

Ideas for research projects in health systems in Sudan

Report prepared by:

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Health information system

Research questions
1. Conduct in-depth analysis of the current vertical surveillance systems aiming at identify the strengths, weaknesses and the potentiality for integration with the national health information system.
2. The feasibility of integrating the HIS with other information systems and Health System Observatory
3. The feasibility of applying community based HIS; including community death registry (verbal autopsy) and the use of mobile phones in birth registry.
4. What are the needs and utilization of HIS by policy makers?
5. Review the current data management and feedback.
6. Review and update data collection tools
7. Assessment of Performance of Routine Information System Management
8. Financial business case to explore options for investment in HIS
9. Operational research to test options for indentifying staff to improve data quality
10. Evaluation of the quality of HIS training institutes
11. Review the required core indicators relevant to each level
12. To rationalize the in depth diagnostic tool for HIS e.g. data mapping, stakeholder engagement.
13. What is the current organizational capacity of HIS at different levels including data producers?
14. To examine the perceptions, attitudes and values of senior managers and other organization members in relation to information related functions. Such an assessment can comprise tools from various disciplines, including epidemiology, performance improvement, behavioral change and policy analysis.
15. Assessment of data quality
16. Piloting the e-health project (testing and amending)
17. Operational research to evaluate the effectiveness of integrating surveillance system (electronically).
18. Operational research to evaluate the effectiveness of integrating surveillance system (electronically).
19. Operational research to evaluate the effectiveness of community based HIS; including community death registry (verbal autopsy) and the use of mobile phones in birth registry.
20. Explore information flow in the new e-health project

Medical and Pharmaceutical Products

Areas	Research Question
Access to essential medicines	What is the proportion of the population with regular access to essential medical products? What purposes this figure was used for? Proposed method to answer: conducting household survey, separate or part of SHHS
	Do we have clear policy on improving the access to medical products at PHC level? Proposed method to answer: situational analysis of measures or policies that aimed to improve the access to medical products at PHC level.
Key mechanisms identified to strength the governance function on medical products	Does the governance capacity at states level is adequate to decentralize the regulatory functions of medical products? Proposed method to answer: assessment of states governance function versus well established benchmarking standards
Capacity of the regulatory systems	Does the current capacity of different regulatory bodies is adequate compared to its mandate and role? Proposed method to answer: Assessing the capacity of the regulatory bodies using standardized method developed internationally by technical partners.
Policies, norms, standards and guidelines for improving the quality, safety and use	what are the priority policies, norms, standards and guidelines currently undermining the capacity of the pharmacy sector to ensure the quality, safety and use of medical products? Proposed method to answer: rapid assessment exercise.
Safety and effectiveness of medical products	Does the currently implemented measures to ensure the safety and effectiveness of medical products were adequate and effective? Proposed method to answer: impact evaluation of priority measures.
Counterfeit and substandard medicines	What is the proportion of circulated medical products that are counterfeit and substandard? What measures were in place to combat this problem? Proposed method to answer: multi-dimensions operational research to identify the current situation.
Public health expenditure on medical products and its management	What are the reasons behind the high expenditures on pharmaceuticals and health technologies in the country? Proposed method to answer: studying, qualitatively and quantitatively, the expenditures on pharmaceuticals and health technologies.
Strategies to improve the affordability of key/essential medical products	Does the current strategies to improve the affordability of key/essential medical products were effective? if no, what are the alternative strategies? Proposed method to answer: study on outcome and impact evaluation of the current strategies and its alternatives.

Local production of medical products	<p>Why the local production of medical products in the country was not improved despite the availability of enabling policies and environment? What are the barriers to increase the production volume in comparison to importation? Do we have selected strategies to improve the local production of medical products?</p> <p>Proposed method to answer: comprehensive assessment and analysis of the local production capacity and the affecting factors.</p>
Procurement systems	<p>Does the current mechanism to procure the essential medical products are effective and efficient?</p> <p>Proposed method to answer: Operational research to assess the effectiveness and efficiency of the procurement systems</p>
Supply chain systems	<p>Does the efforts to integrate the current medicines supply systems were based on evidence?</p> <p>Proposed method to answer: Operational research to assess effectiveness of the current integration mechanism.</p>
Intellectual Property Rights (IPRs) focusing on local and traditional medicines	<p>Does the laws and measures to maintain/ preserve the IPRs of medical products in the country, including Sudanese traditional medicines, were adequate and effective?</p> <p>Proposed method to answer: Situational analysis is needed in this area to inform the policy context.</p>
National Essential Drugs list	<p>Does the mechanism to develop the EDL is effective? does the selected medicines for the national list were the most cost- cost-effective options?</p> <p>Proposed method to answer: Evaluation of the mechanism to develop the most recent EDL in the country, and comprehensive cost-effectiveness of items included in that list.</p>
	<p>what is the knowledge and perception of health care providers about the essential medicines and its usefulness</p> <p>Proposed method to answer: survey</p>
Standard treatment guidelines (protocols)	<p>Why there is a huge gap in developing and enforcing the standard treatment guidelines (protocols)?</p> <p>Proposed method to answer: operational research.</p>
Drug utilization review (analysis)	<p>Does the drugs prescribing and use were coherent with the epidemiological situation in the country?</p> <p>Proposed method to answer: Conducting drug utilization review study.</p>
Antimicrobial resistance	<p>What are the strategies currently used to contain this problem, and does it effective?</p> <p>Proposed method to answer: operational research.</p>
Rational use of medicines	<p>to what extent the health professionals and the public have access to independent, unbiased and transparent medicines information</p> <p>Proposed method to answer: survey</p>
Herbal medicines	<p>How to describe the contribution of herbal medicines in heath care in Sudan and how to regulate this sector to be part of the health system in the country?</p> <p>Proposed method to answer: in-depth evaluation and qualitative research</p>

Epidemiology of Communicable diseases

Theme	Existing knowledge	List of Core research need to be done	Priority research questions in the future
Ranking of Communicable Diseases base on their burden (Health impact such as annual morbidity, mortality and their or economic impact perhaps in term of DALYS and QALY.	Only some information about Malaria, however lack of knowledge regarding the other infectious diseases is prevailed.	1-Ranking of the communicable Diseases based on their health and economic burden (nationally and on the state level). 2- Evaluation of communicable diseases programs at the federal level and highlight successful stories if available.	1-What are the morbidity, mortality and disability of major infectious diseases such as Malaria, TB (including other neglected diseases such as Meningitis, Human papiloma virus, Rift valley fever, hepatitis etc.) that threaten the life of the Sudanese? 2- Systematic review of interventional programmes (such as TB, HIV and other neglected tropical diseases) and the national protocols for diagnosis and treatment of diseases.
Bseline for the status of Zoonotic Diseases in the country.	No such baseline in the country	1- Development of National zoonotic diseases list 2- addressing the one health approach to Confront them. 3- Improving the reporting system of the zoonotic diseases that could be notified 4- Anticipate the trend of the zoonotic disease in the country	1-What is the epidemiology for the status of zoonotic diseases in Sudan? 2- Is the surveillance and reporting system able to map and add the emerging zoonoses such as Rabies and Brucellosis?
Documentation of accumulative experiences of incidents and outbreaks.	The documentation need to be revised and seems to be not used in terms of lessons learnt or knowledge transfer.	Documentation of accumulative experiences of incidents and outbreaks in order to be used as an evident base health intervention as well as a source of knowledge transfer.	1-What are the outbreak performance indicators? 2-Did we use the lessons learnt as an evident base for the decision makers and knowledge transfer?
Update food/ water safety and vector surveillance in collaboration with respective departments.	The data is scattered between the respective departments and could not come up with informative picture.	Health impact assessment of food/ water and vector surveillance in collaboration with respective departments.	1-Evaluation of the monitoring process of water safety? 2- What are the most common water and food borne diseases?

Communication with Public during an outbreaks	No clear Strategy, it depends on the one who deal with the problem and WHO guidelines are not followed.	Improve the communication with public during the outbreaks following the WHO guidelines on that.	1-How to design an effective message to the public during an outbreak and could it help to mitigate the impact and burden of the outbreak? 2-Assesment of health promotive activities.
Role of PH Lab in the proactive strategy of diseases prevention and control.	The PHL almost responds to alerts after taking place thus it acts as reactive strategy.	Improve the capacity of PHL Lab to act as a part of proactive strategy of diseases prevention as well as control within the country.	1-Evaluation of the adherence of the NHL(National Health Lab) to the international guidelines.?

3.3. Epidemiology of non communicable disease

Theme	Major Concern	Existing knowledge	Priority question in the future
Policies and strategies	<ul style="list-style-type: none"> - Are there documented policies for NCDs ? - Are there specific guidelines for the policies stated? - What are these guidelines? - Are there specific strategies for NCDs? - What are the objectives of these strategies? - what is the target of the objectives? And what has been achieved? 	<p>1- National multisectoral frame work for the prevention and control of NCD</p> <p>2-Policy Development</p> <p>3- Strengthening the health system and Integrating the prevention and control of NCD</p> <p>4- Capacity Building and human resource development</p> <p>5- Health promotion and primary prevention through high level multi- sectored action</p> <p>6- Monitoring and Evaluation</p> <p>7- Research and Surveillance</p> <p><u>Objectives of NCD strategy</u></p> <p>The WHO action plan for the global strategy for prevention and control of NCDs sets out 6 objectives which are to be tailored to each country. <u>These are:</u></p> <p>1-To raise the priority accorded to NCDs at global and national levels and to integrate prevention and control of such diseases into policies across all government departments</p> <p>2-To establish and strengthen national policies and plans for the prevention and control of NCDs</p> <p>3-To promote interventions to reduce the main shared modifiable risk factors for NCDs</p> <p>4-To promote research for the prevention and control of NCDs</p> <p>5-To promote partnerships for the prevention and control of NCDs</p> <p>6-To monitor NCDs and their determinants and evaluate progress at all levels</p>	<p>1-What are the current services of NCD strategy and what are the barriers to implementation?</p> <p>2- What are the best ways of prevention and control of NCDs in Sudan?</p>
Prevention programs	<ul style="list-style-type: none"> - Are there well structured prevention programs? 	<u>(No Existing knowledge)</u>	1- What is the KAP of people towards NCDs?
Protocols for diagnosis and treatment	<ul style="list-style-type: none"> - Are there clear protocols for diagnosis and management of NCDs? Are the implemented? To what extent? 	<u>No protocols</u>	1- Assessment of the national protocol (after situation analysis, systematic literature review) and how can the international protocol be adapted to

			Sudan and evaluation of dissemination methods to the primary health care?
Health information about NCD	<ul style="list-style-type: none"> -What are the sources of H.I. for NCDs . - Structure and organization of the HIS including screening activities 	No organized HIS. No case registry . No screening programs.	1- Do we need screening fro specific NCDs? 2- Assessment of NCD registry and reporting.
Epidemiology	-Are there specific indicators set to be targeted or achieved in relation to MDG4 and national targets ?	Disease prevalence, affected age groups, risk factors, and linkage to other diseases, deaths and financial burden on the health system. However it also emphasizes the need for an adequate continuous surveillance system to properly measure prevalence and so enable tailored responses. It focuses on the most common NCDs as a priority for health intervention in Sudan	1- Prevalence of the specific NCDs 2- Risk factors of the specific NCDs 3-What is the burden of NCDs?(NCDs including road traffic injuries, mental health, renal, cardiovascular and cancers)
Financial and human resources	<ul style="list-style-type: none"> - What is the annual cost of the NCD program? - Are there guidelines to the training, deployment remuneration and career development of human resources at all levels? 	(No data)	1-What is the cost of disease specific NCDs? (including HRH surveys, National health accounts, expenditure surveys)
Co-ordination with other health structures and organizations	<ul style="list-style-type: none"> - Is there a plan for co-ordination between NCDs and the other health directorates or departments in the health system? - What sort of co-ordination is it ? - Is there a plan for co-ordination between NCDs and NGOs 	2/The integrated provision of NCD prevention and care requires a flexible health system that can coordinate care planning across services, settings, sectors and over time. This means commitment from a range of services and sectors, and the ability to work together to achieve shared goals. Multidisciplinary care planning must be person centered, incorporate prevention, self-management and co-morbid conditions, and be responsive to changing patient needs.	1-What is the current role of other partners? (including the community)

Health finance & expenditure

Sub Domain	Research gaps	Research questions	Comments & Recommendations
Public spending on health Distribution of health finance budgeting	1. Uncertain or lack of information about the government expenditure on health (since 2005)	1. List (map) the items of public (government) spending on health? 2. What are the channels of government expenditure on health?	<ul style="list-style-type: none"> • Review the final report of the national health accounts • The overall health finance figures need to be updated (there should be a mechanism to update them regularly) • A crucial policy challenge for health financing is to increase government investment in health, reduce financial burden on households and remove social inequalities in access, utilization and health outcomes. • The need for health finance system reform (<i>Sudan Health policies</i>) • Ensuring that financing mechanisms such as cost-sharing are not affecting access to services by poor and disadvantaged groups (<i>the national strategy for reproductive health 2006-2010</i>) • Create some form of coordination and link between the chamber of the Auditor General and the
	2. Inadequate and unsustainable flow of funds (Flow of funds are not clearly mapped)	1- What is the discrepancy of requested budget and the budget in the operational plan?	
	3. Challenges of free care policies implementation in Sudan	Determining the challenges in free care policies implementation in Sudan	
	4. the gap in the budget allocation between what have been set in Abuja and what was actually implemented	Causes behind the gap in the budget allocation between what have been set in Abuja and what was actually implemented	
	5. Weak capacity of ministry of health in estimating the health budget	What are the Factors affecting the weak budgeting at the level of ministry of health?	
	6. The majority of the informal sector (85.5%) is still uncovered by any policy and vulnerable to the user fee and the private for profit services, why? This is a policy gap	What are the available options to cover the informal sector with the health insurance?	
	7. Uncertainty about The exact and recent revenues of the user fees policy	What are the exact revenues of the user fee policy in Sudan?	
	8. The Out of pocket private sector and abroad treatment is estimated to be very high in a range of 2.5-3.5% of the GDP which amounted to 15-20 US\$ per capita annually	What are the causes behind the very high out-of-pocket private sector and abroad treatment in Sudan?	
	9. The health sector is under-funded	1. Determine potential sources of health finance 2. How to manage limited financial resources	

	10. Currently, only a small proportion of the Sudanese population is covered by health insurance schemes.	<ol style="list-style-type: none"> 1. Review the current situation of the national health insurance 2. Identify factors creating barriers to access 3. Evaluate the possibilities for the expansion of coverage 	<p>national accounts (<i>Health Governance in Sudan</i>)</p> <ul style="list-style-type: none"> • A crucial policy challenge for health financing is to increase government investment in health, reduce financial burden on households and remove social inequalities in access, utilization and health outcomes. (<i>country cooperation strategy for WHO and Sudan 2008-2013</i> 2.1.17& 2.4.1.17)
	11. Lack of adequate funds at the national , regional or international levels	<ol style="list-style-type: none"> 1. How funds or budgets are initially calculated or estimated? 2. What are the sources of funds (at both local and national levels) 	
	12. Public Health spending is skewed towards curative services (82%) which are concentrated at the urban big towns that constitute less than 30% of the population	Determinants of public health expenditure (factors affecting public health expenditure)	
	13. Health spending is skewed towards hospital care, and Primary and first-referral care is under-funded and Lack of resources, particularly in the poorer states. (<i>country cooperation strategy for WHO and Sudan 2008-2013</i>)	<ol style="list-style-type: none"> 1. What is health spending priority? 2. Determinants of health spending 	
	14. low health insurance coverage	<ol style="list-style-type: none"> 1. Barriers limiting health insurance coverage 2. Factors affecting the health insurance coverage 	
	15. There are no official criteria for quick release of funds and cuts in the budget are mostly inevitable. Critical services and events such as epidemics mostly enjoy a shortcut in budget release. This holds true for most of hospital services that usually carries political implications. Release of budget is also largely dependent on personal initiatives and relations and no organization or person is held accountable for delay in releasing a budget	<ol style="list-style-type: none"> 1. What are the official mechanisms for quick release of funds? 2. What are the Factors affecting budget release? 	<ul style="list-style-type: none"> • PETS
	16. Limited impact of public spending and external aid on growth and human development 1. Inappropriate allocation of resources	How can we improve our understanding of the determinants of poor service delivery	

	<p>2. Resources do not reach service delivery units</p> <p>3. Poor quality of service delivery</p> <p>4. Services are not used by the population</p>		
	<p>17. Discuss priorities in public financial management, including to protect against external shocks</p> <p>18. Identify measures to improve debt management, and reduce debt vulnerability</p> <p>19. Assess the implications of changing allocation of resources across sectors for growth, poverty, and MDGs</p>	How to assist Government to critically review its operations and the use of public resources?	<ul style="list-style-type: none"> • PER
Actors in supporting the health budgeting and donation The donor funding characteristics	<p>Donors funds to the whole Sudan 3.5 US\$ per capita.¹</p> <p>The international community allocated US\$ 4.7</p>	What are the determinants of the international community funds?	NHA
	<p>The tax-based funding of the health care sector has long been used all over the world to finance certain components of health care services and it have to be known as the most important source of health care financing</p> <p>In Sudan the government is using the general tax and the earmarked tax as tax-based approaches to finance the health care system.</p>	<p>What is exactly the amount allocated to finance health care system in Sudan and</p> <p>How it is distributed among the different health care services?</p>	
	<p>Community financing is a term that has been widely used to financial activities involving community in its operation</p>	1. How it is collected and distributed among the community?	
	<p>Donors funding varies in sources and patterns where the money is supposed to be given (owned) as is the case with the WHO and UNICEF or to be lent often with low interest rate and long duration as the case of the World Bank</p>	<p>1. list the donors and</p> <p>2. What is their exact amount of funds provided to the health sector? (<i>Available in the NHA!?</i>)</p>	
	<p>The regular budget for 2006–2007 was almost fully implemented, while there is no clear information regarding the total funds collected from other sources and how they were distributed.</p>	<p>1. How the total funds were collected</p> <p>2. How the total funds were distributed?</p>	
MDGs 4,5&6	<p>In 2005 the total expenditure on immunization services was 38.3 million US\$. 38% of spending was on routine immunization while 62% was on</p>	<p>No available update regarding the total expenditure on immunization services since 1995? (<i>What about the NHA!?</i>)</p>	<ul style="list-style-type: none"> • To review is there PHC sub- account ?

	Supplementary Immunization activities		
	There is total dependency on the donor's funds, leading to limitations in the time frame regarding the planning and human resource availability. In addition to that the lack of security in some areas is negatively affecting the donors fund and the investment in the private sector	1. The negative impact of the donors fund 2. What are other alternatives to the donor's fund?	PHC costing, sub –account , MBB
	Sustainable financing requires guaranteed funds from all sources combining domestic and external funds which include those provided by the Sudanese government, GFATM, Work Bank, Bilateral agencies, UN agencies	How to ensure the financing sustainability to the NMCP?	Is there financing policy
	The National TB program is currently receiving considerable funds through different partners including Norwegian Heart and Lung Association, Global Fund and World Health Organization. The local component needed for administrative and supervisory activities is insufficient	What are Other financial resources to support the program?	TB sub –account