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REVIEW

The Primary Health Care Performance Initiative (PHCPI): Issues and Challenges for Malaysia as a Trailblazer Country

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ABSTRACT

A strong and robust Primary Health Care system is essential to achieving universal health coverage and to save lives. The Global Conference on Primary Health Care 2018: from Alma-Ata towards achieving Universal Health Coverage and the Sustainable Development Goals at Astana, Kazakhstan provided a platform for low - and middle - income countries to join the Primary Health Care Performance Initiative (PHCPI). At this Global Conference, Malaysia has declared to become a Trailblazer Country in the PHCPI and pledged to monitor her Vital Signs Profiles (VSP). However, the VSP project requires an honest and transparent data collection and monitoring of the Primary Health Care system, so as to identify gaps and guide policy in support of Primary Health Care reform. This is a huge commitment and can only be materialised if there is a collaborative partnership between Primary Care and Public Health providers. Fundamental to all of these, is the controversy concerning whether or not 'Primary Care' and 'Primary Health Care' represent the same entity. Confusion also occurs with regards to the role of 'Primary Care' and 'Public Health' providers in the Malaysian Primary Health Care system. This review aims to differentiate between Primary Care, Primary Health Care and Public Health, describe the relationships between the three entities and redefine the role of Primary Care and Public Health in the PHCPI-VSP in order to transform the Malaysian Primary Health Care system.

KEYWORDS: Primary Health Care; Primary Care; Public Health; Primary Health Care Performance Initiative; Vital Signs Profile; Trailblazer Country; Primary Health Care Reform; Malaysia

INTRODUCTION

A strong and robust Primary Health Care system is fair, equitable, cost-effective and ensures access for everyone in the community [1]. It is essential to achieving universal health coverage and can meet 80% of people's health care needs at every stage of life, from womb to tomb [2]. Primary Health Care prevents and treats infectious and non-communicable diseases [3]. It protects global health security, preventing and detecting outbreaks before they spread [3]; in short, it saves lives [4].

Globally, 5 million people die annually due to limited access and poor-quality Primary Health Care [1, 4]. With this mounting evidence on the need for a strong Primary Health Care system, the Bill & Melinda Gates Foundation, World Bank Group and the World Health Organization (WHO) launched the Primary Health Care Performance Initiative (PHCPI) in 2018 [5]. The PHCPI is a partnership of country policy makers, health system managers and advocates who are passionate and dedicated to transforming the global state of Primary Health Care in the low- and middle-income countries [5].

The Global Conference on Primary Health Care: from Alma-Ata towards achieving Universal Health Coverage and the Sustainable Development Goals, at Astana, Kazakhstan in October 2018 provided a platform for low- and middle- income countries from around the world to join the PHCPI [6]. Under this initiative, each country pledged to monitor their Vital Signs Profiles (VSP), which provide a snapshot of the strengths and weaknesses of their Primary Health Care system [5, 6]. The VSP monitoring tool offers a comprehensive picture of the state of Primary Health Care system in different countries, providing insights in four key pillars as described in Table 1.

Table 1 The Primary Health Care Performance Initiative (PHCPI) - Vital Signs Profiles (VSP) Key Pillars

Key Pillars	Vital Signs
Financing	• How much money does the country spend on Primary Health Care?
Capacity	• Does the country have policies that prioritize Primary Health Care? • Does the system have enough Primary Health Care Providers, medications and supplies?
Performance	• Are people able to get the care they need without financial or geographic barriers standing in the way? • Is the care people receive of high quality?
Equity	• Does the system reach the most marginalized people in society?

At this Global Conference, Malaysia has made a declaration to participate in the PHCPI and become a Primary Health Care Trailblazer Country; and to create a country specific VSP tool [7]. The launching of this VSP underscores the commitment of Malaysia to identify gaps in its Primary Health Care system. These gaps are pertinent to the policymakers in the Ministry of Health (MOH) who will have to prioritize the areas of concern and propose strategies to transform Primary Health Care system in Malaysia and fulfil the promise of the Astana Declaration. However, the VSP project requires an honest and transparent data collection and monitoring of the Primary Health Care system, so as to identify gaps and guide policy in support of Primary Health Care transformation. This is a huge commitment and can only be materialised if there is a collaborative partnership between Primary Care and Public Health providers.

Fundamental to all of these, is the controversy concerning whether or not 'Primary Care' and 'Primary Health Care' represent the same entity [8, 9]. Confusion also occurs with regards to the role of 'Primary Care' and 'Public Health' providers in the Primary Health Care system [10]. For many, the idea that Primary Care and Public Health should work together is both simple and natural proposition. However, in many developing countries such as Malaysia, relationship between Primary Care and Public Health, especially in the MOH is neither simple nor natural. This review aims to differentiate between Primary Care, Primary Health Care and Public Health, describe the relationships between the three entities and redefine the role of Primary Care and Public Health in the PHCPI-VSP in order to transform the Malaysian Primary Health Care system.

Primary Care and Primary Health Care: What is the Difference?

The World Health Report 2003 has brought to the fore the controversy concerning whether or not 'Primary Care' and 'Primary Health Care' represents the same entity [11]. The term 'Primary Health Care' is derived from the WHO Alma-Ata Declaration in 1978 [12]. Some may regard that 'Primary Care' and 'Primary Health Care' are coterminous. However, there is a growing recognition internationally that these terms describe two quite distinct entities [8, 9]. Primary Care, the shorter term, describes a concept of family doctor services delivered to individual patients [8, 9]. Primary Health Care is a broader term which derives from the core principles articulated by the WHO in the Alma-Ata

Declaration [12]. It describes an approach to health policy and service provision that includes both Primary Care services delivered to individuals by family doctors and population-level Public Health services [8, 9]. Based on this historical fact, neither Public Health nor Primary Care providers should be allowed to claim exclusive ownership of Primary Health Care. In actual fact, a collaborative partnership between Primary Care and Public Health providers is required to build a robust Primary Health Care system in any country [1, 6, 12] and to ensure a successful VSP monitoring.

History and Evolution of Primary Care into a Specialty in its Own Right

Generalist Primary Care Physicians have existed throughout the world for centuries [13]. In the earlier days, these doctors may not have had formal postgraduate training but they treated everyone and everything, usually in their own homes. The notion of Primary Care was set forth by the Dawson Report in 1920, following the World War I which has created a heavy healthcare and financial burden across Europe and the Great Britain [13]. The term Primary Care was used to distinguish the healthcare service from secondary and tertiary care services in the hospitals [13]. However, following the World War II which ended in 1945, there was a trend towards specialisation as more doctors began to specialise into various hospital specialties, contributing towards fragmentation of care in the community [13]. Consequently, there were outcries by the general public throughout the western world demanding to be cared for by a Primary Care Physician closer to their homes, reflecting the need to bolster the role of a family doctor in the community [13]. In the United States, the concept and terminology of Primary Care did not take hold until the 1960s. One of the major reports published during this period, known as the Millis Report helped to define both the meaning and the need for Primary Care [14]. The Millis Report emphasised that every individual needed a Primary Care Physician.

Over the last century, Primary Care has evolved into a specialty in its own right [13-15]. Primary Care is defined as the provision of accessible, comprehensive, coordinated, continuous, evidence-based, preventive and patient-centred health care services by Primary Care Physicians and their team, who are accountable for addressing individual's health care needs, developing a sustained partnership with patients, empowering them with knowledge and skills to look after their health and practicing within the context of family and community [15]. It integrates current biomedical, psychological and social understanding of health, which involves the ability to care for an individual patient as a whole person; and provides the first point of contact for the majority of people seeking health care [15]. Primary Care Physicians have a pivotal role in linking various healthcare sectors, integrating different elements of preventive care, disease management and the maintenance of health [15]. Primary Care is also known as Family Medicine in certain parts of the world such as the North America, Canada and Malaysia, and General Practice in the UK and Australia [13-15]. The terms 'Primary Care', 'Family Medicine' and 'General Practice' have since been used interchangeably throughout the world.

One of the countries with a robust Primary Health Care system is the United Kingdom (UK) [16]. Primary Health Care has become the bedrock of its healthcare system since the inception of the National Health Service (NHS) in 1948 [16]. At the heart of this robust system are 55,000 highly trained General Practitioners serving its 66 million populations, giving a ratio of 1 General Practitioner to 1200 registered patients [17]. It is required by law that every individual in the UK must be registered with a General Practitioner [17]. They are responsible to deliver comprehensive primary care services, including out-of-hours care to their registered population of patients and typically work in a group of 4-6 doctors, independently contracted to the NHS [18]. They act as gatekeepers to the NHS system and are supported by the allied healthcare team such as nurses, dietitians, pharmacists and physiotherapists [18]. In terms of training, legislation was passed in 1979 to introduce mandatory postgraduate General Practice training to all doctors who wished to become a General Practitioner in the UK [19]. Currently, this 3-year structured training programme is delivered by the Royal College of General Practitioners with a conferment of Membership

(MRCGP, UK) upon passing the examinations at the end of the programme [20].

Another country with a robust Primary Health Care system is Australia [21]. The Australian Government recognised General Practice as a discipline in its own right in 1989 [22]. Between 1989 and 1995, medical practitioners who were already practising in General Practice for more than five years could apply to be grandfathered on to the Vocational Register [22]. The grandfathering period ended in November 1996 [22]. To date, Australia has produced at least 25,000 General Practitioners serving its 25 million populations, giving a ratio of 1 General Practitioner to 1000 registered patients [22]. The mandatory 3-year structured training programme is conducted by the Royal Australian College of General Practitioners (RACGP) with a conferment of Fellowship (FRACGP) upon passing the examinations at the end of the programme [23].

The History and Evolution of Primary Care as a Specialty in Malaysia

The need for specialist Primary Care Physicians who can deliver comprehensive, coordinated, continuous, evidence-based, preventive and patient-centred health care services to the Malaysian communities was identified in the late 1980's [24]. This is due to the fact that more individuals were having multiple morbidities and suffered complications requiring hospital admissions, as a result of the change in lifestyle and rapid economic growth contributing towards the changing pattern of disease from acute infectious to chronic non-communicable diseases [25]. To address this need, Primary Care or Family Medicine was first introduced in the undergraduate curriculum in 1989 and postgraduate specialist training for Family Medicine was created in 1990 [25, 26]. Following this development, Primary Health Care has been declared as the thrust of health services since the documentation of 7th Malaysia Plan in 1996 [25].

Over the last 30 years, Primary Care or Family Medicine in Malaysia has evolved into a specialty in its own right [26]. Currently, postgraduate specialist training in Family Medicine is being offered by six public universities with the conferment of a Master degree in Family Medicine after a 4-year structured course. Alternative training pathways in Family Medicine include the Membership of Academy of Family Physician Malaysia (MAFPM), Fellowship of Royal Australian College of General Practitioners (FRACGP) and the Membership of the Royal College of General Practitioners, United Kingdom (MRCGP, UK). These alternative pathways have been recognised by the Family Medicine Specialty Subcommittee of the National Specialist Register (NSR) of Malaysia as valid alternative training options [27]. To date, there are approximately 600 doctors who have undergone postgraduate training and are registered as Family Medicine Specialists in the NSR [27]. Of these, nearly 400 are serving in the public Primary Care sector in the MOH, and the rest are in the private sector with a handful serving as lecturers in the universities.

However, the current number of Family Medicine Specialists is still inadequate to serve the 32 million population of Malaysia as majority of the doctors working in Primary Care in both the public and private sectors do not hold postgraduate qualification. These include the medical officers in the public Primary Care Clinics and majority of the General Practitioners in the private sector. Unlike in the UK and Australia, there is no legislation to require mandatory postgraduate primary care training in Malaysia.

Internationally, it is recommended for 1 qualified Primary Care Physician to be responsible for a defined population of between 1000 - 2000 people [17, 22]. Therefore, in order to serve 32 million population of Malaysia, we need to produce at least 16,000 Family Medicine Specialists. Another parallel training pathway i.e. the Membership of the Irish College of General Practitioners (MICGP) is currently being explored by the MOH with the aim to achieve this target. Legislation also needs to be passed to introduce mandatory postgraduate Primary Care training to all doctors who wish to become a Primary Care Physician in Malaysia.

The Differences and Similarities between Primary Care and Public Health

Confusion still exists with regards to the role of 'Primary Care' and 'Public Health' providers in the Malaysian Primary Health Care system. Historically, these terms denote different concepts and represent

distinct entities. In Malaysia, Primary Care (Family Medicine) and Public Health are two distinct specialties in their own rights, professionally governed by separate specialty subcommittee under the NSR. The biggest difference in terms of core functions between the two specialties is that Primary Care deals with health from the perspective of individuals, while Public Health deals with health from the perspective of populations [10].

Primary Care and Public Health providers may be serving the same population, and may have common objectives to prevent diseases and to improve the health of the population. However, in Primary Care, the patient is the individual person, whereas in Public Health, the patient is the entire population. Therefore, the roles and functions of a Family Medicine Specialist are distinctively different from a Public Health Specialist, although they may share common goals [10]. Table 2 illustrates the distinctive roles and functions of a Family Medicine Specialist and Public Health Specialist, and their common goals and similarities [10].

Table 2 Core Functions of Family Medicine Specialist vs. Public Health Specialist

Core Functions of Family Medicine Specialist	Core Functions of Public Health Specialist	Common Goals & Similarities
• Provide comprehensive, coordinated, continuous, accessible, evidence-based, preventive and patient-centred health care services to individual patients and their families • This includes screening, health promotion, prevention, disease management, rehab and palliative care	• Monitor health and disease trends and highlighting areas for action • Identify gaps in health information • Advise on methods for health and health inequality impact assessment	• Work synergistically to IDENTIFY population at risk and PREVENT the onset of diseases by commencing early detection and intervention using Primary Care approach (individual patient care) and Public Health approach (the entire population)
• Provide the first point of contact for the majority of people seeking health care • Provide care for an individual patient as a whole person, integrating current biomedical, psychological and social understanding of health	• Develop public health programmes and strategies on how best to prevent or control the problem • Implement and evaluate public health programmes – providing data to continuously improve the health of the population and eliminate inequality	• Share and utilise the same information for effective decision-making and programme planning and evaluation – but each specialty needs their own resources to carry out their distinctive duties
• Develop a sustained partnership with patients, empowering them with knowledge and skills to look after their own health	• Disseminate information on the public health status of the population	• Serve the same population - but each specialty needs their own resources to carry out their distinctive duties
• Play a pivotal role as patient's advocate in coordinating care between various healthcare sectors (secondary care, tertiary care and public health) integrating different	• Provide health education to the general public through public health campaigns	• Reduce health disparities through effective collaboration between Primary Care and Public Health - working hand-in hand, collaboratively with mutual respect and in

elements of preventive care, disease management and the maintenance of health		parallel with one another to achieve a common goal to improve the health of the population
• Be accountable to address individual's health care needs for a defined population	• Be accountable to address health determinants of the entire population	• Work collaboratively to improve the health of the population
• Manage resources pertinent to Primary Care and develop an autonomous Primary Care organizational structure	• Manage resources pertinent to Public Health and develop an autonomous Public Health organizational structure	• Work collaboratively to manage resources pertinent to each specialty
• Plan and develop policies pertinent to Primary Care	• Plan and develop policies to address priority health needs of the entire population	• Work collaboratively to plan and develop policies to improve the health of the population

A strong Primary Health Care system is defined as having well trained Primary Care Physicians or Family Medicine Specialists and multidisciplinary allied healthcare teams who provide accessible, comprehensive, patient-centred, continuous and coordinated services to a defined population [3, 4]. They provide access to care close to patients with minimal geographical and financial barriers, coordinate care through all healthcare levels from primary, secondary to tertiary care and establish a doctor-patient relationship that is continuous over time [15]. A strong Primary Health Care system also requires Primary Care and Public Health providers to work collaboratively, hand in hand and in parallel to improve the health of the population [10].

While Family Medicine Specialists and their team detect, prevent, treat and manage infectious and non-communicable diseases at individual patient level, Public Health Specialists and their team protects global health security through transparent data collection and monitoring to detect and prevent outbreaks, before they spread to become an epidemic [10]. Therefore, a collaborative partnership between Primary Care and Public Health providers is pivotal for Malaysia to successfully propel itself in becoming a Trailblazer Country for the PHCPI-VSP project. However, the question remains whether the current working relationship between these two specialties in Malaysia is already at its best or could their roles be redefined?

The Primary Health Care Vital Sign Profile in Malaysia: How Are We Really Doing?

Capacity in Service Delivery

Primary Health Care service in Malaysia is provided for by the public and private sectors, but sadly both are working in silo. The MOH has been the major provider of public Primary Care services in Malaysia in the past few decades [24, 25]. Currently, there are 1085 public Primary Care Clinics in Malaysia [28]. These clinics are staffed by at least 381 Family Medicine Specialists, 4998 Medical Officers without postgraduate qualifications, 4767 paramedical practitioners known as Assistant Medical Officers, 24,425 Nurses, 4136 Pharmacists and 63 Dietitians [28]. Significant progress has been made in the public Primary Care sector in terms of clinic infrastructure and comprehensiveness of the services being offered to individual patients [29]. These clinics deliver preventive care for patients with risk factors, pre pregnancy care, maternal child health care, lifestyle modification advice, optimization and intensification of treatment regiments, management of complex medical conditions, domiciliary care, and patient empowerment in self-management of chronic

long term conditions, as well as psychosocial support to patients and their families [29].

In the private sector, there are more than 8,000 Primary Care doctors, also known as General Practitioners, many of whom unfortunately have no postgraduate qualification [29]. These General Practitioners work in about 7,000 private Primary Care Clinics, majority of which are located in the urban areas [29]. These clinics are largely run single-handedly or by a group of 2 to 3 General Practitioners, often without the complement of allied health care staff [29]. They provide easy access for common acute minor ailments and simple trauma/injury management [29]. With sluggish economic growth in recent times, overproduction of doctors and the mushrooming of private Primary Care Clinics close to one another, competition for patients has become intense [30]. As a result, as many as 500 private Primary Care Clinics were estimated to have been closed between 2014 and 2016 due to poor number of patient visits thus rendering the clinic uneconomical [31]. Some have even resorted to offer additional activities such as complementary/alternative medicine or aesthetic/beauty health care services [31].

Financing

In terms of payment mechanism, the public Primary Care sector is highly subsidised by the government and patients pay a minimal sum of RM 1.00 for treatment [29]. In the private Primary Care sector, costs of treatment are largely borne out-of-pocket by patients (78%), and only a small portion is funded by private medical insurance (15%) or medical insurance cover provided by their employers (7%) [32]. It is often too expensive for patients, especially those with multiple chronic conditions to bear the out-of-pocket costs in the private sector [32]. As a result, the over-subsidised and under-staffed public Primary Care Clinics are overburdened, providing care to a larger proportion of patients with chronic conditions (33.7/100 encounters) compared with the private Primary Care Clinics (5.6/100 encounters) [33].

The absence of the universal funding mechanism leads to financial barriers for the vulnerable group of patients to access the private Primary Care sector [34]. Approximately 38% of the Total Expenditure on Health (TEH) in Malaysia came from out-of-pocket payments [32]. This payment mechanism is the most inefficient, inequitable and regressive forms of healthcare financing as it is strongly correlated with the incidence of catastrophic health expenditures i.e. when a household is said to have been impoverished by medical expenses [35].

Governance and Policy

In terms of the governance structure in the MOH, Primary Care is only a small unit governed by the Family Health Development Division, which is one of the divisions under the Deputy Director General of Public Health [36]. It has remained so since the birth of Primary Care as a specialty in the early 1990's. Under the current organization hierarchy, policies pertaining to Primary Care are formed and governed by the Public Health Division. These policies are formed by Public Health providers who have not worked in Primary Care Clinics as clinical specialists.

The MOH spends 39% of the Current Health Expenditure (CHE) on Primary Health Care [7, 32]. However, the control of financial expenditure, human resource allocation and technical support for public Primary Care sector are placed under the Public Health Division. Thus, most of these allocations will first be given priority for Public Health to conduct the various Public Health programmes at the national, state and district levels. Consequently, majority of this budget is spent on Public Health programmes and Primary Care Clinics eventually receive just a small portion of the allocation. As a result, the infrastructure in many Primary Care Clinics is in dilapidated conditions. Medical Officers have to share rooms and there is no privacy in conducting clinical consultations. Availability of new therapeutic agents is also limited.

In addition to the problems with infrastructure, there is also inadequate number of dietitians, nutritionists, occupational therapists and physiotherapists in public Primary Care Clinics [28, 29]. Unfortunately, their posts allocations have not been in parallel to the overwhelming demand for their role in chronic disease management. There is also a huge turnover of staff in public Primary Care Clinics. Many who were trained to deliver multidisciplinary care in chronic disease management team are being transferred

elsewhere. Thus, patients with chronic multi-morbidities have been deprived of the opportunity for a better care which could be delivered by skilful multidisciplinary allied health team [37]. Due to the current organization hierarchy, Family Medicine Specialists have minimal autonomy and voice to influence the policies, budget allocation and human resource planning pertaining to Primary Care.

The private Primary Care sector is currently regulated by the Private Healthcare Facilities and Services Act 1998 [38]. This Act covers registration and approval of license of the private Primary Care Clinics [38]. However, it does not cover monitoring of the performance and quality of care delivered by the private Primary Care doctors.

Performance

The public Primary Care sector is currently under strained from growing public demands, the rising prevalence of chronic conditions requiring long term care [39], high patient load and insufficient resources to meet the demands [29, 37]. Shortages of human resource and budget constraints faced by the public Primary Care sector are giving negative impact on the public Primary Care services and on the health of the population [29, 37]. These include short consultation time and long waiting time; leading to inadequate delivery of preventive care to individual patients, suboptimal management and monitoring of chronic long term conditions resulting in high complication rates requiring hospitalisations, disability and death [37].

Adding to this strain, Family Medicine Specialists and their multidisciplinary team often receive multiple and duplicate 'orders' from various Public Health Divisions in the MOH e.g. Disease Control Division, School Health Division, Maternal & Child Health Division and Food Safety Division, to implement redundant tasks and procedures. The redundant multi-tasking is a result of non-coordinated duplications of Public Health programmes designed by the various Public Health Divisions, thus creating stressful and non-efficient working environment. Many of the programmes which are expected of Family Medicine Specialists and their multidisciplinary team to implement are Public Health programmes which are best delivered by the Public Health Specialists. Such programmes include community-based interventions, verbal autopsy and epidemiological data collection to monitor health behaviour and environment.

Family Medicine Specialists are already overburdened in carrying out their core functions as clinicians delivering individual care to patients in Primary Care Clinics throughout Malaysia. The constraints and redundant multitasking in conducting Public Health programmes have compromised individual patient care, especially in chronic disease management, namely cardiovascular risk factors (CVRF) [29, 37]. A nationwide audit of diabetes care and management conducted in public Primary Care Clinics showed that only 18.1% of patients with diabetes had attained an HbA1c of $< 6.5\%$ [40]. A study in six public Primary Care Clinics revealed blood pressure control was achieved in only 24.3% of hypertensive patients with diabetes and 60.1% of hypertensive patients without diabetes [41]. Similarly, a study looking at the process of care and the choice of antihypertensive medications in public and private Primary Care Clinics in Malaysia revealed that 21% of prescription practices were less than optimal in both sectors [42]. A lipid control study of patients with diabetes revealed that the target low density lipoprotein cholesterol (LDL-C) of ≤ 2.6 mmol/L was achieved in only 22% of patients attending a public Primary Care clinic in Sarawak [43]. Suboptimal management of chronic conditions in Primary Care lead to the massive burden of treating complications in secondary care [28, 44], as well as burdening patients and their families due to morbidity and premature deaths, and burdening the country due to the premature loss of human capital [44-46]. In Malaysia, non-communicable diseases (NCD) accounted for 74% of the total deaths and 17% of deaths were caused by premature NCD mortality [7]. In a recent report, 95% of patients presenting with Acute Coronary Syndrome (ACS) were found to have at least one CVRF. Of these CVRF, 46.2% had diabetes, 64.7% had hypertension, 38.6% had dyslipidaemia and 36.9% were current smokers [47]. The mean age of individuals with ACS at admission in Malaysia was 58.6 years old, of which 23.8% were under the age of 50 years [47].

This is younger compared to our Asian counterparts in the neighbouring countries [47].

Therefore, Public Health specialists should ease this burden by delivering their core functions and not just merely carrying out administrative duties, developing policies and programmes for Family Medicine Specialists to implement. The fragmentation and duplication of roles that take place rampantly in the MOH is causing wastage of resources and a huge strained to the ineffective Primary Health Care system. Therefore, Primary Care and Public Health should not exist in the current organization system where one specialty is regarding another specialty as their subservient. Primary Care should not be used as a vehicle to implement Public Health programmes. Supported by robust historical evidence throughout the world, Primary Care does not belong to Public Health and vice versa [10-15]. They are two distinct specialties with unique features and core functions.

In the private Primary Care sector, the safety and quality of care delivered by the private Primary Care doctors are monitored by the Malaysian Society for Quality in Health (MSQH) Medical Clinic Accreditation standards [48]. This accreditation process provides private Primary Care doctors with a tool to demonstrate their accountability, quality and safety that are being delivered to their patients, which have taken into consideration of the requirements of the Private Health Care Facilities and Services Act 1998 and its corresponding Regulation 2006 [48]. However, this accreditation process only covers basic competencies and infrastructure of the private Primary Care doctors. It does not monitor performance in achieving quality outcome indicators of various common conditions in Primary Care.

Equity

The WHO defines health equity as "the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically" [49]. On the other hand, health inequality is defined as "the differences in health status or in the distribution of health determinants between different population groups" [50]. Encompassing all of these is the Universal Health Coverage which is defined as "the provision of a comprehensive and equitable health services to the entire population without financial or geographical barriers" [51]. In Malaysia, the poor may be spared a high burden of out-of-pocket payments due to the extensive network of public Primary Care Clinics which provide a wide range of very cheap health care services to those in need [52]. However, increasing public demand for better quality care, as well as changing demographics and disease burdens, put the Malaysian public Primary Care system under tremendous strain [29]. Many are turning into the private sector for better quality of care, resulting in dramatic increase in out-of-pocket payments in recent years [32]. Therefore, health inequity and inequality are both prominent in Malaysia where medical care is exposed to market forces, especially in the private sector [32, 34, 35]. Individuals with the greatest need of health care services are those with the least ability to pay for quality services [32, 34, 35]. A study has found that poor people in Malaysia were likely to die at a younger age [53]. Socially disadvantaged districts were found to have worse mortality outcomes compared to more advantaged districts [53]. Mortality outcomes within ethnic groups were also found to be less favourable among the poor [53].

The Quality and Costs of Primary Care (QUALICOPC) is a multi-country study evaluating quality, costs and equity in Primary Care in 35 countries including Malaysia [54]. The Malaysian QUALICOPC Study included 222 public Primary Care Clinics and 739 private Primary Care Clinics from 5 states [55, 56]. The four core dimensions of Primary Care i.e. access to Primary Care services, comprehensiveness (the provided scope of services), continuity and coordination of care were evaluated using questionnaires adapted from the European QUALICOPC Study [54-56]. In terms of accessibility, private Primary Care Clinics offered better access and shorter waiting time compared to public Primary Care Clinics [55, 56]. In terms of comprehensiveness, public Primary Care Clinics provided more comprehensive care by multidisciplinary allied health care team compared to the private clinics [55, 56]. However, gaps existed in longitudinal continuity and coordination of care in both sectors as current legislation does not

require patients to be registered with a family doctor [55, 56].

The Family Doctor Concept with the aim of 'One Family One Family Doctor' is now being introduced in the public Primary Care Clinics, in an effort to provide better continuity and coordination of care for chronic diseases [57]. However, this concept will not be able to rectify the problems immediately, as there is insufficient number of Family Medicine Specialists needed to care for a defined registered population at an acceptable ratio at present.

Overall, there is an imbalanced distribution of resources between the public and private Primary Care sectors, where the number of private Primary Care doctors and clinics outnumbered the public clinics [33]. The underutilisation of private Primary Care doctors is wasteful, and could perhaps be one mechanism to alleviate the overcrowded public Primary Care sector. Therefore, redistributing public sector patients who have to wait several hours, to a private Primary Care Clinic nearer their home, can be a real option. Better access, continuity and coordination of care can perhaps be achieved through integration of the public and private Primary Care services to become a single system of care under the national health financing scheme.

In order to achieve this, negotiations will need to be made with the private Primary Care sector to become independent contractors to the MOH. This will require preparation of the blueprint on public-private integration which needs to be done in collaboration with the professional bodies representing Primary Care doctors and various stakeholders in the public and private sectors. One of the most important steps is to push for legislation towards compulsory training and certification of Primary Care doctors, as many General Practitioners in the private sector as well as Medical Officers in the public sector do not hold postgraduate qualification in Family Medicine. These Primary Care doctors must undergo postgraduate training in Primary Care or Family Medicine to ensure safe and high quality patient care [58]. Once there are sufficient numbers of qualified Primary Care doctors to care for 32 million population of Malaysia, legislation will need to be passed to require patients to be registered with a Primary Care doctor. A payment mechanism should be worked out to address the purchasing of private Primary Care services, and this will generate a win-win scenario for all concerned. Monitoring of performance in achieving quality outcome indicators by Primary Care providers in both the public and private sectors should be done transparently by an autonomous regulatory body. Table 3 summarised an honest reflection on the state of VSP of the Malaysian Primary Health Care system.

Table 3 The Primary Health Care Performance Initiative (PHCPI) - Vital Signs Profiles (VSP) in Malaysia: How Are We Really Doing?

Core Area	Vital Sign	Current Status/Gap
Policy & Governance	• Does the country have policies that prioritize Primary Health Care?	• Primary Health Care has been declared as the thrust of health system since the 7th Malaysia Plan • However, Primary Care is only a small unit under a Public Health Division in the MOH • Family Medicine Specialists have little autonomy to influence policy, budget and human resource planning in Primary Care
Financing	• How much money does the country spend on Primary Health Care?	• 39% of the Current Health Expenditure (CHE) is spent on Primary Health Care • However, this budget is controlled by the Public Health Division, MOH • Over-subsidised public sector vs. high out-of-pocket payments in the private sector • Absence of universal funding mechanism i.e. national health insurance scheme to cover expenses in the private sector

Capacity	• Does the system have enough Primary Health Care Providers, medications and supplies?	• Insufficient number of Family Medicine Specialists to care for 32 million population of Malaysia • Majority of Primary Care doctors have not received formal training • Lack of legislation to make training mandatory • Lack of multidisciplinary allied health team, especially in the private sector and high staff turnover in the public sector • The number of doctors and clinics in the private sector outnumbered the public sector • Lack of integration of the public and private sectors • Lack of continuity and coordination of care in both sectors as there is no legislation which requires an individual to be registered with a Primary Care doctor
Performance	• Are people able to get the care they need without financial or geographic barriers standing in the way? • Is the care people receive of high quality?	• Needs mapping of all public and private Primary Care Clinics in Malaysia to determine whether there is geographical barrier • Financial barrier exists in the private sector – high out-of-pocket payments may lead to catastrophic healthcare expenditure • The public sector is under strained to deliver care to majority of patients with chronic conditions, as they cannot afford the out-of-pocket payments in the private sector • Suboptimal management of chronic conditions due to high patient load, time constrained and high staff turnover • Absence of an autonomous regulatory body to monitor performance of Primary Care providers in achieving quality outcome indicators in both the public and private sectors
Equity	• Does the system reach the most marginalized people in society?	• The over-subsidized public Primary Care services do reach the most marginalized people • However, health inequity and inequality are both prominent in Malaysia where medical care is exposed to market forces in the private sector • Individuals with the greatest need of health care services are those with the least ability to pay for quality services • Poor people are more likely to die younger in Malaysia

Redefining the Role of Primary Care and Public Health in support of the PHCPI-VSP and Primary Health Care Transformation

The ultimate aim of Primary Health Care transformation in Malaysia is to have an integrated public – private Primary Health Care system that is proactive, providing comprehensive, coordinated, continuous and high quality care, designed to meet long term needs of the population, ensuring universal health coverage based on equity and solidarity [1, 6, 57]. The PHCPI-VSP data should be used to justify the call for Primary Health Care transformation in Malaysia. However, these data need to be collected in an honest and transparent method to identify the gaps in the current system. This can only happen if there is a collaborative partnership between Primary Care and Public Health providers.

A clear division of roles, functions and tasks between Family Medicine Specialists and Public Health Specialists as summarised in Table 4, would ease the unnecessary burdens shouldered onto the Family Medicine Specialists. This is important to ensure that Family Medicine Specialists and their multidisciplinary allied healthcare team are able to focus on delivering comprehensive and highly quality primary care services to the individual patients. All of these measures are vital to reduce complication rates requiring hospitalisations, disability and death.

Table 4 Redefining the Roles of Family Medicine Specialists and Public Health Specialists in the Malaysian Primary Health Care System

Role of Family Medicine Specialist	Role of Public Health Specialist	Common Goals
• Delivering care to individual patients: preventive care, pre pregnancy care, maternal child health care, giving lifestyle modification advice, optimizing and intensifying treatment regiments, managing complex medical conditions, delivering domiciliary care, empowering patients in self-management of chronic long-term conditions and giving psychosocial support to patients and their families • Develop a sustained partnership with patients, empowering them with knowledge and skills to look after their own health • Play a pivotal role as patient's advocate in coordinating care between various healthcare sectors	• Delivering care at the population level: monitor health and disease trends, highlighting areas for action, identify gaps in health information. • Develop, implement and evaluate public health programmes • Find strategies to continuously improve the health of the population and eliminate inequality • Disseminate information on the public health status of the population • Provide health education to the general public through public health campaigns	• Work synergistically to IDENTIFY population at risk and PREVENT the onset of diseases by commencing early detection and intervention using Primary Care approach (individual patient care) and Public Health approach (the entire population) • Share and utilise the same information for effective decision-making and programme planning and evaluation – but each specialty needs their own resources to carry out their distinctive duties • Serve the same population - but each specialty needs their own resources to carry out their distinctive duties
• Be accountable to address individual's health care needs for a defined population	• Be accountable to address health determinants of the entire population	• Work hand-in-hand, collaboratively with mutual respect and in parallel with one another to improve the health of the population
• Manage resources pertinent to Primary Care and develop an autonomous Primary Care organizational structure	• Manage resources pertinent to Public Health and develop an autonomous Public Health organizational structure	• Work collaboratively to manage resources pertinent to each specialty
• Plan and develop policies pertinent to Primary Care	• Plan and develop policies to address priority health needs of the entire population	• Work collaboratively to plan and develop policies to improve the health of the population

Primary Care and Public Health are uniquely positioned to play critical collaborative roles in tackling the complex health problems that exist both nationally and locally. They share similar goals and can be rebuilt based on this shared collaborative platform. The two specialties should work hand-in hand, collaboratively with mutual respect and in parallel with one another in a transformed Primary Health Care system to improve the health of the population.

Proposal for Change in the Governance Structure for Primary Care in the Ministry of Health Malaysia

Central to our recommendation is the call to restructure the Primary Care governance in the MOH. This is the most pivotal step to realise the goal of making Malaysia a Trailblazer Country in the PHCPI-VSP project and to prepare for the future Primary Health Care transformation i.e. the integration of public and private Primary Care sectors in Malaysia. The organisational and governance structural change must start within the MOH. Family Medicine Specialists need to be given strong voice and autonomy to ensure that they play a key role in the governance of Primary Care Health Care system, both at the national and regional levels. Family Medicine Specialists being the specialist in Primary Care would understand the need of patients, their families and communities at large, as well as the constraints faced in the delivery of patient care in their day-to-day clinical practice. This is in line with the primary care organisation and governance reforms in the European countries, United Kingdom and Canada which called for Primary Care to be in the drivers' seats [59-62]. Therefore, strong and autonomous Primary Care governance by Family Medicine Specialists are needed at the national, state and regional levels to influence the policies and planning pertaining to Primary Care, and ultimately to ensure that Malaysian population from all walks of life would receive high quality, equitable, continuous and coordinated Primary Care services from both the public and private sectors in a transformed Primary Health Care system.

In line with this, we call for a separate Primary Care organisation structure in the MOH, to be headed by the Deputy Director General of Primary Care, who will be directly answerable to the Director General of Health, Malaysia. Figure 1 illustrates the proposed Primary Care governance structure in the MOH while Table 5 summarises the roles and functions of the various Primary Care Divisions under the proposed organisation structure.

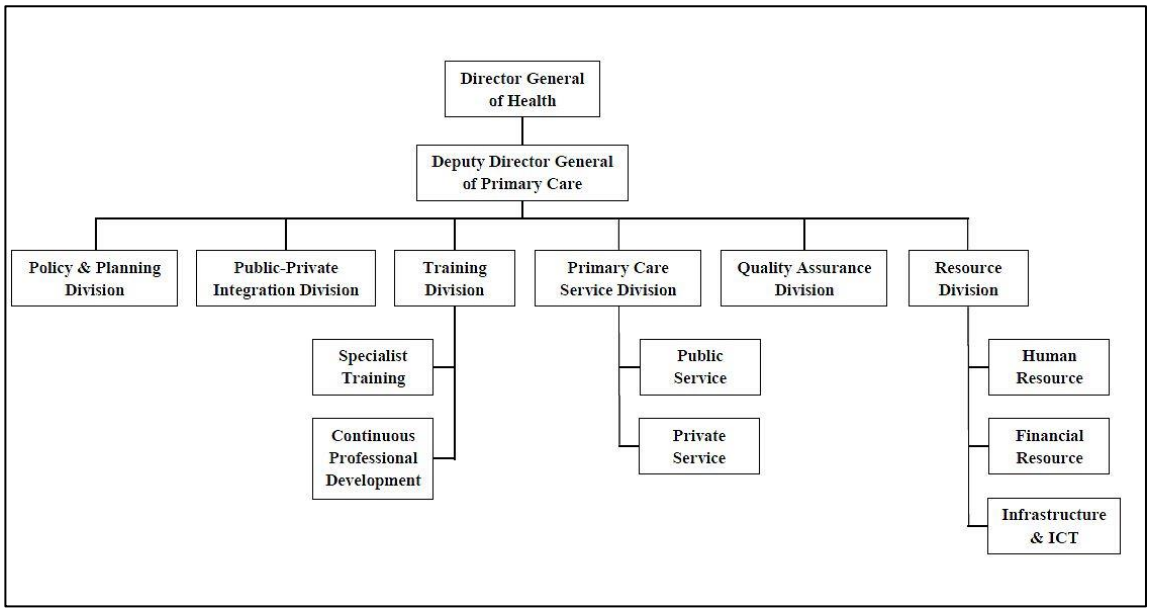

Figure 1 The Proposed Governance Structure for Primary Care in the Ministry of Health, Malaysia

Table 5 Roles and Functions of the Various Primary Care Divisions in the Proposed Primary Care Governance Structure in the MOH

Divisions	Roles and Functions
Policy and Planning	i. Develop relevant policies and planning pertaining to Primary Care ii. Collaborate with other stakeholders to push for legislation e.g. compulsory training and certification of Primary Care doctors
Public-Private Integration	i. Collaborate with professional bodies representing Primary Care doctors and various stakeholders in the public and private sectors ii. Form technical working groups and prepare blueprint for the public-private integration
Services	i. Expand and enhance Primary Care services in the public and private primary care sectors - focusing on disease management, prevention of complications and co-morbidities and promotion of better health to individual patients, families and communities ii. Monitor Primary Care services in both the public and private sectors, excluding the Public Health programmes which are best governed and delivered by the Public Health Specialists
Resources	i. Negotiate for a higher allocation of financial and human resources from the Government in order to increase the accessibility, equitability and quality of Primary Care services ii. Distribute resources needed by the public and private Primary Care Clinics according to the population disease burden
Quality Assurance	i. Set achievable and realistic service, process and clinical performance indicators for management of common conditions in Primary Care in both the public and private sectors ii. Monitor and safeguard quality and standards of Primary Care services in the public and private sectors
Training	i. Collaborate with the public and private universities, and professional bodies to strengthen and expand Family Medicine Specialist training programmes, in order to increase the number of Family Medicine Specialists needed to serve the Malaysian population (at least 16,000 Family Medicine Specialists are needed to care for 32 million population of Malaysia) ii. Provide ongoing continuous professional development training and education for doctors and allied health personnel working in the public and private Primary Care sectors

CONCLUSION

In conclusion, an efficient and effective Primary Care organisation and governance structure in the MOH is pivotal to ensure the success of the PHCPI-VSP project in making Malaysia a Trailblazer Country. A successful PHCPI-VSP project will identify gaps in our Primary Care delivery system which will ultimately instigate Primary Health Care transformation in Malaysia. The ultimate aim is for Malaysia to have a robust Primary Health Care system at par with developed countries, that is proactive, providing comprehensive, coordinated, continuous and high-quality care, designed to meet long term needs of the population, ensuring universal health coverage based on equity and solidarity. High level political commitment that ensures fundamental transformation of the current Primary Health Care

system is much needed [63]. Until this happens, the pursuit of quality, equity and continuity of care will remain a distant reverie.

Conflict of Interest

Authors declare none.

REFERENCES

1. World Health Organization. Primary Health Care: Now More Than Ever: The World Health Report 2008 [Internet]. Geneva: WHO; 2008. Available at: http://www.who.int/whr/2008/en/
2. Starfield B. Is primary care essential? Lancet. 1994; 344(8930): 1129–1133
3. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005; 83(3): 457–502
4. Macinko J, Starfield B, Shi L. The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970-1998. Health Serv Res. 2003; 38(3): 831–865
5. Primary Health Care Performance Initiative, 2018. Available at: https://improvingphc.org/
6. World Health Organization. The Global Conference on Primary Health Care: from Alma-Ata towards achieving Universal Health Coverage and the Sustainable Development Goals, Astana, Kazakhstan, 25-26 October 2018. https://www.who.int/primary-health/conference-phc
7. Primary Health Care Performance Initiative, Vital Signs Profile, Malaysia, 2018. https://improvingphc.org/sites/default/files/country/trailblazer/pdf/2018.10.19%20Malaysia%20VSP_final_0.pdf
8. Awofeso N. What is the difference between 'Primary Care' and 'Primary Healthcare'? Qual Prim Care. 2004; 12: 93–94
9. Muldoon LK, Hogg WE, Levitt M. Primary Care (PC) and Primary Health Care (PHC). What is the difference? Can J Public Health. 2006; 97(5): 409-411
10. Brown AD, Upshur R, Sullivan TJ. Public Health and Primary Care: Competition or Collaboration. Healthcare Papers. 2013; 13(3): 4-8. DOI:10.12927/hcpap.2014.23690
11. World Health Organization. Health Systems: principled integrated care. In: World Health Report 2003. Geneva: World Health Organization, 2003, Chapter 7
12. World Health Organization. Declaration of Alma-Ata. International Conference on Primary Health Care. Alma-Ata, USSR, 6-12 September 1978. Geneva: World Health Organization, 1978
13. Howell JD. Reflections on the past and future of Primary Care. Health Aff. 2010; 29 (5): 760–765. DOI:10.1377/hlthaff.2010.0014
14. Gutierrez C, Scheid P. The history of Family Medicine and its impact in US Health Care Delivery. Department of Family and Preventive Medicine, University of California, San Diego, United States. 2019. https://www.aafpfoundation.org/content/dam/foundation/documents/who-we-are/cfhm/FMImpactGutierrezScheid.pdf
15. Kringos DS, Boerma WG, Hutchinson A, van der Zee J, Groenewegen PP. The breadth of primary care: a systematic literature review of its core dimensions. BMC Health Serv Res. 2010; 10:65
16. Department of Health, United Kingdom. Transforming Primary Care: safe, proactive, personalised care for those who need it most. National Health Service (NHS) England. Crown Copyright 2014. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/304139/Transforming_primary_care.pdf
17. British Medical Association (BMA). Safe Working in General Practice. BMA, London, 2016. file:///C:/Users/user/Downloads/20160684-GP-safe%20working-and-locality-hubs%20.pdf

18. Primary Care Workforce Commission. The future of Primary Care: Creating teams for tomorrow. National Health Service, Health Education England, 2015. https://www.hee.nhs.uk/sites/default/files/documents/The%20Future%20of%20Primary%20Care%20report.pdf
19. Hasler J. History of vocational training for general practice: the 1970s and 1980s. Br J Gen Pract, 1989; 39: 338-341
20. Royal College of General Practitioners, United Kingdom. General Practice Training. 2019 https://www.rcgp.org.uk/about-us/gps-in-training.aspx
21. The Royal Australian College of General Practitioners. General Practice: Health of the Nation 2018. East Melbourne, Vic: RACGP, 2018. https://www.racgp.org.au/download/Documents/Publications/Health-of-the-Nation-2018-Report.pdf
22. The Department of Health, Australia. General Practice Statistics, 2018. http://www.health.gov.au/internet/main/publishing.nsf/content/general+practice+statistics-1
23. The Royal Australian College of General Practitioners. Become a GP: Become a Specialist in Life. 2019. https://www.racgp.org.au/education/students/a-career-in-general-practice/become-a-gp
24. Merican MI, Rohaizat BY. Health Care Reforms and Changes: the Malaysian Experience. Asia Pac J Public Health. 2002; 14(1):17-22
25. Merican MI, Rohaizat BY, Haniza S. Developing the Malaysian Health System to Meet the Challenges of the Future. Med J Malaysia. 2004; 59(1):84-93
26. Ramli AS. Primary Health Care in Malaysia: 30 years post Alma-Ata. UiTM MediPulse. 2008; 1 (1): 46-48
27. National Specialist Register of Malaysia. Recognized Postgraduate Qualifications in Family Medicine. 2019. https://www.nsr.org.my/qualifications1.html #FAMILYMEDICINE
28. Ministry of Health, Malaysia. Malaysia Health Facts 2018. http://www.moh.gov.my/resources/index/Penerbitan/Penerbitan%20Utama/Fakta%20kesihatan/KKM_HEALTH_FACTS_2018_new.pdf
29. Ministry of Health, Malaysia and Harvard T.H. Chan School of Public Health. Malaysia Health Systems Research Volume I. Contextual Analysis of the Malaysian Health System, March 2016. http://www.moh.gov.my/penerbitan/Laporan/Vol%201_MHSR%20Contextual%20Analysis_2016.pdf
30. New Straits Times. GP clinics finding it hard to survive. NST, August 26, 2017. https://www.nst.com.my/opinion/letters/2017/08/272819/gp-clinics-finding-it-hard-survive
31. The Star Online. Clinics closed due to poor business. The Star Online, June 22, 2017. https://www.thestar.com.my/news/nation/2017/06/22/clinics-closed-due-to-poor-business-gps-seeing-fewer-patients-amid-rising-operating-costs/
32. Ministry of Health, Malaysia. Malaysia National Health Accounts (MNHA): National Health Expenditure Report 1997-2017. MNHA Steering Committee, November 22, 2018. http://www.moh.gov.my/images/gallery/publications/MNHA/Pembentangan%20Mesyuarat%20Jawatankuasa%20Pemandu%20MNHA%202018%20-%20National%20Health%20Expenditure%201997-2017%2007122018.pdf
33. Clinical Research Centre, Ministry of Health, Malaysia: National Healthcare Establishments and Workforce Statistics (Primary Care) 2008–2009. Kuala Lumpur, 2011. http://www.crc.gov.my/nhsi/wp-content/uploads/document/publication/Primary_Care_Report.pdf]Google Scholar
34. Abdul Rani MF. Issues in Healthcare Reforms. Journal of Clinical and Health Sciences. 2018;

3 (2): 1-4. https://jchs-medicine.uitm.edu.my/images/manuscript/vol3issue2/editorial/p1-4/Issues-in-Healthcare-Reforms.pdf

35. World Health Organization. Health financing for universal coverage: Out-of-pocket health payments and catastrophic expenditures. 2019. https://www.who.int/health_financing/catastrophic/en/index1.html
36. Ministry of Health, Malaysia. Organization Structure. 2019. http://www.moh.gov.my/index.php/pages/view/3
37. Ramli AS, Taher SW: Managing chronic diseases in the Malaysian primary health care – a need for change. Malays Fam Physician. 2008; 3 (1): 7-13
38. Laws of Malaysia, Act 586. Private Healthcare Facilities and Services Act 1998. https://www.mma.org.my/images/pdfs/Link-LawOfMsiaAct/private-healthcare-facilities-and-services-act-1998.pdf
39. Mimi O, Tong SF, Nordin S, Teng CL, Khoo EM, Abdul-Rahman A, Zailinawati AH, Lee VKM, Chen WS, Shihabudin WM, Noridah MS, Fauziah ZE: A comparison of morbidity patterns in public and private primary care clinics in Malaysia. Malays Fam Physician. 2011; 6 (1): 19-25
40. Mastura I, Chew BH, Lee PY, Cheong AT, Sazlina SG, Jamaiyah H, Syed Alwi SAR, Sri Wahyu T, Zaiton A: Control and treatment profiles of 70,889 adult Type 2 Diabetes Mellitus patients in Malaysia - a cross sectional survey in 2009. Int J Collab Res Intern Med Public Health. 2011; 3: 98-113
41. Cheong AT, Tong SF, Sazlina SG, Azah AS, Salmiah MS: Blood pressure control among hypertensive patients with and without diabetes mellitus in six public primary care clinics in Malaysia. Asia Pac J Public Health. 2013; Epub ahead of print. DOI:10.1177/1010539513480232
42. Tong SF, Khoo EM, Nordin S, Teng CL, Lee VK, Zailinawati AH, Chen WS, Mimi O: Process of care and prescribing practices for hypertension in public and private primary care clinics in Malaysia. Asia Pac J Public Health. 2012; 24: 764-775. DOI: 10.1177/1010539511402190
43. Wong JS, Tan F, Lee PY: The state of lipid control in patients with diabetes in a public health centre. Asia Pac J Public Health. 2007; 19 (3): 16-21. DOI: 10.1177/101053950701900304
44. van Loenen T, van den Berg MJ, Westert GP, Faber MJ. Organizational aspects of primary care related to avoidable hospitalization: a systematic review. Fam Pract. 2014; 31(5): 502–516
45. World Health Organization: Preventing chronic diseases: a vital investment [online]. Geneva; 2005. http://whqlibdoc.who.int/publications/2005/9241563001_eng.pdf
46. Adeyi O, Smith O, Robles S: Public policy and the challenge of chronic non communicable diseases. World Bank, Washington DC; 2007. http://siteresources.worldbank.org/INTPH/Resources/PublicPolicyandNCDsWorldBank2007FullReport.pdf
47. National Heart Association and Ministry of Health Malaysia. Annual Report of the NCVD-ACS Registry 2014-2015. https://www.malaysianheart.org/files/5ae6b0477ed84.pdf
48. Malaysian Society for Quality in Health (MSQH). Medical Clinic Accreditation Standard. 2019. http://www.msqh.com.my/home/medical-clinic-standards
49. World Health Organization. Health Equity. 2019. https://www.who.int/topics/health_equity/en/
50. World Health Organization. Handbook on health inequality monitoring with a special focus on low- and middle-income countries. 2019. https://apps.who.int/iris/bitstream/handle/10665/85345/9789241548632_eng.pdf;jsessionid=8

2C7E50D431ADDEFDB0EB1F53D21BA59?sequence=1
51. World Health Organization and The World Bank. Tracking Universal Health Coverage: 2017 Global Monitoring Report. 2019. https://apps.who.int/iris/bitstream/handle/10665/259817/9789241513555-eng.pdf?sequence=1
52. Ng CW. Universal Health Coverage Assessment: Malaysia. Global Network for Health Equity (GNHE). 2015. International Development Research Centre (IDRC), Ottawa, Canada. http://gnhe.org/blog/wp-content/uploads/2015/05/GNHE-UHC-assessment_Malaysia-1.pdf
53. Mariapun J, Hairi NN, Ng CW. Are the poor dying younger in Malaysia? An examination of the socioeconomic gradient in mortality. PloS One. 2016; 11(6): e0158685.
54. Schäfer WL, Boerma WG, Kringos DS, De Maeseneer J, Gress S, Heinemann S, Rotar-Pavlic D, Seghieri C, Svab I, Van den Berg MJ, Vainieri M, Westert GP, Willems S, Groenewegen PP. QUALICOPC, a multi-country study evaluating quality, costs and equity in primary care. BMC Fam Pract. 2011; 12:115. DOI: 10.1186/1471-2296-12-115.
55. Sivasampu S, Mohamad Noh K, Chin MC. Quality and Costs of Primary Care (QUALICOPC) – Malaysia 2015. National Clinical Research Centre, Ministry of Health Malaysia. 2015. http://www.crc.gov.my/wp-content/uploads/documents/report/01_QUALICOPC_Malaysia_Phase_1_Report.pdf
56. Sivasampu S, Wong XC, Suppamutharwyam M, Mah KY, Husin M, Dahian K, Ismail SA. QUALICOPC: A Survey Looking into Quality of Malaysian Primary Health Care. National Clinical Research Centre, Ministry of Health Malaysia. 2017. http://www.crc.gov.my/nhsi/wp-content/uploads/2017/01/Measuring-Quality-Cost-and-Equity-of-the-Malaysian-Primary-Care-via-QUALICO-PC-Survey.pdf
57. Ministry of Health, Malaysia. From the Desk of the Director General of Health, Malaysia: Improving Malaysia's Healthcare System to Meet Future Needs. June 23, 2015. https://kpkesihatan.com/2015/06/23/improving-malaysias-healthcare-system-to-meet-future-needs/
58. Chan TK, Lee CY, Yau SK, Tipoe GL. Primary care in Asia: a call for compulsory vocational training, Br J Gen Pract. 2014; 64(623): e381–e383. DOI: 10.3399/bjgp14X680281.
59. Saltman R, Rico A, Boerma WGW. Primary care in the driver's seat? Organisational reform in European primary care. Maidenhead: Open University Press; 2006. http://www.euro.who.int/__data/assets/pdf_file/0006/98421/E87932.pdf
60. Kringos DS, Boerma WGW, Hutchinson A, Saltman RB. Building primary care in a changing Europe. In: Edited by Series; 38 OS. Copenhagen: WHO Regional Office for Europe; 2015. http://www.euro.who.int/__data/assets/pdf_file/0018/271170/BuildingPrimaryCareChangingEurope.pdf
61. The United Kingdom Health and Social Care Act 2012. http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted
62. Strengthening Primary Care Organization & Governance.
Report of the Working Group to the Primary Healthcare Planning Group: Canada; 2011. http://www.trilliumresearchday.com/documents/2012_PHPG_Governance-WG-Report_Final.pdf
63. Ahmad D. Enhancing Sustainability in Healthcare Delivery—A Challenge to the New Malaysia. Malays J Med Sci. 2019; 26(1): 1-4. DOI: 10.21315/mjms2019.26.1.1