

# Chapter 1: Introduction

Henry Lucas  
Institute of Development Studies

In his later writings the philosopher Wittgenstein concludes that in most cases ‘the meaning of a word is its use in the language’ (Wittgenstein 1958). Loosely interpreted, the advice is not to worry excessively about dictionary definitions or, in the present instance, about seeking to establish precise dividing lines between different research activities. We will try to follow that advice in this text by accepting that a very wide range of contexts and activities have been and should continue to be seen as within the boundaries of both ‘Health Systems Research’ ([Gilson et al. 2012](#)) and ‘Implementation Research’ ([Peters et al. 2013a](#), [Fixsen et al. 2005](#)). We will set out our use of these terms in this chapter but make no special claims for the value of our interpretation over the many others that can be found in the recent literature.<sup>1</sup>

## 1. Health systems

Following the above guideline, we would consider research on the impact of reforms to the UK National Health Service ([Allen 2013](#)), on the diverse range of formal and informal health providers in Bangladesh ([Ahmed et al. 2013](#)) the activities of patent medical vendors in Nigeria ([Beyeler et al. 2015](#)), or on community-based insurance in Laos ([Alkenbrack and Lindelow 2013](#)) as mainstream examples of health systems research. We would also include research on household healthcare-seeking behaviour (e.g. [Diaz et al. 2013](#)) or coping strategies in response to illness (e.g. [Rahman et al. 2013](#)). To what extent can we characterise these very diverse studies as research on ‘Health Systems’?

The WHO defines a health system as:

*“all organizations, people and actions whose primary intent is to promote restore or maintain health. ... It includes, for example, a mother caring for a sick child at home; private providers; behaviour change programmes; vector-control campaigns; health insurance organizations; occupational health and safety legislation. It includes inter-sectoral action by health staff, for example, encouraging the ministry of education to promote female education, a well known determinant of better health.”* ([WHO 2007:2](#))

This is an interesting definition in a number of respects. First, it omits words such as ‘interacting’ or ‘interdependent’, which we would find in most dictionary definitions of the word ‘system’, though the same document later stresses the importance of interactions between health system components or ‘building blocks’. Second, it defines the ‘system boundary’ – which organisations, people and actions are considered part of the system and which not – in terms of their ‘primary intent’. This seems a potentially elusive criterion and one that must essentially involve a subjective judgement. Should we be examining, for example, the constitution of the Indian Ministry of Health and Family Welfare, the professional codes of conduct of Cambodian doctors or the mission statements of Ugandan Health NGOs to assess their health system status? Moreover, if individuals or organisations are contributing to the promotion, restoration or maintenance of health, to what extent does it matter why they are doing so? On the other hand, should we include those who have the best of intentions but who, perhaps because they have limited health knowledge, do more harm than good?

In line with the ‘primary intent’ requirement, health systems themselves are seen by the WHO as having goals, specifically, “*improving health and health equity, in ways that are responsive, financially fair, and make the best, or most efficient, use of available resources*” ([WHO 2007:2](#)). As might be expected from a United Nations agency, the overall approach seems most appropriate for a ‘national health system’ with a defined organisational structure that operates

under the direction of a well-intentioned government. Over recent years the WHO has expended considerable energy on devising methodologies to assess the comparative performance of such systems ([Murray and Evans 2003](#)) and producing guidance on 'health systems strengthening', which tends to focus on the central role that should be played by governments in terms of strategic planning, regulation and accountability, if not necessarily in service provision.

Though private providers are specifically identified in the list of organisations within the health system, it is not at all clear which, if any, private sector actors might be included within the WHO definition if strictly applied. Is the 'primary intent' of an international pharmaceutical company to 'promote, restore or maintain health' or to meet the expectations of its owners for a substantial return on their investment? In many countries there is a legal obligation on the directors of all companies with shareholders to act in the 'best interest' of those shareholders. It would seem unlikely that those interests would always align with the WHO criterion. Similarly, patent medical vendors in Nigeria are the main providers of anti-malarial drugs to the rural population, even though the law prohibits them from doing so ([Goodman et al. 2007](#)). They are typically marginalised workers on very low incomes whose 'primary intent' will in almost all cases be to support themselves and their families by responding to the demands of their clients. On the other hand, they would probably claim, and often genuinely believe, that they are providing a useful service to those clients, who have very limited access to any formal, regulated health services.

The current focus of WHO work on health systems is on the need for them to deliver 'Universal Health Coverage' (UHC):

*"ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services"* ([WHO 2016](#))

Again, note that the focus is on health system *outcomes*. This is a perfectly rational approach, given that the 'primary intent' of the WHO is not to advance our knowledge of health systems but to improve the health of the world's population and that the primary mechanism available to them is to persuade national governments to play a lead role in improving the overall system that is currently delivering health outcomes in a given country. The 'building blocks' methodology of the WHO Health Systems Framework ([WHO 2010](#)) is an extension of this strategy. The aim is to identify a number of essential functions of a health system in order to consider the extent to which that system is meeting, or is capable of meeting, performance targets in terms of:

1. Health services
2. Health workforce
3. Health information
4. Medical products, vaccines and technologies
5. Health financing
6. Leadership and governance

For example, under the health services building block, the system should deliver 'effective, safe, quality personal and non-personal health interventions to those that need them, when and where needed, with minimum waste of resources' ([WHO 2010:3](#)). Using this approach, health systems strengthening can be defined in terms of (a) determining the extent to which any given component is failing to deliver its expected outcomes, (b) analysing the reasons for that failure – which may lie in its interactions with other components – and (c) implementing actions that will remedy the situation. Again, it seems evident that government will play the key role in this process, possibly in collaboration with international agencies where resources are highly constrained or the national capacity for health systems strengthening is limited.

As indicated, we would see the above approach to health systems as one that may well be appropriate for the aims and procedures of the WHO. However, here we are concerned with health systems *research*. Gaining knowledge as to how specific health systems work is *our* primary intent. We assume that those working in this area will wish to use their research findings to influence policy in such a way as to ‘promote, restore or maintain health’, and a later chapter will provide guidance as to how this may best be achieved, but our first priority is to *understand* the health system that is the focus of our research – gathering and interpreting evidence about the complex interplay between the various actors who are engaged in what we identify as health-related activities ([Peters 2014](#)).

An interesting illustration of the possibilities for alternative approaches to the analysis of health systems is provided by [Ahmed et al. \(2013\)](#) in a study of the health sector in Bangladesh. The context within which that study is set will be very familiar to those who have worked on health systems in resource-poor environments. There are a multiplicity of health providers offering a variety of allopathic and alternative treatments, in this case including Ayurvedic, Unani and homeopathic remedies. Transactions are typically on a ‘cash-for service’ basis, even in the public sector. Poorer clients have very limited access to qualified providers (doctors, nurses, midwives, pharmacists) and rely on unlicensed village doctors, drug sellers, traditional healers, community health workers and traditional birth attendants. In this environment, the formal health sector regulatory framework has limited relevance for the great majority of the population and there is a yawning gap between the formal ‘Bangladesh Health System’, as defined in government policy statements, and the reality on the ground. To address this reality Ahmed et al. develop a conceptual framework that:

*“challenges static and antiquated notions of policy and governance identified, for example, in the building block approach of the WHO Health Systems Framework or in the efforts to align development partners around a single country health plan. The complex and chaotic nature of health systems is unlikely to be tamed by these relatively naive notions of command and control health systems governance.”* ([Ahmed et al, 2013:1753](#))

Two relatively recent approaches to health systems have had a considerable influence on research in this area. The first is usually described as work on ‘health markets’. At one level it involves an exploration of the role of private health providers, driven by a recognition of the extent to which in many countries health services are purchased in the same way as other services and commodities: *“in at least 19 countries in Asia and 15 countries in Africa – including many of the world’s most populous nations (Bangladesh, China, India, Nigeria, and Pakistan) – more than half of total health expenditures are private out-of-pocket transactions”* ([Lagomarsino et al. 2009:2](#)). More generally, it questions the continuing relevance of many of the standard ways of characterising the health sector, recognising that health systems have become increasingly pluralistic. Old barriers between private/public, modern/traditional, and formal/informal health providers seem to be breaking down ([Bloom et al. 2014](#); [Peters and Bloom 2012](#)). [Bloom et al. \(2008:2077\)](#) suggest that health systems can be more usefully considered as complex *“knowledge economies which produce and mediate access to health knowledge embedded in people, services and commodities”*. Their work focuses attention on the ‘stocks and flows’ of health knowledge: how its value is determined, who possesses it and how others gain access to it. This requires a shift from traditional health systems analysis and its concerns with public and private sectors, modern and traditional providers, etc. and focuses attention on power relations and the ways in which it might be possible to construct new forms of *“social contracts for health care which build on existing areas of competence and good practice, whether mediated by states, markets or other institutional actors”* ([Bloom et al. 2008:2085](#)).

The second approach, which has captured the imagination of many leading health system researchers over recent years, is based on the observation that health systems have all the characteristics of complex adaptive systems (CAS) ([Carey et al. 2016](#), [Bloom 2014](#); [Rickles](#)

[et al. 2007](#); [World Bank 2007](#)). A wide range of actors with diverse objectives act at multiple levels and interact through dynamic and multifaceted networks. As [de Savigny and Adam \(2009\)](#) point out, an intervention in one area will typically have consequences, often unforeseen, for many others.

*“every health intervention, from the simplest to the most complex, has an effect on the overall system. Presumably simple interventions targeting one health system entry point have multiple and sometimes counterintuitive effects elsewhere in the system”* ([de Savigny and Adam 2009:30](#)).

Complex adaptive systems have the capability to self-organise, adapt, and learn from experience. They can change in a highly non-linear fashion over time, and are not easily controlled or predictable. It is not unusual for a CAS to show limited responses to apparently major interventions but then to change suddenly when a tipping point is reached ([Gladwell 2000](#)). In Chapter 4 we will discuss various aspects of CAS phenomena that are relevant to the analysis of health systems, including path dependency, feedback loops, scale-free networks, emergent behaviour, and phase transitions or tipping points ([Paina and Peters 2011](#)).

## 2. A general framework for research on health systems

To provide a framework for the development of research strategies that can be used in exploring the wide range of health systems referred to above, we will adopt a generic approach to their definition, adapted from that proposed by [Bishai \(undated\)](#). We first define as ‘agents’ all those individuals who are considered to play a role in a given health system (doctors, nurses, managers, drug sellers, patients, carers, etc.). These agents may come together with a common purpose to form various identifiable ‘units’ (organisations or groups – ministries of health, hospitals, health centres, health insurance agencies, unions, households, etc.), which can be regarded as both capable of making decisions and responsible for any actions undertaken as a result of those decisions. For example, we might hold an individual hospital doctor responsible for their poor treatment of a specific patient but hold the hospital management responsible for their collective failure to employ sufficient doctors. Finally, we can consider the rules or ‘institutions’ that govern or at least influence the behaviour of these agents and units. The term ‘institutions’ is used to cover not only the relevant legal frameworks that regulate the health system but also any established procedures, protocols, guidelines, codes of conduct, accepted behavioural norms, etc., that agents and units are expected to observe.

Given the above, we can define a health system very generally as ‘an interacting collection of agents, units, and institutions concerned with human health’. Note that this definition can encompass national systems such as the UK NHS, the patent medical vendors in a given state of Nigeria, community-based insurance schemes, and rural households in Bangladesh who are coping with the impact of healthcare costs. We make no *a priori* judgement as to the benevolence of the individuals or organisations involved, or as to the virtue of the institutions that influence their behaviour. Our initial aim will be to understand how a given system operates, though usually with the implicit intention of identifying potential ways to improve that operation in order to generate better health outcomes. The above implies that in any given context there may be multiple ways to define health systems. Health systems are essentially conceptual models of reality. “The concept of a ‘health system’ is a heuristic device for understanding a complex reality. Analysts draw different boundaries around the system depending on the questions they are trying to answer” ([Bloom 2014:161](#)). The important question is not the extent to which they precisely mirror that reality – all economic and social models involve drastic simplification – but the extent to which they are useful in predicting and explaining observable outcomes. Thus, the first task of a health systems researcher will be to

decide how they will identify the types of agents, units and institutions with which they will be concerned and how to specify the system boundary.

In quantitative studies, for example those using questionnaire surveys or analysing routine data, it will often be necessary to make such decisions at the start of the research process. To give a simple example, if the 'units' to be surveyed include private clinics, you will need to specify how private clinics are to be defined and sampled – often a far from simple task. Similarly, if the questionnaire survey is to gather information on the institutional context, for example rules on incentive payments, you will have to decide on the importance of informal payments and the extent to which you will attempt to explore the behavioural norms that govern such payments. As we will discuss in Chapter 7, one advantage of qualitative studies is that such definitions can be allowed to emerge and evolve during the research activity, though this advantage has to be balanced against the need to defend against challenges of subjectivity and bias that you will almost inevitably face from those who wish to dispute your findings.

Whether the health system under discussion is defined before or during the research activity, we would argue that the primary obligation on any researcher is for *transparency* – they must go out of their way to ensure that those who read, and may even use, their findings fully understand the assumptions made in arriving at those findings. Good researchers should have the confidence to expose themselves to critical evaluation of both their conceptual models and their methodologies, especially if they have expectations that their work may have a significant influence on the formulation of health policy.

### 3. Implementation research

In his first address as incoming President of the World Bank Group, Jim Kim identified the 'next frontier' for the Group as:

*“helping to advance a ‘science of delivery’. Delivery isn’t easy – it’s not as simple as just saying ‘this works, this doesn’t’. Effective delivery demands context-specific knowledge. It requires constant adjustments, a willingness to take smart risks, and a relentless focus on the details of implementation”.* ([Worldbank 2012](#))

Implementation research (IR) can be seen as the means by which we can develop a 'science of delivery'. It has been defined as: “scientific inquiry into questions concerning implementation – the act of carrying an intention into effect” ([Peters et al. 2013a](#)). In the health sector, the focus on implementation research has arisen partly from a long-standing sense of frustration that interventions for which there appears to be strong evidence indicating the potential for substantial reductions in levels of morbidity and/or mortality in high-risk populations are either not being used or not being used effectively (e.g. [Bhutta et al. 2014](#); [Darmstadt et al. 2005](#)). The primary objective of IR in health is therefore seen as the effective and efficient integration of such innovations into existing health systems, “to improve the uptake... of research findings into routine and common practices” ([Padian et al. 2011:199](#)).

As indicated above, there are multiple definitions of IR, often arising from the specific concerns of those working in different areas of health research ([TDR 2016](#), [WHO-COPR 2014](#)). For example, those concerned with innovations in medical science, such as the development of new pharmaceuticals, will often use the term 'Translational Research' ([Drolet and Lorenzi 2011](#)) in relation to the overall process by which those innovations move from the laboratory to various stages of clinical trials on human subjects and then on to clinical practice. In the present text, because we are focusing on IR in the context of research on health systems, we will be concerned with the final phase in this process, the “integration of research findings and evidence-based interventions into health care policy and practice” ([NIH Fogarty International](#)

[Center](#)). We therefore exclude discussion of laboratory research to develop new drugs or medical technologies, and clinical trials to test the efficacy and safety of those drugs or technologies.

Our overall concern is thus to determine how best to apply health *innovations* that have proved successful in carefully controlled environments (laboratories, clinical trials, small pilot exercises, etc.) in a wider context. This requires the design of some form of *intervention*, which we will use as a general term to cover a range of activities including policy changes, programmes and projects. These have to be *implemented*, which typically involves actions by a collection of individuals that will here be described as the *implementation team*. In general we will assume that IR is best undertaken by ‘insiders’ – here defined as individuals who work *alongside* the implementation team, though with their own terms of reference and independently funded – and that the research questions they address are generated by identifying the constraints and challenges encountered during the implementation process. The scope of IR studies and the range of issues addressed can be very wide, including “the factors affecting implementation..., the processes of implementation themselves..., and the outcomes, or end-products of the implementation under study” ([Peters et al. 2013b: 27](#)).

Any implementation will take place within the context of an existing health system, which is in turn embedded in a broader physical, social, economic, institutional and, often overlooked, historical context ([Grundy et al. 2014](#)). A myriad factors may thus impact on the relative success or failure of that implementation, the great majority of which will be outside the control of the implementation team. The most appropriate strategy will often be ‘constrained adaptation’ – modification of the intervention design to allow for contextual factors but not to the extent that the primary aims of the intervention may be subverted.

The distinction between IR and the closely related activity designated ‘Operations Research’ (OR) is hard to pin down. For example, [Zachariah et al. \(2009\)](#) define OR as “the search for knowledge on interventions, strategies, or tools that can enhance the quality, effectiveness, or coverage of programmes in which the research is being done” ([Zachariah et al. 2009:711](#)), which bears a close similarity to the definition of IR provided above. In practice, definitions vary from agency to agency. An important framework document from the [Global Fund \(2008\)](#) on IR and OR makes no attempt to differentiate between them, other than to provide an annex listing a selection of these definitions. In this text we make a pragmatic distinction, drawing on the following definitions:

OR is:

*the use of systematic research techniques for program decision-making to achieve a specific outcome. OR provides policymakers and managers with evidence that they can use to improve program operations.*

([WHO 2003:3](#))

IR should:

*a. identify common implementation problems... b. develop practical solutions to these problems... c. determine... the best way to introduce these new implementation strategies into the health system and facilitate their full scale implementation, evaluation and modification, as required.*

([TDR 2005:4](#))

Note that the first definition focuses on the use of research to improve the operation of a given programme – to improve the implementation of the programme within which the research is undertaken. It is not unusual for such a programme to have an OR component, with terms of reference that require those working on this component to focus on research that project managers may be able to use to enhance the implementation process (e.g. [Heart 2016](#)). The definition implies that OR is really only useful if it suggests actions that can be undertaken by

the project management. In contrast, the second requires the IR team to use its independently funded resources to propose implementation strategies that can be *integrated into the health system*, by exploring not only issues that might hamper the current implementation but those that might be encountered in other contexts. In doing so, they may well be able to feed those strategies back into the implementation in which they are embedded, playing an OR role, but their primary task is to look outwards and explore the broader implications of their research in terms of seeking to maximise access to the benefits of the innovation. We therefore adopt the following working definition of IR:

*Research that can provide evidence as to the advisability of scaling-up a given health systems intervention, and most effective means of doing so, on the basis of experience with one or more implementations of that intervention*

To take a simple example, if an innovative incentive scheme for community health workers in a given region was being subverted by demands from higher-level health officials to be included in the scheme, an OR solution might be to ask the head of the regional government to negotiate with those officials, if that individual were strongly supportive of the intervention. From an IR perspective, this would raise a number of questions about the possibilities for both sustainability – how long will that individual remain as head of government – and scaling up. For example, how likely is it that similar issues will be encountered in other regions? Are there plausible alternative strategies that could be employed where the regional head was not willing to intervene or perhaps took the side of the officials? To what extent could the incentive scheme be adapted to gain acceptance among health officials while still delivering most of the anticipated gains in terms of health outcomes?

We would argue that the role of IR in terms of encouraging potentially wide-ranging reforms to the operation of health systems has implications for both the overall approach that researchers should assume and the research methodologies and methods that they should adopt. The failure of a time-limited project or programme in a given location will involve a waste of valuable resources and may delay or hinder the introduction of a potential valuable innovation. The failure of a significant health system reform could have far more serious consequences, both in terms of the size of the investment involved and the number of individuals affected. Researchers whose primary objective may be to encourage the widespread uptake of a health innovation and to influence implementation practice at scale have to ensure that their recommendations are backed by the most rigorous and persuasive research findings ([Shaxson 2005](#)).

In Chapter 2, we will consider the overall nature of the innovation process and relevant aspects of research design. We argue that innovations, even those which are seen as purely technical, provide a golden opportunity to improve the processes and outcomes of healthcare, not only by the effective implementation of that particular technology into the health system, but by improving the delivery system to take advantages of the opportunities afforded by that innovation. We would suggest that the primary requirement is for an initial very clear decision as to what the innovation under consideration for implementation is intended to achieve and what this may require in terms of alterations to delivery systems, which stakeholders will be affected by its implementation, and what factors will tend to facilitate or hinder its implementation. We are assuming that all those involved will be primarily concerned with influencing healthcare policy and/or practice and that reaching consensus among stakeholders on the appropriate approach to implementation is key to success. This collaboration should be a starting point both for implementation planning and for research design – what approach to implementation and scale up is most likely to succeed in the circumstances in which you are working and what types of research are most likely to generate findings that will be accepted into the implementation process? We argue that while research quality and rigour are essential there is also a need to integrate research into the overall process of implementation, from initial discussion to the institutionalisation of the innovation

into the health system, and to do this in collaboration with key stakeholders to the extent possible.

Given the above, we suggest that there are four broad areas that require special attention. The first, which we will address in Chapter 3, is the need to systematically review and evaluate the relevant existing literature, which will almost always be far more extensive than most researchers assume. The second requirement, discussed in Chapter 4, is to develop an in-depth understanding of the intervention that is to be implemented. This involves detailed knowledge of each step in the overall process that is intended to deliver the intended benefits, the assumptions that are required to hold for this process to function as planned and the indicators that will allow those managing the intervention to monitor if the implementation is on track. Because implementation is a dynamic process that will invariably diverge from the original plan, it will also be necessary to devise strategies that allow the researchers to be aware of any important modifications to that plan, focusing on the extent to which these are linked to the failure of the original assumptions or contextual factors that had not been fully appreciated when the plan was devised. As indicated above, one key issue will be the extent to which *adaptation* risks impacting on expected outcomes by threatening the *fidelity* of the implementation – has adaptation changed any essential features of the intervention, are we in practice implementing a reform that differs substantially from the one intended? As previously suggested, we would argue that only ‘insiders’ – researchers fully engaged with those undertaking the implementation – can hope to comprehend the process at this level of detail.

The third area is that of context, which we will address in Chapter 5. Here, as discussed above, we start from an analysis of the health systems context, with the health system and its boundaries carefully defined by the research team. We then need to explore the broader physical, social, economic, institutional and historical context within which the health system is located to identify those factors that may potentially influence implementation outcomes. We would see institutional analysis and stakeholder analysis as central to this process. Experience suggests that too often these are seen as peripheral activities, with rote procedures generating simplistic findings that play little part in the implementation process. Finally, in terms of overall approach, we argue the need for early and close engagement with key stakeholders, including those who may eventually play a central role in the integration of research findings into routine practice.

In Chapter 6 we will then address another often neglected aspect of health systems research, that addressing ethical issues. While ethical concerns have played a central role in the design of clinical research studies, there is often an implicit assumption that non-clinical health sector research is exempt from the strict observance of ethical standards. We will demonstrate why this assumption is unacceptable.

The ambitious nature of IR also has implications for data collection, analysis and interpretation, as we will argue in Chapter 7. We have argued that it should be independently funded but recognise that this will probably mean that it have very limited resources with which to pursue its very ambitious objectives. A key skill with therefore be to use those resources most effectively, which involves careful allocation between a potential wide range of research activities. One guiding principle should be that of transparency. The objective of initiating large-scale reform of some aspect of the health system implies a need to influence a variety of key stakeholders, many of whom will have limited knowledge of data collection and analysis procedures. The overriding obligation of researchers is to the population who may be affected if their findings are put into practice.

Seeking to win over policymakers and other stakeholders by exercising analytical or presentational skills that mask underlying data limitations is not the way to meet that obligation.

This is not to imply that sophisticated analytical techniques, for example econometric modelling, should not be used in IR, simply to take note that we should be very wary of persuading policymakers of the likely benefits of a reform based purely on the findings of such an analysis, given that they are very unlikely to be aware of its possible limitations and underlying assumptions. At a deeper level, the potential importance of IR findings requires that researchers be sufficiently reflexive that they do not 'fool themselves' into believing that they have fully understood the nature of the implementation process by the routine application of qualitative and/or quantitative analytical procedures. Understanding typically requires that much more time is spent in careful consideration than in the manipulation of data. Three broad approaches to these issues, labelled by convention 'qualitative', 'quantitative' and 'participatory', though we recognise the inherent limitations of such categorisations, are explored in Chapters 8, 9 and 10. Recognising the central importance of gender issues, in general but very obviously in research on health systems, chapter 11 then sets out the need for a systematic approach to data collection, analysis and interpretation that incorporates a gender perspective.

Finally, chapter 12 considers perhaps the most frustrating aspect of policy-oriented research, that of trying to engage those who are in a position to use your research findings. As indicated above, there is a primary requirement to ensure the quality of those findings and present them in a manner that can be generally understood and correctly interpreted. However, while undertaking high quality research may ensure journal publication, it is rarely sufficient to influence policy-makers or even to gain their attention. Regrettable as it may seem, "*it is now well recognized that policy is determined as much by the decision-making context (and other influences) as by research evidence*". ([Oliver et al. 2013](#):1). To have any chance of being effective the policy-orientated researcher has to endeavour to understand the policy process and the perceptions and motivations of the various actors who determine that process. This can be a challenging and time consuming process, once again emphasising the need to engage with stakeholders at the earliest possible stage of an implementation and to sustain that engagement over time.

Overall, we would argue that as researchers we have too often claimed to understand how complex health system interventions function on the basis of relatively flimsy evidence, typically involving short visits to the field, limited interaction with key stakeholders and one or two cross-sectional surveys of providers and/or intended beneficiaries that manage to be both complicated and simplistic. The argument in this text, as echoed in a recent book on the evaluation of complex interventions ([Patton 2011](#)), is that to reach a position from which we are willing to pass judgement on the advisability of scaling up or relocating a health system intervention that may have significant implications for the health and well-being of the population, we need to take implementation research much more seriously than in the past and reconsider the amount of time, effort and resources that we are prepared to allocate to the task. We would suggest that, while senior international researchers may be able to play a valuable supporting role, the level of commitment required to lead such research will most likely be found among younger researchers from the region in which an implementation is undertaken ([Hasnida et al. 2016](#)).

## References

- Ahmed, S.M.; Evans, T.G.; Standing, H. and Mahmud, S. (2013). Bangladesh: Innovation for Universal Health Coverage 2: Harnessing Pluralism for Better Health in Bangladesh. *The Lancet* 382: 1746–55. [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(13\)62147-9.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(13)62147-9.pdf)
- Alkenbrack, S. and Lindelow, M. (2013). The Impact of Community-Based Health Insurance on Utilisation and Out-Of-Pocket Expenditures in Lao People's Democratic Republic. *Health Economics*, <http://onlinelibrary.wiley.com/doi/10.1002/hec.3023/abstract> (accessed 3 March 2015)
- Allen, P. (2013) 'An Economic Analysis of the Limits of Market Based Reforms in the English NHS', *BMC Health Services Research*, 13 (Supplement 1): S1 [www.biomedcentral.com/1472-6963/13/S1/S1](http://www.biomedcentral.com/1472-6963/13/S1/S1) (accessed 28 January 2015)
- Beyeler N, Liu J, Sieverding M (2015) A Systematic Review of the Role of Proprietary and Patent Medicine Vendors in Healthcare Provision in Nigeria. *PLoS ONE* 10(1):1-21. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0117165>
- Bhutta, Z.A., Das, J.K., Bahl, R., Lawn, J.E., Salam R.A., Paul, V.K., Sankar, M.J., Blencowe, H., Rizvi, A., Chou, V.B. and Walker, N. (2014). Can Available Interventions End Preventable Deaths in Mothers, Newborn Babies, and Stillbirths, and at What Cost? *The Lancet* 384: 347–70. [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(14\)60792-3.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(14)60792-3.pdf)
- Bishai, D. (undated). *The Building Blocks of Health Systems*. Future Health Systems. [www.futurehealthsystems.org/online-course/module-1-the-building-blocks-of-health-systems.html](http://www.futurehealthsystems.org/online-course/module-1-the-building-blocks-of-health-systems.html) (accessed 20 July 2014)
- Bloom, G. (2014). History, Complexity and Health Systems Research. *Social Science and Medicine* 117: 160–61. [https://www.researchgate.net/publication/264248823\\_History\\_complexity\\_and\\_health\\_systems\\_research](https://www.researchgate.net/publication/264248823_History_complexity_and_health_systems_research)
- Bloom, G. and Standing, H. (2001). *Pluralism and Marketisation in the Health Sector: Meeting Needs in Contexts of Social Change in Low- and Middle-Income Countries*. IDS Working Paper 136, Brighton, UK: Institute of Development Studies
- Bloom, G., Standing, H. and Lloyd, R., (2008). Markets, Information Asymmetry and Health Care: Towards New Social Contracts. *Social Science and Medicine* 66(10): 2076–87. <http://www.sciencedirect.com/science/article/pii/S0277953608000592>
- Bloom, G.; Wilkinson, A.; Standing, H. and Lucas, H. (2014). *Engaging with Health Markets in Low- and Middle-Income Countries*. IDS Working Paper (443), Brighton, UK: Institute of Development Studies, [www.ids.ac.uk/publication/engaging-with-health-markets-in-low-and-middle-income-countries](http://www.ids.ac.uk/publication/engaging-with-health-markets-in-low-and-middle-income-countries) (accessed 28 January 2015)
- Carey G, Malbon E, Carey N, et al (2015). Systems science and systems thinking for public health: a systematic review of the field. *BMJ Open* 5:e009002. <http://bmjopen.bmj.com/content/5/12/e009002.full.pdf+html>

- Darmstadt, G.L., Bhutta, Z.A., Cousens, S., Adam, T., Walker, N. and de Bernis, L. (2005). Evidence-based, Cost-effective Interventions: How Many Newborn Babies Can We Save? *The Lancet* 365.9463: 977–88.  
[http://www.who.int/maternal\\_child\\_adolescent/documents/pdfs/lancet\\_neonatal\\_survival\\_paper2.pdf](http://www.who.int/maternal_child_adolescent/documents/pdfs/lancet_neonatal_survival_paper2.pdf)
- de Savigny, D. and Adam, T. (eds) (2009). *Systems Thinking for Health Systems Strengthening*, Geneva: World Health Organization. [www.who.int/alliance-hpsr/resources/9789241563895/en/](http://www.who.int/alliance-hpsr/resources/9789241563895/en/) (accessed 28 January 2015)
- Diaz, T.; George, A.S.; Rao, S.R.; Bangura, P.S.; Baimba, J.B.; McMahon, S.A. and Kabano, A. 'Healthcare Seeking for Diarrhoea, Malaria and Pneumonia among Children in Four Poor Rural Districts in Sierra Leone in the Context of Free Health Care: Results of a Cross-Sectional Survey', *BMC Public Health* 13:157.  
[www.biomedcentral.com/1471-2458/13/157](http://www.biomedcentral.com/1471-2458/13/157) (accessed 28 January 2015)
- Drolet, B.C. and Lorenzi, N.M. (2011). Translational Research: Understanding the Continuum from Bench to Bedside. *Translational Research* 157(1):1–5.  
[https://www.viictr.org/viictr/assets/File/Drolet%20Tranlational%20Research%202010\(1\).pdf](https://www.viictr.org/viictr/assets/File/Drolet%20Tranlational%20Research%202010(1).pdf)
- Fixsen, D.L.; Naoom, S.F.; Blase, K.A.; Friedman, R.M. and Wallace, F. (2005). *Implementation Research: A Synthesis of the Literature*. National Implementation Research Network, FPG Child Development Institute, University of North Carolina, <http://nirn.fpg.unc.edu/resources/implementation-research-synthesis-literature> (accessed 28 January 2015)
- Gilson, L. (ed.) (2012). *Health Policy and Systems Research: A Methodology Reader*. Geneva: Alliance HPSR/WHO, [www.who.int/alliance-hpsr/resources/reader/en/](http://www.who.int/alliance-hpsr/resources/reader/en/) (accessed 28 January 2015)
- Gladwell, M. (2000). *The Tipping Point: How Little Things Can Make a Big Difference*. London: Abacus. <https://www.youtube.com/watch?v=jXZ7iNGPVnA>
- Global Fund (2008). *Framework for Operations and Implementation Research in Health and Disease Control Programs*. The Global Fund.  
[http://whqlibdoc.who.int/publications/2008/9292241109\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9292241109_eng.pdf) (accessed 28 January 2015)
- Goffman, E. (1956). *The Presentation of Self in Everyday Life*. New York: Doubleday.
- Goodman, C., Brieger, W., Unwin, A., Mills, A., Meek, S. and Greer, G. (2007). Medicine Sellers and Malaria Treatment in sub-Saharan Africa: What do They do and How Can their Practice be Improved? *American Journal of Tropical Medicine and Hygiene* 77(6) (Supplement): 203–18.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2657822/pdf/ukmss-4163.pdf>
- Grundy, J., Hoban, E., Allender, S. and Annear, P. (2014). The Inter-Section of Political History and Health Policy in Asia – The Historical Foundations for Health Policy Analysis. *Social Science and Medicine* 117:150–59.  
<http://www.ncbi.nlm.nih.gov/pubmed/25066947>
- Hasnida, Amalaia, Robert A Borst, Anneke M Johnson, Nada R Rahmani, Sabine van Esland, Maarten O Kok (2016). Making health systems research work: time to shift

- funding to locally-led research in the South. *The Lancet Global Health*. [http://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X\(16\)30331-X.pdf](http://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X(16)30331-X.pdf)
- Heart (2016). *How to motivate and support improved practices in Infant and Young Child Feeding (IYCF) in Northern Nigeria*. ORIE Research Summary. <http://www.heart-resources.org/wp-content/uploads/2016/05/ORIE-RSummary-IYCF.pdf>
- Lagomarsino, G.; Nachuk, S. and Singh Kundra, S. (2009). *Public Stewardship of Private Providers in Mixed Health Systems: Synthesis Report from the Rockefeller Foundation - Sponsored Initiative on the Role of the Private Sector in Health Systems in Developing Countries*. [www.rockefellerfoundation.org/uploads/files/f5563d85-c06b-4224-bbcd-b43d46854f83-public.pdf](http://www.rockefellerfoundation.org/uploads/files/f5563d85-c06b-4224-bbcd-b43d46854f83-public.pdf) (accessed 28 January 2015)
- Murray, C.J.L. and Evans, D.B. (eds) (2003) *Health Systems Performance Assessment: Debates, Methods and Empiricism*, Geneva: World Health Organization, [www.who.int/health\\_financing/documents/cov-hspa/en/](http://www.who.int/health_financing/documents/cov-hspa/en/) (accessed 28 January 2015)
- Oliver, Kathryn, Simon Innvar, Theo Lorenc, Jenny Woodman and James Thomas (2013). A systematic review of barriers to and facilitators of the use of evidence by policymakers. *BMC Health Services Research* 14(2)1-12. <http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-14-2>
- Padian, N.S.; Holmes, C.B.; McCoy, S.I.; Lyerla, R.; Bouey, P.D. and Goosby, E.P. (2011). Implementation Science for the US President's Emergency Plan for AIDS Relief (PEPFAR). *Journal of Acquired Immune Deficiency Syndromes* 56(3):199–203. <http://www.pepfar.gov/documents/organization/157942.pdf>
- Paina, L. and Peters, D.H. (2011). Understanding Pathways for Scaling Up Health Services Through the Lens of Complex Adaptive Systems. *Health Policy and Planning* 27: 365–73. <http://heapol.oxfordjournals.org/content/27/5/365.full>
- Patton, M.Q. (2011) *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use*, New York: Guilford Press. [http://betterevaluation.org/resources/guides/developmental\\_evaluation/applying\\_complexity\\_concepts\\_patton](http://betterevaluation.org/resources/guides/developmental_evaluation/applying_complexity_concepts_patton)
- Peters, D.H. (2014) The Application of Systems Thinking in Health: Why Use Systems Thinking? *Health Research Policy and Systems* 12:51 <http://hdl-bnc.idrc.ca/dspace/bitstream/10625/53976/1/IDL-53976.pdf> (accessed 28 June 2016)
- Peters, D.H., Adam T., Alonge, O., Agyepong, I.A. and Tran, N. (2013a). Implementation Research: What It Is and How To Do It. *BMJ* 347: f6753. <http://www.bmj.com/content/bmj/347/bmj.f6753.full.pdf>
- Peters, D.H.; Tran, N.T. and Adam T. (2013b). *Implementation Research in Health: A Practical Guide*. Alliance for Health Policy and Systems Research. World Health Organization. [www.who.int/alliance-hpsr/alliancehpsr\\_irpguide.pdf](http://www.who.int/alliance-hpsr/alliancehpsr_irpguide.pdf) (accessed 28 January 2015)
- Peters, D. and Bloom, G. (2012). Bring Order to Unregulated Health Markets. *Nature* 487.7406: 163–65. [https://www.researchgate.net/publication/229074487\\_Developing\\_World\\_Bring\\_Order\\_To\\_Unregulated\\_Health\\_Markets](https://www.researchgate.net/publication/229074487_Developing_World_Bring_Order_To_Unregulated_Health_Markets)

- Rahman, M.M.; Gilmour, S.; Saito, E.; Sultana, P.; and Shibuya K. (2013). Self-reported Illness and Household Strategies for Coping with Health-Care Payments in Bangladesh. *Bulletin of the World Health Organization* 91: 449–58.  
[www.scielosp.org/pdf/bwho/v91n6/13.pdf](http://www.scielosp.org/pdf/bwho/v91n6/13.pdf) (accessed 28 January 2015)
- Rickles, D.; Hawe, P. and Shiell, A. (2007). A Simple Guide to Chaos and Complexity. *Journal of Epidemiology and Community Health* 61(11): 933-37.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465602/>
- Shaxson, Louise (2005). Is your evidence robust enough? Questions for policy makers and practitioners. *Evidence and Policy* 1(1):101-112.  
<http://dx.doi.org/10.1332/1744264052703177>
- TDR (2016). *Implementation Research Toolkit*. Special Programme for Research and Training in Tropical Diseases (TDR). WHO.
- TDR (2005) UNICEF/UNDP/WHO/World Bank Special Program for Research and Training in Tropical Diseases (TDR). *Implementation Research and Methods (IRM): Guidelines for Preparing a Grant Application to the TDR Steering Committee for Implementation Research*.  
[http://geneplot.plasmodb.org/publications/tdr/grants/workplans/pdf/ir\\_guidelines.pdf](http://geneplot.plasmodb.org/publications/tdr/grants/workplans/pdf/ir_guidelines.pdf)  
(accessed 28 January 2015)
- WHO (2010). *Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies*.  
[www.who.int/healthinfo/systems/WHO\\_MBHSS\\_2010\\_full\\_web.pdf?ua=1](http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf?ua=1) (accessed 28 January 2015)
- WHO (2007). *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes. WHO's Framework for Action*. Geneva: World Health Organization,  
[www.who.int/healthsystems/strategy/everybodys\\_business.pdf](http://www.who.int/healthsystems/strategy/everybodys_business.pdf) (accessed 28 January 2015)
- WHO (2003). *Expanding Capacity for Operations Research in Reproductive Health: Summary Report of a Consultative Meeting*. WHO, Geneva, Switzerland, December 10–12, 2001. Geneva: World Health Organization,  
[www.who.int/reproductivehealth/publications/general/RHR\\_02\\_18/en/](http://www.who.int/reproductivehealth/publications/general/RHR_02_18/en/) (accessed 28 January 2015)
- WHO (2000) *World Health Report 2000*, Geneva: World Health Organization
- WHO-COPR (2014). *Implementation Research Toolkit Video*.  
[http://multimedia.who.int/mp4/WHO-COPR\\_Implementation\\_research\\_toolkit\\_26MAR2014.mp4](http://multimedia.who.int/mp4/WHO-COPR_Implementation_research_toolkit_26MAR2014.mp4)
- Wittgenstein, L. (1958) *Philosophical Investigations* (translated by G.E.M. Anscombe), second edition, Oxford: Blackwell
- World Bank (2007). *Healthy Development: The World Bank Strategy for Health, Nutrition, and Population Results*. Washington, DC: World Bank.  
<http://documents.worldbank.org/curated/en/2007/01/8348853/healthy-development-world-bank-strategy-health-nutrition-population-results>

Zachariah, R., Harries, A.D., Ishikawa, N. et al. (2009). Operational Research in Low-Income Countries: What, Why, and How? *The Lancet Infectious Diseases* 9:711–17. [http://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099\(09\)70229-4.pdf](http://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(09)70229-4.pdf)

---

<sup>i</sup> However, the reader should take note that many research funding bodies will not be so open-minded and will only fund activities that fall within their own, potentially fairly narrow, definitions.