What does 'adaptive programming' mean in the health sector?

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Key messages

- There is considerable interest in the concept of adaptive development and what it may look like in different sectors, including health.

- Adaptive types of programming from the health sector are relatively advanced; as we work towards the Sustainable Development Goals (SDGs), experiences in health can provide useful lessons for other areas of development.

- The international health community may not use the label 'adaptive development', but many are already conducting adaptive work. 'Quality improvement' is one such tried and tested approach.

- Quality improvement is problem-driven, iterative and flexible. The methodology and principles can be used to identify, test and implement changes in any context or part of a health system.

- Quality improvement is being used successfully, but there is still limited experience and evidence of how to apply its values and philosophy beyond the project level and embed it within national structures and systems.

- Systems thinking and analysis of the political economy environment may help embed complex interventions like quality improvement and sustain their achievements.

Does the health sector already do adaptive development?

There has been a surge of interest from donors and the international development community in the concepts of 'doing development differently' and adaptive ways of working. This coincides with debates on how to achieve the Sustainable Development Goals (SDGs) and the shift in approaches that will be needed in order to do so. There is an extensive literature from the Overseas Development Institute (ODI)[1] and beyond on the approaches and justifications of doing development differently. So far, though, there has been little debate on what adaptive development principles mean when applied to health programming, and how or, indeed, if we are already using them.

The ideas of doing development differently are not radical or new, but they do hold an implicit rejection of the blueprints and best practice models for development so often conceived by international experts in recent years. Its crux rests on:

- Working in problem-driven and politically informed ways;
- Being adaptive and entrepreneurial;
- Supporting changes that reflect local realities and are locally led.

International health experts face many similar challenges to those articulated by the broader international development community, but combined as a single entity these ideas are novel to the health sector. This briefing posits that many of the principles and features of adaptive development already exist in health programmes and projects – we just do not usually think of or define our work using this term. We have rich experience using techniques to strengthen health services that are problem-driven, flexible, adaptive and, crucially, led by local initiative. The *extent* to which the approaches really do have local ownership is often dictated by whether they are project-led, researcher-led, or integrated into the health system.

We have numerous terms for research and techniques that are used to improve health care and health systems in these adaptive ways. Well-known examples are 'action learning cycles', 'quality improvement' and 'participatory action research'. Other approaches are less overtly adaptive, and may come under the guise of operational, applied or implementation research (Peters et al., 2013), 'lean thinking' (Powell et al., 2009), 'six sigma' (Varkey et al., 2007) or complex adaptive systems (Paina and Peters, 2011) approaches. Academic and research institutions, health ministries and providers, non-governmental organisations (NGOs) and donors develop and use these approaches according to their disciplinary backgrounds.

The paper describes a set of principles and ideas known as 'quality improvement', arguably an archetype of adaptive programming. We present two case studies to illustrate how quality improvement can result in better health outcomes, delivery of health services and stronger health systems in a progressive and inclusive way. We also question the shortcomings of quality improvement and many other health interventions in failing to consider the importance of political dynamics in health systems – which would be essential to be classed as truly adaptive development. Advocates of doing development differently recognise that reformers should consider political conditions as they may enable – or obstruct – progress (Wild et al., 2015), yet these are often overlooked or poorly connected to the technical approaches that dominate health programming.

How can we be politically informed?

Some health programmes which are technically sound fail to deliver the expected change or results; a lack of institutional and political capacity to deliver reform can help explain some of these problems.

Understanding how political structures, power relations and historic legacies shape the motivations of different stakeholders and the behaviours within systems is therefore an important piece of the puzzle, alongside considering the financing gaps or technical understanding of what works for health reforms. This means looking at the incentives and norms that explain why and how heath systems operate as they do – in other words, the political economy of those systems.

Recent work on political economy has begun to move from recognizing that 'politics matters' for reform, to thinking about the options for what to do differently in light of what is known about the political economy. This puts greater emphasis on politically smart and adaptive ways of working, that can navigate vested interests, challenge the status quo, or identify what is politically possible. (Wild, 2014)[2]

Quality improvement

'Quality improvement is based on the principle that there is an opportunity for improvement in every process and on every occasion' (Hughes, 2008)

The concepts of quality improvement (QI) were developed in Japan after World War II to advance processes in the manufacturing industry (Kaizen approach) and were

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1   See resources available at www.odi.org/doing-development-differently-0

2   Resources available at http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8334.pdf

later translated to other sectors. Quality improvement approaches under many different guises have been systematically applied in health care settings since the 1980s in the UK and other high-income countries and there has been a steady growth in uptake of QI approaches in middle- and low-income countries since the late 1990s. The US Agency for International Development (USAID) is a major funder of project-led QI initiatives for health, and a broad range of health NGOs and other bilateral donors have also made substantial investment in quality improvement activities and learning.

Definition of 'Quality improvement' in public health

'A cyclical process of measuring a performance gap; understanding the causes of the gap; testing, planning, and implementing interventions to close the gap; studying the effects of the interventions; and planning additional corrective actions in response' (Tawfik et al., 2010).

The cyclical nature of quality improvement means it is a continuous effort to achieve measurable and beneficial change; it might focus on efficiency, effectiveness, performance, accountability, outcomes, or other indicators of equity and quality in health services (Cofie et al., 2014). Its techniques can be used to identify parts or processes in any part of the health system that do not work well and then improve them. It is not a single technique, and the nomenclature and precise features vary among the institutions that use it[3]. It is actually a philosophy more than a technique, using a set of shared principles and methodology, but with infinite diversity in methods. The methods selected will depend on the level of the health system where change is wanted, and the methods chosen for QI interventions are as varied as the contexts in which they have been applied. For example, at primary health care level this may start with a quality audit cycle, and at national level the focus may be more on dimensions of coverage and equity. Optimal results are dependent on stakeholders at every level of a given health structure adopting a culture of improvement, working to identify gaps and suggesting where improvement can occur in routine health activities. The stakeholders will articulate an aim, and then choose, develop and apply tools to improve how that part of a health system is organised or designed, then test changes in those processes (Massoud et al., 2001; O'Neill et al., 2011; Paina and Peters, 2011).

### Quality improvement interventions are usually based on these questions:

Step 1: What are we trying to accomplish? Identify what problem or process needs to be improved and set a goal to improve it

Step 2: How will we know if the change is an improvement? Understand the problem and use data to analyse processes and measure outcomes to determine if a change leads to improvement

Step 3: What changes can we make that will result in improvement? Use insight from local stakeholders in the system, creative thinking and others' experiences to develop change ideas or strategies for improvement[4]

Step 4: Does the change make an improvement? Test the change, usually through plan-do-study-act (PDSA) cycles (Figure 1), in which changes are tested

Figure 1: PDSA cycles
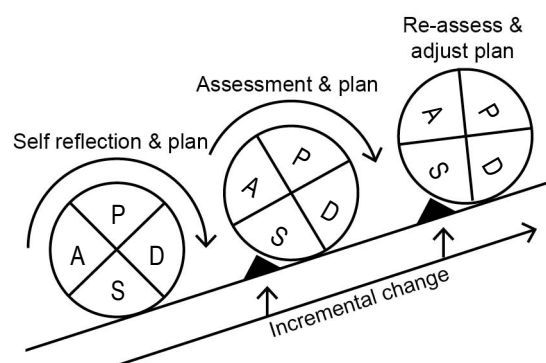
PDSA cycles are fundamentally adaptive and iterative processes. They are used to do short-term trials of interventions, to create improvements. The process is to plan a change (develop idea and collect baseline data), do it (try it out and collect data), study it (compare the data, observe the results) and act on the basis of the results (implement, or modify the idea).

Cycles may run sequentially and iteratively – where one small change is tested after another; or in other circumstances, it can be appropriate for several change cycles to run concurrently. Sequential changes can be used both to refine the strategy and to introduce and test more strategies to address the same problem.

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3   Other names include, continuous quality improvement; collaborative quality improvement total quality management; Six Sigma, etc

4   Resources available at http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/plan_do_stucdy_act. html#sthash.ENRD2wg5.dpuf; http://www.urc-chs./sites/default/files/AModernParadigm.pdf; http://ihi.org/resources/Pages/HowToImprove/.aspx

Data are essential in quality improvement. Activities and interventions are guided by data and their feedback between QI teams and implementers. The use of data is central to maintaining effectiveness, transparency and accountability throughout the quality improvement processes (Paina and Peters, 2011). Data need not be complex or require a high level of skill to analyse, but they should be locally collected and owned.

Adaptation It is important the ideas are tested on a small scale so as to make it possible to refine or abandon changes that have little impact or poor consequences and try those that work well on a larger scale. The PDSA approach works on the assumption that not all changes will result in improvement, but testing and adapting ideas reduces the risk of introducing ineffective large-scale changes.

Teamwork Most types of quality improvement approaches are based on team effort. The rationale is that to improve processes in any part of a health system involves interaction between different types of people who can identify different weaknesses, contribute to and cooperate in the improvement process. The team approach facilitates the development of a culture of quality in which everyone has awareness of and commitment to quality. QI should aim to be an open and consultative process, to ensure all types of stakeholders contribute according to their experience or expertise, learn what does or does not work in their context and have ownership of improvement processes. Teams may include health workers, service users (and their families and communities), researchers, policymakers and planners, public health professionals and budget holders. A diverse team should therefore be able to contribute to better patient outcomes (health), system performance (care) and professional development (learning) (Batalden and Davidoff, 2007).

Communities Engaging service-users and other community members into quality improvement teams is important, particularly as low- and middle-income countries work towards universal coverage and improved accessibility and equity of health services. Communities and service-users are 'co-producers' of health (WHO, 2006), this concept of co-production of health services and the co-creation of health reinforces the emphasis put on teamwork.

> *'Health isn't something that can be handed to people; it is a state that they must produce themselves by interacting with a health care system'* (Ashraf, 2013).

The underlying assertion is that, for a population to benefit from good health care provision, people need to trust the system, services, treatment and pubic health messages enough to seek care and follow medical advice. Community and service-user involvement in improving these processes supports the building of trust and appropriate services.

Pitfalls There are several documented areas where quality improvement interventions can fail to live up to expectations. Quality improvement benefits from being led by a well-informed and enthusiastic 'champion', but poor leadership and low capacity for QI will most likely be coupled by poor levels of improvement. Project-driven QI is often difficult to sustain after the life-time of the project. Unclear or un-measurable objectives and indicators can result in flawed implementation of a change, which takes longer to adapt or is entirely unsuccessful. Change ideas may be difficult if there is a lack of creativity in the quality improvement team, or if the team members attempt to work on areas where they don't have the power to implement changes. In some contexts there may be resistance to doing things differently or lack of trust between stakeholders.

Quality improvement as adaptive development?

Quality improvement activities, if they follow the steps and adhere to the values described, adhere to many of the principles of adaptive development. There are some caveats (Table 1), which also point to the ways in which the potential gains of quality improvement could be maximised.

Table 1: How adaptive is it?

Adaptive development	Quality improvement fit with adaptive development
Problem-driven and politically informed	Always problem-driven. Approach does not have any intrinsic feature that would drive considerations of the political environment. Frequently but not necessarily apolitical.
Adaptive and entrepreneurial	Concepts entirely dependent on being adaptive. Considerable scope for entrepreneurial and innovative working, but dependent on capacity and creativity of quality improvement teams.
Locally led	Quality improvement teams comprise local stakeholders. Quality improvement agenda may well be donor-led.

Case studies: quality improvement for strengthening community health systems

Globally, linking the world's most inaccessible populations to primary health care services remains a great challenge and improving community health programming as part of the broader strengthening of the health system is essential. Quality improvement is applicable to tackling problems in processes at all levels and in all aspects of health systems. The open and simple methodology has contributed to better and more equitable provision of health services in many contexts; it can be used to reach out to local communities and practitioners to identify progressive ways to deliver services to those people most at risk of not being reached. QI has clear potential to continue to contribute to the part of SDG 3 that aims to make coverage of health care universal. Two case studies of quality improvement interventions aiming to improve community provision of maternal health are presented as examples of quality improvement in practice, and to contrast quality improvement at national and project level.

Nationwide Quality Improvement in Ghana

In 2008, the Ghana Health Service introduced a national policy to improve maternal and neonatal survival; this included increasing skilled heath care during labour, delivery and the immediate post-partum period, and surveillance visits within the first week of life. Using a quality improvement methodology, the approach was tested then scaled up nationally over three years. The mechanism for this was Project Fives Alive (PFA), a collaboration between public and faith-based health care providers and the Institute for Healthcare Improvement (an INGO). The motivation for the uptake of this approach was to accelerate achievement on the maternal health Millennium Development Goal.

The PFA frontline health workers use quality improvement to diagnose process and system failures that can lead to preventable child deaths. An adaptive 'driver model' is a type of theory of change that was used to help identify determinants of improved child survival and facilitate local changes (Twum-Danso et al., 2012).[5] They conduct QI by developing aims, using transparent processes of data collection, frequent data monitoring and development and refinement of ideas for continuous improvement through PDSA cycles. Health staff learn from each other to develop, test and implement different ideas for improvement appropriate to their own health facilities, through a peer learning framework. QI teams based in health facilities ensure the different changes are tracked and are responsible for local data collection and review related to each activity or approach.

Selected activities and early outcomes of PFA:
- Health facilities have adopted new practices, e.g. triaging system for severely ill women and children, more culturally acceptable birthing positions, linking new mothers to community health officers to improve postnatal care (PNC).
- Links are made between traditional birth attendants, community health officers and community volunteer officers; home visits are made.
- Cultural barriers are addressed that prevent women from announcing pregnancy and seeking care in the first trimester.
- Indicators have shown improvement: PNC coverage has increased (mean of 15% to 71% for visits within first 48 hours, and from 0% to 53% for visits on Day 6 or 7) and mean skilled delivery has increased from 56% to 82%. Improvement in mortality rates have not yet been reported.

Within four years the approach to identifying service gaps and developing ways to respond to them was being scaled up nationwide. The strategy promoted the spread of the locally effective innovations and the building of skills across all levels of the health sector relating to maternal health. There has been success in 'broad and deep adoption' of quality improvement and improved capacity by all level of stakeholders. High staff turnover is reported as the main difficulty.

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5   See also http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/driver_diagrams.html

Quality improvement projects in Ethiopia

Improvement of health service quality and improving maternal health outcomes are national priorities in Ethiopia, although there is no dedicated national strategy for quality improvement in maternal health. A number of very successful QI projects run through international partnerships in the decentralised health system at regional level. Several of these focus on improving maternal health outcomes. Strengthening community health systems through QI has shown particular promise, for example, the Community Health Worker Improvement Collaborative supported by USAID (Shrestha, 2012) and the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP), a project funded by The Gates Foundation (Stover et al., 2014); there are also facility-based QI projects such as the Maternal and Child Health Integrated Program funded by Jhpiego.

Community projects have taken QI methodology to find ways to strengthen community health systems, improve effectiveness of Ethiopia's village-based health extension workers and increase coverage of services by supporting existing community groups and organisations. The collaborative approaches of these projects are similar to those used in the national Ghana programme.

MaNHEP, for example, undertook the following activities before starting PDSA cycles: (i) orientation of regional, district and health centre staff; (ii) setting up and training a team on data management and use, content training and supervision; (iii) establishing quality improvement teams from existing community groups; and (iv) holding regular team meetings, to report health data on the relevant topic (maternal health), brainstorm change ideas, and regularlry review progress. The inclusive structure of the team was essential, it included representatives from community groups to form a community management committee to identify and strengthen the processes through which the groups participated and interacted with each other. Quality improvement teams innovated and tested 38 change ideas and ultimately ranked them in order of effectiveness and usefulness.

Increased reporting of pregnancy, which was closely linked with increased provision of PNC in the two study zones (from 5% to 51% and from 14% to 47%) was considerably higher than the national increase. Health extension workers reported feeling better supported, community team members were more accountable to their communities and it was recognised that the intervention created a mechanism to identify obstacles to service delivery (Tesfaye et al., 2014).

The MaNHEP project staff highlighted that the lessons learnt and QI approach used should be broadly transferrable to maternal health service provision throughout Ethiopia through the new governance structure of the Health Extension Programme and using the newly built capacity (Stover and Tesfaye, 2013). Despite strong evidence on the success of this and other donor-funded quality improvement projects in Ethiopia, there is not yet evidence that the government will adopt a national strategy or policy relating to quality improvement for maternal health or other parts of the health system.

Evaluating quality improvement

If the potential of QI to strengthen health systems is really to be maximised then it needs to be embedded. This should occur in two ways: (i) in long-term national-level health strategies and political structures; and (ii) in the values of health providers and managers at district level, so as to institutionalise commitment to improving quality and performance. Debates about the best ways to achieve this and the mix of political involvement, engagement and buy-in to quality improvement are still needed.

The successes of the steady incremental change seen in the Ghana and Ethiopia case studies have similar reasons; projects used local knowledge to improve and develop culturally appropriate services and community outreach to increase demand and acceptability of maternal health services. Importantly, they were both dependent on external catalysts to provide funding and expertise and neither project highlighted any efforts to be politically informed. Further evaluation brings to light important limitations and lessons from these cases for adaptive programming and embedding QI.

Embedding quality improvement approaches and values

The Ghana case study is an example of quality improvement introduced through an international collaboration and then integrated as part of national policy on maternal health; it is a success not only because of improved health outcomes but also because of the breadth of stakeholder engagement and increased capacity of managers and providers. However, scale-up has been slow and the programme has remained vertical, albeit at a national scale. Ghana in fact had existing experiences of QI initiatives. One previous QI project for malaria services is documented as having limited success, which dampened enthusiasm for greater uptake of quality improvement across the Ghana Health Service (McLaughlin et al., 2012). In our case study, there is evidence of a progressive and inclusive approach by PFA to incorporate national structures and international and faith-based organisations, which has facilitated a sustainable and successful programme. Despite this, there appear to be limited programme efforts to engage politically or consider ways to instil professionalism and the values of improvement into the health system as a whole.

A great many quality improvement health activities worldwide have been shown to produce significant improvements in health outcomes (Franco and Marquez, 2011), but these commonly occur at project level, as with the Ethiopia case study, so benefits are confined to that project's lifespan. This constrains the long-term potential and reach of quality improvement. For example, in Ethiopia projects that stand in isolation are encouraged – perhaps inadvertently – through a partnership mechanism which governs the relationship between the health sector and development partners (including NGOs, the private sector and civil society). The political environment does not create strong incentive for international partners, many of whom focus on the technical aspects of programming, to negotiate the complexity of broader national health system. So, while partners are permitted to participate in health programming at all levels, they tend to be concentrated at local levels of the decentralised health system.

The projects in Ethiopia are not unusual, QI interventions naturally focus on identifying 'immediate' micro-level problems in subsystems of service provision or in vertical programmes (Blaise and Kegals, 2002; Kwamie et al., 2014). These efforts are of course important, for building local health management capacity as well as improving service provision, but they are also limited. Embedding a culture of quality improvement at system level would need, for example, understanding and responsiveness of the political economy environment, such as the dynamics of organisational culture and decision-making. 'QI collaboratives' do attempt it; but, our case studies indicate that the political economy environment is not a natural consideration in QI interventions; indeed QI, whilst being problem-driven and iterative, is often entirely apolitical and engaging with politics is often a very uncomfortable role for health professionals. Real adaptive development necessitates being politically informed and QI efforts are likely to have more potential if there is acknowledgement that processes are a product of the political economy of the broader health system. Without such efforts the sustainability and long-term effectiveness of quality improvement can appear contentious.

Systems thinking and adaptive programming

The health sector may well be relatively advanced with regard to most elements associated with adaptive development, but it is not yet immune to rigid, linear and best practice approaches. Global health initiatives have long been constrained by these and many donors require log-frames that assume solutions can be known from the outset and that result in programme designs that are far from flexible or adaptive. The end product is then more likely to be rapid, short-term change rather than stronger health systems, service delivery processes and institutions in the long term (Paina and Peters, 2011).[6]

A health system is, inherently, a constantly changing and complex adaptive system (Paina and Peters, 2011). Quality improvement does not necessarily look to the whole system, or the political economy features that govern that system. The potential of QI to really contribute to strengthening health systems is more likely if it employs a politically informed whole-system strategy, emphasises the importance of adaptation and flexibility to emerging issues at the micro level and enables non-linear and dynamic approaches (Sarriot and Kouletio, 2015). While there is a real appetite for systems thinking, the tension for adaptive development in the health sector lies in how to manage whole-system approaches in conjunction with local freedom to shape better services through flexible and adaptive approaches of quality improvement. Debate and learning on this will have relevance across the international development sector as it comes to developing strategies for the SDGs and where there are similar challenges in terms of how to take micro incremental improvements to scale without losing the defining features of adaptive development.

Acknowledgements

6 'Being comprised of many interacting components, they have the capability to self organise, adapt, or learn from experience' (Paina and Peters, 2011)

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