Integrated Primary Health Care (iPHC) for developing countries: a practical approach in South Sudan

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Strategic Health Consultancy (SHC): Vision - optimum health is enjoyed by everyone.

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Submitted: November 2018
Accepted: January 2019
Published: May 2019

Introduction: The founding vision of Primary Health Care (PHC) adopted in Alma Atta in 1978 has not worked as a result a number of countries have sought to re-engineer their own healthcare systems. Healthcare model in most developing countries needs to change from that inherited from the colonial era, which is predominantly hospital-based.

Objective: To describe an integrated primary health care (iPHC) model which encompasses public health services with enhanced basic diagnostic and curative services as a cost-effective delivery of healthcare in the rural areas where 95% of the population resides.

Method: A descriptive study of a proposed iPHC model following situational analyses and literature review of primary healthcare experiences from around the world with a view to inform a practical approach in South Sudan.

Results: The iPHC model consists of five pillars: (1) public health services (2) clinical services (3) universal registration of population in the catchment areas; (4) a standard building infrastructure; and (5) training of multi-disciplinary healthcare workforce. Once operational, within five years it is envisaged that one fully functioning iPHC centre can provide universal access to healthcare service to 10,000 population resident in a geographical catchment area.

Conclusion: South Sudan has a unique opportunity to improve the health of its population by embracing a new model of delivering health care: the iPHC. This model is simple, and can be the basis of delivering a health service for the rural population.

Key words: Integrated primary healthcare; iPHC; public health service; clinical services; developing countries.

INTRODUCTION

The existing model of healthcare in most developing countries is predominantly hospital-based and inherited from colonial systems without much modification. The founding vision of Primary Health Care (PHC) adopted in Alma Atta in 1978 seems not to have worked as recommended by Alma Ata in that it puts emphasis on the already poor communities to support their own health workers. Consequently a number of countries have developed their own primary healthcare systems or structures.[1-3]

An editorial in the Lancet (July 2014) highlighted the limitations of the vision of PHC and called for a fair, equitable, accessible, cost-effective, sustainable health system that improves the health of the population.[4] The article further recommended that future PHC needs to be universally accessible, integrated, person-centred, comprehensive and provided by a team of multi-disciplinary professionals.

This paper describes a model of primary healthcare provision which integrates various aspects of healthcare cost-effectively in the rural areas where 95% of the population resides. We believe that our proposal, which is referred to as integrated primary health care (iPHC), if implemented as recommended,

Citation:
Joseph and Hakim. Integrated Primary Health Care (iPHC) for developing countries: a practical approach in South Sudan South Sudan Medical Journal 2019; 12(2):44-47

will reach near universal coverage of the rural population in South Sudan and other developing countries that embrace it. We describe how it can be applied in South Sudan, as a case-study. The model could be applied in other countries. Our vision is to ensure "optimum health provision is enjoyed by everyone".

We define iPHC as: "*a system of health provision at the primary or rural (county) levels that integrates public health services with enhanced basic diagnostic and curative services, which would have otherwise been provided traditionally through hospitals.*"

PROPOSED MODEL OF DELIVERING PRIMARY HEALTH CARE

We describe five components of iPHC as shown in Figure 1. For a health service to be of high quality and yet universally available to the rural population, it needs to be free at the point of need and paid for by minimal taxation and supplemented with government grants.

Public Health Service Provision

Comprehensive public health services will be designed to deliver simple services to address the health needs of the local population through a joint strategic health plan covering the health priorities in the local area. The public health team will be charged with producing an annual public health report on the status of health in the county.

A strong partnership with chiefs, county administrators, non-governmental organisations (NGOs) operating in the area, faith based organisations, schools, women's groups and others with significant membership of local people will be forged.

The public health service will endeavour to implement public health programmes defined in the Government strategy for health at local level adapted to the local circumstances of the counties in question. Provision of potable water, universal sanitation facilities to stem the tide of diarrhoeal diseases, immunisation against communicable diseases, accident prevention programme, health promotion and health education programmes and securing a safe healthy environment are aspects of the service we propose.

The public health strategy should include preparation for, and responding to, major emergencies and disease outbreaks such as cholera, ebola, yellow fever, leishmaniasis and trypanosomiasis, depending on the area of South Sudan affected. These services will depend on comprehensive data collation and record keeping which is shared with the County Director of Public Health, who in turn, shares the information with the Public Health Department in the Federal or central Ministry of Health. This will ensure an integrated approach in the delivery of public health services at the County level throughout the country.

Figure 1. Components of Integrated Primary Health Care (iPHC) (credit Dr Victor Vuni Joseph)

Clinical Services

A range of clinical services shall be delivered by a multi-disciplinary team. These services include antenatal care provided by registered midwives; basic laboratory services such as stool microscopy and blood films for malaria and sleeping sickness provided by a laboratory assistant, a minor emergency service run by registered nurse(s) and clinical officer(s) to deal with minor injuries prior to transfer to a state hospital in the event of deterioration or requirement for more specialist intervention.

A simple purpose-built Primary Health Care Centre (PHCC) will provide a base for all these services. The structure is recommended to be simple, built with local materials and powered with solar energy. This will provide reliable energy to power refrigerators for vaccine storage and other medicines. With the PHCC in place the role of a Primary Health Care Physician to provide training and specialist knowledge shall be rapidly developed in conjunction with the South Sudan Postgraduate Medical Programme. The training of such a healthcare professional based in the rural area is long overdue and will add premium to the PHCC.

In time the PHCC will also provide opportunities for the training of young medical graduates on the Basic Medical Training (BMT) accreditation, a two year programme for medical graduates prior to registration which was implemented in 2012 by the South Sudan Postgraduate Steering Group and Ministry of Health. Exposure of young graduates to Primary Healthcare encourages holistic thinking in the provision of healthcare as it integrates Hospital Medicine (where these graduates

Table 1. Estimated number for iPHC Centres in each County over time (short- medium- and long-term)

Duration	Ratio of iPHC centre per head of population	Cumulative total number of iPHC centres per County	Cumulative total number of iPHC in South Sudan
Short-term 2-1 years	1:50,000	2	158
Medium-term 4-3 years	1:20,000	5	395
Long-term 10-5 years	1:10,000	10	790

Note: Calculation based on average county population of 105,000

train) and Primary Healthcare (where the majority of the citizens reside).

The Primary Healthcare physician and the trainee doctors will all work in an integrated team as part of the PHCC. Meticulous record keeping using solar powered computers shall be set up to facilitate planning of services and monitoring of communicable and non-communicable illnesses. A simple but workable pharmacy will be established to dispense simple medicines for treating such common conditions as malaria, diarrhoeal diseases, river blindness and sleeping sickness. A programme of audit, evaluation and research shall be embedded in practice at the centre to improve the quality of services.

Universal Registration of Population (Information System)

The iPHC shall establish a system for a population-based register for all persons living in the catchment area of the iPHC. Each person will have a unique identification (ID), which can identify the patient by state and county. All South Sudanese and long-term residents will be required to register with an iPHC in their respective locality. The purpose of this universal registration is to provide information that can be used for planning health services, to improve and protect the health of the public (e.g. before, at the time of epidemics, and thereafter), and to achieve universal health coverage to the population, in line with United Nations Sustainable Development Goals.[5] There shall be established a clinical record system (information system) compatible with ICD-10 (or future revised version) in consultation with the Ministry of Health. The information system shall be used to generate epidemiological reports covering health service activities, and health outcomes performance.

The Building (iPHC Centre)

A standard architectural drawing for PHCC is proposed. The building is intended to be cheap and built rapidly in multiple sites around the country. Design specification needs to be agreed and rolled out throughout the country to minimise construction costs. Competitive tendering from construction firms, we believe, will generate cost-effective buildings. The PHCC are not hospitals and their development is intended to influence the development of smaller, better equipped and efficient Regional Hospitals to deal with complex interventions referred from the PHCC.

Training

Health workforce development is integral to successful delivery of iPHC in South Sudan. It will require training from bottom-up: community development / health workers, nurses/midwives, clinical officers, and doctors. Significant in-roads have been made in the field of health workforce development in South Sudan, such as the clinical officers training, nursing and midwifery, and doctors. What is required is the integration of these healthcare professionals into cohesive teams at each centre under an effective leadership.

The shortage of low-level but essential health cadres can be addressed by having a comprehensive national strategy, for example, the community health workers national strategy as in Malawi[6] and the training of Primary Healthcare Physicians to the level of Master of Medicine in Primary Healthcare (MMed[PHC]) at the University of Juba in South Sudan. The training of Primary Healthcare Physician is in line with developments in a number of other countries aiming to promote rural generalist medicine.[7] Similar training of health cadres will also need to be developed.

Career pathways for all healthcare workers need to be developed and agreed by the Ministry of Health and the relevant educational and training institution. These should include career pathways for clinical officers, nurses and midwifery, pharmacies, etc. Schools of Public Health at national universities are crucial in developing public health leaders for the country. The curriculum at these public health schools needs to be strengthened in line with the Association of Schools of Public Health in Africa (ASPHA).

It is envisaged that over time, South Sudan should build iPHC centres; each of these can serve a defined population as indicated in Table 1, starting from the short-term (1-2 years) to medium (3-4 years) and long-term (5-10 years)

CONCLUSION

South Sudan has a unique opportunity to improve the health of its population by embracing a new model of delivering health care: the iPHC. This model is simple, and can be the basis of delivering a health service for the rural population. It is built on the principle of multi-disciplinary team working, and consists of the key pillars of public health service, clinical service, universal registration, training, and iPHC building.

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