

WWJMRD 2017; 3(11): 292--296 www.wwjmrd.com International Journal Peer Reviewed Journal Refereed Journal Indexed Journal UGC Approved Journal Impact Factor MJIF: 4.25 e-ISSN: 2454-6615

Rajendra Pal Singh

Community Medicine Specialist. Indian Field Hospital Level II Plus, UNMISS, Juba, South Sudan

Dheeraj Kumar

Internal Medicine Specialist, Indian Field Hospital Level II Plus, UNMISS, Juba, South Sudan

Dronacharya Routh

GI Surgeon, Indian Field Hospital Level II plus, UNMISS, Juba, South Sudan

Sanjay Kumar Sharma

Gynaecologist, Indian Field Hospital Level II Plus, UNMISS, Juba, South Sudan

Binu Sekhar

Aviation Medicine Specialist, Indian Field Hospital Level II Plus, UNMISS, Juba, South Sudan

Balbir Singh Deswal

Professor (Community Medicine) SGT University, Budhera, Gurugram, India

Ashim Sud

Contingent Commander. Indian Field Hospital Level II Plus, UNMISS, Juba, South Sudan

Correspondence: Balbir Singh Deswal Professor (Community Medicine) SGT University, Budhera, Gurugram, India

Reaching the Unreached: Challenges and Experiences in South Sudan

Rajendra Pal Singh, Dheeraj Kumar, Dronacharya Routh, Sanjay Kumar Sharma, Binu Sekhar, Balbir Singh Deswal, Ashim Sud

Abstract

South Sudan became the youngest nation of the world on 09 July 2011. This study aimed to introspect the challenges being faced in delivery of health services and suggest possible measures to ensure an adequate, equitable and accessible delivery of health services. It is based on personal experience of all the authors gained while serving under United Nations Mission in South Sudan (UNMISS). Following independence the continued conflict has led to decline in economy and further dilapidation of health infrastructure. It has some of the worst health outcome indicators like maternal mortality rate of 789 out of every 100 000 live births, which is highest in the world. Communicable diseases mainly malaria, pneumonia and diarrhoea in children under the age of five years, continues to be a cause of major public health problem and top most cause of death. This has been attributed to poor access to health services and low emphasis and demand for preventive services because of lack of awareness.

'The Health Policy 2016-25', a community driven health system, has been envisaged by GoSS after exhaustive consultation at every administrative level, health partners, NGOs, technical and political personalities and special interest groups. Government has shown strong will to strengthen the infrastructure and human resources to provide Basic Package of Health and Nutrition Services (BPHNS) to every citizen of country.

The health system needs a major resuscitation, in addition to supporting and developing health training institutions, improving the recruitment, retention and training of health staff, task shifting, and providing the enabling environment.

Keywords: South Sudan, health policy, health indicators, communicable diseases.

Introduction

South Sudan, formerly known as Southern Sudan, became the youngest nation of the world after declaring independence from Sudan on 09 July 2011[1]. The longest war for independence and continuous conflicts between rebel groups has haunted and hurt the country in both the economic and public health sector despite having abundant natural resources [2]. Various International Agencies are rendering support to the Government with an objective of creating conducive conditions for restoring peace, improving the socioeconomic status and health outcome indicators. Despite all these support for the last six years South Sudan is still recognized for having the worst health outcome indicators [3]. This review aims to introspect the challenges being faced in delivery of health services and suggest possible measures to ensure an adequate, equitable and accessible delivery of health services.

Methodology & Source of data

Personal experience of all the authors gained while serving under United Nations Mission in South Sudan (UNMISS) for more than one year and periodical health reports available with UNMISS, Ministry of Health, Government of South Sudan (MoH, GoSS), WHO and other agencies.

World Wide Journal of Multidisciplinary Research and Development

Results

Geopolitical challenges in South Sudan affecting health After a grueling civil war which lasted for close to five decades, South Sudan became the United Nation's 193rd member country as independent Nation [4] [FIG 1]. However, continued conflict led to decline in economy and further dilapidation of health infrastructure as the economy was highly dependent upon production of oil which went down to 33 percentage [4]. As a result, the country's United Nations Development program (UNDP) Human Development Index ranking fell from 171 in 2012 to 182 in 2016, just ahead of 6 African countries like Guinea, Burundi, Chad, Niger, Burkina Faso and Central African Republic [4, 5].

South Sudan is a land locked country in East Central Africa. It's spread across 658841 Sq. Km of land with a population of 12.73 million, having population density of 20.8 per sq. km [6]. Almost one fifth of the population has fled their home, who have either crossed geographical boundaries to reach neighbouring countries or remained as Internally Displaced Person (IDP) [7]. Most of the roads are not all weather type which remains non motorable especially during rainy season which lasts about 6-8 months of the year [2].

The number of states in country has grown from 10 to 32 states from October 2015 to January 2017. South Sudan is home to around 60 indigenous ethnic groups and 80 linguistic partitions. Most ethnic groups still embrace a *cattle culture* in which livestock is the main measure of wealth. The tribes are fragmented into clans of politically separate communities with customs against intermarriage among clans. Processes of urbanization are a source of significant cultural change and societal conflict.

Challenges in health infrastructure and policies

The country has four levels of health care system in upwards order from Primary Health Care Unit (PHCU) to Teaching Hospitals (THs), the apex centre [2]. PHCUs located at the level of Boma (similar to *block level*) and Payam (*Sub County*) provide Basic Package of Health Services (BPHS) for 15000 to 50000 populations [2]. Secondary care is provided at County Hospitals (CH) and State Hospitals (SH) to cater for 300000 and 500000 population respectively, while the apex Teaching Hospitals (TH) are designed to provides tertiary care [2]. The MoH, GoSS oversees the monitoring and evaluation besides providing policy guidelines, leadership, and funding. Health facilities in private sector are not well equipped, and not accessible to most of the people, being located in select bigger cities only [2].

National Health Policy (NHP) 2016 -2025 of South Sudan is a commitment and vision of government to strengthen the national health system in partnerships with international health partners and faith based organizations for ensuring adequate, effective and efficient delivery of Basic Package of Health and Nutrition Services (BPHNS) [8]. However due to conflicts, the fulfillment of this vision still seems to be far from reality without development and financial assistance.

Health outcome indicators and disease burden

There is much to be achieved to reach the ideal health situation in South Sudan. The health infrastructure in three fourth erstwhile counties are still not able to provide adequate health services as the buildings are either destroyed, or in dilapidated state and health facilities are non-functional.

South Sudan has one of the worst health outcome indicator like maternal mortality rate of 789 out of every 100000 live births, which is highest in the world [9] (Table 1). The worst performance of these indicators has been attributed to poor access to health services and low emphasis and demand for preventive services because of lack of awareness [9]. Despite trying various strategies to train midwives, attendance of skilled professionals at the time of birth remains very low as compared to neighbouring African countries. Neonatal Mortality Rate (NMR) and Under-5 Mortality Rate (UMR) still remain very high at 39.3 and 92.6 out of every 1000 live births [9]. In year 2014, the health statistics collected by Ministry of Health (MoH) showed that only 11.3% women attended four or more ANC visits with 1.7% delivered in a healthcare facility [10]. These statistics are worrisome as we know that most of the maternal deaths, which occur during the process of labor and in immediate postpartum period, are preventable provided the deliveries are conducted under supervision of skilled personal in a well-supported infrastructure [10].

Communicable diseases, mainly malaria, pneumonia and diarrhoea still constitute 77% of total OPD patients in children under the age of five years and continue to be a cause of major public health problem and top most cause of death. Maternal mortality, Severe Acute malnutrition (SAM) and Tuberculosis /HIV constitute other major causes of morbidity and mortality. Prevalence of TB/HIV qualifies to classify it as epidemic [7].

The mosquito borne diseases are responsible for 65% of all illness reported in health centres across the country. Every week more than 77000 people are infected and nearly 220 are killed due to malaria of which children 'under five' are mainly victimised [11]. Entire population of the country is in high malaria transmission zone (>1 case per 1000 population). Plasmodium falciparum parasite is responsible for almost all cases of malaria [12]. Malaria, although transmitted throughout the year, becomes most evident in September to November when the rainy season is towards its end. The transmission season varies in different parts of country, being longer in southern part of country extending up to eight months. The main vectors of malaria in South Sudan are Anopheles gambiae, an arabiensis and a funestus [13].

Since the start of conflict in South Sudan in 2013, confirmed cholera cases are being reported every year amongst displaced population [Table 2], [14]. Case fatality rates were especially higher in people living in cattle camps or islands, and more in children and males. This increased attack rate may be attributed to diminished access to safe water and reduction in sanitation facilities, displacement of people, relocation of health staff, insecurity among people including health providers, and decreased expenditure incurred on improvement in Water Sanitation and Hygiene (WASH) facilities [15].

Although Guinea worm disease has been eradicated in most of the countries, South Sudan alone accounts for 24% of worldwide cases along with high load of other Neglected Tropical Disease (NTD) like visceral Leishmaniosis, trachoma, onchocerciasis, trypanosomiasis, schistosomiasis and lymphatic filariasis [7]. In South Sudan 64% of children between ages 1-9 years have Trachoma, which attributes to 1.6% of causes of blindness. However the available ophthalmic services in this country are not adequate to address this challenge [8]. As per estimation, 31% of population is experiencing severe food security crisis with 276 thousands children having Severe Acute Malnutrition (SAM) [16].

Reaching the Unreached: Existing programmes

'The Health Policy 2016-25', a community driven health system, has been envisaged by GoSS after exhaustive consultation at every administrative level, health partners, NGOs, technical and political personalities and special interest groups. Government has shown strong will to strengthen the infrastructure and human resources to provide BPHNS to every citizen of country [17].

Health risk assessment has been carried out at the National level by various health partners to identify potential health hazards including identifying needs of IDP. House to house and health centre based survey and education sessions are being conducted by health partners on health and hygiene issues. Temporary clinics are being set up to provide ANC and health consultation. Health partners are continuously providing medical supplies to remote areas against all odds including insecurities and fear to life [18]. Disease outbreaks are immediately responded by mobile medical teams against diseases like cholera and measles. These mobile teams immediately reach outbreaks hotspots and initiate necessary outbreak control measures [11]. Even the frontline health workers are being trained in diagnosis and treatment of diseases like malaria to improve access to treatment. Availability of Oral cholera vaccine is being ensured at potential areas of outbreak, which led to more than one million people vaccinated in the year 2017 till August. Cholera treatment centres have also been established besides health awareness raising interventions. Measles outbreak in Greater Upper Nile region was combated by vaccinating up to 80,000 unimmunised children below five years of age by the end of 2017. Surveillance and preparedness to respond to any health emergency or disease outbreak is being strengthened by health clusters headed by WHO in coalition with GoSS [11].

SAM kit, designed by WHO for management of complication in severe malnutrition, has been made available at all health facilities and PoC camps. Each kit can cater for treating 50 children for 3 months [3]. An electronic surveillance device, *Early Warning, Alert and Response System* (EWARS) has been introduced by WHO, in conjunction with the Ministry of Health to improve the data collection and analysis of data for Integrated Disease Surveillance and Response (IDSR). This device enables the frontline workers in remote areas to give real time reporting on occurrence of any case. Integration of this system with public health laboratory network for other diseases like acute flaccid paralysis (AFP) is also in pipeline [19].

United Nations Mission in South Sudan (UNMISS) has its Level I, II and II Plus hospitals spread in different disturbed locations registering conflicts or prone to conflicts. It's Level I hospital serves as primary health care facility providing immediate lifesaving and resuscitation capability along with routine clinical care [20]. They are catering for UN employees, troops of different countries deployed in UN, and provide treatment to staff of other agencies

including civilians in need. Medical detachments with army units are conducting regular outreach camps including preventive, promotive and curative services also for civilians especially PoC camps, which may be as large as a township of 1.00.000 – 1.50.000 people. Level II and II Plus hospital having all basic specialities are responsible for curative, preventive and promotive services in their area of responsibilities. Health data from all health units are compiled and collated by Force Medical Officer (FMO) and Chief Medical Officer (CMO) of the mission. We immunised 4157 persons working in UNMISS in year 2017, mostly civilian staff of UNMISS, as military person are supposed to be immunised by their respective countries. However, following reports of cholera outbreak among Indian troops in Haiti in Dec'16/Jan'17, we confirmed the vaccination status of all military persons in UNMISS and vaccinated those remaining troops also. The preventive vaccination, apart from strict water quality surveillance, health education in the form of small gatherings, communication through chiefs of various sections to use boiled water, avoid oro-fecal contamination, improvement in general hygiene of camps ensured not even a single case among UNMISS population, which reiterates the importance of prevention in cholera. Similarly, all troops are advised to have chemoprophylaxis for malaria, besides adopting personal protective measures like use of impregnated mosquito nets, mosquito repellents and practice of "sun down sleeve down". As a result of these measures adopted under flagship of CMO UNMISS, the malaria incidence among UN clientele was 70.8 per 1000 population till end of high malaria transmission season in year 2017 as against 153.8 in South Sudan in year 2014 as reported in WHO World Health Statistics 2016 [9]. Excluding one army unit from neighbouring country deployed in mission, the incidence of malaria among UN population dropped down to 51.36 per thousand populations between Jan to Oct 2017.

Discussion

The Health Sector Development Plan (HDSP) 2012-2016 and Health policy 2016-2025 developed by GoSS in collaboration with health partners to ensure an equitable and easily accessible health services to all the citizens of South Sudan [8,17]. However most of the population is still deprived of basic health facilities due to continued conflict. The deficiency in delivery of health services is evident by more than 1.3 million malaria cases, cholera cases exceeding 20000 and measles crossing the mark of thousand in 2017 [11].

Funding gap, poor and patchy road conditions, insecurities and fear among service providers are hampering the implementation of health programs and positioning of medical supplies to facilities before start of rainy season [18]. This is affecting the delivery of critical and essential health services to 2.7 million targeted population [11, 18].

Apart from infrastructure, human resource constitutes the vital element of health system. Because of protracted conflict, the infrastructure is devastated and Government is finding it difficult to align the resources because of lack of control over health partners. Although NGO's are delivering approximately 80% of health services, there is no cohesiveness between different agencies so better coordination and control is required [7].

A huge portion of revenue in South Sudan comes from

development assistance. However, it was observed that funds used for health, development and humanitarian works are not monitored properly. To obviate this, a co-ordination forum has been established to align the resources as per the priorities of National Health Policy. This will reduce wastage of resources, duplication of efforts and ensure proper utilisation of available funds [7].

Government's decision to establish 22 new states along ethnic lines may have positive outcome. This will ensure equitable distribution of resources among all ethnic groups. Moreover, the health workers of the state will be of the same ethnicity which will be acceptable to the community. However, the proportionate representation of state in national government and appropriate allocation of central resources will be a key factor which needs to be monitored by forum of health partners.

Presently most of the health facilities in South Sudan are not accessible due to long distances, sparse human settlements, lack of transport, floods during rainy season, muddy roads, poor resources and inadequate supplies. Besides, people are scared of going to health facilities because of fear of getting attacked by other tribes [10].

South Sudan is the pioneer country to use SAM kit [3]. However transportation of supplies from national capital, Juba to remote areas depends on aircrafts operated by UN and other agencies [18]. The places connected by air receive better supplies; however, situation remains grim in places not connected by air [18]. Hence logistic difficulties in positioning the supplies at health facilities in remote areas remain a challenge.

Universally acceptable and accessible deployment of health resources requires major financial, technical, operational and cultural inputs [1]. The needs of communities require to be quantified through meticulous planning and logistic assessment. Participation from community and stakeholders is critical in this bottom up micro planning. Role of community volunteers is again emphasised to monitor logistics and communicate with communities [1].

In spite of various technological innovations and modalities, the emphasis of Government still lies on providing BPHNS and improving the general health status of people of South Sudan, through full participation of community, providing logistic support, improving infrastructure, ensuring regular inflow of required funds and better development of human resources. However human resource is a major constraint as the local manpower is either non available or not able to be employed due to tribal issue [18].

South Sudan is struggling with critical shortage of health care professionals at all levels. 90% of posts for qualified health professionals are lying vacant in civil health services, leading to doctor: population ratio as low as 1.5 and nurse population ratio as 2 nurses per 100,000 population [8].

At national level, on an average, about 7947 people are dependent upon one health facility for curative services, each PHCC and PHCU served 40,373 and 10,218 people respectively, and 31,200 people were served by a hospital. [2] Since this is just an average figure, this doesn't mean proportionate distribution of health resources. [2] The health facilities and health professionals are thickly populated in urban areas. Only paramedical workers like Community Health Workers (CHWs), Community Midwives (CMs), Home Health Promoters (HHP), and Maternal and Child Health Workers (MCHWs) are available in communities for providing health services [2]. The fragile Human Resource (HR) management lacks job description, support, supervision, quality check, coordination, continuing medical educational opportunities. and systematic professional development plans/policies. The recruitment system is poor with insufficient and irregular remuneration, thus poor retention. The human resource problem needs to be tackled by increase in remuneration, timely and regular disbursement of payment, employing qualified people from within the communities, providing them adequate training, developing their technical and soft skills, organising regular professional up gradation training, adopting task shifting to address critical shortage of health care professionals, awarding the staff on acquiring the additional or requisite qualification or skill, to motivate and develop the health professionals from community [8].

The recruitment of health workers should be from rural areas, selecting representative qualified candidates from communities, bring them together at county/state/national level teaching and training centres, giving them good scholarships, training them by qualified health professionals to empower them to be able to provide BPHNS, placing them back to their own communities, paying them adequate and regular remuneration, organising refresher courses for professional up gradation, developing basic infrastructure and amenities like schooling for children of health workers, provision of safe water and good insurance cover to protect their families in case of any eventualities [21]. Through the process of task shifting, young newly trained staff may be developed to provide basic preventive and curative services in rural and inaccessible areas [21]. Additional incentives can be provided to health professionals working in remote areas. There is requirement of providing optimal enabling environment to health cadres for improving their retention and morale.

In view of very low doctor: population ratio, there is requirement of development of skilled middle level health care workers, who can be relied upon to provide BPHNS and maternity services. These middle level workers, having good schooling background and equipped with structured training by medical doctors may become the back bone of South Sudan's health system. This task shifting of health services will be a quantum jump in placing people's health in people's hand.

Conclusion

The conflict ravaged South Sudan has huge challenges in the delivery of health care to the population. The health infrastructure is crippled, public health system is almost collapsed, health professionals are insufficient and inadequately qualified. The health system needs a paradigm shift which includes increased number of health training institutions, improving the recruitment, retention and training of health staff, task shifting, and providing the enabling environment. The other components that need to be given urgent attention are peace and security, basic nutritional needs, safe water and sanitation, education, shelter, employment, infrastructure, road connectivity and gender empowerment. These require high level government commitment and leadership. The development of South Sudan, including socio economic and health indicator is not possible without orchestrated and well financed efforts under the umbrella of one responsible agency.

References

- Chanda E, Remijo CD, Pasquale H, Baba SP, Lako RL. Scale-up of a programme for malaria vector control using long-lasting insecticide-treated nets: lessons from South Sudan. Bulletin of the World Health Organization. 2014 Apr; 92(4):290-6.
- 2. Macharia PM, Ouma PO, Gogo EG, Snow RW, Noor AM. Spatial accessibility to basic public health services in South Sudan. Geospatial Health. 2017 May 11; 12(1).
- 3. WHO provides lifesaving treatment for severely malnourished children with medical complication in South Sudan WHO news July 2017?
- 4. Nassif A, Stewart A, Mutepfe M, Christou P. Infrastructure needs in sub Saharan Africa with particular reference to South Sudan. In Third Australasia and South-East Asia Structural Engineering and Construction Conference: ASEA-SEC-3 2016 Nov. ISEC Press.
- 5. World Health Organization. World Health Statistics 2016: Monitoring Health for the SDGs Sustainable Development Goals. World Health Organization; 2016 Jun 8.
- United Nations. Statistical Division. World statistics pocketbook. United Nations Publications; 2015.Available at: https://unstats.un.org/unsd/publications/pocketbook/fil es/world-stats-pocketbook-2015.pdf. Accessed Nov 14, 2017.
- 7. WHO Country Cooperation strategy South Sudan May 2016. Available at: http://apps.who.int/iris/bitstream/10665/136881/1/ccsb rief_ssd_en.pdf. Accessed Nov 14, 2017.
- The Republic of South Sudan. Health Sector Development Plan 2012-2016, January 2012. Available at:http://www.nationalplanningcycles.org/sites/default/ files/country_docs/South%20Sudan/south_sudan_hsdp _-final_draft_january_2012.pdf. Accessed Nov 14, 2017.
- World Health Organization. World Health Statistics 2016: Monitoring Health for the SDGs Sustainable Development Goals. World Health Organization; 2016 Jun 8.
- Wilunda C, Scanagatta C, Putoto G, Montalbetti F, Segafredo G, Takahashi R, Mizerero SA, Betrán AP. Barriers to utilisation of antenatal care services in South Sudan: a qualitative study in Rumbek North County. Reproductive Health. 2017 May 22; 14(1):65.
- 11. World Health Organization, 2017. South Sudan Malaria toll highlights disease burden in war-torn nation. Available at: http://www.afro.who.int/news/south-sudans-malariatoll-highlights-disease-burden-war-torn-nationdt 6 sep 2017. Accessed Nov 14, 2017.
- 12. World Health Organization, 2015. Malaria Country Profile, South Sudan. Geneva: World Health Organization. Available at: http://www .who.int/malaria/publications/countryprofiles/profile_ssd_en.pd.Accessed Nov 14, 2017.

 Eyobo MB, Awur AC, Wani G, Julla AI, Remijo CD, Sebit B, Azairwe R, Thabo O, Bepo E, Lako RL, Riek L. Malaria indicator survey 2009, South Sudan: baseline results at household level. Malaria journal. 2014 Feb 3; 13(1):45.