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Assessing health systems performance in low and middle income countries

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Background: Previous studies on health systems performance have struggled in creating better parameters to assess and compare performance, particularly in many low and middle income countries. If only we can create better parameters, we can then create more efficient health system reforms and optimize health interventions. It is therefore crucial to examine how health systems are performing through creating typologies and determining its influence on health outcomes. Typologies have been widely used as a similarity measure to explore mechanisms that lead to program's successes and failures. It also assists in allocating resources and prioritizing interventions that have most impact on key health targets. However, applying such innovations in health systems performance assessment are yet to be examined further. Until better parameters have been done, misallocation of health resources and poorer health outcomes persists.
Methods: This study involves comparative cross-country analysis of health systems performance in 143 low and middle income countries (LMICs) and also examines how each health system building block influence health outcomes, particularly life expectancies (LE). Using three waves of data averaged before the year 2000, 2001-2006 and 2007-2012, we used various statistical techniques such as multivariate regression analysis, factor analysis and cluster analysis to examine characteristics of health systems in LMICs. Data used is from the Health Systems database, which was an output of the USAID-funded Health Systems 2020 and the Health Financing and Governance Projects. Geographical information systems were also used to determine priority areas for health systems strengthening.
Findings: Findings provide visualizations of how health systems of LMICs are performing across the years. It examines how and why health systems performance remains weak in many LMICs and determines which areas for health systems strengthening have most significant influence on health outcomes. Our results show that three categories of performance: a) stagnant health systems or countries that have no significant improvement for each of the health system building block across the years and have an average life expectancy of only 55 years, b) transitioning health systems or countries that are performing well in terms of service delivery and health workforce but needs improved health financing and better governance and have an average LE of 68 years; and c) positive health systems or countries that are performing well in each of health system building blocks with average LE of 69 years. Our results also show which area of each health system building block have the most significant influence on LE such as stricter corruption controls (B=0.67, p=
Interpretation: Assessing health systems blocks allow identifying patterns of performance and priority areas for health systems strengthening. Increasing health financing alone is not enough to have a well performing health system.
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Developing evidence of content validity and comprehensibility of a measure of HIV-related stigma for Maharashtra, India

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Background: A team of faculty (nursing, health sociology, public health and medicine) from colleges of nursing in Maharashtra, India, and the USA are collaborating to develop a program of research into aspects of HIV-related stigma, an important barrier to effective HIV/AIDS prevention and treatment. Cultural differences between and within countries require researchers to assess the validity of research instruments developed with different populations for use in their intended setting. Guided by classical test theory, the purpose of this initial study was to assess the content validity and comprehensibility of a measure of HIV-related stigma adapted for the general population of Chennai, South India, for use in Maharashtra State.
Methods: Following IRB approvals at both institutions, content validation was conducted of Zelaya and colleagues' HIV/AIDS Stigma Scale, a 24-item measure of stigma adapted from other scales for use in South India. The items for these analyses were presented in English, the language of instruction at the Indian institution. The content validation panel included 12 HIV content experts (faculty in India). Each item was rated individually for relevance to the construct HIV-related stigma, clarity and cultural appropriateness; the set of 24 items together was rated for completeness, redundancy, and appropriateness as a measure of HIV/AIDS-related stigma for the general population. Individual cognitive interviews were conducted with 39 nursing undergraduate students recruited from the Indian institution to ascertain comprehensibility of the item wording and to elicit suggested revisions to improve clarity and understandability.
Findings: The Content Validity Index was extremely high (> .95) for all items on relevance, clarity and cultural appropriateness; the Scale received the highest possible rating for completeness and appropriateness as a stigma measure. However, cognitive interviews revealed 6 items that were frequently misunderstood and required slight revisions to clarify their meaning. For example, in the item, "People with HIV are promiscuous" the word "promiscuous" was not understood by several respondents; the team decided to add "(meaning they have multiple sex partners)" to clarify the item's meaning.
Interpretation: Conducting content validation with experts and cognitive interviews with potential participants provided validation for the use of this measure with the population in Maharashtra. Next, items will be translated into Marathi using a committee approach and another set of cognitive interviews will be conducted with a Marathi-speaking sample. Assessing content validity and comprehensibility of an instrument are essential first steps to ensure valid measurement of any construct of interest to researchers in any setting. These steps lay the foundation for psychometric evaluation with a larger sample to strengthen evidence of the measure's usefulness in the particular setting. Small-scale studies such as this can also serve as exemplar studies in which faculty teaching research can engage their students as a learning exercise.
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Assessing the feasibility and value of a pilot project using mobile applications and mobile money to enhance a maternal health conditional cash transfer (CCT) program in Nigeria leading to the development of a costed business model for scale up

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Program/Project Purpose: Nigeria's maternal mortality ratio is the tenth highest in the world, with an estimated 630 maternal deaths per 100,000 live births (WHO 2010). The Nigerian government is implementing a maternal and child health conditional cash transfer (CCT) scheme, paying women to attend ANC, skilled delivery and immunization to address high mortality. Currently the government is using a cash/paper based system to track and pay clients, requiring large costly overhead and heightening potential corruption. The current system limits the ability to scale CCT to the 1,250 site goal. From 2014 - 2015, Pathfinder International and the Nigeria government are piloting mobile technology and mobile money to improve the efficiency of the CCT program, in order to learn lessons for national scale.
Structure/Method/Design: Pathfinder developed and piloted a mobile phone application to register and track CCT clients and a web dashboard for government staff to view and approve payments via mobile money. This pilot project is in 5 sites near Abuja, Nigeria. Pilot sites were selected by the government and women in low income brackets qualify to receive CCT payments. Mobile network operators (MNOs) and Banks were engaged to support implementation of mCCT. Government staff, health workers, MNOs and Banks are engaged in a national MCCT working group guiding the design of this project. PIlot evaluation will infom the development of a costed business model to scale up and sustain the mCCT program.
Outcomes & Evaluation: Currently, 5 sites are using the mobile application, government staff are trained on the dashboard, and over 300 women have been registered in mCCT. Clients are given free SIM cards to receive appointment reminders, mCCT payments and give feedback on the quality of services received. A BUSPH Doctor of Public Health (DrPH) student will conduct a pilot evaluation in early 2015. Research methods include: 1) interviews with clients, health workers, government and other experts and 2) review and use of data from ongoing research in Nigeria examining the impact of introducing mobile applications on the quality of ANC services in Nigeria and two cost effectiveness studies looking at the impact on health outcomes and efficiencies gained by introducing mobile money. A scale up framework will be developed based on results.
Going Forward: Ongoing challenges include delayed signing the MOU with the government and bank for mobile money implementation. Mobile money payments have not yet been made to clients, but expected to start in December 2014. Pilot project evaluation results expected in
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Evaluations of complex global health initiatives: evidence on the need for case-based research

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Background: Seminal evaluations have repeatedly exposed challenges in getting evidence on what works, why, and under what conditions. More evaluation studies are using case-based mixed methods in response. The Institute of Medicine convened a workshop in January 2014 to explore the experiences of complex global health program evaluations and consider lessons learned. Here we analyze the workshop proceedings to identify key messages, and identify steps to improve the science of case-based evaluation methods.
Methods: Our findings are based on participant observations and analysis of major themes, identified by coding the workshop proceedings in NVivo. These were grounded by our experiences with two of the core evaluation examples of the workshop and participation in other case-based, mixed-methods evaluations of global health interventions.
Findings: All evaluations presented or discussed at the IOM workshop used case-based mixed methods, either solely or as a part of overall study design. There was a strong emphasis on the need for causal theories of change for all program purposes: design, implementation, performance improvement, and evaluation. Consensus on the need for deeper understanding of implementation context was supplemented by calls for differentiating between: contextual "constants" which cannot be influenced; contextual factors which can; and contextual factors that directly support observed changes. Importantly, controlling for contextual complexity using RCT or QED designs may remove the very things that should be identified as important mechanisms for change. Near universal use of multiple methods for capturing the how and why of intervention implementation success explained the predominance of case-based approaches for evaluating complex global health initiatives.
Interpretation: We propose three feasible methodological steps to improve quality and utility of case-based evaluations. 1) Evaluators should assess implementation and contextual variability directly, not just control it, distinguishing among contributors, supporting factors, and preconditions to program success or failure. 2) Evaluators should use purposive case selection as an explicit strategy to improve the transferability of findings to other implementation situations. 3) Evaluators need to balance context-specific (within-case) implementation detail with context-neutral (cross-case) patterns of successes, failures, and solutions to problems. To make progress in global health post-2015, we need to successfully operate complex interventions at scale, in varying implementation situations, and consistently over time. Currently we rarely gain systematic insight on how implementers were able to achieve success, or not; what problems were addressed successfully, or not; or how situational variability affected successes and challenges. This information is crucial if we are to increase the likelihood of success, scale, and sustainability for global health interventions that are known to work, but somehow do not when implemented at scale or in new settings. Well-designed, theory-grounded, case-based, multi-methods evaluation studies that assess context show a way forward for evaluations to provide this necessary information.
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Telesurgery presence in low and middle income settings: A systematic review

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Background: Telehealth, the application of telecommunications to healthcare, is a rapidly growing and diversifying field. It is well known that telecardiology and telepsychiatry are some of the fastest growing subsets of telehealth. This boom is revolutionizing how medical care is being delivered in low and middle-income settings. However, it is relatively unknown the role telesurgery currently plays in LMICs. A more thorough understanding is necessary of telesurgery's position in LMICs in order to illustrate how it can be expanded to improve care.
Methods: A systematic literature review was conducted using PubMed, EMBASE, The Cochrane Library, CINAHL, WHOLIS and 5 regional databases, to identify journal articles published from 2004 to October 15th 2014 which described the use of telehealth or telesurgery in general. The resulting literature was categorized based upon World Bank July 2014 definitions of low, low-middle, and high-middle income countries; high-income countries were excluded. Article references were searched for additional relevant sources. Data