



**Title:** Expecting the unexpected: applying the Develop-Distort Dilemma to maximize positive market impacts in health

**Citation:** Peters, David H., Ligia Paina, and Sara Bennett. "Expecting the unexpected: applying the Develop-Distort Dilemma to maximize positive market impacts in health." *Health policy and planning* 27.suppl 4 (2012): iv44-iv53.

**Official URL:** [http://heapol.oxfordjournals.org/content/27/suppl\\_4/iv44.short](http://heapol.oxfordjournals.org/content/27/suppl_4/iv44.short)

**More details/abstract:** Although health interventions start with good intentions to develop services for disadvantaged populations, they often distort the health market, making the delivery or financing of services difficult once the intervention is over: a condition called the 'Develop-Distort Dilemma' (DDD). In this paper, we describe how to examine whether a proposed intervention may develop or distort the health market. Our goal is to produce a tool that facilitates meaningful and systematic dialogue for practitioners and researchers to ensure that well-intentioned health interventions lead to productive health systems while reducing the undesirable distortions of such efforts. We apply the DDD tool to plan for development rather than distortions in health markets, using intervention research being conducted under the Future Health Systems consortium in Bangladesh, China and Uganda. Through a review of research proposals and interviews with principal investigators, we use the DDD tool to systematically understand how a project fits within the broader health market system, and to identify gaps in planning for sustainability. We found that while current stakeholders and funding sources for activities were easily identified, future ones were not. The implication is that the projects could raise community expectations that future services will be available and paid for, despite this actually being uncertain. Each project addressed the 'rules' of the health market system differently. The China research assesses changes in the formal financing rules, whereas Bangladesh and Uganda's projects involve influencing community level providers, where informal rules are more important. In each case, we recognize the importance of building trust between providers, communities and government officials. Each project could both develop and distort local health markets. Anyone intervening in the health market must recognize the main market perturbations, whether positive or negative, and manage them so as to maximize the benefits to the health system and population health.

**Version:** Final version (open access)

**Terms of use:** This work has been licensed by the copyright holder (The Authors) for distribution in electronic format via any medium for the lifetime of the OpenDocs repository for the purpose of free access without charge.

**This is a download from OpenDocs at the Institute of Development Studies**



# Expecting the unexpected: applying the Develop-Distort Dilemma to maximize positive market impacts in health

David H Peters,\* Ligia Paina and Sara Bennett

Department of International Health, Johns Hopkins Bloomberg School of Public Health, E8-132, 615 N. Wolfe St, Baltimore, MD 21205, USA

\*Corresponding author. Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205, USA. E-mail: dpeters@jhsph.edu

---

**Accepted** 17 August 2012

Although health interventions start with good intentions to develop services for disadvantaged populations, they often distort the health market, making the delivery or financing of services difficult once the intervention is over: a condition called the ‘Develop-Distort Dilemma’ (DDD). In this paper, we describe how to examine whether a proposed intervention may develop or distort the health market. Our goal is to produce a tool that facilitates meaningful and systematic dialogue for practitioners and researchers to ensure that well-intentioned health interventions lead to productive health systems while reducing the undesirable distortions of such efforts. We apply the DDD tool to plan for development rather than distortions in health markets, using intervention research being conducted under the Future Health Systems consortium in Bangladesh, China and Uganda. Through a review of research proposals and interviews with principal investigators, we use the DDD tool to systematically understand how a project fits within the broader health market system, and to identify gaps in planning for sustainability. We found that while current stakeholders and funding sources for activities were easily identified, future ones were not. The implication is that the projects could raise community expectations that future services will be available and paid for, despite this actually being uncertain. Each project addressed the ‘rules’ of the health market system differently. The China research assesses changes in the formal financing rules, whereas Bangladesh and Uganda’s projects involve influencing community level providers, where informal rules are more important. In each case, we recognize the importance of building trust between providers, communities and government officials. Each project could both develop and distort local health markets. Anyone intervening in the health market must recognize the main market perturbations, whether positive or negative, and manage them so as to maximize the benefits to the health system and population health.

**Keywords** Health systems research, strategy, stakeholder analysis, markets, international health

---

## KEY MESSAGES

- We apply a Develop-Distort Dilemma (DDD) framework to diagnose and plan for development rather than distortions in health markets, using intervention projects conducted in Bangladesh, China and Uganda.
- It is important to understand both current and future market players, as well as the formal and informal rules that influence health providers, communities and government officials.
- Policy makers, implementers and those conducting research or facilitating health system change need to recognize market perturbations, whether positive or negative, and better manage them to improve health systems.
- We recommend using the DDD framework from the early stages of project design in order to identify potential opportunities to develop the market and the potential distortions that should be managed or avoided.

## Introduction

Health interventions tend to be judged by how well they achieve their intended goals. Yet even projects that fulfil their stated goals may also cause unanticipated and potentially harmful effects during or after their completion. For example, they may create dependency in the recipient population, with the expectation that services would continue to be provided to them as a public good after the project ends. Projects that hire or train health workers may crowd out other health providers from the area, and those that are focused on a specific set of health services may replace the existing ones with a more narrow range of services. They may also increase the costs and technical requirements of providing services beyond what the population can bear once the project is over. Hitchins and colleagues, when examining whether business service markets work for the poor, identified this problem as the ‘Develop-Distort Dilemma’ (Hitchins *et al.* 2004). Even with the best of intentions, many interventions that are intended to develop a market for disadvantaged populations often end up distorting it in ways that make it more difficult to deliver or pay for the services once the intervention is over.

In his landmark essay on the ‘Unanticipated consequences of purposive social action’, the American sociologist Robert Merton noted that this phenomenon has been observed throughout history (Merton 1936). The phenomenon has been observed in a wide variety of contexts and fields of enquiry that have dealt with the subject, ranging from theology and philosophy to economics, political science and technology. Merton’s analysis highlights the main causes of the phenomena as: (1) ignorance, and notably the inability to know about all possible outcomes; (2) error, and particularly the problem of habitual action based on expectation from past results or results obtained in another location, a problem he characterizes as one of wish fulfilment or a logic based on the fallacy of misplaced concreteness; and (3) ‘the imperious immediacy of interest’, where the need to act is paramount, and excludes the consideration of other consequences of the action. Finally, Merton notes that scientists often make predictions based on the assumption that ‘other things being equal’. Yet ‘other things’ include the public prediction of outcome due to the intervention, which he argues, becomes a new component of the context in which social action occurs. The prediction or expectation itself becomes part of the context, a feedback effect that results in a change in the course of the intervention.

Each of Merton’s underlying causes of unanticipated consequences feature prominently in today’s health sector interventions, particularly in low- and middle-income countries where there is a large number of external and local agencies sponsoring a wide variety of actions. Unanticipated consequences arise because limitations in knowledge about the full set of possible outcomes from health system interventions are the norm, and one of the reasons why health sectors are increasingly recognized as complex adaptive systems (de Savigny and Adam 2009; Paina and Peters 2011). Policies and priorities are frequently determined by the interest in pursuing cost-effective interventions that have been shown to work in research settings, even though they are often not replicable in common conditions found in health systems (Peters *et al.* 2009). A main finding from systematic reviews of experience on efforts to improve the delivery of health services in developing countries is that implementation of interventions and the results vary widely across settings, even with similarly planned and labelled interventions (Peters *et al.* 2009).

The urgency to reach the Millennium Development Goals, eradicate polio, provide universal access to anti-retroviral therapy, or pursue other worthy and internationally agreed targets, has often meant that efforts are focused on securing funding, extensive planning and multi-party agreement, often at the cost of the consideration of unintended consequences of such actions. The same ‘immediacy of interest’ described by Merton has frequently sacrificed longer-term efforts for building processes for learning and flexible implementation—the critical approach needed to identify and respond to unintended consequences and to sustain efforts to deliver and scale-up health services (Peters *et al.* 2009; Subramanian *et al.* 2011). Finally, the logic of evidence-based medicine and public health, and many of the epidemiological and economic models used to identify cost-effective interventions, conventionally assume a world based on probabilistic relationships and equilibrium dynamics, but do not account well for changing contexts, feedback effects or the emergent properties of human organizations involved in a health system. The dominant models of evidence may work very well under research conditions, and indeed may be ‘close enough’ for predicting what can happen in many contexts, but typically do not consider the temporary nature of the intervention, other outcomes which are not included in the models, or the effect on subsequent events of having an expected impact. This often creates a false sense of security in predicting the course of interventions. One example

**Table 1** Key features of the three research proposals to which the Develop-Distort Dilemma was applied

Country (research organization) and title	Main research question	Intervention strategy	Primary health services outcomes
Bangladesh [International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)]: Using information technology for integrated informal and formal health care provision	Can an innovative and locally relevant network of providers supported by technology systems be developed to improve quality, utilization and equity of health services?	Application of mobile technology and computer-assisted guidance with network of informal and public health providers	Population- and facility-based measures of utilization and quality of health care (e.g. outpatient utilization rates; percentage of patients of village doctors receiving an antibiotic; percentage of patients having one of 20 common conditions whose treatment follows standard guidelines)
China (China National Health Development Research Center – CNHDRC): Evaluating payment and health care quality reforms	Can the Chinese health payment and essential drugs reforms be implemented in a way that improves the quality of and access to health services delivery at an affordable cost?	Multiple levels of intervention including mandated case-based financing reforms and the introduction of an essential drugs system to promote rationale use of drugs, with scope for wide variation in financing, organization and oversight at the county level	Facility- and population-based measures:  quality of care [e.g. proportion of prescriptions with: (i) antibiotic; (ii) intravenous injection; (iii) vitamin]; utilization of care (outpatient visits per capita); cost of care (total cost to government and out-of-pocket payments); patient satisfaction
Uganda (Makerere University School of Public Health – MakSPH): Innovations for increasing access to integrated safe delivery, prevention of mother to child transmission of HIV (PMTCT) and newborn care in rural Uganda	Can an integrated system for maternal–newborn care be implemented in a way to increase utilization, quality and impact of maternal–newborn health care?	Community mobilization through community health workers, supply and demand vouchers, integration and quality improvements of clinical services for maternal and newborn care	Population- and facility-based: rates of antenatal care (ANC), institutional delivery, post-natal care (PNC), and neonatal mortality

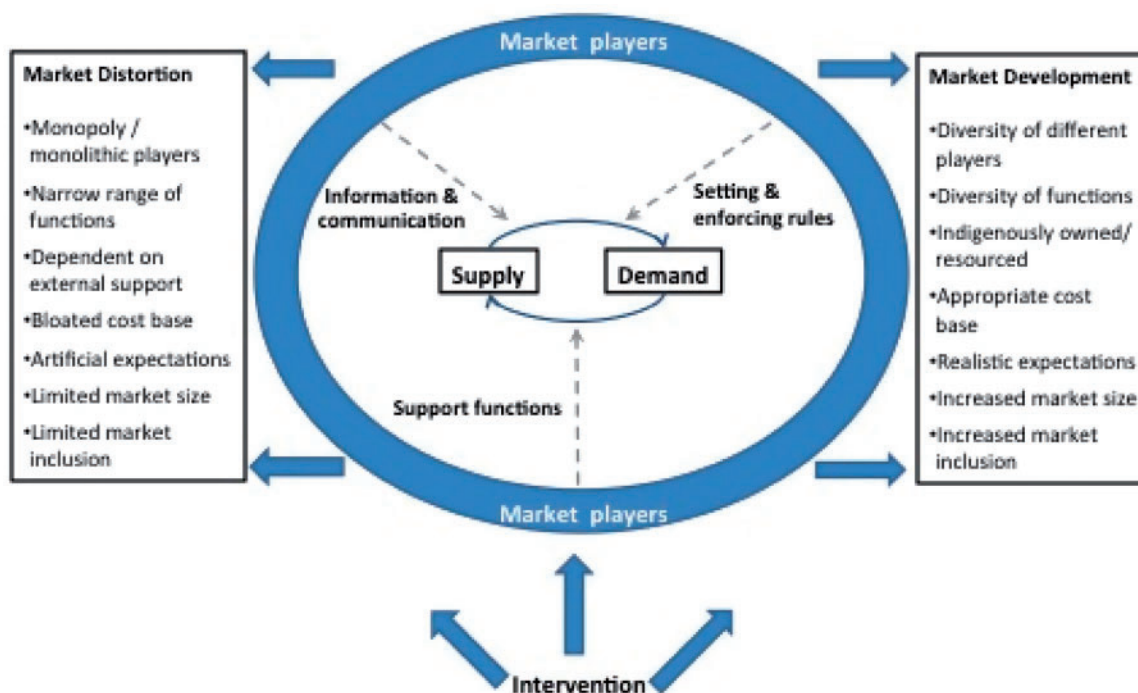
is the increasing use of the Lives Saved Tool (LiST) to assess the outcomes of interventions in child health, even though it was designed as a forecasting tool to consider the most effective set of interventions during the planning stage (Sachdev *et al.* 2010; Ricca *et al.* 2011).

One approach to understanding how to intervene in a health system is to view it as a market system (Bloom and Standing 2001; Bloom *et al.* 2011). The use of the market lens in health systems came out of the recognition that even public sector actors are involved in market-like transactions for health services, and that these transactions occur in poorly organized markets. Its authors also assume that because of the discrepancies between health needs and demands, the asymmetry of information endemic to the health sector, and the weakness of institutions to create and enforce rules, health market systems will need intervention to prevent or reduce the effects of market failure (Arrow 1963; Bloom *et al.* 2011).

In this paper, we use the health market systems lens to examine the Develop-Distort Dilemma (DDD) in the context of health systems interventions. We seek answers to Hitchens' simple question: 'Does the proposed intervention develop or distort the market?' (Hitchens *et al.* 2004). We propose a systematic way to diagnose and plan for development rather than distortions in health markets. We use the experience of research being conducted under the Future Health Systems (FHS) research consortium to illustrate how the DDD can be used to understand health systems interventions and key

aspects in their sustainability. Our eventual goal is to produce a tool that provides an opportunity for meaningful and systematic dialogue for practitioners, researchers and theorists to ensure that well-intentioned health development interventions lead to sustainable and more productive health systems and to reduce the undesirable distortions of such efforts.

The FHS consortium is conducting research in five countries, but here we focus on three country examples that serve particularly well to illustrate the potential for unexpected consequences in terms of market development. Table 1 summarizes the three research projects of interest. In Bangladesh, the consortium is seeking to pilot strategies to improve the quality of services offered by informal health care providers (particularly rural medical practitioners) through better integrating them with the formal health care system through the application of information technology and computer-assisted guidance. In China, FHS researchers are evaluating one component of the ongoing health reforms, assessing the impact of provider payment reform and the introduction of essential drugs lists on rational drug use. Finally in Uganda, the FHS team is seeking to improve quality of access to maternal health services through a combination of community health workers, vouchers and quality improvement interventions. Regardless of the extent to which the intervention is focused on the private sector, in each case, the intervention involves the use of market mechanisms—the interaction between demand, supply and price incentives—to target desired outcomes.



**Figure 1** The Develop-Distort Dilemma

Source: Adapted from DFID (2008) and Bloom *et al.* (2011).

## Methods

Our starting point was the Springfield Centre's interpretation of the DDD, which was originally intended to leverage different markets to benefit the poor (DFID 2008). We use Bloom and Standing's description of the health market (Bloom and Standing 2001; Bloom *et al.* 2011), which places the supply and demand for health goods and services at the core of the market system. There are many market players involved in the health market system, which in developing countries often includes many different organizations and informally trained providers (Bloom *et al.* 2011; Shah *et al.* 2011). There is also a set of supporting functions, such as the management of inputs like drugs, equipment, labour, etc., and a set of rules that influence the behaviour of key actors, especially the providers and users of health services.

Figure 1 summarizes potential market development and distortions in the health market system. At the core of the figure is a simplified illustration of the market system, which shows that an intervention can develop or distort the market in various ways. For example, market development is recognized when the diversity of market players and functions increases as a result of an intervention and is maintained once the intervention has ended—it is distorted when it decreases or is not maintained after an intervention has ended. To consider what market players will do beyond a period of intervention, it is important to assess the incentives that will influence what the various players can do and will want to do in the future. If new players are introduced into the market system, such as a new regulatory agency, an analysis of the long-term viability of the organization would be needed. If a new funding

arrangement is part of the intervention, it is important to assess the long-term picture for sustained funding of the intervention.

In assessing the market players and functions through the DDD, we recommend the following questions to guide assessment of how an intervention could be strengthened so as to develop the health-related market and support sustainability:

- (1) Which market players are appropriate to work within the market system?
- (2) Is there potential for an effective relationship between those supporting the intervention and other market players?
- (3) How much support is needed to the market to achieve desirable rules and norms?
- (4) Is there a pathway to 'crowding-in' or the potential to pull others in?
- (5) When an intervention affects the functions in a market system, are activities likely to constitute a market function in the future or are they purely temporary? (DFID 2008)

We used this DDD framework and guiding questions to assess how FHS research projects were dealing with the DDD's central questions: 'who should do?' and 'who should pay?' These questions are addressed separately for the key market players and stakeholders, and the different sets of functions in a health market system, including the core supply and demand functions, as well as the supporting functions and setting and enforcing of rules. In our analysis, we identified the key market players as those directly linked to the FHS intervention, and did not include the complete set of players involved in a local health market.

**Table 2a** Summary DDD framework for Bangladesh research: using information technology for integrated informal and formal health care provision

Core activities	Current key market players	Future key market players
- Linking informal providers to formal health system through telemedicine network (eClinic)	Telemedicine company – (TRCL)	TRCL and other telemedicine firm
- Introducing computer-assisted case management (HealthBox) to improve informal provider prescribing practices	International non-profit research organization – Research Triangle Institute (RTI) for adaptation; icddr,b for introduction	Ministry of Health (MOH) or local government for scale-up and maintenance
- Networking informal providers through social franchise ( <i>Shastya Sena</i> )	icddr,b	icddr,b or other accrediting body
<b>Core funding</b>	Department for International Development (DFID) – Future Health Systems (FHS); RTI	Market revenue + central health funds
<b>Supporting functions activities</b>		
- Training, community-awareness	icddr,b	MOH or local government
- Co-ordination and oversight	icddr,b	MOH or local government
- Infrastructure support	icddr,b	MOH or local government
- Monitoring and evaluation	icddr,b	icddr,b
<b>Supporting functions funding</b>	FHS	MOH + FHS or other research funds
<b>Rules activities</b>		
- Changing community trust in technology and care-seeking practices	icddr,b	TRCL or similar company
- Committing support towards information and communication technology in development	Government of Bangladesh	Government of Bangladesh
<b>Rules funding</b>	FHS, RTI, TRCL	TRCL or similar company

*Note:* For Tables 2a–2c, the **core** functions refer to ‘the central set of exchanges between providers (supply-side) and consumers (demand-side) of goods and services at the heart of a market system’. The **supporting functions** refer to ‘a range of functions supporting the core exchange helping the market to develop, learn, adapt and grow including, for example, product development, skills enhancement, research & development, coordination and advocacy’. The **rules** refer to ‘formal (laws, regulations and standards) and informal (values, relationships and social norms) controls that provide a key input in defining incentives and behavior in market systems’ (DFID 2008).

The framework described above was applied to each of the three FHS proposals. In the first instance the research team reviewed each of the proposals in detail, and then assessed the proposals based on the framework described. Data from the proposals were extracted so as to complete the tables. This process helped to identify gaps and implicit assumptions in the research proposal. The Principal Investigators from each of the country teams were then sent the draft tables, and follow-up interviews with the Principal Investigators sought to verify and where necessary correct the research team perspectives.

## Results

Table 2 (a–c) outlines the findings from each of the countries. Whereas they share the common goal of increasing access to quality services to poor populations in their respective countries, the three FHS activities each take a unique approach to achieving it.

In Bangladesh, the FHS team seeks to leverage the benefits of a new technology. In Uganda, the FHS team aims to remove financial barriers to access to care and to intervene within the underlying incentive structure on both the supply and the demand sides. In China, the research team seeks to monitor the effects of reforms to hospital financing. Because of these unique

approaches, FHS country teams have engaged with stakeholders specific to their purpose and local context. Differences emerge in connection with where the teams are intervening in the market system. For example, because FHS activities in Bangladesh and Uganda are closely related to the delivery of services, the research teams have engaged primarily with local leaders and members of the affected populations. This demand-side dialogue is less evident in China, where the research team does not have any control over the actual intervention. Future engagement and responsibilities of the stakeholders in each setting were not discussed in great detail in any of the three proposals. The future delivery of the core intervention was briefly addressed in the Bangladesh proposal—describing discussions around who is expected to assume responsibility for the intervention, and proposing that a local telemedicine company, Telemedicine Reference Center Limited (TRCL), could play this role in the absence of government ability or interest to take a lead on it.

The section on rules was the most difficult one to complete. In Uganda and Bangladesh formal rules received little attention in the original design of the interventions. Instead, the proposals focused on the community-based mechanisms—informal rules and behaviours—which the intervention seeks to modify over time. Formal rules were more evident in the China research, probably because the intervention itself is a

**Table 2b** Summary DDD framework activities in China: Evaluating payment and health care quality reforms

<b>Core activities</b>	<b>Current key market players</b>	<b>Future key actors</b>
- Mandated case-based financing for hospitals	County governments	County governments
- Introduction of essential drug list for promoting rational drug programme	County governments, hospitals and providers	County governments, hospitals and providers
- County-level innovations in organization and financing of health care to improve quality	County governments, hospitals and health providers	County governments, hospitals and health providers
<b>Core funding sources</b>	National health insurance scheme: National Cooperative Medical System (NCMS) Individuals, counties and hospitals	NCMS Individuals, counties and hospitals
<b>Supporting functions activities</b>		
- Training providers on essential drug list	Ministry of Health (MOH)	MOH
- Policy formulation for subsidies	County governments	County governments
- Provider payments	County governments	County governments
<b>Supporting functions funding</b>	MOH + NCMS	MOH + NCMS
<b>Rules activities</b>		
- Selection of conditions for case-based payment	County governments	County governments
- New contracts between county mayors and provincial authorities	County governments	County governments
- Influence on local fees for drugs and diagnostics	County hospitals	County hospitals
- Influence on health care in local settings	Health providers	Health providers
<b>Rules funding</b>	Negligible	Negligible

**Table 2c** Summary DDD framework for Uganda research: innovations for increasing access to integrated safe delivery, prevention of mother to child transmission of HIV (PMTCT) and newborn care in rural Uganda

<b>Core activities</b>	<b>Current key market players</b>	<b>Future key market players</b>
- Oversight and management of the voucher system for institutional deliveries and care for complications	Makerere University School of Public Health (MakSPH)	District health teams
- Arranging a system of home visits by trained community health workers (CHW) for improved newborn care	MakSPH; health facilities; CHW	District health teams; health facilities; CHW; community members
- Strengthening health facilities for better delivery of services	MakSPH	District health teams; Ministry of Health (MOH)
<b>Core funding sources</b>	World Health Organization; FHS Saving Newborn Lives (SNL)	MOH; community mobilization
<b>Supporting functions activities</b>		
- Training, quarterly supervision	MakSPH	District health teams
- Provision of basic drugs and supplies for pilot facilities	MakSPH	MOH
- Assessing intervention effects on health outcomes; general monitoring and evaluation; cost-effectiveness studies; dissemination	MakSPH	MakSPH or other independent research organization
<b>Supporting functions funding sources</b>	FHS, SNL	MOH
<b>Rules activities</b>		
- Facilitating the community's acceptability of CHWs	MakSPH	District health teams Community leadership
- Working with the MOH on developing evidence for policies and regulations on VHTs	MakSPH	MakSPH or other independent research organization
<b>Rules funding</b>	FHS	MOH

policy change by the Chinese government involving the introduction of new rules for provider payment and monitoring of activities. Discussions with the research teams in Bangladesh and Uganda pointed out that building the credibility of the informal and community-based providers in the community would be an important objective of the interventions. All the principal investigators highlighted the importance of a deep understanding of the local market and its evolution, in order to identify where best to intervene.

The proposals describe a wide range of supporting functions assumed by the FHS research teams. Due to the nature of the intervention, the FHS teams provide significant support in research and development, including monitoring and evaluation, product innovation and information sharing. In addition, all FHS activities contain a significant training component. The research team or the institution with which they are affiliated provides the training. The recipients of trainings, as well as the content of the training itself, vary by the activity type and are customized to each type of stakeholder. For example, in Bangladesh, the FHS team trains village doctors on how to use telemedicine and the technological devices related to it. In China, the research team trains providers on topics around the Essential Drug Lists. The country teams also facilitate and co-ordinate stakeholders, usually in the context of information sharing. Finally, in all three of the country activities, the FHS teams provide significant infrastructure support, which ranges from the provision of cell phones in Bangladesh, to funding service and transport vouchers in Uganda, to management support to health facilities in China.

Future funding for all of these activities is not very well secured at the time of initiating the research, except for the activity in China (which is implemented and funded by the Chinese government both in the short and the long term). To launch the activities, FHS teams have built partnerships with both public and private sector actors to leverage funding in addition to their own. The issue of future funding is probably most relevant for the core intervention and the support functions, since the actual process of developing rules is less likely to need financial investments.

The proposals contained little discussion about the processes underlying the implementation of their respective interventions. Whereas the proposals provided a good description of the stakeholders to engage, usually based on a systematic stakeholder analysis, they did not provide information on the process of identifying an appropriate entry point to the health market system, both in terms of the stakeholders and the focus of the intervention. The proposals also do not describe how they anticipate stimulating market change, although each of them proposes a theory of change—a framework describing the country team's vision for long-term outcomes. Whereas several support functions are key to the implementation of the intervention, it is unclear how these were selected by the country teams, and who should assume responsibility for them if they are expected to become a function of the market system in the future. From the proposals, it is evident that the research teams, as facilitators, are prioritizing the engagement of other market players. For example, in Bangladesh, the research team is seeking to build partnerships with both public and private sector actors. Finally, the proposals fall short of describing how

the research teams, through their role as facilitators, would ensure the transfer of responsibility and ownership to local stakeholders and local sources of funding. Discussions with local investigators revealed that uncertainty over future funding was a major concern for each of the country teams. In China, the concern is over the wide disparities that could emerge from the variety of funding approaches being tested, with some counties having more financial resources and management capacity than others. In the case of Bangladesh, the telemedicine scheme is expected to raise some funding, though support functions will continue to rely on uncertain government and project funding. In Uganda, finding future sources of funding for the voucher schemes has become a research topic in itself, as the team looks to identify both community and government resources, in addition to other external funders.

The market outcomes described by the proposals are listed in Table 3. The country teams described several approaches to developing the health market system. In Bangladesh and Uganda, the country teams focused on increasing the diversity of market players, in telemedicine and community-based health care, respectively. Both of these country teams also envision increasing the market size through locally owned and funded information communications technology innovations and institutionalizing links between the informal and formal health care sectors. In China, the government-run intervention has the potential to contain costs for health care, while improving the quality of care.

Some potential market distortions also emerged from the three country plans. Potential dependencies and unrealistic expectations might be created regarding the scale-up of potentially expensive technologies in Bangladesh or a donor-funded voucher scheme in Uganda. Across all settings, there are potential pitfalls connected to the costs of supporting the proposed interventions and reinforcing perverse incentives, such as carrying out unnecessary diagnostics and services.

## Discussion

The review of FHS research activities through the lens of the Develop-Distort Dilemma produced a useful depiction of how the proposed interventions unfold within the health market system, and provided an opportunity to explore potential market development or distortion scenarios. The discussions with the local research team provided an opportunity for a candid dialogue around the threats and opportunities for their specific interventions. Ultimately, thinking through the DDD at a relatively early stage of activity implementation highlighted gaps in the research proposals and potentially in the process of how interventions are designed and implemented. While the exercise described by this paper focuses around the activities of the FHS research programme, several noteworthy lessons about the DDD tool and the findings from its application have broader relevance.

Using the DDD tool provides a systematic approach to understanding how a project is placed within the broader health market system and to identifying gaps in planning for future sustainability. The application of the DDD to FHS research proposals uncovered several elements that were not planned for. For example, it appeared that current stakeholders



**Table 3** Summary of market outcomes in the three countries presented

Market outcomes	Bangladesh	Uganda	China
<b>Develop</b>	<ul style="list-style-type: none"> <li>Increased diversity of market players by partnering with TRCL, an established telemedicine company in Bangladesh</li> <li>Creating networks of accredited informal providers</li> <li>Locally owned and funded information and communications technology (ICT) innovations</li> </ul>	<ul style="list-style-type: none"> <li>Increased diversity of market players by engaging CHWs and transport providers in rural Uganda</li> <li>Increasing market size through increased utilization of maternal, newborn and child health services both community-based and in public and private facilities</li> <li>Crowding-in – engaging with a variety of market actors</li> </ul>	<ul style="list-style-type: none"> <li>Contain costs of health care (for governments, patients) (maintain total costs, and maintain current levels of increase)</li> <li>Improve quality of care (at hospitals, at primary care clinics), particularly the rational use of drugs</li> <li>Improve access to care for disadvantaged populations</li> <li>Improve satisfaction with care and financing of care (for public)</li> </ul>
<b>Distort</b>	<ul style="list-style-type: none"> <li>Dependency and unrealistic expectations in regards to scaling up HealthBox, which unlike the eClinic, is technology led and funded by an external partner</li> <li>Uncertainty in regards to telemedicine responsibilities led and funded by TRCL or Government of Bangladesh</li> <li>Unmanageable costs of training and activity monitoring that would not be easily transferable to local authorities</li> </ul>	<ul style="list-style-type: none"> <li>Dependency in regards to the lack of funding for future for transport and service vouchers</li> <li>Bloated cost base due to the unavailability of a funding source for voucher and training costs, particularly with the planned scale-ups</li> </ul>	<ul style="list-style-type: none"> <li>Inability to establish credible agency to assess quality and fair charges for health care</li> <li>Increase fees for non-drug related goods and services (and shift in revenues away from drugs)</li> <li>Increase intensity of unneeded diagnostic testing and services</li> <li>Change in diagnoses patterns to conditions not in scheme</li> <li>Shift from inpatient to outpatient care for conditions under case-based scheme</li> <li>Reduced volume of care for providers without volume bonuses</li> <li>Reduced quality of care for providers without quality bonuses, and for conditions not measured</li> <li>Increased inaccuracy of performance data among counties under contracts</li> <li>Hospitals and providers who do not learn to ‘game’ system go out of business</li> </ul>

and their activities were easier to identify than future ones. The absence of explicit description of future stakeholder engagement might hint that the research teams assume that the government of their respective countries would take these activities up. The risk with this assumption is 2-fold. It indirectly raises community expectations for the services they receive. In addition, it misses the discussion on scaling-up successful pilots, both in terms of funding and in terms of institutionalization. The summaries produced by the DDD framework facilitated discussion among the project team members with respect to the identification of appropriate and relevant stakeholder engagement and identification of unintended consequences. This approach is similar to researchers who see stakeholder engagement as a critical element of planning for sustainability in health programmes (Shediac-Rizkallah and Bone 1998) and generally in the formulation of policy reforms (Hercot *et al.* 2011). More detailed and repeated stakeholder analyses may be useful to provide a more in-depth understanding of the health market, guide the management of project implementation, or plan for expansion and sustainability (Varvasovszky and Brugha 2000; Hyder *et al.* 2010).

In addition to bringing attention to present and future stakeholders, the DDD provides an opportunity to discuss future funding as well. The lack of explicit proposals for future funding might be common among externally funded projects, which, like FHS activities, have a 3–5 year timeframe. The DDD provides an opportunity to think beyond this horizon and to explore associated costs and opportunities. This also relates to the engagement of stakeholders, to leverage both the funding and engagement of other actors, particularly in the private sector, since public sector resources are often already limited. The DDD can add value by conceptually mapping potential future market structures and providing a framework for a process of thinking through the potential pathways through which a sustainable market configuration can be achieved. Other tools are available to assess government's ability to fund different programmes over the medium and long term, such as a fiscal space assessments, public expenditure reviews, and medium-term expenditure frameworks (Tandon and Cashin 2010).

The DDD framework highlights that both formal and informal rules should be considered early in the design cycle. The lack of discussion on formal and informal rules in the FHS proposals could be potentially risky. While this is not a reflection of the knowledge and awareness of local teams, insufficient attention to the formal and informal rules in the market that FHS is intervening in, as well as little deliberate discussion and vision of how these will change in response to the described interventions, could not only inhibit some of the learning processes, but might also underestimate the legal and regulatory frameworks in which the scaling-up of successful pilot projects are planned.

Finally, the discussion on market outcomes is also critical in the early design stages. The DDD framework helps to facilitate discussions on a vision for market development and potential market distortions. This process can help the project teams mitigate the unintended consequences of health interventions.

## Conclusions

We recommend using the DDD framework from the early stages of project design in order to identify potential opportunities to develop the market and the potential distortions that should be managed or avoided. The DDD framework provides a simple and systematic depiction of the health market system within which the project intervenes. The DDD framework facilitates the process of capturing the discussions and decision-making process which the research team undergoes as they plan, implement, evaluate and disseminate evidence from pilots. It also provides a valuable opportunity to document the processes that underlie successful pilots, providing a foundation for discussions on scaling-up. Finally, the process of completing the DDD highlights the importance of answering the question: 'Does the proposed intervention develop or distort the market?' In reality, every project probably does a little bit of both. The challenge lies around recognizing all market perturbations, whether positive or negative, and managing them so as to maximize the short- and long-term benefits to the health system and population health.

Future work should focus on capturing the pros and cons of integrating discussions around the DDD at different stages of project design and implementation so as to facilitate an ongoing process of reflection. Additionally, health planners should explore how the principles at the core of the DDD can be integrated in routine monitoring and evaluation functions, so as to be able to identify and document important market outcomes and their effects on the target populations, as well as on the broader health system over the course of the intervention period and beyond.

## Funding

This work was supported by the Alliance for Health Policy and Systems Research, World Health Organization and by the Future Health Systems Research Consortium. The Future Health Systems Research consortium is funded by the UK Department for International Development (DFID) for the benefit of developing countries (grant number H050474). The views expressed are not necessarily those of DFID or the World Health Organization.

## Conflict of interest

None declared.

## References

- Arrow KJ. 1963. Uncertainty and the welfare economics of medical care. *The American Economic Review* **53**: 941–73.
- Bloom G, Standing H. 2001. *Pluralism and marketisation in the health sector: meeting health needs in contexts of social change in low and middle-income countries*. Brighton, Sussex: Institute for Development Studies.
- Bloom G, Champion C, Lucas H *et al.* 2008. Health markets and future health systems: Innovations for equity. *Global Forum Update on Research for Health* **5**: 30–33.

- Bloom G, Standing H, Lucas H *et al.* 2011. Making health markets work better for poor people: the case of informal providers. *Health Policy and Planning* **26**: i45–i52.
- de Savigny D, Adam T (eds). 2009. *Systems Thinking for Health Systems Strengthening*. Geneva: World Health Organization.
- DFID. 2008. *The operational guide for the making markets work for the poor (MAP) approach*. London: Department for International Development.
- Hercot D, Meesen B, Ridde V, Gilson L. 2011. Removing user fees for health services in low-income countries: a multi-country review framework for assessing the process of policy change. *Health Policy and Planning* **26**: ii5–ii15.
- Hitchins R, Elliott D, Gibson A. 2004. *Making business service markets work for the poor in rural areas: a review of experience*. London: Springfield Centre.
- Hyder AA, Syed S, Puvanachandra P *et al.* 2010. Stakeholder analysis for health research: case studies from low- and middle-income countries. *Public Health* **124**: 159–66.
- Merton RK. 1936. The unanticipated consequences of purposive social action. *American Sociological Review* **1**: 894–904.
- Paina L, Peters DH. 2011. Understanding pathways for scaling up health services through the lens of complex adaptive systems. *Health Policy and Planning* **27**: 365–73.
- Peters DH, El-Saharty S, Siadat B, Janovsky K, Vujicic M (eds). 2009. *Improving Health Service Delivery in Developing Countries: From Evidence to Action*. Washington, DC: World Bank.
- Ricca J, Prosnitz D, Perry H *et al.* 2011. Comparing estimates of child mortality reduction modelled in LiST with pregnancy history survey data for a community-based NGO project in Mozambique. *BMC Public Health* **11**(Suppl. 3):S35.
- Sachdev HPS, Hall A, Walker N (eds). 2010. Development and use of the Lives Saved Tool (LiST): a model to estimate the impact of scaling up proven interventions on maternal, neonatal and child mortality. *International Journal of Epidemiology* **39**(Suppl. 1):i15–i205.
- Shah NM, Brieger WR, Peters DH. 2011. Can interventions improve health services from informal private providers in low and middle-income countries? A comprehensive review of the literature. *Health Policy and Planning* **26**: 275–87.
- Shediac-Rizkallah MC, Bone L. 1998. Planning for the sustainability of community-based health programs: conceptual frameworks and future directions for research, practice and policy. *Health Education and Research* **13**: 87–108.
- Subramanian S, Naimoli J, Matsubayashi T, Peters DH. 2011. Do we have the right models for scaling up health services to achieve the Millennium Development Goals? *BMC Health Services Research* **11**: 336.
- Tandon A, Cashin C. 2010. *Assessing Public Expenditure on Health from a Fiscal Space Perspective. Health, Nutrition and Population (HNP) Discussion Paper*. Washington, DC: World Bank.
- Varvasovszky Z, Brugha R. 2000. How to do (or not to do)...A stakeholder analysis. *Health Policy and Planning* **15**: 338–45.