76.81
Private insurance enterprises (other than social insurance)	1 968	14.25
All Corporations (other than health insurance)	804	5.82
Non-profit organisations serving households	365	2.64
Private MCOs and other similar entities	66	0.48
Total	**13 809**	**100.0**

Figure 1: Public and Private Sector Resources and Workload (2008)(Munisamy, Thanapalan, Murelitharan, Munusamy, & Krishnan, 2015)

The problem here arises however due to the fact that these patients often have to largely pay out-of-pocket for consultation, medication and treatment.

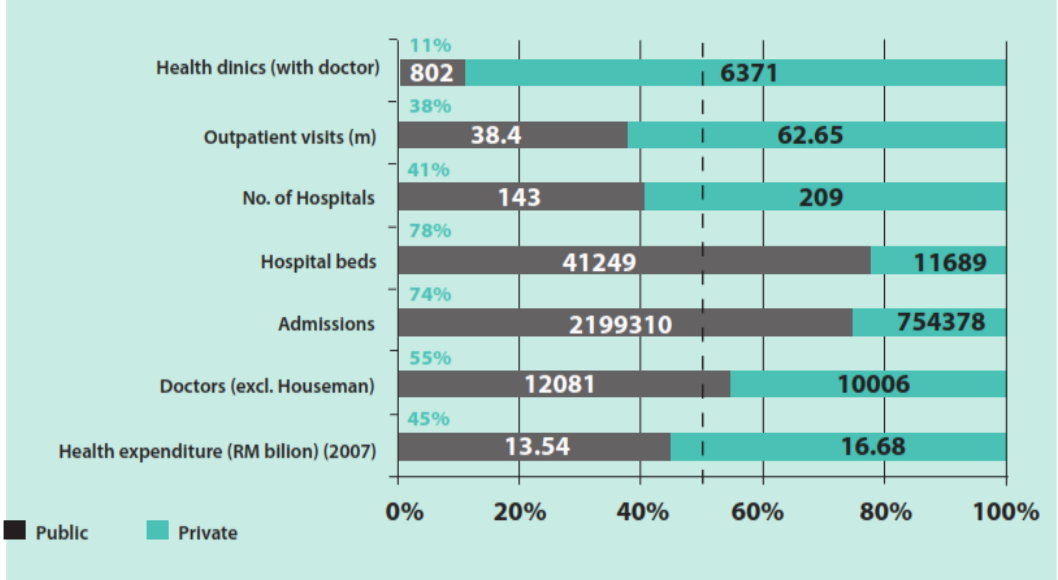


Figure 2: Private healthcare by source of funding 2009 (Jaafar et al., 2013)

This results in poor compliance to medication as they have to pay for it, decreased regularity in visits to the doctor and foregoing of necessary tests required to assess disease and complication onset at the required intervals. In patients with chronic diseases, this causes poor clinical outcome as well (Mafauzy, 2005; Munisamy et al., 2015). In many cases, patients also seek non-medical alternatives as alternatives first before coming to the doctor, irrelevant of whether it is an acute condition such as diarrhoea (Tee, Kaur, Ramanathan, Amal, & Chinna, 2011) or even chronic diseases such as complications of diabetes or even cancer (Sahril et al., 2014; Yusoff, Taib, & Ahmad, 2011). This is partly due to cultural norms but also in no small part due to the fear of having to pay the costs of treatment at the provider (Sahril et al., 2014; Yusoff et al., 2011).

Studies have shown that while paying out-of-pocket for outpatient care does not cause catastrophic expenditure for low and lower-middle income patients, it does increase their monthly household expenditure, especially in families with children who are often suffer from short, frequent bout of acute diseases(Davidoff, Dubay, Kenney, & Yemane, 2003). In fact, in families with children, OOP spending is

significantly associated with delayed care for a person who is ill in that family(DeVoe, Tillotson, & Wallace, 2009). A study modelling family resource allocation revealed that when budgets were limited, OOP costs financially burden families and deter children from getting needed healthcare due to family budget constraints(Becker, 1965). If children are at risk when their families are burdened by OOP spending, this means that in general, the whole family should be covered by insurance, and not just some of the members of the family(Wisk & Witt, 2012).

Under the healthcare system reform programme which was planned for Malaysia called the 1 Care Malaysia, the Ministry of Health Malaysia planned for closer private-public sector integration, driven by a National Healthcare Financing scheme of social health insurance. This would enable the burden of care, especially in primary care to be shifted equably across both the public-private sector, with patients being assigned to the care of either a public or a private primary care clinic who would then be paid an annual capitation fee to manage the patient's health condition. This would have reduced the load on the public sector, empowered patients with more personalised, quality care as well as ensured good distribution of resources. Although this programme was a great step forward in terms of healthcare systems reform, it did not take off due to political considerations and the unpopularity of the health financing scheme amongst Malaysians in general(Kamaliah, 2011).

With the failure of 1Care to take off, the present healthcare system continues to flounder, performing poorly in many aspects including in the treatment and control of the diabetes epidemic. With the general shift to private primary care already evident in the population, it would then be logical to suggest supportive measures to the private primary care physicians to enable them to shoulder the burden of managing these members of the population, and at the same time, reduce the burden of the public sector to maintain the current welfare-based healthcare system, choosing rather to use limited resources to focus on inpatient secondary and tertiary care which still very much dependent on the government sector.

Creating and sustaining another method of payment besides OOP for Malaysians to fund their treatment at private primary care clinics would be extremely beneficial in many fronts. On one hand it will allow Malaysians who are undergoing follow-up at a private primary care clinic to receive the full and necessary treatment regimens and medication without any worry as to cost that they have to bear as well as ensure good treatment outcomes. On the other, it will promote healthcare equity amongst the low and lower-middle income group of Malaysians who are not able to gain equitable access to good quality primary care treatment. On yet another aspect such a move will be beneficial in terms of chronic disease management as well. Soaring rates of nationwide Diabetes mellitus, Hypertension and dyslipidemia which continue to increase (Wan Mohamud et al., 2011)coupled with the fact that many of these sufferers are treated outside the public healthcare sector mean that they have poor clinical outcomes due to lack of money to pay for treatment(Gulley, Rasch, & Chan, 2011). Controlling the morbidity and mortality rates of the disease by this mechanism also offers huge bonuses in terms of savings on expensive care resources for treatment of diabetic complications such as stroke and cardiovascular events. On another note, it will also remove burdens on public primary care clinics with less patient footprints and follow-ups as well as reduction in health expenditure. In addition this can be the building-blocks of successful public-private integration and prove to be a cornerstone for the 1Care health reforms if and when they do occur in Malaysia.

The idea of health insurance in Malaysia is not new, with multiple private personal care insurance schemes in place (Jaafar et al., 2013). However their usage is not widespread due to high premiums and is only utilised by the upper middle income and high income groups (Jaafar et al., 2013). It is interesting that there has been no effort to introduce an alternate financing scheme such as a system of community health microinsurance. It is as yet unsure if this has been because this scheme would not be feasible to be implemented. To explore this feasibility of such a scheme would then be the first aim of this study. If such a scheme is found to be feasible, its subsequent deployment will hinge crucially on its acceptability to the

group of private primary care OOP payers that it will be designed for. Determining this acceptability, via a willingness and ability to pay study (WATP) would then be the second aim of this study. The WATP of this group of possible users needs to explored to understand whether they are keen for and more importantly able to fork out the money needed to start and sustain such an initiative in the long-term. Studies on WATP for community health microinsurance have not been done in private primary care in Malaysia and thus this is also a gap in the research that this study hopes to address. Once these questions have been answered, the actual effectiveness of this scheme should be carried out and this would be the other contingent aim of this study.

1.2 Expected Benefit/Application

This study will lay the groundwork for the creation of a viable community microinsurance scheme to compliment and complement the public healthcare system, making a case for itself as the possible way forward nationally instead of a top-down cumbersome national health insurance entity which has been impossible to implement up-to-date. In many countries long-term sustainability of community health insurance schemes has been suspect due to various factors including high operational costs. This continues to re-burden national governments to finance the scheme and returns to the problems faced by any tax-funded welfare healthcare system. Even in many countries with universal health coverage, quality of services and equitable access has been seen to deteriorate over time. In many cases this has been due to the non-participation or long-term withdrawal of the private sector. The feasibility, acceptability and efficacy of a community microinsurance especially among the lower and lower middle income community in an urban setting could prove to be an effective buy-in lure for individual providers in order to make the scheme a tangible proposition. In addition this study will also lay the groundwork and provide important data for national healthcare stakeholders in determining the willingness and ability to pay for health insurance among the OOP groups of

Malaysians who frequent private primary care. Coming on the heel of economic downturn and the implementation of a regressive Goods and Services Tax from April 2015, the financial burden of healthcare for the lower socio-economic groups will quickly show through their inability to obtain health and poorer clinical outcomes. It is hoped that this scheme will manage to provide an alternative to this.

1.3 Health Systems Gap

The utilisation of private primary care in Malaysia is far higher than the usage of public primary care clinics despite the fact that they are almost free. Patients who utilize private primary care clinics, largely pay out-of-pocket to finance their visits. Studies in various countries have shown that OOP payments lead to decreased equitable access and poorer clinical outcomes especially among the lower socioeconomic groups of the population. An alternate financing mechanism is needed to counter this problem; reduce out-of-pocket payments, improve equitable access to healthcare and improve clinical outcomes among the low and lower middle-income population of Malaysia.

1.4. Research Gap

1. The feasibility of a community health microinsurance scheme for OOP patients in alaysian private primary care is unknown as such a model has not been proposed before.

2.The acceptability of a community health microinsurance scheme for OOP patients in alaysian private primary care is unknown as such a model has not been proposed before.

3. The efficacy of a community health microinsurance scheme for OOP patients in Malaysian private primary care is unknown as such a model has not been proposed before.

1.5 Research objectives

1.5.1 General objectives

To ascertain the feasibility and acceptability of a community health microinsurance scheme as well as to determine its efficacy for OOP patients in Malaysian private primary care clinics.

1.5.2 Specific objectives

1.5.2.1 To determine the feasibility of a community health microinsurance scheme for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur

1.5.2.3 To determine the acceptability of a community health microinsurance scheme for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur

1.5.2.4 To determine the efficacy of a community health microinsurance scheme for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur

1.6 Research questions

1.6.1 What is the feasibility of a community health microinsurance for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur?

1.6.2 What is the acceptability of a community health microinsurance scheme for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur?

1.6.3 What is the efficaciousness of a community health microinsurance scheme for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur?

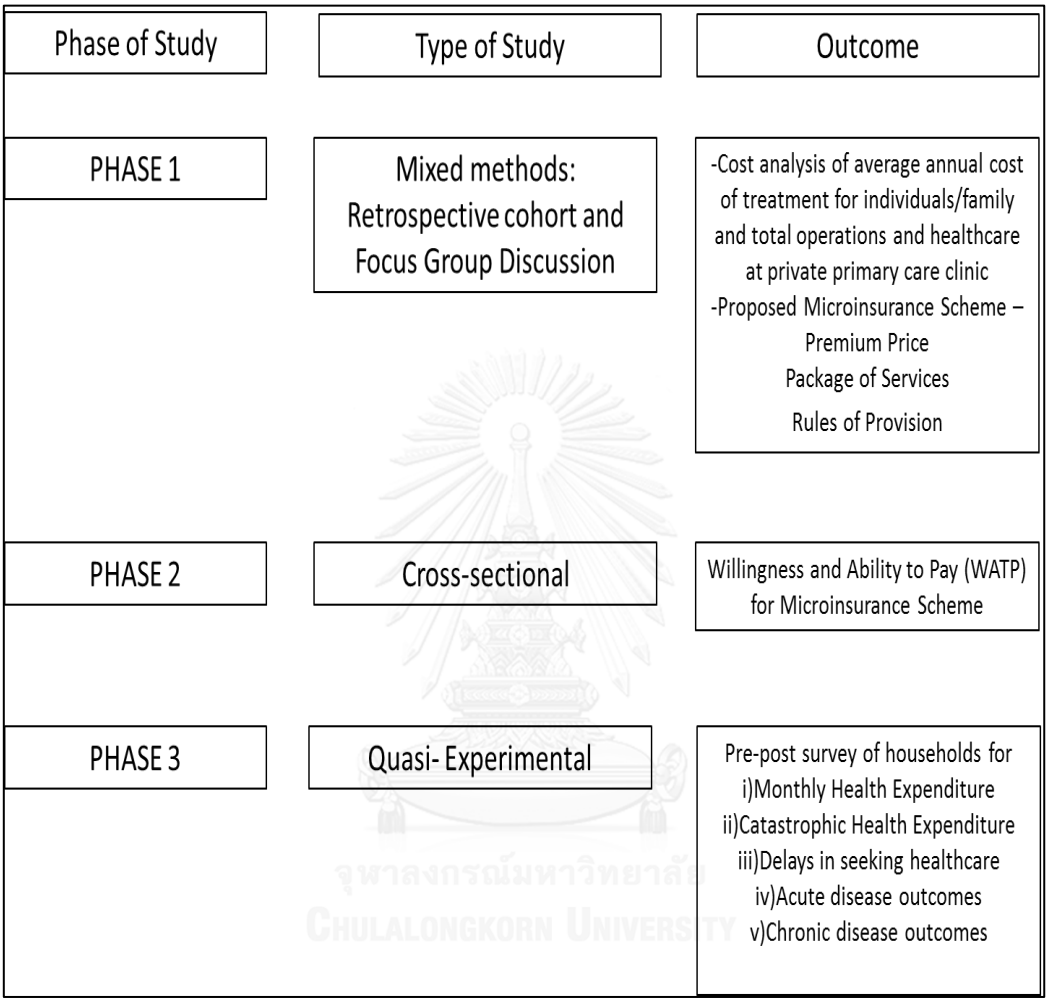
1.7 Research Hypotheses

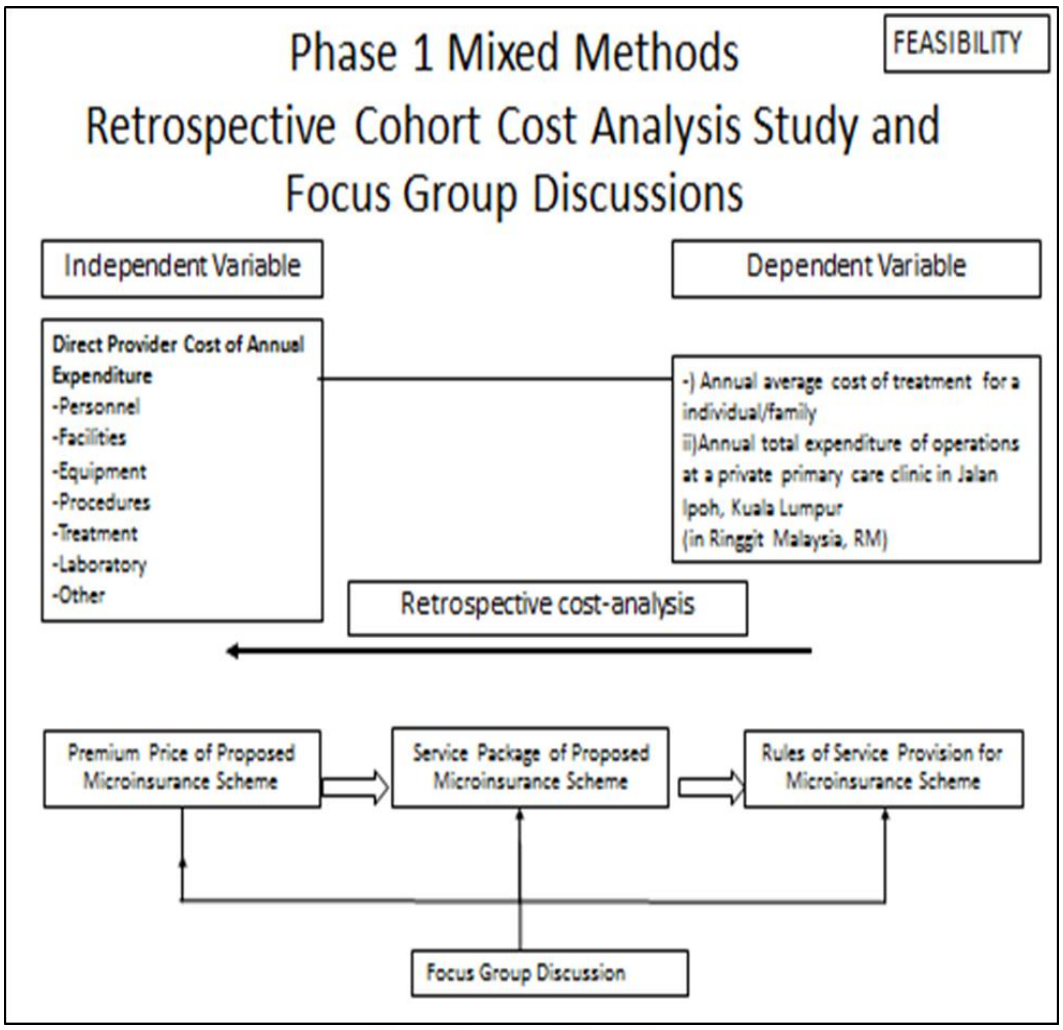
1.7.1 A community health microinsurance scheme is feasible for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur

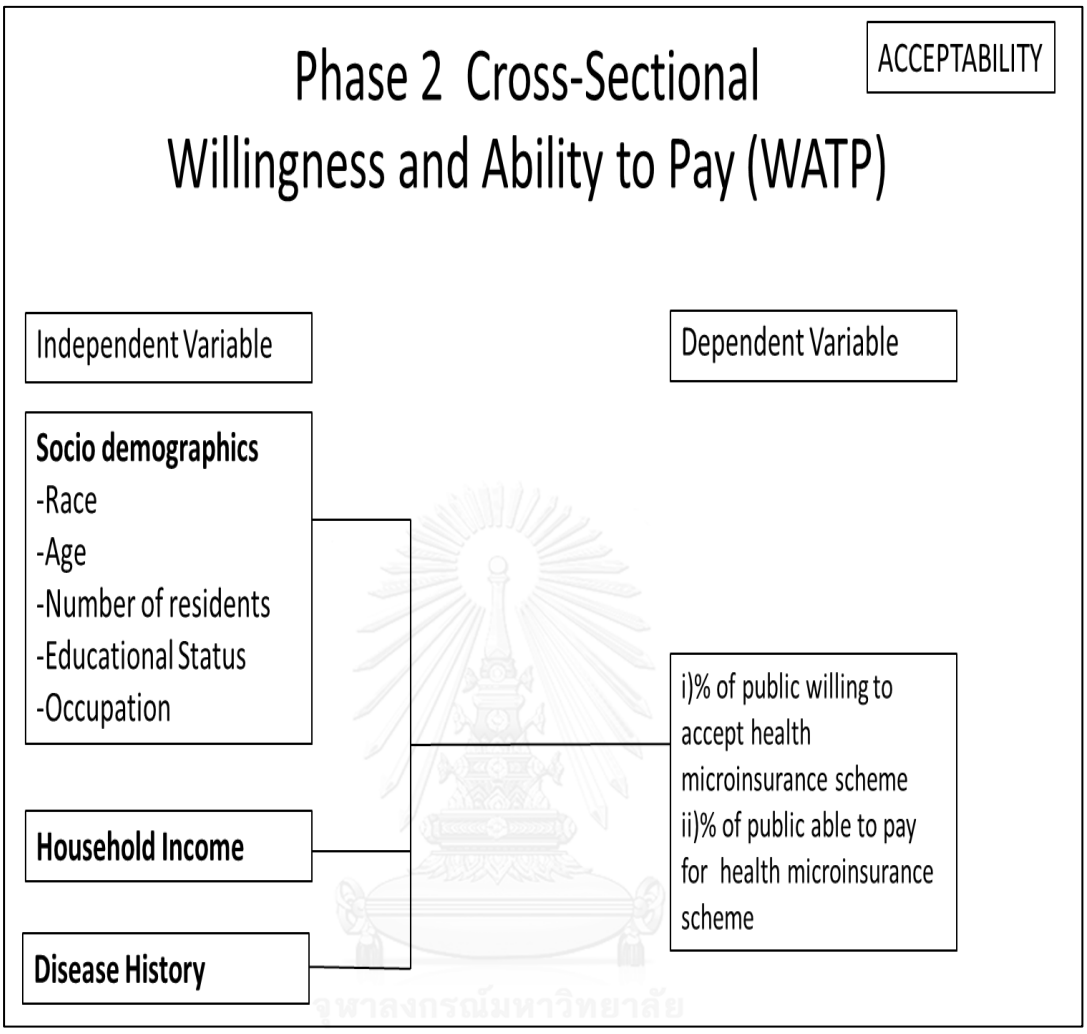
1.7.2 A community health microinsurance scheme is acceptable for private primary care OOP patients in Jalan Ipoh, Kuala Lumpur.

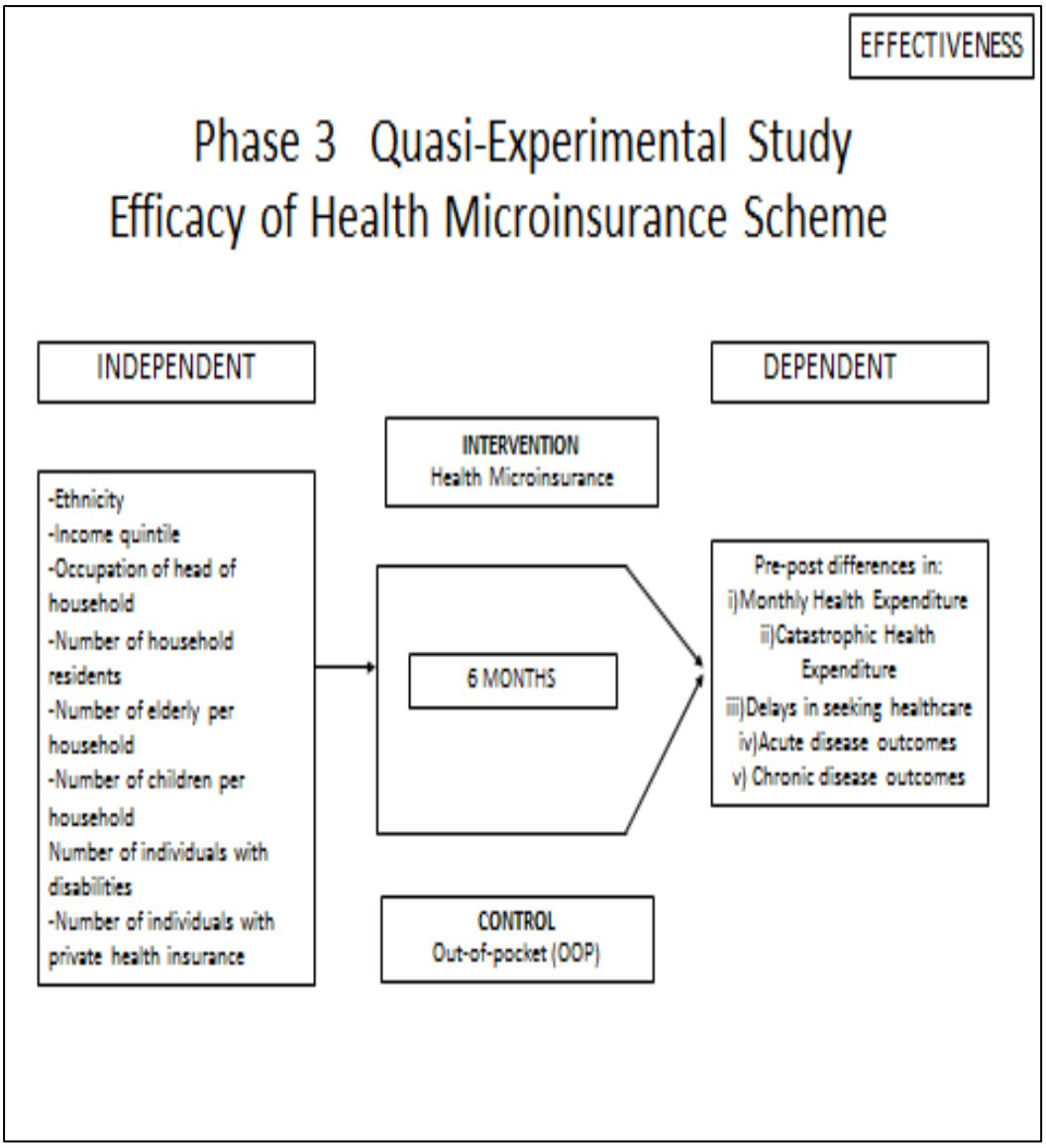
1.7.3 A community health microinsurance scheme is more efficacious for microinsurancepatients compared to paying OOP in private primary care clinics in Jalan Ipoh, Kuala Lumpur .

1.8 Conceptual Framework








EFFECTIVENESS
Phase 3 Quasi-Experimental Study
Efficacy of Health Microinsurance Scheme
INDEPENDENT
DEPENDENT
INTERVENTION
Health Microinsurance
-Ethnicity
-Income quintile
-Occupation of head of household
-Number of household residents
-Number of elderly per household
-Number of children per household
Number of individuals with disabilities
-Number of individuals with private health insurance
6 MONTHS
Pre-post differences in:
i)Monthly Health Expenditure
ii)Catastrophic Health Expenditure
iii)Delays in seeking healthcare
iv)Acute disease outcomes
v) Chronic disease outcomes
CONTROL
Out-of-pocket (OOP)

1.9 Operational Definitions

Term	Definition
Race	As defined in the Malaysian Identity Card
Age:	As defined by the date on the Malaysian Identity Card, with the age counted from the last birthday in years
Education	No formal education – did not attend/complete primary school Primary Education – completed at least Standard Six Secondary Education – completed Form Five Diploma/Vocational – has obtained a diploma or vocational training Degree and above- has at least a Bachelor's Degree or above i.e Master's Phd. Professionals such as ACCA or CFA are in this group as well
Occupation	primary income-earning activity as defined as being in one of the categories defined by the Department of Statistics Malaysia
Household Income	Total household income as defined by the Department of Statistics Malaysia in the National Household Income Survey (adapted from the World Bank methodology) (Creese & Parker, 1994)
Number of Years with Disease	the number of years since was first confirmed diagnosed with a disease – made by a doctor and with some form of documentation

Disease Complications	Advanced stages of disease with end-organ complications. In DM for example, either macrovascular or microvascular complications such as Cardiovascular Disease , Cerebrovascular Accident, Nephropathy, Neuropathy, Vasculopathy, DFU
Personnel in Private Care Clinic	Includes doctor, nurses, aides, management staff and other individuals working at the facility full-time or part time
Facilities	The building in which the private primary care building is located or the stand-alone structure that makes up the private primary care clinic and the structures/ functional apparatus related to this
Equipment	Medical apparatus used in the course of the doctor's consulting and treatment of patients and located in the clinic premises
Procedures	Medical diagnostic/curative procedures done by the doctor on a patient during the course of his/her interaction with them
Treatment	Activities done by the doctor for the purpose of providing relief from symptoms or cure a medical condition; i.e toilet and suturing; intravenous drug injection and such like

Laboratory	Tests that are done as part of diagnostics requirements either internally or that have to be sent to an outside laboratory for analysis such as cholesterol levels or even urine.
Household Annual Tax Returns	As required by Malaysian law, all individuals must formally declare their income and expenditure to the Internal Revenue Board (IRB) and obtain an annual tax declaration certificate which lists their total income and expenses as well as tax paid.
Medication	Medication prescribed by the doctor for the purpose of

	treating a particular condition/diagnosis after examining the patient and obtained from the clinic
Monthly Health Expenditure	Any and all quantifiable monetary expenses incurred in the pursuit of medical-related expenses by members of the household in a month including purchase of over-the-counter medications, visits and treatment at official medical institution including the cost of transport to said centre, costs of visit and treatment at traditional medical centres and other related
Household	As defined by the UN Statistics Division. A household is classified as either: (a) A one-person household, defined as an arrangement in which one person makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household or (b) A multi-person household, defined as a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons or a combination of persons both related and unrelated. This arrangement exemplifies the housekeeping concept. In an alternative definition used in many countries exemplifying the so-called household-dwelling concept, a household consists of all persons living together in a housing unit.

Household out-of-pocket expenditures (OOP)	Out-of-pocket expenditures by households in health accounts typically comprise direct spending by households, after deducting third-party payments, such as insurance. However, for estimation purposes, it is often necessary to estimate the gross level of direct spending, before taking into account reimbursements by third-party sources.

Term	Definition
Private Insurance	The ownership of an active private insurance medical coverage scheme, with an annual paid premium, allowing the patient to be treated at private healthcare facilities in Malaysia
Out-of Pocket payment (OOP)	Paying via cash or credit/debit cards for services and/or treatment at private healthcare facilities in Malaysia
Company Insurance	Coverage for private healthcare facilities in Malaysia for individuals working for a particular company which is paying a group insurance scheme and allows them to utilize these private healthcare facilities without any form of payment as pre-agreed between these institutions
Managed Care Organisation (MCO)	Organisations which function as an outsourced regulator of heathcare for certain companies, which pay these MCOs an annual sum to provide medical coverage for their employees. These MCOs then contract for these medical services from private primary and tertiary care providers such as private

	primary care clinics and private hospitals.
Third-Party Administrator (TPA)	Similar to MCO- see above
Fee-for Service (FFS)	Payment for services rendered by private medical doctors in primary care and hospitals. Costs for services and consultations are fixed by the Malaysian Medical Council as per regulations which are enforceable and need to be adhered to by doctors in Malaysia
Private Primary Care Clinic (Private PPC)	Stand-alone or chain primary care clinics in Malaysia, registered officially by the Ministry of Health, Malaysia and in possession of an Annual Licence of Practice. These are either owned and operated by one single doctor, a group of doctors as a group practice, or as part of a company of clinics. Location of these clinics are usually in shophouses, though some operate out of stand-alone premises. Doctors at these establishments can either be medical officers or family physicians. Working hours range from 5 days to 7 days, to even 24 hour operations.
Public Primary Care Clinic (Public PPC)	Public primary care clinics run under the Ministry of Health Malaysia and varying in size and number of doctors depending on the geographical area. First-line doctors at the Public PPCs are Junior or Senior Medical Officers, with a visiting Family Physician in overall charge of 4-5 Public PPCs. Working hours are 8 am to 5pm, Mondays to Fridays. Selected clinics have an extended operating time of Monday to Friday 5pm-9pm

Term	Definition
Cost analysis of annual treatment expenditure at private primary care clinic	The total and average costs of healthcare for a particular individual and/or family for a given calendar year beginning January 1st to December 31st 2014 at a particular private primary care clinic in terms of direct provider cost
Willlingness/Ability to Pay for Insurance	The tacit agreement and capacity of the patient/family to pay the assigned annual insurance premium amount for the proposed Health Microinsurance Scheme
Premium of Health MicroInsurance Scheme	The determined proposed annual premium of payment for the Microinsurance scheme for inviduals and/or families for a given calendar year
List of Provided Services	The total list of services to be provided under the Health Microinsurance Scheme as well as conditions of their use, as determined via feasibility phase of focus group discussions with providers
Cost of Personnel	Annual cost of salaries and other remunerations for all working personnel of a particular private primary care clinic as given by a calendar year of January 1st to December 31st 2014
Costs Facilities	Costs of operating the private primary care facility including building rental, utilities and other costs for a given calendar year of January 1st to December 31st 2014
Costs of Equipment	Costs of operating equipment at the private primary care facility for a given calendar year of January 1st to December 31st 2014 inclusive of rental, hire purchase and direct purchase costs.

Costs of Procedures	The total amount spent on procedures for an individual patient for a calendar year of January 1st to December 31st 2014
Costs of Treatment	The total amount spent on treatment (including consultation fees) for an individual patient for a calendar year of January 1st to December 31st 2014
Costs of Laboratory	The total amount spent on laboratory diagnostic tests (internally or externally i.e sent to an outside laboratory) for an individual patient for a calendar year of January 1st to December 31st 2014
Costs of Medication	The total amount spent on medication for an individual patient for a calendar year of January 1st to December 31st 2014

Term	Definition
Equitable Access	Defined by the ability to access medical services without any delay and captured by the variables of Presence or absence of delay in seeking medical services Length of delay in seeking medical services Existence of inability to obtain services due to monetary constraints Need to take loan/seek financial assistance to pay for healthcare
Chronic Disease Outcomes	Defined by compliance to national normative values or improvement of more than 25% of the baseline levels of the

	patients in any/all of the following chronic diseases HbA1c Serum Lipid BP TB Cure Rate Microalbuminuria Proteinuria Liver Function test Foot Ulcers Neuropathy Renal Function Test Bronchial Asthma Others as specified
Acute Disease Outcomes	Defined as days taken to resolve acute infections i.e. Acute Gastroenteritis, Acute Upper Respiratory Infections Acute Urinary Infection Acute Pharyngtonsilitis Acute exacerbation of Bronchial Asthma

The following definitions are designated by the author as it applies to the purpose of this proposal.

Chapter II

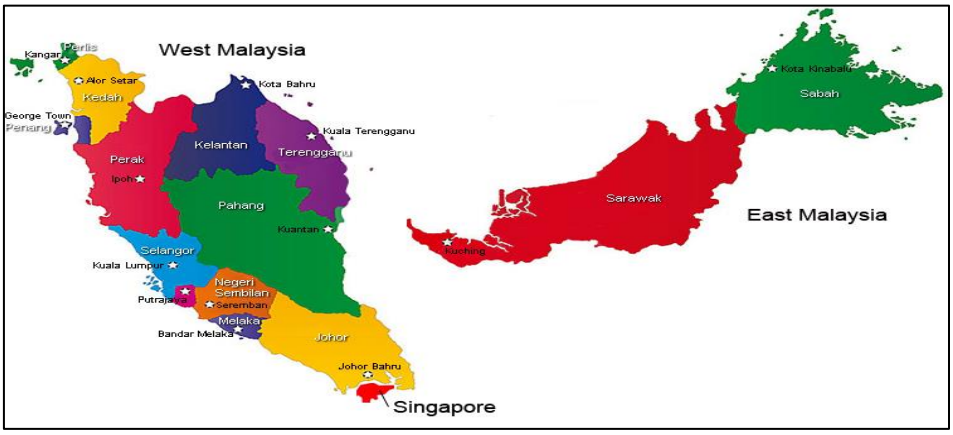
Literature Review

2.1 Introduction

This chapter will elaborate in detail the background information related to the areas of interest in this proposal. The earlier sections of this chapter are devoted exclusively to detailing the Malaysian healthcare system and discussing the various payment mechanisms in Malaysian healthcare financing. The later sections of this chapter will detail the issues pertaining to the methodology of the studies used in this proposal as well as the applicability in this context. Finally the final sections of this literature review will explain in detail the various intricacies related to the workings of this proposal.

2.2 Malaysia: A Brief Overview and Indicators

Malaysia is an ASEAN country located in between Thailand in the north and Singapore in the south. The country consists of 13 states and 2 federal territories spread across the Malay peninsula and the island of Borneo. It is a parliamentary democracy, with an elected parliament headed by the Prime Minister and the Cabinet modelled after the Westminster system and a constitutional monarch as the head of state. Malaysia is categorized as an upper middle income country by the World Bank with rapid industrialization in the second half of the 20th century.



Currently the population numbers more than 29 million with more than 70% being urban-dwellers. The country's rapid development and economic prosperity has spilled over to the general population ensuring a well-developed accessible healthcare system, good access to clean water and sanitation as well as numerous efforts by the government to continue decreasing the rich-poor divide via various social and economic upliftment programmes (Jaafar et al., 2013). The following table illustrates some of the more important facts and figures about Malaysia:

	INDICATORS	DATA			Year
	Demographics	Total	Male	Female	
1	Area (1 000 km2)	329.96			2010
2	Estimated population ('000s)	28 250.50	14 379.90	13 870.60	2010
3	Annual population growth rate (%)	1.30	1.20	1.30	2010
4	Percentage of population				
	- 0-4 years	8.60	8.70	8.60	2010
	- 5-14 years	18.60	18.70	18.40	2010
	- 65 years and above	4.70	4.40	5.10	2010
5	Urban population (%)	72.20	...	...	2010 est
6	Crude birth rate (per 1000 population)	18.80	...	...	2010
7	Crude death rate (per 1000 population)	4.90	...	...	2010
8	Rate of natural increase of population (% per annum)	1.39	...	...	2010
9	Life expectancy (years)				
	- at birth	...	71.70	76.60	2010 est
	- Healthy Life Expectancy (HALE) at age 60	...	...	...	
10	Total fertility rate (women aged 15-49 years)	2.40			2010 est
	Socioeconomic Indicators				
11	Adult literacy rate (%)	92.70	95.20	90.20	2009
12	Per capita GDP at current market prices (US$)	7689.18 [3]			2010
13	Rate of growth of per capita GDP (%)	7.20			2010

Table 1: Malaysia Health Databank 2011 (World Health Organization, 2011)

2.3 The Malaysian Healthcare System

The Malaysian healthcare system is a model of duality featuring two separate arms namely the public and private arms respectively. The public arm of healthcare

is based on the Beveridge Model of the UK and comprises largely an infrastructure of government built and government maintained health delivery systems from tertiary hospitals and university hospitals right down to the humble village clinic manned by community nurses. The public healthcare sector is funded by taxation and caters for almost 65% of the population (including foreign nationals and immigrants) but has only some 40% of all registered doctors and only about 25% of all specialists/consultants. Services in the sector are borne almost entirely by budgetary allocations from the Ministry of Finance/Treasury with patients paying really low amounts for access to outpatient clinics (RM1) or admissions to hospitals (3rd class beds at RM 3 per night). These rates are heavily subsidized and are definitely not reflective of true costs. However although access is cheap to government healthcare, the service delivery leaves much to be desired from overcrowding to lack of care and patient dissatisfaction. One of the driving factors for development of a private arm in Malaysian healthcare was the economic prosperity of the 80s which led to the development of a middle class and an upper middle class who were ready and willing to pay for better healthcare services. Under a previous Prime Minister Tun Dr Mahathir Mohammad however, a vibrant private sector developed also comprising an almost parallel number of tiers; from the General Practitioner in a single clinic to multi-speciality private tertiary hospitals. In August 2011, Malaysia had 145 public hospitals, 2,880 health clinics and 165 mobile health clinics across the country in the public sector while there were 217 private hospitals, 34 maternity and nursing homes, 36 ambulatory care centers, and 6,442 medical clinics in the private healthcare sector. However these systems remain separate and not integrated despite a detailed structured blueprint called 1Care which remains unimplementable due to political circumstances. Although the Malaysian Constitution declares that healthcare is a universal right for all its citizens, today the healthcare system in Malaysia is ambivalent as reflected by its dual independently functioning healthcare system arms. The government continues to oscillate between complete use of the free market system for healthcare funding and provision or to move to a single payer publicly controlled system where universal access is

guaranteed and this remains a sticky problem for policymakers, physicians and public alike(Rasiah, Wan Abdullah, & Tumin, 2011).

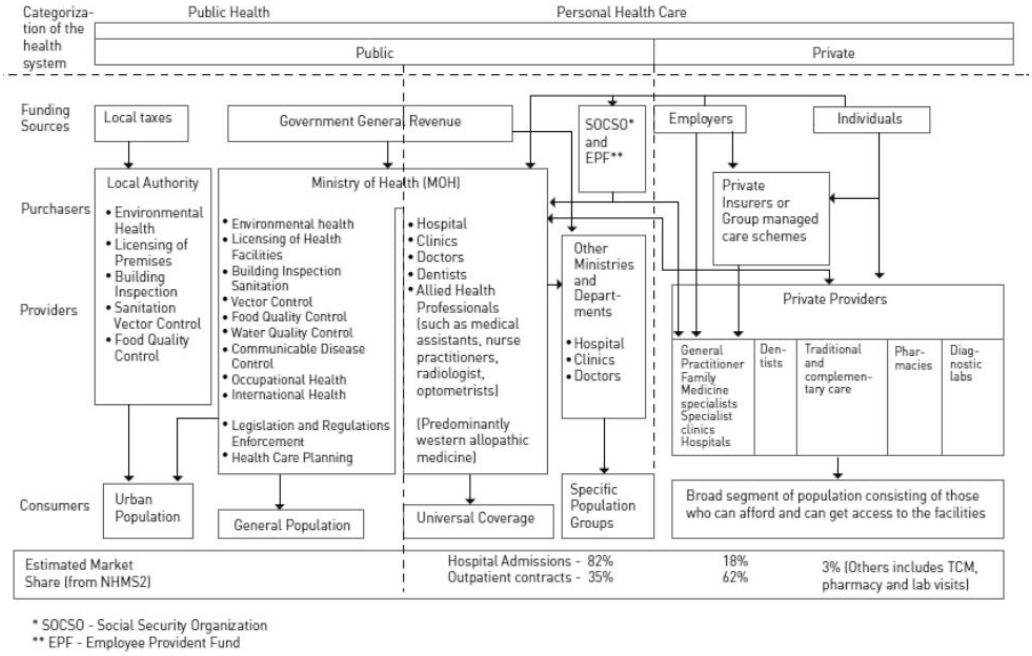


Figure 3: Schematic Overview of the Malaysian Healthcare System 1

The public healthcare sector in Malaysia is divided into two main service delivery branches; i) primary care and rural health service and ii) tertiary hospital services. The primary care and rural health services is one of the largest sectors in the services departments with doctors and other allied health staff being deployed to various healthcare centres from rural clinics to district hospitals. In fact Malaysia boasts , and rightly so, that it has a public healthcare facility within a 5 km radius in the whole country including in its rural regions, which enables easy and quick access to the public. Unfortunately this has been somewhat mitigated by the fact that these centres often are understaffed or have only inadequately trained staff due to the difficulty of getting staff such as doctors to serve in remote areas(David Quek, 2009).

Putting aside these problems credit is still due to the Malaysian healthcare structure for remaining well-integrated. The primary care and rural health service provides and effective primary healthcare coverage through their primary care clinics and district hospitals and they are strengthened through connections to large tertiary

hospitals in each state and the national capital through a referral system. In the early 1990s, the system was further improved with the building of sub-speciality centres based in various hospitals around the Klang Valley with excellent care in specific sub-specialities such as nephrology, cardiology, cardiothoracic surgery, neurology and infectious diseases. However due to manpower and infrastructure considerations, these facilities suffer from long waiting times and other shortcomings (Hussein RH, 2010).

The private healthcare sector expanded in a big way during the 1980s under the support of Tun Dr Mahathir. There were two reasons for this the first being the fact that the government had bought into the idea of expanding private healthcare so as to relieve some of the burden from the public sector and the second was that the growing segment of middle-class and upper class Malaysians who did not want to wait for treatment in the public sector as well as evolving to need more comfort and amenities even as they seek for health. Between 1980 and 2003, private hospital beds increased almost 10 times from 1171 to 10405 due to the building of many new private hospitals, many of whom are partly owned by government-linked-companies. Private medical centres evolved from functioning as a place to come to for emergency and/or trauma care and most are now competitive consumer-driven healthcare centres with 'hotel-like' facilities designed to cater to the population who would and are willing to pay more to obtain better, more personalized, faster, more comfortable luxurious medical care. The expansion of private hospitals has also been somewhat related to the advent and expansion of private insurance (or voluntary insurance) who are patronized by most private employers seeking to ensure good medical coverage and benefits for their staff (D Quek, 2000).

The workhorse of the private healthcare arm though, are the primary care private clinics run by General Practitioners (GP), fully-registered Malaysian medical officers who have completed their housemanship or internship and government service and then choose not to specialize in any hospital clinical medicine setting. These clinics cater to most of the self-paying public; which can be divided into cash paying patients, patients who have private health insurance, panel-appointed clinics

from employers and through those covered by managed-care-organisation(MCO). In private primary care clinics, the setting is like a one-stop-centre as patients see the doctor, undergo treatment or other procedures, get laboratory tests and even X-rays in some clinic and at the end of it are prescribed and given medicine from the clinic dispensary. Only one combined fee is paid for all these services, generally adhering to a fee-for-services schedule prepared and enforced by the Ministry of Health Malaysia. Especially in the urban centres, these clinics have proven to be a viable popular alternative for primary care treatment compared to the overburdened public primary care clinics. Though in most cases not board-certified as family medicine physician, the GP plays that role by far and large in the Malaysian private healthcare system, often caring for the local population from cradle to grave for at least 2-3 generations; giving them an edge with continuity of care and the warm care of a person who is more an extended family member rather than an outsider. Though fewer in number in the outskirts of the city the number of GP clinics in the city centre are numerous and provide easy access and affordable care at reasonable costs – though higher than the government primary care clinics(David Quek, 2009).

2.4 Healthcare Financing in Malaysia

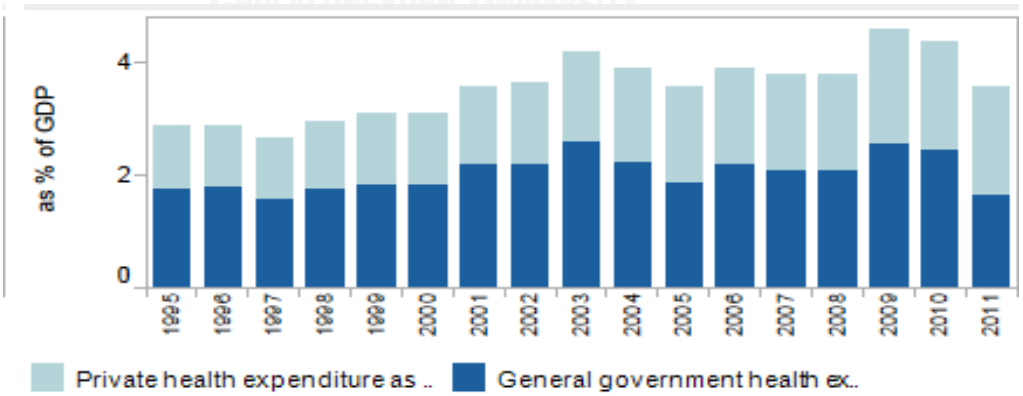


Figure 4: Malaysia: Trends in healthcare spending (as % of GDP)(World Health Organization, 2014)

Malaysia has always spent a small amount of its total GDP percentage on healthcare with an increasing shift of the proportion to being from the private side. As shown in the above table, in later years, the shift of spending has increased greatly from the private side while decreasing on the public side although what is worse is the fact that even the total amount as percentage of GDP seems to be on a downward slide (World Health Organization, 2014).

The main financier of Malaysian health services as outlined above is the government. The government funds are primarily derived from tax and used to fund the public health sector while the private health sector is funded primarily by an increasing percentage of OOP (out-of-pocket expenditure)(slightly more than 40% in 2011). A tiny percentage (less than 1%) of government revenue consisted of social security contributions while insurance and other funding sources only make up less than 15% of the total health expenditure.

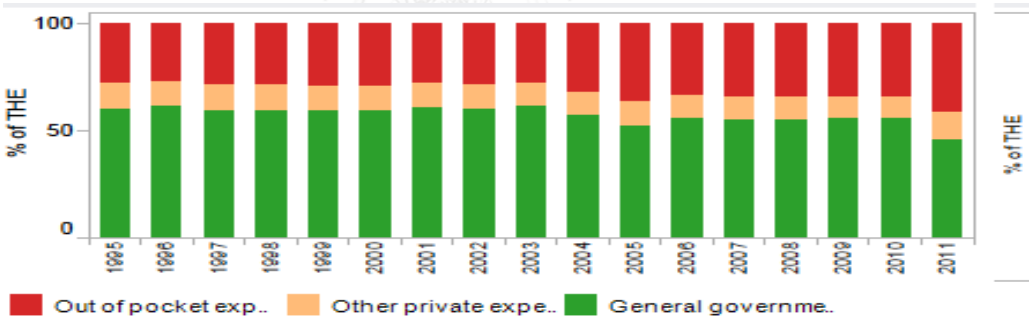


Figure 5: Total Health Expenditure Malaysia 2011(World Health Organization, 2014)

The general population funds most of Malaysia's public health services via tax payments (both direct and indirect) and contributions to the Employee Provident Fund (EPF) and Social Security Organisation (SOCSO). The EPF's primary aim is to create savings for the old age of the contributor(with withdrawal currently at 55 years of age) but some one third of their total contributions can be withdrawn at any time to reimburse healthcare expenditure. The employed population earning less than RM 3000 further contributes to SOCSO that provides medical benefits for work-related

injuries alone (unlike in some countries including Thailand in which it functions as a form of social health insurance). The coverage provided by SOCSO is thus minimal. Private health insurance is provided by a number of companies and individuals are free to purchase the scheme they can afford or want to subscribe to, paying the premiums that they are then subject to. Many employers also buy voluntary health insurance for their employees in order to provide them health benefits although payments for these are usually regulated via a managed-care-organisation (MCO). A large number of patients still utilize the out-of-pocket payment mechanism although it can and does in many cases lead to creating of debt and may lead to catastrophic household expenditures(Chai, Whynes, & Sach, 2008).

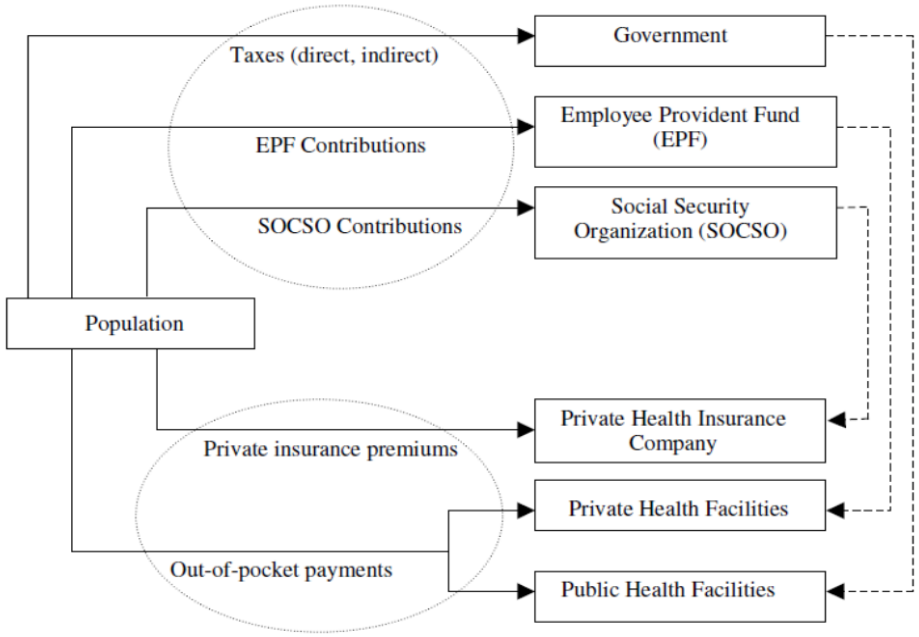


Figure 6: Sources of Healthcare Financing in Malaysia (Chai et al., 2008)

When the private healthcare category is further subdivided, one will still notice that there is an abnormal tilt to increased out-of-pocket expenditure as the main method of financial payment, making up more than 75%. Private insurance enterprises make up less than 15% of total funding percentage with MCOs making up less than 0.5% of the financing picture. It has to be said here however that the

corporations is the health coverage that employers provide for their workers without subscribing to an MCO which for all intents and purposes functions exactly like a managed care organization. Thus the total attributable percentage for MCO and MCO-like structures are almost 6%. The dependence on out-of-pocket payments for healthcare payments in private is a worrying phenomenon as it can lead to catastrophic expenditures as well as other problems with medicine and drug compliance.

Source	RM million	%
Private household out-of-pocket expenditures	10 607	76.81
Private insurance enterprises (other than social insurance)	1 968	14.25
All Corporations (other than health insurance)	804	5.82
Non-profit organisations serving households	365	2.64
Private MCOs and other similar entities	66	0.48
Total	**13 809**	**100.0**

Table 2: Private healthcare by source of funding 2009 (Jaafar et al., 2013)

2.5 Private Health Insurance in Malaysia

Private health insurance policies were introduced to the Malaysian public in the 1970s but not many subscribed to them simply because the benefits of the policies were somewhat limited in nature (compensation for personal accident, work injury compensation and third party body injuries in motor vehicular accidents). Sales of private health insurance policies picked up in the mid 1990s following the government's decision to introduce personal income tax relief for purchase of such policies in 1996 and a relaxation of existing policy to allow insurers to offer standalone health insurance policies in 1997. Between 2000 and 2005 alone it was determined that the annual premium income from yearly renewable health insurance policies increased by almost 150%. Total premium income from short and long-term private insurance policies was almost RM 2.5 billion or 10.2% of the insurance industry's total premium income in 2005. Bank Negara Malaysia's

landmark study of the health and medical insurance market in 2005 found that there was an increase in new individual policies between the years of 2000-2005 and in fact in 2005, individual policies made up 80% of all new policies in 2005. This was a reflection of the growing preference of the social strata for better healthcare services as well as an awareness in making sure they had access to better healthcare services. This was also reflected in the growth of group policy purchases, which were significantly higher than where they had been a decade ago, also a reflection of the changing mindsets and the needs for employers to provide better healthcare benefits for their workers as part of the necessity for the job they undertook and not merely reliant on the public healthcare services. From this study, it was also extrapolated that about 15% of the population had private healthcare insurance protection. From this figure 84% were determined to be below 45 years of age, which is both a reflection of the young population of Malaysia and the fact that the younger generation was already foreseeing the need to buy private healthcare insurance as mentioned earlier in parallel with newly enjoyed economic prosperity. Over time it is expected that this generation will age but will continue to subscribe to and enjoy the benefits of their foresight with health insurance protection even in old age (Bank Nagara Malaysia, 2005).

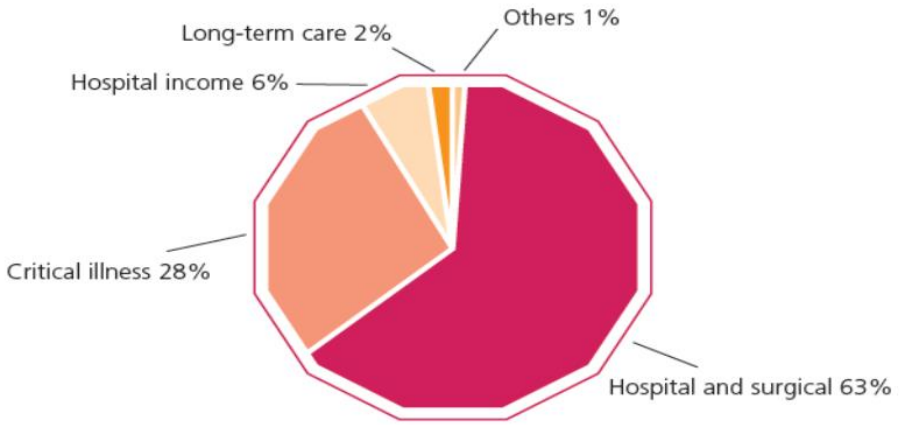


Figure 7: Distribution of Premiums by Type of Policy (Bank Nagara Malaysia, 2005)

This study also revealed that hospital and surgical insurance policies which were designed to reimburse the policyholder for all hospitalization expenses was the most popular type of policy purchased. However it was seen that critical illness policies which provided one-off payments upon diagnosis of an illness had also become popular, going up from only 10% of the total in 2002 to the current 28%. Many policyholders in fact had two concurrent policies with a combination of these two. For healthcare providers, the current scheme from insurers to recompense them for their services, or purchase of health, has been not via the capitation system but rather through a fee-for-service claiming system. This is because under the private insurance scheme the patient is not stopped from going to any hospital or private primary care clinic and in fact many do so, switching from provider to provider. Once the provider has given outpatient treatment in private primary care clinics or admission for the patient in a private hospital, then the provider submits the claims to be approved and then reimbursed by the insurer. This system is made marginally easier now with the advent of online realtime claims submission systems which are being practised by all the insurers. However reimbursement takes between 30 to 60 days depending on which insurance company it is.

2.6 Managed Care Organisations in Malaysia

Robinson and Steiner define managed care as healthcare services given by or by way of organisations that are actively involved in methods to influence the behavior of the consumer (patient) in terms of care-seeking behavior as well as the behavior of the caregiver (doctors and other healthcare providers) in terms of providing care. Managed care has two major objectives; the first being to encourage appropriate usage of health services by the consumer (reduce unnecessary visits) and the second being to encourage appropriate supply of health services by providers (reduce supplier-induced demand). Supporters of managed care believe that via this system efficiency can be improved in the healthcare system as well as to promote the idea of ‘necessary care’ which will save both in terms of wastage and overusage

of drugs, investigative procedures and specialist consultation, bringing medicine back to preventive and primary care. In short managed care is critical, according to them, to control inflating healthcare costs and keep it affordable for everyone(Robinson & Steiner, 1998).

MCOs made an entry into Malaysia in the early 1990s as part of measures advocated by the Asian Development Bank to lower costs. The Private Healthcare Facilities and Services Act 1998 in section 82 subsection 1 as "any insurance company with a panel of hospitals and clinics is classified as an MCO". A national committee was formed on Managed Care and issued guidelines on how MCOs could operate (role of doctors, how many doctors in an MCO centre and so on). The first MCO began operating in 1995 (PM Care) and at first the MCO idea was not popular enough to be picked up by private entities due to the low capitation rates. Later however as the rates of capitation increased, the MCOs began to flourish and by 1999 there were some 600 000 people enrolled in MCOs compared to half that number just two years prior(Rauber, 1999). There were 32 registered MCOs in 2000 and this number rose up to almost 50 in the years following that. MCOs covered about 10% of the private manpower sector and have evolved throughout the years with multiple forms and plans; from being insurance companies to being cooperatives or profit or not-for-profit companies. All the various MCOs implement fee-for-service but have incorporated various features of different models like Preferred Provider Organisations(PPO) and Independent Practice Association (IPA) selectively leading to a hybrid product that is unique to their own setup(Phua, 2000).

As of 2008 however, Malaysia only had 25 registered MCOs, in part due to the failure of the earliest market entrants and consolidation of some smaller MCOs. These MCOs had contracts with selected clinics and hospitals and offered a set, fixed package of healthcare to policyholders who paid a pre-calculated monthly premium. However many problems abound with MCOs. The Ministry of Health discovered that there was no uniformity between benefits offered by various MCOS, no uniform fee schedule and a lack of care and interest in following the Ministry's guidelines which had been drawn up earlier. Some MCOs were started by businessmen who had little

if any idea of healthcare and thus offered limited health benefits or unreasonable benefit packages both for the user and the physician provider. Another ongoing complaint from doctors was the delay (of sometimes up to 6 months) of MCOs in settling their claims post treatment. One of the more famous cases of MCOs in Malaysia occurred when a KL-based MCO went bankrupt. Hospitals barred their clients from receiving any form of medical service and operations only resumed when the parent company (an insurance company) agreed to repay all uncompensated bills which happened after a significant delay (D Quek, 2000). Despite the numerous problems with MCOs they remain in some form and function as an important aspect of private healthcare in Malaysia and will continue to be a player in the field for some time to come.

2.7 Private Primary Care in Malaysia

As explained in the section above , the private healthcare arm in Malaysia is divided into private primary care practices run by General Practitioners / Family Physicians and private multi-specialty hospitals. Private Primary Care centres are spread all around each of the states with a marked difference in numbers between the urban areas and the rural areas. The following section draws on data from the National Medical Care Statistics (NMCS) and National Healthcare Establishments and Workforce Statistics (NHEWS) Primary Care reports in 2010 to give an in-depth understanding of the quantitative variables making up private primary care in Malaysia.

The NMCS and the NHEWS are part of the Malaysian National Health Statistics Initiative (NHSI) family of surveys run by the Clinical Research Centre of the Ministry of Health Malaysia. The National Healthcare Statistics Initiative (NHSI) is a group of related surveys conducted to support evidence-based policy-making in Malaysian healthcare. The reports, published annually, have been extremely useful in helping stakeholder make informed decisions on formulating policy and guidelines as well as being an important aspect for health policy and systems research.

STATE	SECTOR	Year 2008/2009		Year 2010	
		NUMBER	Per 10000 Population	NUMBER	Per 10000 Population
MALAYSIA	PUBLIC	806		806	
	PRIVATE	5104		4529	
	TOTAL	5910	2.09	5335	1.9
PERLIS	PUBLIC	9		9	
	PRIVATE	29		26	
	TOTAL	38	1.58	35	1.5
KEDAH	PUBLIC	52		50	
	PRIVATE	293		262	
	TOTAL	345	1.72	312	1.6
PULAU PINANG	PUBLIC	26		27	
	PRIVATE	418		370	
	TOTAL	444	2.81	397	2.5
PERAK	PUBLIC	73		71	
	PRIVATE	494		456	
	TOTAL	567	2.37	527	2.2
SELANGOR & WP PUTRAJAYA	PUBLIC	56		56	
	PRIVATE	1255		1223	
	TOTAL	1311	2.53	1279	2.3
WP KUALA LUMPUR	PUBLIC	14		14	
	PRIVATE	624		444	
	TOTAL	638	3.85	458	2.7
NEGERI SEMBILAN	PUBLIC	38		41	
	PRIVATE	232		193	
	TOTAL	270	2.86	234	2.3
MELAKA	PUBLIC	26		26	
	PRIVATE	172		142	
	TOTAL	198	2.57	168	2
JOHOR	PUBLIC	88		86	
	PRIVATE	667		581	
	TOTAL	755	2.23	667	2
PAHANG	PUBLIC	63		84	
	PRIVATE	209		188	
	TOTAL	272	1.76	260	1.7
TERENGGANU	PUBLIC	38		38	
	PRIVATE	137		116	
	TOTAL	175	1.56	154	1.5
KELANTAN	PUBLIC	53		53	
	PRIVATE	170		150	
	TOTAL	223	1.36	203	1.3
SABAH & WP LABUAN	PUBLIC	78		78	
	PRIVATE	257		226	
	TOTAL	335	1.02	304	0.9
SARAWAK	PUBLIC	192		193	
	PRIVATE	147		154	
	TOTAL	339	1.35	347	1.4

Table 3: Number of Primary Care clinics, Private and Public (Rauber, 1999)

The NHEWS Report gives a detailed breakdown on various aspects of different private primary care centres in Malaysia. There was a total of 4529 private primary clinics in Malaysia in 2010 compared to 806 government clinics. Of these the highest density of clinics was in WP Kuala Lumpur (the capital) and followed by Pulau Pinang and Selangor with Sabah/WP Labuan having the least number of clinics. The number of practices (both private and public) by state are detailed in Table 3.

The NMCS 2010 on the other hand recorded variables regarding demographics and frequency patterns of those who visited private and public primary care clinics. In their most recent published report in 2010, the age range of the most frequent visitors was 25-29 (10.8%) followed by the 30-34 year olds (9.7%). Children between 1 and 4 years old also had a high frequency of encounters (7.5%) while the geriatric population (above 60 years old) made up 12.5% of total encounters. Females made up 51.3% of the population of patients while males made up 48.7%. On another angle, when ethnicity was analysed, 67.4% was found to Malays with 24.6% Chinese and 7.3% Indians. However it must be mentioned that the demographic data for NMCS featured data collated as a whole for both public and private primary care clinics and separate data was unavailable for private primary care clinics (Ministry of Health Malaysia, 2012).

In terms of financing for primary care it was found that out-of-pocket payment (56.8%) was the most common method of payment, followed by payment through private third parties (22.0%) and then private third parties. (In this study, private third parties referred to employers and panel companies with appointed clinics as designated treatment venues). Falling far behind these were MCOs and private insurance companies. In this study also all visits to public primary care clinics were considered to be under government subsidy.

CHARACTERISTIC		NUMBER	PERCENT OF ENCOUNTERS	95 % CI	
				LOWER	UPPER
Mode of payment	Gov Subsidy[1]	4,314	20.17	20.11	20.23
	Private OOP[2]	12,135	56.75	56.64	56.85
	Private Third Parties[3]	4,695	21.95	21.89	22.02
	Private OOP & Private Third Parties[4]	37	0.17	0.17	0.18
	Others[5]	204	0.95	0.94	0.97
	SUBTOTAL	21,385*	100	-	-

Table 4: Sources of Payment in NMCS 2010 (Ministry of Health Malaysia, 2012)

2.8 Microinsurance

The term microinsurance came into being specifically to cater to the protection of low-income people against specific perils in exchange for regular premium payment proportionate to the likelihood and cost of the risks involved. This definition is exactly the same as one might use for regular insurance except for the clearly prescribed target market: low-income people(Morduch, 2006).The target population typically consists of persons ignored by mainstream commercial and social insurance schemes, as well as persons who have not previously had access to appropriate insurance products(Morduch, 2006). Another definition of the term is insurance with low premiums and low caps / coverage. In this definition, "micro" refers to the small financial transaction that each insurance policy generates. "General microinsurance product means health insurance contract, any contract covering the belongings, such as, hut, livestock or tools or instruments or any personal accident contract, either on individual or group basis, as while "life microinsurance product" means any term insurance contract with or without return of premium, any endowment insurance contract or health insurance contract, with or without an accident benefit rider, either on individual or group basis(Morduch, 2006).

Micro-insurance does not refer to: (i) the size of the risk-carrier (some are small and even informal, others very large companies); (ii) the scope of the risk (the risks themselves are by no means "micro" to the households that experience them); (iii) the delivery channel: it can be delivered through a variety of different channels, including small community-based schemes, credit unions or other types of microfinance institutions, but also by enormous multinational insurance companies. Microinsurance is synonymous to community-based financing arrangements, including community health funds, mutual health organizations, rural health insurance, revolving drugs funds, and community involvement in user-fee management. Most community financing schemes have evolved in the context of severe economic constraints, political instability, and lack of good governance. The common feature within all, is the active involvement of the community in revenue collection, pooling, resource allocation and, frequently, service provision(Churchill, 2006). Microinsurance links multiple small units into larger structures, creating networks that enhance both insurance functions (through broader risk pools) and support structures for improved governance (i.e. training, data banks, research facilities, access to reinsurance etc.). This mechanism is conceived as an autonomous enterprise, independent of permanent external financial lifelines, and its main objective is to pool both risks and resources of whole groups for the purpose of providing financial protection to all members against the financial consequences of mutually determined risks(Churchill, 2006).

Thus 3 of the critical features of microinsurance are(De Bock & Gelade, 2012)

i) transactions are low-cost (and reflect members' willingness to pay);

ii) clients are essentially low-net-worth (but not necessarily uniformly poor);

iii) the essential role of the network of microinsurance units is to enhance risk management of the members of the entire pool of microinsurance units over and above what each can do when operating as a stand-alone entity.

There are 4 main models in offering microinsurance. They are: i) the partner-agent model, ii) the provider-driven model, iii) the full-service model, and iv) the community-based model(De Bock & Gelade, 2012).

A microinsurance scheme is a scheme that uses, among others, an insurance mechanism whose beneficiaries are (at least in part) people excluded from formal social protection schemes, particularly, informal economy workers and their families. The scheme differs from others created to provide legal social protection to formal economy workers. Membership is not compulsory (but can be automatic), and members pay, at least in part, the necessary contributions in order to cover benefits. The expression "microinsurance scheme" designates either the institution that provides insurance (e.g., a health mutual benefit association) or the set of institutions (in the case of linkages) that provide insurance or the insurance service itself provided by an institution that also handles other activities (e.g., a micro-finance institution)(Clarke, 2011).The use of the mechanism of insurance implies(Morduch, 2006):

Prepayment and resource-pooling: the regular prepayment of contributions (before the insured risks occur) that are pooled together.

Risk-sharing: the pooled contributions are used to pay a financial compensation to those who are affected by predetermined risks, and those who are not exposed to these risks do not get their contributions back.

Guarantee of coverage: a financial compensation for a number of risks, in line with a pre-defined benefits package.

Examples of microinsurance schemes include:

Life microinsurance (and retirement savings plans)

Health microinsurance (hospitalisation, primary health care, maternity, etc.)

Disability microinsurance

Property microinsurance – assets, livestock, housing

Crop microinsurance

2.9 Health Microinsurance

Health micro-insurance – referred by different names such as community-based health insurance, micro-health insurance, mutual health insurance, community-based health financing, community health insurance etc -is a form of micro-insurance in which resources are pooled to mitigate health risks and cover health care services in full or in part. Health micro-insurance schemes are more complex in nature compared to life insurance schemes, as they provide services towards specific risks or illnesses and involve the role a health care provider, whether independent of or in partnership with the scheme(Leatherman, Christensen, Holtz, & Ehrbeck, 2010). The scheme can be provided by government, a private insurance company, an NGO or a CBO. Health microinsurance is important for the poor because health risks are often identified by the poor as the greatest and costliest risks among all other natural, social, economic etc risks faced by them. Health problems not only impact expenditure of the household, but also reduce the productivity and lessen the opportunity for growth(Leatherman et al., 2010). Long-term illnesses have serious implications on the poor, leading to other unhealthy social conditions such as alcoholism, domestic violence or psychological complications. The poor are considered to be more vulnerable to illnesses and epidemics than the rich as the former usually live in unhygienic conditions, they have low-levels of health awareness and fail to take up preventive measures(Radermacher & Dror, 2006).

Research has indicated that the poor become further impoverished in the process of seeking health services..36 Nearly 40% of hospitalised patients sell assets or borrow money to afford treatment and an average of 24% fall further down the poverty trap in this process(D. M. Dror & Jacquier, 1999). One of the reasons for lack of a proper health-seeking behaviour within the poor community is the expensive medical treatment especially at private health clinics in addition to the bad facilities available at public health centres(Björn Ekman, 2004). There is a close relationship between the health conditions of the people and the economic growth of the country in which they live. It becomes necessary for the government to ensure

affordable services for the poor to improve and maintain their health well-being. Some of these factors prove that health microinsurance is critical to reduce poverty and improve household conditions in poor and developing countries (Björn Ekman, 2004). A health microinsurance project can cover the following benefits under its plan of operation(D. M. Dror & Jacquier, 1999)

(1) Basic Health Care: Preventive health care, health education, immunization, family planning etc; part of curative care such as medical consultations, nursing care, medical care etc

(2) Hospital Treatment: Hospital accommodation, medical, surgical, technical expenses and medicines.

(3) Specialised Treatment: Includes consultations with specialist doctors (gynaecologists, paediatricians, surgeons, dentists etc) and medical interventions such as radiology and clinical biology, which are carried out either during hospitalisation or during an external consultation.

(4) Dental Care: Administered through dental clinics

(5) Medicines: Medicines under prescription

(6)Transportation: Transportation costs of bringing patients to health centres

(7) Other categories of health care coverage include paying a fixed rate for loss of compensation during the hospitalised period for the earning member of the family, maternity cash allowances, funeral allowances etc. However, it has been observed that these extra services require a large contribution from members.

Health insurance entails the transfer of health risks in return for a premium payable in advance. This arrangement entails flows of funds and information in two directions: from the client to the insurer and from the insurer to the client. The party with the most control of these flows of funds and information can influence the business process to its advantage. This notion that one party would seek an advantage over another implies that conflicts of interest can occur between insurers and insured. This is not so clearly implicit in health microinsurance which is aimed to

assist the uninsured groups to become insured, and in doing so, lean towards aiding the latter rather than the former. However this may not be true in many cases(Radermacher & Dror, 2006). Of importance is the reason for why organisations are interested in providing health microinsurance in the first place. Health microinsurance organizations can be distinguished along two dimensions: a) the primary motivation for entering the market, since this motivation influences the design of the business process and hence the product,and b) the entity bearing most of the risk of losses. As seen in the microinsurance model, there are 4 four main providers of health microinsurance: 1) licensed insurers operating the "partner-agent" model, 2) the charitable insurance model, 3) healthcare providers that also operate health insurance and 4) the mutual model.

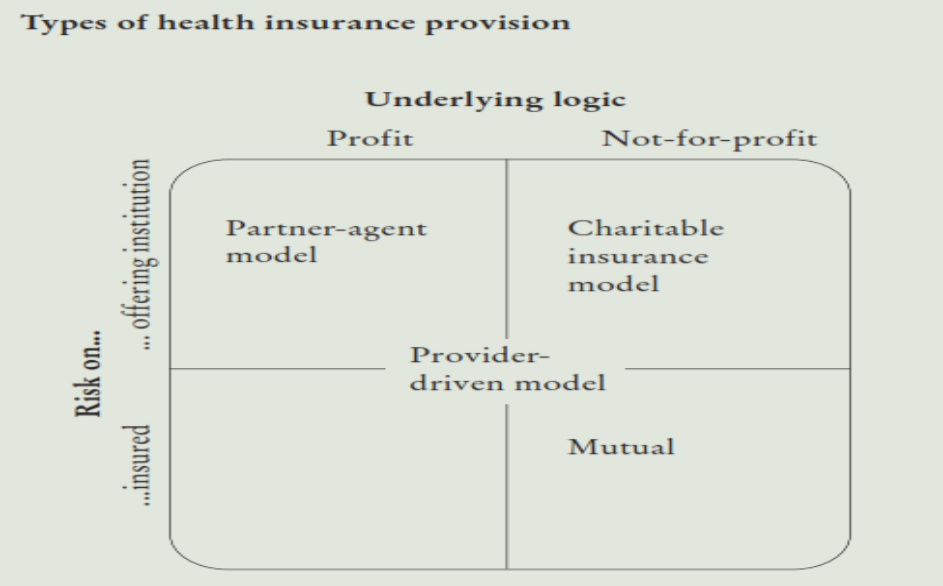


Figure 8: Types of Health Insurance Provision (Leatherman et al., 2010)

Partner-agent model

The relationship between the policyholder and an insurance company ("the partner") is facilitated by an intermediary ("the agent") such as an NGO, a microfinance institution or any other organization with close contacts to the target

group. The insurance company is responsible for all decisions affecting product manufacturing, sales, servicing and maintenance of long-term sustainability i.e. it carries the risk. Although it may consult the agent organization when designing a product, the insurer maintains control over the strategic operations that define the risk transfer mechanism. The agent deals with sales and product-servicing within the boundaries of the products that the insurance company is allowed to sell, and at commissions that meet the regulatory limits or are agreed on with the partner. Agents have better knowledge of (and ties to) the target market, but their primary role is to represent the insurer to the clients. This is an area where conflicts of interest might arise, as the agent organizations usually regard themselves as advocates for their clients, and might feel uncomfortable communicating the insurance company's position. If a conflict arises over whether a claim is valid and should be paid, the agent might need to agree with one side, running the risk of alienating the other. Usually, its position as an agent of the insurer means having to side with the latter, and communicate the rejection of a claim to the client. If such cases occur frequently, agents might find their reputation in the community damaged and the community's trust in them – the very attribute that attracted the insurer to the agent – will diminish or be lost. One of the shortcomings of the system is that neither clients nor healthcare providers have direct input into the production process, and bear no responsibility for long-term sustainability. The agent's role is usually also confined to sales and after sales service, although the latter is sometimes dealt with by the insurer directly or through a third-party administrator (TPA).

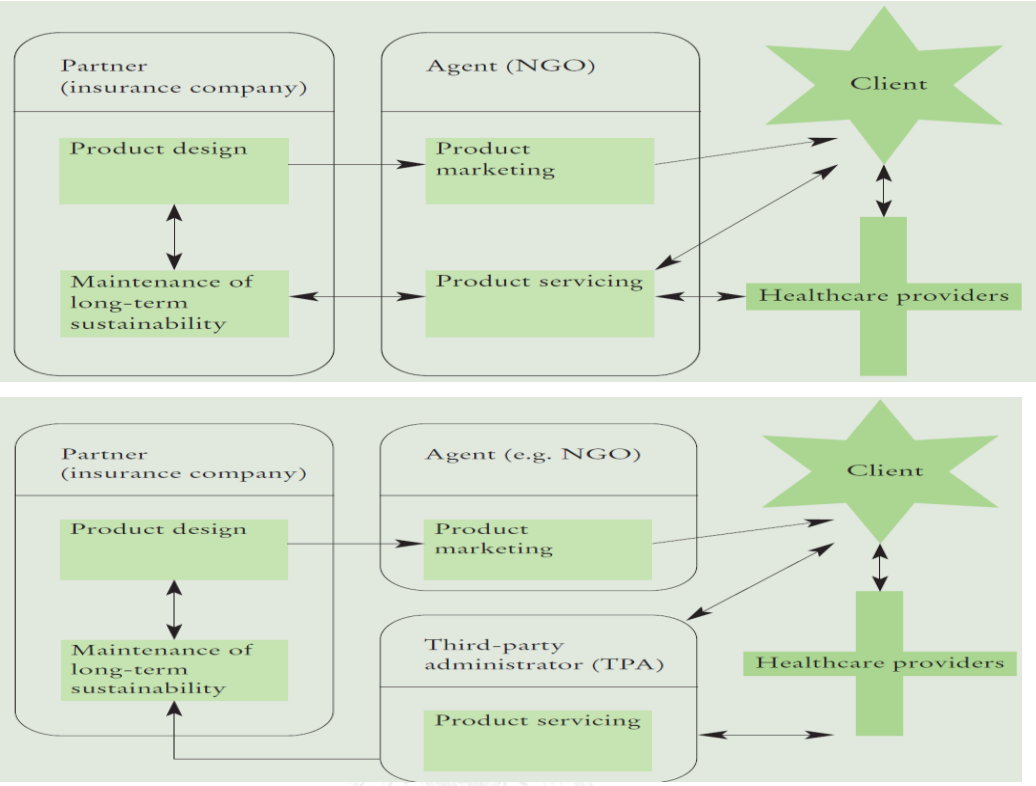


Figure 9: Partner-Agent Model

For health microinsurance, the agents' real comparative advantage (and hence their source of attractiveness for the insurer) is highlighted in the sales process. Insurers, which often lack a relationship of trust and access, both physical and psychological, to potential clients, rely on the agent's proximity to the market and the trust built up over the years through the agent's other operations. However, market penetration is one thing, but complete transparency another: clients quickly realize that there is little incentive for them to provide information about their health status or about a neighbour who they know is withholding information, and so the flow of information in both directions is incomplete in the partner-agent model(D. M. Dror & Jacquier, 1999).

This constitutes an increased risk to insurance companies for which their shareholders (logically) expect to be compensated by increased returns (invariably leading to higher premiums). Higher premiums in turn result in clients' increased

demand for “value for money” and thus amplify moral hazard (again a higher risk for the insurer). Thus, a vicious cycle of dysfunction can evolve which may cause the opportunities inherent in this model to be squandered. For as long as risk and returns are not balanced from the insurer’s perspective, there will be no incentive to enter the market in a meaningful manner. This incentive problem is amplified when it comes to product-servicing and claim verification. The insurance company may expect the agent to verify the claims, and if so hopes that the strong ties of the agent with the target groups will ensure a good flow of information. However, as in any commercial insurance scheme, clients have no incentive to provide information that will benefit the insurance company at their (or their neighbour’s) expense. Clients might even consider it legitimate to cheat a large company in a distant city following the logic: “we are poor and they are rich, so they can pay.” (Radermacher & Dror, 2006).

As insurance companies experience this problem with clients from every market segment, they establish monitoring mechanisms for verifying claims. However, these mechanisms are costly, and in the context of microinsurance may be prohibitively expensive to the point where affordability for the poor is lost. One clear solution maybe by empowering the agent to allow them to adjudicate claims. Other probable solutions include: synchronizing the clients’ incentives with the incentives of the insurance company (e.g. through profit-sharing arrangements) modifies the business process in such a way that the problem might not arise in the first place, as clients would then have an increased incentive to keep information flowing (perhaps not about themselves but about others who are cheating the system)(Radermacher & Dror, 2006).

Charitable Insurance model

Charitable insurance models cover a wide range of institutional options, which all share two important features: (i) being non-profit and (ii) not putting the risk on the insured. Providers of this kind of insurance can be NGOs, religious associations or any other well-meaning organization. Thus, this model can be applied to some government-supported initiatives as well. The motivation for establishing the

insurance scheme is to increase clients' access to care. The motivation is purely social, resulting primarily from the development background of these organizations. The paternalistic and social characteristics of the charitable model do raise some potential conflicts of interest, notably that of placing priorities of the clients behind those of other stakeholders (such as donors or NGO management). Furthermore, in situations where sustainability is based on permanent external financing, the scheme may neglect the education of its clients on proper insurance mechanisms, which might make it difficult to create an insurance culture among the target market. As most of these organizations have worked with the target group for quite some time, they are familiar with the requirements of prospective clients (Leatherman et al., 2010).

However, turning this into an actuarially-priced product is difficult since these organizations usually lack insurance expertise. The health insurer bears the risk of losses. Profits generated in some years are kept as reserves for future losses. All activities of the business process are performed by the offering institution, sometimes with involvement of the target group. For many charitable insurance schemes, achieving sustainability is a major challenge due to their social background. For instance, they may find it more difficult to reject claims, even if the claim is not fully justified. This is due to what is sometimes referred to as the "dirty work hypothesis": managers of charitable institutions might feel that they threaten the institution's reputation by rejecting claims since, unlike in the partner-agent model, the charitable institution cannot blame anyone else to justify an unpopular decision. Some charitable organizations take this social motivation logic even further, to the point of not even considering sustainability of the insurance scheme an objective. Instead, it is simply assumed that losses will occur, and will need to be covered with external subsidies. This social interpretation of this kind of organization's mission also affects the design of its business processes in insurance: the flow of information in the sales process is mainly unidirectional towards the client. Information on how to claim benefits is provided, but no information about preexisting diseases is sought. The distribution process is usually conducted through the organization's own staff who also have other duties. Its objective is to cover those who need it most, not

necessarily balancing the bad risks with good risks to stabilize the risk pool(Leatherman et al., 2010).

Charitable organizations usually agree to relatively unrestricted provision of benefits and product-servicing is also kept simple. Some operate their own health facilities and clients are obliged to use them. However, unlike provider-driven models the motivation here is not to increase the utilization of their own (commercial) facilities, and consequently their financial viability, but rather to ensure that their insured population has access to health services. Maintenance of long-term stability is arguably the weakest point of the charitable model. Often management does not regard financial stability as desirable. Thus, their means of ensuring sustainability is through a donor rather than a market-based solution (such as reinsurance)(Radermacher & Dror, 2006).

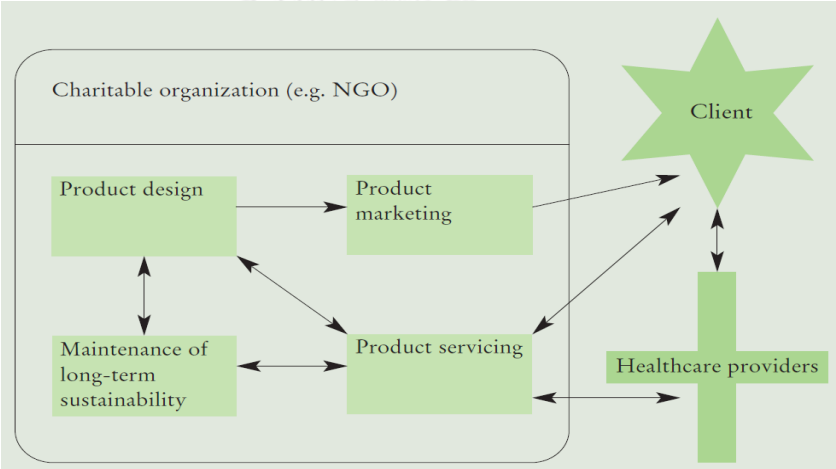


Figure 10: Charitable Insurance Model (Radermacher & Dror, 2006)

Provider-driven model

Providers of care (e.g. hospitals, clinics) may launch an insurance scheme to generate larger volumes of business in dedicated facilities, as well as to open up access to healthcare at different unit prices for different segments of the target population The unique feature of this model is the involvement of the healthcare provider in the design of the business process including the financing side. A healthcare provider directly deciding on the benefit package is significantly different from an insurance company setting up its own healthcare facility, or directly

employing providers to service a product. The difference might seem rather theoretical, but the question of ultimate control over the design of the benefit package is not trivial. Consider the case of open-heart surgery – if the decision-maker is a surgeon, whose services are not in great demand due to the high cost of operations, the likelihood of this benefit being included in the package is higher than if the decision is taken by insurance professionals or clients. This explains why many provider-driven schemes restrict clients' choice to the provider's facility or its health professionals. The clients pay their premium to the healthcare provider, which in turn offers clients a financing mechanism that enables them to consume health services, presumably in a more cost-effective manner than paying for them out of pocket. At the same time, the provider benefits from this arrangement in several ways: a) it increases its potential market by enabling more people to use services, b) the provider restricts the choice of customers to its facility and c) the provider receives revenue from those who would otherwise have not sought treatment, or would have done so elsewhere, or to whom it would have provided services anyway – but for a lower price or for free(Leatherman et al., 2010).

In some schemes, the premium is used directly for operating the health facility, while the provider commits to providing certain benefits to the clients if needed, with provider payment on a capitation basis. Hence, the risk in bad years rests with the healthcare provider which then needs to provide the services. In good years, the surplus is absorbed by the healthcare provider. In these payment systems, the provider has an incentive to underprovide or compromise on the quality of care. In other schemes, the premium collected is released to the healthcare provider according to the services rendered or cases treated (fee-for-service, case-based payments). This mechanism requires a stricter separation between insurance and healthcare provision. Most healthcare providers do not have the administrative (or sometimes the financial) capacity to run a viable health insurance scheme. Pricing products actuarially is certainly a weak point even though the data available about healthcare expenses might be relatively good in this model. The main problem of the model is in product servicing: in the case of fee-for-service payments, the

healthcare provider might have an incentive to provide more services than necessary, while the insurance provider needs to maintain its long term stability. The unification of roles of provider and purchaser of services may thus create conflicts of interest.(Radermacher & Dror, 2006)

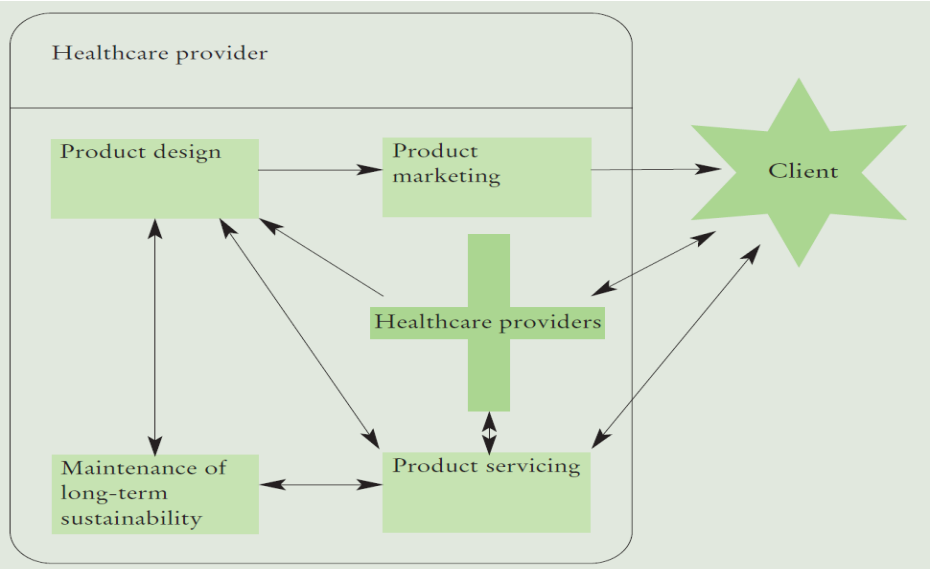


Figure 11: Provider Driven Model (Radermacher & Dror, 2006)

Community-based/mutual model

Mutual benefit societies, also referred to as community-based health insurance schemes or mutual health organizations, are voluntary non-profit systems of risk-spreading based on the ethics of mutual assistance and solidarity. This model is based on the premise that the risk is borne by the insured, who are the owners of the scheme, and that profits are in some way retained for the benefit of the insured. However, community-based and mutual schemes are not identical. The community-based model is usually made up of a small, local group formed on the basis of the social ties developed in day-to-day interaction. The management has little professional expertise in insurance and the degree of involvement of the members is usually quite high. Mutual schemes, on the other hand, have a long history as providers of social security. They are often built on religious or common political lines and provide insurance services to their members. Mutuals are often much larger than community-based schemes and usually have professional management. Due to

the group size, and the consequent absence of personal links between the members, there may be less social cohesion in mutuals than in community-based schemes(Leatherman et al., 2010).

In the community-based/mutual model, clients or members play the central role. They are responsible for all aspects of product manufacturing, sales and servicing, as well as for the maintenance of long-term stability. Members are both the insured and the insurers, as the group underwrites the risk collectively. As owners of these societies, members are actively involved in management and decision-making. They have a direct influence on determining the scope of coverage and the size of contributions. This first-hand knowledge of needs and preferences gives mutual schemes a special advantage in designing the products. The involvement of the members ensures a high degree of satisfaction with the product; but this is conditional on true and representative inclusion in the design process, as well as on fair and transparent management of the scheme. However, to design and operate an insurance system, specialist knowledge is necessary and this is the Achilles' heel of many mutual schemes. Sometimes apex bodies, e.g. in the form of a secondary cooperative, are set up to provide technical assistance. As member-run organizations, mutual benefit societies are based on the principles of self-help, self-administration and self-responsibility. According to the latter principle, the members bear the actuarial risk and are liable for potential losses. By the same token, profits remain in the system to the advantage of all members. This loss- and profit-sharing model suggests that the interest of the individual remains aligned with that of the group, strengthening social cohesion in the group. This model, especially when operated in small communities, usually lowers the costs stemming from fraud, moral hazard and adverse selection. This is due to high levels of social cohesion, which is usually more prominent in small groups, where social interactions tend to be both more important and easier to trace, and translate (in the health microinsurance context) into an informal and frequent flow of information. However, this flow of information can create a privacy issue as well, since people might be afraid of social exclusion in case

of certain illnesses – for example, in the case of HIV/AIDS and mental illnesses – and thus prefer not to rely on the benefits of the scheme(Radermacher & Dror, 2006).

Another drawback of such mutual schemes is their smaller group size: small groups experience greater uncertainty about claims expenses and are more vulnerable to catastrophe risk. While social control may be a suitable instrument to reduce moral hazard, successful risk spreading – or at least a transfer of accepted risks – requires merging with other risk pools or access to other forms of reinsurance. Further aggregation of risk would not only lead to increased financial stability, but also result in lower premiums through decreased capital loading; however, this kind of reinsurance is usually not available. In a member-owned institution, the responsibility for stability rests with the member-run management, which is sometimes delegated to professional managers. According to the ownership principle, all members should ideally feel committed to the stability of the system. The notion of ownership in terms of identification with the system and a sense of personal responsibility may represent a major advantage of community-based schemes. However, personal responsibility can easily get lost when mutual organizations grow and become more professional. In this process, the member-run administration of community-based schemes is replaced by professional managers who might develop their own set of aims rather than focus on the members' objectives. Managers have an incentive to expand the scheme, as this might enhance their remuneration, reputation and power. Although this is good in terms of stabilizing the financial viability of the scheme, the voice of the individual insured can no longer be heard. It becomes increasingly difficult for insured members to monitor their own scheme due to information asymmetry and asymmetry in skills between the professional management and themselves. The scheme is no longer member-ruled but taken over by managers. This can result in members losing their sense of ownership, and thus in the loss of many advantages of the mutual scheme, except that profits still remain with the group of insureds(Radermacher & Dror, 2006).

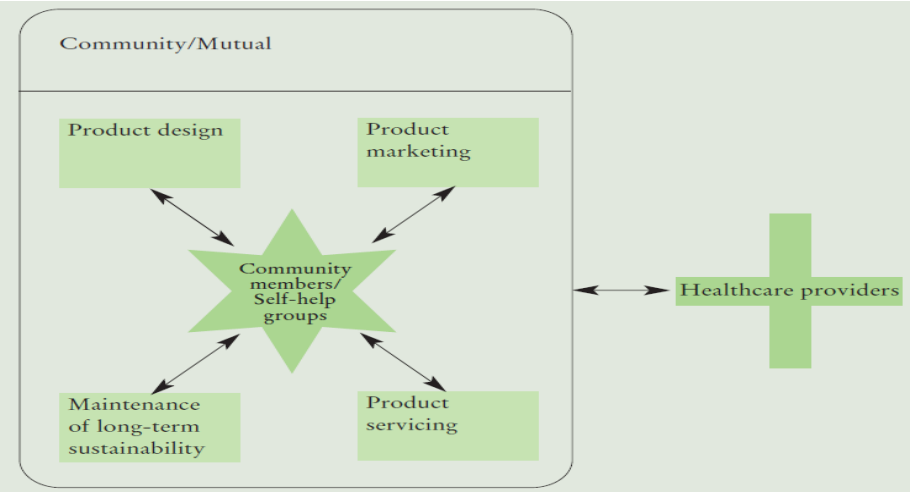


Figure 12: Community-based/Mutual Model (Radermacher & Dror, 2006)

Challenges for health microinsurance schemes in various providers

Building and sustaining a health microinsurance scheme that is successful is subject to many challenges and most importantly, continuously being able to toe the line between demand supply requirements. Some of the important challenges with designing and implementing a successful microinsurance scheme for each are as follows(Apostolakis, van Dijk, & Drakos, 2015; D. M. Dror & Jacquier, 1999):

Product design: Offering value for money and responding to client wishes Health microinsurance clients generally prefer broad coverage that includes low-cost, high-probability events (e.g. outpatient coverage, pharmaceuticals), while insurers like to cover rare events. This conflict of interest is most apparent in the partner-agent model, where the main aim of the insurer is usually profit, and where less frequent claims help profit margins by keeping administrative costs low. Health microinsurance products offered by commercial insurers typically focus on

this kind of benefit. Commercial insurers are reluctant to deal with endless numbers of small claims, especially when an arrangement with unregulated

healthcare providers would produce additional monitoring costs(Apostolakis et al., 2015) .

However, the insurer, which maintains control over product design, also finds it hard to know what the insured want: what price are clients willing to pay and for what benefits? Here, the agent can help resolve a part of the problem. The more the insurer is willing to involve the agent – on behalf of the client – in the design of the benefit package, the more likely the product is to respond to clients' needs. However, insurers may consider some low-income market segments too small to justify a costly adaptation process. Rather, the insurer will be tempted to persuade agents to sell products already developed. The provider model would possibly be better placed to be aware of client priorities if consumption of health services were systematically registered and analysed prior to launching the insurance product, even though there is, generally speaking, little data on willingness to pay and priorities of the client. Furthermore, depending on the type of services they offer, providers might adopt a more flexible attitude to the clients' desire to have low-cost, high-probability events (e.g. outpatient care) included in the benefit package(Apostolakis et al., 2015; D. M. Dror & Jacquier, 1999).

This is usually true for charitable models as well, and can apply to community- based models too. However, the perspective in defining the benefit package is different: in provider-driven models, services are included in the benefit package only if they are actually offered by the healthcare provider. Therefore, the provider, not the client, is the starting point. Charitable and community-based insurance providers might be more likely to take the clients' needs as the starting point, as their concern is neither profit nor developing their own healthcare facility, although the charitable model might not consider it necessary to involve the community as it plans to assume the risk in any case. Another conflict of interest can arise in the provider-driven model when the price of services is negotiated, as the same institution represents both the purchaser and supplier of services. Although one assumes that most provider schemes use their knowledge of their own cost structure for the benefit of the client, a basic conflict of interest remains and special

attention needs to be paid to it. The frequency of premium payment is another area where the interests of the insurer and the insured are fundamentally different: clients often prefer small, frequent payments. This, coupled with the relatively small size of the premiums, poses a challenge to insurers(Apostolakis et al., 2015).

Partners, care providers, charitable insurers and community-based schemes are all likely to try to circumvent this by establishing a system where collection can be done either up-front, or through a deduction at source, or seek a third-party subsidy or advance. However, the community-based model, the charitable insurer and agent organizations, with their access to clients, are naturally equipped to resolve this mismatch between the interests of the insurer and the insured. This is achieved by relying on existing social structures in the community and the existence of community workers who can piggyback on other interactions with the community. This makes it much easier for them to respond to requests for more frequent payment than it is for healthcare providers, which do not usually have regular contacts with the target market(Adomah-Afari, 2015).

Product marketing: Trust and access required

An efficient sales process depends to a large extent on levels of trust and easy access to the clients as information exchange and client education make up the core activity in this process. The lack of a relationship of trust and access (both physical and psychological) to potential clients usually deters formal insurance companies from entering this market alone. This sits well with the philosophy behind the partner-agent model that the main responsibility for product manufacturing lies with the insurer, which then delegates distribution responsibilities to agents. From the clients' point of view, agents facilitate communities' access to insurers and providers which may otherwise be inaccessible to the clients, and provide the latter with access to a recognizable and trustworthy "brand". However, clients' trust in the organization that carries out the actual sales process is of even greater importance, and while insurance companies lack this relationship of trust, agents (in the form of local organizations like NGOs) usually have more respectability and thus ability to reach potential clients. Community-based schemes, as their name implies, are in

constant contact with their members and are likely to have far greater levels of trust and access to them than many other organizations. As a result, the cost of informing members about the benefits of health insurance decreases, and the likelihood of a sale increases(D. M. Dror & Jacquier, 1999).

Product servicing: Managing the flow of information

On the whole, the interests of the different insurers are aligned in the servicing area. All would like an efficient system that would keep costs down and reduce fraud. A cashless system is usually best for achieving these goals, and has the added advantage for the insured of not having to advance money to get treatment. In the partner-agent and community-based model, a cashless system has the additional benefit of enabling the risk carrier to negotiate with healthcare suppliers to bring costs down. Not surprisingly, this negotiation does not take place in the provider-driven model, which effectively limits competition and could result in higher prices or lower service quality. However, many insurance companies are unable or unwilling to negotiate and set up a relationship with a tight network of rural doctors or hospitals as they find it difficult to control the appropriateness of services rendered and claims filed. To obtain the information they require for verifying a claim without having to negotiate with an additional party (the provider), some insurance companies settle claims on a reimbursement basis only(Apostolakis et al., 2015).

This arrangement places a heavy burden on poor households. Due to complicated and inappropriate paper work, exclusions, and procedures required by the insurance companies, reimbursement is often delayed, sometimes for months. Provider-driven insurers, community-based schemes and most charitable insurers are better placed in this respect. Due to their local presence, they can offer benefits in kind more easily – especially in a provider scheme. Their claim verification process is usually better adapted to local circumstances as well. This helps to keep clients satisfied and thus results in higher renewal rates and increased willingness to pay, and probably promotes equity(Adomah-Afari, 2015).

Securing long-term sustainability

Just as the insured pay little attention to probabilities, they also tend to discount other technical aspects related to the provision of insurance, such as the need to pool risks (law of large numbers), the need to invest for the future, or the effects of a particularly high claim load in a current year on premiums (or even insurance availability altogether) for a future year. Nonetheless, the insured expect the insurance provider to meet all its liabilities and constantly reduce their losses. This conflict poses considerable difficulties for all insurers, but it is a particular challenge for community-based schemes for two main reasons(D. M. Dror & Jacquier, 1999).

Firstly, members are likely to exercise greater control over scheme decisions in a community-based model than in any other model. Therefore, in a year with relatively few claims, members might attempt to force the scheme to redistribute unused reserves or to increase benefits, which would pose a danger for long-term sustainability. Secondly, community-based schemes might not have the risk management expertise on hand, and are more likely to assess the actuarial risk incorrectly. While reinsurance can help resolve both of these problems, the fact remains that a stand-alone community-based model is likely to be most vulnerable as regards long-term sustainability (besides the charitable model which relies on indefinite subsidies) (Adomah-Afari, 2015; Apostolakis et al., 2015).

2.10 Household Health Expenditure Survey

Out-of-pocket (OOP) household health expenditures are among the most difficult factors to measure. Yet their measurement is important as OOP household expenditures are typically the first or second largest source of health care financing

in developing countries. As shown in the Malaysian healthcare system context, this holds true. OOP payments have substantial negative side effects. They may lead to impoverishment and further hardship. The requirement of OOP payments is particularly hard on the poor, whose illness will either remain untreated or force

patients into deeper poverty. The poor may not seek medical care and, as a result, remain trapped in the vicious circle of illness and poverty. OOP expenditures include

those of firms, nonprofit organizations, and medical insurance schemes. But outside a few high-income nations, OOP expenditures consist predominantly of private household spending(Organization, 2003).

Private expenditure is incurred by organizations or individuals outside the public sector. These may include private firms, households, private health insurance schemes, and nonprofit institutions serving households. Household OoP spending includes gratuities and payments in kind made to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or to the enhancement of the health of individuals or population groups. OOP expenditures include household payments topublic services, nonprofit institutions, or nongovernmental organizations (NGOs). OOP expenditures exclude payments made by enterprises that deliver medical and paramedical benefits, mandated by law or not, to their employees. Third-party payments, such as insurance, have to be deducted. Households pay taxes and insurance premiums and also make OOP payments for medical services. They may also receive monetary reimbursement for outlays they have made,and this inflow should be captured as well. To examine the distribution of spending among various subsets of the population, further household data need to be collected, including in and the total amount spent on goods and services within a given year.

Including an expenditure in more than one category should be avoided to keep the margin of accounting error low. For example, estimates should not label a given copayment amount as both an insurance activity and an OOP. Such “double counting”will overstate actual expenditure on health care(Rannan-Eliya & Lorenzoni, 2010).

The literature reports that specialized health surveys that focus on only health events and health expenditures can result in overreporting. In other words, more events or expenditures may be reported for a given time period than actually occurred. Household budget surveys, which are conducted to collect data on all types of household expenditure, tend to result in lower estimates of health spending

than specialized health surveys, which focus only on health care use(Rannan-Eliya & Lorenzoni, 2010).

Nonsampling errors are found in most surveys and arise from defects in survey design and implementation, or from the inherent limitations of human behavior when responding to survey questions. The most influential limitation is that individuals are rarely able or willing to accurately recall exactly what they did in any given time period. Errors may arise as a consequence of embarrassment or a wish to conceal information, for example, when surveys seek information about the use of traditional medical providers, which may be associated in some countries with social stigma, or when the illness or health care is itself considered private or sensitive. Another way in which errors can occur is if survey respondents do not understand the survey questions or the survey instrument is too exhaustive, in which case some respondents may learn that not reporting certain events will result in the interview taking less time(Rannan-Eliya & Lorenzoni, 2010).

From the Pakistan Health Income and Expenditure survey (HIES) series, the authors offer some invaluable insights on sources of financing, clarifying that there should be a distinct difference between the sources of financing from household and employer(Xu, Ravndal, Evans, & Carrin, 2009).

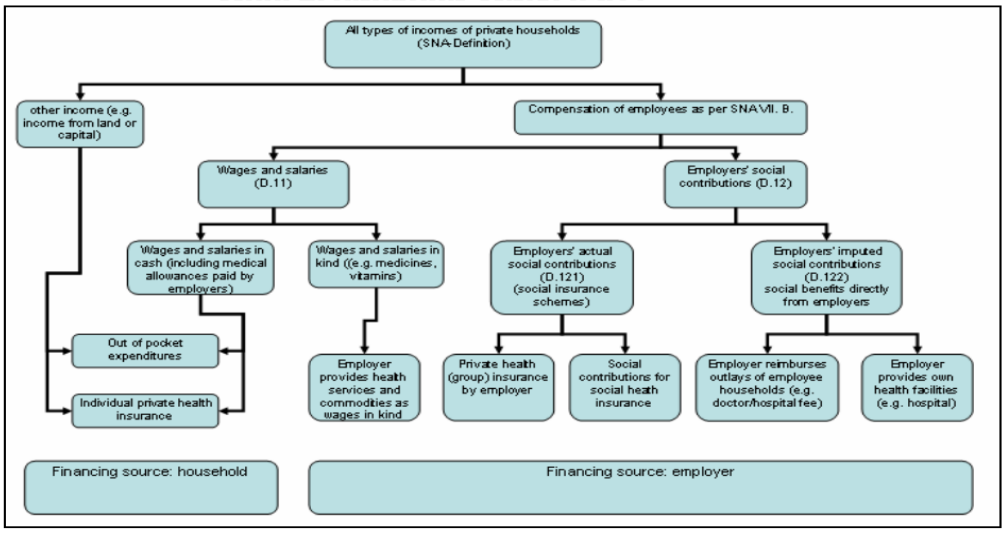


Figure 13: Household Health-Related Income Type (Xu et al., 2009)

Estimating Household Health Expenditure is undertaken in many countries in line with the established of their national health accounts. However there is a vast degree of variation in terms of reliability, validity and comparability between various representative surveys, even in the same country. 2 Philippine studies done in 2003 for example, reported 2 totally different health expenditure shares for households; 1.3% and 7.7%. [41]Thus there has been major concern as per accurate reflections of real conditions.

A World Health Organisation study on estimating health expenditure shares from household surveys identified the direction of the biases inherent in health expenditure share estimates, quantified the effect of these biases, analysed multiple surveys per country or territory and showed how the estimated share of the household expenditure devoted to health (i.e. health expenditure share) would have varied if survey instruments with different characteristics had been employed. Through their study there is an increased availability to compare health expenditure share estimates across surveys. From their study of 214 surveys, the authors divided the surveys by 3 types of survey instruments; minimalist, typical and extensive. A "minimalist" instrument had one expenditure question, one health expenditure question and a two-week recall period. A "typical" instrument had six expenditure questions, five health expenditure questions and a one-month recall period. These thresholds represented the median value of those variables in the sample. An "extensive" instrument had 2431 expenditure questions, 274 health expenditure questions and a 12-month recall period. The study found that the greater the number of health expenditure questions, the greater the health expenditure share. Other factors held constant, a one-unit increase in the number of health questions was accompanied by a 1% increase in health expenditure share. A one-unit increase in the number of total expenditure questions (while holding the number of health expenditure questions constant) was accompanied by a 0.2% decrease in health expenditure share. A one-month increase in the recall period was accompanied by a

6% reduction in health expenditure share. Surveys that employed a diary generated lower health expenditure shares(Heile, 2011).

The authors espouse, as echoed in previous WHO recommendations such as the manual A system of health accounts: 2011 edition which advocates an "integrative approach" to estimating private expenditure that involves making use of all available data sources, such as provider tax returns, pharmaceutical sales databases and household surveys. This approach would triangulate flows from these different channels to generate an accurate estimate. Although this approach is ideal, it is also impractical, especially in the near term for low-income countries. An interim solution would be to rigorously track the flow of funds at selected validation sites, as is done for the Medical Expenditure Panel Survey of the United States of America. This exercise would capture expenditure outflows from households to all health-care platforms in the community, including hospitals, clinics and pharmacies, and would provide a "gold standard" estimate of out-of-pocket expenditure that could then be used to adjust existing household survey data. Analysts will be able to systematically, reliably and accurately estimate out-of-pocket expenditure only if these validated estimates exist(Heile, 2011).

2.11 Cost Analysis in Primary Care

In the era of shrinking healthcare resources, hard choices need to be made as to which healthcare programmes can and should be financed. Making a choice for resource allocation is difficult especially since one choice merely means that another programme cannot be implemented, and in healthcare this is usually a trade-off costing lives. [44] Decisions about allocation of scarce healthcare resources are made by many different providers and payers of medical care. The principal decision-makers responsible for containing costs and ensuring that the resources available are used to provide more and better healthcare include(Edejer, 2006)

•healthcare policy-makers

•administrators of managed-care organisations

•administrators of government healthcare programmes

• pharmacists, prescribing physicians, health insurance administrators and employers (especially where employer-provided health insurance is common).

All of these groups have a need for information on the economic value of alternative healthcare interventions if they are to make informed decisions about allocating scarce healthcare resources. In addition, patients and patient-advocacy groups have displayed an increasing interest in acquiring information on the economic value of alternative therapies.

5 key types of economic evaluation have been described for healthcare programmes(Edejer, 2006)

(i) cost analysis considers only the total costs of the programme(s) being compared;
(ii) cost-minimisation analysis seeks to determine the least costly of 2 programmes, the outcomes of which are judged to be equivalent;

(iii) cost-effectiveness analysis examines the value of the outcomes or consequences of comparative programmes in terms of natural units (e.g. cost per day of pain avoided), without attempting to put a monetary value on that outcome;

(iv) cost-utility analysis adjusts the outcome units used in the cost-effectiveness analysis by 'utility scores' (utility scores weight the outcome analysed in terms of patient preference for the health outcome achieved); and

(v) cost-benefit analysis in which the outcome is not expressed in terms of natural units, but is assigned a monetary value, allowing comparisons across disease states.

The cost-analysis study remains the most important study of all these as it forms the foundation for all the other types of cost studies that come after it. Costs are the value of raw materials (such as labor, equipment, supplies) used to produce goods or services. Costs could be tangible or not. Our most common idea of cost is monetary cost of things we consume i.e a price tag. According to economists, costs are the consequence of choice; making a choice means devoting resources to implement this choice and thus other possible choices could not be done. The true

cost of a program then has to also include this loss of choice, often called opportunity cost(Edejer, 2006).

One great problem in calculating costs is obtaining the value of an opportunity cost. This involves identification of best alternative uses of a resource and value how much that benefits could have been. In a perfect market, in which buyers and sellers can enter and withdraw at no cost and goods and services traded are the same, market prices of resources reflect their opportunity costs and thus can be calculated easily. However in the real world there are very few perfect markets, most being imperfect markets where there is some distortion of the rules. One example of an imperfect market is the healthcare market. In the healthcare market, market power is controlled by a small number of health insurance companies, who 'buy' care from providers, giving them market power to influence the price of goods and services. They force discounts on doctors and hospitals depending on the type of insurance and these are then the prices which a customer pays; not relative to the opportunity cost. The other reason for an imperfect market to exist is the unequal flow of information between buyers and sellers. Again this is clearly seen in the healthcare market where patients as consumers have little or not information while providers or doctors as sellers control all information and influence choice making. This allows sellers to charge prices for medical services and goods that are higher than the opportunity costs. This is why opportunity costs are never representative of their true costs in medical care(Edejer, 2006).

Prices of goods purchased under imperfect market conditions have to be adjusted to reflect their opportunity costs Methods for doing this can be seen as below (Walker, 2001) :

a) Using Cost-To-Charge Ratios (CCRs) – prices and economic costs are also changed by distortions of the market via taxes and subsidies. One of the ways to adjust for this is via Cost-to-charge ratios, which are coefficients developed by expert panels to convert charges for medical services to their true economic costs. The US Federal Register, for example, publishes yearly Medicare cost-to-charge ratios by state which also have a differences for urban and rural areas.

b) Micro-Costing – it is a better method than CCR but more complex and time-consuming. It usually can only be carried out in smaller scale studies and involves identifying and determining a value for the cost of each component used to produce the good or service.

c) Costs of Non-traded Goods and Services – the healthcare market is one that often relies on non-market resources such as volunteer time and donated goods which cannot be costed directly in monetary value. Thus an estimation of their value is called shadow price. Shadow price can be estimated by using market prices for similar resource i.e wage rate for a paid worker to do the job to cost volunteer time. This is called the substitute method and can either be costed lower by using just any substitute (global substitute) or a equivalent-skilled worker (specialised substitute) in which the costs would be higher. The opportunity cost of the particular volunteer i.e how much he would be paid if he was working today could also be used as a method to calculate shadow price and is much more accurate since it takes into account each volunteer's individual actual capabilities. For donated goods and services, market value of inputs can be used as the costs of resources which can be obtained by contacting suppliers or estimated from catalogs. Shadow prices can also be estimated by looking at previous published work to obtain formulas or methods used for this(Walker, 2001).

Costs are generally classified as direct, indirect, and intangible costs. Direct costs are the costs of all resources that are being used to carry out the programme such as lab tests, facilities, personnel and others. The costs of providing a treatment directly are direct medical costs and can be medical (vaccine, drugs) or non medical such as salary of nurses and cost of syringes. Direct costs can be subdivided further into provider costs and patient costs (such as patients' transport expenses to clinic). Indirect costs or productivity losses are the loss-of-income because the patient fell ill or had to come to the clinic today (lost time from work or prolonged medical leave). Intangible costs are the nonmaterial costs (e.g., patient's anxiety, fear of patient and family and even pain score). Intangible costs have a major impact on the patient and

can be a major influential factor on decision-making but are almost impossible to quantify and thus difficult to include in any study(Edejer, 2006).In this study, since the costs will be borne by the health purchaser i.e insurance entity, only direct provider costs are estimated as only these will be factored into the calculations when formulating the assessment of provision of an insurance scheme and annual premiums.

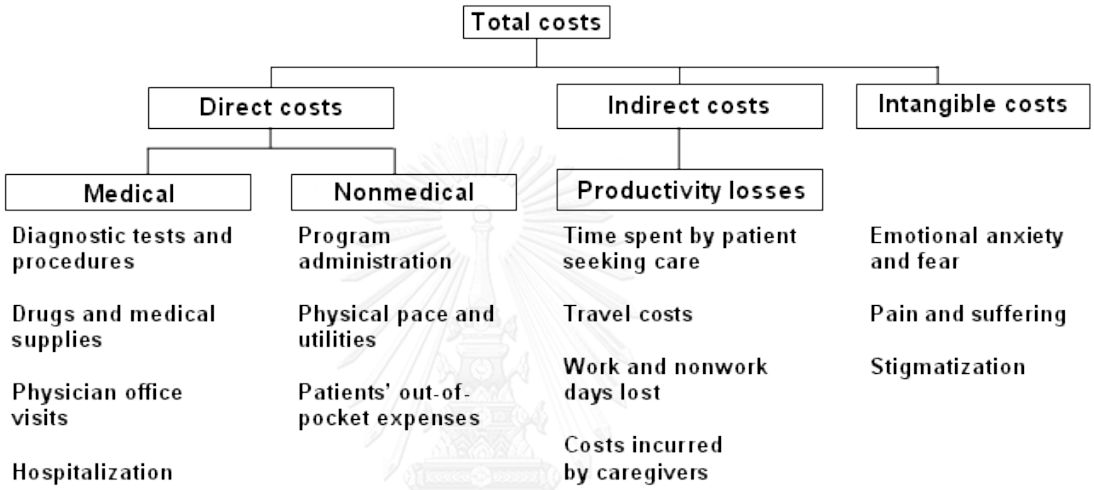


Figure 14: Costs in healthcare cost analysis(Edejer, 2006)

Walker's detailed guide to cost analysis gives the breakdown and formulas on how to calculate the various costs, combine them into a complete costing that gives you the total cost and then also the average cost per patient as outlined below(Walker, 2001)

Fixed Program Costs

The fixed costs of a program are costs that do not vary with the level of activity. These are costs such as rent and utility costs which have to be paid no matter how heavily or underutilised the facility is. Personnel costs are also fixed costs. Costs incurred at the beginning of the programme implementation can also be called start-up costs. Facilities cost can usually be costed by adding the cost of

space, maintenance and utilities. Costs for facilities are recorded as cost/unit and if this is a shared space, division of how many units are used for this programme and how much that costs as a proportion of the whole. The equation that follows is a sample of how to calculate facility costs for a shared facility.

Facilities costs = Additional space used by the program x Cost per square foot for space and utilities

or

Facilities costs = Total facility cost for space and utilities x (Facility time used by program/ Facility time used by all programs)

In a private primary care clinic which also sees other cases besides diabetic cases, the second option would be the best one to use.

Costs for administrative and staff support as a proportion of the staff time spent on this programme would also be similar as to the above and demonstrated by the equation below to determine the cost of administrative and staff support associated with a program.

Administrative costs = Proportion of administrator's time spent on intervention x Administrator salary

Support costs= Proportion of support staff time spent on intervention x Support salary

Administrative and staff support costs = Administrative costs + Support costs

Variable Program Costs

The variable costs of a program change with changing levels of activity. This includes total time spent on the intervention by doctor and medications costs, lab tests costs and other material costs. Variable costs are measured by calculating the quantity of resource and multiplying it with unit price.

Provider cost is determined for each provider type and service by using the equation below.

Provider cost = Provider salary x Average duration of service x Number of services provided in period

Material and supply costs can be calculated using the formula below:

Material and supply costs = Specific resource x Cost per unit x Number of units used in period

How much of these resources were used can be calculated via a number of methods including from primary data collection of surveys or from medical records, accounting ledgers and payrolls.

Calculating Cost Analysis Results

The first series of calculations computed on the basis of the cost information previously collected is referred to as the base-case scenario. It is based on the assumptions about resource use and value most closely reflecting the intervention's true level of resource use (best estimate). These calculations include total costs, average costs and marginal costs.

Total Cost

The total cost (TC) of a program or an intervention is calculated by adding all the costs incurred in producing a given level of output and is inclusive of the cost of all the personnel, the supplies, and the equipment that were identified in the cost

inventory.

Total costs can be given as the formula of

TC = (Q1 x P1) + (Q2 x P2) +...+ (Qn x Pn)

where

Q1 = Quantity of Resource 1 **P1 = Value of Resource 1**

Q2 = Quantity of Resource 2 **P2 = Value of Resource 2**

Qn = Quantity of Resource n **Pn = V**alue of Resource

Average Cost

The average cost (AC) is the cost per unit of output (e.g., cost per patient treated or cost per child immunized). AC is computed by dividing the total cost by the number of participants or other relevant intervention units. The formula is

AC = TC / Q

where

AC = Average cost

TC = Total cost

Q = Units of output

Unlike most generalised CEAs which use national costing data for treatment, this study utilises specific costing data from only private primary care clinics, not from a mix of hospitals and/or public primary care settings. The inability to utilise national overall health expenditure is of no consequence as the costs will be analysed as part of the study process. A Malaysian study done in one district in the state of Kelantan compared the provider costs of outpatient care in two different public primary care clinics; the first with a family medicine specialist and the second without; whereby the costs per diabetic patient per year for the former was RM1127 (USD363.13) and RM802.15 (USD258.46)(Nabilla et al., 2003)for the latter. However leaving aside the fact that these figures are more than a decade old, these numbers cannot be used as approximation in this study due to the fact that this study was

conducted in a public primary care clinic with many more different variables unlike in the private primary care clinic.

The costing exercise for the study will then be microcosting with involvement of only the direct costs of the provider. The WHO has published a manual called costs analysis in primary healthcare(Creese & Parker, 1994) which is used as the reference point for similar costing studies. In addition this study also will draw on the micro-costing methods used by the Malaysian authors in order to include local peculiarities and eccentricities.

2.12 Willingness and Ability to Pay (WATP)

One of the greatest problems in formulating and putting into action health care programmes especially when not funded totally by the government is the dilemma of equity. The balance of making the programme sustainable against the issue of making the service available to low-income patients is difficult as it is treading on a fine line. A price bar set too high will deny access to those who the programme was fashioned for in the first place while if the programme entry price was too low, it will become unsustainable and either collapse or rely on external funding for eternity. The willingness and ability to pay (WATP) is a technique that allows the correct estimation of prospective clients willingness to pay for goods and services, allowing planners to make rational pricing decisions and successfully walk the tightrope of affordability versus sustainability. The law of demand states that demand is inversely related to price and as prices increase, sales/use will decrease. However there will be a minimum price below which further reductions do not cause increased sales/use(Smith, Harris, & Olsen, 1999). Similarly once prices are increased to beyond a point, further increases also do not reduce sales. This can be illustrated as in the figure below:

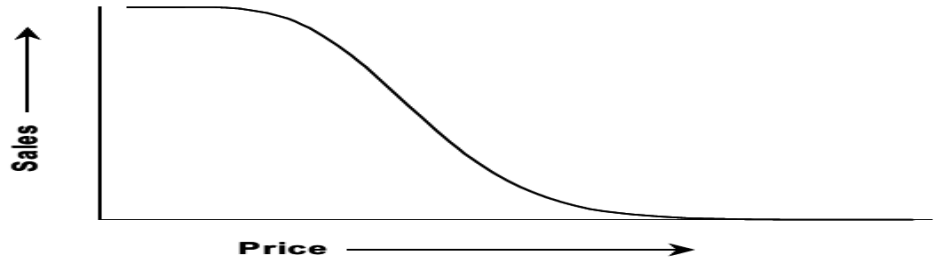


Figure 15: Relationship between price and sales(Smith et al., 1999)

The shape of a demand curve for a goods/service is dependent on sources of supply, alternative methods and clients income and motivation. If there are many choices and income of clients is low, sales/use will drop as price increases. On the other hand if there are few choices and the motivation of the client is high sales/use will be less affected by price changes. Revenue is calculated by multiplying sales/use by price per unit. As per the demand curve, any decline in sales will be commensurated by the increase in price and this will still lead to increased revenue. However at some price ranges, even small increases will lead to large decrease in sales and thus decrease in revenue. Understanding the shape and height of the revenue curve is then crucial to allow for cost-estimation and expected revenues at different price levels(Smith et al., 1999).

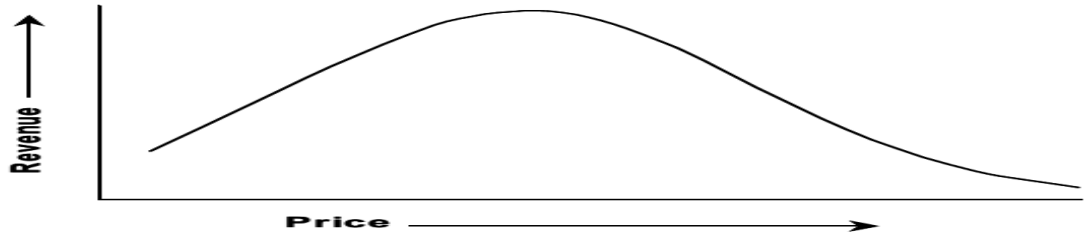


Figure 16: Relationship between revenue and price(Smith et al., 1999)

Predicting client response to price levels are crucial to allow planners to estimate the impact of a proposed price on revenues and sales/use. Formulation of the revenue curve can be done by real-world experimentation of raising prices to high levels and then reducing it when sales/use falls to low levels. However while this may be practical in terms of a commercial enterprise, in a social programme these steps would have doomed the programme to a total and utter failure of

support from the community it aims to embrace. The alternative then is simple; ask potential clients how much they would be willing to pay? This is called contingent valuation. WATP surveys measure potential demand for goods/services by asking " Would you buy this product if it was this price?" Data obtained from this allow program managers to estimate the number of clients who will pay a fixed price for a goods/service, the amount of revenue that will be generated by that price and the characteristics of those who will not pay that price. When more complicated analyses are performed, the data can also be used to estimate the revenue maximizing price for a product or service(Smith et al., 1999).

WATP studies answer the question of " How much can we charge?". But before going into answering this question the answer to another question of " How much should we charge?" should be available. To answer this question data should be present on possible pricing schedules or how much is the basic costs of the programme per individual from estimation studies. Two other components of importance are who will be the potential clients and what is the plan for the revenue generated by charging/raising prices. These questions focus the investigation on the programme's target population and on its financial objectives.

Specifying the target population allows the investigator to customise characteristics in the study and focus on individuals who the programme is targeted for, especially since diffferent groups of clients will respond differently to different prices. The plan for revenue generated involves the planner/programme manager to totally understand the programme's total costs so that this can be incorporated into the current study and shortcomings if any from possible generated revenue can be obtained via means other than from the user/purchaser. Thus it is good to have done either a cost-analysis study of the programme costs or at least utilise cost-effectiveness data to have a complete picture of estimated costs and thus revenue needed to cover those costs. The sampling design and size in a WATP survey are dependent on the nature of the product of service under study and the precision required. Generally the programmatic question should determine the study design. If the clinic manager, for example, wants to know how much of a price increase he can

impose on the current clientele should conduct interview in the clinic itself while introducing new services/products should be conducted among individuals currently not having the service or with a population based samples representative of the community. In general terms, precision of the study increased with larger sample sizes but this also increases costs of doing the survey itself. Surveys in clinic settings tend to, for efficiency purpose be conducted as exit interviews with all clients obtaining services in the clinic for a fixed time e.g 2 weeks or 1 month(Liu, Hammitt, Wang, & Liu, 2000).

The National Oceanic and AtmosphericAdministration, after the Exxon-Valdez spill and the ensuing investigation, has established best practice rules in order to overcome the major sources of bias associated with WATP studies. These recommendations include the fact that WATP surveys should 1) be done as personal interviews 2) use close-ended questions eliciting the respondents' WATP to a specified increment for a familiar service 3) remind respondents that price increments will reduce other consumption 4) remind respondents that substitutes exist for the service in question and 5) question respondents about factors that might influence their preferences. It was also advisable to obtain informed consent pertaining to this. The key component of the WTP is based on the fundamental idea that respondents need to understand what they will be purchasing in effect. It is not so much a problem when increasing the price for a service already being used but is difficult when they are asked to pay for a product that they have never used before. Thus when asking about a new product it is better to show a product sample/ or give a full description of the product. When meeting a non-user for the first time, ascertain interest in using the product before going into pricing issues. This is because, the data of an uninterested individual is of no use in a WATP study. If needed ask a related additional question to confirm interest. In addition, the way questions about prices are asked may influence the answers. Asking a single direct open-ended question - "What is the most you would pay for this product?" does not get valid or reliable answers. Rather the consensus is to better pose an explicit question and get yes/no answers. The questions should include questions to cover a

price range without unduly tiring the respondent. In addition, the order of questions should not be as to bias the respondent into naming a higher or lower maximum price than what they really want(Liu et al., 2000).

WATP surveys should always incorporate social demographic questions as well as income-related questions in order to establish client characteristics, income level and most importantly, ability-to-pay, which can be done using common wealth indicators available from most countries' demographic and health surveys. When introducing a new programme or service, non-users should be asked questions phrased as absolute prices and not as price increases which they would be asked if they were current users evaluating a price increase. Target price should be in either the question concerning the low price increment or medium price increment but not the highest increment as experience shows that respondents (especially in developing countries) treat the WATP as a bargaining situation and are more willing to pay a given price when it is low than when it is medium (first price asked) or the highest price increment(Portney, 1994).

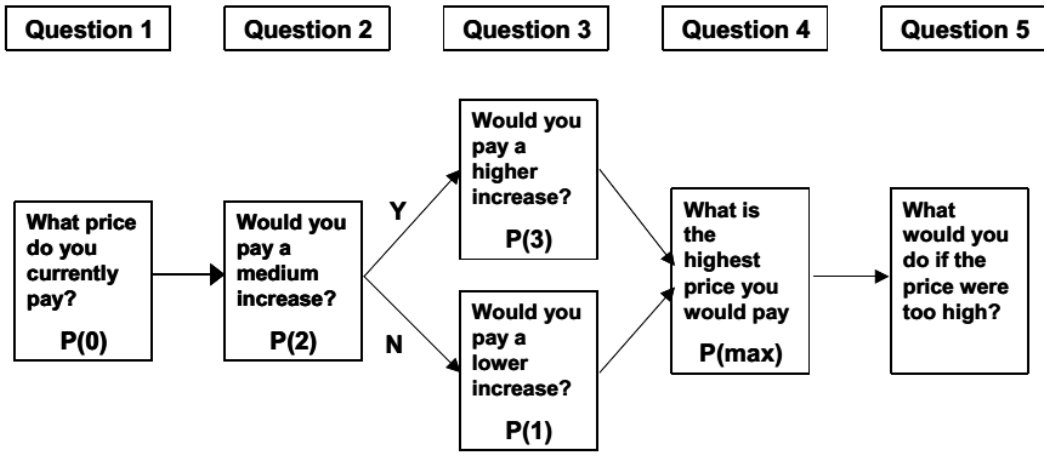


Figure 17: Sequence of Willingness to Pay Questions - note that in a new programme introduction the question should start from question 2(Portney, 1994)

The study should also include two additional price-related questions which is to ask all respondents, regardless of their earlier answers, to name the maximum price they would be willing to pay. For respondents answering yes to the highest price asked this extends the price range under question. For respondents who answered no to the final price asked this gives a finer distinction between highest price agreed and lowest unacceptable price. Data from the maximum price question can also be used to check internal consistency (via number of respondents stating a maximum WATP lower than their current price or the price increment accepted in the close-ended questions should be ideally, trivial). Finally, respondents can be asked what they would do if prices were increased beyond their willingness-to-pay limit. This is helpful for a private programme to establish a market niche or a public programme planner to estimate the need for a social aid(Portney, 1994).

When analysing the data for the demand curve, the following assumptions need to be assumed:

A respondent's maximum price is the highest price they have agreed to. If a respondent answers to RM 10 but yes to RM 8 then the maximum price is RM 8.

Respondents who are willing to pay for a given price are also willing to pay for a price that is lower.

Respondents who are not willing to pay for a given price are also not willing to pay higher.

Each respondent's maximum WTP price is established and remove non-responders (said no interest) and respondents who are internally inconsistent (just saying yes). Respondents who are unsure to standard price probes but gives a maximum price should be included as well as people who respond to the stand price probes but don't have a maximum price. All responses with a maximum WATP price should be examined for internal consistency with the assumption that the maximum price chosen must be higher or same as the accepted highest price probe.If the maximum price chosen is lower than the highest price probe, eliminate this respondent from the analysis. IF the proportion of respondents eliminated is

large to as substantially alter the findings (more than 20%) the survey's itself cannot be considered to be valid. A frequency distribution of maximum willingness-to-pay is run and a graph can be plotted with price increments along the x axis. Percentage demand at each price increment using cumulative frequency can be plotted. The percentage of respondents who will accept price x is calculated (100 minus the percentage whose maximum price is lower than x). However direct analysis will underestimate maximum WATP because of the fact that only few price probes were asked and many respondents will repeat the highest probe as the maximum they are willing to pay. For finer estimates of WATP multiple regression modelling can be undertaken(H. Dong, Kouyate, Cairns, Mugisha, & Sauerborn, 2003).

Conclusion

This literature review has been important to obtain the necessary knowledge related to the formulation and the steps required to build the studies in order to answer the research question. In doing so, a full descriptive analysis of the important underlying concepts which are integral to the study have been laid out clearly in this section of the proposal and will enable the reader to currently have a clear understanding of the need for alternatives in health financing mechanisms in Malaysia, a best way forward via health microinsurance, and a detailed understanding of microinsurance schemes and how they operate. Following this, some of the important aspects of the study designs to be used in this thesis are also outlined to provide a better understanding of their strengths and abilities in helping to answer the research question. Following this chapter, a much clearer picture will be obtained during the description of the research methodology section in the next chapter.

Chapter III

Research Methodology

This was a mixed-methods study and used a number of methods to fully explore the research questions. Thus the study was divided into 3 phases:

Phase 1: Mixed methods study: a) Retrospective cohort cost-analysis study of private primary care clinics and b) a Focus-group discussion of private primary care providers which determined the feasibility of a community health microinsurance

Phase 2: Cross-sectional: Willingness and Ability to Pay (WATP) which determined the acceptability of a community health microinsurance

Phase 3: Quasi-experimental: A pre-post survey of a control and Experimental clinic which determined the efficacy of a community health microinsurance scheme in private primary care clinics in Malaysia

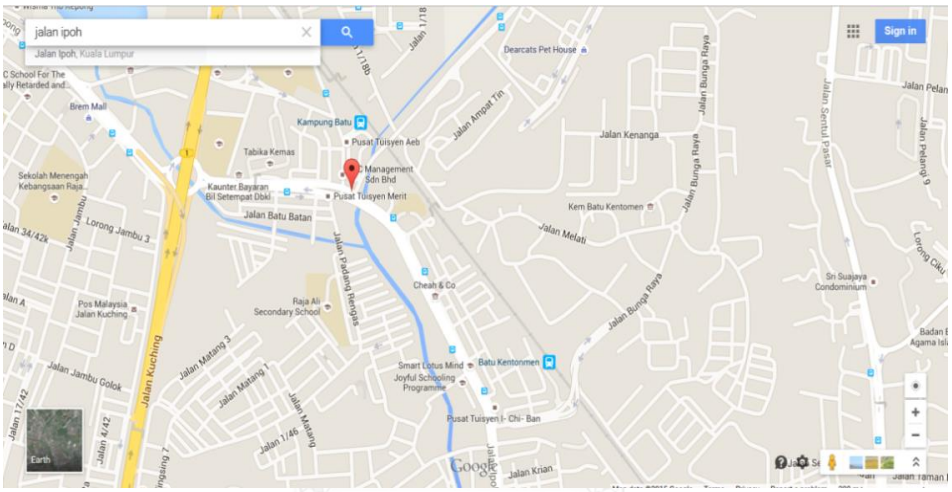
Phase 1a

Retrospective Cohort Cost Analysis Study

3.1.1 Research Design

This was a retrospective cohort cost-analysis study of private primary care clinics around the Jalan Ipoh area, Kuala Lumpur, Malaysia

3.1.2 Study Area



The study area for this study was in and around Jalan Ipoh, Kuala Lumpur, a mixed housing area within the city limits. This area comprised of mixed development of low-cost houses and flats, middle income double and single storey housing, high-income bungalows, and condominiums. The population was also of mixed socio-economic groups of various racial ethnicities. The study area for this study was focused on the private primary care clinics located in this area. From the Ministry of Health Malaysia Kuala Lumpur State Health Department, it was determined that there were 23 private primary care clinics in the Jalan Ipoh area.

3.1.3 Study Period

This phase was conducted in a 3 month period.

3.1.4 Study Population

The population of this study was all OOP-paying patients being seen in the private primary care clinics in the Jalan Ipoh area as well as the private primary care providers of these clinics.

3.1.5 Sample and Sample Size

The number of patients included in the cohort portion of the study was estimated using the sample size calculation formula for cohort sample size estimation with a single group and a continuous dependent outcome (Murphy, Myors, & Wolach, 2014).

$$N = (Z_{\alpha/2})^2 s^2 / d^2$$

Where N= sample size

s= standard deviation from a previous study

$Z_{\alpha/2}$= value 1.96, for the conventional level of confidence of 95%

d = precision (in proportion of one), taken as 0.1 (giving a power of 90%) for this study

From a Malaysian study which analysed direct costs of diabetes in outpatient setting, as(Nabilla et al., 2003) an approximation of costs was used as the mean and standard deviation for this study and when calculated needed a sample of 273. When 20% drop out was added to this it required a sample of 329, which was then obtained.

3.1.6 Sampling Technique

The sampling method for this study was a two-stage sampling method. The first stage was by simple random sampling. In the first stage, 5 clinics were selected randomly via a randomized computer programme (a free online number generator available at http://stattrek.com/statistics/random-number-generator.aspx) from the total number of clinics. Going by the number of patients needed, a total of 65 patients needed to be sampled from each clinic. If a clinic did not agree to participate, another clinic was randomly chosen. The second stage of sampling was systematic random sampling. 65 patient records were drawn randomly using a computer programme (as elaborated above) from a numbered list of clinic patients who used OOP for treatment. If a selected patient had family members who also followed-up in the clinic, then their records were also selected to make up the sample. The patient records were then examined for the year 2014 and the total cost of treatment for 2014 and other variables were extracted.

3.1.7 Inclusion and Exclusion Criteria

Inclusion criteria:

1. Patient lived in the study area

2. Method of payment to clinic was by out-of-pocket

3. This was patient's regular choice of primary care provider.

4. Patient had been seen in the clinic since at least the past two years i.e. from before Jan 1, 2014

Exclusion criteria:

1. Patients who died in the year 2014.

2. Patients who were away from this place of residence for work/transferred for more than 1 month in 2014.

3. Patients who had regular follow-up in other medical facilities.

4. Patients who switched methods of payment in the last year- (e.g newly bought insurance or retired and lost health benefits so paying OOP)

5. Patients who refused consent

3.1.8 Recruitment and Data Collection Procedure

Once patients were identified from the respective clinic, patients were contacted and asked for their consent that their clinical records would be used for this study by members of the study team. Once informed consent had been obtained the patient's case records were extracted and the necessary variables documented into a specially prepared Case-Report-Form (CRF). The CRF captured the patient's entire treatment history and associated costs from this private primary care clinic over the entire year of 2014. Members of the study team filling in the CRF underwent a training session on how to fill the CRF and had a manual with the required explanations and definitions of the variables under study. If there were any inconsistencies or lack of information pertaining to any of the variable, the consulting family physician/GP was consulted with and gaps filled. Additional costing data on capital costs and other operational costs was captured by a Macrocosting Assessment Form which captured time spent on patients in monetary terms, which was then filled by members of the study team with guidance from the clinic manager/resident physician/GP. Total costs were compiled and added up to give a total cost of annual treatment per patient.

3.1.9 Research Instruments

For this part of the study the research instrument used were two CRF (Case Report Form) which comprised of a Macrocosting Assessment Form and a Provider Cost Assessment Form. These forms were adapted from previous cost-effectiveness studies (Liu et al., 2000; Smith et al., 1999) and also based on WHO's manual on primary care cost-analysis and cost effectiveness research. The Macrocosting Assessment Form comprised of 6 sections with Section A dealing with details on the

demographics of the clinic, Section B concentrating on patient census i.e the total number of patients seen in the clinic, Section C on building costs and rates for rental of the building as well as others in the area; Section D on Operation and Maintenance Expenditure including water, electricity and other utilities; Section E on equipment purchased in the clinic; and Section F on staff salaries and other compensation. The Provider Cost Assessment Form, on the other hand, looked at the costs incurred by the patient for treatment over the cost of the year. It comprised of 3 sections; Section A which captured the patient's social demographics, Section B which covered the patient's medical history and Section C which looked at itemised cost per treatment episode. Section C had multiple copies and was filled out for every patient visit throughout the year and this costing will compiled as part of the total cost.

3.1.10 Reliability and Validity

The reliability of the instrument was tested via pilot tests conducted in a clinic not selected as one of the study sites with an interval of one month. A total of 10 patients were selected. As this was a costing analysis using a case report form it did not have test-retest reliability done on it, rather from the pilot test it was assessed on whether there were missing components to costing which had been left out and was added in as needed. A specifically assigned member of the study team filled out the CRF based on the patient case notes and this was audited by another member of the study team randomly at a determined interval to ensure data quality by comparing filled in CRFs with the original case notes. Since these were CRF conducted by members of the study team, there was no need to translate these instruments into Bahasa Malaysia since they were used in English.

3.1.11 Data Analysis

1. First, descriptive statistics were calculated for all variables and put down into a table. E.g is as below.

Table 5 : Baseline characteristics

	Sample
	(N) %
Age	
20-29	
30-39	
40-49	
50-59	
>59	
Race	
Malay	
Chinese	
Indian	
Sex	
Male	
Female	
Household Income	
< RM 1000	
1000-3000	
3000-5000	

5000-10000
>10 000
Education
No formal
Primary School
Secondary school
Diploma/Vocational
Degree and above
Or mean and standard deviation if continuous independent variable

2. The relationship between various individual variables and dependent variable of total cost of treatment per year was explored using bivariate tests of association. The statistical tests of comparison depended on the variables being utilised

Continuous variables: T test or ANOVA.The baseline null hypothesis was that there is no difference between the two groups. Statistical significance was established at $p<0.05$

3. Multivariate logistic regression and linear regression models were constructed to determine the true strength of association between the various independent and dependent variables if healthy bivariate relationships existed.

3.1.12 Ethical Considerations

Ethical approval was sought and obtained from the Malaysian Research Ethics Committee (MREC), Ministry of Health Malaysia. Written informed Consent of each participant was obtained along with confidentiality and privacy measures to ensure that their data was safeguarded and not utilized for any purpose outside the purpose of this study.

Phase 1b

Focus Group Discussions

3.2.1 Research Design

This sub-phase of the study comprised of focus-group discussions of private primary care providers in Jalan Ipoh, Kuala Lumpur who elaborated on the findings of this part of the study and calculated a feasible value for a community health microinsurance scheme.

3.2.2 Study Area

The study area for this study was in and around Jalan Ipoh, Kuala Lumpur. The study area for this study focused on the private primary care clinics located in this area. From the Ministry of Health Malaysia Kuala Lumpur State Health Department, it was determined that there were 23 private primary care clinics in the Jalan Ipoh area.

3.2.3 Study Period

This phase was conducted over a 3 month period.

3.2.4 Study Population

There is a variety of private primary care clinics in Jalan Ipoh,Kuala Lumpur, ranging from single owner/doctor clinics which were open during office hours to larger partnership setups which were open 24 hours 7 days a week or even franchise clinics that employed doctors to work in their clinics. Private primary care providers who practise in the Jalan Ipoh area were invited to participate in this study.

3.2.5 Sample and Sample Size

The sample was selected from among the 23 private primary clinics in the Jalan Ipoh area. Three different focus groups were formed and carried out consecutively one after another to compare the data obtained and ensure saturation of information. Each group was arranged to comprise of 6 people and consist of as

diverse a sub-group as possible (for example, physician-owners, managers or employee/doctor-in-charge in separate groups, or by different sizes of clinics).

3.2.6 Sampling Technique

Clinics were purposefully selected to reflect the wide range of differences in residential income areas (high-income, middle-income, low-income), geography (city-center, suburban), type of clinic (self-owned, franchise, size) as well as patient population (ethnic breakdown of patients) in order to get as many diverse and complete views as possible. Each group had as different a set of representation reflecting these differences as far as possible. This was done to ensure the maximum variation of sampling so that there would be as wide a heterogeneity as possible.

3.2.7 Inclusion and Exclusion Criteria

Inclusion criteria:

1. Private primary care provider/representative such as Primary care physicians, clinic managers or physician-owners involved in private primary care clinics in the Jalan Ipoh area.

2. Private primary care provider with least one year experience working in private primary care medicine.

3. Private primary care provider who had at least one year of working at the particular clinic where he/she was based currently so that they could base their experiences in the local setting.

Exclusion criteria

1. Private primary care providers that had only locum medical officers and no permanent doctor.

2.Private primary care providers who declined to participate

3.2.8 Recruitment and Data Collection Procedure

Letters explaining in depth the study and its requirements were sent to all private primary care providers in Jalan Ipoh to recruit them into this aspect of the study. These were either primary care physicians, clinic managers, or physician-owners. One week after the letters were sent, a study team member called these selected clinics and invited the owner/doctor or the employee/doctor-in-charge to participate in the study after giving them basic study information and objectives. Those who declined to participate were thanked and the next name on the list called. Once confirmed participating providers were recruited into an email group and a date fixed for the first focus group discussion.

3.2.9 Research Instrument

At the first discussion the findings of the earlier part of this phase of study were presented in detail to stimulate the discussions and answer the questions posed at the FGD. This was an evolutionary process with a few discussions likely required to achieve a consensus. Each FGD session lasted about 2 hours. Questions posed at the FGD were clustered around three main themes. The first theme was the introduction of the community health microinsurance scheme; the second theme centred around the premium payment and the third was clustered around the theme of integrating such a scheme into the present clinic setup. Each theme had open-ended questions related to it to which the participant stated his degree of agreement as well as state his opinion if and when there were differences in the opinion. A member of the study team functioned as moderator to drive the discussion and facilitate the answering of the questions for each theme with a consensus on completion being reached before proceeding to the next question contained in the theme. The moderator was a trained family physician with more than five years of experience in primary care medicine and had also been trained in conducting qualitative research especially focus group discussions.

3.2.10 Reliability and Validity

Validity was established from the wide sampling involving as heterogenous a sample as possible, with diversity in each of the focus groups in terms of the various types of clinics as elaborated above. Reliability will be established from the use of the 3 groups, running consecutively, with each group verifying the information of the previous group via repetitive input, ensuring saturation of information.

3.2.11 Data Analysis

FGD sessions were conducted in English. Interviews were recorded electronically and transcribed verbatim into English as required (both interviewees who are professionals and study team members were fluent in English). An inductive approach was used to thematically analyse transcripts. Members of the study team read and re-read the transcripts independently to familiarize themselves with the data. The transcripts were then independently analysed to find significant ideas and opinions using systematic and comprehensive coding. The coded data was summarized to determine code frequencies and then grouped by similarity into themes and sub-themes. Study supervisors provided oversight to verify findings and ensure consistency between the findings. Comparisons between the participant's answers were then carried out, with patterns and associations being found and explanations for the findings generated before final categorization and conceptualization completed.

3.2.12 Ethical Considerations

Ethical approval was sought and obtained from the Malaysian Research Ethics Committee (MREC) Ministry of Health Malaysia. Written Informed Consent of each participant was obtained along with confidentiality and privacy measures to ensure that their data was safeguarded and not utilized for any purpose outside the purpose of this study. Recordings of interviews, in digital format, was stored in a secure password-protected hard drive maintained only for this purpose and destroyed upon

completion of the thesis/related publications in the time frame legally allotted for this purpose.

Phase 2

Willingness and Ability to Pay (WATP) Study

3.3.1 Research Design

This was a cross-sectional study designed to determine the acceptability of a community health microinsurance via a cross-sectional study to determine Willingness and Ability to Pay (WATP) of OOP patients in private primary care clinics in Kuala Lumpur, Malaysia

3.3.2 Study Area

The study area for this study was in and around Jalan Ipoh, Kuala Lumpur, focusing on the private primary care clinics located in this area. From the Ministry of Health Malaysia Kuala Lumpur State Health Department, it was determined that there were 23 private primary care clinics in the Jalan Ipoh area.

3.3.3 Study Period

This phase was conducted in a 4 month period.

3.3.4 Study Population

The population of this study was all OOP-paying patients being seen in the private primary care clinics in the Jalan Ipoh area.

3.3.5 Sample and Sample Size

Mitchell and Carson suggested the proper formula for calculation of sample size in willingness-to-pay studies in their definitive 1989 book as

$$N = [z_{\alpha/2}\ \sigma/E]^2$$

Where N= desired sample size

Z $\alpha/2$ = 95% confidence interval statistic (1.96)

σ = standard deviation of income (taken as standard deviation of average monthly household income in the country being studied)

E = acceptable error in the sample estimation of population mean WTP- taken as 1/10 of a census estimateof average household income (i.e a 10% error)

The Department of Statistics Malaysia in its 2012 Household Income and Basic Amenities Survey found that the average monthly household income in Malaysia for 2012 was RM 5000 (RM 1 = 10 baht) and this figure was used in the calculation (Quimbo, Peabody, Shimkhada, Florentino, & Solon, 2011)giving a sample size of 384 people. Assuming a drop-out rate of 20%, 461 people were required in the sample and this was obtained.

3.3.6 Sampling Technique

The sampling method for this study was a two-stage sampling method. The first stage was by simple random sampling. In the first stage, 20 clinics were selected randomly via a randomized computer programme (as elaborated above) from the total number of clinics. Going by the number of patients needed, a total of 25 patients needed to be sampled from each clinic. If a clinic did not agree to participate, another clinic was randomly chosen. The second stage of sampling was systematic random sampling. Members of the study team visited each selected clinic and systematically sampled every 2nd patient who paid by OOP until the completion of their sample of 25 patients per clinic.

3.3.7 Inclusion and Exclusion Criteria

Inclusion criteria:

1. Adult patients or any adult who is above 18 years old who accompanied a patient to the clinic.

2. Method of payment to clinic was by out-of-pocket

3. Able to understand Bahasa Malaysia or English

Exclusion criteria

1. Patients who had any neurological or psychiatric diseases.

2. Patients who refused consent.

3.3.8 Recruitment and Data Collection Procedure

Patients were identified from the respective clinic and spoken to by members of the study team. A trained member of the study team interviewed the patients individually via an interview and answered the questions in the WATP study after explaining salient points about a community health microinsurance programme to the patient as outlined in talking points provided to the staff. Results were then compiled to give an idea of WATP of these group of patients to pay such a scheme as an alternative payment mechanism compared to current OOP.

3.3.9 Research Instruments

The questionnaire used for the WATP study comprised of 3 main sections and was compiled based on the framework provided by the manual for formulation of Willingness-To-Pay research(Department of Statistics Malaysia, 2014; Mitchell & Carson, 1989; Murphy et al., 2014).The framework was modified for the purpose of this study and thus incorporated elements particular to it. This questionnaire was administered to the interviewees via a trained interviewer. Section A covered the demographic questions of the patient while Section B covered the Ability-To-Pay of the patient including total amount of income from the whole family which was then used to predict the ability to pay while Section C will cover the Willingness-To-pay component of the study. Patients were asked on Section C using the cost amount which was provided from Phase 1. The price was oscillated up and down as per the determined protocol in order to obtain the true willingness-to-pay.

3.3.10 Reliability and Validity

The questionnaire instrument was tested for validity and reliability via the following mechanisms. The instrument was forward translated into Malay by a member of the study team who is fluent, qualified in the subject matter area and has university-level education in both the languages (English and Malay). The translated instrument was then assessed by two Malaysian experts in public health/primary care medicine who were tasked with verifying the content of the instrument and resolving the inadequate expressions/concepts of the translation as well any discrepancies between the forward translation in the Malay language (post-translation) and the original instrument.

Two independent technical experts competent in both the languages from the Faculty of Modern Languages, National University of Malaysia then performed a back-translation of the translated instrument from Malay back into English separately. Both the back-translated items were then compared and differences in translation

among the items of the instrument discussed among the two experts until a consensus was reached.

The validity of this questionnaire was high as it was only adapted with negligible changes from previously conducted studies. However face validity was still carried out with the use of 3 experts in content and methodology from Malaysia and Thailand respectively.

The reliability of the instrument was tested via pilot tests conducted in a clinic not selected as one of the study sites with an interval of one month. A total of 30 patients were selected. From the differences within the sessions, test-retest reliability was determined.

3.3.11 Data Analysis

1. First, descriptive statistics was calculated for all variables and put down into a table. E.g is as below.

Table 6 : Baseline Characteristics

	Sample (N) %
Age	
20-29	
30-39	
40-49	
50-59	
>59	
Race	
Malay	

Chinese
Indian
Sex
Male
Female
Household Income
< RM 1000
1000-3000
3000-5000
5000-10000
>10 000
Education
No formal
Primary School
Secondary school
Diploma/Vocational
Degree and above
Or mean and standard deviation if continuous independent variable

2. A frequency distribution of maximum price willing to pay was constucted with the results looking similar to the figure below and a percentage demand curve plotted.

.

Table 1

Frequency Distribution of Maximum Price Willing to Pay

Q20 Maximum price

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	1	.0	.2	.2
	100.00	52	1.9	10.3	10.5
	125.00	3	.1	.6	11.1
	150.00	27	1.0	5.4	16.5
	175.00	1	.0	.2	16.7
	200.00	40	1.4	7.9	24.6
	250.00	82	2.9	16.3	40.9
	300.00	64	2.3	12.7	53.6
	350.00	4	.1	.8	54.4
	375.00	1	.0	.2	54.6
	400.00	28	1.0	5.6	60.1
	500.00	77	2.8	15.3	75.4
	600.00	15	.5	3.0	78.4
	700.00	7	.3	1.4	79.8
	750.00	22	.8	4.4	84.1
	800.00	2	.1	.4	84.5
	900.00	1	.0	.2	84.7
	950.00	1	.0	.2	84.9
	1000.00	46	1.7	9.1	94.0
	1250.00	2	.1	.4	94.4
	1300.00	1	.0	.2	94.6
	1500.00	13	.5	2.6	97.2
	1550.00	1	.0	.2	97.4
	2000.00	7	.3	1.4	98.8
	2500.00	1	.0	.2	99.0
	5000.00	5	.2	1.0	100.0
		2276	81.9	Missing	
	Total	2780	100.0	100.0	

Valid cases 504 Missing cases 2276

3. The relationship between Ability to Pay and Willingness to Pay was modeled by a Pearson correlation with the coefficient giving us the value of the relationship as to how much willingness-to-pay changed with the ability to pay.

4. Another relationship that was explored was the relationship of various factors influencing Willingness-to-pay. This was explored via a logistic regression model. This model was chosen because the dependent variable will be the established maximum Willingness-to-pay of the sample which was then used to convert as a dichotomous variable. The influence of other factors to this was first explored in a bivariate relationship using the Chi-square test of association. To correctly estimate the effects of factors, this model was also run adjusting for different demographic

and clinical independent variables as captured in the outset of the study. Relationships with a significance of up to $p<0.15$ were taken into account into the multivariate logistic regression model which was specified as:

Maximum Willingness-to-pay (Y) = A + B_1X_1 (Age) + B_2X_2(Gender) +..... BnXn

This modelled the influence of the relationship of all these independent factors on the maximum willingness-to-pay.

3.3.12 Ethical Considerations

Ethical approval was sought and obtained from the Malaysian Research Ethics Committee (MREC), Ministry of Health Malaysia. Written Informed Consent of each participant was obtained along with confidentiality and privacy measures to ensure that their data is safeguarded and not utilized for any purpose outside the purpose of this study.

Phase 3

Quasi Experimental Study

3.4.1 Research Design

This was a quasi-experimental study designed to determine the efficacy of a health microinsurance scheme in private primary care clinics in Malaysia via a pre-post survey of an experimental and control clinic .

3.4.2 Study Area

The study area for this study was in and around Jalan Ipoh, Kuala Lumpur. One clinic was chosen as the experimental site and one as the control site. Both had the same characteristics and patient population.

3.4.3 Study Period

This phase was conducted in a 6 month period.

3.4.4 Study Population

The population of this study was all OOP-paying patients being seen in the private primary care clinics in the Jalan Ipoh area.

3.4.5 Sample and Sample Size

The dependent variables for this study were 1) total monthly health expenditure, as measured in Ringgit Malaysia 2) catastrophic health expenditure as measured in percentage of household income 3) health-seeking behavior in terms of delay in seeking medical care 4) acute disease outcomes in terms of days taken to resolve acute infections and; 5)chronic disease outcomes, as measured by HbA1c level (in %), resting hypertension and total serum LDL. As these dependent variables were all continuous, the sample size for this study was calculated as based on a continuous outcome but accounting for all dependent variables to determine the effect in the smallest variable, using the sample size for comparison between means.[58]

With n = the sample size required in each group

d is the size of difference

σ = standard deviation of the outcome variable.

$Z_{\alpha/2}$ is 1.96

Z_{β} = 0.84

Estimates for these outcomes were made based on previous studies which used produced similar outcomes to the outcomes being studied. [60,61,62,63]

For health-seeking behavior :

In a previous study, the size of difference was given at 3.5 and the SD was 1.4

Thus n was 28 per group x2 = 56

For self-care behaviour:

Size of difference for delay in seeking medical care was given at 2.2 days and the SD was 4.6

Thus n was 32 per group x2 = 64

For acute infections in children,

Size of difference in C-Reactive Protein was 6.5points and the SD at 2.5.

Thus n was 37 per group x 2= 74

For hypertension control:

Size of difference for blood pressure was 1% and the SD was 0.4

Thus n was 47 per group x 2 = 94

Taking the largest required sample size to see a difference, was taken 94

Added 20% for dropout rate, 114 households or

Sample size at: 57 households per group

3.4.6 Sampling Technique

The sampling method for this study was a two-stage sampling method. The first stage was by purposive sampling with selection of 1 clinic as control and 1 clinic as intervention group. These were clinics which were not selected in the earlier studies. Clinic patients were then grouped into households with their case notes combined together (this was a practise already being done in some clinics before the study). A total of 57 households were then sampled per clinic from a numbered list of complete households and followed up for the length of the study i.e 6 months.

3.4.7 Inclusion and Exclusion Criteria

Inclusion criteria:

1. Households were located in the study area
2. Method of payment to clinic was by out-of-pocket
3. This was household's regular choice of primary care provider.

Exclusion criteria

1. Households had members who had regular follow-up in other medical facilities.
2. Households who refused consent.

3.4.8 Recruitment and Data Collection Procedure

Once households had been identified from the respective clinic, they were contacted and asked for their consent to allow their clinical records to be used for this study by members of the study team. Once informed consent had been obtained, a pre-questionnaire was filled in by members of the household. This questionnaire was then repeated at the end of the study. Some parts of the questionnaire were filled in by the doctor at the clinic where the patients were being followed up (i.e control or intervention clinic in terms of clinical outcomes for DM, HPT and dyslipidemia).

Members of the study team interviewing the households underwent a training session on how to conduct the interview.

3.4.9 Research Instruments

For this part of the study the research instrument used was 1) a specifically formulated questionnaire for households, modified from the Household Health Expenditure Questionnaire; and 2) a short Questionnaire for private primary care providers, to fill in the clinical outcomes of the patients in each household. The questionnaire for households contained sections on demographics, wealth index and dependent variables for this study namely 1) health-seeking behavior 2) delay in seeking medical care 3)total monthly health expenditure 4)days taken to resolve acute infections. The questionnaire for private primary care providers charted improvements in clinical outcomes as measured by HbA1c level (in %), resting hypertension and total serum LDL, among others.

3.4.10 Reliability and Validity

The questionnaire instrument was tested for validity and reliability via the following mechanisms. The instrument was forward translated into Malay by a member of the study team fluent and qualified in the subject matter area and with university-level education in both the languages (English and Malay). The translated instrument was then assessed by two Malaysian experts in public health/primary care medicine who was tasked with verifying the content of the instrument and resolving the inadequate expressions/concepts of the translation as well any discrepancies between the forward translation in the Malay language (post-translation) and the original instrument.

Two independent technical experts competent in both the languages from the Faculty of Modern Languages, National University of Malaysia then performed a back-translation of the translated instrument from Malay back into English separately. Both

the back-translated items were then compared and differences in translation among the items of the instrument discussed among the two experts until a consensus was reached.

The validity of this questionnaire is high as it was only adapted with negligible changes from previously conducted studies. However face validity was carried out with the use of 3 experts in content and methodology from Malaysia and Thailand respectively.

The reliability of the instruments was tested via pilot tests conducted in clinics not selected as one of the study sites with an interval of one month. A total of 10 households were selected. The questionnaire was subjected to assess test-retest reliability. From the first session, internal consistency was also measured of the construct and a Cronbach-alpha level obtained. The feedback and responses from the pilot test was then used to make changes and incorporated into the final instrument.

3.4.11 Data Analysis

1. First, descriptive statistics will be calculated for all variables and put down into a table. E.g is as below.

Table 7 : Baseline characteristics

	Control Group (N) %	**Intervention group (N)%**
Age		
20-29		
30-39		
40-49		
50-59		
>59		

Race
Malay
Chinese
Indian
Sex
Male
Female
Years living with hypertension
1-5
5-9
10>
Or mean and standard deviation if continuous independent variable

The two groups were compared for homogeneity between the two groups. This was done to establish that there was no baseline differences in the two groups affecting the effects of the intervention. The statistical tests of comparison depended on the variables being utilised

Categorical variables: Chi square test

Continuous variables: T test

The baseline null hypothesis was that there is no difference between the two groups. It was expected that the null hypothesis should be accepted for all groups. Statistical significance will be established at $p<0.05$

2. The next table featured the dependent variables. The clinical outcome of resting hypertension is used as an example to illustrate the tables used in the results section:

Table 8 : Changes in BP

	Control group		**Intervention group**	
	B	6	B	6
Resting hypertension	Data presented in mean and standard deviation			

Breakdown table for each variable

For e.g

	Baseline	6mth
Control	A	b
Intervention	D	c

Absolute intervention effect for BP at follow-up 6mth compared to baseline:

= (c-d) – (b-a) =

Similar table and calculation was done for the other outcome variables

3. The statistical test of association to compare the efficacy of each outcome variable between the intervention group and control group was done via repeated measures ANOVA. This model was used because of the following:

1) dependent variables are continuous

2) dependent variables are correlated in time and thus not independent – not advised to use linear regression

Different repeated measures ANOVA analysis was carried out for each dependent outcome. The magnitude of the mean difference which are linear could be read as measures of estimated effect and Confidence Intervals were given with corresponding p values to imply significance.

3.4.12 Ethical Considerations

Ethical approval was sought and obtained from the Malaysian Research Ethics Committee, Ministry of Health Malaysia. Written Informed Consent of each participant was obtained along with confidentiality and privacy measures to ensure that their data is safeguarded and not utilized for any purpose outside the purpose of this study.

Chapter IV

Results

This chapter data analyses and presents results from the different phases of the study conducted. Data was collected and analysed to be presented both descriptively and analytically in order to answer the research questions posed in the first chapter of this study. The fundamental goals driving data collection were i) to determine the feasibility of a health microinsurance scheme in private primary care clinics in Malaysia ii) determine whether a feasible health microinsurance scheme would then be acceptable to prospective users; and iii) determine whether such a scheme prove efficacious in healthcare utilization, household healthcare expenditure and disease outcomes. This study accomplished these objectives. The results for this study will be presented in the same order in which the studies were done. First, the results for Phase 1a, followed by Phase 1b will be elaborated on in length. This then will lead to the results for Phase 2 and Phase 3 respectively.

Phase 1a: Retrospective Cohort Cost Analysis Study

Section 1: Individual and Household Patient Cost Analysis

In this section, the data for 330 selected patients from 5 private primary care clinics were analysed for the calendar year beginning 1 January, 2014 to December 31 2014. Details of doctor's visits and the costs of treatment as well as sociodemographic variables were extracted from the case notes and compiled. The first table shows the sociodemographic data for the sample.

The sample was predominantly female (65.2%) and were largely adults between 25-54 years old (79.6%) with almost 14% young people below 24 years old. Malays made up the largest ethnicity of the sample (55.2%) with close to half (46.9%) of the sample having completed secondary education. The population largely consisted of

working individuals (59.6%) and the largest subgroup within the working population was waged staff such as clerks and other salaried non-professional staff.

The sample consisted of 91 individuals (27.6%) who had some form of chronic disease. 9.7% of the total sample had diabetes mellitus while 10.3% had hypertension. Most of the chronic disease patients had been diagnosed between 1 to 3 years ago (11.5% from the total sample). 112 chronic disease patients (17.3% of the total sample) had comorbidities along with the primary disease.

These 330 patients consisted of 74 households. Average number of people per household was 4.46 (SD 0.67)

Sociodemographics N=330	n (%)	Clinical	n(%)
Gender		Chronic Disease	
Male	115(34.8)	Yes	91(27.6)
Female	215(65.2)	No	239(72.4)
Age		Type of Disease[a,b]	
<25 years old	46(13.9)	Diabetes Mellitus	32(9.7)
25-34	82(24.8)	Hypertension	34(10.3)
35-44	99(30.0)	Dyslipidemia	26(7.9)
45-54	49(14.8)	Bronchial Asthma	6(1.8)
55-64	31(9.4)	Ischemic Heart Disease	13(3.9)
65 and above	23(7.1)	Connective Tissue/SLE	2(0.6)
Ethnic Group		Chronic Renal Failure	9(2.7)
Malay	182(55.2)	Duration of disease [a, b]	
Chinese	86(26.1)	<1 year	33(10.0)
Indian	37(11.2)	1-3 years	38(11.5)
Others	25(7.5)	4-6 years	26(7.9)
Education Level		>6 years	25(7.6)
Primary	99(30.0)	Number of comorbids [b]	
Secondary	155(46.9)	0	65(19.7)

Tertiary	76(23.1)	1	31(9.4)
Occupation		2	17(5.2)
Professionals/Executive	69(20.9)	>2	9(2.7)
Sales/Services/Business	39(11.9)		
Waged Staff	88(26.8)	Types of daily medication[b]	
Student	47(14.2)	0	8(2.4)
Retired	29(8.7)	1	11(3.3)
Carer	55(16.6)	2	43(13.0)
Unemployed	3(0.9)	>2	29(8.79)
Family Variables , measured in Mean, (SD)			
Number of households		74	
Number of people per household		4.46(0.67)	
Adults per household		2.04(0.20)	
Children per household		1.86(0.28)	
|Elderly per household		0.55(0.06)	
Chronic disease patients per household		1.2(0.10)	
Disabled per household		0.05(0.01)	

[a] total not equal to 91 as there were those with more than 1 chronic disease

[b] N=330

Table 9: Characteristics of the study sample

In terms of cost analysis borne by the patient, the annual average cost per person was RM 537.29. The highest cost category for treatment costs was medication at RM 231.60 per person annually. This was followed by consultation at RM93.47 and

procedures at RM 94.72 per person annually. The table that follows illustrates various categories and subcategories of cost categories to patients, along with the average cost per person.

Variables	Annual Total Costs (in RM) N=330	Average Cost per person (in RM)	SD
Consultation	30845.99	93.47	14.02
Procedures	31256.40	94.72	8.52
Venepuncture/Cannulation	6015.90	18.23	2.55
Injections (intravenous /intramuscular)	13061.40	39.58	3.96
Wound dressing	3729.00	11.30	1.58
Minor surgery (e.g. Toilet & Suturing)	5949.70	18.03	1.98
Others	2501.40	7.58	0.68
External Laboratory Test	28100.15	85.15	12.77
Infectious (e.g. Full blood count, Dengue antigen	7444.80	22.56	2.93
Systemic (Renal Profile, Liver Function)	4313.75	13.07	1.83
Blood culture	7797.90	23.63	3.07
Urine culture	0.00	0.00	0.00
Specific (e.g SLE screening, allergic test)	5052.30	15.31	3.11
Others	3491.40	10.58	1.27
Inhouse Diagnostic Tests	10678.00	32.36	3.56

Full blood count	4587.00	13.90	0.97
Electrocardiogram	3154.00	9.56	0.67
Radiography (e.g X Ray)	656.70	1.99	0.24
Ultrasound	1874.40	5.68	0.85
Urine dipstick	405.9	1.23	0.16
Others	0.00	0.00	0.00
Medication	76428.23	231.60	25.48
Oral- Infectious	3375.90	10.23	1.23
Oral – Gastroenterologic	3154.80	9.56	0.96
Oral – Dyslipidemic	2973.30	9.01	1.17
Oral – Antihypertensive	3309.90	10.03	1.40
Oral – Antidiabetic	3593.70	10.89	1.63
Oral - Analgesia	3346.20	10.14	0.81
Oral – Antipyretic	2847.90	8.63	1.29
Oral – others	3705.90	11.23	1.35
Creams and Ointments	29554.80	89.56	10.75
Injectibles – Infectious	6718.80	20.36	2.65
Injectibles – Analgesia	3857.70	11.69	1.64
Injectibles – Others	3085.50	9.35	1.03
Bandages & Slings	2719.20	8.24	0.82
Disposables	4184.40	12.68	1.90
Total	177308.77	537.29	75.22

Table 10 : Annual Total Costs and Average Costs of Treatment by category from provider perspective

Chronic disease follow-ups were by far the most expensive diagnostic category as it costed about RM 1022.17 annually on average for a person. Other acute conditions cost, on average, a tenth of what the average annual cost for treating chronic disease was. Other diagnostic categories and their costs are detailed in the following table.

Variables	**Annual Total Costs (in RM) N=330**	**Average Cost per person (in RM)**	**SD**
Treatment causes			
Acute respiratory	4299.39	13.03	1.95
Acute gastroenterological	4518.20	13.69	1.92
Acute urinary	2513.40	7.62	0.76
Acute pain – (neuralgia, myalgia, headaches)	1003.31	3.04	0.40
Viral fever (including dengue)	4615.21	13.99	1.68
Dermatological	4778.16	14.48	1.16
Ophthalmological (eye injury, conjunctivitis)	5554.30	16.83	2.36
ENT (otitis, foreign body)	5603.58	16.98	2.04
Cardiovascular (congestive failure, angina)	10986.61	33.29	2.33
Allergic reactions	1060.08	3.21	0.45

Chronic disease follow-up	93017.47	1022.17	71.55
Immunization	7654.07	23.19	3.81
Antenatal check-up	8657.09	26.23	2.10
Health screening/Work screening	2569.28	7.79	1.17
Minor surgery	6534.99	19.80	2.18
Wound care	2597.30	7.87	0.87
Family planning	3743.02	11.34	1.47
Counselling	458.13	1.39	0.19
Sports Injuries	3368.45	10.21	1.43
Occupational	3285.63	9.96	1.16
Others	491.10	1.49	0.16
Total	**177308.77**	**537.29**	**75.22**

Table 11: Annual Total Costs and Average Costs of Treatment by category from diagnostic perspective

Utilisation	**Average Number of Visits (Mean, SD)**	**Annual Total Costs (in RM)**	**Average Cost per person (in RM) (Mean, SD)**
Adult	4.91 (0.74)	34002.18	225.18(22.52)
Children	11.59 (1.62)	46735.08	338.66(30.48)
Elderly	6.33 (0.82)	3425.96	83.56(10.86)
Chronic Disease	11.94 (1.79)	93017.47	1022.17(71.55)

Disabled	1.68 (0.17)	128.08	32.02(4.80)
Individual Overall	6.64(0.79)	177308.77	537.29 (75.22)
Individual overall (without chronic disease)	5.91(0.89)	84291.30	352.68(45.85)
Household Overall	7.24 (0.80)	177308.77	2396.06(263.57)
Household (without chronic disease)	5.43(0.76)	84291.30	1139.07(136.68)

Table 12 : Average number of visits, Annual Total Costs and Average Costs of Treatment by group –customer perspective

When broken down by age category, the annual average cost for adults was RM 225.18 while it was slightly higher for children at RM338.66. Elderly, older than 65 years old costed relatively low among the other two groups, with an annual average cost of only RM 83.56. As seen above, the average cost of treatment for chronic disease patients was the highest with an annual average cost of treatment at RM 1022.71. When all these groups were combined together, the average annual cost of treatment for an individual was RM 537.29 while for a household, it was RM 2396.06. If patients with chronic disease were removed from the equation, the average cost for treatment for an individual dropped to RM 352.68, and for a household to RM 1139.07.

Variables	Crude			Adjusted		
(Individual)	Coefficient	Standard Error	p value	Coefficient	Standard Error	p value
Gender	5.64	0.90	0.45	9.24	1.09	0.36
Age	8.87	1.50	0.01	12.16	1.32	0.01
Age category	12.59	1.01	0.04	3.61	0.34	0.27
Ethnic group	3.23	0.40	0.68	3.99	0.28	0.59
Education	20.09	3.35	0.04	24.55	2.60	0.14
Occupation	12.34	2.38	0.55	17.71	2.45	0.31
Chronic Disease status	21.25	2.89	0.01	31.64	4.46	0.25
Type of Disease	8.04	0.90	0.03	15.34	2.39	0.12
Duration of disease	17.50	0.81	0.01	14.87	0.44	0.01
Number of comorbidities	9.09	0.72	0.08	11.08	0.41	0.04
Types of daily medication	11.80	2.88	0.11	13.64	3.57	0.21
Number of visits	16.32	1.24	0.05	11.48	2.05	0.0

		2

Table 13: Multiple Linear Regression Analysis of Factors Associated with average cost of treatment for individuals

The table above lays out the results of the multiple linear regression analysis of factors associated with cost of treatment for individuals. In the bivariate or crude analysis, age, age category, education, chronic disease status, type of disease, duration of disease and number of visits were significantly associated with cost of treatment for individuals. However in the multivariate analysis, only age, duration of disease, number of comorbidities and number of visits were significant. Thus it could be surmised that these are the major factors having an impact on the average cost of treatment for individuals from a private primary care setting.

Variables (Household)	**Crude**			**Adjusted**		
	Coefficient	**Standard Error**	**p value**	**Coefficient**	**Standard Error**	**p value**
Number of people	12.53	2.67	0.04	13.58	3.65	0.05
Number of adults	8.63	1.67	0.14	9.67	1.88	0.18
Number of children	7.89	1.32	0.06	8.25	1.59	0.04
Number of elderly	1.26	1.12	0.22	2.31	1.95	0.39
Number of chronic	11.88	0.34	0.01	13.42	0.65	0.0

disease patients						1
Number of disabled	1.65	0.98	0.13	1.99	1.24	0.23
Number of visits	2.35	2.31	0.06	3.25	3.01	0.03

Table 14 : Bivariate and Multivariate Multiple Linear Regression Analysis of Factors associated with Cost of Treatment for households

The table above lays out the complete multiple linear regression analysis of factors associated with average cost of treatment for households. In the bivariate analysis, only number of people per household and number of chronic disease patients per household that were associated with cost of treatment significantly. In the multivariate model, however, the number of children per household and number of visits also became statistically significant. This brought the total of factors associated with average cost of treatment for a household to four.

From this study, it was possible to obtain the average annual cost for treating a single individual as well as for a household via private primary care. This data is crucial in order to help build premium prices for the proposed microinsurance scheme. However it must be remembered that these prices are the prices of the cost of receiving care which includes the profit margin of the providers. On the other side, there is also a need to assess the actual costs of delivering care from the provider side, which will be done in the next section of this study.

Section 2: Provider Macrocosting Cost Analysis Study

In this section, the total costs of providers in terms of capital expenses and operating expenses were used to also determine a similar quantifiable variable on the side of care delivery. The annual expenditures of the 5 clinics that were sampled were collected, aggregated and analyzed. Of the 5 clinics, 3 were owned by a single

owner (60.0%). Only 2 clinics (40%) had 2 or more doctors working in them and only a single clinic (20%) operated 24 hours. Only two clinics (40%) owned their own premises. On average these clinics had an average of 42.26 (SD5.49) patients day, reaching past 15 000 patients a year. The table elaborates further on the characteristics of each clinic.

Characteristics	n (%) or Mean (SD)
Type of clinic	
Single Owner	3(60.0)
Chain	2(40.0)
Number of physicians working	
1	3(60.0)
2-3	1(20.0)
>3	1(20.0)
Operating Hours	
Office hours (8am- 5pm)	1(20.0)
14 hours (8am-10pm)	3(60.0)
24 hours	1(20.0)
Premise Status	
Self-owned	2(40.0)
Rental	3(60.0)
Number of Staff	
1-2	1(20.0)
3-4	2(40.0)
5 or more	2(40.0)

Number of patients per day	42.26 (5.49)
Number of patients per year	15424.90 (1079.74)
Number of patients paying OOP	9254.94(647.84)
Number of patients on employer health coverage	3084.98(246.79)
Number of patients on private insurance	2776.48(305.41)
Number of patients on other payment mechanisms	308.49(30.85)

Table 15: Characteristics of the sampled clinics

Variables	Annual Total Costs (in RM) N=5	Annual Average Cost per clinic (in RM), Mean	SD
Premises (rental, bank loan)	368026.68	73605.34	6624.48
Utilities (electricity, water, telephone, internet, waste management)	55985.24	11197.05	1567.59
Maintenance (renovation work, painting, other upkeep)	29475.24	5895.05	648.46
Insurance (premises)	15039.91	3007.98	391.04
Tax (business)	27748.97	5549.79	665.97
Equipment			
Purchased	5874.43	1174.89	176.23
Rental (includes hire-purchase)	118132.92	23626.58	3071.46

Staff (salary, bonus, insurance, social security deductions**)**			
Doctors	594824.04	118964.81	10706.83
Nurses	114491.88	22898.38	2747.81
Nursing Aides	74914.08	14982.82	2247.42
Associates (physiotherapist, radiology technician)	35051.64	7010.33	981.45
Clerk	67289.28	13457.86	942.05
Security guard	41330.64	8266.13	661.29
Medication (drugs and others)	994027.68	198805.54	25844.72
Disposables	67053.12	13410.62	1341.06
Miscellaneous (advertising, promotions)	9913.96	1982.79	297.41
Total	**2619179.71**	**523835.94**	**57621.95**

Table 16 : Annual Total and Average Expenditure Costs for private primary care clinic

The table above details the breakdown costs of care delivery from the provider perspective. The categories with the highest costs are: i) premises (either paying bank loan for lend-purchased property or rental of premises; ii) rental of equipment; iii) salary of doctors and iv) medicines. Overall, it can be determined that the average cost of delivering care for a patient at a private primary care clinic was RM 33.96. This is detailed in the table that follows.

	Annual average cost per clinic (in RM) Mean, SD	Annual Average number of patients	Average Cost per person (in RM) (Mean, SD)
Individual	**523835.94(57621.95)**	**15424.90**	**33.96(5.09)**

Table 17 : Annual average costs per clinic, annual average number of patients and average cost per person for private primary care clinic

With this section, the whole equation is complete. Via these sections of the study, the costs of delivery of care as well as the cost of receiving care has been calculated based on real world data from the year 2014. This data is crucial to the next part of this phase, namely the focus group discussions where stakeholders, namely private primary care providers use this data to estimate a workable premium price for the microinsurance scheme as well as its components i.e. services to be offered and rules of service provision.

Phase 1b: Focus Group Discussions

The following part of the first phase brought together the care deliverers in the study area, namely the private primary care stakeholders. As this is a private sector enterprise, there can be no issue of compulsory regulation to push into acceptance a microinsurance scheme; rather it has to be through the agreement and acceptance of the private providers. For them to 'buy-in' into the concept, a health microinsurance scheme has to be tailor-made to their ability to provide, taking into account their needs and requirements.

The following group of providers were broken into three focus groups in which discussion sessions were carried out concurrently. The following table details the breakdown of the participants' characteristics.

	Group A	Group B	Group C
Number of members	6	6	5
Member composition			
Primary Care Physicians	1(16.6)	2(33.3)	0(0.0)
Physician Owner	1(16.6)	1(16.6)	2(40.0)
Clinic Doctor	2(33.3)	2(33.3)	2(40.0)
Clinic Manager	2(33.3)	1(16.6)	1(20.0)
Clinic Area			
High-income	1(16.6)	3(50.0)	2(40.0)
Low-income	2(33.3)	3(50.0)	2(40.0)
Mixed	3(50.0)	0(0.0)	1(20.0)
Type of Clinic			
Self-owned	4(66.7)	3(50.0)	3(60.0)
Franchise	2(33.3)	3(50.0)	2(40.0)
Patient population			
Largely Malay	1(16.6)	2(33.3)	1(20.0)
Largely Chinese	1(16.6)	1(16.6)	1(20.0)
Largely Indian	1(16.6)	0(0.0)	0(0.0)
Mixed	2(33.3)	3(50.0)	3(60.0)

Table 18: Sample Characteristics of Focus Groups

Each discussion session was clustered around a particular theme which contained certain open-ended questions which participants answered. Their responses were compiled in detail below.

Theme 1: Characteristics of a Community Health Microinsurance Scheme

Questions:
How many of your patients would be interested in a microinsurance scheme?
What would be the benefits of a microinsurance scheme for you? For your patients?
What would be your idea of a model microinsurance scheme?
What are the possible pitfalls that you think are possible with such a model microinsurance scheme?
Do you think each member of the household should pay the premium? Or should it be charged per household on average?
What do you think of co-payment for this scheme? Should there be some form of it?
Should there be a limit on visits? Type of visits? What happens when you have to refer a patient to another centre?

14/17 of the participants were quite keen on introducing a microinsurance scheme for various reasons. 5/17 were of the opinion that this would improve patient attendance and attract more patients. 8/17 thought that this would be cost-saving which could then be transferred to the patient. Of the 3/17 who were not keen, all three were unclear on the concept of microinsurance. One was of the opinion it was too risky and would be of little benefit to the provider while another was worried about the additional administrative headache this would bring. Only one provider was concerned about making not adequate profit. Most of them (15/17) clarified that they would still have walk-in OOP patients despite introduction of microinsurance scheme.

“ Hopefully we get more patients this way. If this is a way to bring in extra patients, then I am all for it…”

13/17 felt that the microinsurance would attract more patients to their clinic as it would be cheap and affordable with microinsurance. 14/17 felt that with their number of patients confirmed, they could plan, with the up-front money that they got, for the entire year and do things such as order medication and other equipment. 4/7 said tgar that now they could prescribe necessary treatments only to the patient as they were not worried about the patient not coming again (due to the current walk-in system).

“ Everything is so expensive now, it will be good that patients can get an insurance to make them able to come when they need to come . I am sure that they will support this fully…. ”

All 17/1/7 were unanimous that a microinsurance should not use another outside agency as third-party administrator (TPA) or managed-care organisations (MCOs). This is because they alleged that various companies have tried this in the past and gone bankrupt, many still owing money for treatment delivered for these TPAs or MCOs. 12/17 agreed that a microinsurance scheme could be run out of their clinics as they had the administrative and logistic capacity to administer it. All 17/17 were also quite sure that patients should pay for the scheme yearly and then be allowed to use it when they required and that they could perform the function of ‘insurer’ from the clinic, saving administrative costs. All 17/17 also agreed that the insurance premiums should be adequate to offset the cost of care as well as take into account required profit margins.

“ It (the insurance) scheme should be adequate to cover our costs and also give us some profit. After all we are not the government. We need to make some money for us to also run our business….”

As mentioned earlier, 1/17 was concerned about loss to the provider from not enough money from premiums. For the others, concerns about possible pitfalls were centread around undersubscription and sustainability. 7/17 thought there would not

be enough people to cover the needed 'pool' of people as many did not have 'the correct attitude' when it came to buying insurance. Marketing was seen by most (16/17) to be an essential component of the microinsurance scheme.

" They (general public) want the option to be able to walk into any clinic they want and see any doctor. They may not do it. But they want the option..... so the insurance may have a problem when it forces you to see only one doctor or clinic for the whole year..."

Most of the participants (15/17) thought that the premiums should be paid by the household rather than by individuals. This was to avoid misuse and to encourage joint family care. 6/17 also had the concept of 'risk-pooling' to be a part of this as it was felt that the younger working family members would pay to provide coverage to their young children or old parents.

" Individual premiums are similar to employer-covered insurance that we have now. One person has a card and the whole family takes medicine using this person's name.... it will just destroy the program.... So must make the whole family buy it..."

The participants were mixed on the co-payment issues with 8/17 thinking that it should be implemented as a minimum fee of RM1 to deter misuse while the other 8/17 were of the opinion that it would be against the entire microinsurance concept and demotivate people to join the scheme. Similarly, there was a split around whether there should be a limit on the number of visits that a patient may undertake to the provider. 5/17 were in favor of imposing a limit on the number of visits but 12/17 were of the opinion that there should be no limits, provided that the patient was made to understand clearly that the provider had no obligations to provide medication for every visit.

" You can't sell an insurance where you say after you buy the insurance everything is free but oh wait, you have to pay something every thing you come.... And oh you can only come a few times a year.... That's a joke..."

“Definitely many people will come to check some minor thing. But this is not bad. It gives us more time to educate them and promote healthy activities. It might also move them away from this everything also needs medicine when I come to the doctor mentality….”

In terms of referring patients, not of the participants were really concerned as the primary referral mechanism would be to the public sector which is almost free at point-of-care anyway and without individual reimbursement. 12/17 were firm that they would not reimburse the patient if they had to refer him/her to another specialist facility as that was beyond their level of care. Also, 14/17 were sure that they would not reimburse the specialist/clinician they were referring to.

The figure below illustrates the characteristics of the model microinsurance scheme that was agreed to by the majority of the participants

Not exclusive, offered from clinics in additional to current OOP system, private insurance and employer-based coverage patients
Household based-premiums
Covering one year from purchase
Marketing efforts to be undertaken to promote scheme.
Make efforts to convert current OOP patients to the scheme
No copayments
No limit on visits
Referral as per patient choice, no sharing of insurance premiums with referred-to-party

Figure 18: Characteristics of proposed microinsurance scheme as agreed by participants

Theme 2: Premium Payment and Service Package

Questions:

Data on the average cost of treatment of individuals and households is now available to you. Based on this, would you like to estimate how much a possible household microinsurance premium could be?

How do you think the payment should be collected? Yearly? Or in installments? Does it affect you either way? What are the pros and cons of these different collection methods?

Is it possible to treat all categories of your patients under this scheme? Will some exceptions be needed ? What do you foresee?

Would you need to change treatment procedures for your patients under the scheme?

What are the list of services you would cover under the scheme? What would they be?

Would there be a list of services that you would exclude from the scheme? What would they be?

Would there be changes to medication types and treatment regimens?

From the earlier phase, participants were given the breakdown data for the average cost of treatment for different groups, individuals and households. Also provided to them was the cost of delivery of care. Using this data, they were asked to reach a possible premium price for households for the microinsurance scheme. Benchmarking using the data that the cost of household treatment without chronic

disease annually was RM 1139.07 and that the household cost of treatment with chronic disease was RM2396.06, 10/17 participants agreed a premium without chronic disease for households at RM 1000. Upon further discussion on the importance of including chronic disease patients as part of the 'risk-pooling' the group was then persuaded to include this sub-group with an increase of the premium to RM1500.00 to which 12/17 participants agreed. 5/17 felt that this amount was too little as there would be overuse of the services. 9/17 felt that there would actually be cost-savings since if patients were well-controlled in terms of disease, they would be ill a lot less.

" Once you give people the capacity to come to the clinic any time for anything, they will do so. This will make things so much more expensive and then the money won't be enough..."

After further conferring, 16/17 of the participants decided that a surcharge did need to be put on for chronic disease patients and settled on a sum of RM 150.00 as surcharge for every chronic disease patient in a household. Although this was not enough to match the average cost of treatment for households with chronic disease, it was felt that this could be recovered from economies-of-scale purchasing, pooling effects from the other households and also the savings from the chronic disease patients being well and not sick, requiring more care. 17/17 participants agreed that there should be no additional surcharges for different levels of disease chronicity and also different types of chronic disease.

" The good news is that as everyone is paid from the first month, we know how many chronic disease patients we will have and how much medication to stock. This way we can order in bulk and make a lot of savings as well..."

13/17 participants also felt a surcharge should be tagged on for families with people more than 5 people in them. 12/17 agreed that only a minimum charge should be tagged on for a child, and all 17/17 agreed that for a child the surcharge could be set at RM 50.00 while for an adult/elderly it could be set at RM150.00.

In terms of types of services offered, all participants agreed (17/17) that there should be a division of services to be covered under the microinsurance scheme. 4/17 felt that this should be limited to just curative service and not inclusive of immunisations. However 14/17 disagreed and managed to convince everyone to divide the services into two groups of necessary and unnecessary care, with the latter not being covered under the microinsurance programme. Patients were welcome to undertake the latter services which would be offered under fee-for-services. The following figure illustrates the grouping of services as agreed by the participants.

Necessary Services (covered by microinsurance programme)	Unnecessary Services (not covered by microinsurance programme)
All acute treatments – Acute respiratory Acute gastroenterological Acute urinary Acute pain – (neuralgia, myalgia, headaches) Viral fever (including dengue) Acute primary care ophthalmological conditions (eye injury, conjunctivitis) Acute primary care otolaryngology conditions Acute dermatological conditions – infections, occupational dermatitis Antenatal Care – caveat that ultrasounds only as required determined by MOH	Cosmetic dermatological procedures Aesthetic procedures Vitamin C and other intravenous supplement injections Genetic testing Fertility Services Physiotherapy Referred-out services – such as MRI/CT Platelet-Rich-Plasma (PRP) services Extraneous vitamins and supplements Anti-aging therapy and supplements

guidelines and not on patient request Immunisations and Vaccines according to the MOH guidelines Chronic disease follow-up Minor surgery Wound care Sports Injuries Family planning Counselling for preventive conditions – quit smoking, obesity Annual Health screening Radiological Service- in clinics where available	

Figure 19: Necessary and unnecessary services offered under proposed microinsurance scheme as agreed by participants

10/17 participants felt that they would switch medicine to exclusively generic medications under the programme while 5/17 felt they would continue current prescription trends, with their individual medicine preferences as per each patient. The 5/17 participants however agreed that this might not be sustainable under the programme as it might be too expensive. As a compromise, all participants agreed that on an individual basis, the prescribing physician could discuss with the patient to top-up the cost price difference between the non-generic and generic drug prescribed, if the patient was amenable to it.

“ Initially switching to generics will be hard, as we are used to all the perks we enjoy from branded companies…. but in time, I think we will make more in terms of patients being attracted to the cost-savings that we can offer…. Some patients are

adamant that they want only branded drugs, and for these, we can offer them to top-up the difference…."

Under the insurance programme, all the participants (17/17) also felt that patients should be more adherent to payment schemes by single-sum early payments at the beginning of the term. The benefits of this was seen to be two-fold. First, it would provide planning capability to the providers who could then properly allocate resources for the year. On the other hand, it would also 'lock-in' households by committing them to the program for the insurance year. 10/17 participants were worried about the large sum to be paid and its impact to the acceptability of the scheme. However various avenues were suggested for payment including standing bank order for a year to break the payment into installments (6/17), payment by 0% interest-free credit card payments (8/17) and direct debit payment (9/17). A one-off payment was suggested to be rewarded by a rebate of RM100.00 as an incentive (14/17).

" The best thing would be to allow them to charge their credit card for interest free payments over the year. People are used to this and they buy all their things this way, from fridges to cars…"

Theme 3: Integration Into Own Clinic

Questions:
What are the major hurdles you see in implementing this into your own clinic? How would you overcome them? What would be a feasible timeline for this?
Is your clinic using Electronic Medical Records/ Information Systems . Do you see you moving to these platforms if you haven't already done so?
Do you need to hire more staff for this system implementation? If yes, why and how much more would this cost? If not, why don't you think so?
Do you foresee cash flow problems? Increased revenue? Or limitations on your

current operating patterns?

Will you continue to treat other OOP patients? Will you move away from other MCO or TPA patients? If yes, why? If not, why not?

What would your ideas be on sustainability of this scheme for you next year? What incentives would you offer? How to attract and hold on to existing patients? How many of your patients would be interested in a microinsurance scheme?

3/17 participants did not think that the microinsurance scheme could be implemented right away in their own clinic while 10/17 thought that with minimal adjustments to their clinic administrative setup, it could be implemented immediately. Problems with administrative arrangements were mostly resolvable with the hiring of new clerical staff to manage the additional insurance component and purchasing.

“ One additional clerk would be enough for us to kick off, and the cost of hiring her would be minimal because her salary would not be so high…”

3 of the 17 participants who could not implement the system were the ones who were still using manual patient records and logistic systems. All the others had were using electronic Clinic Information Systems which not only used electronic case records but also other functions of the systems such as electronic purchasing, warehousing and logistic functions. These management tools played a large role in the automation of these clinics’ management systems and would allow them to immediate deploy a microinsurance system.

Other than the new staff for administrative purposes, as yet not one of the providers contemplated hiring new clinical staff such as doctors and nurses. This was because they still could not predict how high the increased patient volume would be. 16/17 were however sure that with a more than 40% increased load, they would

immediately hire new clinical staff or even add a doctor at the clinic to enable shorter waiting times, but this would only be done after one year of the insurance and there was good reception for a second year of continued microinsurance.

“ Honestly, we are not thinking that far into the future. If we got that many more patients definitely we will hire more staff but currently, it’s a pleasant problem to think about and have in the future….”

In terms of cash flow problems, almost all the participants (15/17) felt that they would have no real cash flow problems if they implemented a prepaid insurance scheme where customers needed to pay annually at the beginning. 2/17 even were of the opinion that they would benefit immediately as even now, with cash payment systems, they have almost 20% of monthly revenue as unpaid bills. 11/17 were equally optimistic about increased revenue and the loss of cash flow problems as many company MCOs or TPAs had a delay of between 60 to 90 days for reimbursing patient claims to the provider.

“ A system where we have money already in the beginning would be great. Currently I have to maintain an overdraft with the bank which charges me interest for payments as all the MCOs which owe me money pay me only after an average of 3 months….”

As this is a new scheme, none of the participants were sure as to how it would be accepted or even whether the ‘buy-in’ for the scheme would be high. As such none of them were willing to cease all other payment mechanisms such as receiving MCO or TPA patients although they were not particularly happy to accept these patients. All participants were also quite sure they would not stop taking OOP patients to their

clinics though they would promote the scheme to them to encourage them to convert to the microinsurance scheme.

“ This system may be good, but its too risky to opt for this scheme for all my patients as yet. If I stop seeing cash patients and this insurance scheme is not working I am going to be stuck and may have to close shop…. Let’s wait and see over some years how the reception of this scheme is…..”

A few concerns persisted about the long-term sustainability of the scheme from all the participants. One recurring concern was how it would be taken up by users. While the participants were sure that they could hold up their end from the delivery aspect, they were concerned that either not many people would buy the insurance, or not understand the need for private primary care insurance. All participants agreed on the need for serious marketing and promotion of the insurance, both to promote the idea of microinsurance and the benefits of this particular scheme to potential users.

“ I may not be able to afford a marketing person for my clinic, but if we are serious about the scheme, that’s a part of the business that has to be taken care of. Someone has to seriously market the scheme full-time in order to attract people… promotion and campaigning to attract people to join….”

In summary, the participants proposed a microinsurance scheme with the following characteristics as detailed in the figure below.

Price	**Additional information**
RM 1500 annually for a household of five people	Surcharge for each additional child = RM 50.00 Surcharge for each additional adult = RM150.00 Surcharge for chronic disease patient

	=RM 150.00
List of services offered	**Additional information**
All acute treatments – Acute respiratory, Acute gastroenterological, Acute urinary, Acute pain syndrome, Viral fevers, Acute primary care ophthalmological conditions, Acute primary care otolaryngology conditions ,Acute dermatological conditions – infections, occupational dermatitis, Antenatal Care, Immunisation, Chronic disease follow-up, Minor surgery, Wound care, Sports Injuries, Family planning, Counselling for preventive conditions, Annual Health screening, Radiological Services	Excluded from coverage Cosmetic dermatological procedures, Aesthetic procedures, Vitamin C and other intravenous supplement injections, Genetic testing, Fertility Services, Physiotherapy, Referred-out services – such as MRI/CT, Platelet-Rich-Plasma (PRP) services, Extraneous vitamins and supplements, Anti-aging therapy and supplements
Copayment	None
Limit on usage	None
Medications	Generic, but with ability to top-up the difference for those who prefer branded
Term	1 year
Payment method	Up-front cash/ Credit Card by 0% installment/Standing bank order for term of insurance

Figure 20: Final characteristics of health microinsurance scheme

Phase 2: Willingness/Ability to Pay Study

The findings from Phase 1 were used in Phase 2 where the acceptability of the formulated health microinsurance scheme was tested in a sample of prospective users, namely patients who paid OOP and visited private primary care clinics. 461 patients who were selected from 10 different private primary care clinics in Jalan Ipoh, Kuala Lumpur were interviewed about their willingness and ability to pay for the health microinsurance scheme, with the price, package of services and rules of service provision as per outlined in Phase 1.

The sample consisted of a majority of males (64.6%) with the majority of the respondents being between 35-54 years old (46.8%). 57.3% of the sample was Malay and more than half were married (61.0%). 26.9% had received tertiary education. Waged staff made up the largest group in terms of occupation (35.6%). 79.0% of the sample were in the top three income quintiles.

Sociodemographics N=461	**n (%)**		**n (%)**
Gender		**Education Level**	
Male	298(64.6)	Primary	76(16.5)
Female	163(35.4)	Secondary	261(56.6)
Age		Tertiary	124(26.9)
<25 years old	69(15.0)	**Occupation**	
25-34	75(16.3)	Professionals/Executive	31(6.7)
35-44	101(21.9)	Sales/Services/Business	65(14.1)
45-54	115(24.9)	Waged Staff	164(35.6)
55-64	58(12.6)	Student	76(16.5)

65 and above	43(9.3)	Retired	43(9.3)
Ethnic Group		Carer	79(17.1)
Malay	264(57.3)	Unemployed	3(0.7)
Chinese	99(21.5)	**Income Quintile**	
Indian	89(19.3)	1	165(35.8)
Others	9(1.9)	2	110(23.9)
Marital Status		3	89(19.3)
Yes	281(61.0)	4	73(15.8)
No	180(39.0)	5	24(5.2)
Size of household		**Number of children**	
<2	101(21.9)	0	56(12.2)
2-4	234(50.8)	1-2	199(43.2)
5 or larger	126(27.3)	3-4	176(38.2)
		5 or more	30(6.5)

Table 19: Characteristics of the study sample

Most of the sample were well aware of insurance and its mechanisms. 66.1% had vehicle insurance, 43.2% had personal life insurance, 52.7% had some property insurance and 33.8% had some other form of insurance. 39.3% of the sample had made a previous insurance claim; with 72.9% of those 181 individual who said yes having successful claims. Awareness about health insurance was also present among more than half of the sample (62.3%). However, only 15.0% had health insurance before. A little over a third had heard about microinsurance and when explained about it in detail by a study team member, 83.5% stated that they were interested in purchasing it.

Questions N=461	YES n (%)	NO n (%)
Do you have vehicle insurance (car, van, motorcycle)?	305(66.2)	156(33.8)
Do you have personal life insurance?	199(43.2)	262(56.8)
Do you have property insurance?	243(52.7)	218(47.3)
Do you have any other type of insurance?	156(33.8)	305(66.2)
Have you made any claims for insurance before?	181(39.3)	280(60.7)
Have those claims been successful?*	132(72.9)	49(27.1)
Do you know about health insurance?	287(62.3)	174(37.7)
Have you previously had health insurance?	69(15.0)	392(85.0)
Have you heard about health microinsurance?	143(31.0)	318(69.0)
Would you like to purchase private primary care health microinsurance?	385(83.5)	76(16.5)

*n=181

Table 20: Familiarity with general insurance, health insurance and health microinsurance

The breakdown of willingness to pay for different health microinsurance premium prices was as found in the following table. The willingness to pay was high for a premium priced between RM 1200 (73.5%) and almost two thirds (65.7%) for a premium of RM1500. The willingness to pay was even higher for a annual household premium of RM 1800 (77.6%) but dropped steeply to a little less than 20% when premium prices were RM 2100.

Questions N=461	YES n (%)	NO n (%)
Would you be willing to pay RM 1200 for your family as an annual premium for health microinsurance?	339 (73.5)	122(26.5)
Would you be willing to pay RM 1500 for your family as an annual premium for health microinsurance?	303(65.7)	158(34.3)
Would you be willing to pay RM 1800 for your family as an annual premium for health microinsurance?	358(77.6)	103(22.4)
Would you be willing to pay RM 2100 for your family as an annual premium for health microinsurance?	86(18.6)	375(81.4)

Table 21: Willingness to pay for health microinsurance premium (objective amount stated)

Would you be willing to pay the following amount for your family as an annual premium for health microinsurance? (N=461)	n, %	Cumulative percentage (%)
Lower than RM 1300	8(1.7)	1.7
RM1301-1400	31(6.7)	8.4
RM1401-1500	45(9.8)	18.2
RM1501-1601	81(17.6)	35.8
RM1601-1700	104(22.7)	58.5
RM1701-1800	159(34.5)	93.0
RM1801-1900	20(4.4)	97.4
>RM2000	12(2.6)	100.0

Table 22: Maximum Willingness to pay for health microinsurance premium

The table above elaborates on the maximum willingness to pay for health microinsurance premiums and is also depicted visually in the following figure. At a premium price of RM1501-1600 (the proposed premium price), 35.8% of the sample was willing to pay for the premium. However the larger proportion of the sample was willing to pay more than that for an insurance premium, with the maximum willingness to pay petering off at around RM 2000. This means that the willingness to pay is high for a premium priced at RM 1500, with only 18.2% of prospective users unwilling to pay at least that price.

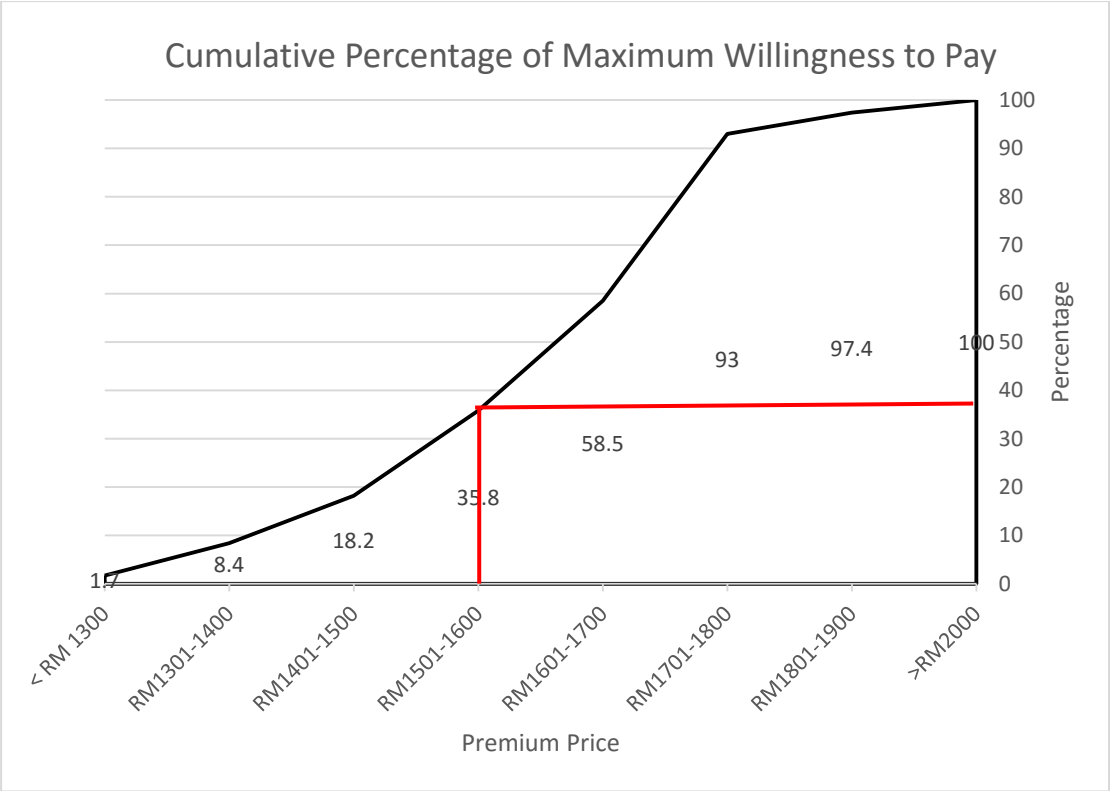


Figure 21: Maximum Willingness to pay for health microinsurance premium

When given options of how they would continue to seek care if they did not have a microinsurance scheme to access private primary care, the larger part of the sample still opted to continue for OOP payments at the clinic, as seen in the following table. 21.9% opted to go to public primary care or buy medicine at a pharmacy.

If you could not afford to pay for the health microinsurance what would you do when you are sick? (N=461)	n, %
Continue out-of pocket payment at this clinic	333(72.2)
Go to public primary care clinic for treatment	59(12.8)
Buy medicine from pharmacy	42(9.1)
Find cheaper OOP private primary care clinic	27(5.9)

Table 23 : Options for further treatment if did not purchase health microinsurance

Independent Variable	(B)	p value	Odds Ratio (OR)	95% Confidence Interval
Age	0.12	0.07	1.23	0.48 – 4.17
Ethnic group	3.85	0.22	5.38	1.40 -10.53
Marital status	0.74	0.06	0.45	0.14 - 0.68
Education level	1.78	0.02	4.14	1.43 - 9.63
Size of household	3.38	0.05	2.68	1.23 - 3.87
Occcupation	1.96	0.01	0.28	0.11 - 0.84
Income quintile	4.66	0.01	2.36	1.02 - 3.48
Number of children	2.09	0.04	2.17	0.84 – 5.01

Table 24: Multiple Logistic Regression Analysis of Associated Factors with Willingness to Pay at established Premium Price

A multiple logistic regression analysis was carried out with the outcome being willingness to pay at RM 1500, the established premium price, as shown in the table above. The variables of education level, size of household, occupation, income quintile and number of children were significantly associated with willingness-to-pay for the premium price of RM 1500. Increasing levels of education increased the odds of being willing to pay for the insurance by 4.14 times. Increasing size of household

also increased the odds of being willing to pay by 2.68 times. Increasing quintile of income increased the odds of being willing to pay for the insurance by 2.36 times while increasing number of children was also associated with a 2.36 times greater odds ratio of being willing to pay the insurance premium. Moving along the occupation levels from professional to unemployed decreased the odds of being willing to pay for the insurance by 0.28 per category.

Phase 3 Quasi Experimental Study: Efficacy of Health Microinsurance Scheme

The results of third phase of the study elaborates on the quasi-experimental trial which studied the efficacy of the health microinsurance scheme in an intervention clinic compared to a control clinic in terms of outlined outcomes

These outcomes were:

i) monthly household health expenditure, defined in Ringgit Malaysia (RM)

ii)household catastrophic health expenditure, defined by two outcomes – as a percentage of total household expenditure and the other as a percentage from capacity to pay.

iii)delays in seeking healthcare, defined by two outcomes- days it took to seek medical care and the first avenue of treatment for illness

iv)acute disease outcomes, defined by the length of illness from onset to resolution in days

v) chronic disease outcomes, as described by levels of various biomarkers.

The control groups and experimental groups consisted of 57 households each which were non-heterogenous when compared at the baseline statistically using demographic variables. The demographic tables details the breakdown of both groups according to continuous and categorical variables respectively as well as giving the comparison statistics between them at baseline.

Variables	Control Group	Experimental Group	p value *
N=57 per group	(n, %)		
Ethnicity			0.14
Malay	30(52.6)	32(56.1)	
Chinese	13(22.8)	12(21.1)	
Indian	7(12.3)	8(14.0)	
Others	5(8.8)	3(5.3)	
Mixed (More than 1 ethnicity)	2(3.5)	2(3.5)	
Income quintile			
1	11(19.3)	12(21.1)	
2	10(17.5)	13(22.8)	
3	23(40.4)	21(36.8)	
4	8(14.0)	6(10.5)	
5	5(8.8)	5(8.8)	
Occupation of head of household			0.22
Professional/Executive	5(8.8)	6(10.5)	
Sales/Services/Business	6(10.5)	12(21.1)	
Waged Staff	15(26.3)	17(29.8)	
Student	8(14.0)	10(17.5)	
Retired	10(17.5)	5(8.8)	
Carer	11(19.3)	6(10.5)	

Unemployed	2(3.5)	1(1.8)

*Test of association is Chi-Square

Table 25: Sample characteristics for households– categorical variables

Variables	Control Group	Experimental Group	p value**
N=57 per group	(Mean, SD)		
Number of adults	2.05(0.31)	2.17(0.33)	0.13
Number of children in household	2.12(0.25)	2.26(0.27)	0.27
Number of elderly (>65) in household	0.74(0.08)	0.86(0.03)	0.14
Number of individuals with chronic diseases	1.46(0.13)	1.74(0.16)	0.27
Number of individuals with disabilities	0.19(0.02)	0.26(0.03)	0.09
Number of individuals with private health insurance	0.54(0.08)	0.61(0.09)	0.14
Number of individuals with employer health coverage	0.26(0.03)	0.35(0.05)	0.22

*Test of association is T test

Table 26: Sample characteristics for households– continuous variables

Monthly Household Income and Expenditures (in Ringgit Malaysia, RM)							
Variables	Control Group Mean (SD)		Experimental Group Mean (SD)		Mean diff	95% CI	p value
N=57 per group	Pre	Post	Pre	Post			
Monthly household income	3972.23 (284.56)	3955.13 (229.81)	3946.71 (310.67)	4001.65 (235.87)	72.04	43.71-103.22	0.13
Monthly household expenditure	2731.22 (374.95)	2803.60 (380.07)	2792.48 (376.02)	2953.99 (380.12)	89.13	58.14-130.64	0.26
Monthly household basic needs expenditure *	1627.21 (121.95)	1768.57 (101.17)	1573.39 (91.61)	1652.36 (177.15)	-62.39	-101.22 - -28.54	0.17
Monthly health expenditure**	516.27 (72.28)	487.94 (65.31)	529.32 (74.10)	283.63 (39.71)	-217.36	-246.70 - -187.84	0.01
% of health expenditure from total household expendit	17.9(1.4)	18.4(1.6)	18.3(1.6)	9.7(1.1)	-9.6	-11.3 - -8.2	0.03

ure							
% of health expenditure from capacity to pay ***	39.5(1.8)	39.7(1.3)	40.1(0.9)	29.7(0.6)	-10.6	-13.7- -8.8	0.01

* Basic needs consist of food and utility expenses

** Costs are direct and indirect costs to the patient including transport costs and opportunity costs in terms of lost wages.

*** Capacity to pay is income remaining after basic needs have been met

Table 27: Repeated measures ANOVA for baseline and post-intervention levels of monthly household income, expenditure and health expenditure

When compared from baseline to the post-test at 6 months, there was a significant reduction between the control group and experimental groups in terms of monthly household health expenditure (mean difference = decreased RM 217.36; $p<0.05$). The percentages of health expenditure from total household expenditures were also decreased significantly in the experimental group compared to the control group (mean difference=decreased 9.6%; $p<0.05$). Percentages of health expenditure from capacity to pay also had a significant reduction in the experimental group when compared to the control group (mean difference =decreased 10.6%; $p<0.05$)

Healthcare Utilisation							
Variables	Control Group Mean (SD)		Experimental Group Mean (SD)		Mean diff	95% CI	p value
N=57 per group	**Pre**	**Post**	**Pre**	**Post**			
Health status (5 point Likert scale)	3.4(1.6)	3.7(1.2)	3.1(0.7)	3.8(0.5)	0.4	0.0-0.6	0.08
Monthly illness episodes per household	4.8(2.0)	4.2(0.9)	4.1(1.1)	4.2(1.3)	-0.5	-0.7-0.2	0.14
Delay of care-seeking (days)	3.6(1.8)	3.4(1.5)	3.4(1.1)	1.3(1.6)	-1.9	-2.4- -1.3	0.04
First avenue of treatment for illness (as percentage of total)							
self-treated	35.3(2.8)	32.7(2.1)	31.5(1.3)	11.7(1.9)	-22.4	-28.6- -19.8	0.008
traditional medicine	33.6(3.2)	36.1(2.7)	32.4(1.8)	6.4(2.1)	-28.5	-31.6 - -26.4	0.006
purchased medicine from pharmacy	17.1(2.8)	14.3(2.3)	15.2(2.2)	8.1(1.0)	-4.3	-9.6- -1.2	0.04
government primary care clinic	2.8(0.6)	3.1(0.4)	2.9(0.4)	1.5(0.4)	-1.7	-2.8-0.4	0.09
private primary care clinic	11.2(0.4)	13.8(0.6)	12.7(1.5)	72.3(3.4)	62.4	56.8-66.7	0.002

Table 28: Repeated measures ANOVA for baseline and post-intervention levels of healthcare utilisation

Self-reported health status of both the groups were similar throughout with no differences between them. Similarly, there was no significant differences in terms of monthly illness episodes both within and between the groups throughout the study period. There was a significant reduction in the days of delay in care seeking between the experimental group and control group (mean difference= reduction of 1.9 days, $p<0.05$). There was also a large change in the first avenue of treatment for illness between the experimental and control group, with a mean increase of 62.4% in choice of private primary clinic as the first choice for treatment in the experimental group ($p<0.05$).

Acute disease outcomes (Length of illness from symptom onset to resolution, in days)							
Variables	Control Group Mean (SD)		Experimental Group Mean (SD)		Mean diff	95% CI	p value
	Pre	**Post**	**Pre**	**Post**			
Acute upper respiratory infection (adult)							
	4.6(1.4)	4.3(1.7)	4.2(1.5)	3.2(1.1)	-0.7	-0.9- -0.5	0.04
Acute upper respiratory infection (child)							
	5.7(1.0)	4.9(1.8)	3.9(0.7)	2.6(1.6)	-0.5	-0.8- -0.2	0.04
Acute gastroenteritis (adult)							
	2.8(0.6)	2.7(0.7)	3.1(0.7)	2.2(0.5)	-1.2	-1.6- -0.8	0.02
Acute gastroenteritis (child)							
	2.2(1.3)	2.1(0.6)	2.0(0.5)	2.2(0.3)	0.3	0.7-0.0	0.07
Acute urinary tract infections (adult)							
	5.7(1.5)	5.4(1.7)	5.4(1.5)	4.1(1.5)	-1.0	-1.4- -0.6	0.05

Acute urinary tract infection (child)							
	8.3(2.4)	7.9(2.1)	8.1(1.2)	6.7(2.2)	-1.0	-1.3- -0.7	0.04
Acute traumatic injuries (adult)							
	8.2(1.4)	8.1(1.6)	8.0(1.5)	6.9(2.1)	-1.2	-1.6- -0.8	0.04
Acute traumatic injuries (child)							
	10.6(2.3)	10.3(1.5)	9.9(1.4)	8.1(1.3)	-1.5	-1.7- -1.3	0.04
Pain syndrome (adult)							
	2.6(0.7)	2.6(0.4)	2.7(0.5)	1.4(0.6)	-1.3	-1.7- -0.9	0.04
Pain syndrome (child)							
	2.2(0.5)	2.1(1.3)	2.4(0.3)	0.9(0.3)	-1.4	-1.6- -1.2	0.04

Table 29: Repeated measures ANOVA for baseline and post-intervention levels of acute disease outcomes

Across the board, for all assessed acute disease outcomes with one exception, there were significant reductions in the outcome in terms of length of disease when comparing the control and experimental group as shown in the table above.

Chronic disease outcomes							
Variables	Control Group Mean (SD)		Experimental Group Mean (SD)		Mean diff	95% CI	p value
	Pre	**Post**	**Pre**	**Post**			
Diabetes mellitus (measured by HbA1c, in %) (Normal<6.5%)							
	8.4(0.4)	8.1(0.6)	8.1(0.7)	6.6(0.5)	-1.2	-1.5 - -0.9	0.02
Nephropathy (measured by microalbuminuria levels, mg/L) (Normal=30-300)							
	365.4(9.7)	392.6(7.4)	329.2(8.9)	283.0(6.8)	-73.4	-99.4 - -38.5	0.01
Total serum cholesterol (mmol/L) (Normal<5.2)							
	6.2(0.8)	6.0(0.3)	6.3(0.4)	5.6(0.7)	-0.5	-0.6 – 0.1	0.07
LDL (mmol/L) (Normal<3.3)							
	3.5(0.4)	3.4(0.8)	3.5(0.3)	3.1(0.5)	-0.3	-0.5 - 0.2	0.09
Bronchial Asthma, (measured by peak expiratory flow rate as % predicted from normal)							
	71.9(2.8)	75.4(5.3)	74.3(8.8)	87.6(5.7)	9.8	7.1 – 11.4	0.03
Mean resting blood pressure (measured in mmHg) (Normal below 140/90)							
Systolic	162(22)	158(18)	174(21)	141(9)	-29	-32 - -26	0.04
Diastolic	98(8)	96(8)	102(9)	93(9)	-7	-12 - 1	0.1
Chronic renal disease, measured by Serum Creatinine as % predicted from normal							

	47.1(2.2)	38.6(3.9)	51.4(6.8)	38.9(4.18)	-4.0	-7.6 - - 2.2	0.03

Table 30: Repeated measures ANOVA for baseline and post-intervention levels of chronic disease outcomes

In terms of chronic disease outcomes, there were significant reductions between the experimental group and control group for diabetes mellitus (mean HbA1c reduction=1.2%, $p<0.05$); nephropathy (mean microalbuminuria reduction of 73.4mg/L, $p<0.05$); bronchial asthma (mean % drop in PEFR of 9.8%, $p<0.05$); systolic blood pressure (mean decrease of 29mmHg, $p<0.05$) and chronic renal disease (decrease in creatinine by 4% based on % prediction from normal).

Chapter V

Discussion & Conclusion

The purpose of this chapter is to summarize the study that was conducted and review the results obtained. It will then seek to draw upon work done in the similar area to compare and contrast these findings. Building upon the theoretical frameworks underpinning this study this chapter will also seek to assess how the aims of the research have been fulfilled and draw upon work done in the similar area. After a short discussion on the strengths and limitations of the study, the chapter will end by providing some recommendations for future research and directional guidance for policy.

5.1 Contextualising the Study Results: A Health System Reform Perspective

Overall, this study found that a feasible private primary care health microinsurance scheme constructed based on stakeholder input was highly acceptable to prospective users. The scheme was also efficacious in reducing monthly household health expenditure, improving health utilization and clinical disease outcomes among a sample of patients who used it compared to a control group who did not.

The growth of the private healthcare sector in the 1980s in many low- and-middle income countries (LMIC) was largely fuelled by neoliberal policies put into place by Bretton Woods institutions and their structural adjustment programmes (Gosden et al., 2001). The growth of the private sector, led by New Public Management ideas was designed to bring about increased performance efficiency (Gosden et al., 2001). The bureaucratic, centralized government healthcare sector was deemed to be inefficient and offering low-quality services to the public (Gosden et al., 2001). Moving service provision to the private sector while transforming the government's role from service provider to that of stewardship and regulator was

designed to enhance efficiency and quality (Gosden et al., 2001). The growing middle class who also demanded for better quality services would be appeased, it was felt, by them obtaining high-quality services from the private sector, which would then also free up government resources to be engaged in delivering services to lower socioeconomic groups (Gosden et al., 2001). Malaysia, as a country which underwent a similar transformation period from the 1980s, continues to show exactly this pattern of utilization of the private sector by the middle class or even the lower middle class. As seen in the Phase 3 findings, households from all the income quintiles continue to prefer private primary care clinics as the medium of choice for treatment, despite government services being available. In the study, it was seen that when households could not afford private treatment, they opted for traditional medication or pharmacy, but still ignored the government primary care centre.

This, however, reflects the problem faced by using OOP for payment to access medical services, as seen in this study, and in other settings elsewhere. Evidence from various studies in various LMICs showed that the rapid growth of the private healthcare sector caused the rise of a few severe problems (Gosden et al., 2000). While quality of services was deemed to improve when provided by the private sector, the ability to access services that now had to be paid for decreased utilization(Gosden et al., 2000). The ability to pay for services was inversely correlated to the need to use services, with service utilization also decreasing. This was seen by early systems specialists to be in line with achieving New Public Management goals of restoring efficiency (Gosden et al., 2000). However this was not true. Research revealed that while utilization did decrease, it did so across all sectors, both necessary and unnecessary use (Carrin, Waelkens, & Criel, 2005). People who were sicker waited longer to come to the doctor and problems that could have been treated at a primary care level became complicated enough to require hospitalisations(B. Ekman, 2004). This in turn continued driving the rise of total healthcare expenditure, negating the efficiency gains purportedly derived as a part of this measure(B. Ekman, 2004).

In addition, the need to pay for private services has caused the decreased accessibility to care also by members of the lower socioeconomic groups(B. Ekman, 2004). These economically deprived groups were now also deprived of care and this was a social injustice being done to them. As was also later discovered in the Social Determinants of Health Marmot Commission, the poorer tended to be also the sicker groups in society and by encouraging and developing private services, there was a considerable loss in equity(Lauer & Betrán, 2007). This was also seen in the findings of this study both in the baseline phases of the quasi-experimental trial and the willingness/ability to pay study where the members of the lowest income quintiles forewent care whenever they did not have money to access private services but still avoid using government services.

To top all this off, many LMIC governments who had little capacity in regulating or managing private services thus gave this sector a free hand in their development phase(D. Dror, 2014). While some efficiency gains were garnered by the private sector, these was never transferred to the public domain and remained in private hands as profit(D. Dror, 2014). Over time, the large profit margins enjoyed by the members of the private sector led them to engage in unscrupulous activities such as overprovision of services, providing unnecessary services and engaging in wrongful treatment as seen in the case of India, Bangladesh and Pakistan, among others (D. Dror, 2014). This has shown that the private sector, far from being a helping hand to the health systems in terms of service provision, left it far worse off, it could be argued (D. Dror, 2014). Many countries, especially those in the Middle Income category, however, have done much to address these concerns about quality of services provided in the private sector. In Malaysia, for example, the Medical Act (1972) and its amendments (2012) offer various avenues for redress for those seeking medical services in the private sector if they were unsatisfactorily treated or underwent medical harm. Under this Act, the consumer of healthcare is entitled to seek justice/ make a complaint to the Malaysian Medical Council via various methods such as writing a letter or even via e-mail where this will be investigated thoroughly by the council or a special committee. These enables all practitioners, even those in

private to be censured in case of wrongdoing, with sentences up to and including jail sentences, disbarring from the medical profession and temporary loss of medical practice privileges. Further strengthening of the consumer was also provided in the Private Healthcare Facilities and Services Act 1998 which regulates the setup of private healthcare facilities, requiring them to be licensed and inspected by empowered officials. It would be too naïve, of course, to expect that with the availability of these avenues, there is no overprovision that offers to the consumer/patient and these are shortcomings that are being addressed via a proposed Quality Monitoring and Evaluation Framework being built into the healthcare reforms proposed by the Government under the 1Care programme.

An interesting point in this study was that the perception of the public, even in those from lower income quintiles, continued to be that the services offered in private were far better than those in the public setting, even when they were almost free. This has to be one of the important points that underlies the reason for private sector provision of healthcare. As clearly seen in this study's findings, it remains the choice of the customer. This alone justifies the need for its existence, in a free-market system. However, there are other considerations that also offer equally compelling reasons for this.

In this current situation of ever reducing health resources, coupled with the ever skyrocketing cost of healthcare provision, economic uncertainties and slowdowns; and large changes in both communicable and non-communicable disease mortality, governments in LMICs have little choice(Gosden et al., 2001). There is simply no way to make the limited tax-revenues stretch even further to provide an ever-larger piece of the cake to healthcare(Gosden et al., 2001). Alternative methods of financing and delivery have to be put into place in LMICs, and thus this is why microinsurance is suggested as a viable solution for this(Gosden et al., 2001).

There question then arises on why provide private primary care rather than secondary or tertiary care. This is also a simply explained point. In this study, the findings of the quasi-experimental clearly point this out, with the amount of

expenses that are spent by households on healthcare monthly roughly comparable to the need for primary health services in the community. Although it may seem difficult to think about primary care in terms of it being highly expensive, the cost spent to obtain it remain considerable, as this study points out, at the household level. The importance of primary care services have been clearly elucidated since the Alma-Ata Declaration of 1978(Teng, Aljunid, Cheah, Leong, & Kwa, 2003). Primary care services are both important as the first, ground-level interactions of the health system with prospective users(Tong et al., 2012). It is also broad and comprehensive, comprising of all forms of health care services from primary mental health to chronic disease management or maternal and child health services(Tong et al., 2012). It is the first-used service and thus functions also as an important gatekeeper for the cost-containment of higher expenditures of hospital settings(Tong et al., 2012). Another important point is the fact that primary care is the cheapest of the health services(Tong et al., 2012).

By engaging with private primary care services, which are usually easily and widely deployed, there is little expensive capital infrastructure that has to be put in place for service provision(Tong et al., 2012). As seen in the preliminary focus group discussions and the characteristics of the private primary care providers in the urban Kuala Lumpur setting, there is more than an adequate supply of primary care providers. These providers are also more than capable of providing comprehensive services, reflecting perhaps a surplus of capacity for the local populations.

Another factor which promotes usage of primary care services is the need to pay, which in essence is a necessity that is catered for in this health system reform, is minimized to the lowest possible payment categories which is in primary care(Tong et al., 2012). In fact, a case has been made in many countries such as even the National Health Service in the UK where primary care services are provided by private General Practitioners while the government provisions, at subsidized prices, the secondary and tertiary care services(Aljunid, 1995).

The case for this is even clearer in the Malaysian setting, in which a huge disproportionate number of private primary care clinics already exist compared to

the public ones. In addition, the large number of existing private primary care doctors also make this an easy option to opt for. It would not be a difficult thing for a change in policy which called for the shifting of provision to private primary care to be put into place. This would then allow the government to focus on providing secondary and tertiary care in hospitals.

5.2 Analysing Costs as the Building Blocks for a Feasible Microinsurance Scheme

On average, this study found that the annual average cost of treatment for an OOP patient at a private primary care clinic in Kuala Lumpur was around RM 537 (Int$ 215.00). A large percentage of patients following-up at private primary care clinics were working-age adults between 20 and 50 odd years of age. This was likely due to their better earning capacity which made them prefer private primary care services, and is a finding that has been echoed in similar settings(Babatunde et al., 2012).There were large differences in the average treatment costs both for individuals and households with and without the inclusion of chronic disease patients. This highlighted the high costs involved with treating chronic disease patients out of private primary care settings; and this cost factor was precisely the reason why they were either poorly compliant to medication or had poorer disease control when seen in private primary care(Bonan, LeMay-Boucher, & Tenikue, 2014).

The annual cost of treatment for an OOP patient in private primary care was difficult to compare against, because few studies have been done out of the private setting in Malaysia(Lavado, Brooks, & Hanlon, 2013). Recent Malaysian studies have also reported low participation rates among private clinics in health research(Chuma & Maina, 2012). Other cost-analyses in outpatient settings in Malaysia were largely disease specific and carried out in public primary care clinics. A 2002 study, for example, found that the mean provider cost for treating a diabetic patient in public primary care was Int$ 77.71 per year while a more recent 2007 study costed between Int$257.42 to Int$ 361.60 for treating a diabetic patient annually(Organization, 2005). These costs were higher than those found in this study, but this was to be expected

as it was specifically for a chronic disease population requiring more intensive, expensive treatment. A more recent 2014 study out of a university primary care centre determined that the direct annual cost of treating hypertension was RM289.42 (Int$ 115.77). This cost was low for treating a chronic disease, and may have been lower for a general population. However it has to be noted that this cost-analysis was from a university hospital's primary care unit and did not include capital expenditure costs, merely subsidised costs charged to the patient, and thus maybe unable to provide an accurate comparison(Xu et al., 2007).

From the cost analysis parts of Phase 1, there were two lessons to be learnt. The first was that there was a large cost difference when comparing the annual average cost of treatment for an individual patient when estimated via microcosting (which reflected the cost of receiving care) and the average cost of treatment for an individual patient when estimated via macrocosting (reflecting the cost of delivering care). These cost difference was the profit margin of the private primary care providers. These findings were later used in the focus group discussions to resolve reservations that these providers had about their profit-loss ratios by implementing microinsurance. The data helped in convincing them that they would enjoy similar profits based on economies-of-scale and volume delivery rather than on smaller volume, high fee-for-service treatments.

The second lesson learnt from the cost analysis was the fact that there was a huge disproportionate amount in treatment costs between the average patient and the chronic patient. As seen in the results section, when the chronic patients were added into the overall treatment costs, the costs for average household treatment costs doubled. Once again, this data was crucial to convince providers that they needed to incorporate chronic patients into households rather than leave them as individual premium payers as chronic patients would either i) not participate in the scheme as it was too expensive, ii) participate this first year but drop out in subsequent years as the scheme became too expensive as costs when up (adverse selection) or iii) costs for treating the chronic patients were too high for the provider to continue the insurance programme (market collapse)(Xu et al., 2003). The

solution therefore was to allow some risk-pooling to happen at both a family level, where the family premium helped absorb some of the costs of treating the chronic patient; as well as at the community level where the overall pool would be large enough to cover the costs of chronic patients(Xu et al., 2003).

The important role that the second part of the first phase study was the engagement of the private sector providers to help build a feasible scheme that they would be interested in adopting for their own practices .In most LMICs, there is very little regulation surrounding private health provision especially in private care and they are often seen to be motivated purely by 'profit' motives(Mebratie, Sparrow, Alemu, & Bedi, 2013). Due to this, they are rarely brought onboard to public health stakeholder dialogues, and due to the ill-feeling between them and their public sector brethren, are poor participants in research processes(Chuma & Maina, 2012; Lavado et al., 2013). In healthcare, especially in primary care settings where the major players remain individual small businesses owned by a single doctor, there is still an important altruistic mindset that exists. This can be leveraged upon for the objective of overall healthcare delivery, provided it remains profitable for the private provider(Mebratie et al., 2013).The focus group discussions were built upon that premise, bringing in these 'providers' who would manage and provide the insurance to build a scheme that would generate adequate profit for them, while fulfill larger societal objectives and be sustainable.

5.3 Is it Worth it? Analysing the take-up of Microinsurance Amongst Users

Once a feasible microinsurance scheme had been designed, the second phase explored the acceptability of such a scheme among prospective users. As seen in results of Phase 2, Malaysians seem to have a good understanding of insurance mechansisms, with most of them being risk-averse enough to purchase some form of household insurance. Although private health insurance exists, its high premiums make it unaccessible to most, except to those in the upper middle-income or the high income groups(Derseh, Sparrow, Debebe, Alemu, & Bedi, 2013). The results of

this study were higher than a previous Malaysian study carried out among university staff in one Malaysian state(Raza, Poel, Bedi, & Rutten, 2015). Participants in the study were asked on their willingness to join one of three theoretical community health insurance schemes. However these schemes were based on delivery out of the public sector at government hospitals(Raza et al., 2015). The theoretical insurance scheme, which proposed merely covering inpatient payments at government hospitals, may not have attractive to Malaysians who already enjoy highly subsidized public healthcare(Raza et al., 2015). Even with these limited offerings, the willingness –to-pay for the proposed insurance scheme was 63.1%, indicating the risk-averseness of the population. The findings from this study reflected this risk-averse behavior in the willingness of the population to not only buy insurance, but their willingness to pay high premium prices. Evidence from other settings show that besides, risk-averseness, users also purchase microinsurance when they perceive that it has high quality and a wide range of benefits(Geissler & Leatherman, 2015).

Although conventional economics theory argues that price of product greatly influences, its demand, this is not seen to be true in microinsurance schemes elsewhere(Geissler & Leatherman, 2015). Though price may have some signal influence, it has been shown that purchasers of microinsurance are more likely to buy and keep subscription when the provider/insurer is trustworthy, provides trustable quality of services and there are low transaction costs to utilize the insurance such as high transport costs or difficulty in claiming benefits(Geissler & Leatherman, 2015). The attractiveness of the insurance package in this study, based out of a neighbourhood provider that the user already knows and trusts, the offer of access to perceived higher quality, personalized private care and the ease of transactions, without paperwork and nearby locations may have proven to be winning factors in influencing high willingness to buy the microinsurance. In terms of factors associated with willingness-to-pay, various study settings showed similar results to those found in this study, with increasing levels of household income, education levels, size of household and ethnicity (particularly in the Malaysian study)(Habib, Perveen, & Khuwaja, 2016; Raza et al., 2015). There is however a

significant difference between the willingness to pay for a theoretical microinsurance programme when asked and actually buying the programme, or as the saying goes, “putting your money where your mouth is.” Although this study showed a high willingness to pay for the microinsurance scheme, this may not translate into actual purchase. Evidence from a study in Senegal, however looked promising; finding strong significant associations between willingness-to-pay for health insurance premiums and actual uptake.

5.4 Workability of the Microinsurance Scheme on the Ground

With the complete results of Phase 1 and Phase 2, a feasible and acceptable microinsurance scheme needed to be tested to determine its efficacy in doing what it set out to do. This was tested in Phase 3 of the study. Even from the outset, there were difficulties in benchmarking the results of this phase. In terms of health expenditure, for example, there was a huge difference between the percentage and amounts of household health expenditure as determined in this study compared to national data as found in the National Household Expenditure Survey run by the Department of Statistics Malaysia(Quimbo et al., 2011). In the national survey, health expenditure as a percentage of total monthly household expenditure was only 1.5%(Quimbo et al., 2011). The primary differences between these figures and this study results is due to a large difference in methodologies(Edejer, 2006; Nabilla et al., 2003; Walker, 2001) Evidence reveals that the Household Expenditure Surveys, which have minimal questions on health expenditure are often restricted in their capacity to capture true health expenditure and thus report much lower outcomes (Edejer, 2006; Nabilla et al., 2003; Walker, 2001).

When analysed statistically, it can be determined that in national household expenditure surveys, the greater the number of health expenditure questions, the larger the health expenditure turns out to be. When other factors are held constant, increasing the number of questions on health expenditure causes a one percent increase in its share. Vice versa, increasing the number of total expenditure

questions by one decreases the health expenditure share by 0.2 percent. Another important factor that influences the percentage of health expenditure reported is the recall date of the questionnaire, with a one-month increase in recall period being associated with a 6% reduction in health expenditure(Nabilla et al., 2003). This explains exactly why the National Household Expenditure Survey which has a large number of questions with limited questions has a large difference in expenditure compared to that of this study which had a health expenditure specific questionnaire(Nabilla et al., 2003). However, both this study and the national survey had similar validity in terms of recall, as both used a one-month recall period for patient responses(Quimbo et al., 2011). The results from this study was comparable to the results from the Kenyan Household Health Expenditure Survey, a specific multi-question survey focusing only on health expenditures. From the Kenyan study, it was found that there was almost 33% health expenditure among poor households and 8% among rich households(Mills, Brugha, Hanson, & McPake, 2002). This study was designed based on the methodology of the Kenyan study(Mills et al., 2002).

WHO defines catastrophic health expenditure via two methods. In the first method, health is defined as a catastrophic expenditure when it is greater than 10% of the total monthly household expenditure. The second way defines catastrophic health expenditures as occurring when it is greater than 40% of the remaining total household expenditure once basic needs expenditure has been removed, a term defined as capacity to pay. This study showed that when defined by the first method, catastrophic health expenditure existed among households in the study sample. The results, however, were not arguably so strictly by definition of the second method, though the confidence interval of the average results were arguably within the levels of catastrophic expenditure. A global study utilising data from 59 household type surveys, and using the higher 40% expenditure compared to capacity-to-pay definition for catastrophic health expenditure, high rates of catastrophic expenditure were seen in many LMICs. This was seen even when the

data used contained fewer health-expenditure specific questions, which would have made the percentage of health expenditure to be lower overall.

The results of Phase 3 showed significant improvements in the household which had microinsurance when compared to the households that did not. These improvements were in terms of reduction of monthly and catastrophic health expenditures, improved utilization of health services and improvements in both acute and chronic disease outcomes. Various other studies of health microinsurance in other LMIC settings have also reported similar improvements in studied microinsurance-covered communities. 37,100 In fact another recent study conducted in Ethiopia showed also that enrollment in a microinsurance scheme was associated with household decline in probability of borrowing and increase in household income. Evidence does report, however, that these results of financial protection and increased access were not seen in the lowest income-groups. 37,100 While this study showed that all income quintiles were present in this study, with similar positive effects on all of them, this was not reflective of the actual income levels of the general Malaysian population. This was because private primary care clinic users in Jalan Ipoh, and overall in Malaysia in general. may not have been of the hardcore poor groups. Thus households of the 1st and 2nd income quintiles may have been relatively poor compared to the sample, but not of actual poverty levels compared to the general population.

Although there seems to be some overall positive benefits in the short-term for microinsurance, it has to be mentioned that some long-term evidence sheds poor light on the impact of the scheme. In an Indian study for example, there were little benefits to be seen from microinsurance in 3 communities, with low sustainability due to low-take up. Even in terms of improvement of disease outcomes, there seems to be little evidence in terms of experimental trials which support these, though they are strongly postulated on based on deductionary evidence from the effectiveness of microinsurance in influencing other positive preventive behavior.

If anything there is a dearth of evidence pertaining to the effectiveness of microinsurance over the long-term.There remain to be huge problems with sustained delivery since the schemes are usually government or NGO-funded and can never become self-sustainable(Organization, 2003). The results of this study which is structured around a provider-delivered model, may prove to be more effective and sustainable as it hinges on available capacity and community trust, while catering to a population that can afford to pay, rather than on providing equitable care across the board. This, if anything, reflects an efficiency-equity trade off. The working idea that the freeing up of resources from the LMIC government in terms of disabling them of the need to provide healthcare services will then enable them to target provision or subsidize access to services for the genuinely needy segments of the population or concentrate on high-value secondary and tertiary care.

5.5 Provider-driven Microinsurance in Private Primary Care: Why is it a Feasible Financing Option?

One of the largest problems with the private healthcare sector in LMICs has been its reliance on paying its providers, be it institutions or individual providers via fee-for-service mechanisms(Mimi et al., 2011). Fee-for-services, by its nature, encourages overprovision, though it was originally put in place to encourage diligence and reward hard work(Mimi et al., 2011). It is also a retrospective method of reimbursement after procedures are done, so there is little risk which lies with the provider. In fact the patient is the one who bears all the financial risk in this relationship(Mimi et al., 2011). Providers are thus driven to provide more as they are reimbursed more. As patients are unable to decide on the proper need for services due to the asymmetry of information existing between them and the provider, there is often the condition of 'supplier-induced-demand' that arises(Mimi et al., 2011). Another problem with using fee-for-service has been notably the lack of preventive medicine being practiced by the provider since there is no impetus for them to do so(Mimi et al., 2011).

In order to tackle the problem and incentive to overprovide from the provider side, there has to be a move to switch this payment method for providers. 73Many high-income nations, especially those with social health insurance systems, have introduced capitation as a method for doing this(Mimi et al., 2011). Capitation, as a method of prospective payment to providers, removes the financial risk from patients to providers(Mimi et al., 2011). A provider is given a fixed sum of money for a patient to provide a defined set of health services for a defined period of time(Mimi et al., 2011). Via this, the provider loses the incentive to overprovide services as they are already reimbursed for the patient over a fixed term(Mimi et al., 2011). In fact if anything, the provider is now careful to ration services in order to ensure that the total cost of the patient's health does not run over the amount already reimbursed to them(Mimi et al., 2011). In this study, this of course cannot be seen. Rather there is a large increase in the total amount of utilization of services. This reflects the actual demand for healthcare which is now being fulfilled when the individuals/families are able to fulfill this need. Over time, this demand will iron itself out, with the provider being able to then bring about control demand to the necessary levels.

Provider-driven microinsurance schemes incorporate the capitation system of reimbursement to providers. The users of the scheme, or prospective patients, will be paying an annual premium upfront to the provider and this is then the capitated sum made available to the provider who rations it per care use over the year. Although some patients might cost a little more over the premium over a year , some may cost a little less, the overall 'risk-pooling' of the subscribers will even out total reimbursement to the provider, ensuring that they do indeed, manage to be sustainable over the long-term.

Under the microinsurance scheme, it is also likely that the provider will engage in preventive practices, as this will also be a cost-saving measure on their part. Preventive practices, which are mostly relatively cost -free would be engaged in by the provider to ensure that the patients are less sick and thus needing less to be spent on them over the year.

There are concerns about capitation reimbursement which have been seen in literature(Mimi et al., 2011). These can be perhaps explained simply as the behavior of the provider to 'cream-skim', skimp or dump(Mimi et al., 2011). In 'cream-skimming' the provider is driven to choose only healthier patients to join the insurance, and similarly, in dump, the provider is driven to throw-out patients with higher risks i.e. complicated diseases or chronically ill(Mimi et al., 2011).In terms of skimping, the provider is driven to use only cheap medication or interventions in order to save money from the insurance sum already paid to them(Mimi et al., 2011).

The arguments for 'cream-skimming' may not necessarily hold true in a provider-driven microinsurance scheme in Malaysia. This is simply because there already exists a healthy competitive market for private primary care providers in Malaysia, and under the current fee-for-service mechanisms for reimbursement, there is no way to 'hold' a patient to follow-up at a particular clinic alone. In fact it is common for a patient to move up to three providers to resolve a particular set of complaints/condition. So rather than engaging in cream-skimming, the provider will welcome the insurance as a method to obtain 'brand loyalty' and build a steady customer base at his/her private primary care clinic. It is true that dumping may happen as there maybe a tendency to refer to public facilities in the case of poorly controlled or severely ill patients, but this is likely good practice as the primary care physicians are encouraged to refer these cases to be treated under specialist care from hospital-based settings. On a large scale, the microinsurance may ensure correct provision and increased quality by only necessary referrals to hospitals out of the private primary care settings. As the microinsurance is a stand-alone system to that particular clinic, there will be no perverse incentive to not refer the patient in order to keep the capitated sum with the provider. This is because secondary and tertiary hospital care in Malaysia is largely subsidized.

Also the power of competition cannot be underestimated in controlling the possible negative effects of the microinsurance scheme. If the microinsurance provider engages in underprovision, or skimping, the patient will immediately gain awareness of this and simply, leave the provider, causing the entire scheme to

collapse. The idea of competition will spur the provider, rather, to provide high-quality, cost-effective care by minimizing his waste and increasing efficiency through a number of methods such as strategic purchasing methods(Ibrahim, Aljunid, & Ismail, 2010).

5.6 Microinsurance to bridge the gap in LMICs

Most high income countries have financed their healthcare through general taxation or through the development of social health insurance(Gosden et al., 2001). These methods respond to the goal of financing fairness, in that people pay according to their income while they are guaranteed access to services based on their need(Gosden et al., 2001). In high-income countries, this is paid for by tax mechanisms either directly in a tax-funded system or indirectly via premiums in a social health insurance system(Gosden et al., 2000). The problem in LMICs is that there is a small tax-base due to the small incomes earned as well as the large informal sector(Gosden et al., 2000). In addition, there is a low institutional capacity to effectively collect taxes as well(Gosden et al., 2000). Social health insurance would be a good method to move forward, but this requires political will and commitment to implement over a long-term period(Gosden et al., 2000). Also, this usually is kicked off traditionally in the formal sector, which is easy to enroll and manage(Gosden et al., 2000). Following implementation in this area, only then will it be possible to push for implementation at a larger scale among the self-employed and the informal sector. Many countries continue to struggle with scale-ups after the initial introduction of SHI into the formal sector(Y. Dong, 2013).Governments may also not yet have the skills and capacities to administer a national SHI which requires new and complex skills especially in collecting contributions, organizing reimbursement and monitoring health and financial information(Y. Dong, 2013).

In LMICs the inability to generate adequate revenue for provision as well as a push for cost recovery under neoliberal provisions of aid led to the introduction of user fees(Y. Dong, 2013). This proved to be disastrous both at generating revenue as

well as to healthcare as a whole, as it deterred both necessary and unnecessary use of services overall with a particularly heavy impact among the poor(Mills, 2014). Luckily, the use of user fees has been halted in most LMICs, reversing some of its effects. The quandary, of course in LMICs, has been to find a sustainable method for financing and this has led to the ideas of using community financing. Community financing of health would, in theory, circumvent the organizational incapacities of governments(Shafie & Hassali, 2013). It refers to mechanisms whereby households in a community fund the costs related to a set of health services. One of the more comprehensively developed ideas behind community financing is community-based health insurance (CBHI). CBHI introduces elements of risk-pooling into the community as well as prepayment to protect against financial catastrophes from health expenditures(Shafie & Hassali, 2013). Mostly run through community groups, NGOs or even medical aid schemes, they mostly run as a non-profit though provider based profit models are also utilized(Shafie & Hassali, 2013). CBHI, thought to be an extremely viable idea, has taken off in numerous settings and nations, but has yet to be successfully scaled-up. This is due to the fact that it has been still dependent on donor funding and government aid, with low buy-in from communities in which it functions, small unsustainable risk-pools and low quality of services(Y. Dong, 2013; Mills, 2014; Shafie & Hassali, 2013).

Health Microinsurance extends the thinking of community-based financing into the next level of action, utilizing local social and economic characteristics on which to build insurance schemes(Chandani & Garand, 2013). Microinsurance is touted to be an autonomous enterprise, independent of external operators and subsidies(Chandani & Garand, 2013). It is supposed to be based on economic activities which can then be used to generate funding for the sustaining of the insurance scheme(Chandani & Garand, 2013). Over the long term, smaller microinsurance units are intended to link up through are and occupation-based units to form larger risk pools and the support structures needed for improved governance of these schemes(Chandani & Garand, 2013). Microinsurance aims to create a self-

sustaining solution within the community-financing idea focusing on action at a micro-level(Chandani & Garand, 2013).

A successful health microinsurance scheme needs to be built on three important pillars; simplicity, affordability and proximity(Asenso-Okyere, Osei-Akoto, Anum, & Appiah, 1997). Users should not need to be taxed with complex reimbursement procedures(Asenso-Okyere et al., 1997). Rather they must be allowed to access services once they have paid for it to enable them to see the utility of joining such a scheme(Asenso-Okyere et al., 1997). The premiums for the microinsurance must be affordable, and at the very least, show a perceived return for the premium(Asenso-Okyere et al., 1997). Thus costs of operation should be kept low as this will impact the premium costs(Asenso-Okyere et al., 1997). Also, proximity is crucial to enable users to easily access the services which are provided and provide a sense of connection to the community(Asenso-Okyere et al., 1997).

These suggestions, however have to be 'ring-fenced' to reflect the differences between Lower Income Countries (LICs) and Middle Income Countries (MICs), which together make up the the LMIC grouping. It is important to separate the MICs, which have better-organised more progressive systems such as as evolved financial sector, better legal frameworks such as stronger consumer protection laws and more importantly better infrastructure both in terms of human capital as well as physical structures. Many LICs are germinating these ideas as they advance rapidly, but these factors, among others, remain an integral difference subcategorizing them. Although this may make little direct impact on the direct microinsurance planning and delivery, there may be a tangible impact on the long-term sustainability of such programmes, which may require infrastructural support to strengthen them. This, however does not detract from the message of microinsurance deployment in all LMICs, rather, it distinguishes between the ease of success in implementation between MICs and their LIC counterparts.

5.7 Strengths

One of the greatest strengths of this study is that it is a first-of-its-kind in the Malaysian setting if not in a regional setting. The use of formative research methodology, where current, ground-level data was used to formulate the following studies was also a clear strength, as this ensured that the intervention was specifically tailored for the specific community in which it was implemented.

For the first phase, the strengths of the study were that it used a retrospective cohort analysis which was carried out relatively quickly and inexpensively to produce data which was real-world and current (done in 2014). It did not rely on simulation or approximations to obtain the costs that were later used by the focus group discussions to formulate the premium of the microinsurance as well as to factor in profit margins and other planning concerns by the providers in the focus-group discussions. In addition, it used a two-pronged approach to obtain the costs; the first being from the direct cost to provider which calculated the annual average costs per patient from the demand side, while the parallel macrocosting analysis gave the average costs per patient from the supply side. The ability to compare both these figures gave the ability to providers to engage meaningfully in discussions to formulate the premium prices for the microinsurance scheme.

In the second part of the first phase, the use of a wide range of local providers in the focus groups discussions lent both sampling depth and heterogeneity to the sample. In addition, as they were relevant local actors, their feedback and information was invaluable as it offered in-depth perspectives on the studied subject. Also, the focus groups were able to offer quick turnaround on necessary information as well as for evaluating concepts such as terms of service provision and proposed basket of services for the microinsurance. The use of a family physician well-versed in the area being studied as a moderator was also extremely helpful in keeping discussions relevant and focused without the generation of large amounts of open-ended general data and unnecessary information.

The major strength of the second phase which was the willingness and ability to pay study was that it took a 'real' product which had been built through engagement with stakeholders and gauged its 'sellability' among potential users in a field survey. The usage of a questionnaire built using the contingent valuation method which has high validity to estimate economic value is also a strength of this phase. The data obtained was thus both deemed to be highly accurate and valid.

The major strength of the third quasi-experimental stage which tested the efficacy of the microinsurance scheme was that it was conducted in a real-world setting where its generalizability was increased. In addition, the study also used multivariate statistical models to control the effects of external factors which were present due to the inability to conduct randomization. The use of these models enabled higher validity of the study results.

5.8 Limitations

Despite the extensive in-depth nature of this study, there were still many limitations to it, some due to inherent issues with the study designs used and some due to time and financing limitations. In the first phase, the use of the retrospective cohort analysis design was a shortcoming as the usage of secondary data opened the door questions about the reliability and accuracy of the data obtained from patient case notes, especially when these were not properly filled in in some cases. In addition, by its design nature this study did not lend itself to establish the temporal relationships between different factors and their relationship to cost of care. The second part of the phase which utilized focus-group discussions was limited due to its oft domination by medical practitioners, who were more in control compared to the non-medical personnel who sometimes did not venture information. Even though the sample was made to be as wide as possible, there was still concerns of generalizability of their opinions. Also, the presence of their peers was felt to render a Hawthorne effect to some of the participants where their responses may have been different if they were not being observed.

The second phase, a direct customer willingness and ability to pay, was subject to the following limitations. The first was that by this method, potential purchasing customers still may have not revealed their true willingness-to-pay, as this was perceived as part of behavior to help indirectly to keep the price of the product that they may use down, for the future. Even though the surveyed individuals did reveal true willingness-to-pay, this again may not necessarily translate into real purchasing behavior, and thus at best this remains a proxy measure of sellability which can only be truly determined from actual sales patterns. Potential customers may also not had the capacity to judge the microinsurance product accurately, despite the explanations being given by the study team, if they had not been exposed to insurance schemes before and this may have led them to undervalue it or overvalue it due to its social benefits (the warm glow effect).

Due to inherent lack of randomization, the third quasi-experimental stage opened itself up to concerns of reduced internal validity, especially amidst the inability to control for confounders. In addition, the short time for which it was conducted meant that this trial was unable to determine long-term effects of the various behavioral effects being studied and whether it would revert to earlier practices patterns over time.

5.9 Recommendations

From the findings of this study, the author makes the following recommendations. The first of these is that since health microinsurance schemes are feasible, acceptable and efficacious as found by this study, longer-term studies should be carried out to determine the effectiveness of such schemes in community setting, ideally via long-term pragmatic trials. Pragmatic trials would be ideal to determine the true 'buy-in' of such schemes among prospective users as compared to just the 'theoretical' demand generated from the willingness/ability to pay phase of the study. In addition, long-term pragmatic trials will also be able to map clearly

the effects of microinsurance schemes on utilization behavior, household expenditures and chronic disease outcomes.

In the earlier part of this chapter, a strong case is made for the implementation of microinsurance schemes both in LICs and MICs, though with differing implementation mechanisms for each. However, implementation of private-driven microinsurance schemes does not mean that the entire duty of care provision be now left to the private sector and markets, as they are. One of the segments of the population which have often been underserved in private sector driven healthcare is the poor and underprivileged, especially the hardcore poor. In this study it has to be noted that equity concerns were largely under-evaluated, since the sample enrolled only households who were already utilizing private primary care services. It is theorized that the hardcore poor utilize the highly-subsidised public healthcare services though there is little evidence for this in Malaysia, while elsewhere in the world, evidence is to the contrary. Specific nested studies to evaluate the enrollment of hardcore poor into primary care microinsurance schemes should be considered as part of future research especially if schemes such as these as scaled-up. Of course, research should be also look into some 'demand-side-financing' measures or means testing which will be used to target the hardcore poor to enable them to obtain equitable access as well.

This study will be of benefit to health planners and policymakers in terms of jump-starting the health system reforms of Malaysia which have been stalled due to a combination of financial deficiencies and loss of political drive. While the reforms planned factored in the deployment of a Social Health Insurance, this may have been a 'bridge too far' as it received heavy opposition from all sectors, including private primary care providers who felt they were being dragged kicking and screaming forcibly into the SHI scheme. As such, via a microinsurance scheme the providers remain in control as the 'insurer; but also begin to bear financial risk via the capitation element of the insurance. This slowly eases them away for the ruinous fee-for-service system which has been determined detrimental to healthcare expenditures, especially as seen in the United States setting. It also sets the scene

for future reform i.e. incorporation into a nationwide SHI scheme by building private providers' bulk purchasing capacities, financial management skills as well as other administrative skills. Health planners could consider the 'powerful' bridging role that microinsurance schemes could have in become the building-blocks of implementable health system reforms and it is recommended they deploy trial schemes such as these towards this end.

The role of government remains a crucial part of the microinsurance scheme, despite its seemingly deceptive role rooted in the private sector. Properly deployed private primary care microinsurance schemes will shift the burden of care provision away from the government in this area, leaving them to deliver secondary and tertiary care, which also can be more easily corporatized over time. This huge advantage to government should be reciprocated by the willingness by the government to act as a reinsurer, in order to minimize risk borne by the individual private provider-'insurers'. By doing this the government will 'underwrite' and assure care-provision to all segments of society across the board, especially if this will enable it to pull-back from delivering these services. The government has similarly been involved in underwriting many developmental infrastructure loans in the past, thus this is not a novel idea to be put forward, rather quite simply implementable.

Other than playing the role of reinsurer, the government will also have large roles to play in terms of stewardship, an important governance function currently being espoused throughout LMICs as well as their high-income counterparts. In its stewardship role, the government must design and implement monitoring and evaluation systems to ensure both quality and efficient delivery of primary care services. This remains un-investigated till date, although evidence from other countries cast aspersions on the true quality and efficiency provided by profit-seeking private primary care providers. The development of such mechanisms are integral to the development of sustainable health reform efforts and can be undertaken in small steps, in line with the deployment of smaller microinsurance schemes. The experience acquired in monitoring and evaluation of these schemes, which can serve

as ‘pilot’ projects, will be invaluable when the times come to scale up these mechanisms for nationwide use.

Thus a strong recommendation is made by this author to consider health microinsurance schemes as a viable first step in system-wide reform for Malaysia. Such schemes can be deployed as a workable strategy and scaled-up gradually and easily, as the necessary infrastructure and capacity is already available. By bringing in private sector primary care providers as partners, the road for reform will be much smoothened as well as being economical and sustainable for the government. Once scaled-up, a large microinsurance network will act as a firm, strong foundation for implementation of a Social Health Insurance scheme for all Malaysians. Similarly, exploration of the viability of such schemes as possible solutions to UHC is recommended for other LMICs.

5.10 Conclusion

This study offers the following conclusions. Firstly, health microinsurance schemes are viable for implementation in private primary care settings in Kuala Lumpur, Malaysia. This may prove directly replicable in other similar settings, not only in Malaysia but in other MICs as well. The benefits derivable from such a scheme may find adaptability and replicability to be of benefit in LICs as well. Secondly, the study proved that microinsurance schemes are efficacious in improving health utilization, lowering health expenditures and improving both acute and chronic disease outcomes. Moving patients from OOP payments to prepaid mechanisms for financing health is beneficial for patients and should be incorporated into health reform efforts, both in Malaysia and in other LMICs. Thirdly, the evidence from this study is used to extrapolate as to the value of microinsurance schemes, especially in private primary care. In many LMICs, this is a sector which evolved separately and exists in parallel outside the public healthcare system, yet is highly utilized by citizens due to perceptions of quality. Incorporating this hitherto largely unregulated sector into a national framework of health provision is highly possible

when small steps are put into place for integration. Health Microinsurance schemes could provide such a solution. In addition, for resource-short LMICs, health microinsurance schemes could also be a viable method to sustainably finance quality healthcare for the citizens of a community. Combining many such sustainable financial communities into a national umbrella would be then, a smaller and easier step to take for LMICs as they trudge along the road to universal healthcare coverage (UHC).

APPENDIX

Appendix A

Respondent Information Sheet and Consent Form –Phase 1 a

Patient Information Sheet (English)

Title of research project: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 1a Retrospective Cohort Cost Analysis Study

Principle researcher's name: Dr Murallitharan Munisamy

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1. You are being invited to take part in a research project. Before you decide to participate it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and do not hesitate to ask if anything is unclear or if you would like more information.

2. This research project involves determining the feasibility, acceptability and effectiveness of a Community Health Microinsurance Scheme for Private Primary Care in Kuala Lumpur, Malaysia, where the researcher proposes to create and test whether a Community Health Microinsurance Scheme will be effective in the Jalan Ipoh area.

3. This study comprises part of Phase 1a of the study. This phase intends to obtain costing information from clinics on how much they spend on treating patients per year and broken down into individual patients. If you are ONE of the selected patients who have been selected randomly from the list of patients in the clinic, the investigators want to obtain **your consent** to access your medical records which are stored in the clinic which you regularly visit.

   After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

4. Members of the study team will be available to give you full information and you can also speak to the doctor/staff at the clinic at which you are following up who is fully aware and informed of the study.

   4.1 For any other information, please feel free to contact the Principle Researcher via phone or email. We will be happy to provide you with any or more information you need in any form such as oral or electronic.

4.2 As our study team members will be administering the questionnaire, you should be able to clearly understand/speak English or Bahasa Malaysia. If you are not comfortable or feel unable to clearly understand the study team members, please feel free to withdraw from the study or inform the study team member of your intent to withdraw.

4.3 No vulnerable groups such as those with psychosis, prisoner, mental retarded, person under eighteen years old, pregnant woman, dementia, disabled, minority, drafted private, very sick person, and refugees are allowed to participate in this study. If you are in one of these groups please identify yourself and withdraw from the study.

1. During the process of screening, if you are found to **NOT** meet the inclusion criteria, the member of study team will thank you, explain why you are not able to be included and allow you to withdraw from the study.

5.1 The inclusion criteria for this study is:
a) You live in the study area
b) This clinic is your regular choice of primary care provider
c) You have been seen here in this clinic since before January 1, 2014
d) You pay for treatment at this clinic by cash/credit-card (out-of-pocket)

5.2 The exclusion criteria for this study is:
a) If you were away from this place of residence for work/transferred for more than 1 month in 2014.
b) You have had regular follow-up in public facilities for chronic disease.
c) You have switched methods of payment in the last year- (e.g newly bought insurance or retired and lost health benefits so paying OOP)

5.3 Your medical records will be used for this study and consent from your doctor has already been sought for this. If you are unhappy or unwilling for your records to be used, please inform the member of the study team who will thank you and allow you to withdraw from the study.

2. There will be NO risky/harmful procedures which may cause ill effect to you in terms of physical, mental, social, economic, or beliefs. If you have ANY concerns in terms of issues that you feel may arise, please **DO NOT** hesitate to immediately communicate with any member of the study team or the Principle Researcher.

7. This study is carried out due to increasing rates of Malaysians suffering from problems of not able to obtain equitable access to healthcare in Malaysia. This is even worsened for low and lower middle income families who have various problems in accessing healthcare. Due to problems with accessing government healthcare many Malaysians frequent private facilities, including for outpatient treatment. Unfortunately they are paying out-of-pocket (OOP) for such access, causing them problems such as monetary difficulties, delays in obtaining treatment as well as poor control of disease. This study, is a part of a series of studies which aims to discover a microinsurance scheme. This study in particular studies the annual costs to treat a patient in private primary care.

8. Participation to the study is **voluntary** and you have the **right to deny** and/or **withdraw** from the study at any time, without any need to give any reason, and there will be no bad impact upon you. Your normal visits and services to your private primary care clinic **WILL NOT** be affected in any way.

9. If you have any question or would like to obtain more information, the researcher can be reached at any time. If the researcher has new information regarding benefit on risk/harm, all efforts will be made to inform you as soon as possible. This practice will provide an opportunity for you to decide whether to stay/not stay with the project.

10. Information related directly to you will be kept **confidential.** Results of the study will be reported as total picture. Any information which could be able to identify you will not appear in the report.

11. There is **NO** compensation given for study participants. However we are able to offer you some small refreshment as a token as our appreciation.

12. If the research is not being performed as indicated in the information, you can report the incident to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

Dr Murallitharan Munisamy
College of Public Health Sciences
Chulalongkorn University
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Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Informed Consent Form (English)

Address: .....
Date .....

Code number of participant .....

I who have signed here below agree to participate in this research project

Title: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 1a:Retrospective Cohort Cost Analysis Study

Principle researcher's name Dr Murallitharan Munisamy

Contact address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
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Telephone: 603-40414667

I have **(read or been informed)** about rationale and objective(s) of the project, what I will be engaged with in details, risk/harm and benefit of this project. The researcher has explained to me and I **clearly understand with satisfaction.**

I willingly **agree** to participate in this project and consent the researcher to

1) Allow my medical records to be viewed and accessed for data collection

After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

I have **the right** to withdraw from this research project at any time as I wish with no need to **give any reason**. This withdrawal will not have any negative impact upon me (normal visits and services to my private primary care clinic will not be affected in any way.

Researcher has guaranteed that procedure(s) acted upon me would be exactly the same as indicated in the information. Any of my personal information will be **kept confidential.** Results of the study will be reported as total picture. Any of personal information which could be able to identify me will not appear in the report.

If I am not treated as indicated in the information sheet, I can report to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

I also have received a copy of information sheet and informed consent form

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Handphone:+60123173575 – WhatsApp/SMS
Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Risalah Informasi Responden (Bahasa)

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 1: Analisis Kajian Kos Retrospektif Kohort

Nama Pengkaji: Dr Murallitharan Munisamy

Jawatan: PHD Student/Researcher

Alamat pejabat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh

51200 Kuala Lumpur

Alamat rumah: 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

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HP: +60123173575 **E-mail:** murallimd@gmail.com

1. Anda telah dijemput untuk menyertai sebuah projek kajian. Sebelum anda ingin menyertai projek ini adalah penting untuk anda memahami mengapa projek ini dijalankan serta apa yang ia melibatkan. Sebelum meneruskan sesi soal jawab adalah penting untuk anda membaca dan memahami informasi dalam risalah maklumat responden ini.

2. Kajian ini dijalankan untuk menganalisa dan memperolehi keputusan feasibiliti, penerimaan dan keberkesanan skim mikroinsurans kesihatan dalam meningkatkan kadar ekuiti kesihatan dan hasil klinikal bagi klinik perubatan primer swasta di Kuala Lumpur Malaysia. Pengkaji berhasrat untuk mencipta dan mencuba sama ada sebuah system mikroinsurans dapat berfungsi dengan jayanya di kawasan sekitar Jalan Ipoh.

3. Kajian ini adalah Fasa 1 daripada 3-fasa kajian. Fasa pertama melibatkan perolehan informasi kos daripada klinik swasta tentang berapa kos untuk merawat pesakit setiap tahun dan dipecahkan mengikut pesakit individu. Jika anda salah sebuah pesakit yang telah dipilih secara rawak dari senarai pesakit di klinik, pasukan pengkaji mahu mendapatkan kebenaran untuk memeriksa rekod kesihatan anda yang disimpan di klinik yang sering anda kunjungi.

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

4. Ahli pasukan kajian akan memberikan maklumat sepenuhnya kepada anda dan anda juga boleh berbual dengan doctor/staf bertugas di klinik anda yang mengetahui tentang kajian tersebut.

   4.1 Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

4.2 Anda perlu mempunyai kebolehan bertutur dan memahami Bahasa Malaysia atau Bahasa Inggeris. Sekiranya anda tidak boleh berbuat demikian, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

4.3 Tiada ahli dari golongan pesakit mental, mempunyai kecacatan mental, banduan, kanak-kanak bawah lapan belas tahun atau pelarian dibenarkjan turut serta dalam kajian ini. Sekiranya anda termasuk dalam golongan ini, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

1. Ketika proses pemilihan jika anda didapati tidak memenuhi kriteria saringan ahli pasukan pengkaji akan menjemput anda mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

6.1 Kriteria kemasukan bagi kajian ini:

1. Anda tinggal dalam kawasan kajian
2. Klinik ini adalah klinik yang sering anda kunjungi
3. Anda telah melawat klinik ini sebelum Januari 1, 2014
4. Anda membuat bayaran di klinik ini secara tunai/kad kredit.

6.2 Kriteria pengecualian dari kajian ini

1. Isirumah keluarga berada di luar kawasan ini selama lebih daripada 1 bulan dalam tahun 2014.
2. Isirumah dengan pesakit penyakit kronik yang menerima rawatan susulan di sektor awam
3. Isirumah dengan ahli yang telah menukar kaedah pembayaran kepada klinik (baru bersara dan tamat tempoh insurans bayaran majikan)

6.3 Rekod pesakit anda akan digunakan dalam Fasa ini dan doktor anda telahpun bersetuju untuk perkara ini. Jika anda tidak gembira atau berpuas hati dengan perkara ini sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah

2. Tiada sebarang risiko/prosedur berbahaya yang akan dijalankan ke atas anda. Namun jika ada sebarang kemusykilan sila hubungi bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

7. Kajian ini dijalakankan kerana semakin ramai rakyat Malaysia yang mengalami masalah tidak dapat menerima rawatan kesihatan yang berkualiti secare ekuiti di Malaysia. Oleh kerana pelbagai masalah dalam menerima rawatan di pusat kerajaan, ramai terpaksa menerima rawatan di pusat kesihatan primer swasta, dengan masalah-masalah yang seiring dengannya iaitu kesukaran untuk membayar untuk rawatan tersebut secara tunai atau 'Out-of-Pocket'. Kesukaran untuk membayar secara tunai ini mewujudkan masalah-masalah seperti kesempitan wang untuk rawatan kesihatan atau lebih merisaukan lagi, melewatkan rawatan sehingga waktu tergentar atau mengabaikan rawatan penyakit kronik seperti kencing manis dan darah tinggi. Tujuan kajian ini adalah untuk mengetahui samada sebuah skim mikroinsurans dapat mengurangkan beban-beban masalah tersebut. Fasa ini khususnya, mengkaji kos merawat seorang pesakit setahun di klinik rawatan primer swasta.

8. Anda ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada anda dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini

9. Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

10. Semua maklumat yang diperolehi melalui kajian ini akan dianalisa dan diterbitkan. Segala maklumat adalah SULIT dan akan hanya dapat dilihat oleh pengkaji yang bertauliah dan jika perlu.

11. Tiada sebarang bayaran yang dikenakan atau saguhati wang diberikan kepada anda apabila menyertai kajian ini.

12. Jika kajian tidak dijalankan seperti yang telah dimaklumkan, sila laporkan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Borang Persetujuan Berpengetahuan (Bahasa)

Alamat: .....

Tarikh .....

.....

Nombor Kod Peserta .....

Saya yang bertandatangan seperti di bawah bersetuju untuk menyertai projek kajian ini

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 1: Analisis Kajian Kos Retrospektif Kohort

Pengkaji Utama: Dr Murallitharan Munisamy
Alamat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur
Telefon: 603-40414667

Saya telah membaca risalah maklumat responden dan telah mengambil masa secukupnya untuk memikirkan perkara tersebut dan juga telah menerima jawapan yang lengkap serta sewajarnya dan memuaskan bagi segala persoalan saya.

Saya setuju sepenuh hati untuk melibatkan diri dalam projek ini dan memberikan persetujuan kepada pengkaji untuk

1) Membenarkan rekod-rekod perubatan saya ditatapi dan digunakan untuk pengumpulan data

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

Saya ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada saya dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini.

Pengkaji telah memberikan jaminan bahawa segala prosedur kajian akan serupa seperti yang telah dinyatakan kepada saya. Sebarang maklumat peribadi akan dirahsiakan. Keputusan kajian akan dilaporkan sebagai data agregat.Sebarang maklumat sulit yang boleh mengenalpasti diri saya tidak akan dikemukakan dalam mana-mana penerbitan.

Jika saya tidak dilayan seperti yang dinyatakan dalam risalah maklumat responden, saya boleh membuat laporan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

Saya juga telah menerima salinan risalah maklumat responden dan borang persetujuan berpengetahuan.

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Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ..... Sign .....

(.....) (.....)

Participant Witness

Appendix B

Respondent Information Sheet and Consent Form –Phase 1 b

Patient Information Sheet (English)

Title of research project: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 1b – Focus Group Discussion

Principle researcher's name: Dr Murallitharan Munisamy

Position: PHD Student/Researcher

Office address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur

Home address : 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

Telephone (office):603-40414667 Telephone (home) 603-90754780

Cell phone +60123173575 **E-mail:** murallimd@gmail.com

1. You are being invited to take part in a research project. Before you decide to participate it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and do not hesitate to ask if anything is unclear or if you would like more information.

2. This research project involves determining the feasibility, acceptability and effectiveness of a Community Health Microinsurance Scheme for Private Primary Care in Kuala Lumpur, Malaysia, where the researcher proposes to create and test whether a Community Health Microinsurance Scheme will be effective in the Jalan Ipoh area.

3. This study comprises part of Phase 1b of the study. This phase intends to obtain information from focus group discussions comprising private primary care providers (managers, physicians, owners) to formulate a health microinsurance scheme in terms of benefit package, price and rules governing its implementation. If you have been invited to join these focus group discussions, the investigators want to obtain **your consent** to record your opinions and information from the discussion session.

   After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

4. Members of the study team will be available to give you full information and you can also speak to the discussion moderator for any details you may need.

   4.1 For any other information, please feel free to contact the Principle Researcher via phone or email. We will be happy to provide you with any or more information you need in any form such as oral or electronic.

4.2 As our study team members will be administering the questionnaire, you should be able to clearly understand/speak English or Bahasa Malaysia. If you are not comfortable or feel unable to clearly understand the study team members, please feel free to withdraw from the study or inform the study team member of your intent to withdraw.

4.3 No vulnerable groups such as those with psychosis, prisoner, mental retarded, person under eighteen years old, pregnant woman, dementia, disabled, minority, drafted private, very sick person, and refugees are allowed to participate in this study. If you are in one of these groups please identify yourself and withdraw from the study.

1. During the process of screening, if you are found to **NOT** meet the inclusion criteria, the member of study team will thank you, explain why you are not able to be included and allow you to withdraw from the study.

5.1 The inclusion criteria for this study is:

1. Be a private primary care provider/representative such as Primary care physicians, clinic managers or physician-owners involved in private primary care clinics in the Jalan Ipoh area.
2. Be a private primary care provider with least one year experience in practicing primary care medicine.
3. Be a private primary care provider having at least one year of working at the particular clinic where he/she was based currently so that they could base their experiences in the local setting.

5.2 The exclusion criteria for this study is:

1. You are a locum medical officer and not a permanent doctor in the clinic.

5.3 Your opinions from the discussion will be used for this study. If you are unhappy or unwilling for your opinions to be used, please inform the member of the study team who will thank you and allow you to withdraw from the study.

2. There will be NO risky/harmful procedures which may cause ill effect to you in terms of physical, mental, social, economic, or beliefs. If you have ANY concerns in terms of issues that you feel may arise, please **DO NOT** hesitate to immediately communicate with any member of the study team or the Principle Researcher.

7. This study is carried out due to increasing rates of Malaysians suffering from problems of not able to obtain equitable access to healthcare in Malaysia. This is even worsened for low and lower middle income families who have various problems in accessing healthcare. Due to problems with accessing government healthcare many Malaysians frequent private facilities, including for outpatient treatment. Unfortunately they are paying out-of-pocket (OOP) for such access, causing them problems such as monetary difficulties, delays in obtaining treatment as well as poor control of disease. This study, is a part of a series of studies which aims to discover a microinsurance scheme. This study in particular seeks opinions from private primary care providers such as yourself on the formulation and governance of a health microinsurance scheme.

8. Participation to the study is **voluntary** and you have the **right to deny** and/or **withdraw** from the study at any time, without any need to give any reason, and there will be no bad impact upon you.

9. If you have any question or would like to obtain more information, the researcher can be reached at any time. If the researcher has new information regarding benefit on risk/harm, all efforts will be made to inform you as soon as possible. This practice will provide an opportunity for you to decide whether to stay/not stay with the project.

10. Information related directly to you will be kept **confidential.** Results of the study will be reported as total picture. Any information which could be able to identify you will not appear in the report.

11. There is **NO** compensation given for study participants. However we are able to offer you some small refreshment as a token as our appreciation.

12. If the research is not being performed as indicated in the information, you can report the incident to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Chulalongkorn University

Risalah Informasi Responden (Bahasa)

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 1b: Diskusi Kumpulan Fokus

Nama Pengkaji: Dr Murallitharan Munisamy

Jawatan: PHD Student/Researcher

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1. Anda telah dijemput untuk menyertai sebuah projek kajian. Sebelum anda ingin menyertai projek ini adalah penting untuk anda memahami mengapa projek ini dijalankan serta apa yang ia melibatkan. Sebelum meneruskan sesi soal jawab adalah penting untuk anda membaca dan memahami informasi dalam risalah maklumat responden ini.

2. Kajian ini dijalankan untuk menganalisa dan memperolehi keputusan feasibiliti, penerimaan dan keberkesanan skim mikroinsurans kesihatan dalam meningkatkan kadar ekuiti kesihatan dan hasil klinikal bagi klinik perubatan primer swasta di Kuala Lumpur Malaysia. Pengkaji berhasrat untuk mencipta dan mencuba sama ada sebuah system mikroinsurans dapat berfungsi dengan jayanya di kawasan sekitar Jalan Ipoh.

3. Kajian ini adalah Fasa 1b daripada 3-fasa kajian. Fasa ini melibatkan pengumpulan maklumat dari diskusi kumpulan focus yang terdiri daripada para pemilik, pengurus dan doctor yang berkerja untuk menyarankan sebuah skim mikroinsurans dari segi harga, jenis perkhidmatan dan implementasi pakej tersebut. Jika anda dijemput turut hadir, anda akan diminta memberi kebenaran untuk merakamkan pendapat anda dan maklumat dari diskusi.

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

4. Ahli pasukan kajian akan memberikan maklumat sepenuhnya kepada anda dan anda juga boleh berbual dengan doctor/staf bertugas di klinik anda yang mengetahui tentang kajian tersebut.

5.1 Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

5.2 Anda perlu mempunyai kebolehan bertutur dan memahami Bahasa Malaysia atau Bahasa Inggeris. Sekiranya anda tidak boleh berbuat demikian, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

5.3 Tiada ahli dari golongan pesakit mental, mempunyai kecacatan mental, banduan, kanak-kanak bawah lapan belas tahun atau pelarian dibenarkjan turut serta dalam kajian ini. Sekiranya anda termasuk dalam golongan ini, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

1. Ketika proses pemilihan jika anda didapati tidak memenuhi kriteria saringan ahli pasukan pengkaji akan menjemput anda mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

6.1 Kriteria kemasukan bagi kajian ini:

1. Anda adalah doctor tetap/pengurus/doctor-pemilik klinik rawatan primer swasta di Jalan Ipoh
2. Anda adalah doctor yang telah bekerja dalam kesihatan primer untuk sekurang-kurangnya 1 tahun.
3. Anda adalah doctor yang telah bekerja sekurang-kurangnya satu tahun di klinik yang anda berada pada masa kini

6.2 Kriteria pengecualian dari kajian ini

1. Anda pegawai perubatan lokum atau pegawai perubatan bukan tetap di klinik tersebut.

6.3 Pendapat anda akan digunakan dalam Fasa ini. Jika anda tidak gembira atau berpuas hati dengan perkara ini sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah

2. Tiada sebarang risiko/prosedur berbahaya yang akan dijalankan ke atas anda. Namun jika ada sebarang kemusykilan sila hubungi bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

7. Kajian ini dijalakankan kerana semakin ramai rakyat Malaysia yang mengalami masalah tidak dapat menerima rawatan kesihatan yang berkualiti secare ekuiti di Malaysia. Oleh kerana pelbagai masalah dalam menerima rawatan di pusat kerajaan, ramai terpaksa menerima rawatan di pusat kesihatan primer swasta, dengan masalah-masalah yang seiring dengannya iaitu kesukaran untuk membayar untuk rawatan tersebut secara tunai atau 'Out-of-Pocket'. Kesukaran untuk membayar secara tunai ini mewujudkan masalah-masalah

seperti kesempitan wang untuk rawatan kesihatan atau lebih merisaukan lagi, melewatkan rawatan sehingga waktu tergentar atau mengabaikan rawatan penyakit kronik seperti kencing manis dan darah tinggi. Tujuan kajian ini adalah untuk mengetahui samada sebuah skim mikroinsurans dapat mengurangkan beban-beban masalah tersebut. Fasa ini khususnya, mengumpul pendapat dari pihak pengendali klinik perawatan primer swasta untuk mengetahui bagaimana membina skim mikroinsurans, harga serta pakej yang perlu ditawarkan.

8. Anda ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada anda dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini

9. Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

10. Semua maklumat yang diperolehi melalui kajian ini akan dianalisa dan diterbitkan. Segala maklumat adalah SULIT dan akan hanya dapat dilihat oleh pengkaji yang bertauliah dan jika perlu.

11. Tiada sebarang bayaran yang dikenakan atau saguhati wang diberikan kepada anda apabila menyertai kajian ini.

12. Jika kajian tidak dijalankan seperti yang telah dimaklumkan, sila laporkan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

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College of Public Health Sciences
Chulalongkorn University

Borang Persetujuan Berpengetahuan (Bahasa)

Alamat:.....

Tarikh .....

.....

Nombor Kod Peserta .....

Saya yang bertandatangan seperti di bawah bersetuju untuk menyertai projek kajian ini

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 1b: Diskusi Kumpulan Fokus

Pengkaji Utama: Dr Murallitharan Munisamy
Alamat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur
Telefon: 603-40414667

Saya telah membaca risalah maklumat responden dan telah mengambil masa secukupnya untuk memikirkan perkara tersebut dan juga telah menerima jawapan yang lengkap serta sewajarnya dan memuaskan bagi segala persoalan saya.

Saya setuju sepenuh hati untuk melibatkan diri dalam projek ini dan memberikan persetujuan kepada pengkaji untuk

1) Membenarkan pendapat saya yang dikumpul ketika sesi diskusi kumpulan focus digunakan

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

Saya ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada saya dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini.

Pengkaji telah memberikan jaminan bahawa segala prosedur kajian akan serupa seperti yang telah dinyatakan kepada saya. Sebarang maklumat peribadi akan dirahsiakan. Keputusan kajian akan dilaporkan sebagai data agregat.Sebarang maklumat sulit yang boleh mengenalpasti diri saya tidak akan dikemukakan dalam mana-mana penerbitan.

Jika saya tidak dilayan seperti yang dinyatakan dalam risalah maklumat responden, saya boleh membuat laporan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

Saya juga telah menerima salinan risalah maklumat responden dan borang persetujuan berpengetahuan.

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Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Appendix C

Respondent Information Sheet and Consent Form- Phase 2

Patient Information Sheet (English)

Title of research project: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 2 – Willingness and Ability to Pay (WATP) Study

Principle researcher's name: Dr Murallitharan Munisamy

Position: PHD Student/Researcher

Office address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur

Home address : 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

Telephone (office):603-40414667 Telephone (home) 603-90754780

Cell phone +60123173575 **E-mail:** murallimd@gmail.com

1. You are being invited to take part in a research project. Before you decide to participate it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and do not hesitate to ask if anything is unclear or if you would like more information.

2. This research project involves determining the feasibility, acceptability and effectiveness of a Community Health Microinsurance Scheme for Private Primary Care in Kuala Lumpur, Malaysia, where the researcher proposes to create and test whether a Community Health Microinsurance Scheme will be effective in the Jalan Ipoh area.

3. This study comprises part of Phase 2 of the study. This phase intends to obtain information from you on whether you would be willing and able to pay for a proposed microinsurance scheme via a survey. If you have been selected to answer this survey, the investigators want to obtain **your consent** to record your answers to this questionnaire. This process should take about 20-30 minutes.

   After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

4. Members of the study team will be available to give you full information and you can also speak to the discussion moderator for any details you may need.

4.1 For any other information, please feel free to contact the Principle Researcher via phone or email. We will be happy to provide you with any or more information you need in any form such as oral or electronic

4.2 As our study team members will be administering the questionnaire, you should be able to clearly understand/speak English or Bahasa Malaysia. If you are not comfortable or feel unable to clearly understand the study team members, please feel free to withdraw from the study or inform the study team member of your intent to withdraw.

4.3 No vulnerable groups such as those with psychosis, prisoner, mental retarded, person under eighteen years old, pregnant woman, dementia, disabled, minority, drafted private, very sick person, and refugees are allowed to participate in this study. If you are in one of these groups please identify yourself and withdraw from the study.

1. During the process of screening, if you are found to **NOT** meet the inclusion criteria, the member of study team will thank you, explain why you are not able to be included and allow you to withdraw from the study.

5.1 The inclusion criteria for this study is:

1. Be an adult patient visiting the clinic when this survey is being carried out
2. Pay for treatment by cash or credit card (out-of-pocket)

5.2 Your answers to the survey questions will be used for this study. If you are unhappy or unwilling for your opinions to be used, please inform the member of the study team who will thank you and allow you to withdraw from the study.

2. There will be NO risky/harmful procedures which may cause ill effect to you in terms of physical, mental, social, economic, or beliefs. If you have ANY concerns in terms of issues that you feel may arise, please **DO NOT** hesitate to immediately communicate with any member of the study team or the Principle Researcher.

7. This study is carried out due to increasing rates of Malaysians suffering from problems of not able to obtain equitable access to healthcare in Malaysia. This is even worsened for low and lower middle income families who have various problems in accessing healthcare. Due to problems with accessing government healthcare many Malaysians frequent private facilities, including for outpatient treatment. Unfortunately they are paying out-of-pocket (OOP) for such access, causing them problems such as monetary difficulties, delays in obtaining treatment as well as poor control of disease. This study, is a part of a series of studies which aims to discover a microinsurance scheme. This study in particular seeks answers from members of the public who are users of private primary care on what is the price you would be willing and able to pay for a proposed microinsurance scheme.

8. Participation to the study is **voluntary** and you have the **right to deny** and/or **withdraw** from the study at any time, without any need to give any reason, and there will be no bad impact upon you.

9. If you have any question or would like to obtain more information, the researcher can be reached at any time. If the researcher has new information regarding benefit on risk/harm, all efforts will be made to inform you as soon as possible. This practice will provide an opportunity for you to decide whether to stay/not stay with the project.

10. Information related directly to you will be kept **confidential.** Results of the study will be reported as total picture. Any information which could be able to identify you will not appear in the report.

11. There is **NO** compensation given for study participants. However we are able to offer you some small refreshment as a token as our appreciation.

12. If the research is not being performed as indicated in the information, you can report the incident to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Informed Consent Form (English)

Address: .....
Date .....

Code number of participant .....

I who have signed here below agree to participate in this research project

Title: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 2 : Willingness and Ability to Pay (WATP) Study

Principle researcher's name Dr Murallitharan Munisamy

Contact address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur

Telephone: 603-40414667

I have **(read or been informed)** about rationale and objective(s) of the project, what I will be engaged with in details, risk/harm and benefit of this project. The researcher has explained to me and I **clearly understand with satisfaction.**

I willingly **agree** to participate in this project and consent the researcher to

1) Allow my answers garnered during the survey to be recorded and accessed for data collection

After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

I have **the right** to withdraw from this research project at any time as I wish with no need to **give any reason**. This withdrawal will not have any negative impact upon me (normal visits and services to my private primary care clinic will not be affected in any way.

Researcher has guaranteed that procedure(s) acted upon me would be exactly the same as indicated in the information. Any of my personal information will be **kept confidential.** Results of the study will be reported as total picture. Any of personal information which could be able to identify me will not appear in the report.

If I am not treated as indicated in the information sheet, I can report to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

I also have received a copy of information sheet and informed consent form

Dr Muralitharan Munisamy
College of Public Health Sciences
Chulalongkorn University
Handphone:+60123173575 – WhatsApp/SMS
Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Risalah Informasi Responden (Bahasa)

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 2: Kesanggupan dan Kebolehan Membuat Bayaran

Nama Pengkaji: Dr Murallitharan Munisamy

Jawatan: PHD Student/Researcher

Alamat pejabat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh

51200 Kuala Lumpur

Alamat rumah: 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

Telefon (office):603-40414667 Telefon (Rumah) 603-90754780

HP: +60123173575 **E-mail:** murallimd@gmail.com

1. Anda telah dijemput untuk menyertai sebuah projek kajian. Sebelum anda ingin menyertai projek ini adalah penting untuk anda memahami mengapa projek ini dijalankan serta apa yang ia melibatkan. Sebelum meneruskan sesi soal jawab adalah penting untuk anda membaca dan memahami informasi dalam risalah maklumat responden ini.

2. Kajian ini dijalankan untuk menganalisa dan memperolehi keputusan feasibiliti, penerimaan dan keberkesanan skim mikroinsurans kesihatan dalam meningkatkan kadar ekuiti kesihatan dan hasil klinikal bagi klinik perubatan primer swasta di Kuala Lumpur Malaysia. Pengkaji berhasrat untuk mencipta dan mencuba sama ada sebuah system mikroinsurans dapat berfungsi dengan jayanya di kawasan sekitar Jalan Ipoh.

3. Kajian ini adalah Fasa 2 daripada 3-fasa kajian. Fasa 2 melibatkan mendapatkan pendapat dari pesakit yang membuat bayaran secare tunai ketika melawat klinik swasta. Sejumlah 461 pesakit adalah diperlukan untuk tujuan tersebut. Dalam Fasa 2, pesakit akan disuruh menjawab soalan yang dikemukakan oleh ahli pasukan pengkaji. Soalan-soalan ini adalah berkenaan samada anda akan berminat untuk membeli insurans dan harga yang anda sanggup bayar untuk skim insurans tersebut untuk menerima rawatan di klinik swasta. Soal-jawab ini dijangka memakan masa 20-30 minit.

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

4. Ahli pasukan kajian akan memberikan maklumat sepenuhnya kepada anda dan anda juga boleh berbual dengan doctor/staf bertugas di klinik anda yang mengetahui tentang kajian tersebut.

5.1 Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

5.2 Anda perlu mempunyai kebolehan bertutur dan memahami Bahasa Malaysia atau Bahasa Inggeris. Sekiranya anda tidak boleh berbuat demikian, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

5.3 Tiada ahli dari golongan pesakit mental, mempunyai kecacatan mental, banduan, kanak-kanak bawah lapan belas tahun atau pelarian dibenarkjan turut serta dalam kajian ini. Sekiranya anda termasuk dalam golongan ini, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

1. Ketika proses pemilihan jika anda didapati tidak memenuhi kriteria saringan ahli pasukan pengkaji akan menjemput anda mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

5.1 Kriteria kemasukan bagi kajian ini:

1. Pesakit dewasa yang melawat klinik ketika soal-selidik dijalankan
2. Membuat bayaran untuk rawatan dengan tunai atau kad kredit.

5.2 Jawapan anda bagi soal-selidik akan digunakan dalam Fasa ini. Jika anda tidak gembira atau berpuas hati dengan perkara ini sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah

2. Tiada sebarang risiko/prosedur berbahaya yang akan dijalankan ke atas anda. Namun jika ada sebarang kemusykilan sila hubungi bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

7. Kajian ini dijalakankan kerana semakin ramai rakyat Malaysia yang mengalami masalah tidak dapat menerima rawatan kesihatan yang berkualiti secare ekuiti di Malaysia. Oleh kerana pelbagai masalah dalam menerima rawatan di pusat kerajaan, ramai terpaksa menerima rawatan di pusat kesihatan primer swasta, dengan masalah-masalah yang seiring dengannya iaitu kesukaran untuk membayar untuk rawatan tersebut secara tunai atau 'Out-of-Pocket'. Kesukaran untuk membayar secara tunai ini mewujudkan masalah-masalah seperti kesempitan wang untuk rawatan kesihatan atau lebih merisaukan lagi, melewatkan rawatan sehingga waktu tergentar atau mengabaikan rawatan penyakit kronik seperti kencing manis dan darah tinggi. Tujuan kajian ini adalah untuk mengetahui samada sebuah skim mikroinsurans dapat mengurangkan beban-beban masalah tersebut. Fasa ini khususnya, mengkaji sama ada anda sebagi orang awam berkesanggupan dan berupaya untuk membuat pembayaran bagi sebuah skim mikroinsurans.

8. Anda ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan

memberikan kesan negatif kepada anda dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini

9. Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

10. Semua maklumat yang diperolehi melalui kajian ini akan dianalisa dan diterbitkan. Segala maklumat adalah SULIT dan akan hanya dapat dilihat oleh pengkaji yang bertauliah dan jika perlu.

11. Tiada sebarang bayaran yang dikenakan atau saguhati wang diberikan kepada anda apabila menyertai kajian ini.

12. Jika kajian tidak dijalankan seperti yang telah dimaklumkan, sila laporkan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Borang Persetujuan Berpengetahuan (Bahasa)

Alamat: .....

Tarikh .....

.....

Nombor Kod Peserta .....

Saya yang bertandatangan seperti di bawah bersetuju untuk menyertai projek kajian ini

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 2: Kesanggupan dan Kebolehan Membuat Bayaran

Pengkaji Utama: Dr Murallitharan Munisamy
Alamat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur
Telefon: 603-40414667

Saya telah membaca risalah maklumat responden dan telah mengambil masa secukupnya untuk memikirkan perkara tersebut dan juga telah menerima jawapan yang lengkap serta sewajarnya dan memuaskan bagi segala persoalan saya.

Saya setuju sepenuh hati untuk melibatkan diri dalam projek ini dan memberikan persetujuan kepada pengkaji untuk

1) Membenarkan jawapan saya kepada soal-selidik digunakan untuk kajian

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

Saya ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada saya dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini.

Pengkaji telah memberikan jaminan bahawa segala prosedur kajian akan serupa seperti yang telah dinyatakan kepada saya. Sebarang maklumat peribadi akan dirahsiakan. Keputusan kajian akan dilaporkan sebagai data agregat.Sebarang maklumat sulit yang boleh mengenalpasti diri saya tidak akan dikemukakan dalam mana-mana penerbitan.

Jika saya tidak dilayan seperti yang dinyatakan dalam risalah maklumat responden, saya boleh membuat laporan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

Saya juga telah menerima salinan risalah maklumat responden dan borang persetujuan berpengetahuan.

Dr Muralitharan Munisamy
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Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Appendix D

Respondent Information Sheet and Consent Form- Phase 3

Patient Information Sheet (English)

Title of research project: FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 3: Quasi-experimental:

A pre-post survey of a Control and Experimental clinic

Principle researcher's name: Dr Murallitharan Munisamy

Position: PHD Student/Researcher

Office address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur

Home address : 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

Telephone (office):603-40414667 Telephone (home) 603-90754780

Cell phone +60123173575 **E-mail:** murallimd@gmail.com

1. You are being invited to take part in a research project. Before you decide to participate it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and do not hesitate to ask if anything is unclear or if you would like more information.

2. This research project involves determining the feasibility, acceptability and effectiveness of a Community Health Microinsurance Scheme for Private Primary Care in Kuala Lumpur, Malaysia, where the researcher proposes to create and test whether a Community Health Microinsurance Scheme will be effective in the Jalan Ipoh area.

3. This study is Phase 3 of a 3-phase study. It will involve the follow-up of 57 households who are being already followed-up at a particular private primary care clinic for 6 months. One of the clinics will be the test site while the other will be the control site. If you are one of the selected households in the test site, you will be given access to an insurance scheme Free-Of-Charge which will allow you to use the services at the clinic for the period for free while those at the control site clinic will be continuing to see/visit as per their normal routine if and when they are sick. At NO time, will you see another doctor or go to another clinic except your regular normal doctors and staff at your regular clinic.

4. In Phase 3 patients will be asked to answer a questionnaire at the start of the 6 month period and after the completion of the 6 months period. This questionnaire is expected to last about 1 hour and will be answered together with a member of the study team to guide you. This study **WILL NOT** utilize your samples such blood or urine but **WILL** use the results of your normally scheduled tests and your medical record kept by your doctor at this clinic.

After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

1. Members of the study team will be available to give you full information and you can also speak to the doctor/staff at the clinic at which you are following up who is fully aware and informed of the study.

5.1 For any other information, please feel free to contact the Principle Researcher via phone or email. We will be happy to provide you with any or more information you need in any form such as oral or electronic.

5.2 As our study team members will be administering the questionnaire, you should be able to clearly understand/speak English or Bahasa Malaysia. If you are not comfortable or feel unable to clearly understand the study team members, please feel free to withdraw from the study or inform the study team member of your intent to withdraw.

5.3 No vulnerable groups such as those with psychosis, prisoner, mental retarded, person under eighteen years old, pregnant woman, dementia, disabled, minority, drafted private, very sick person, and refugees are allowed to participate in this study. If you are in one of these groups please identify yourself and withdraw from the study.

2. During the process of screening, if you are found to **NOT** meet the inclusion criteria, the member of study team will thank you, explain why you are not able to be included and allow you to withdraw from the study.

6.1 Inclusion criteria for this study:

1. Households located in the study area

2. Method of payment to clinic is by out-of-pocket

3. This is household's regular choice of primary care provider.

4. Household members has been seen in the clinic since at least the past two years i.e from before Jan 1, 2014

6.2 Exclusion criteria for this study:

1. Households with members who were away from this place of residence for work/transferred for more than 1 month in 2014.

2. Households with members who had regular follow-up in public facilities for chronic disease.

3. Households with members who have switched methods of payment in the last year- (e.g newly bought insurance or retired and lost health benefits so paying OOP)

6.3 As stated earlier, medical records of patients in this phase WILL be used and consent from your doctor has already been sought for this. If you are

unhappy or unwilling for your records to be used, please inform the member of the study team who will thank you and allow you to withdraw from the study.

1. There will be NO risky/harmful procedures which may cause ill effect to you in terms of physical, mental, social, economic, or beliefs. If you have ANY concerns in terms of issues that you feel may arise, please **DO NOT** hesitate to immediately communicate with any member of the study team or the Principle Researcher.

8. This study is carried out due to increasing rates of Malaysians suffering from problems of not able to obtain equitable access to healthcare in Malaysia. Due to problems with accessing government healthcare many Malaysians frequent private facilities, including for outpatient treatment. Unfortunately they are paying out-of-pocket (OOP) for such access, causing them problems such as monetary difficulties, delays in obtaining treatment as well as poor control of disease. This study, is a part of a series of studies which aims to discover a microinsurance scheme. This study in particular studies the effectiveness of a microinsurance scheme in providing access to healthcare, lowering health expenditure and controlling disease. .

9. Participation to the study is **voluntary** and you have the **right to deny** and/or **withdraw** from the study at any time, without any need to give any reason, and there will be no bad impact upon you. Your normal visits and services to your private primary care clinic **WILL NOT** be affected in any way.

10. If you have any question or would like to obtain more information, the researcher can be reached at any time. If the researcher has new information regarding benefit on risk/harm, all efforts will be made to inform you as soon as possible. This practice will provide an opportunity for you to decide whether to stay/not stay with the project.

11. Information related directly to you will be kept **confidential.** Results of the study will be reported as total picture. Any information which could be able to identify you will not appear in the report.

12. There is **NO** compensation for participants. However we are able to offer you some small refreshment as a token as our appreciation.

13. If the research is not being performed as indicated in the information, you can report the incident to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Informed Consent Form (English)

Address: .....
Date .....

Code number of participant .....

I who have signed here below agree to participate in this research project

Title SUITABILITY, FEASIBILITY,ACCEPTABILITY, AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTHCARE EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Phase 3: Quasi-experimental:

A pre-post survey of a Control and Experimental clinic

Principle researcher's name Dr Murallitharan Munisamy

Contact address: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur

Telephone: 603-40414667

I have **(read or been informed)** about rationale and objective(s) of the project, what I will be engaged with in details, risk/harm and benefit of this project. The researcher has explained to me and I **clearly understand with satisfaction.**

I willingly **agree** to participate in this project and consent the researcher to
1) Allow my responses to the questionnaires to be used
2) Allow my participation in the Community Health Microinsurance Scheme
3) Allow my medical records to be viewed and accessed for data collection

After the end of the project all personal data both in the form of paper and electronic form will be deleted. All collected information will only be used in the form of aggregated information (collected together) for scientific publications and not use any individual personal data.

I have **the right** to withdraw from this research project at any time as I wish with no need to **give any reason**. This withdrawal will not have any negative impact upon me (normal visits and services to my private primary care clinic will not be affected in any way.

Researcher has guaranteed that procedure(s) acted upon me would be exactly the same as indicated in the information. Any of my personal information will be **kept confidential.** Results of the study will be reported as total picture. Any of personal information which could be able to identify me will not appear in the report.

If I am not treated as indicated in the information sheet, I can report to the Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

I also have received a copy of information sheet and informed consent form

Dr Muralitharan Munisamy
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Chulalongkorn University
Handphone:+60123173575 – WhatsApp/SMS
Email: murallimd@gmail.com

Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Risalah Informasi Responden (Bahasa)

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 3: Quasi-experimental:

Soal-selidik Sebelum dan Selepas Klinik Eksperimen dan Kontrol

Nama Pengkaji: Dr Murallitharan Munisamy

Jawatan: PHD Student/Researcher

Alamat pejabat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh

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Alamat rumah: 11 Jalan Alam Jaya 5 Taman Alam Jaya 43200 Cheras Selangor

Telefon (office):603-40414667 Telefon (Rumah) 603-90754780

HP: +60123173575 **E-mail:** murallimd@gmail.com

1. Anda telah dijemput untuk menyertai sebuah projek kajian. Sebelum anda ingin menyertai projek ini adalah penting untuk anda memahami mengapa projek ini dijalankan serta apa yang ia melibatkan. Sebelum meneruskan sesi soal jawab adalah penting untuk anda membaca dan memahami informasi dalam risalah maklumat responden ini.

2. Kajian ini dijalankan untuk menganalisa dan memperolehi keputusan feasibiliti, penerimaan dan keberkesanan skim mikroinsurans kesihatan dalam meningkatkan kadar ekuiti kesihatan dan hasil klinikal bagi klinik perubatan primer swasta di Kuala Lumpur Malaysia. Pengkaji berhasrat untuk mencipta dan mencuba sama ada sebuah system mikroinsurans dapat berfungsi dengan jayanya di kawasan sekitar Jalan Ipoh.

3. Kajian ini adalah Fasa 3 daripada 3-fasa kajian. Fasa 3 melibatkan jejakan ulangan 57 isirumah yang sudah sedia mengikuti rawatan di salah sebuah klinik yang akan dipilih sebagai eksperimen atau klinik control. Jika anda berada di klinik eksperimen, anda akan mendapat akses ke sebuah skim insurans bebas bayaran di mana anda boleh menggunakan perkhidmatan di klinik itu secara percuma untuk menerima rawatan seperti biasa. Mereka di klinik control akan menerima rawatan seperti biasa dengan bayaran seperti biasa. Anda tidak diperlukan menerima rawatan yang bukan biasa anda dapati dari doktor/staf yang tidak anda biasa temui.

4. Dalam Fasa 3 peserta akan diwajibkan menjawab soal-selidik pada mula dan tamatnya tempoh insurans selama 6 bulan. Soalan-soalan ini dijangka memakan masa kira-kira 1 jam dan akan dijawab bersama dengan bantuan ahli pasukan pengkaji. Kajian ini tidak akan menggunakan sampel darah atau air kencing tetapi akan menggunakan fail pesakit anda dan keputusan ujian yang biasa anda jalankan di klinik.

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

1. Ahli pasukan kajian akan memberikan maklumat sepenuhnya kepada anda dan anda juga boleh berbual dengan doctor/staf bertugas di klinik anda yang mengetahui tentang kajian tersebut.

   5.1 Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

   5.2 Anda perlu mempunyai kebolehan bertutur dan memahami Bahasa Malaysia atau Bahasa Inggeris. Sekiranya anda tidak boleh berbuat demikian, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

   5.3 Tiada ahli dari golongan pesakit mental, mempunyai kecacatan mental, banduan, kanak-kanak bawah lapan belas tahun atau pelarian dibenarkjan turut serta dalam kajian ini. Sekiranya anda termasuk dalam golongan ini, sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

2. Ketika proses pemilihan jika anda didapati tidak memenuhi kriteria saringan ahli pasukan pengkaji akan menjemput anda mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah.

   6.1 Kriteria kemasukan bagi kajian ini:

   1. Rumah anda terletak di kawasan kajian
   2. Kaedah pembayaran kepada klinik adalah melalui tunai/kad kredit
   3. Ini adalah klinik yang anda/keluarga sentiasa menziarahi
   4. Ahli keluarga melawat klinik ini sekurang-kurangnya sejak dua tahun iaitu dari 1 Januari 2014.

   6.2 Kriteria pengecualian dari kajian ini

   1. Isirumah keluarga berada di luar kawasan ini selama lebih daripada 1 bulan dalam tahun 2014.
   2. Isirumah dengan pesakit penyakit kronik yang menerima rawatan susulan di sektor awam
   3. Isirumah dengan ahli yang telah menukar kaedah pembayaran kepada klinik (baru bersara dan tamat tempoh insurans bayaran majikan)

   6.3 Rekod pesakit anda akan digunakan dalam Fasa ini dan doktor anda telahpun bersetuju untuk perkara ini. Jika anda tidak gembira atau berpuas hati dengan perkara ini sila sampaikan maklumat ini kepada ahli pasukan pengkaji dan mengundurkan diri dengan ucapan ribuan terima kasih daripada kami tanpa sebarang masalah

1. Tiada sebarang risiko/prosedur berbahaya yang akan dijalankan ke atas anda. Namun jika ada sebarang kemusykilan sila hubungi bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

8. Kajian ini dijalakankan kerana semakin ramai rakyat Malaysia yang mengalami masalah tidak dapat menerima rawatan kesihatan yang berkualiti secare ekuiti di Malaysia. Oleh kerana pelbagai masalah dalam menerima rawatan di pusat kerajaan, ramai terpaksa menerima rawatan di pusat kesihatan primer swasta, dengan masalah-masalah yang seiring dengannya iaitu kesukaran untuk membayar untuk rawatan tersebut secara tunai atau 'Out-of-Pocket'. Kesukaran untuk membayar secara tunai ini mewujudkan masalah-masalah seperti kesempitan wang untuk rawatan kesihatan atau lebih merisaukan lagi, melewatkan rawatan sehingga waktu tergentar atau mengabaikan rawatan penyakit kronik seperti kencing manis dan darah tinggi. Tujuan kajian ini adalah untuk mengetahui samada sebuah skim mikroinsurans dapat mengurangkan beban-beban masalah tersebut. Fasa ini khususnya, mengkaji keberkesanan skim mikroinsurans dalam membolehkan rakyat menerima rawatan, mengurangkan kos perbelanjaan dan mengawal penyakit.

9. Anda ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada anda dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini

10. Jika anda ada sebarang persoalan atau kemusykilan sila bertanya dengan ahli pasukan kajian atau menghubungi saya sebagai ketua pasukan kajian mengikut maklumat yang disertakan.

11. Semua maklumat yang diperolehi melalui kajian ini akan dianalisa dan diterbitkan. Segala maklumat adalah SULIT dan akan hanya dapat dilihat oleh pengkaji yang bertauliah dan jika perlu.

12. Tiada sebarang bayaran yang dikenakan atau saguhati wang diberikan kepada anda apabila menyertai kajian ini.

13. Jika kajian tidak dijalankan seperti yang telah dimaklumkan, sila laporkan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. Email: mreciir@nih.gov.my

Thank you for your kind cooperation.

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Professor Sathirakorn Pongpanich
Advisor and Dean
College of Public Health Sciences
Chulalongkorn University

Borang Persetujuan Berpengetahuan (Bahasa)

Alamat:.....

Tarikh .....

.....

Nombor Kod Peserta .....

Saya yang bertandatangan seperti di bawah bersetuju untuk menyertai projek kajian ini

Tajuk: FEASIBILITI, PENERIMAAN DAN KEBERKESANAN SKIM MIKROINSURANS KESIHATAN DALAM MENINGKATKAN KADAR EKUITI KESIHATAN DAN HASIL KLINIKAL BAGI KLINIK PERUBATAN PRIMER SWASTA DI KUALA LUMPUR MALAYSIA

Fasa 3: Quasi-experimental:
Soal-selidik Sebelum dan Selepas Klinik Eksperimen dan Kontrol

Pengkaji Utama: Dr Murallitharan Munisamy
Alamat: D-0-20 Putra Majestik, Jalan Kasipillay off Jalan Ipoh
51200 Kuala Lumpur
Telefon: 603-40414667

Saya telah membaca risalah maklumat responden dan telah mengambil masa secukupnya untuk memikirkan perkara tersebut dan juga telah menerima jawapan yang lengkap serta sewajarnya dan memuaskan bagi segala persoalan saya.

Saya setuju sepenuh hati untuk melibatkan diri dalam projek ini dan memberikan persetujuan kepada pengkaji untuk

1) Membenarkan jawapan saya kepada soal-selidik digunakan untuk kajian
2) Membenarkan penglibatan saya dalam skim kesihatan mikroinsurans komuniti
3) Membenarkan rekod-rekod perubatan saya ditatapi dan digunakan untuk pengumpulan data

Setelah selesainya projek ini, segala maklumat persendirian dalam bentuk kertas dan elektronik akan dihapuskan. Segala maklumat yang dikumpulkan akan digunakan secara timbunan sahaja untuk tujuan penerbitan saintifik dan bukan secara individu.

Saya ada hak penuh untuk menarik diri dari kajian ini sekiranya berasa demikian tanpa sebarang keperluan memberikan sebab. Pengunduran diri ini tidak akan memberikan kesan negatif kepada saya dari segi perawatan dan pelawatan ke klinik yang biasa saya kunjungi ini.

Pengkaji telah memberikan jaminan bahawa segala prosedur kajian akan serupa seperti yang telah dinyatakan kepada saya. Sebarang maklumat peribadi akan dirahsiakan. Keputusan kajian akan dilaporkan sebagai data agregat.Sebarang maklumat sulit yang boleh mengenalpasti diri saya tidak akan dikemukakan dalam mana-mana penerbitan.

Jika saya tidak dilayan seperti yang dinyatakan dalam risalah maklumat responden, saya boleh membuat laporan kepada Medical Research and Ethics Committee (MREC), Secretariat of National Institutes of Health (NIHSEC), c/o Institute for Health Management, Jalan Rumah Sakit, Bangsar 59000 Kuala Lumpur. Tel/Fax: 03-2282 8072 / 03-2282 0015. E-mail: mreciir@nih.gov.my

Saya juga telah menerima salinan risalah maklumat responden dan borang persetujuan berpengetahuan.

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Professor Sathirakorn Pongpanich
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Chulalongkorn University

Sign ……..…… Sign ……..……

(……..……) (……..……)

Participant Witness

Appendix E

Questionnaire for Cost Analysis of Healthcare

(Macrocosting Form) – Phase 1 a

COST ANALYSIS

MACROCOSTING ASSESSMENT FORM

For Office Use only:
ID: ☐☐ / ☐☐
Centre: ☐☐☐

Instructions: Where check boxes ☐ are provided, check (√) one or more boxes.
Where radio buttons O are provided, check (√) one box only.

Centre Code: ☐☐

SECTION A : FACILITY DEMOGRAPHICS

Year commenced :	☐☐☐☐☐ Operating Hours: ☐☐☐☐☐☐☐☐☐☐

SECTION B : PATIENT CENSUS (2014)

Total number of patients seen	☐☐☐☐☐☐☐☐ Average patient census per day ☐☐☐☐☐☐☐☐
Payment mechanism of patients not on OOP/Number	☐ Private Insurance ☐☐☐☐☐☐☐☐ ☐MCO ☐☐☐☐☐☐☐☐ ☐ Employer panel ☐☐☐☐☐☐☐☐

SECTION C: BUILDING COSTS

Own Premises	O Yes O No If No, how much is rental per month: RM ☐☐☐☐☐☐☐☐
Land Area (sq/m)	☐☐☐☐☐☐
Assessment Rates for Nearby Area	Furnished : RM ☐☐☐☐☐☐☐☐ Unfurnished : RM ☐☐☐☐☐☐☐☐

Trial Version 1.1 last updated on 01/04/2014 * Mandatory

Page 1

COST ANALYSIS
MACROCOSTING ASSESSMENT FORM

For Office Use only:
ID: /
Centre:

Instructions: Where check boxes ☐ are provided, check (√) one or more boxes.
Where radio buttons ○ are provided, check (√) one box only.

Centre Code:

SECTION D : OPERATION AND MAINTENANCE EXPENDITURE

No	Item	Total Costs (2013)
	Electricity	
	Water Telephone	
	Waste Management	
	Cleaning Services	
	General Maintenance	
	Security	
	Tax	
	Insurance	
	For office use only **TOTAL**	

SECTION E : EQUIPMENT

Type of equipment / instrument	Model	Year* bought	No of unit	Purchased price / unit (RM)	Market price per unit** at 2014	**For office use only (Estimated capital consumption)**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

SECTION F : STAFF

Staff Category	No Of Staff	Annual Salary	Annual Bonus	Annual Insurance	Annual EPF/Socso	Annual Allowances	Total
Doctor							
Nurse							
Nurse Aide							
Clerk							
Cleaner							
Driver							

Appendix F

Questionnaire for Cost Analysis of Healthcare

(Provider Cost Assessment Form) – Phase 1 a

COST ANALYSIS
PROVIDER COST ASSESSMENT FORM

For Office Use only:
ID: ☐☐ / ☐☐
Centre: ☐☐☐

Instructions: Where check boxes ☐ are provided, check (√) one or more boxes.
Where radio buttons ○ are provided, check (√) one box only.

Centre Code: ☐☐ *PAYMENT MECHANISM: _____

SECTION A : PATIENT DEMOGRAPHICS

1. Gender *	○ Male ○ Female	**6. Date of Birth * (dd/mm/yyyy):**	☐☐ / ☐☐ / ☐☐☐☐ If the exact date is not known, please enter 01/07/yyyy and check the estimated/presumed year box ☐ Estimated/presumed year
2. Age:	☐☐ Years ☐☐ Months ☐☐ Days *(autocalculated)*		
3. Ethnic group: *	○ Malay ○ Chinese ○ Indian ○ Bajau	○ Dusun ○ Kadazan ○ Murut ○ Melayu Sarawak	○ Melanau ○ Kedayan ○ Iban ○ Bidayuh
	○ Bumiputera Sabah ○ Bumiputera Sabah lain ○ Bumiputera Sarawak ○ Bumiputera Sarawak lain	○ Orang Asli Semenanjung ○ Others:	
4. Education level:	○ Nil	○ Primary	○ Secondary ○ Tertiary ○ Unknown
5. Occupation: *	☐Legislator/Manager/Officer ☐Technician/Ass.Professional ☐ Service/sales worker ☐ Crafts/related trades	☐ Elementary Jobs ☐ Professionals ☐ Clerical workers ☐ Agricultural, fishery	☐ Factory/machine ☐ Housewife
	☐ Unknown ☐ Unemployed ☐ Retired		

SECTION B : MEDICAL HISTORY (AS OF 1 JAN 2014) (Fill In one after another as required)

Type of Disease	
1. Duration of * disease	☐☐ **Years** ☐☐ **Months**
3. Complications	○ None ○ 1 ○ 2 ○ 3 ○ More than 3
2. Type of medication *	○ Diet/Exercise ○ 1 Type ○ 2 Types ○ 3 Types ○ 4 or more
3. Complications	○ None ○ 1 ○ 2 ○ 3 ○ More than 3
4. Type of Complication:	☐Blindness/Cataract ☐ Amputations ☐ Cerebrovascular Insult ☐ESRF on HD ☐ IHD ☐ CKD ☐ ACS ☐ DFU ☐ CABG/PCI

Trial Version 1.1 last updated on 01/04/2015 * **Mandatory**

Page 1

COST ANALYSIS
PROVIDER COST ASSESSMENT FORM

For Office Use only:
ID: ____ / ____
Centre: ____

Instructions: **Where check boxes ☐ are provided, check (√) one or more boxes.**
Where radio buttons ○ are provided, check (√) one box only.

Centre Code: ☐☐

(Patient identifier for paper CRF) ☐☐☐☐

SECTION C : ITEMISED COST PER TREATMENT

DATE:	No of Unit	Cost	**Drug Type**	**Dosage**	**Duration**	**Cost**
Consultation Fees		RM				
Procedure Fees IV cannulation Venepuncture Intramuscular Dressing Toilet & Suturing Others, specify _____ _____ _____		RM	**Oral** **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13**			RM
Laboratory Tests FBC HbA1c RP LFT FSL Homocysteine Microalbuminuria CRP Blood C& S Urine C&S Others, specify _____ _____ _____		RM	**Injectibles** **1** **2** **3** **4** **5** **6**			RM
Inhouse Diagnostic Tests UFEME X-Ray ECG Others, specify _____ _____ _____		RM				

TOTAL: _____

TOTAL COST OF VISIT: _____

TOTAL: _____

Appendix G

Questions for Focus Group Discussions – Phase 1 b

SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

THEME: **Characteristics of a Community Health Microinsurance Scheme** **Questions**	Comments
1. How many of your patients would be interested in a microinsurance scheme?	
2. What would be the benefits of a microinsurance scheme for you? For your patients?	
3. What would be your idea of a model microinsurance scheme?	
4. What are the possible pitfalls that you think are possible with such a model microinsurance scheme?	
5. Do you think each member of the household should pay the premium? Or should it be charged per household on average?	
6. What do you think of co-payment for this scheme? Should there be some form of it?	
7. Should there be a limit on visits? Type of visits? What happens when you have to refer a patient to another centre?	

SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

THEME: **Premium Payment and Service Package** **Questions**	Comments
1. Data on the average cost of treatment of individuals and households is now available to you. Based on this, would you like to estimate how much a possible household microinsurance premium could be?	
2. How do you think the payment should be collected? Yearly? Or in installments? Does it affect you either way? What are the pros and cons of these different collection methods?	
3. Is it possible to treat all categories of your patients under this scheme? Will some exceptions be needed ? What do you foresee?	
4. Would you need to change treatment procedures for your patients under the scheme?	
5. What are the list of services you would cover under the scheme? What would they be?	
6. Would there be a list of services that you would exclude from the scheme? What would they be?	
7. Would there be changes to medication types and treatment regimens?	

SUITABILITY, FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

THEME: **Characteristics of a Community Health Microinsurance Scheme** **Questions**	Comments
1. How many of your patients would be interested in a microinsurance scheme?	
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3. What would be your idea of a model microinsurance scheme?	
4. What are the possible pitfalls that you think are possible with such a model microinsurance scheme?	
5. Do you think each member of the household should pay the premium? Or should it be charged per household on average?	
6. What do you think of co-payment for this scheme? Should there be some form of it?	
7. Should there be a limit on visits? Type of visits? What happens when you have to refer a patient to another centre?	

Appendix H

Questionnaire for Willingness-Ability to Pay – Phase 2

Questionnaire Number ☐☐☐

Willingness/Ability to Pay For Health MicroInsurance Questionnaire

Centre Code ☐☐☐

Interviewer ID ☐☐☐

[INSTRUCTIONS TO THE INTERVIEWER: The following statement should be read to every potential interviewee.]

May I have a minute of your time, please? CLINIC_____wants to continue providing you with convenient, high quality services at an affordable price while giving you the best level of care. In line with this CLINIC_____ is studying the feasibility to introduce a health microinsurance scheme in order to give you cheaper care while at the same time of high-quality. Your family would need to pay an annual premium for the programme and then receive outpatient care at this clinic as per your requirements throughout the year. Such insurance programmes have been found to be effective in improving care for all family members.

As part of the studies to plan and implement such an insurance programme, it is needed to not only find out how much is the cost for treatment over a year from private primary care but also how much individuals are willing and able to pay for such a policy if introduced, which is what this study is about.

We want to know your opinion and interest in such a programme. There are no right or wrong answers, so please be honest and tell us what is true for you. The information being collected is for planning purposes only and there are no personal risks or benefits to your participation.

Everything that you say will be confidential and information will only be used for study purposes. The interview takes about fifteen minutes. You can terminate the interview whenever you want without consequences.

Do you have any questions? Would you like to participate? If you would like to know more about this study, please contact _____ at _____.

Participation YES (proceed to interview) NO (thank respondent and wish her a nice day)

[All questionnaires will be saved by the interviewer regardless of the respondent's decision to participate or not]

Interview Date: Mo.___ Day___ Yr. ___
Time Interview Began: _____
Time Interview Completed: _____

SECTION A
Demographic Questions

1. How old were you at your last birthday? (as per your IC) Years ____
2. What is your marital status?
   - Married/In-union 1
   - Widowed, Separated, Divorced 2
   - Single 3
3. How many living children do you have?
   - None
   - Number _____

4 How many living children do you have in the following age groups?

AGE GROUP	NO. OF CHILDREN
<1	_____
1-3	_____
4 or older	_____

5. What is the highest grade/year you completed?
   - No grade completed ☐
   - Elementary grade ☐
   - High school ☐
   - Diploma/Vocational Training ☐
   - Degree and above ☐

Interviewer ID ☐☐☐

Willingness/Ability to Pay For Health MicroInsurance Questionnaire

Questionnaire Number ☐☐☐

Centre Code ☐☐☐

SECTION B
Ability to Pay

1. Does your household have:	YES	NO
Electricity	☐	☐
Piped water	☐	☐
Flush toilet	☐	☐
Radio	☐	☐
TV	☐	☐
VCR	☐	☐
Telephone	☐	☐
Car/pick-up truck	☐	☐

2. Do you work outside the home? ☐ ☐

3. What type of job do you have?

☐ Legislator/Manager/Officer ☐ Elementary Jobs ☐ Factory/machine ☐ Unknown
☐ Technician/Ass.Professional ☐ Professionals ☐ Housewife ☐ Unemployed
☐ Service/sales worker ☐ Clerical workers ☐ Retired
☐ Crafts/related trades ☐ Agricultural, fishery

3. How much do you make per month? Amount RM _____

4. Does you spouse/partner work? ☐ ☐

5. What type of job does she/he have?

☐ Legislator/Manager/Officer ☐ Elementary Jobs ☐ Factory/machine ☐ Unknown
☐ Technician/Ass.Professional ☐ Professionals ☐ Housewife ☐ Unemployed
☐ Service/sales worker ☐ Clerical workers ☐ Retired
☐ Crafts/related trades ☐ Agricultural, fishery

6. How much does she/he make per month? Amount RM _____

7. Who provides monetary support for your family?

Interviewee	☐	☐ Amount RM _____
Spouse/Partner	☐	☐ Amount RM _____
Children	☐	☐ Amount RM _____
Others, please specify _____	☐	☐ Amount RM _____

INSTRUCTIONS TO THE INTERVIEWER: Monetary Support includes Income, Gifts etc. Probe for all additional sources of income such as rent, stock dividend etc.

Questionnaire Number ☐☐☐

Willingness/Ability to Pay For Health MicroInsurance Questionnaire

Centre Code ☐☐☐

Interviewer ID ☐☐☐

SECTION C
Willingness-To-Pay

	YES	NO
1. Have you heard about health microinsurance?	☐	☐
2. Would you be interested in purchasing health microinsurance?	☐	☐

READ TO CLIENT:
I would now like to ask you some questions about the possible price of this insurance. In answering these questions, please bear in mind the following:
1. Assume that your income will stay the same and not change.
2. Alternatives do exist for treatment, including continuing your current method of Out-Of-Pocket Cash Payment or you can always go to a public primary care clinic for treatment if you want a cheaper alternative

3. If the price of health microinsurance annual premium was RM 1.2 X would you purchase it? **(X is the average cost for treatment per patient per year obtained in the earlier studies)**	☐	☐
4a. **If answer for 3 was YES ask this** If the price of health microinsurance annual premium was RM 1. 4X would you purchase it?	☐	☐
4b. **If answer for 3 was NO ask this** If the price of health microinsurance annual premium was RM X would you purchase it?	☐	☐

5. What is the highest price you would be willing to pay for a health microinsurance annual premium

RM _____

6. If you could not afford to pay for the health microinsurance what would you do when you are sick?

Continue out-of pocket payment at this clinic	☐	☐
Go to public primary care clinic for treatment	☐	☐
Buy medicine from pharmacy	☐	☐
Find cheaper OOP private primary care clinic	☐	☐
Others, please specify _____	☐	☐

Don't read all choice to the interviewee let him make his own suggestions and just mark it down

Appendix I

Questionnaire for Quasi-Experimental Trial– Phase 3

FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A COMMUNITY HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

QUASI EXPERIMENTAL QUESTIONNAIRE

Good day. I am here to conduct a study to look at the effectiveness of a community health microinsurance which you may be participating in from your neighbourhood about the health of women, men and children, including information on household membership, and use of health facilities. Your house has been selected to be part of this survey and we would, therefore, like to interview you. This survey is conducted by Chulalongkorn University College of Public Health Sciences. The information you provide will only be used to understand the main things that affect peoples' health and how people view their own health and access to health services. The interview will take approximately 60 minutes. I will ask you questions about:
Some personal details,
Your health including activities that you generally carry out,
Any health problems you have experienced and treatment you may have received,
The health care centres you use and how well these have responded to your needs.

The information you provide is totally confidential and will not be disclosed to anyone. It will only be used for research purposes. Your name, address, and other personal information will be removed from the questionnaire, and only a code will be used to connect your name and your answers without identifying you. The Survey Team may contact you again only if it is necessary to complete the information on the survey. We would like you to know the possible risks and benefits involved in this

Risks
Revelation of personal information.
Time consuming.
Disruption of routine.
Possibility of unforeseen discomforts.

Benefits
No direct benefits
Benefits to the community as a whole.

Your participation is voluntary and you can withdraw from the survey after having agreed to participate. You are free to refuse to answer any question that is asked in the questionnaire.

If you have any questions about this survey you may ask me or contact the Investigator Dr Murallitharan at murallimd@gmail.com or +60123173575.

Who is the person who provides the main economic support for the household? Identify from list below	
Who is the household informant?	Household informant should be 18 years and above; key decision maker of the household, and the person in the household who is most knowledgeable about the health, employment, financial condition, expenditures and health insurance of members of the household
Religion	
Race	
All births in the household over the past 2 years?	

Member	Gender M=1/F=2		Year of birth	Line number if still alive
1	1	2		
2	1	2		
3	1	2		
4	1	2		
5	1	2		

HOUSEHOLD ROSTER

QUASI EXPERIMENTAL QUESTIONNAIRE

No	Sex	Relationship to Head of household	Living Status (at home)	Age	Education	In School	Occupation	Marital Status	Age of marriage	Members 15-49 yrs old

HOUSEHOLD INCOME AND EXPENDITURE

Total Monthly Household Income	In RM		
Were there any changes in this year's income compared to last year's income?	Yes.....1 No.....2 Don't know/ Can't say.....99		
If there has been a change, has it increased or decreased from the past year till today?	Increased.....1 Decreased.....2 Don't know/ Can't say.....99		
In the past one year, did your household earn any income (in cash or in kind) from the following sources?	YES	NO	Amount
Income from business	1	2	
Income from regular salary job	1	2	
Income from properties- rent, savings interest, dividends	1	2	
Pension	1	2	
Disability	1	2	
Welfare	1	2	
Any other sources, please specify	1	2	

HOUSEHOLD INCOME AND EXPENDITURE

QUASI EXPERIMENTAL QUESTIONNAIRE

How much did you spend on total household grocery expenditure last month?	In RM		
If you can increase expenditure on 3 items below, which ones would, you increase? Please rank the top 3	RANK	In the last one year, did your household experience any financial shock? What was the cause for this?	
Food		Accident	
Shelter		Marriage in the household	
Electricity		Illness	
Fuel		Fire	
Healthcare		Theft	
Education		Natural calamity	
Transportation		Death in household	
Entertainment		Any other, please specify	
Others, please specify			

How did your household manage the finance the above catastrophic expense?	YES	NO	Amount
Savings	1	2	
Borrowed money from bank	1	2	
Borrowed money from relatives /friends	1	2	
Borrowed money from moneylender	1	2	
Sold/pawned valuables/land	1	2	
Increased labour/extra income	1	2	
Any other sources , Please specify	1	2	
Have you/households taken any loans in the past one year ?	1	2	Reason for loan
Amount and interest rate 1			
2			
3			
4			
5			

HOUSEHOLD INCOME AND EXPENDITURE

QUASI EXPERIMENTAL QUESTIONNAIRE

Do you have any savings? If, so, where?	YES	NO	Amount
Bank	1	2	
Cooperative	1	2	
Savings group	1	2	
Gold, silver, jewellery	1	2	
Sold/pawned valuables/land	1	2	
Any other sources , Please specify	1	2	
Have you/households taken any loans in the past one year ?	1	2	
	1	2	Total:

INSURANCE STATUS

Member Name	Has Private Health Insurance	Has company coverage	If not, why not ?	Life Insurance	Motor Insurance	Any other insurance	Please specify

HEALTH CARE USE AND HEALTH EXPENDITURE

QUASI EXPERIMENTAL QUESTIONNAIRE

In the past SIX months, did you or anyone in your household have any episode of illness that did not require hospitalization but required outpatient treatment?

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
What illness did the person have?	From code						
Severity	Not serious						
	Quite serious						
	Very serious						
	Don't know						
Type of doctor/facility visited for treatment	Did not seek care						
	Private PPC						
	Govt PPC						
	Govt Hospital						
	Private Hospital						
	TCM						
	Pharmacy						
	Others, specify						

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Why did not seek care?	Not serious						
	Spontaneous recovery						
	Did not have money						
	No transport						
	Long waiting						
	No good care						
	Could not get away from work						
	Nobody to accompany						
	Fear of hospitals						
	Religious beliefs						
	Others, specify						
	Don't know						

HEALTH CARE USE AND HEALTH EXPENDITURE

QUASI EXPERIMENTAL QUESTIONNAIRE

In the past SIX months, did you or anyone in your household have any episode of illness that did not require hospitalization but required outpatient treatment?

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Any self-treatment taken for this episode?	YES or NO						
Would you have preferred to take treatment at other facility, but could not due to any reason?	YES or NO						
If Yes, which facility?	Private PPC						
	Govt PPC						
	Govt Hospital						
	Private Hospital						
	TCM						
	Pharmacy						
	Others, specify						

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
How much did your household have to spend for this last episode of illness?	Amount in RM						
	Consultation						
	Investigation						
	Medicines						
	Travel						
	Hospital Fee						
	Others, please specify						
	Total						
How much did your household lose because an earning member could not go to work during this illness	Amount in RM						

HEALTH CARE USE AND HEALTH EXPENDITURE

QUASI EXPERIMENTAL QUESTIONNAIRE

In the past SIX months, did you or anyone in your household have any episode of illness that did not require hospitalization but required outpatient treatment?

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
How did your household pay for this treatment?	YES or NO						
	Did not have to pay						
	Own money						
	Worked over time						
	Sold jewellery/belongings						
	Sold property						
	Borrowed money from moneylender						
	Borrowed money from friends and relatives						
	Borrowed money from employer						
	Borrowed money from bank						
	Others, specify						

GENERAL HEALTH

Do you or anyone in your household have any Chronic illness like diabetes, heart problems, BP. Cholestrol, TB, asthma, arthritis, cataract, etc.

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Does any member of your household suffer from a chronic condition	YES or NO or Don't Know						
	Heart Disease						
	Blood Pressure						
	Cholesterol						
	Diabetes						
	TB						
	Bronchial Asthma						
	Arthritis						
	Kidney disorder						
	Liver Disease						
	Gastritis/Ulcers						
	Neurological Disease						
	Others, specify						

GENERAL HEALTH

QUASI EXPERIMENTAL QUESTIONNAIRE

Do you or anyone in your household have any Chronic illness like diabetes, heart problems, BP. Cholestrol, TB, asthma, arthritis, cataract, etc.

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Do they take treatment for this condition?	YES or NO or Don't Know						
If YES, what is the average for monthly cost of this treatment?	Amount in RM						
If NO, why is no treatment taken for this illness	Not serious						
	Too inconvenient						
	Did not have money						
	Ignorance						
	Lack of time						
	Lack of transport						
	Felt that there is no use						
	Nobody to accompany						
	Fear of hospitals						
	Religious beliefs						
	Others, specify						

HOSPITALIZATION AND HEALTH SHOCK

Was any member in your household admitted to the hospital in the past SIX months? Make sure to confirm it includes only members of the household who were hospitalized. This may include even maternity events and also the chronic ill persons. Should also include persons who died in the last 1 year if they were hospitalized

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Which member of your household was hospitalised ?	YES or NO or Don't Know						
What was the hospitalisation for?	From code						
How serious was the illness?	Not serious						
	Quite serious						
	Very serious						
	Not sure/don't know						
Where was she admitted?	Govt Hospital						
	Private Hospital						
	Traditional Medicine Hospital						
	Others, please specify						

HOSPITALIZATION AND HEALTH SHOCK

QUASI EXPERIMENTAL QUESTIONNAIRE

Was any member in your household admitted to the hospital in the past SIX months? Make sure to confirm it includes only members of the household who were hospitalized. This may include even maternity events and also the chronic ill persons. Should also include persons who died in the last 1 year if they were hospitalized

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Type of doctor/facility visited for treatment	Did not seek care						
	Private PPC						
	Govt PPC						
	Govt Hospital						
	Private Hospital						
	TCM						
	Pharmacy						
	Others, specify						

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
Would you have preferred to take treatment at other facility, but could not due to any reason?	YES or NO						
If Yes, which facility?	Private PPC						
	Govt PPC						
	Govt Hospital						
	Private Hospital						
	TCM						
	Pharmacy						
	Others, specify						

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
How much did your household have to spend for this last episode of illness?	Amount in RM						
	Consultation						
	Investigation						
	Medicines						
	Travel						
	Hospital Fee						
	Others, please specify						
	Total						
How much did your household lose because an earning member could not go to work during this illness	Amount in RM						

HOSPITALIZATION AND HEALTH SHOCK

QUASI EXPERIMENTAL QUESTIONNAIRE

Was any member in your household admitted to the hospital in the past SIX months? Make sure to confirm it includes only members of the household who were hospitalized. This may include even maternity events and also the chronic ill persons. Should also include persons who died in the last 1 year if they were hospitalized

		Name 1	Name 2	Name 3	Name 4	Name 5	Name 6
How did your household pay for this treatment?	YES or NO						
	Did not have to pay						
	Own money						
	Worked over time						
	Sold jewellery/belongings						
	Sold property						
	Borrowed money from moneylender						
	Borrowed money from friends and relatives						
	Borrowed money from employer						
	Borrowed money from bank						
	Others, specify						

DISEASE CODES

Code	DESCRIPTION	DISEASE
1	Respiratory System	Bronchial Asthama
		COPD
		Alergic Bronchitis
		URI including Pnemonia
		URI
		Tuberculosis
		Other Respiratory Diseases
2	Cardiovascular System	Congenital Heart Disease
		Rheumatic Heart Disease
		Hypertension
		Ischaemia including MI (Heart Attack)
		Other diseases related to CVD
3	Pyrexia Related Diseases	PUO
		Viral Fever
		Typhoid Fever
		Measles
		Chicken Pox
		Malaria
		Others
4	Connective Tissue Disorder	Osteo Arthritis
		Rheumatoid Arthritis
		Other Connective Tissue Disorder
5	Pregnancy Related Disorder	Pregnancy Induced Hypertension
		Gestational Diabetes Mellitus
		Malnutrition
		Anaemia
		Other Related Disorder
6	Skin	Eczema
		Tinea Infection
		Scabies
		Leprosy
		Other related skin diseases
		Dog Bite
		Scorpion Sting
		Snake Bite
		Other insect & animal bite
7	Gastrointestinal System	Acute Diarrhoeal Disease
		Abdominal Colic
		Jaundice
		Worm Infestation
		Amoebiasis
		Acid Peptic Diseases (Heart Burns)
		Food Poisoning
		Apthus Ulcer (Mouth Ulcers)
		Other related GIT System

Code	DESCRIPTION	DISEASE
8	Genito Urinary System	Urinary Tract Infection
		Menstrual Disorder
		RTI (Renal Tract Infection)
		Malignancy
		Other related dieases incl. Nephrotic Syndrome
9	Neurological Disorder	Epilepsy
		CVA (Cerebro Vascular Accident)
		Meningitis
		Other Neurological Diseases
10	ENT	Sinusitis
		Tonsilitis / Pharyngitis
		ASOM /CSOM Middle Ear Infection
		Hearing Defect
		Foreign Body Ear
		Foreign Body Nose
		Gingivitis
		Others
11	Dental	Dental Carriers
		Dental Flurosis
		Other Dental Problems
12	Opthalmic	Refractive Errors
		Conjunctivitis
		Foreign Body Eye
		Stye
		Other Related Diseases
13	Nutritional Disorder	Anaemia
		Vitamin A Deficiency
		Vitamin B Deficiency
		Malnutrition
		Other Vitamin Deficiency
14	Endocrine System	Diabetes Mellitus
		Goitre
		Others
15	All Other Causes	Accidents and Injuries Including Burns

QUASI EXPERIMENTAL QUESTIONNAIRE

DISEASE OUTCOMES – TO BE REPORTED AFTER SIX MONTHS BY PROVIDER

	Number 1 (Pre)	Number1 (Post)	Number 2 (Pre)	Number 2 (Post)	Number 3 (Pre)	Number 3 (Post)	Number 4 (Pre)	Number 4 (Post)	Number 5 (Pre)	Number 5 (Post)
Date										
HbA1 C										
Serum Lipid										
Blood Pressure										
TB Cure Rate										
Microalbuminuria										
Proteinuria										
Liver Function Test										
Foot Ulcers										
Neuropathy										
Renal Function Test										
Others, specify										

Appendix J

Gannt Chart

FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

		2015			2016						
No	Activities	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
1	Study Concept, Literature Review										
2	Research Proposal development										
3	Development of Research Tool										
4	Ethics Committee Approval										
5	Pre-Test Deployment										
5	Pre-Test findings Review/Amend										
6	Selection of respondents/administer tool										
7	Data collection										
8	Data analysis										
9	Thesis writing										
10	Thesis defence										

Appendix K

Budget

No	Item	Amount (unit)	Unit Cost (RM)	Total Cost (RM)
1	Pilot studies			
	Questionnaires	400 pages	0.10	40.00
	Refreshments (participants)	90people	5.00	450.00
	Experts – 6 people Per diem/transport reimbursement per meeting	8 meetings	50.00	2400.00
2	Phase 1			
	Case Report Forms (CRF)	4500 pages	0.10	450.00
	Per diem for researchers 5 people	20days	30.00	3000.00
	Refreshments for focus group discussions – 30 people	6 sessions	5.00	900.00
3	Phase 2			
	Questionnaires	3000 pages	0.10	300.00
	Refreshments for participants	470 people	5.00	2350.00

4	Phase 3			
	Questionnaires	1800 pages	0.10	180.00
	Refreshments for participants -114 households	2 sessions	5.00	1140.00
	HbA1c tests (pre&post)	100	30.00	3000.00
	Serum Lipid (pre& post)	100	25.00	2500.00
	Sputum AFB x3 per person (pre& post)	300	15.00	4500.00
	Microalbuminuria (Pre & post)	100	18.00	1800.00
	Urine dipstick (Pre& post)	100	7.00	700.00
	Liver Function Test (Pre& post)	100	30.00	3000.00
	Renal Function Test (Pre& post)	100	30.00	3000.00
	Full Blood Count (Pre& post)	100	15.00	1500.00
			TOTAL (In RM)	31 120
			TOTAL (In THB)	262,164

1 Exceptions: Budget DOES NOT include the cost of the Microinsurance Premiums, as this has been agreed to be borne IN TOTAL by the experimental site i.e PPC Clinic ownership

2. Calculated at Ringgit Malaysia (RM) 1 is 8.40 THB, estimated on 10 January 2016. Rates obtained from http://superrichthai.com/exchang

Appendix L

Approval Letter - Malaysian Research Ethics Committee (MREC)

JAWATANKUASA ETIKA & PENYELIDIKAN PERUBATAN
(Medical Research & Ethics Committee)
KEMENTERIAN KESIHATAN MALAYSIA
d/a Institut Pengurusan Kesihatan
Jalan Rumah Sakit, Bangsar
59000 KUALA LUMPUR

Tel.: 03-2287 4032/2282 0491/2282 9085
03-2282 9082/2282 1402/2282 1449
Faks: 03-2282 0015

Ruj. Kami : (6) KKM/NIHSEC/P16-252
Tarikh : 4hb Mac 2016

DR MURALLITHARAN MUNISAMY
KLINIK SURIA|PUTRA MAJESTIK

TUAN/PUAN,

NMRR-16-172-29311 (IIR)
FEASIBILITY, ACCEPTABILITY AND EFFECTIVENESS OF A HEALTH MICROINSURANCE SCHEME IN IMPROVING HEALTH EQUITY AND CLINICAL OUTCOMES FOR PRIVATE PRIMARY CARE IN KUALA LUMPUR, MALAYSIA

Lokasi Kajian: KLINIK SURIA|PUTRA MAJESTIK

Dengan hormatnya perkara di atas adalah dirujuk.

2. Jawatankuasa Etika & Penyelidikan Perubatan (JEPP), Kementerian Kesihatan Malaysia (KKM) tiada halangan, dari segi etika, ke atas pelaksanaan kajian tersebut. JEPP mengambil maklum bahawa kajian tersebut hanya melibatkan pengumpulan data menggunakan **borang soal selidik** sahaja.

3. Segala rekod dan data subjek adalah **SULIT** dan hanya digunakan untuk tujuan kajian ini dan semua isu serta prosedur mengenai *data confidentiality* mesti dipatuhi.

4. Kebenaran daripada Pegawai Kesihatan Daerah/Pengarah Hospital dan Ketua-Ketua Jabatan atau pegawai yang bertanggungjawab disetiap lokasi kajian di mana kajian akan dijalankan mesti diperolehi sebelum kajian dijalankan. Dato'/Dr/ Tuan/ Puan perlu akur dan mematuhi keputusan tersebut. Sila rujuk kepada garis panduan Institut Kesihatan Negara mengenai penyelidikan di Institusi dan fasiliti Kementerian Kesihatan Malaysia (Pindaan 01/2015) serta lampiran *Appendix 5* untuk templet surat memohon kebenaran tersebut.

5. Adalah dimaklumkan bahawa kelulusan ini adalah sah sehingga **3hb Mac 2017**.Dato'/Dr./ Tuan/ Puan perlu menghantar perkara-perkara berikut kepada JEPP selepas mengikut kesesuaian. Borang-borang berkaitan boleh dimuat turun daripada laman web MREC (http://www.nih.gov.my/mrec).

I. Borang ***Continuing Review Form*** perlu dihantar ke JEPP selewat-lewatnya 2 bulan sebelum tamat tempoh kelulusan ini bagi memperbaharui kelulusan etika.
II. ***Study Final Report*** perlu dihantar ke JEPP pada penghujung kajian.

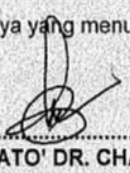
III. Mendapat kelulusan etika sekiranya terdapat pindaan ke atas sebarang dokumen kajian/ lokasi kajian/ penyelidik.

6. Sila ambil maklum bahawa sebarang urusan surat-menyurat berkaitan dengan penyelidikan ini haruslah dinyatakan nombor rujukan surat ini untuk melicinkan urusan yang berkaitan.

Sekian terima kasih.

BERKHIDMAT UNTUK NEGARA

Saya yang menurut perintah,



.....

(DATO' DR. CHANG KIAN MENG)
Pengerusi
Jawatankuasa Etika & Penyelidikan Perubatan
Kementerian Kesihatan Malaysia

Appendix M

List of Presentations, Publications and Awards throughout PhD study (from June 2013 till present)

Publications

ClinicalTrials.gov [Internet]. Bethesda (MD): National Library of Medicine (US). 2000 Feb 29 - . Identifier NCT02696174, Effectiveness of A Health Microinsurance Scheme for Private Primary Care in Malaysia (HMI); 2016 Feb 22 [cited 2016 April 27]; [about 4 screens]. Available from: https://clinicaltrials.gov/ct2/show/NCT02696174

Current Controlled Trials [Internet]. London: BioMed Central. [date unknown] - . ISRCTN10261528, Effectiveness of health microinsurance scheme in private primary care in Malaysia; 2016 Feb 25 [cited 2016 April 27]; [about 3 p.]. Available from: http://www.isrctn.com/ISRCTN10261528/.

Murallitharan Munisamy, Mrigesh Bhatia. Effectiveness of health microinsurance (HMI) schemes: lessons to learn for improving sustainability in lower middle-income countries (LMIC). PROSPERO 2016:CRD42016035627 Available from http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016035627

Bruno Sunguya, Masamine Jimba, Murallitharan Munisamy. Effectiveness and challenges of advocacy for HIV-programs and lessons learnt for increasing advocacy effectiveness advocacy for Non-Communicable Diseases (NCDs). PROSPERO 2014:CRD42014014524 Available from http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42014014524

Sunguya, B.F, Munisamy, M., Pongpanich. S., Yasuoka J., Jimba M. Ability of HIV Advocacy to Modify Behavioral Norms and Treatment Impact: A Systematic Review. American journal of public health. 2016; Accepted: pending publication.

Munisamy M., Krishnan K., Selvaratnam G.,Panza A.,Pongpanich S., Jimba M. Healthcare Workers are Not TB-Proof: Factors Associated with Latent Tuberculosis

Infection (LTBI) among Healthcare Workers in Kuala Lumpur Hospital. Occupational Medicine. 2016; in review

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Oral Presentation: The Hole in My Pocket was Made by Out-Of-Pocket: Healthcare Utilization and Expenditure Among Suburban Residents in Kuala Lumpur, Malaysia. At the Oxford International Health Conference 2016, King's College London. To be presented: 20-22 June 2016

Oral Presentation: Annual Average Costs of Treatment at Private Primary Care Clinics in Kuala Lumpur, Malaysia: A Pilot Study for Development of a Health Microinsurance Scheme At the 7th International Graduate Students Conference on Population and Public Health Sciences (IGSCPP), Chulalongkorn University, Bangkok. To be presented: June 10, 2016

Oral Presentation: Social Media as an Unhealthy Tool: A Case study of Facebook and the Rise of the Natural Birth Movement. At the 15th International Conference of Public Health Sciences, Bangkok. Presented: October 1, 2015

Oral Presentation: Medical tourism within the medical hub policy – reviewing the need of a balanced strategy for health inequality reduction in a Thai context. At the

15th International Conference of Public Health Sciences, Bangkok. Presented: October 1, 2015

Oral Presentation: Myanmar Chin Refugees- the oppressed in Malaysia. At the 4th International Joint Conference on Society and Health. Mahidol University Salaya Campus, Bangkok. Presented: 28-29 September 2015.

Oral Presentation: ASEAN Doctors without Borders? Review on mobility of healthcare professionals post AEC 2015. At the International Conference on ASEAN Studies (ICONAS 2015) Chulalongkorn University, Bangkok. Presented August 3-5 2015.

Oral Presentation: Reaching Out with a Helping Hand: A Case Study of a Private CSR Initiative for Providing Equitable Health Care for Myanmar Migrants in Kuala Lumpur. At the 6th International Graduate Students Conference on Population and Public Health Sciences (IGSCPP), Chulalongkorn University, Bangkok. Presented July 23, 2015

Awards

2013 – ASEAN Economic Community (AEC) Scholarship Chulalongkorn University

2014 – UEHAS (Interdisciplinary Consortium on Urban Environment and Health in Asia) Fellowship The University of Tokyo

2015 – Chevening Scholarship Award, the Foreign and Commonwealth Office, Government of the United Kingdom

2015 – Student Ambassador, London School of Hygiene and Tropical Medicine, London, United Kingdom. http://virtual.lshtm.ac.uk/student-ambassadors/

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VITA

Dr Murallitharan Munisamy is a Public Health Physician from Malaysia. He trained as a Medical Officer in the Russian Federation under a Public Services Department, Government of Malaysia scholarship and subsequently completed a Masters in Community Health Sciences at the National University of Malaysia. He then received a scholarship to read for a PhD in Public Health at Chulalongkorn University, Thailand under the ASEAN Economic Community program and is currently still the ASEAN Research Fellow at the College of Public Health Sciences Chulalongkorn University, Thailand. Dr Murallitharan was awarded the prestigious Chevening Scholarship in 2015 by the UK Foreign and Commonwealth Office and is currently a fellow in Health Policy, Planning and Financing at the London School of Hygiene and Tropical Medicine and the London School of Economics and Political Science, two of the top universities in the world. Prior to his foray into the medical world, Dr Murallitharan was actively involved in writing and was an award-winning journalist for the New Straits Times, one of Malaysia's leading English newspapers. In medicine, Dr Murallitharan has worked in various capacities as medical officer and clinician at Hospital Kuala Lumpur and the National Blood Bank, clinical epidemiologist for the Clinical Research Centre, Ministry of Health, Malaysia and also as Medical Director of MMPKV Healthcare Sdn Bhd, a chain of primary healthcare providers in Kuala Lumpur. Dr Murallitharan's area of interest is in public health, health systems and health economics. He is actively engaged in research into these areas, collaborating with Chulalongkorn University, Thailand, the University of Tokyo, the London School of Hygiene and Tropical Medicine and the London School of Economics and Political Science.