IJPHCS
Open Access: e-Journal

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577. Vol. 3:No. 2
March/April 2016

Countries Experiences: Review of District Health Management in Developing and Low Developing Countries

Auwal S. G.[1], Kaur K. K.[1], Salma A. M.[1], Kay T.[1], Kamal A. I.[1], Ismail S. A.[1], Suriani I.[2], Huda B.Z.[2*]

[1] MPH Candidates, Department of Community Health, Faculty of Medicine, Universiti Putra Malaysia.
[2]Department of Community Health, Faculty of Medicine, Universiti Putra Malaysia.

**Corresponding authors: Huda Zainuddin, hidazai@upm.edu.my*

ABSTRACT

A strong healthcare system is characterized by efficient health service delivery, adequate manpower and resource generation, a sustainable financing system and good governance. District healthcare system is the one closest to the people and its performance in relation to resource allocation impacts directly on the community health status. Over the years, many of the developed nations have learned to prioritize it mainly because it remains the most ideal way of improving population health through activities of general health promotion, disease prevention and provision of basic medical care. In the developing countries, achievement of district health system is not uniform and even among countries with comparable income per capita, wide variations exist. While some have attained a commendable population health status by strengthening their district healthcare systems by redoubling government's commitment, enhancing resource production, encouraging fairness in healthcare financing and adopting development-oriented health policies, many others are facing healthcare challenges from lack of political will, limited resource allocation and shortage of both manpower and service infrastructure. For these countries, there is an urgent need to transform the district health system so that new and existing health problems can be dealt with decisively and more efficiently. This will require a renewed commitment from the state governments, reprioritizing and readjustment of present health programs, an inter-sectorial collaboration that involves all relevant stakeholders including the communities, and a renewed investment in sustainable health policies that deliver maximum impact at minimal cost.

Keywords: district health system, management, developing countries.

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577. Vol. 3:No. 2
March/April 2016

1.0 Introduction

Health system is made up of all the people, institutions and resources, working together to improve the health status of a given community. In an analytical framework developed by the World Health Organization (WHO), health system is conceived as comprising of six building blocks that include leadership and governance, service delivery, health workforce, health information system, medical products and health system financing (WHO, 2011).

The national healthcare system is an important issue in governance that is typically regulated by the state's ministry health. Most often, this system is revised and transformed continuously to cater for the evolving health needs of the general population. The importance of district health system as a key component of the national healthcare system as well as the specific measures taken by state governments to improve the overall performance of their healthcare systems is of growing interest to researchers.

Similarly, District Health System (DHS) is a constellation of primary care health facilities under the supervision of district hospital and district health management team, the main focus of which is to provide holistic health services to a specified population (WHO, 2011). It is the system closest to the people and active participation of the community is central to its functioning, essentially taking charge of its community's health and liable to account for its clinical and economic outcomes (Shortell, Anderson, Gillies, Mitchell, & Morgan, 1993).

The management of district health system is carried out by the District Health Office (DHO), even though the planning and strategies adopted need to be aligned with the prevailing national health plan. The status of district health system, its achievements, as well as future policy directions may differ across nations.

This paper aims to compare the experiences of district health management in a developing country (Cuba) and some low developing countries in Africa (Nigeria, Sudan) and Asia (Indonesia, Myanmar). Some of the WHO building blocks were used, first to compare the status of the health systems prior to declaration of Millennium Development Goals (MDG), and then at present. Two reference materials were used for this purpose namely; Global Health Report 2000 and Global Health Statistics 2015. Additional literature search was carried out to obtain more specific information regarding each country and to provide wider context for discussing their experiences.

1.1 Overview of Countries

In this review, five countries are included. Nigeria and Sudan are African countries, Indonesia and Myanmar are Asian while Cuba is a South American. According to World Bank income classification by Gross National Income (GNI), all are middle income countries (World Bank, 2015). However, these countries differ in terms of population size, Gross Domestic Product (GDP) and income per capita, literacy rate as well as life expectancy at birth.

The most populous country in the review is Indonesia. With an estimated 254.5 million people in 2014, its size is more than 20 times that of the smallest country – Cuba. Although both GDP and GNI are assigned monetary values in US Dollars, important difference exists between the two and middle income is defined as GNI per capita of 1, 046 to 12, 375 USD. An additional cut-off of 4, 125 USD is used to segregate countries in this group into lower

and upper middle income groups. Again, all countries in this review fall into lower middle income group with the exception of Cuba, which falls into upper middle income class with a GNI per capita of 5 880 USD.

Even though only a statistical measure, life expectancy at birth denotes how long an individual born today in a country is likely to live for if current age specific death rates are remained unchanged. Hence, the smaller the death rates, the higher the life expectancy. There seems to be a direct relationship between income per capita and life expectancy across different countries, even though some studies have reputed that assertion (Judge, 1995; Regidor, Calle, Navarro, & Domínguez, 2003). Cuba has the highest life expectancy of 79 years, followed by Indonesia's 71 years. Interestingly, although Nigeria ranks third by GNI, its life expectancy of 52 years is the shortest among the reviewed countries, below Myanmar's 65 years and Sudan's 62 years.

Gross primary school enrolment ratio is an educational indicator used to express the percentage of official primary school age children who are enrolled in schools. In cases of under and over age enrolment or when there are discrepancies between data sources, the percentage may exceed 100 (UNICEF, 2015). Cuba has the least primary school enrolment gap (2%) while Sudan has the widest (30%). In both Asian countries, reported primary schools enrolment in 2015 exceeded 100%. The following table gives the summary of the latest indices by country.

Table 1: Reviewed countries according to population size, income and productivity, life expectancy and primary school enrolment ratio.

Country	Population (million)	GDP (USD billion)	GNI per capita (USD)	Income level	Life expectancy (years)	Primary school enrolment ratio (%)
Cuba	11.38	77.15	5 880	UMI	79	98
Indonesia	254.5	888.5	3 630	LMI	71	109
Nigeria	177.5	568.5	2 970	LMI	52	85
Sudan	39.35	73.82	1 710	LMI	62	70
Myanmar	53.44	64.33	1 270	LMI	65	114

UMI = Upper Middle Income; LMI = Lower Middle Income
(Source: World Bank, 2015)

1.2 Prior to MDGs

Back in 2000, the World Health Organization (WHO) made a remarkable attempt to rank the national health systems of its 191 member states based on two dimensions, namely; level of health and overall health system performance (WHO, 2000). Level of health was measured by Disability-Adjusted Life Expectancy (DALE), whereas overall health performance was determined through an index developed from a weighted average score on five separate levels. These levels were the country's DALE, the distribution of health using within the country, health system's responsiveness, the distribution of health system responsiveness across socioeconomic classes and lastly, the degree of fairness with which the health system is financed (Reinhardt & Cheng, 2000).

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577. Vol. 3:No. 2
March/April 2016

In order to measure these indices, various indicators were used including country's per capita expenditure on health as well as public expenditure as percentage of GDP. Even though there were some criticism about the study's methodology and even its validity (Navarro, 2000), notwithstanding, the WHO gave a ranking of the national health systems based on their overall performance indices. Some authorities also lend their support regarding the importance of the exercise (McKee, 2010) and part of that ranking is provided in the table below:

Table 2: Status of the countries prior to declaration of MDG in terms of expenditure on health, life expectancy and WHO performance index.

Country	Per capita expenditure on health (USD)	Health expenditure (% GDP)	Disability adjusted life expectancy (years)	Overall health system performance (WHO index)	World ranking
Cuba	131	6.3	68.4	84.2	39
Indonesia	18	1.7	59.7	73.8	92
Sudan	13	3.5	43.0	62.3	134
Nigeria	30	3.1	38.3	51.7	187
Myanmar	100	2.6	51.6	53.7	190

(Source: Global Health Report, 2000)

Cuba had the largest per capita expenditure on health and its health system performs better than the others (39th in the world). Sudan has the least per capita expenditure (USD 13), which was less than one-fifth that of low-performing Myanmar. Nigeria's health system was ranked 187th given that its performance index and disability-adjusted life expectancy were among the lowest in the world.

2.0 Structure and Organization

There is hardly any country in the world without some form of organized healthcare service structure. The overwhelming majority of them adopt the top-bottom approach, with various degrees of decentralization along the administrative levels. Countries like Cuba, Indonesia, Myanmar, Nigeria and Sudan have a well-recognized long-established healthcare systems which serve the fundamental roles of governance in healthcare, manpower development, resource production as well as service delivery.

Cuba's healthcare system is public-driven that has gained remarkable achievements in terms of equity, universal access and efficiency (Vos et al, 2006). On the other hand, Myanmar's healthcare system was shaped by an "open door policy" introduced since 1988 which promoted a free market approach to healthcare management (Grundy, Annear, Ahmed, & Biggs, 2014). For this reason, the healthcare systems in these two countries will be discussed in more depth as they provide some examples of two contrasting models.

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577. Vol. 3:No. 2
March/April 2016

Cuba is a socialist state and access to health and educational services is both universal and free for all citizens. Its Integrated National Health System (INHS) is a network of services based on primary health care mode that is orientated towards health promotion, disease prevention, cure and rehabilitation (Braa, Titlestad, & Sæbø, 2004; Keck & Reed, 2012).

Back in 1960, the country introduced the Rural Medicine Services (RMS) which mainly focused on improving access in rural and remote areas. Ten years later, before the Alma-Ata declaration, a system of multi-speciality polyclinics were established. In 1980, these polyclinics were transformed through the addition of family Doctor and Nurse Programme, with a view to improving the national health system's ability to achieve its targets (Sixto, 2002).

Apart from recognizing the need to understand people in all their dimensions, be it; biological, psychological or social, the cornerstone of Cuban healthcare system is prevention. Healthcare system in Cuba relies on community participation and political leaders consider it a government's priority. Health indicators are seen as measures of government's efficacy, as such, the country's social policy is designed to enhance the national development and social welfare; to eliminate inequities among regions, areas, and populations; and to enforce the equal rights of all citizens to basic nutrition, health services, education, and income (De Vos, De Ceukelaire, & Van Der Stuyft, 2005).

The Ministry of Public Health in Cuba is responsible for implementing health policies and regulations, and for managing health programmes and services. The health system is structured based on the three territorial levels – national, provincial, and municipal. At the same time, there exists three levels of care based on a network of specialized and decentralized services that start from the primary care level and cover the entire population. The health care model relied on family medicine and General Practitioners (GPs) and healthcare provision is tailored according to the needs for each territory, community, population group, family and individuals.

On the other hand, Myanmar is led by a military-backed democratically-elected civilian government. Unlike Cuba, healthcare is privatised with private expenditure on health accounting for 76.1% of total health expenditure (WHO, 2015). However, healthcare systems in both countries share important similarities including the hierarchical structure and the emphasis on community involvement at each administrative level. In Myanmar, health committees are created at each administrative level and they have representatives from the administrative office, health office and the communities (MOH Myanmar, 2014).

Nevertheless, important differences exist between Cuba and all the low developing countries particularly in the structure of the healthcare systems. For instance in Cuba, the ministry itself is for public health while medical and research units form separate departments under it. In Myanmar, public health exist as a unit in the ministry and has to relate with other units such as planning, medical services and medical research (Grundy, Annear, Ahmed, & Biggs, 2014). Again while the system in Myanmar appears to be broad, consisting of many inter-related albeit overlapping units, the system in Cuba is arguably more unified.

International Journal of Public Health and Clinical Sciences
e-ISSN : 2289-7577. Vol. 3:No. 2
March/April 2016

3.0 Role and Scope

The focal point of district health services is to provide primary healthcare (PHC) to the population as it remains the community's first point of contact with the healthcare system. Whether a consumer's needs are entirely served or has to be referred depends largely on the type of need as well as the volume of services designated as primary, according to the provisions of national health system policies.

In many countries, health services provision primarily revolve around general health promotion, disease prevention, cure and rehabilitation. However, the degree to which these functions are emphasized and the priorities attached to each one of them may vary considerably when comparing any two states and for this purpose, Cuba and Indonesia will be further examined in view of the differences that exist in the way these countries these countries integrate these primary functions into their respective Primary Health Care (PHC) systems.

For instance in Cuba, the primary health care provided by Doctors and Nurses programme consist of health promotion and prevention strategies including health education, water and food sanitation as well as immunization of vaccine preventable diseases. They also provide curative as well as rehabilitative services, in addition to maternal and child health, common ailments as well as locally endemic diseases (Hadad, 2009).

Another feature which is largely unique to Cuba's PHC is the overwhelming emphasis given to health promotion, disease prevention and community participation in healthcare. Providers are trained on how to examine their communities and come up with acceptable range of service initiatives that specifically target the problems identified within their communities (Xie, 2014).

The primary health care in Indonesia provides a parallel example to Cuba's preventive health approach. The community health centres or *Pusat Kesehatan Masyarakat* (PUSKESMAS) scattered around the country are typically headed by a Physician. Services at PUSKESMAS are divided according to Technical Units (TUs) and they cover both communicable and non-communicable areas. In addition, preventive health services are provided to some extent, including nutrition, school health, environmental health and village midwife programme (Chongsuvivatwong et al., 2011).

4.0 Budgeting and financing

Health financing is an essential component of healthcare system. Over the years, countries have learnt to develop a set of indicators that reflect the records of both financing and spending flows regarding the operations of their healthcare systems. These indicators, usually provided by the National Health Account (NHA), are collected within an internationally recognized framework to enable comparison across countries with different economic strengths as well as health and social priorities (WHO, 2006). In addition, such parameters give details of funding sources and distribution of such funds across providers and functions related to health. In broad terms, health financing indicators cover areas of public expenditure

on health, general government's expenditure on health, private expenditure on health as well as out-of pocket expenditures on health (OECD, 2014).

Public expenditure on health is expressed as percentage of country's Gross Domestic Product (GDP) and it indicates how much investment the public made in health during the reference year. Similarly, the General Government's expenditure on health refers to expenditure on health incurred by central, regional and local government authorities, excluding social security schemes (OECD, 2014).

On the other hand, private expenditure on health refers to sum of expenditure on health by any form of private prepaid plans (such as risk-pooling arrangements), firms' expenditures on health, NGOs that serve mainly households as well as households out-of-pocket spending on health. In general, OOP spending covers private cost-sharing arrangements, cost of self-medication and other expenditures paid directly by private households, regardless of whether the contact with the health care system was established on referral or on the patient's own initiative.

The table below compares the reviewed countries by their 2012 health financing indicators. As an upper middle income country, Cuba spent more of its GDP per capita on health than any of the lower middle income countries. More than 94% of health expenditure in the country is covered by the general government and the remaining is covered entirely by out-of-pocket payments, which indicates a total absence of other private expenditures such as prepaid plans, payment by firms or household-serving NGOs (WHO, 2015).

Table 3: Comparison of health financing indicators by country as at 2012.

Country	Total expenditure on health as % of GDP	General government expenditure on health as % of health care expenditure	Private expenditure as % of total healthcare expenditure	Out of pocket expenditure on health as % of private expenditure
Cuba	8.6	94.2	5.8	100
Indonesia	3.0	39.6	60.4	75.1
Myanmar	1.8	23.9	76.1	93.7
Nigeria	3.4	33.2	66.8	95.5
Sudan	6.7	22.5	77.5	96.1

(Source: World Health Statistics, 2015)

Conversely, the country with least public expenditure on health is Myanmar (1.8% of GDP). The country's government expenditure was the lowest among the reviewed countries and despite the significant presence and participation of NGOs in the country, more than 93% of private health expenditure was OOP payments.

Curiously, the two countries with the largest GDP, Indonesia and Nigeria, allocated relatively the same amount of it to their health sectors in 2015. However, there is a significant variation

in terms of what these allocations eventually serve. For instance, Indonesia's 3.0% covers nearly half of the total health expenditure, compared to Nigeria's 3.4% that covers only one-third of same expenditure. In addition, it's noteworthy that Indonesia's private expenditure is less dependent on OOP compared to Nigeria, where healthcare consumers are virtually unprotected and OOP covers 95.5% of private expenditure. Indonesia is also making for more commitment to health than Nigeria. In the last 15 years, its allocation to health has increased by nearly 77% while Nigeria's has increased by only 10% during the same period.

By far, the most striking contrast exists between Cuba and Sudan. Even though the difference in their GDP allocations is less than 2%, the gap between the two countries in terms of total health expenditure deficits exceeds 70% and consumers in Sudan have to pay for that deficit, majority of which comes directly as out-of-pocket payment (96.1%).

5.0 Health Services

One of the key aspects in which district health systems are assessed is the availability of health services to the population. In the WHO framework, assessment of this component involves breaking it down into two; manpower and infrastructure.

For each country, the number of physicians, nurses, midwives and dentists per hundred thousand population are used to provide an indication of manpower strength of the health system. For health system's infrastructure, the number of hospitals and beds are frequently used. To assess for specialized services and advanced infrastructural capacities, other indicators such as number of specialists, Computerized Tomography (CT) scans and Mammography machines available per thousand populations may be used (WHO, 2015).

Cuba's health care service is by far the most readily available in terms of both manpower and infrastructure. With more than 60 physicians, 90 nurses and midwives as well as over 66 psychiatric beds per 100 000, the availability of its health service is more than ten times that of Indonesia, the richest among the lower middle income countries.

Other than a shortage of physicians (only 2 per 100, 000 population), Indonesia's health service is slightly better than Myanmar's. Both are comparable in terms Dentist per population rate, hospitals and beds for psychiatric admissions. Similarly, Nigeria's health service is marginally above Sudan's, except for hospital capacity, where no official records exists for Nigeria and number of psychiatric beds, where Sudan's 2.7 nearly doubles Nigeria's 1.5 per 100, 000 population.

Table 4: Manpower and infrastructure in health services for each country in terms of number of physicians, nurses and midwives, dentists, hospitals and psychiatric beds per 100, 000 population.

Country	Physicians	Nurses and midwives	Dentists	Hospitals	Psychiatric beds

Cuba	67.2	90.5	10.7	2.0	66.8
Indonesia	2.0	13.8	1.0	0.4	4.0
Myanmar	6.1	10.0	0.7	0.6	3.0
Nigeria	4.1	16.1	0.2	-	1.5
Sudan	2.8	8.4	0.2	1.3	2.7

(Source: World Health Statistics, 2015)

6.0 Achievements of MDGs

The declaration of Millennium Development Goals (MDGs) in 2000 gave an additional impetus to countries in their quest to achieve better healthcare systems. Although the goals were stated separately, all were related to development and three of them – goals 4, 5 and 6, were directly related to health. Country targets were set in reference to previous 1990 morbidity data. In this review, we consider the three health-related MDGs to compare the health achievements of the countries, bearing in mind the states of their health systems as of the year 2000 when the declarations were made.

Table 5: Achievements of health-related MDGs of the countries expressed as percentage reduction from 1990 and service coverage indicators.

Country	Goal 4		Goal 5		Goal 6		Healthy life expectancy at birth (years)
	Under 5 mortality (% reduction)	Measles immunization coverage (%)	MMR (% reduction)	ANC coverage (%)	HIV incidence (% reduction)	Deaths from TB (% reduction)	
Cuba	54	99	-27	100	-	48	66
Indonesia	65	84	56	96	-50	64	62
Myanmar	53	86	66	83	75	68	57
Nigeria	45	59	53	61	55	5	47
Sudan	40	85	50	74	-	53	53

(Source: World Health Statistics, 2015)

The target of goal 4 was to reduce under five mortality rate by two-thirds (about 67%) and Indonesia may be considered to have come very close to achieving it. From 1990 to 2015, mortality among under five children in the country decreased by 65%. Even with higher income per capita and better national health system, Cuba's reduction was significantly below the target. This may be related to the country's low mortality rate even back in 1990, since the lower the initial rate, the more difficult it is to drive it further down. This contrast can readily be appreciated when proper consideration is given to the complementary indicator – measles immunization coverage, which Cuba has raised to 99% and is the highest among the reviewed

countries. Accordingly, with an average reduction in under five mortality of less than 45%, the African states had some of the least achievements.

Similarly, Nigeria's measles immunization coverage was the lowest of the five countries even as Sudan's coverage reached 85% and was comparable to that of Asian countries. Both Indonesia and Myanmar recorded high measles immunization coverage at 84 and 86% and this can be linked directly to the higher reduction in child mortalities they recorded.

In terms of maternal health, the target was to reduce Maternal Mortality Rate by 75%. In this regard, Myanmar recorded the highest success with 66% reduction. Both Indonesia and the representative nations from Africa had similar achievements which were below 60%. Again it warrants clarification that although Cuba's MMR appeared to have gone the opposite way, the fact that the country's MMR in 1990 was just 41.8 per 100 000 implies that even a 27% increase is not as significant as the percentage seems to show. Moreover, Cuba's Antenatal Coverage (ANC) of 100% appears to be vindictive of the performance of its health system.

All the countries have recorded success in reversing the trend of HIV with the exception of Indonesia where the disease seems to be on the rise. For Cuba and Sudan, no data could be provided mainly due to very low incidence, both in 1990 and at present. Nigeria has achieved more than 50% reduction in HIV new cases in the last 15 years while Myanmar's success was 75% during the same period. Both achievements were remarkable, contrary to the case of reduction in TB-related deaths, were Myanmar's 68% sharply contrasts with Nigeria's 5%. Although the Healthy Life Expectancy (HALE) in 2015 was comparable between Indonesia, Myanmar and Sudan, remarkable contrast of nearly two decades exists between Cuba's 66 and Nigeria's 47 years.

7.0 Discussion

In any country, healthcare system and its policy directions most often evolve as a direct response to prevailing health needs of the population. Such needs are only appreciated through careful analysis of past experiences as well as present circumstances. Comparing local situations with what other countries have experienced is another way of anticipating future health challenges that can be avoided by making appropriate plans and taking preventive steps. While some countries have made a remarkable achievements in terms of strengthening their national and district health systems, others are yet to do so and wide variations in terms budgeting and financing, service capacity, infrastructure and health status of the communities are manifest.

7.1 Cuba

The major strength of Cuba's health system is its public and social nature, which emphasized on prevention and comes at minimal cost (Cabrera et al., 2007). By allocating 8.6% of its GDP, the country has obviously made its citizens' health a priority. This allocation proved to be quite sufficient, considering that government's spending alone covers more than 94% of total health expenditure. Targeting health promotion and disease prevention as adopted by

Cuba is also quite effective given the country's low burden of both communicable and non-communicable diseases (Cooper, 2006).

One of the main weakness of such an approach is its heavy reliance on inter-sectoral collaboration which is vital in pursuing such comprehensive action programmes. Even though great efforts have been taken to invest in capacity building and to strengthen collaboration across ministries, gaps still exist at the level of implementation. This is particularly true at the district levels, where the understanding of synergistic roles among workers is not keeping up with evolution of new health programmes (Cabrera et al., 2007).

Even though the rising cost of running some programmes in Cuba such as family Doctor and nurse programme poses a threat to sustainable development in health, many researchers see an opportunity if Cuba were to divert some if its health budgets towards other programmes such as sanitation and municipal services. Presently, its health manpower and infrastructural capacities are tending towards excess with more than 66 physicians and 90 nurses per 100 000 populations. Cuba also has one of the lowest bed occupancy rates in the world (Sixto, 2002).

7.2 Indonesia

The health service system in Indonesia is mostly decentralized. This is an adaptive policy pursued by the government to enable district authorities design and implement health programmes according to their local needs. A growing private investment in the country's health sector is serving to further increase access and also consumer options in terms of health services (WHO, 2014).

However, weak infrastructure worsened by over dispersed hard to reach populations makes health services virtually inaccessible to many. This is particularly made worse by the inequity in both health services and health expenditure. Even though the central government has nearly doubled its expenditure on health since 1997, more than half of the total expenditure on health is borne by the consumer (60.4%). Interestingly, out of pocket expenditure on health is only 75% implying a noticeable effect of alternative funding mechanisms in Indonesia.

Moreover, despite speculations on sustainability and funding short-falls, the central government remains committed towards subsidizing cost of health care so that low income populations can afford it (Rokx, Schieber, & Harimurti, 2009).

7.3 Myanmar

Like most other countries, the health system in Myanmar is managed at various administrative levels and one of its remarkable features is that at each level, there exist a health committee which involves community members and gives them a role to play in decision-making. This is in line with global best efforts in health promotion were community participation is key to sustainable health care (MOH Myanmar, 2014).

Unfortunately, some of the communities in Myanmar are either hard to reach with poor access to health services or vulnerable groups whose health needs cannot be met by either the government or household-serving NGOs (Grundy et al., 2014). Also, the rapidly growing public private partnership among health care providers in the country need to be addressed

and regulated to enhance service efficiency and sustainability. Fortunately, the growing public commitment to health sector which started in 2005 is an opportunity that should be complemented with goal-oriented policies from policy-makers such that meaningful achievements in population health could be achieved.

7.4 Nigeria

The health sector in Nigeria presents a mix of public and private partnership. Although no records on availability of hospitals were provided in 2015 health statistics report, previous ones have asserted a significant number mainly due to privately owned health care facilities (Uneke et al., 2013). In terms of manpower, Nigeria is only second to Cuba with regards to nursing workforce. The greater challenge will be to address the mal-distribution of health workers and provide service to all (Benson, 2011).

The regulation of private providers is equally of paramount importance such that health services would be affordable to the public as they currently have to pay 66.8% of their health expenditure, about 96% of which remains out of pocket. Given the size of its population, it will be of benefit if policy-makers adopt a preventive strategy in approaching the country's health problems, especially in the areas of maternal and child health.

7.5 Sudan

In Sudan, a strong commitment from both communities and stakeholders towards formulation and implementation of sustainable health policies is critical factor in strengthening the health system. The importance of this is increasingly being recognized with a growing commitment from the general government to increase allocation to health sector. Sudan has nearly doubled its health expenditure from 3.5% in 1997 to 6.7% in 2015, overtaking its African and Asian counterparts.

However, more efforts need to be put in place to correct the rural – urban imbalance in health care services (MOH Sudan, 2014). This is only likely to happen if policy-makers take a decisive action. There is also the need to strengthen the country's infrastructure to enable it meet up with increasing demand for health services (WHO, 2014).

8.0 Conclusion

District health management is an integral part of national health system and countries that have achieved better health status for their populations have learnt to prioritize it. As an avenue for providing primary care, district health services should not only be available to the public but also accessible and affordable, bringing upon it minimal cost to the consumer.

With growing demand for medical services, there is a tendency to give more emphasis on curative services. This should be resisted as health promotion and disease prevention are the

most efficient and cost-effective approach to addressing health problems, especially where the communities involved are willing to participate and in sustaining health care services. In any case, problems affecting low developing countries such as poor infrastructure, lack of clear policy direction, poor implementation of health programs inefficient use of limited resources need to be addressed to achieve sustainable development.

Acknowledgement

This review was carried out as part of an assessment in health services system course.

Declaration

The authors have no competing interest to declare.

Authors' contribution

Author 1: Literature search and drafting of manuscript

Author 2: Literature search on Cuba and developing conceptual framework

Author 3: Literature search on Indonesia

Author 4: Literature search on Myanmar

Author 5: Literature search on Nigeria

Author 6: Literature search on Sudan

References

Benson, A. C. (2011). Hospital Information Systems in Nigeria: A Review of Literature. *Journal of Global Health Care Systems*, *1*(3), 1–26.

Braa, J., Titlestad, O. H., & Sæbø, J. (2004). Participatory health information systems development in Cuba. In *Proceedings of the eighth conference on Participatory design Artful integration: interweaving media, materials and practices - PDC 04* (Vol. 1, p. 53). New York, USA: ACM Press.

Cabrera. (2007) A study on intersector practices in health in Cuba | Database on Intersectoral Action for Health Equity (ISACS). (). Retrieved December 24, 2015, from https://extranet.who.int/isacs/case/1088

Chongsuvivatwong, V., Phua, K. H., Yap, M. T., Pocock, N. S., Hashim, J. H., Chhem, R., … Lopez, A. D. (2011). Health and health-care systems in southeast Asia: diversity and transitions. *Lancet (London, England)*, *377*(9763), 429–37.

Cooper, R. S. (2006). Health in Cuba. *International Journal of Epidemiology*, *35*(4), 817–824.

De Vos, P., De Ceukelaire, W., & Van Der Stuyft, P. (2005). Colombia and Cuba, contrasting models in Latin America's health sector reform. *Medicine and Health in the Tropics*. Retrieved from https://biblio.ugent.be/publication/339984

Grundy, J., Annear, P., Ahmed, S., & Biggs, B. A. (2014). Adapting to social and political transitions - The influence of history on health policy formation in the Republic of the Union of Myanmar (Burma). *Social Science and Medicine*, *107*, 179–188.

Judge, K. (1995). Income distribution and life expectancy: a critical appraisal. *BMJ (Clinical Research Ed.)*, *311*(7015), 1282–5; discussion 1285–7.

Keck, C. W., & Reed, G. A. (2012). The curious case of Cuba. *American Journal of Public Health*, *102*(8), e13–22. http://doi.org/10.2105/AJPH.2012.300822

McKee, M. (2010). The World Health Report 2000: 10 years on. *Health Policy and Planning*, *25*(5), 346–8. http://doi.org/10.1093/heapol/czq032

Ministry of Health Myanmar (2014). Myanmar Healthcare system. Retrieved from http://www.moh.gov.mm/file/MYANMAR%20HEALTH%20CARE%20SYSTEM.pdf

Ministry of Health Sudan (2014). Country Cooperation Strategy document from the WHO. Retrieved from http://www.who.int/countryfocus/cooperation_strategy/

Navarro, V.(2000). Assessment of the World Health Report 2000. *The Lancet*. 356, no. 9241 (2000): 1598-1601.

OECD Dataset. (2014). OECD Health Statistics 2014 Minimum Dataset Definitions , Sources and Methods, (June), 1–20.

Organization, W. H. (2000). The World health report : 2000 : Health systems : improving performance. Retrieved from http://www.who.int/iris/handle/10665/42281

Regidor, E., Calle, M. E., Navarro, P., & Domínguez, V. (2003). Trends in the association between average income, poverty and income inequality and life expectancy in Spain. *Social Science & Medicine (1982)*, *56*(5), 961–71.

Reinhardt, U. E., & Cheng, T. (n.d.). The world health report 2000 - Health systems: improving performance. *Bulletin of the World Health Organization*, *78*(8), 1064.

Rokx, C., Schieber, G., & Harimurti, P. (2009). Health financing in Indonesia: a reform road map. *Health Financing.* Retrieved from http://www.cabdirect.org/abstracts/

Shortell, S. M., Anderson, D. A., Gillies, R. R., Mitchell, J. B., & Morgan, K. L. (1993). Building integrated systems--the holographic organization. *The Healthcare Forum Journal*, *36*(2), 20–6. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10124166

Sixto, F.E. (2002). An evaluation of four decades of Cuban healthcare. *Center for urban*

studies. Retrieved from http://www.centerforurbanstudies.com/documents/

Uneke, C. J., Ezeoha, A. E., Ndukwe, C. D., Oyibo, P. G., Onwe, F., & Ogbonna, A. (2013). Assessment of Organizational Capacity for Evidence-Based Health Systems Operations in Nigeria. *Social Work in Public Health*, *28*(2), 97–108.

UNICEF - Definitions. (2015). Retrieved December 24, 2015, retrieved from http://www.unicef.org

World Bank. Country and Lending Groups | Data. (2015). Retrieved December 8, 2015, from http://data.worldbank.org/about/country-and-lending-groups

Vos, P. D., Ceukelaire, W. D., & Stuyft, P. V. D. (2006). Colombia and Cuba, contrasting models in Latin America's health sector reform. *Tropical Medicine & International Health*, *11*(10), 1604-1612.

WHO (2011) | Health Systems Strengthening Glossary. Retrieved from http://www.who.int/healthsystems/hss_glossary/en/

WHO (2015) | World Health Statistics 2015. (n.d.). Retrieved from http://www.who.int/gho/publications/world_health_statistics/2015/en/

WHO Statistical Information System. (2006). WHO Health Financing Indicators, 81–85. Retrieved from http://www.who.int/whosis/whostat2006HealthFinancing.pdf

Xie, Y. (2014). Community Healthcare Services in Cuba - Cuba's Contribution to the World. *Cuban Society Policy Issues Program*. Retrieved from http://www.crsp.pitt.edu/sites/default/files/Paper - Community Healthcare Services.