Maintains

Research supporting social services to adapt to shocks

Working Paper: What is a Shock-Responsive Health System?

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About Maintains

Maintains aims to save lives and reduce suffering for people in developing countries affected by shocks such as pandemics, floods, droughts, and population displacement. This 5-year programme, spanning 2018–2023, is building a strong evidence base on how health, education, nutrition, and social protection systems can respond more quickly, reliably, and effectively to changing needs during and after shocks, whilst also maintaining existing services. With evidence gathered from six focal countries – Bangladesh, Ethiopia, Kenya, Pakistan, Sierra Leone, and Uganda – Maintains is working to inform policy and practice globally. It also provides technical assistance to support practical implementation.

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For more information about the programme, visit www.maintainsprogramme.org and for any questions or comments, please get in touch with maintains@opml.co.uk.

Introduction

The world is seeing an increased incidence of shocks – whether from natural hazards, epidemics like COVID-19, or conflict. Shocks are often responded to through humanitarian systems that run parallel to national public service delivery systems. This approach misses opportunities to strengthen national systems to manage future shocks, and is increasingly viewed as being unsustainable. Under the Maintaining Essential Services After Natural Disasters (Maintains) programme we are undertaking operational research across six countries (Pakistan, Bangladesh, Ethiopia, Kenya, Uganda, and Sierra Leone) that seeks to understand how national systems can be more responsive to shocks – scaling up to address needs that arise due to the shock, whilst maintaining routine service delivery and avoiding indirect effects from service disruption.

In this working paper, we set out a model of shock-responsiveness in health systems. This builds upon an evidence review (Witter and Russell, 2019) and background paper (Witter, 2019) prepared for Maintains by Professor Sophie Witter, and an initial conceptual model developed by the Centre for Humanitarian Change for their work under Maintains in Kenya and Uganda. The purpose of this model is to standardise the conceptual approach underpinning country and cross-country research under Maintains, and to facilitate comparative learning and synthesis. The model will be iterated based on emergent findings throughout the life of Maintains, as well as other developments in the literature and evidence base. The model has also contributed towards a policy brief prepared for the UK Department for International Development (DFID) on health system resilience in the context of COVID-19 Witter, 2020), as well as a detailed literature review for Maintains on COVID-19's impact on health services in low- and middle-income countries, recovery measures, and potential reform policies, drawing also on learnings from past disease outbreaks (Nair, 2020).

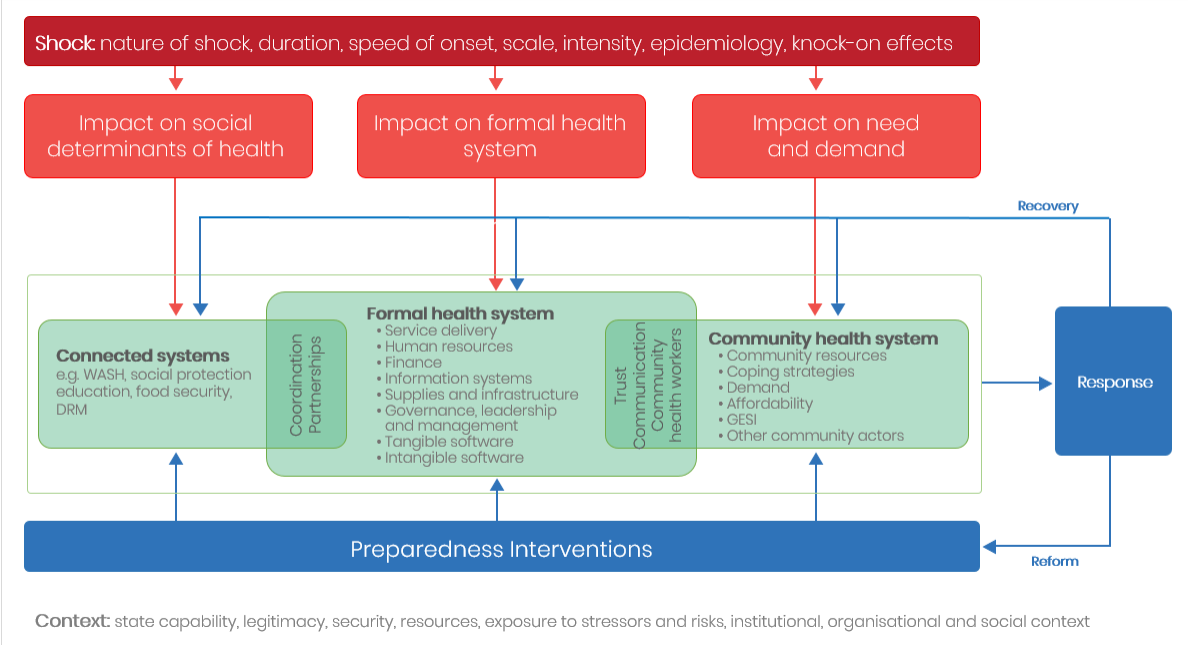
The concept of shock responsiveness overlaps with the concept of resilience and borrows extensively from the literature on that subject. Resilience is a broader concept – taking into account a system's ability to manage all kinds of change, not just shocks – as seen in the recent focus on 'everyday resilience' (Gilson *et al.*, 2017). Resilience is also a contested term in the literature (Abimbola and Topp, 2018), and has been challenged based on its genesis within the domain of ecology, which models change as mechanistic. Increasingly, health systems are understood as complex, adaptive social systems whose outcomes depend on the decisions and interactions of the people within them (Barasa, Cloete and Gilson, 2017). This has seen a shift away from an emphasis on technical interventions that assume linear, mechanistic change, towards the need to create a conducive environment that supports and influences people to act in ways that create system resilience. We have tried to take into account this thinking in the model we present below. We have also tried to learn from one of the other critiques of the concept of resilience: that it often implicitly focuses on restoring the status quo that existed before a shock, whereas often that status quo is not a desirable state (Topp *et al*., 2016). Based on this understanding, part of shock responsiveness involves capitalising on the opportunity that shocks present to improve health systems and to make them more effective and better prepared to be responsive to future shocks.

Maintains is actively seeking input and reflection on this model from others working in this space. This note seeks to contribute to the community of practice working on resilient and shock-responsive health systems and health preparedness.

The model

The model is based on the idea that a formal health system has strong interdependencies with community health systems and other connected social systems, such as education, social protection, and food security. A shock affects all parts of this: directly affecting the health system, changing needs and demand for services at the community level, and impacting on the social determinants of health. The way these systems interface with a shock involves four phases: preparedness, response, recovery, and reform. These phases can happen simultaneously, for example, with broader recovery activities overlapping with response activities, particularly in situations where systems face multiple shocks.

Figure 1: Model of a shock-responsive health system



Social systems

Health outcomes are dependent upon the formal health system and its interactions with the community and other connected systems.

The formal health system

The formal health system includes both ‘hardware’ and ‘software’ components. Hardware components include the six ‘building blocks’ within the traditional model of a health system: the health workforce; health information systems; supplies and infrastructure; finance;

governance, leadership, and management;[1] and service delivery (World Health Organization, 2010). Software relates to the people within the system and includes both tangible software (their capacity and the formal processes by which people act) and intangible software (the informal rules, values (Whyle and Olivier, 2010), and norms that shape relationships and interactions among actors, and which are themselves shaped by the socio-political context in which the health system operates) (Sheikh *et al.*, 2011). The literature shows that both hardware and software components of a formal health system are important in determining how well that system can be responsive to a shock (Kruk *et al.*, 2017). Many of these factors have already been identified as underpinning the success of the health systems of Hong Kong, Singapore, and Japan in dealing with COVID-19 (Legido-Quigley *et al.*, 2020).

The formal health system includes both the public sector (directly) and private sector (through the governance building block, which covers the stewardship and regulation of the private sector).

The literature has identified particular components of the hardware building blocks that are most relevant to the ability of a system to respond to shocks (Hanefeld *et al.*, 2018; Nuzzo *et al.*, 2019; Witter, 2020). For the first four building blocks, these include the following:

- A strong, committed, well-distributed, and skilled **workforce** that is supported, protected, recognised, and encouraged, particularly given the strain they are put under during emergencies, especially female health workers, who often have to balance family pressures as well as the increased workload (O'Donnell *et al*., 2020).
- Sufficient **supplies**, logistics, equipment, and infrastructure, with emergency stocks, procurement plans, and plans to weather interruptions in relation to critical infrastructure and transportation.
- **Information** systems with surveillance and early warning systems that integrate other sector data with health management information systems, and that cultivate informal and local data sources that can overcome the inherent delays in producing formal data, alongside clear channels of communication between health system actors and other sectors, risk communication protocols, and robust engagement with patient populations.
- Adequate and predictable **finance**, with fiscal stabilisers, reserve accumulation mechanisms, robust expenditure management systems, and flexible access to financing.

In terms of **governance** (Blanchet *et al*., 2017), **leadership** (Fridell *et al*., 2020), and **management**, it is imperative to pre-emptively build a legal and policy foundation to guide responses to shocks, covering all levels of the health system, private and non-profit sectors, international agencies, and inter-sectoral coordination (Kruk *et al*., 2015). Planning for shocks, building networks, and appropriate decentralisation to allow decision-making by local managers helps to provide a platform for responding to shocks when they occur. For example, the limited decentralised decision space was highlighted as a limitation of the response to Ebola in West Africa (Abimbola and Topp, 2018). Furthermore, shocks often affect countries in multiple ways, and interdependencies with other sectors, such as social

[1] Although leadership and governance is sometimes defined as a software component.

protection, WASH, nutrition, and Disaster Risk Management (DRM), need to be identified, and convergent approaches planned for in advance.

The literature also emphasises the importance of establishing a clear and flexible leadership and command structure prior to an event, having flexible management structures to cope with rapidly evolving circumstances, the importance of collaboration, coordination and partnerships within and outside of the health system, and promoting dispersed and distributed leadership which incentivises the emergence of positive adaptations throughout a system, rather than relying on prescriptive solutions from above (Barasa *et al*., 2018).

In terms of **service delivery**, the literature focuses on surge capacity (the ability to call on human and capital resources to surge the level of care during shocks), altered standards of care (having adaptable response plans to guide actors in allocating scare resources and health services), and having strong Infection Prevention and Control systems.

In terms of **tangible software**, the literature argues that because not everything can be planned for, health system actors need to have 'adaptive resilience' to manage responses to shocks in real time, to complement the 'planned resilience' that comes from preparedness activities. This includes the cognitive capacity (Barasa *et al*., 2018) to collect, integrate, and analyse formal and informal information, make sense of it, and develop appropriate responses; and planning and management capabilities, including to anticipate and cope with uncertainties and manage interdependencies, relationships, and feedback. Overall, the capacity to manage actors, networks, and institutions that have an influence on the health system are crucial determinants of how shock-responsive that system can be.

The importance of **intangible software** – the norms, values, incentives, and relationships that drive behaviour – is gaining increasing prominence in the field of health systems and policy research, including its importance in enabling health systems to respond to shocks, particularly through the importance of values and the role of trust (Palagyi *et al.*, 2019). Values include the political priority given to health during a shock, the values of the society in which the health system and its workers are embedded, and the personal, professional, and societal moral landscapes that impact on how difficult decisions are negotiated (Hanefeld *et al.*, 2018.

It has been established that trust, and in particular institutional trust between communities and the health system (Topp and Chipukma, 2016) is a precondition for resilience: *'Health systems that earn the trust and support of the population and local political leaders by reliably providing high-quality services before crises have a powerful resilience advantage*' (Kruk *et al*., 2015). For example, it has been established that community distrust of frontline health services generated resistance to seeking care and implementing infection control measures during the Ebola crisis (Thiam *et al*., 2015). Interpersonal trust between actors within the health system – so that health workers are willing to engage during shocks, and particularly epidemics – has also been shown to be extremely important (Nyarko *et al*., 2015.

Interpersonal trust within the health system can be promoted (Witter and Hunter, 2017) through establishing an organisational culture with a strong public mission that leads to pro-social decision-making, supportive supervision, and ensuring that staff feel that they are treated fairly and given the resources required to perform. The literature suggests that this needs to be underpinned by leadership practices that: build trust, motivation, and

empowerment; create a learning organisational culture that promotes collaboration; are amenable to change through coaching and mentoring; and can nurture resilience (Barasa *et al*., 2017). Institutional trust can be promoted through community engagement, promoting responsiveness to community demands and priorities (including through social accountability), and taking into account cultural preferences. For example, community monitoring was found to increase trust and confidence in health workers, and to improve the perceived quality of care provided by clinics, in Sierra Leone, which led to increased likelihood of reporting symptoms and seeking care during Ebola, and lower mortality (Christensen *et al*., 2020).

Community health systems

Community health systems comprise a large number of actors engaged in supporting and mediating the household production of health, and access to health services (Sacks *et al*., 2019). This includes community health workers, who provide a bridge to the formal health system, informal providers, and other community organisations and governance structures, all of which interact in complex ways (Schneider and Lehmann, 2016).

Institutional trust in the formal health system at the community level, the quality of and engagement with informal providers, and the collective impact of actors on promoting health-seeking and health behaviours and leveraging the collective resources of communities (George *et al*., 2016) influence the effectiveness of community health systems and their interface with the formal health system.

Other factors at the community level also impact on households' access to health, and their health-seeking behaviour, including the ability to pay for health services, perceptions of risk, community and individual ability to withstand shocks, and household and gender dynamics. The resilience literature emphasises the importance of dismantling barriers to healthcare access so that the public can access care during shocks (Nuzzo *et al.*, 2019), including physical, economic, and social barriers.

Communities themselves are heterogeneous, complex social systems (George *et al.*, 2018) that are heavily influenced by intangible software issues such as contested power relations and discrimination. The literature emphasises how this works against universal solutions and requires local problem solving, experimentation, and learning about what works to address specific problems in a particular context, and mobilising commitments to implement these context-specific solutions.

The literature increasingly recognises the importance of effectively engaging with communities and their institutions during shocks, particularly learning from the roles communities played in overcoming the Ebola crisis in West Africa (Marston *et al.*, 2020). Community engagement – including the formation of community-based surveillance teams and treating communities as active participants of health response efforts, not just passive recipients — was found to be crucial in Liberia. Inclusive dialogue, efforts to enhance accountability, and engagement of local actors in the formulation and implementation of recovery strategies and service delivery are seen as important in rebuilding institutional trust and community resilience after shocks (Konyndyk and Saez, 2020).

Connected systems

Health outcomes depend on other sectors beyond health, such as education, social protection, WASH, food security, and DRM, both as influencers of the social determinants of health, but also because of interdependencies in service delivery. For example, education affects the impact of behavioural change interventions, and social protection affects the ability of households to pay for health services. All other sectors have gendered considerations which impact on access to health services. Coordination and partnerships between the health system and other sectors are important in ensuring positive interdependencies and convergence in service delivery.

Shocks

When a shock hits, its impact and the appropriate response will depend on the nature of the shock, and its duration, speed of onset, scale, intensity, epidemiology, and knock-on effects. A shock has three direct impacts on the three components of 'social systems':

- on the formal health system – impacting on the building blocks (for example, if health workers are infected by an epidemic and can no longer provide services); this includes impact on the private sector and knock-on effects on the public sector;
- on the community – impacting on the needs of the population, and on their ability to demand health services (for example, through weakened ability to pay if there is an economic shock, or through changes to their mobility during a lockdown); and
- on connected systems – impacting on the other social determinants of health (for example, if food insecurity increases as a result of disrupted social protection systems, or domestic violence increases during periods of lockdown).

System reaction

System reactions can be classified into four phases: preparedness, response, recovery, and reform.

Preparedness relates to building the planned and adaptive resilience of a system so that it is able to be responsive to shocks.

Response relates to the immediate service delivery impacts of the shock, including to maintain basic service delivery whilst dealing with the changed population needs arising from a shock. The disruption of routine services during shocks can have grave impacts. For example, it has been shown that during COVID-19, even a modest decline of 10% coverage of pregnancy-related and newborn healthcare would lead to an additional 1.7 million women who give birth and 2.6 million newborns experiencing major complications, and 28,000 maternal deaths and over 160,000 infant deaths (Riley *et al.*, 2020).

System responses can be classified as attempts to 'absorb', 'adapt', or 'transform' (Blanchet *et al.*, 2017, although systems may not be successful and may mal-adapt or collapse in the face of severe shocks. **Absorb** relates to delivering the same level (quantity, quality, and equity) of basic healthcare services and protection to populations despite the shock, using the same level of resources and capacity. **Adapt** relates to delivering the same level of

services through the reallocation of resources and changes to policies and procedures. **Transform** relates to the ability of health system actors to transform the functions and structure of the health system to respond to a changing environment.

Effective response strategies depend heavily on the type of shock, its intensity and impact, and the degree of structural change required to deal with it. A mixture of responses is often required. Strategies can include: changing the service delivery bundle provided by a system (either adding services or stripping them back to their core, or amending pricing policies – either making services free or non-core services more expensive, to generate more resources); redistribution of the health workforce; and provision by informal, private, not-for-profit, and international organisations. However, the literature emphasises the risk of 'over-optimisation' responses to a shock in ways that undermine a system's ability to manage a future shock (Abimbola and Topp, 2018).

Recovery relates to ensuring how countries, and different sectors (including the community and connected systems), recover and address the impacts of a shock. The resilience literature emphasises that short-term adaptation during a response, without recovery (also termed robustness), is simply coping, and is not a genuine sign of resilience (Abimbola and Topp, 2018).

Practitioner experience suggests that there tends to be a disconnect between response and recovery operations in a country. Those that are busy with the response have little time to think about recovery, yet recovery needs to be well planned, from an early stage. As such, this can be a valuable area of focus for development partners and others not directly involved in the response.

Reform relates to ensuring that the country and affected sectors are more able to withstand shocks or future crises, through learning from the experience of the shock, improving future preparedness, and capitalising on any emergent opportunities for policy reform. This is important given the criticism in the resilience literature of the focus on 'bouncing back' to a pre-shock state that was itself unsatisfactory.

In the longer run, the experience of shocks provides an opportunity to build better, more shock-responsive health systems. In an ideal world, adaptive resilience emerges post-crisis as new capabilities are developed in the face of emergent situations (Barasa *et al*., 2018). For example, following the Ebola crisis in West Africa, international efforts by governments, multilateral organisations, and financial donors supported the alignment of global health security and health systems strengthening. The Ebola outbreak was thus an enabling event that generated opportunities for actors in the health sector to propose solutions for national health system reforms. Research shows that leadership, financing, and capacity were necessary pre-requisites for windows of opportunity to be taken advantage of in this case (Witter *et al.*, 2016).

The resilience literature emphasises the importance of a commitment to continuous quality improvement, multi-directional learning, and feedback loops, and a conducive environment for sense-making and learning, as facilitators for taking advantage of reform opportunities.

Context

A formal health system is part of a broader institutional context, and is influenced and constrained by factors outside of its direct control, such as broader civil service hiring and performance management rules, resource envelopes, and levels of decentralisation. Health systems are also fundamentally social systems, embedded in social contexts, so values and other components of intangible software are also heavily dependent on the norms and culture outside of the health system (Whyle and Olivier, 2020). The organisation of the health system, how it is financed, and the relative role of the public and private sectors is also an important contextual determinant.

In terms of shock responsiveness in particular, the fragility of a context is a major determinant of the ability of a health system to manage shocks: the combination of exposure to risks, and the capacity of the state, system and/or communities to manage, absorb or mitigate those risks (Diaconu *et al*., 2019).

Conclusion

This working paper has set out a conceptual model of a ‘shock-responsive health system’ for Maintains. A shock-responsive health system is one that can maintain routine service delivery during a shock (whether a natural hazard, epidemic, or conflict), whilst addressing needs that arise due to the shock. The purpose of this model is to standardise the conceptual approach underpinning country and cross-country research under Maintains, and to facilitate comparative learning and synthesis. Maintains is actively seeking input and reflection on this model from others working in this space.

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