

Prioritising Health Systems to Achieve SDGs in Africa: A Review of Scientific Evidence

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Abstract

The Sustainable Development Goals (SDGs) provide a framework for streamlining efforts towards achieving global development objectives. The SDG 3 on universal good health and well-being remains an international priority. Recent reports indicate that although progress has been made, most developing countries face health system challenges and are still far from achieving SDG 3. We examine scientific evidence to infer priorities for African states that could inform the direction and implementation of SDG 3 in Africa. The chapter focuses on shortfalls in health systems, particularly with health information systems and human resources for health. It also highlights strategies to strengthen these systems and promote sustainable capacity building. Health information systems (HIS) are important data sources for evidence-based health policymaking, research and evaluation, training and service delivery. However, inadequate provision of reliable,

valid and comparable data in resource-poor settings threatens meaningful progress in realising SDG 3 targets. We review the literature and discuss progress and challenges in the collection, synthesis and use of health information, and give recommendations on improving HIS evidence in such settings. Human resource is a key component of strong and resilient health systems, without which implementation of evidence generated from HIS into meaningful practice is unachievable. We also discuss health workforce hurdles to health cooperation, coverage and training that may affect the attainment of SDG 3. Improvements in HIS and adequate capacity building will undoubtedly highlight key silences and obstacles in SDG 3 actualisation and inform health policymakers, practitioners and researchers on innovative strategies for better health in African countries.

Keywords

Sustainable development · Health systems · Health information · Health workforce

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11.1 Introduction

The 17 Sustainable Development Goals (SDGs) adopted in late 2015 constitute comprehensive, renewed efforts across the globe to tackle social, environmental and economic development issues related to humanity and the planet by the year

2030. The third goal (SDG 3) aims to ‘ensure healthy lives and promote well-being for all at all ages’ and acknowledges good health as a universal and fundamental human right across the life course (UNDP 2015). The central role of health in sustainable development is incontestable, as both a determinant and an outcome of progress in other development sectors (Hanefeld et al. 2017; Nunes et al. 2016). Several SDGs (2, 6, 7, 8, 11, 12, 13 and 16) also inherently contain health-related targets (World Health Organization (WHO) 2017). We therefore argue that successful implementation of SDG 3 by African states ought to take more coordinated and integrated approaches as the attainment of any SDG 3 target is linked to and facilitates achievement of other goals (Kickbusch and Hanefeld 2017). Such cross-cutting strategies to realise health-related targets have been hindered by factors such as the narrower focus on a few health goals within the previous Millennium Development Goals (MDGs) (UN 2015), prevailing disease-specific or population-specific vertical funding programmes, inefficient resources, poor governance and fragmented health systems (Atun et al. 2008). To be successful, SDG 3 warrants health systems thinking that would foster synergy across different components of the health sector.

Health systems can be viewed as the interconnection of several components concerned with health. These include individuals, families, communities, institutions and organisations, such as health financing bodies and health ministries (World Bank 2007). Health systems play a vital role in connecting health interventions with the population, and weak health systems were cited as a key impediment for many African countries in achieving health-related MDGs (Kirigia et al. 2016).

Africa’s development agenda remains substantially focused on health system-related issues. A recent public attitude survey of 36 African countries highlights inadequacies in Africa’s health systems such as barriers to basic health services that include health facility shortages, inaccessible medical care and poor governance for basic health services strengthening (Armah-Attoh et al. 2016). Such findings are

contradictory to the new SDG 3 agenda, since a core theme is to ensure equity, universal coverage and sustainability of health care across populations.

The WHO describes a framework that classifies health systems into six building blocks: health services, health information, health workforce, medical supplies, financing and governance (WHO 2007). The framework has previously been applied in guiding health systems strengthening efforts in various settings and can be a useful tool in monitoring progress and performance of countries towards the achievement of SDG 3 (Manyazewal 2017). Strengthening health systems is identified as a ‘key line of action’ within the SDG 3 agenda (WHO 2017), and the performance of health systems bears a strong influence on differences in summary measures of disease between countries (Sepanlou et al. 2017).

This chapter identifies priority areas within specific SDG 3 targets from a health systems perspective. It examines two health systems components: health information systems (HIS) and human resources for health (HRH), and makes recommendations for prioritising SDG 3-related objectives. We acknowledge that health systems are different and also complex, and that their effective functioning depends on the local social, economic and political contexts in which they occur (Atun 2012). A ‘one size fits all’ approach would be impractical in giving recommendations for improvement. It is hoped that the analysis presented in this chapter provides a rapid assessment overview of prerequisites for strengthening HIS and HRH across Africa with relevance to the SDG 3 targets.

11.2 Review of Key Health Information Systems in Africa with Implications for SDG 3 Achievement

Health information systems (HIS) constitute the evidence base that drives health-related decision-making across all six health system building blocks. HIS generate, collate, synthesise and disseminate data into meaningful information

that is used for policy making, governance, research, health education and training, financing, service delivery and human resources development (WHO 2010). A good HIS is able to generate reliable, comparable, complete and timely data on health determinants, health status and health system performance (WHO 2007). Poor outcomes in health care have been attributed to weak HIS (Bailey et al. 2017).

11.2.1 Civil Registration and Vital Statistics (CRVS)

Civil registration and vital statistics (CRVS) systems document major or vital events of populations and provide data on key events such as live births, deaths, marriages and divorce. Sound CRVS are permanent, regular, compulsory and complete in order to adequately monitor population dynamics, evaluate health programmes and identify health inequities. Most CRVS systems in Africa lack adequate data that can be useful in health policy planning due to poor coverage and existing inequalities (Mbondji et al. 2014; Bhatia et al. 2017).

Africa has disproportionate mortality rates for children under-5 years, with the highest mortality rates documented in ten Sub-Saharan Africa (SSA) countries (Liu et al. 2016). Notably, these high burden areas have inadequate CRVS systems to establish childhood and maternal causes of death and, usually, rely on verbal autopsies (VAs) to fill data gaps (Liu et al. 2016; Congo et al. 2017). VAs are not fully reliable, consisting of interviews to ascertain probable cause of death in the absence of a physician. However, VAs can be adapted for regular integration to CRVS, through information technologies such as mobile phones for data collection (de Savigny et al. 2017). Tackling the major under-5 mortality causes (birth complications, perinatal-related events, pneumonia, malaria and diarrhoea) requires vital registration data. African countries can prioritise financial, human and structural resources to improve childhood cause of death data collection methods through alternative methods. These would include the use of

household surveys, demographic surveillance networks and pilot registration systems before implementation of fully fledged CRVS.

11.2.2 Surveys

Health surveys are used for rapid data collection to monitor population health needs at single time points and over time. Household surveys remain the most popular source of data within the WHO African region, with Demographic and Health Surveys (DHS) that collect large-scale nationally representative health, nutrition and population indicators being widely conducted (Mbondji et al. 2014). Although DHS have facilitated a wide range of research such as investigating inequalities in accessing antenatal care and neonatal mortality (Neal et al. 2016; Grady et al. 2017) such data is unsuitable for regular monitoring and evaluation because they generate average estimates over five year intervals before data is collected (Amouzou et al. 2013) and are subject to bias due to retrospective reporting.

Survey data can however be easily integrated into global data sharing platforms, and are readily augmented to data obtained from other sources, such as registers and other studies (Lamri, Gripiotis and Ferrario 2014). Retrospective data collection is commonly conducted through surveys of medical records in health facilities (Mwinga et al. 2015). Health facility data could also be used in conjunction with population survey data to improve estimates (Amouzou et al. 2013). Such shared data repositories facilitate easier access to data on SDG 3 targets that potentially lack adequate epidemiological information within countries, for example, target 5 on substance abuse (Ferreira-Borges et al. 2015).

11.2.3 Disease Registries

Disease registries involve facility- or population-based data collection on specific conditions and allow follow-up on management practices and patient outcomes. Some African countries have

implemented registries; mostly focusing on non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes and cancer (Brown et al. 2014; Kingue et al. 2016; Ghorbanoghlil et al. 2017). North African countries demonstrate a higher frequency of implementing registries (Bonaventure et al. 2017). Longitudinal observational cohorts are required for long-term investigations to improve management of increasing incidence of NCDs in Africa. Studies on disease registries that harness data for epidemiological investigations are necessary (Moustaghfir, Haddak and Mechmeche 2012).

SDG 3 target 3 reflects the ongoing efforts to curb communicable diseases. An electronic TB register that captures treatment data at the sub-district level and is aggregated at provincial level, has allowed detailed assessment of mortality rates and factors affecting adherence to medication in TB patients (Heunis et al. 2017). Incomplete data and limited financial and human resources impede the full exploitation of registries in studying disease. Integration of non-health facility registries and hospital registry data is recommended to improve data completeness (Chichom-Mefire et al. 2017).

11.2.4 Electronic Medical Records

Electronic medical records (EMR) provide comprehensive patient data that improves health care service delivery and fosters best practice within health facilities. They offer robust integrated health management information sources that can be easily harnessed for research and are largely adopted in developed countries (Pantalone et al. 2017). Despite EMR being recognised as a key health system-strengthening component (Iyer et al. 2017), their wide-scale use in SSA has not been achieved. This has been attributed to several barriers that include high purchase and maintenance costs, poor electricity and Internet connections, inadequate computer skills and non-prioritisation of EMR usage owing to other challenges such as civil unrest and disease outbreaks in many African settings

(Odekunle et al. 2017). Poor regulation and governance frameworks have led to inadequate EMR implementation and missed potential benefits (Ahanhanzo et al. 2016).

A few studies in Africa have demonstrated the potential impact of EMR in improved data management efficiency. Application of EMR as part of an intervention facilitated: improved HIV diagnosis and linkage to care among mothers and children, reduced loss to follow-up, wider treatment coverage and lower mother to child HIV transmission (Gamell et al. 2016). EMR allowed rapid initial identification of cancer patients lost to follow-up in primary care to update their vital status (Semeere et al. 2017). The use of open source EMR software has been common in SSA due to concerns with the high cost of proprietary software, with several African countries using the Open Medical Record System (OpenMRS) (Aminpour et al. 2014) mostly within HIV control programmes (Akanbi et al. 2012).

Engaging leadership, training users, establishing multidisciplinary teams, routine quality assessment of data, software upgrades and ensuring availability of adequate power could address these challenges. There is an urgent requirement for EMR that are cost-effective and customised to local contexts, and built to address various health conditions apart from HIV. A phased-in incremental approach to EMR implementation can improve use and uptake by African countries. The potential role of humanitarian-technology collaborations through adapting existing EMR systems to solve emergency disease outbreaks could be considered (Jobanputra et al. 2016).

11.2.5 Surveillance Systems

Surveillance systems remain an urgent prerequisite in the continent given recurring epidemics such as the recent Ebola outbreak in West Africa (Save the children 2015). Rather than regarding surveillance solely as a data source, it can be viewed in a broader context as a specific manner of managing and using data that is obtained from different sources to facilitate timely response to

emergencies (WHO 2007). A public health surveillance system is able to integrate data from the population and facility level to identify and tackle health problems in a timely manner as well as allow planning for long-term disease control strategies (WHO 2007).

Demographic and health surveillance systems (DHSS) have been used across Africa (Ye et al. 2012). They allow for the description of health status in geographically defined populations through the use of surveys. Such platforms help identify geographical inequalities in health determinants; a relevant agenda stated in SDG 3 target 7 on universal coverage (Sousa-Figueiredo et al. 2012). DHSS could be useful to generate population-level data to inform national health priorities (Ye et al. 2012).

11.3 Human Resources for Health and Their Role in Building Reliable Health Information Systems

An effective health workforce should have personnel that are qualified, motivated, productive, adequate and equitably distributed (WHO 2007); achieving best outcomes possible, given available resources and circumstances (Manyazewal 2017). SDG 3 target 12 aims to increase health financing, recruitment, development, training and retention of the health workforce in developing countries. Without an able workforce, inputs into establishing good health information systems (HIS) for achieving SDG 3 are inevitably reduced (WHO 2017).

11.3.1 Factors Impeding Health Worker Education, Performance and Coverage

Although health workers positively regard the benefits of HIS for health care delivery, inadequate knowledge, skills and user-confidence hinder their use of such products to enhance the quality of care (Yagos et al. 2017). Health

workers are also strong linkage points of information dissemination, thereby influencing the extent to which health information is used in communities (Flora et al. 2017). This necessitates the need for training interventions that could increase knowledge and motivation on data collection and use. There is evidence to support the application of training and continuous professional development of health workers as a strategic approach to realise SDG 3, by including training in multifaceted interventions to improve health worker performance (Abuya et al. 2015).

The role of interpersonal relationships between patients and providers should be prioritised as these could affect universal coverage of interventions, including health information dissemination. For example, negative interactions characterised by hostility and insufficient guidance on medication use by service providers (Hendrickson et al. 2016) have been reported to erode patients' trust in service providers leading to patients' alternative health-seeking behaviours (Topp and Chipukuma 2016).

Another key area for consideration for African countries is in establishing human resource information systems (HRIS) to enable better planning and management of health workforce resources. HRIS can be used to document characteristics, distribution and compensation in workforce and ensure equitable resource allocation (Likofata Esanga et al. 2017). Health worker availability is subject to correct placement of appropriately trained health workers (Ambikile and Iseselo 2017) and higher health worker densities are associated with lower mortality (Farahani et al. 2016).

Understanding factors influencing health worker performance is crucial to strengthen health systems in Africa. Behavioural factors such as post-training non-adherence to practice guidelines (Steinhardt et al. 2015), poor understanding of management practices of diseases (Gies et al. 2017) and inadequate knowledge on disease control policies (Ganfon et al. 2017) should be investigated as they could influence HIS usage (Nicol et al. 2013).

Health worker shortages, lack of coordination and inadequate financial resources are reported to

compromise quality control and accountability for training programmes and thereby negate their effectiveness and sustainability (Ferrand et al. 2017). Lack of health worker training, poor financial investment, poor governance and weak disease surveillance systems are major hindrances to the elimination of vaccine-preventable diseases (Gaafar et al. 2003).

It is prudent to rethink how to resolve HRH constraints in post-conflict areas in Africa. Civil unrest is detrimental to health systems, and a common occurrence within Africa. Conflict reduces the number of health workers and has adverse implications on the skills, motivation and overall productivity of the workforce (Witter et al. 2016), with great implications for data collection and use.

11.4 Conclusion

African countries have a unique opportunity to meet SDG 3 by improving their health information systems and human resources for health. Cross-cutting implementation strategies for acquiring and disseminating health information that leverage available resources can address multisectoral SDG 3 and other SDGs. Integrating existing data collection methods or sharing platforms to supplement incomplete data and improve the usefulness of information is key and there is need to establish HIS that facilitate application of longitudinal cohorts to tackle SDG 3 targets such as NCDs. African governments should rethink policies that ensure availability and channelling of national level funding towards broadening the scope and coverage of HIS beyond more renowned communicable disease programmes.

Good governance will be crucial in improving financial investments towards the establishment of diverse, devolved, robust data sources and collection of reliable and timely data. Health personnel require training in HIS use and provider–patient interactions as well as determinants of health worker performance even in conflict areas, should be considered for universal coverage in health information dissemination. African

governments will need to be proactive, increase investments in and take ownership of local funding initiatives to build reliable information systems and educated health personnel towards achieving sustainable health.

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