



Comparative analysis of the Norwegian and Sri Lankan primary health care systems.

Dodanwalage Asela Kumar Perera

Abstract

Norway and Sri Lanka are two countries located in two different geographic, socioeconomic and political contexts but experience similar epidemiological and demographic transitions. Both countries introduced primary health care (PHC) approach over 100 years ago into the health system.

The purpose of this research paper is to describe, evaluate and compare the PHC systems of Norway and Sri Lanka to understand how well one system performs over the other. Data was gathered from selected documents, reports, research papers, websites and informal interviews with experts.

Both countries provide comprehensive PHC services. Norway has a well demarcated primary and secondary care delivery system, while Sri Lankan system demarcated as preventive and curative care services. In Sri Lanka, primary medical institutions are bypassed due to the lack of defined population, referral system and resources. Sri Lanka has identified the need for reorganization of PHC. In Norway, PHC acts as a gatekeeper to the rest of the health system. Besides, Norway has some noteworthy initiatives in its PHC, including its regular general practitioner scheme, electronic health record system and telephone consultation. However, there remain some equity issues to resolve.

1. Introduction

Health services affect all people in one or other way. Therefore, in the modern world, health services are mostly organized as health systems. Within the health system, according to the delivery level, complexity and purpose of the services delivered there are two elements

known as primary health care and specialized care. The evidence shows that primary care (in contrast to speciality care) is associated with a more equitable distribution of health in the population (Starfield et al, 2005). Since the Alma-Ata declaration in 1978, the World Health Organization (WHO) has recognized the importance of primary health care (PHC) to health service system more than ever before.

Norway and Sri Lanka are two countries located in two different continents (Europe and Asia) and have different socio, economic and political context. When considering the health status of the two countries there are similarities as well as dissimilarities.

The purpose of this research paper is to describe, compare and evaluate the primary health care systems of Norway and Sri Lanka and to gain the understanding of how well one system performs against the other. Sociodemographic and political context and historical development of primary health care in the two countries were described. Further, special emphasis was given to explore the organization structures, service delivery models and information systems within primary health care systems. Finally, two systems were compared mainly considering the performance of health status, quality of care, access and coverage of services and resources used (as a proxy for efficiency).

This research is based on factorial qualitative and quantitative data gathered from selected documents, reports, research papers and websites. When selecting the data sources special attention was given to the credibility and reliability of data sources. Further several study visits and informal interviews with experts were carried out to get an in-depth understanding of two systems.

2. Geographic, demographic and political overview

The kingdom of Norway is a northern European country located at the Western half of the Scandinavian Peninsula. The most significant geographic feature of the country is mountainous landscape that covers the two-third of the country. Nearly half of the total population of five million lives in the Southeast around capital Oslo. Interior areas of the country are sparsely populated. Population density of Norway is 15/sqkm and one of the lowest in the world. The extensive road network has connected rural areas to the towns and cities. The strong economy of Norway is mainly based on the petroleum industry and fisheries.

The three-tier administrative system of Norway includes: the state is the highest level, nineteen counties are in the second level and 357 municipalities are the lowest level in public administration.

Sri Lanka is an island with a land area of 65610 sqkm which is about one-fifth of Norway. The island is located in the Indian Ocean just south to mighty India. The tropical climate of the country ensures a relatively higher temperature throughout the year. But the central highland of Sri Lanka is a different climate zone and has a low temperature. The population of Sri Lanka in 2012 was 21.2 million (Population census, 2012). A large majority (>75%) of them live in rural and suburban areas. Sri Lanka is a highly dense populated country and population density is 338/sqkm. At the same time, more than one-third of population of the country lives in Western Province, where the capital city Colombo also located.

In Sri Lanka in 1987, after the 13th amendment to the constitution, some administrative powers were devaluated to the newly established nine Provincial Councils. Since 1987, similarly to Norway, Sri Lanka also has three-tier administrative system. The heights level is the state or central government. Provincial councils are in the second level and the country has divided into nine provincial councils. Each provincial council has its board of ministers with a chief minister. The lowest level is the 330 local government authorities (Municipalities, Town Councils and Pradeshiya Sabha).

In both countries, the parliament has the legislative power and the ministry of health is the national level implementation body of health care services. Minister of health gives the political leadership to the ministry of health and is responsible to translate political decisions to the legislations, rules and regulations with the support of ministry officials. In Sri Lanka, each provincial council has its provincial ministry of health and a minister of health.

Although the health care delivery system of Norway has been organized in two levels, four administrative levels are involved. The primary health care including prevention, promotion, rehabilitation, long term care and basic emergency care is a responsibility of municipalities or Commune. Specialist health care services delivery is owned by the state, organized at the regional level and function at the county level. Hospital services for patients with somatic or psychiatric disorders, outpatient departments, rehabilitation, caring and rehabilitation of drug addict, laboratory and x-ray facilities, emergency care, pre-hospital services and ambulance and air ambulance services are major components of specialist health services.

In Sri Lanka, public health care delivery system is organized into two administrative levels. Tertiary care services including first contact care at tertiary level are the responsibility of the

central government. Provincial councils are responsible for planning and implementation of the primary care and secondary care including disease prevention and health promotion programs (community health services) within the provincial councils according to the policies, guidelines and regulations established by the central government.

Table 1; Basic demographic, and economic indicators of Norway and Sri Lanka

Indicator	Norway	Sri Lanka
Total Population	5.1M (2014)	21M (2014)
Population Growth Rate	1.01% (2017)	0.76% (2017)
Adult Population (>65 years)	16.7% (2017)	9.67% (2017)
Literacy Rate	99% (2018)	92% (2018)
GDP per capita income	75 527USD (2017)	USD 3927 (2017)
GDP per capita income (PPP)	USD 70 000 (2017)	USD 13012 (2017)
HDI	0.951 (2016)	0.766 (2016)

Sources: Statistics, Norway; Register General Department data, Sri Lanka.

Compared with Sri Lanka Norway has the higher per capita income and proportion of adults over 65 years but less population and population density.

3. Primary Health Care in Norway

3.1 Services and responsibilities

The first legal establishment of PHC service in Norway goes back to 1860. Public Health Law of 16 May 1860 laid down the basic principles and institutions of primary health care, preventive health care, and local public-health administration that lasted until the 1980s (Hubbard, 2006).

According to the Municipal Primary Healthcare Act (1982) enacted in 1984, the primary health care provision to the population became a responsibility of the municipalities. On average a municipality has 10 000 inhabitants with a range from 250 – 500 000 population (Romøren et al, 2011). Primary health care program includes general practitioners (GPs) care, public health nursing care, nursing home care, home nursing care and dental care. General practitioner care is given through the regular general practitioner (RGPs) scheme. GPs are responsible to give the services in medical care, basic surgical care, basic emergency care, primary mental health care, long term care and care during pregnancy and post-natal care. Besides, GPs should also have more focus on chronic care and illness prevention (Hasvold & Christensen, 2010). The nursing care and physiotherapy care is also organized within the GP

care. School health program, national immunization program, maternal and child health clinics are conducted by the public health nurses and midwives. Nursing homes provide long term care mostly to people need dementia care or palliative care. Nursing homes represent the largest institution in Norway with more than 41 000 bed capacity. Home nursing care is available for the elderly and disabled people. All PHC services except dental care are organized, managed and financed by the municipalities.

Every municipality must have employed one or more Municipality/Public Health Officers who are responsible for the plan and operate municipality health services and given medical advice to the municipality (Municipal Health and Care Services Act, 2011).

3.2 Registered General Practitioner

According to the statistics, approximately 22 000 doctors are practising medicine in Norway. Out of that 6500 doctors are practising as GPs. GPs are fairly well distributed across the country (HiT- Norway,2013). There are two types of GPs in Norway (Halvorsen et al, 2012); those who are self-employed (employ staff and own their medical equipment), salaried GP (GPs hire staff, equipment, and/or office space from the municipality). Approximately 92% of GPs have contractual relationship with communes and commune reimbursed 30% of per capita fee to the contracted GP. Contracted GPs are (*fastlege*) enlisted in the regular general practitioner scheme. The municipality has the right to occupy regular GPs in out of hour emergency care services.

3. 3 Regular general practitioner

The list patient system or regular GP scheme was introduced in 2001 (Statistics Norway, 2019) mainly focusing to ensure the patients right to choose the doctor. Norwegian directorate of health instructs every person, who has registered in the Norwegian population registry (*Folkyregistry*) to register with a GP. GP is responsible to provide health care for people who have registered with him/her during office hours on weekdays. The regular GP scheme intended to improve continuity of primary care, especially for elderly people and for the chronically ill (Hasvold & Christensen, 2010). Grasdal and Monstad (2011) say that the regular general practitioner scheme was introduced to attract more GPs, to facilitate stability in the patient-doctor relationship and improve equity in physician utilization. Although GP care is a responsibility of the local commune, patients are free to choose their GP outside the commune or even district. However, the opportunity to choose is limited twice per year. GPs

receive a payment from the municipality for each patient in their list. This payment is known as the per capita subsidy. Apart from this, GPs receive a payment from the Norwegian Health Economics Administration (HELFO) as well as an out of pocket payment from the patient for each consultation. Even though registered GP system is voluntary, only 0.4% of people have chosen to remain outside of it (New in Norway, 2019)). If a patient has a doubt about regular GP's diagnosis and treatment, the patient can seek a second opinion from another physician. Furthermore, if a patient not satisfied with the services of the regular GP has an opportunity to complain to the Norwegian Board of Health Supervision (Health directorate, 2009).

3.4 Public health nursing care

The public health nurse (PHN) service is a part of the municipalities' statutory public health service that covers the needs for nursing services related to health-promoting and preventive work (Norwegian Nurses Organization, 2010). PHNs deliver their services at public health centres (for children age 0 – 5 and adolescent and young age), school health services, environmental health promotion/infectious disease control and refugee/immigrant health services. They have a vast spectrum of service delivery including home visits, examinations of infants and small children, vaccinations, mental health, physical health, sexual education, tuberculosis works and health information.

3.5 Telephone consultations and triage

Statistics show that visits to the GP care and the out of hour emergency care are gradually increasing yearly. To address this increasing demand the telephone consultation and triage system was introduced. One impetus for the development of telephone consultation is to reduce the burden on general practitioners (GPs) and accident and emergency (A&E) departments (Bunn et al, 2010). Studies have shown that half of the out of hour calls could be handled by the telephone consultation but there is no adequate evidence to decide whether telephone consultations reduce the pressure of the emergency departments. Although some telephone consultations are done by doctors much is now done by qualified nurses using computer-based clinical decision support systems (Bunn et al, 2010).

Table 2; Facilities available and services delivered at GP practice and Emergency care Rooms in Norway

Institution	Facilities available		Contents of Services	Opening Hours
	Staff	Diagnostic Equipment		
GP Practice	GPs 1-6 Nurses 1-3 Secretary 1-2	ECG Lab Ixs; FBC, FBS, CRP, UFR	Basic medical care Basic surgical care (Wound Dressing) Health education Maternal & Child clinics* FP*	8am – 4pm on week days
Emergency Room	Doctors Registered Nurses Physiotherapists Health Assistants	ECG Digital XRay Lab Ixs, FBC, FBS, CRP, LFT, KFT	Basic medical & surgical emergency care.	24*7*365

4. Primary health care in Sri Lanka

4.1 Primary health care provision in Sri Lanka

In Sri Lanka, both the public and private sectors involved in providing primary health care to the population. The public sector is dedicated to providing more comprehensive PHC services while the private sector provides predominantly outpatient based curative primary care.

Contrast to Norway, in Sri Lanka there are several categories of physicians involved in the provision of PHC services to the population.

These are

1. Public sector medical officers working in curative primary care
2. Public sector medical officers working in preventive care
3. After hour private practising public-sector medical officers
4. Full time private medical practitioners (GPs)

5. Private sector medical officers working in out-patients departments (OPDs) at private hospitals.

These categories are the same for dental practitioners in the PHC system.

GPs and after hour private practising physicians work on 'fee for services' basis. Majority of the medical officers in Primary Medical Care Units (PMCU) and Medical Officer of Health (MOH) offices do private practice after hours, usually in the vicinity of their institution (MoHSL, 2017). Even though occasionally some patients' payments are reimbursed by the private insurance schemes almost all patients pay as OOP expenditure. Even though public primary medical care is available to all within 5km of their home completely free of charge, more people are opting for the private sector or bypass the primary care institutions and visit outpatient services in secondary and tertiary hospitals (MoHSL, 2017). According to the surveillance data, 55% of patients attend the private sector on their outpatient primary care needs. It is important to understand why a majority of patients seek private providers in outpatient primary care with OOP expenditure. Studies show that the major differences are patients in the private sector receive more time from their physicians and are more likely to be given education and advice about their condition. Patients report better satisfaction with interpersonal quality, physician communication and the amount of time given in the private sector, but rate both sectors equal in technical competency and overall quality (Rannan-Eliya et al, 2015). Rannan-Eliya et al further say that most of the poor people rely on the public sector while wealthy people rely on private outpatient primary care. Michel Vernam in 1987 says GPs prescribed less and referred to specialists less compared to their colleagues in hospital primary care. Ministry of Health says except for a small number of trained full-time family physicians, none provide continuity of care and are not accountable to the patient in the long term.

4.2 The public primary health care system in Sri Lanka

The public health sector of Sri Lanka is organized into two parallel streams. 1. Community health services focusing mainly on promotive and preventive health. 2. Curative care services ranging from nonspecialized primary care to specialized care delivered through a variety of hospitals (AHB, 2016). Within the public health care system, PHC services and specialist care (secondary and tertiary care) services are less demarcated. In this context, most of the secondary and tertiary care institutions provide some extended of PHC services including outpatient primary care to the population other than the first contact care and specialized care. Therefore, all three administrative levels are involved in the provision of PHC services in Sri Lanka. However, the main responsibility of providing PHC to the population is with the

Provincial Councils. Local authorities' involvements are confined to the services of ensuring food hygiene, sanitation and supplying of safe water. Some municipalities conduct maternal and child health clinics and small dispensaries for the inhabitants of municipality area.

WHO in 1948, recommended comprehensive PHC programme as the tool in achieving its concept of health; complete physical, mental and social wellbeing of people. This initiative was reaffirmed by the Alma-Ata declaration in 1978 under the 'Health for all' slogan. Alma-Ata declaration recommended all the member states to dedicate to implement comprehensive PHC approach to achieve Universal Health Coverage (UHC). But most of the developing countries face resource constrain as the main barrier for implementing comprehensive PHC programme. Meanwhile, organizations like the United State Agency for International Development (USAID), Rockefeller Foundation and World Bank proposed selective PHC approach as an alternative for costly comprehensive PHC approach. According to Soma Hewa even before the selective PHC concept, a community-based PHC programme known as the 'health unit system' was developed by the International Health Board of Rockefeller Foundation and Sri Lankan health experts. The health unit system was introduced to the Sri Lankan health care system in 1926 (Senanayake et al, 2017; Hewa, 2011).

Health unit system was strengthened as a part of the national health care program in the post-colonial period, and the first health unit established at Kalutara later became Sri Lanka's National Institute of Health Sciences (Hewa, 2011). Although the general objective of the health unit program was "to meet the health needs of populations living in rural and semi-rural areas," the core principles of the program were disease prevention and health education (Hewa, 2011).

4.3 Medical Officer of Health

At present, there are 342 health units in Sri Lanka. Each health unit shares the same geographical boundaries as the divisional secretariat area which is the lowest administrative unit of the country. The technical and administrative leadership to the health unit is given by the Medical Officer of Health (MOH) under the supervision of the District Director of Health Service. Therefore, nowadays health units are popularly known as MOH areas. MOH area is the closest public health unit to the people in Sri Lanka.

The main role of the MOH is to ensure the implementation of national disease prevention and health promotive programmes within his/her area with the support of public health field staff. The MOH provides services to an average population of 60 000 within a demarcated area. Each member of health staff [Public Health Nursing Sister, Supervising Public Health

Inspector, Supervising Public Health Midwife, Public Health Inspector (PHI) and Public Health Midwife (PHM))] is also responsible for a subdivided area and a respective population (AHB, 2016). The PHI and PHM are the health workers at the grass-root level. PHM provides family health care including domiciliary care and PHI is primarily responsible for environmental sanitation, school health services and the control of communicable diseases (AHB, 2003).

4.4 Public curative PHC system of Sri Lanka

Public sector curative primary health care services are delivered throughout the country by hospitals and primary medical care units (PMcus) network. Tertiary care hospitals (42) and Secondary care hospitals (78) provide curative primary care services through the Out Patients Departments (OPDs) of the hospital (Samaranayaka et al, 2017). There are 485 divisional hospitals and 475 PMcus dedicated to providing curative PHC services and selective components of preventive primary care services. On the other hand, some preventive PHC services like health education programs, screening programs, Healthy Lifestyle Clinics (HLCs) and sputum examination for TB are organized and conducted by the tertiary and secondary care organizations other than the curative services.

Table 3; Facilities available & services delivered at different public health institutions in relation to PHC service in Sri Lanka

Type of Institution		Facilities available		Contents of services	Opening Hours
		Staff	Diagnostic Equipment		
PMcus		Medical Officer-1 Health Assistance 1-2	Only basic examination facilities	Basic medical care Basic surgical care (Wound Dressing) Health education Maternal & Child clinics* FP*	8am-4pm on week days
Divisional Hospitals	OPD	Specialist in Family medicine 1*** Medical officers 1-2 Dental surgeons 1 Nurses 1-2 Lab Technician** Dispensers Health Assistant 1-2	Lab Ixs; UFR, FBS, FBC**, ESR**, ECG	Basic medical care Minor surgical procedures Basic dental care Long term care Health education	8am-4pm on Week Days 8am-12noon on Saturday
	A & E	Medical Officer 1	FBS, ECG	Basic medical & surgical	24*7*365

	Unit	Nurse 1 Health Asist 1		emergency care.	
2ry & 3ry care institutio ns	OPD	Medical Officers 3-10 Dental surgeons 2-4 Nurses 3-6 Lab Technician 1-2 Pharmacists Dispensers Health Assistants 3-8	Laboratory Investigations ECG X ray	Basic medical acre Minor surgical procedures Health education	8am-4pm on Week Days 8am-12noon on Saturday
	A & E	Medical officers 2-4 Nurses 2-8 Health Assistants 2-6	Laboratory Investigations ECG X ray US Scan***	Medical & surgical emergency care	24*7*365

*Combined with MOH, **When Laboratory facilities available, ***Optional

Primary curative care services in the state sector have been under-invested during the last two decades when the emphasis was on developing specialist services at secondary and tertiary level (MoHSL, 2017). The service delivery is confined to a very primitive level at PHC institutions is due to the limited infrastructure facilities and staff availability. However, the number of primary medical care institutions has been increased from 397 in 2004 up to 461 in 2013 (AHB, 3013).

Table 4; Categories of health care workers in PHC service in Norway and Sri Lanka

Sector	Norway		Sri Lanka	
	Curative	Preventive	Curative	Preventive
Public	General Practitioner Nurses Physiotherapists Secretary Psychologist	General Practitioners Community Nurses Midwives Physiotherapists Social Workers Health Educationists	Specialists in family medicine Medical officers Hospital managers Nurses Pharmacists Dispensers Medical laboratory technicians Support staff	Specialists in community medicine Medical officers of health Medical officers Public health inspectors Nurses Public health midwives Field officers School dental therapists
Private	General Practitioner Nurses Physiotherapists		General practitioners Government doctors in dual practice Medical officers in large hospital Out-patient departments Nursing Assistants Support staff	

4.5 Patient referral system

Referring a patient from primary care institution to specialist care institution can be done in two ways in the Sri Lankan health system. If there is a medical emergency or need urgent attention at higher-level care, primary care institution doctor refers (transfer) the patient to the closest specialist care institution by using public ambulance service. In the absence of an emergency or an urgent requirement, a referral letter is given to the patient's hand to attend specialist care. Although, officially referrals are made from the primary care hospitals to the nearest hospital with specialist services the patient is at liberty to access care at a specialist hospital of their choice (Senanayaka et al, 2017). Coordinated back referrals are uncommon as facilities for rehabilitation and palliation are not available in the periphery (MoHSL, 2017).

5. Gatekeeping function

In some health systems, people normally go to their primary care physician before seeking care elsewhere (Starfield et al, 2005).

Primary care should provide a function of gatekeeping to the rest of the health system, whereby patients have a usual primary medical care provider who coordinates services and referrals to more specialized care (Gould et al, 2011).

Within the Norwegian health system, patients cannot seek specialist care or hospital admission without a referral from the GP except in emergency care. Therefore, GPs work as gatekeepers (Hasvold & Christensen, 2010; Lindahl et al, 2016). The main purpose of the gatekeeping function is to prevent patients from seeking hospital care that can be treated at the primary care level. Though patients have the freedom of choice for specialized care provider, a referral from the PHC provider is compulsory.

In contrast to this, Sri Lankan citizens have the freedom of choice of health institution for health care when they become sick. There is no requirement for patients to register and institutions are not responsible for a defined population or area (Perera et al, 2019) for curative primary care. Therefore, the majority of the patients access directly to specialist care hospitals bypassing primary care institutions. Patients commonly prefer to bypass primary care institutions, which often lack standard-essential services, in favour of tertiary facilities (Perera et al, 2019). Gould et al define that there is no gatekeeping as patients are free to self-refer to any provider regardless of the medical problem or the degree of provider specialization.

Table 5; Out Patients care visits according to the primary and specialists care institutions in Sri Lanka- 2016

Level of care	Number	Percentage (%)
Primary care institutions	32 454 034	60
Specialist care level	21 165 908	40

Source; Medical statistic unit, SL

In 2016, 40% of patients have attended specialist care institutions for their primary health care needs in Sri Lanka. Senanayake et al in 2017 argue that a defined population (community) should be allocated to doctors who are providing curative care in the primary healthcare level as in preventive health system.

Table 6; Comparison of health outcomes in Norway and Sri Lanka

Indicator	Norway	Sri Lanka
Life Expectancy at Birth	81.9 years (2017)	76.9 years (2017)
Infants Mortality Rate/1000 Live Births	2.5 (2017)	8.4 (2017)
Maternal Mortality ratio/100 000 Live Births	3.0 (2016)	33.8 (2016)
Low Birth Weights (%) (BW <2500gr)	4.5 (2015)	15.9 (2015)
Prevalence of TB cases/100 000 Population	10 (2014)	65 (2014)

Sources: Statistics, Norway; Register General Department, SL

6. Record keeping and information sharing

Medical record keeping is a vital function in health care services delivery at any level. Patient records are to be shared with GP/ PHC facility and specialized hospitals as it will help to manage patients efficiently and effectively (Senanayake et al, 2017; National Health care & Hospital Plan-Norway 2020 - 2023). Further maintaining proper patients' records and sharing patient information among health care providers prevent unnecessary duplication of investigations and save time. The success of a referral system depends on the sharing of information about the patient (Senanayake et al, 2017).

Information technology is extensively used by health care providers to generate, archives and sharing health information. The Electronic Health Records (EHR) is considered as a hub of information in health care. The electronic patient record is a record containing a patient's personal history (name, date of birth etc.), their diagnoses or conditions, and details about the treatment/assessments undertaken by a clinician (Mendis & Purves, 2019). Electronic health

records (EHRs) are complex systems with direct effects on the documentation and coordination of care and indirect effects on process efficiency, quality of care, staff satisfaction, and hospital finances (Hertzum,2019).

In Norway, EHR adoption started at the beginning of the 1980s for both hospitals and general practice (Heimly & Faxvaag, 2011). In 20 years nearly all the GPs had acquired the EHR system. All health care providers in Norway (both private and public) are obligated to use publicly owned, secured national network established for electronic communication between health care providers (Heimly & Faxvaag, 2011). According to this regulation all hospitals, general practices and municipalities should connect with the national network. Digital solutions have been established, which support cooperation and communication, internally and between municipalities and hospitals throughout the patient journey (National Health care & Hospital Plan-Norway 2020 – 2023). A unique personnel identification number is allocated to each resident which is linked to the EHR system. By using the EHR system GPs send electronic referrals to the hospitals directly and hospitals send electronic discharge letters to the GPs that patient has registered. Further hospitals could send electronic laboratory reports to the GPs. GPs can access the information regarding after hour emergency visits of their patients. There is a tool known as the summary care record (SCR) in the EHR system. The health authorities have invested heavily in the development, implementation and deployment of this tool, and as of 2017, all Norwegian citizens have a personalized SCR (Dyb & Warth, 2018). SCR contains the information on personnel data, prescription summary, important clinical information like allergies and chronic diseases, hospital admission history and information that the patient has registered himself or herself. A national strategy for health information technology (HIT) was initiated in 2016 and is the responsibility of the Directorate of eHealth (Lindahl, 2016).

In Sri Lankan context except for very few public and private hospitals and GP practices, all curative PHC providers use the paper-based record-keeping system. Usually, each episode of care generates a separate record. The quality of these paper-based record is also poor. The existing system is not patient-centric, and there is a lack of longitudinal data (MoHSL, 2017). Usually, the content of the record is confined to the medicine prescribed at the end of the consultation. There is very minimal record-keeping in government OPDs, even in the GP sector only about 60% have medical records (Mendis & Purves, 2019)

Even though still there is no national electronic patient record project implemented in Sri Lanka at the moment some health care institutions have piloted and adopted their own

ehealth initiatives. As a national level initiative, national ehealth guidelines and standards were developed by the ministry of health in 2016.

7. Access to PHC

When considering the access to the PHC services, the patients' list system has enhanced access to the PHC in Norway. Almost already 99.6% of the population has signed up with a GP and each GP have an average of 1213 persons in their list. However, the main issue with the system is GPs give their services in working hours only. In out of hour emergency services are available for the entire population of the commune (some places for more than two communes) only at specific emergency care set up. There may be a waiting time for getting an appointment with GP. Patients may not have immediate access and then again in some cases pay privately for the immediate access (Marinova, 2017). GPs are easier to access in urban areas but must be paid fully by the patients themselves (Grasdal and Monstad, 2011).

Although the public health sector provides primary care facility during working hours, strong private sector involvement ensures providing extended hours of primary outpatient care in Sri Lanka. Private practising public sector doctors usually do their after-hour practice from 4 pm to 10 pm while most of the private hospitals provide 24*7 outpatient care including emergency care. This availability factor has encouraged people to seek more primary outpatient care in Sri Lanka.

Table 7; Average number of GP/outpatient consultation by a person per year in Sri Lanka & Norway, 2017.

Country	Average Consultations
Sri Lanka	5.3
Norway	2.7

Source: Statistics, MoHSL & Statistics, Norway.

Holcik and Koupilova in 2000, says primary care should be accessible twenty-four hours a day, seven days a week and related to other parts of the health system.

In Sri Lanka, currently a significant number of patients' access to a higher level of institutions for their primary care needs. For long term care such as diabetes, hypertension, coronary heart diseases and chronic renal diseases a majority of patients access to the higher level of care.

8. New initiatives

During the past decade, it has been recognized that business, as usual, is not an option for Sri Lanka and that the health system needs to change to sustain its gains and progress towards

universal health coverage (Perera et al, 2019). National health strategic masterplan has identified the need of every citizen to ensure access to a family doctor. Under the Health System Enhancement Project (HSEP) 2018- 2023, funded by the Asian Development Bank (ADB), has proposed to improve efficiency, equity, and responsiveness of the primary health care system based on the concept of providing universal access and continuum of care to quality essential health services (Sri Lanka: Health System Enhancement Project, 2018). Initially, this project will implement in three provinces as a pilot project. It has been developed a rational health care delivery policy based on a shared care cluster system in which the PMCU and DH are the important constituents at primary care level (MoHSL, 2018).

During the next four years, the Norwegian health care system has planned to improve cohesive and collaborative health care service to ensure high-quality mental health and emergency care services. The Emergency Chain Project in Telemark emphasises the importance of improving and developing cooperation with the municipalities in order to create a better emergency health service. The project involves Telemark Hospital Trust, the ambulance service, Emergency Medical Communication Centre (EMCC), emergency medical centres, GPs, municipalities and other parties. Improving skills in municipal health and care service is an important part of the project (National Health care & Hospital Plan-Norway 2020 – 2023).

9. Conclusions

The two countries, Sri Lanka and Norway are relatively different in their historical development—politically, economically and socially. Further, the two countries are significantly different geographically. In some aspects, there are of course also some similarities. Both countries are ageing at around the same speed and on same epidemiological transition.

High income and large geographic area of Norway, as well as a highly dense large population of Sri Lanka, have affected the development of PHC organization and service delivery models of each country. In the PHC system perspective, this study found the two countries differ in many aspects.

Both Sri Lanka and Norway has over a century old PHC systems as well as comprehensive PHC services.

In Sri Lanka, severe insufficiency of resources and facilities at PHC level is a result of under-investment to the PHC institutions (PMcUs and DHs) during the last two decades. These effects and the liberty of people have in selecting health care provider are probably the major influences on people to bypass the primary care level institutions (PMcUs and DHs) for their primary health needs. Therefore, the government should focus its health policies to utilize primary care institutions to meet services with an increasing demand such as screening, initial treatment and follow up of chronic diseases.

Sri Lankans entertain more visits to primary care physicians than Norwegians. Sri Lanka has ensured better access to PHC services. Even with low investment, Sri Lanka provides free care at public health institutions ensuring the equity of receiving health care to the low-income group, but there is an inequality in service quality between public primary outpatient care and private outpatient care.

When considering the service delivery model, Norway has well-demarcated primary and specialist care service delivery model in contrast to the Sri Lankan well-demarcated curative and preventive care model. Sri Lanka has defined population only in primary preventive care services delivery but Norway has defined population for primary curative care at GP level and preventive care at the municipality level.

Norway has an advanced electronic record keeping and patient information sharing system. On the other hand, Sri Lanka needs to improve the existing paper-based system as patient-centric longitudinal data collection system until establishing an EHR system in the long term.

Not only because of the expansion of medical knowledge, increase demand of the health care and complexity, to accomplish continuity of care and care coordination, Sri Lanka inevitably needs to introduce a national EHR system and compulsory forward and backward referral system.

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