

Role of Devolution in Health Service Delivery, Health Workforce and Medical Commodities Acquisition: A Review

Maximilla N. Wanzala¹, Micky Olotunde Oloo^{2*}

¹Department of Public Health, Masinde Muliro University of Science and Technology, Kakamega, Kenya

²Department of Health Promotion and Sports Sciences, Masinde Muliro University of Science and Technology, Kakamega, Kenya

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*Corresponding author: Micky Oloo Olotunde

Abstract

Background: In the past three decades, health reform has become commonplace in most countries. Such that reforms decentralized governance of health systems has been adopted in some countries as a subset of broader health reforms or as a preferred management strategy. This review was performed to synthesize evidence around this issue. Specifically, the objective was to answer the question: “What is the role of devolution in service delivery, health workforce and medical commodities acquisition?”. **Methods:** CrossRef, Google Scholar, Academic keys, Open Academic journals index, MEDLINE, Embase, CINAHL, and PsycINFO were searched with terms related to devolution and health. The search included terms related to service delivery, health workforce and medical commodities. Findings were presented within a narrative synthesis. Quality of the evidence was evaluated using the Cochrane risk of bias tool and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. **Findings:** A few studies, all cross-sectional studies, met the selection criteria for this review. Most studies noted the major benefits resulting from devolution in terms of local governance and citizen participation in the health service delivery sector. The UK and India are some of the countries with evidence of how devolution impacts positively from accountability and participation. Some of benefits reaped include developed leadership, effective monitoring, promotion of quick delegation of work and generation of interest among employees. In Kenya, health sector still undergoes significant human resource deficiency, in spite of the government investing over the years from independent and also considering the devolution of health services. Healthcare workers shortage affects how health institutions functions. Studies showed that health workers positively respond to the demands of human resource of a decentralized unit if they look for employment in it, if a post is offered, they accept, and stays in service. Their ability and willingness to act in response to local demands are due to a number of factors. However, there is little literature on the best level of the government in provision of public type medical services. The recent focus has been entirely on the merits of local provision. Local governments are more responsive to their citizens compared to the central government. **Conclusions:** A universal objective of health systems should be to reduce inequality in health and promote equity, but the impact of Devolution of health system governance on equity has been questioned.

Keywords: Devolution, Kenya, service delivery, health workforce.

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INTRODUCTION BACKGROUND

Globally the health care sector is facing great challenges in both development and maintenance. In Africa, there are major policy, system, and infrastructural changes with the aim of improving service delivery and general health of the citizens. Both developing and developed countries are using the devolution approach to achieve the set health goals more important the sustainable development goals [1]. For most countries, achieving health for all revolves around devolution of the health system regarding the structure and even management. WHO defines

devolution as the transfer of authority, or dispersal of power, in public planning, management, and decision-making from the national level to sub-national level [2]. In Ethiopia, devolution started in 1996 with an intention to improve health service delivery in the health sector alongside other sectors. The design was a four-tier system that entailed primary health facilities as the lowest, followed by district hospitals, regional referral hospitals, and national referral hospitals at the top. Districts were empowered to determine budget allocations based on their priorities and needs, they controlled the medical supplies and managed the human resource. Despite challenges at first, there was a significant improvement regarding service delivery [3].

In Uganda there has been an invisible improvement in the health service delivery despite embracing the concept of devolution in 1997, most health indicators have stagnated or worsened due to financial and human resources inadequacies. Also, it is important to put the communities' members on board by involving them in various activities since they are the primary consumers of these basic services [4]. In the 2010 Kenya new constitution, article 185 to 187 clearly outlines the distribution of functions between the national and county government. The county government is supposed to handle county health services [1]. Despite the roles and responsibilities of both the National and county level were clearly outlined as in Table 1, there still exists poor understanding of the health system. There is also a lack of coordination between the national and county governments; as noted in the policy note, 2015 working paper 4 by Kenya School of Government: Center for Devolution Studies.

The health SDG number 3 has nine targets to be achieved. The strengthening of the health system is hence given a focus and expected to play a decisive role in ensuring that the following targets are achieved:

- Reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030
- End preventable deaths of newborns and under-five children by 2030
- End the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases by 2030
- Reduce the pre-mature mortality rate from non-communicable diseases (NCDs) by one-third through prevention and treatment, and promote mental health and wellbeing by 2030
- Strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

- Halve the global deaths and injuries from road traffic accidents by 2020
- Ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs by 2030
- Achieve universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all
- Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination by 2030.

Basically, the objective of devolution was to make the health service easily accessible to the citizens, more responsive to the needs of a specific population and more equitably distributed. Different countries have had a different experience. Some have sufficiently allocated funds to health care delivery while others have done it through a struggle. Given that the county management is tasked with planning and procurement for the first time, the issue of a lack of effective communication and feedback among authorities remains a hindrance, years after the devolution. There are still expensive delays in disaster and epidemic management despite the fact that the county authorities are thought of as sensitive and responsive to the needs of the local community. Excess capacity is yet to be teamed down and effectively patterned by devolution. The resolving challenges which deter better and equitable healthcare delivery are human resources, devolution of decision making, prioritization of a basic set of services, community oversight, and evidence-based advocacy and decentralization of infrastructures and structures.

Table-1: Responsibilities of National and County Governments in the health sector

National Ministry Responsible for Health	County Department Responsible for Health
Health policy	County health facilities and pharmacies
Financing	Ambulance services
National referral hospitals	Promotion of primary health care
Quality assurance and standards	Licensing and control of agencies that sell food to the public
Health information, communication, and technology	Disease surveillance and response
National public health laboratories	Veterinary services (excluding regulation of veterinary professionals)
Public-private partnerships	Cemeteries, funeral homes, crematoria, refuse dumps, solid waste disposal
Monitoring and evaluation	Control of drugs of abuse and pornography
Planning and budgeting for national health services	Disaster management
Services provided by the Kenya Medical Supplies Agency (KEMSA), National Hospital Insurance Fund (NHIF), Kenya Medical Training College (KMTC) and the Kenya Medical Research Institute (KEMRI)	Public health and sanitation
Ports, boundaries and transboundary areas	
Major disease control (malaria, TB, leprosy)	

Source: (KPMG 2013) [2]

It is therefore prudent for the county government to emphasize health care provision to the community members themselves basing on the communities' needs by reinforcing the communities' capacity in order to improve on their health and livelihoods.

METHODS

For reporting of this review, the standard guidelines by the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) were followed.

Search Strategy

The search strategy for this review was designed in consultation with a research librarian at Masinde Muliro University of science and technology to ensure a comprehensive search of the literature. The search included terms related to devolution, health and government, service delivery health workforce and medical commodities. There were no language, location, or publication period restrictions applied. Various electronic bibliographic databases were searched CrossRef, Google Scholar, Academic keys, Open Academic journals index, MEDLINE(R) In-Process & Other Non-Indexed Citations, Embase Classic, Embase, CINAHL (1937 to present), and PsycINFO (1806 to present). Reference lists of included studies were also evaluated to identify any potential studies for inclusion.

Inclusion and exclusion criteria Studies

There were no restrictions on the study time periods or design types eligible for inclusion

Study selection and data extraction

Two authors independently screened the titles and abstracts, followed by the full texts of potentially eligible studies, for eligibility as per the pre-specified

selection criteria. Articles that were not in English (ie, French and Spanish) were translated. Finally, a third author was consulted to resolve any discrepancies between the two reviewers. Results from the screening process were summarized in a flow diagram as per the PRISMA guidelines [5]. Data from the selected studies were extracted by each of the two reviewers independently, including study information and methods, participant characteristics and outcomes

Assessment of Evidence Quality

Each of the two authors independently assessed the risk of bias for each study using the Cochrane Handbook for Systematic Reviews of Interventions [6]. Although none of the included studies were randomized-controlled trials, the Cochrane risk of bias tool was deemed suitable because both included studies were experimental and controlled [6]. In addition to the standard six criteria for assessing the risk of bias according to the Cochrane Handbook for Systematic Reviews of Interventions, risk of bias from confounding was also examined to account for the fact that participants were not randomized [6].

A narrative synthesis was done of all eligible studies. A meta-analysis and subgroup analyses were not conducted, as there were too few studies identified from the search, without similar outcome measures.

RESULTS

The database search yielded 20 articles, which were narrowed down to 18 articles after duplicates were removed. The results were confined to 11 articles that could potentially meet the inclusion criteria. These remaining articles were assessed in full, with two studies being selected to be included in the systematic review. No additional studies were identified from the reference lists of included studies. This is summarized as a flow diagram in Figure-1.

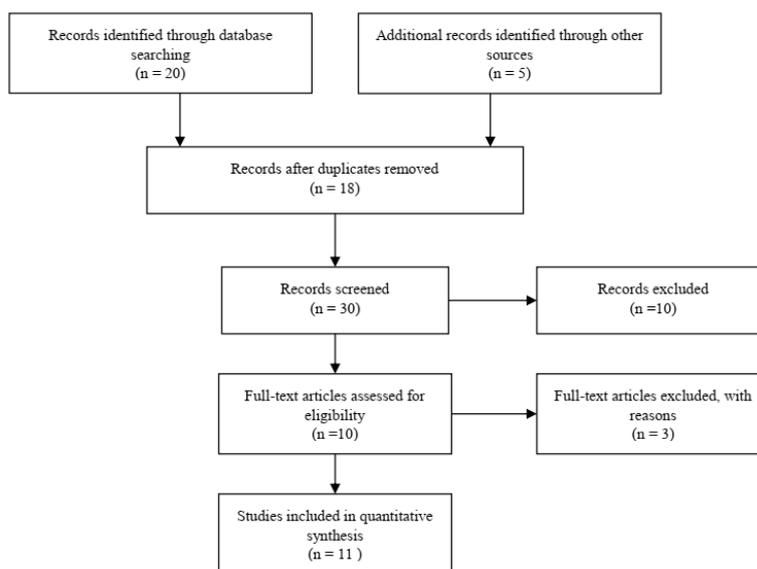


Fig-1: Study Flow diagram

Service Delivery, Health Workforce, and Medical Commodities acquisition in Devolved units

Service Delivery

Devolution of health care in Kenya aims at improved service delivery in terms of comprehensiveness, availability, affordability, accessibility, accountability and efficiency, coordination, person-centeredness, and quality health care services to all citizens from the national level to the grass root levels [7]. This is key also to the realization of Sustainable Development Goal 3, which aims at ensuring healthy lives and the promotion of well-being at all stages of life [8]. A comprehensive range of health services ensures that the appropriate needs of a target population are achieved in terms of rehabilitative services, preventive, curative and health promotion activities. Availability aims at providing individuals from all income and social groups with coverage. Affordability ensures every individual continue to receive care throughout the network of services and levels of care. Accessibility guarantees that services provided are close to the people and permanently available with no interference from costs, language barrier or cultural differences. Moreover, accountability and efficiency seek that health services are well managed with minimum wastage of resources. Those charged with the responsibility to manage resources allocated are held accountable for any misappropriation or misuse of funds. In addition, person-centeredness purposes that service users be responsive and accept services being offered to them. Lastly, coordination requires cooperation and collaboration between primary health care providers with other sectors. With the implementation of all these components, then the health service delivery offered would be of really great quality [9].

Over the years, devolution concept has been widely embraced by many countries throughout the globe and significant contributions have been noted in terms of quality service delivery which is a key pillar of health building blocks [9]. Countries such as France, Britain, Philippines, Ghana South-Africa, Zambia, Uganda among others are just but a few of the countries that have implemented major decentralization programs and policies in their health sectors. The reforms were implemented to strengthen service delivery to help reduce the burden of child and maternal mortality, tuberculosis, malaria, and HIV/AIDS among other diseases. Many studies conducted over the world have shown the major benefits resulting from devolution in terms of local governance and citizen participation in the health service delivery sector. The UK and India are some of the countries with evidence of how devolution impacts positively from accountability and participation. Some of the benefits reaped include developed leadership, effective monitoring, promotion of quick delegation of work and generation of interest among employees. In addition, devolution in India's health sector was successful because power and

resources that would help in the formulation of the program in the future were transferred to the local governments, pioneering for the equitable and affordable provision of public health services throughout the country.

In Bolivia, the inception of devolution was through the law of popular participation in (LLP) the year 1994. The drive behind this process was because of the poor performance of the Bolivian economy. The law was part of larger reforms that fundamentally aimed at correcting several major problems that arose from the previous governments [10]. One of which was the imbalanced development between the rural and urban areas. The political, economic and social aspects of Bolivia were drastically reshaped with greater equity in resource allocation from the introduction of various reforms that were capital based funds [11], however, this did not necessarily produce greater equity in health services. Devolution in Bolivia led to the neglect of nationwide control of vertical diseases program that resulted in serious consequences with an example being a first-ever outbreak of urban yellow fever [12]. In the Philippines, devolution was adopted in the year 1991 with the aim to help improve the health sector by the formulation of major health policies. However, it was observed that devolution itself did not improve the efficiency, effectiveness, and equity of health service delivery. This was attributed to the fact that there was no coordination of authority shared between the central government and the local government to help achieve the national health objectives and the needs of the locals. Furthermore, there was no improvement in the reproductive health indicators since the implementation of health policies in 1993 after devolution [12]. Constant strikes by health workers was also another major problem experienced in the Philippines resulting in inefficient service provision. In 1980, Ghana adopted the devolved system of government and with the adoption in the health sector, impeccable changes ranging from health finance to efficient and accessible services delivery were noted. In 2014, an assessment was done on the health sector to monitor trends. Accessibility to health care services was noted in the improved national ambulance coverage by about 60 percent in all the 216 districts of Ghana. This aimed at increasing the response time to emergency calls. Outpatient services accessed by patients insured by the National Health Insurance Scheme (NHIS) also increased per capita from 0.55 in 2006 to 1.17 in 2012 with the largest providers being the government centers (about 55percent). An increase in the overall health coverage also increased from 37 percent to 38 percent. NHIS aimed at providing free medical cover to the special population such as pregnant mothers, children under the age of 18 and the elderly above 70 years. An additional of about 400 doctors were also employed by the Ministry Of Health (MOH) in 2014. This saw the ratio of doctors to patients increase by one doctor per 2700 patients [13].

The target of one nurse to 1000 patients was also achieved ensuring equitable services to every citizen. In addition, the number of midwives also significantly improved in Volta and Ashanti regions where the average of deliveries per year was 110 and 190 respectively as compared to the previous years. Furthermore, in-patient's deaths decreased from 27.8 deaths per 1000 admissions in 2012 to 21.3 deaths in 2014. A reduction in health indicators is also another positive outcome attributed to devolution. About one child out of 260 malaria admissions died in 2014 accounting for a reduction of about 20 percent as compared with the previous years. This attribution is as a result of the use of long-lasting insecticide-treated nets as one of the operational ways to prevent malaria infections with about twice use as much of the nets in 2014. Infant and under-five mortality decreased by 40 percent between 1990 and 2014 because of increased health personnel, improved infrastructure, and health insurance exemptions to the most vulnerable. Utilization of reproductive health education in terms of contraceptive use increased by over 25 percent. Maternal mortality ratio dropped from 174 deaths from 2011 to 144 deaths per 100,000 live births in 2014. The proportion of HIV in pregnant women who receive ARVs during PMTCT visits also declined to 66 percent in 2014 from 76 percent in 2013.

Cases of tuberculosis also reduced with about 87 percent of diagnosed patients were treated successfully. However, cases related to cholera outbreaks and Ebola Virus still remain to be a serious indicator affecting citizens of Ghana [13]. Ghana recorded the worst cases of cholera outbreaks in June 2014 till January with a total number of 28,922 cases and 243 fatality deaths. This was the worst ever recorded case of cholera outbreak 34 years later after the inception of devolved governance in the health sector. Apart from the health indicators, other challenges have also been experienced in the health service delivery sector. Some of the problems include inadequacy in the number of midwives and nurses. In the Northern region, Domingo district hospital, for example, only two midwives were available to conduct about 80 deliveries per month. Moreover, the number of community health nurses was also limited and their productivity reduced greatly owing to the fact that almost half of them were pregnant at one point in time and has to take maternity leave. Kambugu District Hospital was no different with 12 Community Health Nurses and 5 midwives. The region, however, had a huge surplus of 900 Health Clinical Assistants while the required number was about 1,100 less. Appeals were made to the national government to employ more CHNs and Midwives. Accessibility in some regions was also another challenge being experienced with some regions like Kambugu having no car, DHMT having one motorbike being used in monitoring and supervision. Unavailability of data collection tools was also another

problem experienced with a shortage of various forms like Antenatal Care Register, Inpatient morbidity and mortality register, EPI tally books among others yet it's a necessity that the books be available to help in data quality so as to better the services being provided. Funding from the national government also was another issue. The delays in disbursement of funds made health projects to be put on hold which in turn made the quality of services being provided to be poor. Devolution in Uganda was introduced with the main focus being on health, education and agricultural services. A case study that examined decentralization in Uganda found out that there was no improvement in service delivery with the status of some health indicators either stagnated or even worsening [14]. The study argued that decentralization of education and health services did not result in greater participation from the ordinary people and no accountability between the service providers to the community. It further argued that due to lack of community participation, inadequate funding and human resources, a weak civil society and a narrow local tax base were also some challenges hindering the complete implementation of health reforms in devolved health systems.

In Kenya, the implementation of devolution was in 2013 after the promulgation of the new constitution in 2010 with the aim of developing various sectors throughout the country. The Kenyan constitution guaranteed health for all Kenyan citizens as stated in the various articles of the constitution. Article 26 states that every person has the right to life. Article 42 states that every person has the right to a clean and healthy environment. Article 43. (1a) states that every person has the right to attain the highest attainable standard level of health which entailst he right to health care services including reproductive health care. Several principles embedded in Article 174 of the 2010 constitution were necessary to be considered when implementing devolution. These included county governments to be based on democratic principles and separation of powers, county governments shall have reliable sources of revenue to facilitate governance and deliver effective services and no more than two-thirds representation of members in each county government to be of the same gender. In this context, devolution aimed at fostering democracy and accountable exercise of power through diversity recognition, self-governance and enhanced participation of people in the process of decision-making policies that would affect them. Application of devolution in Kenya's health sector aimed at promoting accessibility to health services throughout the country, to address problems of the low quality of health services, to promote efficiency in health service delivery and to address issues of discrimination in terms better health service delivery in the urban centers than in the rural areas. Functions outlined for the national and county government were as follows;

- Social functions except education are mainly to be performed by county governments whereas security, defense, and foreign affairs solely lie with the national government.
- Policy Framework is set by the national government and implemented by the county governments.
- Residual power lies with the central government, Article 186(3)
- Vast responsibility for service delivery lies with the county government.

In the year 1994, the government of Kenya adopted the Kenya Health Policy Framework (KHPF) with the aim of reducing challenges affecting the health sector. The policy aimed at health service delivery and reducing health indicators such as the HIV/AIDS burden, tuberculosis, and malaria which were the leading causes of mortality in Kenya. Since the implementation of the policy, numerous strides have been made and there has been a noteworthy improvement in the health indicators such as child mortality and other infectious diseases. After the general elections of March 2013 in Kenya, a health census called Service Availability and Readiness Assessment Mapping (SARAM) was conducted between April to May 2013 with the aim of accessing and monitoring the readiness of the Kenyan health facilities to provide the basic health care services now that county governments became operational. SARAM provided the status of Kenya Essential Package for Health (KEPH), the capacity of service provision in terms of availability of essential inputs required for service provision and functional inputs needed for service provision and lastly readiness of the critical inputs needed for the provision of service.

Service delivery readiness looked at the capacity of health facilities to provide services in terms of availability of basic equipment, standard precautions for infection control, diagnostic tests, medicine, infrastructure because it was a crucial aspect to help in the realization of quality access services to health. Availability of basic amenities as such electricity supply, emergency transportation, water, and adequate sanitation would enable an effective and functional delivery system. Availability of basic equipment like child/infant weighing scale, blood pressure machine, thermometer and adult weighing machine would help cut across in providing health services. Patients and staff safety is also an essential part of service delivery. For workers to be able to provide the required services they must work in a conducive environment and even the patients must also have access to a secure environment. This is characterized by the availability of materials like soap and water, latex gloves, disposable bins, and auto-disposable syringes. Facilities should also provide specific health services like immunization, surgical services, HIV, tuberculosis, maternal health

and child health among others. Key findings from the SARAM were as follows

1. The overall availability of different KEPH services throughout the country was still too low attributing to the growing burden of non-communicable diseases
2. Availability of some crucial and priority services like maternal and child services was still low with about only 35 percent of facilities providing the services.
3. Health education and promotion was still low throughout the country.

Application of devolved governance in the Health sector in regards to service delivery has brought about significant changes. Some of which are the development of the marginalized areas of Kenya especially in the semi-arid regions like Mandera and Isiolo which have benefitted from a programme like Beyond Zero campaign that aimed at reducing the prevalence of maternal and child mortality. More boreholes have also been dug in other regions like Turkana, Laikipia, and Samburu by the local governments with the aim providing adequate water for residents which aimed at reducing cases of disease like cholera and typhoid outbreaks that were a constant occurrence in the region. In addition, there has also been an improvement immunization and vaccination services throughout the country which has led to the reduction of childhood diseases especially in the arid and semi-arid regions of Kenya. An increase in health education services has also been noted with the increased use of contraceptives so to help reduce the burden of unplanned pregnancies. Increase in the purchase of health equipment is also another positive outcome that has been attributed to devolution. This has led to improved service delivery for some services like dialysis, surgical operations without the need of traveling to referral hospitals to access such services. Participation from local has also been encouraged to help in policy making to help the county government provide services suitable for its residents. Even with the recommendations made by SARAM to help in the full implementation of devolution in the health sector, challenges are still being faced in various health facilities in terms of service delivery [15]. Some of the challenges experienced include delay in funding from the county governments which majorly depend on the national government to fund most of the health projects [16]. Due to delayed payments and non-conducive working conditions, health workers constantly go on strikes which in turn hinder access to medical services and resulting in reported cases of deaths among patients. Health indicators such as maternal mortality, neonatal and postnatal mortality, on communicable diseases, tuberculosis and malaria are still high in various counties likes Mandera, Isiolo, Wajir, Marsabit, and Migori among others despite the fact that devolution aimed at reducing such. Misappropriation of funds and increased cases of corruption has also been

on the rise causing delays in completion of various health projects which hinder service delivery [17].

Health Workforce

Skilled health personnel is needed to deliver interventions on public health. Human Resources for Health (HRH), as by the World Health Organization (WHO), includes all persons engaged in actions whose primary intent is to enhance health. These are care givers i.e. nurses, pharmacists, doctors, clinical officers, and so on to managerial personnel, laboratory technicians, and other staff like medical records officers, cleaners and health economists who don't deliver services to the patients one on one but are very important to health system functioning. For a country to meet its health goals largely depends on the skills, knowledge, motivation, and deployment of the individuals who are responsible for organizing and delivering health services [18].

Generally, failure to attain adequate coverage rates as prioritized by the MDGs, for pointed fundamental health-care interventions in the countries has an estimation that they have less than 23 nurses, physicians and midwives per 10000 population. Decentralization uses two frameworks which are analytical. The first specifies three decentralization types: deco centralization, devolution, and delegation. In the second principle agent approach is used and gaps which are innovative of 'decision space' in defining the choice range for varying functions transferred to the periphery from the Centre of the system [19]. In Ghana, health service had a one and structure of hierarchical personnel in which hiring and firing authority, salaries, contracting and civil service decisions were centralized completely. This was done expecting greater flexibility on the management of human resource to the GHS in this area than the National civil service [20].

In Zambia, The Zambian District Health Boards wanted decentralized authority where they could hire and fire but other sectors to still be centrally managed like employment condition and salaries. Early-mid-1998, the system of Zambia had experienced slowdowns series of work, protests and strikes believed to have been organized by the Zambian National of Health Workers (ZNUHAW) in claims that the health facilities were deteriorating, no supplies and salaries and benefits were taking so long to be paid [20]. In the Philippines, the authority had been given to the local government for hiring and firing devolved personnel this led to de-linkage between the local government and national civil service. Political influence however in both cases of public sector health workers led to the centralization of employment conditions, benefits and salary levels. This led to in an indirect influence on the management of financial resources as human resources captures a greater percentage of budget allocations and recurrent costs [20]. The large-scale transfer in the Philippines of health personnel to local government

from the DOH employment, approximately 46000, or 62% of the DOH's 70000 employees led to a reaction which was extremely adverse among health workers, this was due to exclusion of the DOH from decentralization policy formulation until late in the legislative process. Decentralization at least initially appeared to have led to a significant deterioration of devolved healthcare workers' employment conditions. Decrement of devolved workers' salaries relative to employees of the central government [21].

Health labor market to be assessed according to [22], studying the demand and supply sides are both required, and also matching them to determine shortages or surpluses of health workers. The supply includes the number of health workers who are qualified and willing to render their services in the health care sector at a given wage rate. Thus, the key determinant is the training of the health workers. The training institutions would determine the number of health workers who are trained, the years of training, the level of education, the training cost, the personal interest in working in the field, after training the expected probability of job getting, and so on. It is connected to the market for health workers training [23]. Higher wages encourage a larger number of willing health workers to work for the sector of health. Other considerations would include better conditions of working, career opportunities and safety, also determining the decision of working in the sector or rather in a different sector or to move out and migrate. The health workers supply and demand determine other compensation and the wages, employed a quantity of the health workers, the hours the health workers work, the employment settings and their geographical location [24].

In Kenya, health sector still undergoes significant human resource deficiency, in spite of the government investing over the years from independent and also considering the devolution of health services. Healthcare workers shortage affects how health institutions functions [25]. As according to Kenya HRH Strategic Plan and also from the Ministry of Health's commitments signed at the Human Resources for Health Conference in Brazil in 2013, under commitment 4, there is a need of increment in spending in the Health Sector on HRH beyond salary and allowances of the staff by 2017. Allocate HRH budgets beyond emoluments of the employee towards the welfare of employee, relations of employee, recognition, and reward, improvement of work climate, safety and occupation health by 2017 [26]. Health personnel recruitment over time. The Health Ministry notes that the investments of the human resource should be designed to address if there are available appropriate and equitably distributed health workers, retention and attraction of required health workers, improvement of institutional and performance of health worker, and

finally the capacity building of training and development of the health workforce [27].

More than 5,000 trained doctors of Kenya have emigrated due to poor payment and 3,000 more have joined others sectors leaving health, leaving 3,440 doctors for the approximately 46 million Kenyans who fully depend on national hospitals and county hospitals [28]. According to Kenya Medical Practitioners, Pharmacists and Dentists Union (KMPP&DU), the information didn't, however, occupy the fact that many of these doctors had emigrated or after 2013 left the health sector, on the decentralization of health services to the county government. Most have cited negatively on the effects of devolution such as lack of service schemes to county level that still negatively impacted on practices of human resources such as retention and recruitment, delayed salaries, promotion, harmonization of salaries are lacking, opportunities are lacking for medical education continuation, and many more. Measured against staffing norms and standards of the World Health Organization, Kenya has a deficiency of 83,000 doctors [20].

In South Sudan, where shortages of human resource are at crisis levels, assistance from the Intergovernmental Authority for Development (IGAD) gives way for countries who are neighbouring to provide the country with specialist labour. The countries who are originating continue to pay salaries of the workers and the government of South Sudan provides an allowance, according to Dia Timmermans, the Joint Donor Office with a senior health adviser of the World Bank, based in South Sudan [29]. part of these challenges currently is being addressed according to the proposed norms of staffing, initiatives of private-public like "Beyond Zero" tolerance, the managed scheme of equipment, construction in a number of the counties of teaching referral hospitals. Also, counties which are hard to reach want to invest in human resources for health, on the other hand, attract and retain these human resources in services and have initiated incentives to attract and retain health workers like risk allowance, performance best financing, provision of air ticket and bonuses, etc. Planning and development immediate action on human resources for health by the Ministry exceeding the political poetry of providing county hospitals were long deserted by the doctors

In Uganda, decentralized personnel management, eg, showed that "personnel management structures and systems are weak at the district level, personnel offices are not fully staffed, poorly resourced District Service Commissions, and clarification of central-local linkages are still in need" [20]. Managers who are not trained and weak personnel systems are not well equipped to deal with the added complexity that decentralization brings to personnel administration. The move to accessible employment arrangements, mostly in Latin America, has the workforce fragmented [20].

The decentralized sector is now in charge for personnel administration of a number of different types of staff: the locally hired, individuals who are members of the national civil service, those hired on contract terms, among others. According to Brito in Brazil, e.g. there are 15 different more ways of contracting a health worker to render service in the public sector. Health workers positively respond to the demands of the human resource of a decentralized unit if they look for employment in it, if a post is offered, they accept, and stays in service. Their ability and willingness to act in response to local demands are due to a number of factors. These would be a personal family of a worker and situation of economic, salary levels attractiveness, terms, and conditions of service, professional growth opportunities and development of a career, on the other hand, opportunities of employment in the labour market, the morale level and motivation in them, etc. Among these factors, employment stability, working conditions and salaries, and professional development opportunities are very important concerns of health staff. Job security is highly valued by most health workers. If their status of employment changes to local employees from national civil servants, they want to keep at least the benefit level, status and seniority that they had before decentralization. They prefer a little change in their work location, reporting relationships or job content. Decentralization can threaten the concept of equal pay for equal work. National employees may be compensated differently from decentralized employees. Tang et al. report that in China, personnel working in state-owned and devolved health centres are paid differently. Evidence from the Philippines shows that salaries of devolved health workers decreased in the early years of devolution to local government units. As decentralized units are given more financial autonomy, and as flexibility in pay bargaining increases, health workers doing similar jobs but in different decentralized units will be remunerated differently. This is emerging in Uganda, where salaries are set nationally but staff benefits and allowances locally. Considerable differences in salary levels and other terms of employment have also emerged in South Africa, where salary levels are determined locally [30].

Pensions have arisen as an important issue for health workers in countries such as Zambia, which have tried to break the rigidity of the civil service system by making health workers local employees. Public sector employees are usually included in a large national pension scheme, covering all civil servants. The contributions are paid by the national government and are part of benefits packages that have been negotiated with labour unions. Under devolution, local authorities may be reluctant or outright refuse to accept the financial burden of paying for the pensions of prior civil servants. Thus, a new pension fund to cover local employees may be needed. In Jamaica, for example, regionally hired health workers now belong to a private pension fund. Contributions to it come both from the

regional health authority and the individual employee. Previously, the government paid the total contribution [31]. Delayed payment of wages or their non-payment is a serious issue for decentralized health workers in the poor countries of the developing world. It has also happened in Central and Eastern Europe, as the countries of this region have tried to cope with economic crises. Staff whose salaries are centrally distributed, such as those working for delegated hospitals, are more likely to get their salaries than those employed by devolved units. The latter may not be paid for months or do not receive their full pay when they are paid [32].

There is very little in the literature about decentralization's impact on working conditions in the developing world, other than observations, referenced before in this paper, that financial restrictions have reduced the availability of essential drugs, supplies, and transport. ILO comments that overtime and unsociable working hours have increased as a result of reform processes and cost-containment measures in countries, such as France, Germany, Sweden, and the United Kingdom. In addition, the intensity of work has increased greatly, even if the actual hours of work have not changed much [31]. Mexico decentralized considerable powers over the health sector from the federal to the state governments. The aim was to increase health care accessibility and coverage, and some 116,000 health workers were transferred from federal to state employment. Three main strategies have been used to strengthen human resources and develop the staff required to implement decentralized service delivery [33]. The health workforce constitutes the 'building blocks' of the health sector that determine the efficiency with which all other blocks function. According to World Health Organization's (WHO's) report in 2006 [34], it is evident that Low-income countries have 'critical shortage' of health service providers [35]. The joint learning initiative standard showed that anything below the threshold of 2.28 doctors, nurses, midwives per 1000 population was below the standard threshold [36].

In 2007 Approximately 500 nurses per year were estimated to be graduating in Kenya with diplomas and 150 per year with Bachelor of Science in Nursing degrees. The number of doctors produced each year was estimated to be 350. It was widely recognized that there was unemployment among nurses. Hence there was an emergency hire of nurses by joint efforts between the government of Kenya and several external sources through the Capacity project. 830 nurses and health professionals were recruited to work in 193 sites [37]. Kenya has low vacancy rates, significant numbers of unemployed health workers that are still deemed to be a critical shortage because the number of funded posts does not match WHO's estimation of the minimal number of health workers required [36].

In some countries, the human resource crisis is as a result of factors such as inadequate production, inability to hire, conflict of interest, misuse of resources brain drain, poor motivation, and corruption. In most African countries the majority of the health workers are based in urban areas and apparently, there is a short supply of doctors and nurses compared to the standards of the population. As we proceed in implementing the devolved health system, it is important to appreciate the fact that the human resource issue is affected both quantitatively regarding appropriate numbers and qualitatively like adequate skills and motivation. As such, the shortage of the right people, in the right place, with the right attitudes and skills mix must be addressed so as to produce professionals with skills that are not only technical but also managerial and relational. Health professionals need to be able to see beyond direct causes of ill-health to indirect and proximate determinants of health such as poverty, disparity, ignorance, and marginalization. They should also be able to facilitate and provide feedback to people as partners [38].

Inequitable distribution of health services and inefficiency in health care service delivery was linked to centralized governance [39]. Therefore, some of the major intentions for devolved health system was to improve efficiency and equity of health care services in the country alongside promoting transparency and accountability if the transition is excellently managed [56]. Adequate primary health care capacity is dependent on the number of doctors and nurses available in any given county or county. The Kenya National benchmark is supposed to be three doctors per 10,000 people yet in the 47 counties, the proportion of doctors ranges from 0 to 2. Counties that have low population densities seem to have fewer population densities of nurses, for example, Mandera had 0.9 per 10,000 [40]. According to the 2013 Service Availability Readiness Mapping analysis, there was going to be great variability in the provision of health care services upon the devolved health care system. By then, some Counties had very few numbers of facilities per 10,000 people, and it was feared whether the nine counties would manage or were prepared to provide health care services than other Counties. Increased revenue may improve the Counties' readiness to provide healthcare services. Counties that performed relatively well across the indicators may still have inadequate healthcare inputs according to national or international standards as none of the counties met the national benchmark for the population density of medical practitioners [41].

Medical Commodities

According to the World Bank, essential medicines and are medicines and that fulfils the most prioritized health care needs in a population. These medicines and equipment serve an essential role in basic health care since they make the health services effective by curing diseases, alleviating symptoms and

reducing the mortality rate. The essential medicines should be available in the health facilities in good amounts, in the appropriate dosage, with reliable quality and enough information and at an affordable price. Selection of the essential medicines should be done with regard to the public health relevance, comparative cost-effectiveness and evidence of efficacy and safety [34]. Provision of healthcare by a government to its citizens involves promotive, curative, rehabilitative and preventative. For a system to achieve both preventive and curative care there must be reliable medicines and medical supply. Besides having very skilled health care providers, reliable medicines supply to the health facility is the most important and significant means to alleviate, prevent and cure diseases (EZOfficeInventory, 2018). Supply of essential medicines and equipment closely intertwines with other two building blocks: governance and service delivery. Effective service delivery has to be accompanied by sufficient medicine supply, equipment, and infrastructure. Medicine supply and access to medicine are covered in the Millennium MDG8. Access to medicine is defined as “having medicines consistently available and affordable in private or public health facilities or pharmacies that are within an hour’s walk of the population” [42]. According to the United Nations report on the progress towards MDG target 8.E, low availability, high prices and poor affordability of medicines are a key hindrance to treatment access in the third world and middle-income countries [43].

A good-working health system ensures equal access to vaccines, medical products, and technologies (WHO, 2014). It is, therefore, the primary role of the government to ensure every health facility is supplied with medicines and medical equipment for service deliveries in hospitals. However, some governments have decided to devolve this role to county levels to ensure that every part of the country has access to these services. Some of the examples of supplies made by the government include public goods, for example vector control, immunizations, water supply safe drinking, sanitation, infectious disease, control and health education; or goods that results to significant externalities, for example, family planning, maternal and child health and infant nutrition [44]. Up to now, there is little literature on the best level of the government in the provision of public type medical services. The recent focus has been entirely on the merits of local provision. Local governments are more responsive to their citizens compared to the central government. The decisions made at the local governments reflect the demands of the public since these decisions are made closer to the individual receiving the government services. On the other hand, the government is less concerned about each and every need of its citizens and important circumstances, therefore local government tends to be more efficient in the provision of medical supplies and equipment [45]. A study on developing and transitional nations indicated

that out of 75 of the developing countries with a population greater than five million, all but 12 claims to have adopted transfer of power to local governments [46].

Many countries have had numerous drawbacks as pertains to the inadequacy of several important medicines and medical supplies. According to Bruno *et al.*, [47] the concept of essential medicines was introduced by the World Health Organization (WHO) in 1977. The World Health Organization indicated that a third of the world’s population have inadequate access to the required medicines. Inadequate access to required medicines is more common in developing countries in Asia and Africa. Up to 50% of the total population has limited access to needed medicines. There has been good progress in terms of accessibility to needed medicines since the World Health Organization introduced the concept of essential medicines. And these benefits have unequally spread across the global population [48].

A study report was given by the World Health Organization [49] showed that about 30% of the world’s total population has no or inadequate access to important medicines. The report further revealed that almost half of the African population have either no access or inadequate access to essential medicines. According to WHO [50], Poor medical supply in the public sector is a key impediment to the access of essential medicines. Studies have further indicated that the supply of generic medicines is below 60% across all regions covered by the World Health Organization ranging from 58% in the European regions to 32 in the Mediterranean region. Supply of generic medicines is higher in the private sector than in the public sector in all regions. However, the supply of these generic medicines is still below 60% in the Western Pacific, South-East Asia, and Africa Regions.

According to the Kenyan constitution, every citizen is entitled to high-quality health care. In the Kenyan Vision 2030; the national government has a target of having the entire population in the country having access to effective health service. In the “Big Four agenda” the government emphasizes on the need for “Universal Health Care”. Devolution of the health systems has granted the county government a role of coordinating and managing the delivery of County health care services including promotion of primary health care, public health and sanitation, ambulance services, disease surveillance and response among others. Devolution in the Ministry of Health was supported by the Health Policy Project, which helped to identify participants for the Functional Assignment Competency Team (FACT). FACT was established under the guidance of the transition authority to spearhead, coordinate, and oversee the devolution of the health sector. Among the grappled contentious issues was organizing commodity procurement (Project HPP,

2012). Under the new constitution, the Kenya Medical Supplies Agency (KEMSA) lost its monopoly over the procurement of the health sector commodity. The 2010 Constitution did not specify whether national or county governments would manage the Provincial General Hospitals (PGHs) currently referred to as County General Hospitals (CGH). It was also unclear on how counties would procure pharmaceutical products. However, the national government tried to keep PGHs under its control by designating them as national referral hospitals, with KEMSA as the sole procurement option for counties. HPP worked with the MOH to explore the possibility of funding PGHs through various conditional grants and circulated a policy brief on the subject to county teams [51]. The situation of medical supply in Kenya has not been any better in Kenya since the beginning of devolution to date. According to the Ministry of Medical Services and Public Health and Sanitation [52], the public health facilities experience stock-outs of primary essential medicines for about 46 days annually. To develop Kenya's health system access to important medicines is the key to tackling health complications and reducing the high level of mortality in the developing world. A report by WHO [9], showed that, 39 third world countries and middle-income countries. The study indicated that there was a wide difference in the average supply of medicines which was 56% in the private sector and 20% in the public health facilities.

According to the ministry of Health-Kenya, 2010, public facilities are facing a shortage of drugs leading to the use funds meant for development and buying emergency medicines from local pharmacies by health facilities. For example, in Nakuru County, a research was done by the pharmaceutical agency indicated that 201 provincial, district and sub-district hospital in the County had an average of 50% for the common class medicines and lower level health facilities had an average of 60% of essential medicines in the health facilities. Currently, Kenya has done relatively well on availing important medical equipment and medicines that are required in a health facility. However, there is still an inadequate supply of some drugs and equipment, for example, tracer drugs for mothers and children. Inadequacy of medicines, irregular distribution of health services and inadequacy of equipment in health facilities is considered as service management. The monitoring evaluation report on health facilities in different countries also revealed that there was a gap in the availability of key drugs used in the management of communicable and noncommunicable diseases across the health system [9]. The findings of a case study carried out in Embu County showed that, some of the factors influencing the availability and supply of essential medicines and equipment in Embu County included health worker training on management of essential drugs, budgetary allocation, and disbursement of the allocated budget,

supplier stock level of essential medicines, and disease prevalence patterns [53].

In the year 2010, over 100,000 Kenyans on ARV's were disadvantaged because of delayed procurement of drugs due to supplier's concerns over the procurement process that had been conducted. Some of the challenges that led to this case included lengthy ministerial consultations, inflated tenders, shortage of procurement staff, heavy debts and insufficient allocation of funds to meet the facility needs [54]. To solve the problem of inadequacy of important medicines, the County government should revisit its procurement and distribution arrangement to address the key lifesaving medical supplies and equipment. Counties plus the Kenya Medical Supplies Agency (KEMSA) should ensure that there is efficient supply chain management system based on the needs and they should have alternative options to order drugs not forgetting principles of economy, quality, timeliness and rational use [9]. A study by Bazargani [55] showed that the supply of essential medicine does not guarantee equal access to the medicines.

CONCLUSION

In conclusion, it is unclear whether devolution leads to improvement in overall health system performance [56]; and the relationship between Devolution and health system objectives such as equity, efficiency and cost effectiveness is unclear. Some studies indicate that the outcomes, benefits and challenges of Devolution are mixed [20, 57]. A universal objective of health systems should be to reduce inequality in health and promote equity [34], but the impact of Devolution of health system governance on equity has been questioned [58].

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