OXFORD

Perspectives on Quality

Quality improvement and emerging global health priorities

NANA MENSAH ABRAMPAH[1], SHAMSUZZOHA BABAR SYED[1],
LISA R. HIRSCHHORN[2], BEJOY NAMBIAR[3,4], USMAN IQBAL[5],
EZEQUIEL GARCIA-ELORRIO[6], VIJAY KUMAR CHATTU[7],
MAHESH DEVNANI[8], and EDWARD KELLEY[1]

[1]Service Delivery and Safety Department, World Health Organization, Avenue Appia 20, 1211 Genève, Switzerland, [2]Feinberg School of Medicine, Northwestern University, 625 North Michigan Ave, Chicago, IL 60611, USA, [3]Institute for Global Health, University College London, 30 Guilford Street, London WC1N 1EH, UK, [4]Academy of Medical Sciences, Malawi University of Science and Technology, PO Box 5196, Limbe, Malawi, [5]Global Health & Development Department, College of Public Health, Taipei Medical University, No. 250 Wu-Xing Street, 11031 Taipei, Taiwan, [6]Health Care Quality and Patient Safety, Institute for Clinical Effectiveness and Health Policy, Dr. Emilio Ravignani 2024, 1414 CABA, Argentina, [7]Public Health Unit, Faculty of Medical Sciences, University of the West Indies, Eric Williams Medical Sciences Complex, Building 39, First Floor, Uriah Butler Highway, Champ Fleurs, Trinidad, West Indies, and [8]Post Graduate Institute of Medical Education and Research, Sector 12, Chandigarh 160012, India

Address reprint requests to: Nana Mensah Abrampah, Service Delivery and Safety Department, World Health Organization, Avenue Appia 20, 1211 Genève 27, Switzerland. Tel: +41 (0) 22 791 3517; Fax: +41 (0) 22 791 4769. E-mail: abrampahmn@who.int

Abstract

Quality improvement approaches can strengthen action on a range of global health priorities. Quality improvement efforts are uniquely placed to reorient care delivery systems towards integrated people-centred health services and strengthen health systems to achieve Universal Health Coverage (UHC). This article makes the case for addressing shortfalls of previous agendas by articulating the critical role of quality improvement in the Sustainable Development Goal era. Quality improvement can stimulate convergence between health security and health systems; address global health security priorities through participatory quality improvement approaches; and improve health outcomes at all levels of the health system. Entry points for action include the linkage with antimicrobial resistance and the contentious issue of the health of migrants. The work required includes focussed attention on the continuum of national quality policy formulation, implementation and learning; alongside strengthening the measurement-improvement linkage. Quality improvement plays a key role in strengthening health systems to achieve UHC.

Key words: quality improvement, health systems, resilience, SDGs, health security

Background

The 2015 progress scorecard for the Millennium Development Goals (MDGs) indicates significant improvements in child survival, maternal health, HIV/AIDS, malaria and tuberculosis across all five regions. [1]. However, a closer look at the scorecard highlights unequal and fragmented progress across regions, particularly in low and middle-income countries (LMICs) [2, 3]. Challenges highlighted in MDG implementation emphasize [4] vertical approaches to health systems strengthening alongside the absence of focussed attention on cross-cutting health systems strengthening entry points such as

quality [5]. Moving forward, the 2030 Sustainable Development Goals (SDGs) have been hailed as a historic moment in global health. Unlike the MDGs, the SDGs are viewed as inclusive and integrated [6]. The SDGs are interconnected and span across multiple sectors and bring various developmental goals and targets together to improve overall human and societal development. For example, SDG 3—'Ensure healthy lives and promote well-being for all at all ages'—is intimately associated with SDG 6 (clean water and sanitation), SDG 7 (clean energy), SDG 9 (industry, innovation and infrastructure) and SDG 17 (partnerships) as well as the rights-based argument to health. As countries aim to strengthen and move their health systems towards Universal Health Coverage (UHC), quality of care has become an important component of this dialogue. The importance of quality within the UHC dialogue is clearly articulated in SDG 3.8, which aims to 'achieve UHC, including financial risk protection, access to quality essential healthcare services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all'. Further, the 2016 adoption of the WHO Framework on Integrated People Centred Health Services by all Member States underscored the importance of innovative pathways aimed at securing a future in which all people have access to health services that are provided in a way that responds to their life course needs and preferences, are coordinated across the continuum of care, and are safe, effective, timely, efficient and of acceptable quality [7].

Quality improvement approaches (linked strongly to quality planning and control) play an intrinsic role in reorienting care delivery systems from provider-centred to integrated people-centred health services where services are trusted, coordinated and respond to the needs of the individual. Emphasizing how structures and processes within a system interact with each other to improve and achieve desired health outcomes is unique to the model of healthcare quality, pioneered by Avedis Donabedian [8] and has direct consequences on how emerging global health issues are tackled. Quality improvement will have a critical role in addressing the shortfalls of previous agendas, realizing the goals put forth in the SDG era, and securing a healthy future for all by adopting participatory, systems-thinking and accountability-based approaches [9]. This article outlines the critical role of how quality improvement can be applied in emerging global health priorities. Quality improvement has the potential to have an impact on key global agendas including the global actions on noncommunicable diseases and antimicrobial resistance (AMR). In particular, quality improvement can bridge the dichotomy—the artificial divide—between health security and health systems; addressing global health security priorities through participatory quality improvement approaches; and improving health outcomes at all levels of the health system.

Health Security and Resilient Health Systems

The Former Director General of the WHO, Dr. Margaret Chan recently emphasized that 'for infectious diseases, you cannot trust the past when planning for the future [10]'. Recent global health epidemics have underscored the critical need for local health authorities to improve epidemic preparedness and response at the national and sub-national level to guarantee collective global security. Key pillars essential for enhancing both global and local health security are reflected in Fig. 1. These pillars are informed by WHO's health systems response to safely reactivating essential health services during the 2014/2015 Ebola Outbreak.

The concept of global health security, though not new, has seen increasing prominence, and can be defined as efforts undertaken by countries to prevent, detect and respond to infectious diseases and other public health threats and to reduce the risk of these threats crossing borders [11]. All countries have a binding agreement to report certain disease outbreaks and public health events to WHO to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. Recent outbreaks have resulted in increased attention and commitment [12–14] from the international community to support countries adhere to this binding agreement.

An immediate concern for countries aiming to adhere to the WHO International Health Regulations (IHR) is the capacity of effective public health surveillance systems at the sub-national level to detect, assess and trigger reporting mechanisms at the sub-national level to the national and global level. The majority of countries, particularly resource-limited countries, are often ill-equipped with early warning systems and trained health personnel at the frontlines to detect such cases. The 2014/2015 Ebola outbreak, which originated in a small village in Guinea, West Africa, is one such example of how deficiencies in the development and implementation of surveillance systems compounded by limited human resources can lead to a public health emergency of international concern [15]. Further, the Zika epidemic in the Americas highlighted how poorly prepared countries are to face the next infectious disease epidemic [16, 17]. Both examples highlight how global health security is dependent on individual security, which comes from individual access to safe and effective health services, products and technologies [18]. However, individual security cannot be achieved without an efficient health system (with attention to all building blocks) that can deliver quality essential health services alongside financial risk protection and that ensures access to safe, effective, quality and affordable vaccines and medicines to all.

Quality improvement mechanisms can play a major role in stimulating the discourse and enhancing convergence between health security and resilient health systems. A clear entry point for the application of these quality improvement approaches can be considered in many relevant areas. Three examples shed further light.

First, clear measurement metrics and performance monitoring of service delivery across all levels of the health system—micro-level (continuum of care at the facility-level); meso (referral systems between health facilities and with district/national/regional teams); and macro (link up with national level surveillance systems)—are critical during public health emergencies. Clear reporting channels for integrated surveillance, monitoring, and early detection, that is complemented by fit-for-purpose health workers and well-functioning supply-chain and diagnostics systems are needed to assure the timely detection of potential hazards at the point of care. This is only possible if there is national direction and commitment for reporting diseases in-country, linking with global metrics and indicators for emergencies and routine service delivery. Quality improvement approaches can be applied in strengthening all these areas.

Second, the application of proven quality improvement approaches into the processes of improving care delivery during peacetime efforts and emergencies. Speeding up the application of improvement efforts that seek to address what care is delivered, and how that care is delivered, is critical for both emergency preparedness and response. For example, quality improvement can be applied during preparedness efforts and during simulation exercises to inform emergency strategy refinement and development. In the case of infectious disease outbreaks, where cases need to be rapidly contained, improvement efforts can be applied to rapid team building and problem-solving by district teams, collaborative facilities and rapid response teams.

Third, strengthening leadership and management capacity of district health management teams with a focus on quality improvement
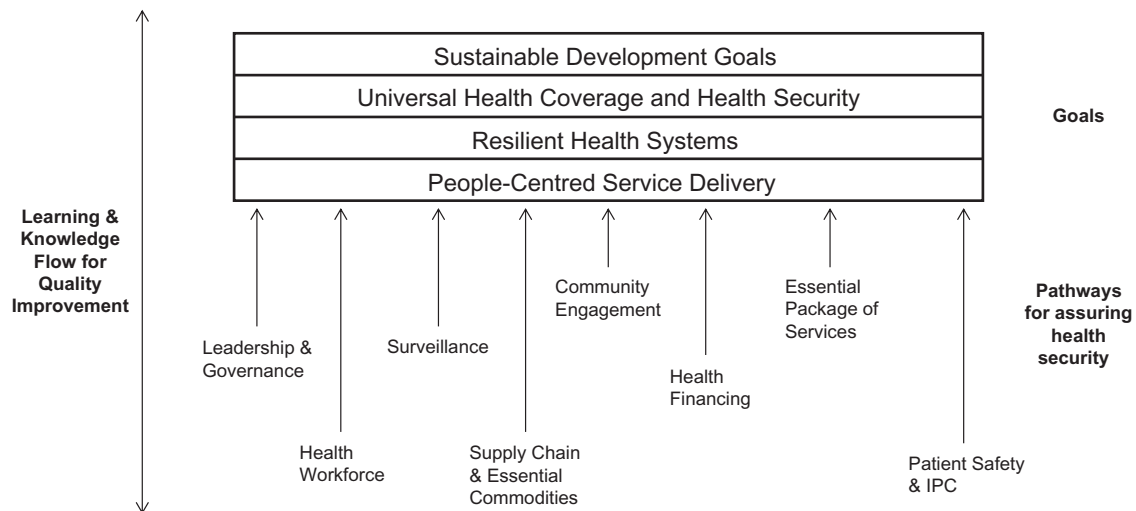
Figure 1. Key pillars essential for enhancing health security.

can provide a means of strengthening the convergence between health service delivery, emergency preparedness and community representation. Specifically, for protracted emergency settings, the establishment of Emergency Operating Centers (EOC) at the district-level with facility and community representation on the district health board to inform overall service delivery during emergencies. Quality Improvement can contribute through the planning stages of active representation by all stakeholders. Further, to inform response efforts, the establishment of assurance and control mechanisms such as periodic situation reports to assess, monitor and inform action is critical. Quality planning can also play a role through the development of standard operating procedures, to operate the EOCs.

All three examples above need to be carefully considered within the context of how quality improvement efforts can further be improved during peacetime and how such approaches can be utilized during emergency response efforts.

Emerging Global Health Priority Areas

The past decade has seen a rise in multiple global health priorities, many of which stand to benefit from the application of quality improvement approaches. Two stand out.

The rise in antimicrobial resistance (AMR) has received significant attention [19]. Often classified as an emerging public health threat, the response to AMR can benefit from quality planning and quality control mechanisms which seek to enhance the stewardship of antimicrobials. For example, facility control mechanisms such as establishing schedules for monitoring; a checklist of key tasks to be performed including tracking antibiotic in-take and out-take at the pharmacy; assigning clear responsibilities for monitoring; and optimizing efficiency through education of healthcare workers, patients and communities can be applied to monitor antibiotic prescribing and resistance patterns. Furthermore, routine quality control mechanisms can seek to measure progress on standards set forth by the national government in this arena. Additionally, health facilities have a clear and vital role in achieving the vision for limiting AMR that can be activated through quality improvement mechanisms. Such efforts can include but are not limited to developing quality manuals for antibiotic resistance and feeding the learning from the

application of these manuals to inform wider strategic policy dialogue on AMR at both the national and sub-national levels.

The world is experiencing large migrant movement with over 250 million international migrants (at the international level, there is no universally accepted definition of the term 'migrant'. Migrants may remain in the home country or host country ('settlers'), move on to another country ('transit migrants'), or move back and forth between countries ('circular migrants' such as seasonal workers)) [20]. Indeed, at the end of 2015, there were estimated to be over 21 million refugees and 3 million asylum seekers worldwide, in addition to 763 million internal migrants (~11% of the world's population), of whom over 40 million were internally displaced persons [20]. Current trends indicate further increases. The SDGs and the goal of UHC cannot be achieved if migrants cannot access the same essential quality health services as members of host countries. The role of quality improvement becomes evident with an emphasis on the often-neglected quality domain of equity. That is, affording all populations timely access to the full spectrum of services—promotive, preventive, treatment, rehabilitative and palliative. This process can be facilitated using quality planning and control mechanisms that seek to mitigate the risks of inequities across populations. Quality improvement methodologies can be applied in health facilities that are tasked with delivering care to migrants. A particularly important focus of concern is the critical role of essential packages of services that aim to standardize what services are provided at primary, secondary and tertiary levels of care to all populations, including vulnerable populations such as migrants. These essential packages of services address priority needs of a country's population, providing a strategic framework and pathways for providing quality essential health services. Such packages need to be balanced at the planning and implementation stage, between immediate priority areas—for example, the role of structures for quality that focuses on water and sanitation—and longer term approaches to developing integrated service delivery.

Leading Quality Improvement at all Levels of the Health Care System

To achieve better health outcomes at the societal level, it is important to emphasize quality across the spectrum of health systems from

the sub-national to the national and across primary, secondary and tertiary levels of care. Primary care is the basic or general healthcare focused on the point at which a patient ideally first seeks assistance from the medical care system. It is the basis for referrals to secondary and tertiary level care. Secondary care is specialist care provided on an ambulatory or inpatient basis, usually following a referral from primary care. Tertiary care is the provision of highly specialized services in ambulatory and hospital settings. The pivotal role of primary care and its beneficial impact on population health is well documented [21]. It is at this level that majority of quality improvement approaches are implemented. However, the quality of health services received at this level is often unknown [22] although there is a rapidly emerging body of knowledge. In addition, little is known about the continuity of quality improvement approaches beyond its expected life cycle and into the scale-up phase at this level. Several advances have been recorded in improving secondary care around maternal and child care, infection prevention and control, surgical procedures and medication use [23–25]. A systematic and unified approach, however, remains largely elusive. Unlike the aforementioned areas, in tertiary care, quality improvement has often received less priority. Improvements in secondary and tertiary care quality in high-income countries can be driven by reimbursement policies and quality improvement frameworks; this is not the case in most countries. We can see that strategies to implement quality interventions at various levels of the health system vary at large. Proven quality improvement interventions depend on an enabling environment at the national and facility-level to institutionalize quality improvement as part of everyday culture and sustain healthcare improvements. This is where leadership—at all levels—becomes critical.

Different organizations have provided opportunities to identify lessons learned when applying interventions at the frontline of service delivery. A wide variety of improvement methods are being utilized to contribute to global development agendas [26]. Until recently, quality improvement efforts have focused on provider-oriented models and improving 'hard' clinical outcomes, such as improving antenatal care coverage or prevention of mother-to-child transmission of HIV at the facility-level. The WHO Framework on Integrated People-Centred Services heralds a fundamental shift in thinking to address the needs and preferences of people; the focus on patient and community empowered to be more active in their own health is given prominence [27]. Incorporating quality improvement approaches using participatory approaches, into this new way of thinking will require individuals as active participants in the design and delivery of health service reforms and models of care, governance and monitoring and accountability structures as well as coordinating services across all sectors; leadership of a different kind.

As quality improvement has evolved over time, so has process documentation. The current challenge of quality improvement is how documented improvements can be cascaded across wider audiences to ensure frontline leaders have access to just in time information to have the maximal positive impact on service delivery. Harvesting and sharing these practices, challenging these approaches and sparking new innovative ways of undertaking improvement through global knowledge exchange mechanisms is key, particularly in the light of the evolving global dialogue on UHC [28]. Basic principles of healthcare quality such as leadership, teamwork, quality culture; applied in different national health systems are fairly consistent. Evidence-based quality improvement interventions which require little investment—for example, process improvement—can be replicated across the globe with local adaptations. However, a critical component of process improvement is documenting how improvements were undertaken. Documenting the process from the onset of any improvement activity, coupled with process evaluation mechanisms through the improvement phase is critical.

Practical experiences and lessons from the sub-national level, when well-documented and shared nationally and globally, play a critical role in informing national policy and strategy formulation on improving the quality of health services. Implementation at the frontline must inform and be informed by national direction on quality—defining what quality means at the national level—and seeks to create an enabling environment for delivering high-quality services. This must be informed by what works on the ground to institutionalize quality at all levels of the national health system and one that strives to ensure ownership among health workers, with the involvement of all stakeholders. National governments must articulate a vision for improving healthcare quality within their context and agree on locally adapted standards that can routinely monitor the quality of services at the point of care (primary, secondary, tertiary). The incorporation of quality improvement approaches in national health policies or the development of focused quality policies or strategies is needed for wider adoption of evidence-based quality improvement practices throughout the health system.

Measurement and Improvement Nexus

Measurement can be wasteful when it does not go hand-in-hand with improvement. Many countries and programs are awash in data, yet the link between this data and improvement has remained a critical system gap. Indeed, there is a need to improve the way we measure, utilize the data we have, define what we measure, and how we use it to drive change. Five key directions can be suggested. First, make the data we have better. Second, use the data we have better. Third, measure better in terms of what we measure and how we measure it. Fourth, stop collecting data we do not use. Finally, link local efforts to the global dialogue rather than allowing the global dialogue to be the driver of local action.

Active efforts are being taken along these lines. There have been growing efforts to improve the quality of routinely collected data. If high-quality, these data provide close to real-time insights into components of the functioning of healthcare systems from the lowest to the highest levels and allow local managers to understand and improve. Some of this work has used innovative methodology including partnering with non-governmental organizations [29]; application of random sampling methodology [30, 31] to reduce resources needed to target improvement; strengthening data utilization at the management level [32]; linking measurement and feedback [30, 33]; and building capacity through initiatives focused on data quality and utilization [34, 35].

There is also a need to build the capacity and culture to use the available data more effectively and efficiently to measure quality and inform quality improvement. This will require work to transform data into information, knowledge and drive action for change through knowledge dissemination. Other work has included efforts to build capacity for data analysis, leadership and data-driven management including accountability and developing learning systems rather than data primarily as an audit tool. Decentralization of decision-making and accountability to sub-national levels with strengthened capacity in data management systems to support district health management with a focus on the measurement-improvement nexus proves pivotal for delivery of quality health services.

Conclusion

The field of quality improvement has much to offer in tackling emerging global health priorities. Fresh ways of thinking about how to apply quality improvement in the rapidly evolving landscape of global health is needed. Quality improvement efforts are an integral component of the shift towards more people-centred health services. Rapidly evolving global health priories provides multiple specific and tangible quality entry points at different levels of the health system. Some examples have been explored here ranging from global health security, migrant health, AMR and the measurement-improvement nexus. Many others could have been mentioned. If the potential of quality to demonstrate its impact is to be realized, a new form of leadership is required at all levels of the system. The quality improvement community needs to clearly articulate the positive impact that it can stimulate on health systems that are moving towards UHC.

References

1. United Nations. http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20PC%20final.pdf (12 January 2017, date last accessed)
2. World Health Organization. http://www.who.int/gho/publications/world_health_statistics/EN_WHS10_Part1.pdf (12 January 2017, date last accessed)
3. World Health Organization. http://www.who.int/whosis/whostat/EN_WHS10_Part2.pdf?ua=1 (12 January 2017, date last accessed)
4. World Health Organization: http://apps.who.int/iris/bitstream/10665/200009/1/9789241565110_eng.pdf?ua=1 (12 January 2017, date last accessed)
5. Schneider A. How quality improvement in health care can help to achieve the Millennium Development Goals. *Bull World Health Organ* 2006;**84**: 259.
6. World Health Organization. https://sustainabledevelopment.un.org/post2015/transformingourworld (12 January 2017, date last accessed)
7. World Health Organization. http://www.who.int/servicedeliverysafety/areas/people-centred-care/en/ (12 January 2017, date last accessed)
8. Donabedian A. The quality of care. How can it be assessed? *J Am Med Assoc* 1988;**260**:1743–8.
9. Nambiar B, Hargreaves DS, Morroni C *et al.* Improving health-care quality in resource-poor settings. *Bull World Health Organ* 2017;**95**:76.
10. Bollyky TJ. http://www.css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/resources/docs/Public%20Health.pdf (12 January 2017, date last accessed)
11. US CDC. http://www.cdc.gov/globalhealth/healthprotection/ghs/about.html (12 January 2017, date last accessed)
12. World Health Organization, Geneva, Switzerland. http://www.who.int/csr/disease/ebola/funding/en/ (20 May 20 2017, date last accessed).
13. WorldHealth Organization, Geneva, Switzerland. http://www.who.int/emergencies/zika-virus-tmp/response-zika-2017.pdf?ua=1.
14. World Health Organization, Geneva, Switzerland. http://www.who.int/about/who_reform/emergency-capacities/who-health-emergencies-programme-progress-report-march-2016.pdf?ua=1 (1 June 2017, date last accessed).
15. Tambo E, Ugwu EC, Ngogang JY. Need of surveillance response systems to combat Ebola outbreaks and other emerging infectious diseases in African countries. *Infect Dis Poverty* 2014;**3**:1.
16. Sikka V, Chattu VK, Popli RK *et al.* The emergence of zika virus as a global health security threat: a review and a consensus statement of the INDUSEM Joint working Group (JWG). *J Global Infect Dis* 2016;**8**:3.
17. World Health Organization: http://www.who.int/emergencies/zika-virus/en/ (12 January 2017, date last accessed)
18. Heymann DL, Chen L, Takemi K *et al.* Global health security: the wider lessons from the west African Ebola virus disease epidemic. *Lancet* 2015;**385**:1884–901.
19. Médecins Sans Frontières (MSF). https://www.msfaccess.org/sites/default/files/AMR_MSF_analysis_Oneil.pdf (12 January 2017, date last accessed)
20. World Health Organization. http://www.who.int/hac/techguidance/health_of_migrants/en/ (12 January 2017, date last accessed)
21. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q* 2005;**83**:457–502.
22. Kruk ME, Chukwuma A, Mbaruku G *et al.* Variation in quality of primary-care services in Kenya, Malawi, Namibia, Rwanda, Senegal, Uganda and the United Republic of Tanzania. *Bull World Health Organ* 2017;**95**:408–18.
23. Agency for Healthcare Research and Quality: http://www.ahrq.gov/professionals/quality-patient-safety/pfp/index.html (12 January 2017, date last accessed)
24. Haynes AB, Weiser TG, Berry WR *et al.* A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med* 2009;**360**:491–9.
25. Alkema L, Chou D, Hogan D *et al.* Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *Lancet* 2016;**387**:462–74.
26. Board on Global Health; Institute of Medicine; The National Academies of Sciences, Engineering, and Medicine. *Improving Quality of Care in Low-and Middle-Income Countries: Workshop Summary.* Washington, DC: National Academies of Science, Engineering, and Medicine, 2015.
27. World Health Organization. http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_39-en.pdf?ua=1&ua=1 (12 January 2017, date last accessed)
28. World Health Organization, Geneva, Switzerland. http://www.who.int/servicedeliverysafety/areas/qhc/gll/en/ (7 July 2017, date last accessed).
29. Nisingizwe MP, Iyer HS, Gashayija M *et al.* Toward utilization of data for program management and evaluation: quality assessment of five years of health management information system data in Rwanda. *Glob Health Action* 2014;**7**. doi:10.3402/gha.v7.2582.
30. Admon A, Bazile J, Makungwa H *et al.* Assessing and improving data quality from community health workers: a successful intervention in Neno, Malawi. *Public Health Action* 2013;**3**:56–9.
31. Odaga J, Henriksson DK, Nkolo C *et al.* Empowering districts to target priorities for improving child health service in Uganda using change management and rapid assessment methods. *Global Health Action* 2016;**9**. doi:10.3402/gha.v9.30983.
32. Wagenaar BH, Gimbel S, Hoek R *et al.* Effects of a health information system data quality intervention on concordance in Mozambique: time-series analyses from 2009–2012. *Popul Health Metr* 2015;**13**:1.
33. Ivers NM, Grimshaw JM, Jamtvedt G *et al.* Growing literature, stagnant science? Systematic review, meta-regression and cumulative analysis of audit and feedback interventions in health care. *J Gen Intern Med* 2014;**29**:1534–41.
34. Aqil A, Lippeveld T, Hozumi D. PRISM framework: a paradigm shift for designing, strengthening and evaluating routine health information systems. *Health Policy Plann* 2009;**24**:217–28.
35. MEASURE Evaluation. https://www.measureevaluation.org/resources/publications/sr-08-44 (12 January 2017, date last accessed)