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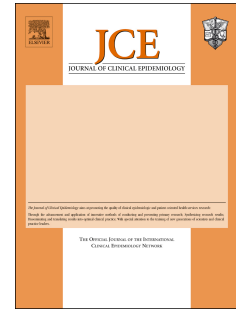
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Evidence-based Health Care and Policy in Africa: Past, present and future

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Abstract

Africa has high disease burden and health system challenges but is making progress in recognising, accepting and adopting evidence-based health care (EBHC). In this paper, we reflect on the developments of the past two decades and consider further steps that will help with the translation of reliable research results into the decision making process.

There has been a rapid growth in various initiatives to promote EBHC in the African region. These include the conduct and reporting of primary and secondary research, research capacity development and supportive initiatives, access to information, and work with decision makers in getting research into clinical guidelines and health policies. Much however still needs to be done to improve the impact on health in the region. A multipronged approach consisting of regionally relevant well conducted research addressing priority health problems, increased uptake of research in healthcare policy and practice, dedicated capacity development initiatives to support the conduct as well as use of research, facilitated by wider collaboration and equitable partnerships will be important.

Working together in mutually supporting partnerships is key to advancing both evidence informed healthcare practices and better health.

Key words: evidence-based health care; Africa; reflection; policy; collaboration

Running title: Evidence-based health care in Africa

Relevance of evidence-based health care and policy in Africa

The disease burden in countries of Africa remains high: with increases in chronic non-infectious diseases adding to the already existing large burden of infectious diseases, injuries, and maternal and child health conditions [1]. Government health care is poorly resourced in general, with poor health system infrastructure and limited human resources. In the public sector, global initiatives and funds from donors can put pressure on existing services by funding particular initiatives, such as targeted disease control programmes. These can distort national priorities and human resource allocations.

The formal private sector though not well developed, is increasingly becoming so in both middle and low income African countries, while the public healthcare system is perceived to offer 'poor services for the poor.' Under these conditions individuals and communities increasingly turn to private health care (formal or informal) and self-treatment. This may result in their exploitation by predatory companies making false claims about their products and services, particularly in environments where the levels of income and education are low and government regulations non-existent or not enforced. Having ready access to reliable healthcare information will help the public, clinicians and governments to make the right choices [2].

Evidence-based clinical care, the integration of current best available research evidence with clinical expertise and patient values and preferences, is gaining momentum in the African region. Whilst initially arising from clinical medicine to guide clinical decisions, increasingly these decisions impact on national and global policies; and the methods of research synthesis are being applied to public health problems. In the context of this broadened agenda, evidence-based health care (EBHC) and policy is a better way of describing the current status of shifting from research into public health policy and clinical practice, and is the scope of this article.

Important strides have been taken to get EBHC onto the agenda at regional, national and local levels in some countries of Africa. In this paper we reflect on the developments of the past two decades and, consider further steps required to ensure that the results of reliable research continue to inform decision-making on the continent.

EBHC in Africa: the past 2 decades

Globally there has been an explosion of efforts aimed at developing research synthesis methods, conducting systematic reviews and designing structured ways of getting evidence into healthcare policies. People in Africa have played a key role in this process, mainly through Cochrane. Since its inception in 1997, Cochrane South Africa has formed part of this global network. It has worked with various stakeholders inside and outside of Africa to raise awareness of the importance of EBHC. It has spearheaded the conduct and support of regionally relevant Cochrane Reviews. Data from Cochrane's contact database in September 2014 show that the number of Cochrane contributors from the Cochrane South Africa reference region (comprising a total of 25 countries in Sub-Saharan Africa) has increased considerably, with the majority located in South Africa and Nigeria (Figure 1). Working with Cochrane Review Groups for HIV/AIDS and Infectious Diseases, Cochrane South Africa has

trained, mentored and supported a large number of African review authors. An average of 44 full Cochrane Reviews and 26 protocols were published each year by authors from Africa during 2009-2013. These authors frequently act as change agents advocating the use of systematic reviews within their home institutions and countries [3]. On an international scale, they have challenged global policy e.g. on the use of directly observed treatment strategy for tuberculosis [4] and continue to contribute to clinical guideline development. In the recent WHO Malaria guidelines, more than three quarters of the 11 Cochrane Reviews informing guideline development were authored by Africans [5].

Systematic reviews help to identify gaps in the research base. There has been an increase in research productivity in the African region since 1991 which has been shown to be associated with the number of epidemiology training programmes, especially at the masteral level [6], and national gross domestic product [7]. The conduct of randomised trials, specifically, is being strengthened through funding from the US National Institutes of Health (NIH), Wellcome Trust and the EDCTP among others; the development of research ethics committees; the Pan African Clinical Trials Registry which allows prospective registration of trials [8,9]; and dedicated capacity development initiatives primarily through Masters and PhD programmes. While the growth in research productivity is a welcome development it remains unclear to what extent research is being informed by findings from systematic reviews. Furthermore, there is still a huge discrepancy between research capacity in Africa compared to that of Europe and North America [10]. This links with various factors, such as the lack of sustained investment in research and research capacity building and a lack of alignment between national and regional priorities and available funding [11].

The availability of research evidence is, of course, only one of the inputs into the complex process of healthcare decision-making [12]. Healthcare decisions made by policymakers, healthcare professionals, managers, researchers, media, professional associations, and the public-at-large are influenced by many factors including cost, feasibility, and availability of products and services [13]. The priority given to best evidence in decisions can be influenced by these, as well many other factors, particularly competing interests, whether commercial, academic or political [14].

We have witnessed a positive change in attitudes towards the use of evidence in healthcare planning. For example, at the start of the 21st century, when high rates of mother to child transmission of HIV was an important health problem, a Cochrane Review was undertaken in response to a direct request from the South African Department of Health for evidence on the effects of antiretroviral drugs for its prevention. On presenting the evidence to key decision makers, the door was literally closed in the face of the researchers because the evidence did not speak to what the decision makers wanted to hear. This was an all too typical case of policy based evidence (finding evidence to confirm instead of inform policy decisions) winning over evidence based policy [15]. Today, with the caveat that one needs to be clear on what the phrase means, it is unusual to see any policy without the words 'evidence based' in it.

It must be kept in mind that for evidence informed policymaking to succeed, proactive engagement of researchers with policymakers and other decision makers is required. Here, initiatives such as the Effective Health Care Research Consortium

(EHCRC), an international consortium working closely with African partners, in Cameroon, Kenya, Nigeria and South Africa, can be identified as an example of a group which has had considerable impact [3]. Since 2006, this consortium has gone beyond conducting relevant high quality reviews which inform policy and practice. It uses an explicit theory of change where the production of systematic reviews or their derivative products are considered outputs. Outcomes of interest include these outputs being accessed and used on the short term by decision makers, or on the medium term, to inform new or amended policies or guidelines. Long-term outcomes comprise EHCRC evidence being used to influence major funding decisions by bilateral or multi-lateral agencies and an increased number of evidence-informed decisions being made by intermediary organisations and networks (e.g. WHO, bilateral) and national decision makers. Further examples of dedicated initiatives to promote evidence use in policymaking include the SUPPORT Collaboration which developed tools for policymakers [16]; the SURE Collaboration [17] which engages decision makers through deliberate dialogues to develop evidence-informed policy briefs, and by preparing rapid responses to policymakers in need of research evidence; and Evidence Aid which is seeking to improve access to systematic reviews relevant to disasters and other humanitarian emergencies, such as the ebola outbreak in West Africa in 2014 [18].

There have also been promising developments in clinical guideline development and evaluation in the African region [13,19,20]. For example, Kredo and co-authors [19], assessed 30 regional guidelines from 13 countries linked to five priority diseases and found quality gaps in relation to the AGREE II tool and variable concordance with current best evidence. In this series the assessment by Machingaidze and co-authors of South African primary healthcare guidelines had similar findings [21] illustrating the need for dedicated initiatives to advance and promote guideline development, reporting and implementation. Sinclair and co-authors [13], have similarly described a project in which researchers worked with the Ghana National Drugs Programme to review the evidence base for five priority areas in paediatric medicine. They considered both the international evidence base and the local applicability of the evidence and presented these as structured summaries to be used by guideline development teams.

Indeed the Paediatric Association of Kenya is using explicit, transparent guideline development procedures. They made clear recommendations about stopping bolus fluids in shocky children based on the totality of the evidence (including the large FEAST trial in Africa evaluating this) [22], recommendations that the World Health Organization (WHO) has not yet implemented. This has benefited children by improving clinical care, reducing bolus treatments and saving lives, and shown that an African country appraise and apply evidence ahead of any guidelines from WHO.

It is clear that existing international evidence-informed clinical guidelines are not always taken into account by African guideline development groups. This may be due to the peculiarities of local health systems, such as specific clinical care pathways and resource limitations; knowledge of evidence, and a reliance on clinical experience. To accelerate the availability and implementation of high quality local guidelines, a shift from new guideline development to guideline adaptation [23], application and evaluation would be helpful.

There has been recent growing recognition of the need for EBHC as demonstrated by multiple initiatives to promote the use of evidence in policymaking and practice (Table 1), the increased number of systematic reviews being commissioned and funded, and an increase in institutional initiatives to support the conduct of research. There has also been improved access to evidence through the HINARI initiative [24], and free one-click access to the Cochrane Library for people in many African countries. Furthermore, postgraduate and continuing professional development courses in EBHC are increasing whether measured in the number of programmes or the number of enrollees [25,26]. In 2012, the signing of the Kigali declaration on EBHC [27] by representatives from academe, hospitals, NGOs and research institutions from nine African countries, forming part of the Collaboration for Evidence based Health in Africa, signalled a key milestone in the recognition of EBHC and the momentum for moving towards the implementation of evidence based practices (Box).

Future role of EBHC in Africa

How can we ensure that all these developments in EBHC have the greatest impact on improving the lives of Africans? A multipronged approach consisting of regionally relevant and robust research addressing priority health problems, increased uptake of research in healthcare policy and practice, dedicated capacity development initiatives to support the conduct as well as use of research, facilitated by wider collaboration will be important. Avoiding research waste and unnecessary duplication will help ensure that initiatives remain sustainable.

Conducting regionally relevant robust new research

New research needs to be informed by the existing body of research [28,29] and such primary studies and systematic reviews must seek to answer relevant research questions [30]. They should not be driven solely by the agendas of funders or researchers. In striving for global excellence and local relevance, African researchers need to stay abreast of methodological developments and remain cognisant of research integrity principles. In this series Rohwer and co-authors [31] describe the application of logic model templates for systematic reviews and health technology assessments (HTA) of complex interventions. Various postgraduate programmes play a significant role in building relevant capacity [6]. However, these will need to be complemented by efforts to improve science literacy in schools, broad-based initiatives to empower a critical mass of local researchers to conduct and deliver internationally competitive research, support senior researchers to become role models and leaders, create enabling institutional environments for research, and build closer relationships between researchers on the one hand and health decision makers, funders and the public on the other [11].

Dedicated specialised institutional and regional initiatives (centres of excellence) can also make an important contribution. For example, regional biostatisticians are joining together to strengthen capacity in biostatistics in Sub-Saharan Africa by increasing the number, and standards of, postgraduate programmes in biostatistics [32,33] in order to facilitate collaborative research initiatives and build biostatistics literacy. This aligns with the INCLIN, the International Clinical Epidemiology Network, which includes seven regional networks. Through the development of

Clinical Epidemiology Units, INCLEN has strengthened research capacity of medical schools in the African region [34]. Clinical epidemiologists, as key champions, link with biostatisticians and other researchers to foster research conduct and dissemination.

Promoting the use of research to inform policy and practice

The availability of robust research evidence on its own is not enough to impact on health care [34,35,36]. Sensitisation of undergraduates – the next generation of healthcare practitioners, healthcare managers, policy makers, and researchers – to the importance of research in decision making is important. Internationally, there is recognition and acceptance of the need to include teaching and learning of EBHC in the training of all healthcare professionals [37,38]. Despite this recognition, there is still a general lack of coordinated country and regional efforts to support integration of EBHC at both undergraduate and postgraduate levels. Evidence informed strategies should be used to direct how EBHC learning can be mainstreamed into health professions education [39]. As part of the momentum towards transformative health professions education [40], the process of curriculum review presents useful opportunities to include and enhance EBHC learning. For instance, the Committee for Undergraduate Education and Training of the Health Professions Council of South Africa has adopted a modified version of the CanMEDS framework for establishing graduate attributes of a newly qualified healthcare professional [41]. It provides a guide to the essential competencies health professionals must have to optimise patient outcomes. The framework defines the attributes of the graduate according to seven interdependent roles: Medical Expert, Scholar (which includes most of the aspects of EBHC), Professional, Communicator, Collaborator, Manager and Health Advocate.

Undergraduate training programmes in South Africa are being reviewed to better reflect these attributes. This period of change to the curriculum provides a window of opportunity to introduce, strengthen and integrate multifaceted EBHC teaching and learning with assessment [39, 42]. The process starts by assessing the current curriculum [43,44], and moves on to working with lecturers and programme convenors to plan pre-clinical and clinical EBHC learning, getting institutional buy in, and enhancing the competencies of the trainers to facilitate learning and, most importantly, acting as role models [45,46]. In the course of these activities, academic institutions can benefit through sharing best practices and using robust evaluations alongside implementation.

Researchers also need to understand how the policy process and health system work, and engage with policy-makers to understand their priorities and information needs. This will guide efforts to access and interpret existing research, especially systematic reviews, conduct new research (where necessary) and complete and communicate research timeously and in appropriately tailored formats [47], in order to inform decision making at both policy development and implementation level. Clinical guideline development can be enhanced by following standardised approaches, followed by dedicated initiatives to support guideline implementation and evaluation. National and regional initiatives in this regard are in the pipeline. The recently launched G-I-N Africa [48] describes itself as ‘a regional community of clinical practice guideline developers, users and other stakeholders from the African continent who are interested in improving the effectiveness, rigor and efficiency of

guideline development, adaptation, dissemination, implementation and performance measurement.' Initiatives such as these, need support and engagement from guideline development teams and ministries of health to avoid unnecessary duplication and ensure sustainability and impact.

Partnership and collaboration are key guiding principles

Collaboration between researchers and decision makers, between academic institutions, between academic and research institutions, and between cadres of specialist staff, is key to moving towards the common goal of evidence informed healthcare practices in the African region. By sharing best practices, collaborating and partnering on research and capacity development initiatives, avoiding unnecessary duplication and building equitable [49] long term relationships, African efforts to promote EBHC will go further [34,50,51].

Conclusion

There has been a rapid growth in various initiatives to promote EBHC in the African region. Much still needs to be done to improve impact on health in the region. Working together in mutually supporting partnerships is key to advancing both evidence informed healthcare practices and better health.

Contribution of authors

Taryn Young developed the draft manuscript. Mike Clarke, Paul Garner and Jimmy Volmink provided input, reviewed and commented on the draft manuscript. All authors approved the final version.

Conflicts of interest

All authors are identified with Cochrane. All receive grant money from public bodies based on activities related to producing systematic reviews and promoting their uptake.

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Table 1. Examples of EBHC initiatives in Africa – rapid growth in initiatives to promote EBHC

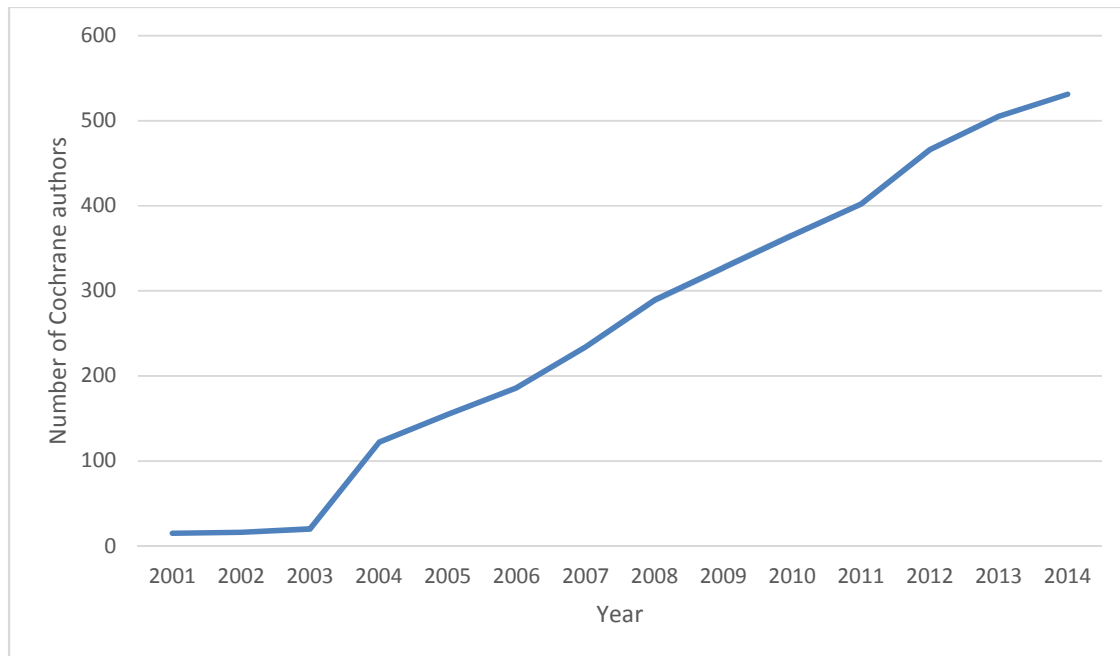
Initiative	Short description	Website
Alliance for Health Policy and Systematic reviews (AHPsr)	An international collaboration hosted by the World Health Organization which goal is to promote the generation and use of health policy and systems research as a means to improve the health systems of LMIC	http://www.who.int/alliance-hpsr/
Collaboration for Evidence Based Healthcare in Africa (CEBHA)	A network of institutions in Africa engaging in promoting EBHC in Africa.	http://www.cebha.org/
Development Research Uptake in Sub-Saharan Africa (DRUSSA)	Provides direct support to universities at individual, institutional and systems levels to improve participation in and impact on policy and practice.	http://www.drussa.net/
Effective Health Care Research Consortium (EHCRC)	International consortium focusing on preparing and updating Cochrane Reviews about the effects of health care relevant to LMIC; and identifying approaches to ensure dissemination and use of the results of systematic reviews in decision making.	http://www.evidence4health.org/
Evidence-Informed Policy Network (EVIPNet)	Promotes the systematic use of health research evidence in policy-making focusing on LMIC, partnerships at the country level between policy-makers, researchers and civil society in order to facilitate both policy development and policy implementation through the use of the best scientific evidence available.	http://global.evipnet.org/
Knowledge translation Network (KNET)	A network of eight research coalitions with membership of a coalition of researchers from 9 countries with the overall aim to promote and support the uptake and use of research evidence generated by their coalition partners who are funded by the Global Health Policy and Health Systems research programme.	http://www.knet africa.net/
Policy BUDDIES - Building Demand for evidence in Decision making through Interaction and Enhancing Skills	A collaborative project promoting researcher and policymaker engagement to promote evidence informed policymaking.	http://www.cebhc.co.za/policy-buddies/
South African Guideline Excellence (SAGE) project	A collaborative project aiming to, through engaging in a stakeholder-driven process, improve the standards of local clinical guideline development, adaptation, contextualisation and, ultimately, implementation.	http://www.mrc.ac.za/cochrane/sage.htm
SUPPORT	An international Collaboration Network that involves a partnership between LMIC and European scientists and LMIC policymakers to provide training and support to encourage researchers and policymakers in collaborative policy-relevant research.	http://www.support-collaboration.org/
Supporting the Use of Research Evidence (SURE)	A collaborative project that builds on and supports EVIPNet in Africa and the Region of East Africa Community Health (REACH) Policy Initiative.	http://www.who.int/evidence/sure/en/
Global Evidence Synthesis Initiative (GESI)	Brings together a number of worldwide research organisations that are committed to the development and use of research synthesis to enhance public policy, public service delivery and citizens' involvement	https://community.cochrane.org/sites/default/files/uploads/GESI%20-%20Case%20for%20Support%20-

Legend: LMIC – Low- and Middle income countries

Box: Recommendations from the Kigali declaration [27]

- A sustainable collaboration to foster evidence based healthcare in Africa is developed
- Health workers, policy makers and researchers are trained and infrastructure is provided to support evidence based healthcare
- Evidence based healthcare is integrated into health education curricula
- All health workers have access to relevant electronic health information resources
- Systematic reviews and guidelines relevant to African healthcare needs and disease burden are developed
- Health care practitioners, policy makers and consumers of health care are supported to identify and use reliable evidence in making healthcare decisions
- Effective dissemination and implementation strategies are established
- Research to further strengthen the knowledge base for the implementation of evidence based healthcare in the African context is encouraged and supported
- Centres and satellite offices for evidence based healthcare are established in countries.

Figure 1: The growth in the number of Cochrane authors in Cochrane South Africa reference region* (2001-2014)



*Reference region: Benin, Botswana, Cameroon, Comoros, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Sierra Leone, Somalia, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.