

ENGAGING THE PRIVATE SECTOR FOR DELIVERY OF CHILD HEALTH INTERVENTIONS – THE ROLE OF IMCI

Phyllis Awor, MD PhD

Senior Research Fellow

Makerere University school of Public Health

Kampala – Uganda

June 2016

TABLE OF CONTENTS

INTRODUCTION.....	4
The role of the private sector in management of childhood illnesses	4
Composition and distribution of the private sector	5
Challenges of engaging the private sector for public health goals.....	7
AIM AND OBJECTIVES	8
METHODS.....	8
Analysis	8
EFFECTIVE AND PROMISING APPROACHES TO ENGAGE THE PRIVATE SECTOR IN DELIVERY OF CHILD HEALTH INTERVENTIONS	9
Social marketing.....	9
Social franchising	9
Vouchers	10
Accreditation.....	10
Contracting – out	10
Pre-packaging.....	11
Training	11
Regulation	11
IMPORTANCE OF INTEGRATED DELIVERY APPROACHES WHEN WORKING WITH PRIVATE HEALTH CARE PROVIDERS.....	11
The need for integrated management of childhood illnesses within the private sector	13
HOW CAN CURRENT DELIVERY STRATEGIES FOR CHILD HEALTH (INCLUDING IMNCI) BE STRENGTHENED AND MODIFIED TO MORE EFFECTIVELY WORK WITH PRIVATE SECTOR HEALTH CARE PROVIDERS?	16
CONCLUSIONS AND RECOMMENDATIONS.....	19
REFERENCES	19

ACKNOWLEDGEMENTS

I would like to thank Dr. Meenakshi Gautham for her contribution to the introductory section of this report and for comments on the draft.

INTRODUCTION

The private health sector is conventionally defined as comprising “all providers who exist outside the public sector, to treat illness or prevent disease, whether their aim is commercial or philanthropic.” [1-2]. This therefore includes private-for-profit (commercial) providers, private-not-for profit providers (for example non-governmental organizations, faith based groups and charities), as well as traditional health providers.

Private providers can be further classified as being formal (legally recognized, for example physicians and nurses) or informal. Informal private health care providers are defined as those who practice allopathic medicine but have no formally recognized training, are not legally recognized, and typically function outside the realm of government regulation[3].

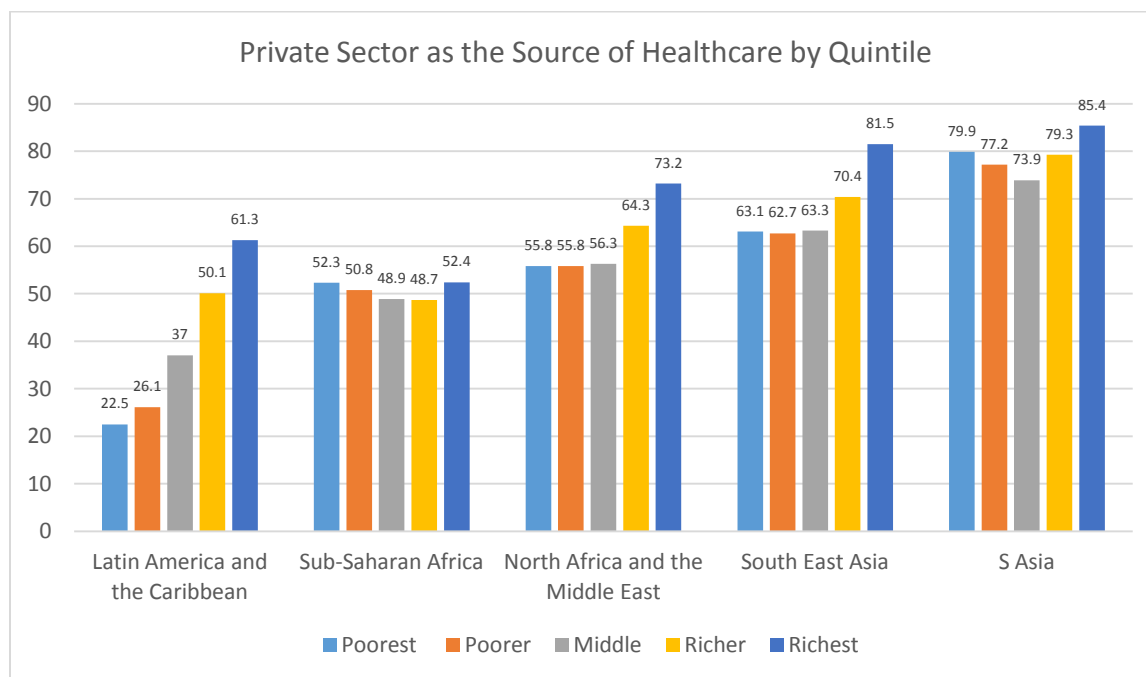
The role of the private sector in management of childhood illnesses

Health systems in low and middle income countries were generally designed based on a national health model, characterized by government owned health services, ideally financed through government tax revenues. However, a low tax base and inability to collect sufficient revenue to finance all sectors has rendered this national health model insufficient to meet the health needs of most people. Thus, despite substantial public health investments made over the last 40 years in low and middle income countries, governments cannot be viewed as the principal health care provider in many countries [4].

Due to gross public sector weaknesses, health systems in low income settings have evolved and are pluralistic in nature, having various stakeholders and agents present and working in different ways, in an attempt to meet the health needs of the populations [5]. This often includes the existence of public and private providers as well as allopathic and alternative providers, all within a health system. The private sector particularly plays a significant role in the delivery of health services, providing more than 50% of all health care in sub-Saharan Africa (SSA) and over 80% of health care in Asia outside of China [6-9].

The extent of utilization of the private sector for community management of childhood illness is equally high. A recent analysis of 198 Demographic and Health surveys (DHS) from 70 countries conducted from 1990 – 2012 showed that the private medical sector provides more than half of diarrhea (54%) as well as fever and cough (57%) treatments in children [10]. This is consistent with DHS data analysis from the year 2000 – 2008, which showed that care seeking for children with fever, diarrhoea and cough in the private sector ranges from 51% in Sub-Saharan Africa to 60.1% in North Africa and the Middle East, 66.3% in South East Asia and in Latin America and the Caribbean, to the highest -79.3%- in South Asia. People from all income quintiles, poorest as well as richest, seek healthcare from private sources (see Fig 1). In the poorest quintile this ranges from 22.5% in Latin America and the Caribbean to almost 80% in South Asia, and in the richest quintile from 52.4% in Sub-Saharan Africa to 85.4% in South Asia. This confirms that in many countries, not just the richest but a large majority of those in the poorest quintiles also seek care in the private sector.

Figure – 1: care seeking in the private sector, by wealth quintile



Source: Global DHS Data from after 2000 - <http://ps4h.org/globalhealthdata.html>

While the DHS data described above may not uniformly categorize which level or type of private sector is being utilized for child health care, the majority of private sector consultations and the bulk of community level management of fever, diarrhoea and pneumonia symptoms in children occurs, through informal providers and the retail health sector (drug shop and pharmacies) [11-12].

The important role of the private health sector in outpatient healthcare and child health has raised questions about the conventional focus of critical child health interventions in the public sector [13], when much of the care that children receive is from the private sector.

Composition and distribution of the private sector

DHS and other national surveys follow a limited typology of the private sector. However, several studies and reviews [11] confirm that the private sector is heterogeneous and multi-layered, with the for-profit and not for profit sector, segmented further into formal and informal, each with multiple entities (see Table 1). For example, the different entities in the formal for-profit sector include biomedical providers and facilities as well as practitioners of other formally recognized systems of medicine, such as Ayurvedic/Unani/Siddha/Homeopathic (collectively termed AYUSH) providers in India, and practitioners of integrated Chinese and Western medicine in China. The informal sector also includes a wide range of traditional and biomedical providers; the latter may be frequently referred to by rural communities as 'doctors' – small doctors [14] or private doctors or village doctors- thus creating confusing overlaps with formally qualified private doctors.

These distinctions must be vitally understood as the informal sector is several times larger than the formal sector, and substantially contributes to the dominance of the private sector as a source of healthcare [11]. For example, in their provider survey in the central Indian state of Madhya Pradesh, one of the largest in India, DeCosta and Diwan enumerated 24,807 qualified doctors and 89,090 unqualified practitioners [15]. The majority (75.6%) of the qualified doctors worked in the private sector and 80% of these were in urban areas. The unqualified or informal providers all worked privately and 90% were in rural areas. Basu et al in their systematic review of the performance of public and private sectors in LMICs found that ‘when the definition of “private sector” included unlicensed and uncertified providers such as drug shop owners, most patients appeared to access care in the private sector; however, when unlicensed healthcare providers were excluded from the analysis, the majority of people accessed public sector care’ [11].

Table 1: The heterogeneous and multilayered composition of the private sector

	Formal	Informal
For Profit	<ul style="list-style-type: none"> Private hospitals/clinics (outpatient care, inpatient care, multi-specialty, super specialty) Private doctors (general physician) Private registered/licensed pharmacies, drug shops and proprietary patent medicine vendors (Nigeria) Private mobile clinics Private nurse/paramedic/other formally trained health worker Public private mixed: e.g. village doctors and village clinics in China, and public doctors working privately in India; Publicly owned hospitals and public providers with high user fees Private non-biomedical providers and facilities. E.g. formally qualified AYUSH practitioners in India and practitioners of Chinese medicine/integrated medicine in China. 	<ul style="list-style-type: none"> Unregistered pharmacies and drug shops Public sector frontline health workers providing private healthcare beyond their scope of work, for a fee Private practitioners of allopathic medicine. May be commonly referred to as ‘small doctors’ or ‘private doctors’ in India, ‘village doctors’ in Bangladesh. Traditional healers Friends and relatives Drug peddlers and vendors
Not for profit	<ul style="list-style-type: none"> Non-governmental hospitals/clinics (e.g. LV Prasad eye hospital, India) Faith based hospitals such as Mission Hospitals Community based depot holders and other fieldworkers Public Private Partnerships between governments and NGOs to deliver health services such as mobile clinics or delivery centers in hard to reach areas 	<ul style="list-style-type: none"> It is possible for not-for-profit entities to function informally, for example small charities and un recognized spiritual healers

Challenges of engaging the private sector for public health goals

Engaging the private sector for public health goals is challenging in itself, due to the heterogeneous, multilayered and highly segmented structure described above. While it may be easier to partner with large private facilities and hospitals (both profit and non-profit) to enhance access and quality of care, most patients seek care within the informal and retail sectors, where there is hardly any regulatory oversight.

Further, there are market failures related to inefficiency in allocation and inadequate supply of goods and services of public health importance especially for the poor. These market failures are often explained in terms of: information asymmetry, which can benefit poor quality providers and may lead to poor demand for services; as well as the problem of provider-induced-demand (the principal-agent-problem) where health providers unnecessarily recommend more interventions to enhance earnings [16].

In terms of quality of care, a recent systematic review comparing the performance of public and private health care provision in low and middle income concluded that quality of care within the private sector is generally lower than in the public sector, with private providers frequently violating medical standards [11]. For example, while utilization of Oral Rehydration Therapy (ORT) has greatly improved over the years, the private-for-profit sector has been found to be 15% (95% CI: 13 – 17) less likely to provide ORS/Zinc for diarrhea in children in SSA, and 12% (95% CI: 10-15) more likely to provide other treatments [17]. In India, the private sector is 9.5% (5 -14%) less likely to provide ORT to children than public sector [18]. In this regard interventions to improve private sector provision of ORT are highly recommended.

Thus important considerations in engaging the private sector include ensuring: equity in access to care; affordability; quality of care within the vast private sector; and sufficient regulatory capacity. An analysis of how these challenges are being addressed through various private sector strategies is discussed later.

Given the private sector weaknesses, it is advisable that government engagement with private providers is based on a careful analysis of health system challenges and bottlenecks in service delivery, and a plausible assessment of how engaging the private sector will solve these problems and improve health outcomes [19].

However, gross public sector inadequacies in low and middle income countries including: frequent medicine and commodity stock-outs; poor physical access to health facilities; health worker shortages; high staff absenteeism; perceived poor quality in government facilities etc. [20] justify seeking ways to improve service delivery in general, but also the consideration of alternative health care provision strategies [21]. These public sector inadequacies and the resultant high utilization of the private sector – albeit with poor quality care – necessitate an in-depth understanding of strategies to engage the private sector for public health benefit [9, 22]. Further, Out of pocket expenditure (which to the larger extent is in private sector) constitute about 50% of total health expenditure in many countries [23]. Harnessing this expenditure for improved quality of care will increase the efficiency of the health sector as a whole.

AIM AND OBJECTIVES

The aim of this work was to review the evidence and identify how current delivery strategies for child health can be strengthened or modified to work more effectively with private sector health care providers. This review was undertaken as part of the Integrated Management of Newborn and Childhood Illnesses Strategic Review (2016) and focused on the role of the private health sector.

Specific objectives included:

1. To discuss the evidence of effective and promising approaches to engaging the private sector in delivery of cost-effective, evidence-based child health interventions
2. To reflect upon the value of integrated delivery approaches including IMNCI for private health care providers
3. To discuss how current delivery strategies for child health (including IMNCI) can be strengthened or modified to work more effectively with private sector health care providers

METHODS

We conducted a desk review of existing literature to assess the strength and summarize the evidence around utilization of the private sector to meet public and child health goals. We searched both published and grey literature available on line, using Pub med/Medline and Google Scholar. For assessment, we extracted the following types of studies only: systematic reviews (including narrative and qualitative reviews); randomized controlled trials; non-randomized controlled trials; and pre-post studies with a control. We excluded observational studies or descriptive studies, although these were the bulk of the evidence that exists. Reference lists of identified papers were also checked for additional articles. Further, we include some examples of programs utilizing the private sector to improve child health outcomes. The search terms included various combinations of: private sector, private, non-state, non-governmental, child health, access, utilization, quality, social franchising, social marketing, vouchers, demand-side financing, accreditation, contracting, and performance-based financing, malaria, pneumonia, diarrhoea, and case management. This review was not necessarily exhaustive but focused on identifying strong evidence from which recommendations could be made.

Analysis

The analysis focused on collating and summarizing findings mainly from the systematic reviews and individual studies identified, in relation to various strategies for engaging the private sector.

EFFECTIVE AND PROMISING APPROACHES TO ENGAGE THE PRIVATE SECTOR IN DELIVERY OF CHILD HEALTH INTERVENTIONS

Different approaches have been utilized to engage the private sector in the delivery of public health interventions. The main purpose has been to: improve quality of care; increase availability of goods and services; and to ensure affordability, equity and coverage of health services through engaging the private sector. These strategies are well defined [24] and include the following: social marketing, use of vouchers, pre-packaging of drugs, contracting-out, franchising, training, regulation and accreditation. The intermediary actor for these strategies is often an NGO; however management of these strategies can be government lead through ministries of health and education.

Over the last 10 years, the evidence around engaging the private sector for public health goals has been steadily increasing. A recent exhaustive review on trends in working with the private sector to improve basic healthcare [25], summarizes implementation programs and the peer-reviewed evidence. This review found that while scientific evidence is growing, the programmatic implementation of the above private sector engagement models has progressed far ahead of the evidence. Also, child health programs have been less evaluated.

Social marketing

This is the application of the concept of commercial marketing to social and health problems [26], in order to increase population coverage of effective and affordable interventions [2]. Social marketing usually includes: mass promotional activities, branding, labeling, pre-packaging and subsidy of public health products.

Commercial marketing techniques have been used to create demand for health products including: contraceptives, mosquito nets and malaria medicines even through for-profit channels, where these commodities are often subsidized. Mass media campaigns have been shown to directly and indirectly influence health-related behavior positively with moderate evidence for the effect on immunization, use of oral rehydration therapy, HIV prevention [27-28] and on awareness and use of insecticide-treated nets [24]. The positive effect of social marketing has also been shown in relation to increasing knowledge, availability and ensuring price reductions of artemisinin combination therapy (ACT) through the recent Affordable Medicines Facility – malaria [29-30]. The identified reviews on commodity social marketing highlight the importance of an integrated package including: mass media, training of health-care providers, outreach to patients, and the concurrent supply of the commodities and services being promoted, for the strategy to be effective. [21]

Social franchising

A franchise is a contractual arrangement between a health service provider and a franchise organization, which aims to improve access to quality and price-controlled services. Franchisees are trained in standardized practices for which prices are predefined, and they benefit from advertising of the logo or franchise name. In return, franchisees may be required to comply with minimum sales volume, quality standards and pay a membership fee to the franchisor [31]. The franchise organization (a government or donor-sponsored NGO) monitors providers and subsidizes the network.

Over the last 8 years, an annual survey of social franchising programs in existence within low and middle income countries shows an ever increasing number of franchised networks. In 2013 alone, Viswanathan et al. report the existence of social franchises in over 40 countries in Africa, Asia and Latin America, with over 95,000 providers currently operating as part of social franchised networks [32].

However, the academic evidence base supporting franchised delivery of public health services is weak. A 2009 systematic review on social franchising found no studies which met the rigorous Cochrane inclusion criteria [33]. More recently, the growing evidence of social franchising in health care has primarily been evaluated within the reproductive health and family planning domain and the findings have been summarized in some systematic reviews [34-36]. Based on this evidence, franchising is predominantly associated with increased client volumes, client satisfaction, physical accessibility and improved quality. The findings related to health care utilization, health impact, efficiency and provider outcomes are mixed. Extensive research is needed to further determine the effect of franchising in terms of quality, health impact, equity, cost-effectiveness and the value of health care franchising in other health care sectors like child health [33-35].

Pragmatically, numerous social franchising programs already exist around the world, providing an opportunity to rapidly expand access to care and standardize and improve quality of care, through these franchised networks. This could form the basis for evaluation of private sector initiatives, provided evaluation is built into further expansion of the social franchises.

Vouchers

A form of demand-side subsidy that recipients use as part or full-payment for a product or service from identified providers. Distribution of vouchers can be targeted, for example to poorest households or pregnant women. Vouchers could be competitively redeemed through of different providers, or non-competitively assigned to a particular provider [2]. The use of vouchers has been shown to improve access to maternal health care, although the problem of misuse of the subsidy has also been identified [37].

Accreditation

This is a strategy to improve and control quality of services provided at facility level through oversight by an independent quality control evaluation body (government or an NGO). It may include training providers in standardized practices [24]. Accreditation is similar to franchising, although it is often voluntary, unlike the contractual relationship between franchisee/franchiser. Accreditation has been successfully used for WHO laboratory quality control, and within the pharmaceutical sector, to improve quality of drug dispensing in the Tanzania accredited drug dispensing program [38].

Contracting – out

This is a purchasing mechanism used to acquire specified services, of defined quality, at an agreed price, from a specific private provider and for a specific period of time. Governments may purchase clinical or non-clinical services from private providers to complement public provision. Contracting out has been shown to be effective at increasing access and use of health services particularly in conflict or fragile states [39-40].

Pre-packaging

This involves packaging drugs in pre-defined doses adequate for the targeted population group and length of treatment regimen [24]. This is particularly useful for pediatric medicines and is a strategy to improve provider and patient adherence to treatment regimens. Prepackaging is some time used with commodity social marketing.

Training

Training activities are often integrated into other strategies including franchising, accreditation and social marketing interventions and can take various forms including: formal training sessions, vendor-to-vendor education, distribution of guidelines and job-aids.

Consistently, literature reviews are showing that provider training is insufficient to change practice or improve quality of care in the private sector [3, 9]. This is because various other factors including supply chain management, patient expectation, profit motivation etc. impact provider practice more strongly. Hence approaches that combine provider training with consumer education yield better results. There two approaches have been utilized to improve private provider case management if sick children in various countries including Pakistan [41], and Indian [42].

Regulation

The purpose of regulatory interventions is to set up and ensure adequate technical quality of service providers [43]. Regulation involves setting rules, sanctions and ensuring adequate enforcement. Basic regulatory frameworks exist in most countries particularly related to pre-service training, registration and licensing requirements for health workers and premises. Pharmaceutical market regulation aims to limit the availability of harmful drugs and unregistered products, minimize drug misuse, control the sale of specific drugs through prescriptions, and regulate drug manufacture and importation. Regulation has a crucial balancing role within the private sector [44], although, inadequate resources are typically allocated for monitoring and enforcing regulations [45]. Co-regulation with professional associations, civil society and communities can provide additional benefit.

IMPORTANCE OF INTEGRATED DELIVERY APPROACHES WHEN WORKING WITH PRIVATE HEALTH CARE PROVIDERS

Within both the formal and informal private sector, utilization of more than one of the above delivery strategies has been shown to provide better impact. For example, social franchise programs often include commodity social marketing and training of providers. Further, when social franchising is utilized with demand-side purchasing strategies like voucher systems for the poor, access to care and equity are enhanced [25].

A recent review by Shah et al., on interventions to improve health services from informal private providers in low income countries concluded that although training was the most common intervention, it was ineffective on its own [3]. The approaches most likely to succeed included social marketing,

creating referral mechanisms, and training when combined with other interventions – Table 2. Strategies which focused only on building individual capacities of informal private providers were less likely to succeed [46] compared to those which changed market conditions, and institutional relationships including incentives and accountability [3, 47].

That review also found that the greater the number of interventions, the more likely it was that positive outcomes would be found –Table 3. Thus, the above strategies should be applied in combination and not individually. For example in Uganda, when drug shop attendants received training on management of acute respiratory infections (ARI) in children, there was no improvement in actual practice and attendants who received training remained with similarly poor ARI management practices as those who did not receive training [46]. However, when training was combined with negotiation sessions and contractual obligations which sought to satisfy both public health interest and private provider incentives, there was significant improvement in drug seller practices [48].

Table 2: Proportion of positive outcomes from studies involving informal private providers according to type of intervention strategy

Intervention strategy	Percentage positive
Training alone	21%
Training plus other interventions	58%
Training of trainers	71%
Supply provision	63%
Franchise	44%
Branding/social marketing	76%
Regulation	53%
Reinforcement with print media	61%
Financial incentives, subsidies	55%
Supervision	59%
Referral systems	71%

Source: Shah et al. (2010)

Studies assessed here included: randomized controlled trials, pre-post studies with controls and case-control studies (n=26)

Table 3: Proportion of positive outcomes from studies involving informal private providers according to the number of interventions

Number of intervention strategies	Percentage positive
One	48%
Two	50%
Three	65%
Four	88%
Total	56%

Source: Shah et al. (2010)

The need for integrated management of childhood illnesses within the private sector

Since 1995, Integrated Management of Childhood illnesses (IMCI) has been utilized as a key strategy for treating sick children and improving child survival in countries with high burden of child mortality. IMCI provides guidance on treatment and care for the major childhood illness including malaria, pneumonia and diarrhoea and malnutrition and has three components: improving health worker skills, health systems strengthening, and family and community practices. While IMCI was shown to improve health worker performance and quality of care [49-50], it did not achieve the expected impact on mortality mainly due to delayed care seeking [51].

In order to improve the treatment seeking practices for sick children under IMCI, community case management (CCM) was recommended, to complement the health facility based services. CCM includes treatment of sick children at the community level and promotes timely care seeking and referral to health facilities. Integrated community case management (iCCM) is supported by WHO and UNICEF as an equity-focused strategy to increase access to care for malaria, pneumonia and diarrhoea in children under-5 years of age [52].

In 2014, Awor et al. reviewed the available literature for iCCM-related experiences within both the public and private sector [53]. The purpose was to understand the degree to which the private sector was utilized for integrated management of childhood illnesses. Evaluation studies investigating the effect of introducing an intervention with drugs or diagnostics, for malaria, pneumonia or diarrhoea, within both the public and the private sector were included. This review found four times as many evaluation studies referring to malaria, pneumonia and or diarrhoea in the public sector (49 studies), as compared to similar studies within the private sector (13 studies). Most public sector iCCM-related studies evaluated the introduction of drugs and/or diagnostics for 2 or more illnesses (malaria, pneumonia and diarrhoea), while almost all studies in the private sector were related to interventions for one disease only, malaria [53]. A summary of the studies found within the private sector is included here - Table 4. The studies all happen to be within retail drug shops. This table includes the intervention, study design, outcome measured and results of impact evaluation studies related to iCCM within the private sector.

These results indicate that private sector involvement has focused more on single disease interventions (especially malaria) and not integrated care. Clearly the private sector has not been effectively utilized for integrated child care. This follows the historical pattern of single disease focus in public sector (starting with Home Management of Malaria) that has now evolved into the iCCM integrated care strategy.

In order to improve rational drug use and quality of care for sick children, the logical next step for private sector engagement at community level should be - integrated service delivery for acute febrile illness in children, with provision of alternative appropriate care where the malaria diagnostic test is negative. In this regard, the iCCM strategy is an appropriate vehicle, which should be further explored, as discussed within the next section. There is need for implementation research on the effect of utilizing the iCCM strategy within the private sector, on child health outcomes; and on how the iCCM strategy can be utilized within existing private sector approaches like social franchising, in conjunction with programs in different settings.

Table 4: Low utilization of the private sector, for integrated management of malaria, pneumonia and diarrhoea [53].

	Author	Study design and outcome measure	Results
Malaria	Thomson et al. 2014 [54]	Pre-post study without a control. Community use of ACT in Tanzania	Mixed results – No change in population level utilization of ACTs despite increased availability, affordability and market share of ACTs in private sector
	Ikwuobe et al. 2013 [55]	Pre-post study with a control (2 pharmacies only). Change in ACT purchase from pharmacies in Nigeria	Positive results – 40% reduction in ACT purchase with introduction of RDTs
	Kangwana et al. 2013 [56]	A cluster randomized controlled trial. ACT stocking and prescription practices in Kenya	Positive results – increased ACT stocking and better prescription practices in intervention area
	Tougher et al. 2012 [29]	A before-and-after analysis of outlet survey data. Effect of AMFm on ACT availability, price, market share in 8 African countries	Mixed results – increased availability, and market share of ACTs in some countries; and reduced price of ACTs in some countries
	Talisuna et al. 2012 [57]	Pre-post study with a control. Effect of private sector subsidy on community access to ACT in Uganda	Positive results – 6 times better odds of access to ACT within 24 hours in intervention areas compared to control areas
	Yeung et al. 2011 [30]	Pre-post without a control – Multiple rounds of household and outlet surveys. Uptake and utilization of ACT and RDT over 10 years of implementation in Cambodia	Mixed results – improvements in ACT and RDT availability and uptake were relatively slow especially in rural areas
	Rutta et al. 2011	Pre-post study with no control. Review of drug shop registers for ACT dispensing practice and market share at accredited drug dispensing outlets in Tanzania [58]	Positive results – increased ACT dispensing from 3% -26%
	Kangwana et al. 2011 [59]	A cluster randomized controlled trial.	Positive – Increased coverage of ACT treatment for fever in children (25%)

		Proportion of children with fever getting ACT within 24 hours of fever onset in Kenya	difference between intervention and control at follow up)
	Alba et al. 2010 [60]	Three repeat household surveys 2004 – 2008. Community awareness and use of malaria treatment for malaria in Tanzania	Mixed results – increased community awareness (62% - 84%) but decreased utilization of recommended treatment (85%-53%), attributed to policy change for 1st line anti malaria drug
	Abuya et al. 2010 [61]	Pre-post study without a control. Drug seller knowledge and prescription practices for malaria in Kenya	Positive results – high drug seller knowledge and higher prescription of the recommended amodiaquine in intervention (61%) compared to control areas (2.8%)
Pneumonia		No articles	
Diarrhoea	Larson et al. 2012 [62]	National scale up of zinc treatment for diarrhoea in Bangladesh. Repeat surveys to determine caretaker awareness and actual use of zinc and ORS for diarrhoea	Mixed results – Rapid increase in community awareness on use of zinc for diarrhoea to 90% but lower actual utilization of zinc (10-30%)
Integrated care for malaria, pneumonia and diarrhoea	Awor et al. 2014 [63] (only one study)	Quasi experimental study introducing the WHO/UNICEF ICCM intervention within private sector drug shops in Uganda. Before-and-after facility and household surveys conducted in intervention and comparison districts. Appropriateness of care for malaria, pneumonia, and diarrhoea in children at facility and population level	Positive results – High appropriateness of care for malaria, pneumonia and diarrhoea in children and high adherence to treatment protocols by drug shop attendants

Source: Awor, 2016 [64]

HOW CAN CURRENT DELIVERY STRATEGIES FOR CHILD HEALTH (INCLUDING IMNCI) BE STRENGTHENED AND MODIFIED TO MORE EFFECTIVELY WORK WITH PRIVATE SECTOR HEALTH CARE PROVIDERS?

Maternal and child health interventions are commonly delivered through three main channels: clinical and curative services; outreach services; and community based preventive and health promotion services [65]. Chopra and colleagues propose a fourth delivery channel – the use of legislative mechanisms and mass media [21]. Using a meta-review, they identified strategies to overcome bottlenecks of availability, access, use and effective coverage of health services for poor and marginalized children. The strategies were classified into three categories focused on: improving the delivery channel itself; changing the way interventions are delivered within the same delivery channel (e.g. through task shifting from doctor to nurses and clinical officers); or moving interventions from one delivery channel to another (e.g. immunization and micronutrient delivery from clinical services to outreach services).

Chopra and colleagues identified the following effective strategies to overcome barriers to access, use and effective coverage of maternal and child health interventions and some of them are relevant for private sector engagement: use of lay health workers, outreach campaigns and child health days, social marketing, structural interventions to change health behavior, task shifting, increased use of outreach services, use of private service providers, human resource availability and geographical access, reduction or elimination of user fees, community-based and social health insurance, cash transfers and vouchers, improving continuity of care, improving quality of care, and fostering demand.

The concepts of task shifting and use of lay community health workers, in response to the human resources for health crisis in low income countries, can also be extended to the private sector. As discussed earlier, the first point of care for sick children in low income countries is mainly at retail drug outlets in sub-Saharan Africa (SSA) and through informal providers in South Asia [11]. Where there is such high utilization of the private sector for ambulatory care, it is important to ensure timely access to appropriate care for sick children at the point-of-care. This would reduce delays in accessing care and contribute to improved health outcomes.

However, there is minimal evidence on how to utilize proven and effective child-health delivery strategies like IMNCI and ICCM within the private sector. To date, one study has evaluated the effect of introducing iCCM within the private sector in peripheral settings in SSA [63]. I use this as a case study to illustrate how the iCCM strategy can be utilized in the private sector, using a multi-faceted intervention that incorporates a full range of stakeholders and utilizes other private sector engagement strategies including: franchising, social marketing and community awareness, training, and price subsidies to ensure access and affordability of care – See Box 1. The introduction of the iCCM strategy at private drug shops in Uganda led to high levels of appropriateness of care for sick children.

Box 1: Increased access to care and appropriateness of treatment at private sector drug shops with integrated management of malaria, pneumonia and diarrhoea: a quasi-experimental study in Uganda

Following iCCM policy, community health workers with minimal training have been empowered to provide integrated management of malaria, pneumonia and diarrhoea using pre-packaged drugs and diagnostics, in the community [52, 66-67]. However, as over 50% of febrile children in Sub-Saharan Africa are treated at retail drug shops, where the quality of care is poor, it is important to similarly improve the quality of care that children receive within this private sector.

This case study set out to determine the feasibility and effect on quality of care after introducing diagnostics (malaria Rapid Diagnostic Tests – RDT – and respiratory timers) and promoting paediatric-dosage pre-packed drugs for malaria, pneumonia and diarrhoea in private sector licensed drug shops in Eastern Uganda, in order to contribute to rational use of drugs and child survival. There were 3 main components of the intervention: 1) availing subsidized, dose specific, pre-packaged drugs and free diagnostics for malaria, pneumonia and diarrhoea through drug shops; 2) training of drug shop attendants in the iCCM intervention and 3) a community awareness campaign. A social franchise model was used, where drug shops were grouped under a known local brand and provided with training, supervision and access to quality drugs and diagnostics for management of common childhood illnesses [31].

Three studies (I-III) were conducted using a quasi experimental design in one intervention and one comparison district, between May 2011 and June 2012. Household surveys, exit interviews, focus group discussions and in-depth interviews were conducted before (at baseline) and after the intervention (at end-line) in both areas. A total of 3759 household interviews and 943 exit interviews were conducted with caretakers of children less than five years of age, before and after introducing the intervention. The role and appropriateness of care provided by drug shops in treating childhood illnesses – study I [68] was determined from the baseline data by computation of proportions. The effect of the iCCM intervention on appropriateness of care at drug shops was determined using generalized linear regression models and difference-in-difference analysis, comparing baseline and end-line data – study II [63]. For study III, the proportion of adherence to treatment protocols was determined from a review of the drug shop treatment registers, which included 7,667 child visits [69].

From the baseline assessment, the majority of children with a recent illness sought care in the private sector 496 (53%) compared to the public sector 154 (16.5%). However, at the level of drug shops, only 15 (10%) received appropriate treatment for malaria and almost none for pneumonia symptoms or diarrhoea. With the introduction of the iCCM intervention at drug shops in the intervention area, 88% (95% CI 79.0 – 96.4) of children with fever received parasite diagnosis of malaria prior to treatment with appropriate drugs. Further, children with pneumonia symptoms or diarrhoea in the intervention area were 3 (2.8; 95% CI 2.0 – 3.9) and 13 times (12.8; 95% CI 4.2 – 38.6) more likely to receive appropriate treatment with amoxicillin and oral rehydration salts + Zinc, respectively. Finally, from the review of registers, 90% of children categorized as having either malaria, pneumonia or diarrhoea or a mix of these classifications were treated according to the iCCM guidelines.

In conclusion, introduction of the iCCM intervention at drug shops in rural Uganda resulted in high levels of appropriateness of care for malaria, pneumonia and diarrhoea in children and high adherence to treatment protocols by drug shop attendants [64].

It is also important to note that implementation of the iCCM intervention through franchised outlets is also ongoing under Population Services International [70], in some countries like Uganda and Kenya, showing how program implementation is moving faster than the academic evidence. PSI has 33 franchised networks, with 10,000 franchisees across 30 countries around the world, which reach more than 10 million clients per year. The franchised networks, take various preventive and life saving services related to family planning, maternal health, tuberculosis and HIV testing as well as iCCM-related child health services [70].

Two other franchised networks, Living goods [71] and BRAC [72] are using the iCCM strategy with the private sector in Uganda and Kenya. Working through a network of mainly female community health promoters, the franchised networks utilize a non-profit entrepreneurial delivery model where the community health promoters earn a margin on product sales and performance based incentives. An evaluation of the impact of the living goods entrepreneurial model of community health delivery in Uganda found that the intervention reduced under-five mortality rate by 25% in intervention compared to control clusters [73].

Given the above examples, there is potential of utilizing the IMNCI and iCCM strategy to improve quality of care for children, through the private sector. Further, there is an opportunity to use the existing franchised networks to expand the reach and coverage of the IMNCI strategy.

However, the influences on the private sector should guide the conceptualization, design and implementation of interventions in the private sector. Elliot et al 2008 and Bloom et al. 2008 emphasize the importance of understanding health markets as “complex systems that can perform well or badly”. There are multiple institutions which influence health markets, multiple actors and an interplay of formal and informal rules within these market systems. For this reason, they argue that interventions that focus too narrowly on specific aspects for example training are likely to fail [3] because they do not adequately anticipate and account for complex interactions among the range of stakeholders that exist [74].

Finally, health markets exist within the broader health system, requiring a systems thinking approach [75], when using health markets for public health goals. Using a systems approach, which considers effects of a particular intervention on the other health system building blocks, allows holistic understanding of the interactions with the rest of the health system. This can help understand both the intended and unintended consequences of private sector interventions on the health system [74, 76].

CONCLUSIONS AND RECOMMENDATIONS

1. There is growing evidence of private sector engagement approaches which are promising and relevant for improving child health outcomes. These particularly include: social marketing, social franchising, voucher systems, accreditation and contracting-out. However, for maximum benefit, these delivery strategies must be utilized in various combinations, as the use of single interventions are less effective in the private sector.
2. It is important to use a systems approach when engaging the private sector for public health goals, in order to understand how the interventions interact with the rest of the health system, as well as the intended and un-intended consequences that result.
3. There is potential for the IMNCI and iCCM strategy to act as a vehicle to improve quality of care in the private sector, provided it is adapted for use in the sector. Conversely, private sector can improve reach and coverage of IMNCI as a strategy. However, there is very little evidence available at present.
4. An implementation research agenda for private sector integrated care of febrile illness in children needs to be developed and implemented in conjunction with private sector programs, in multiple settings. This research agenda should incorporate the different segments of the private sector including drug shops and the informal sector.

REFERENCES

1. Hanson, K. and P. Berman, *Private health care provision in developing countries: a preliminary analysis of levels and composition*. Health Policy Plan, 1998. **13**(3): p. 195-211.
2. Mills, A., et al., *What can be done about the private health sector in low-income countries?* Bull World Health Organ, 2002. **80**(4): p. 325-30.
3. Shah, N.M., W.R. Brieger, and D.H. Peters, *Can interventions improve health services from informal private providers in low and middle-income countries?: a comprehensive review of the literature*. Health Policy Plan, 2011. **26**(4): p. 275-87.
4. Walker D. , C.C., Hossain S. , Wahed T. , Gazi R. , Koehlmoos T. , Asiimwe C. , Ranson M. , and Bennett S., *Establishing non-state sector research priorities in developing countries using a participatory methodology*. 2009.
5. Bloom, G., et al., *Making health markets work better for poor people: the case of informal providers*. Health Policy Plan, 2011. **26 Suppl 1**: p. i45-52.
6. Forsberg, B.C. and D. Montagu, *Further advances in knowledge on the role of the private sector in health systems*. Health Policy Plan, 2014. **29 Suppl 1**: p. i1-i3.
7. Marek, T., O'Farrell, C. , Yamamoto, C. , Zabel, L., *Trends and opportunities in public-private partnerships to improve health service delivery*. 2005, WorldBank: Washington, D.C.
8. UCSF Global Health Group. *The Private Sector in Health. Conference Report*. in *iHEA 8th World Congress. Pre congress Symposium*. 2011. Toronto, Canada.

9. Bustreo, F., A. Harding, and H. Axelsson, *Can developing countries achieve adequate improvements in child health outcomes without engaging the private sector?* Bull World Health Organ, 2003. **81**(12): p. 886-95.
10. Grepin, A.K., *The role of the private sector in delivering maternal and child health services in low-income and middle-income countries: an observational, longitudinal analysis.* Lancet, 2014. **384**(S7).
11. Basu, S., et al., *Comparative performance of private and public healthcare systems in low- and middle-income countries: a systematic review.* PLoS Med, 2012. **9**(6): p. e1001244.
12. Kamal-Yanni, M.M., J. Potet, and P.M. Saunders, *Scaling-up malaria treatment: a review of the performance of different providers.* Malar J, 2012. **11**: p. 414.
13. Claeson, M. and R.J. Waldman, *The evolution of child health programmes in developing countries: from targeting diseases to targeting people.* Bull World Health Organ, 2000. **78**(10): p. 1234-45.
14. Gautham, M., et al., *'First we go to the small doctor': first contact for curative health care sought by rural communities in Andhra Pradesh & Orissa, India.* Indian J Med Res, 2011. **134**(5): p. 627-38.
15. De Costa, A. and V. Diwan, *'Where is the public health sector?' Public and private sector healthcare provision in Madhya Pradesh, India.* Health Policy, 2007. **84**(2-3): p. 269-76.
16. Nguyen, H., *The principal-agent problems in health care: evidence from prescribing patterns of private providers in Vietnam.* Health Policy Plan, 2011. **26 Suppl 1**: p. i53-62.
17. Sood, N. and Z. Wagner, *Private sector provision of oral rehydration therapy for child diarrhea in sub-Saharan Africa.* Am J Trop Med Hyg, 2014. **90**(5): p. 939-44.
18. Wagner, Z., M. Shah, and N. Sood, *Barriers to use of oral rehydration salts for child diarrhea in the private sector: evidence from India.* J Trop Pediatr, 2015. **61**(1): p. 37-43.
19. WHO, *World Health Report 2000, in Health Systems: Improving Performance.* 2000, World Health Organization: Geneva.
20. Banerjee, A.V., R. Glennerster, and E. Duflo, *Putting a Band-Aid on a Corpse: Incentives for Nurses in the Indian Public Health Care System.* J Eur Econ Assoc, 2008. **6**(2-3): p. 487-500.
21. Chopra, M., et al., *Strategies to improve health coverage and narrow the equity gap in child survival, health, and nutrition.* Lancet, 2012. **380**(9850): p. 1331-40.
22. Waters, H., L. Hatt, and D. Peters, *Working with the private sector for child health.* Health Policy Plan, 2003. **18**(2): p. 127-37.
23. WHO. *Global Health Observatory Data: Out of pocket expenditure.* 2015 [cited 2016 03-06-2016]; Available from: http://www.who.int/gho/health_financing/out_pocket_expenditure/en/.
24. Patouillard, E., et al., *Can working with the private for-profit sector improve utilization of quality health services by the poor? A systematic review of the literature.* Int J Equity Health, 2007. **6**: p. 17.
25. Montagu, D., et al., *Recent trends in working with the private sector to improve basic healthcare: a review of evidence and interventions.* Health Policy Plan, 2016.
26. Kikumbih, N., et al., *The economics of social marketing: the case of mosquito nets in Tanzania.* Soc Sci Med, 2005. **60**(2): p. 369-81.
27. Wakefield, M.A., B. Loken, and R.C. Hornik, *Use of mass media campaigns to change health behaviour.* Lancet, 2010. **376**(9748): p. 1261-71.
28. Grilli, R., C. Ramsay, and S. Minozzi, *Mass media interventions: effects on health services utilisation.* Cochrane Database Syst Rev, 2002(1): p. CD000389.
29. Tougher, S., et al., *Effect of the Affordable Medicines Facility--malaria (AMFm) on the availability, price, and market share of quality-assured artemisinin-based combination therapies*

- in seven countries: a before-and-after analysis of outlet survey data*. Lancet, 2012. **380**(9857): p. 1916-26.
30. Yeung, S., et al., *Socially-marketed rapid diagnostic tests and ACT in the private sector: ten years of experience in Cambodia*. Malar J, 2011. **10**: p. 243.
31. Montagu, D., *Franchising of health services in low-income countries*. Health Policy Plan, 2002. **17**(2): p. 121-30.
32. Viswanathan, R., Schatzkin, E. , Sprockett, A. , *Clinical Social Franchising Compendium: An Annual Survey of Programs: findings from 2013*. 2014, The Global Health Group: San Francisco, CA.
33. Koehlmoos, T.P., et al., *The effect of social franchising on access to and quality of health services in low- and middle-income countries*. Cochrane Database Syst Rev, 2009(1): p. CD007136.
34. Beyeler, N., A. York De La Cruz, and D. Montagu, *The impact of clinical social franchising on health services in low- and middle-income countries: a systematic review*. PLoS One, 2013. **8**(4): p. e60669.
35. Nijmeijer, K.J., I.N. Fabbriotti, and R. Huijsman, *Is franchising in health care valuable? A systematic review*. Health Policy Plan, 2014. **29**(2): p. 164-76.
36. Munroe, E., B. Hayes, and J. Taft, *Private-Sector Social Franchising to Accelerate Family Planning Access, Choice, and Quality: Results From Marie Stopes International*. Glob Health Sci Pract, 2015. **3**(2): p. 195-208.
37. Bellows, N.M., B.W. Bellows, and C. Warren, *Systematic Review: the use of vouchers for reproductive health services in developing countries: systematic review*. Trop Med Int Health, 2011. **16**(1): p. 84-96.
38. Rutta, E., et al., *Accrediting retail drug shops to strengthen Tanzania's public health system: an ADDO case study*. J Pharm Policy Pract, 2015. **8**: p. 23.
39. Lagarde, M. and N. Palmer, *The impact of contracting out on health outcomes and use of health services in low and middle-income countries*. Cochrane Database Syst Rev, 2009(4): p. CD008133.
40. Liu, X., D.R. Hotchkiss, and S. Bose, *The effectiveness of contracting-out primary health care services in developing countries: a review of the evidence*. Health Policy Plan, 2008. **23**(1): p. 1-13.
41. Luby, S., et al., *Improving private practitioner sick-child case management in two urban communities in Pakistan*. Trop Med Int Health, 2002. **7**(3): p. 210-9.
42. Chakraborty, S., S.A. D'Souza, and R.S. Northrup, *Improving private practitioner care of sick children: testing new approaches in rural Bihar*. Health Policy Plan, 2000. **15**(4): p. 400-7.
43. Conteh, L. and K. Hanson, *Methods for studying private sector supply of public health products in developing countries: a conceptual framework and review*. Soc Sci Med, 2003. **57**(7): p. 1147-61.
44. Mahendradhata, Y., *The case for stronger regulation of private practitioners to control tuberculosis in low- and middle-income countries*. BMC Res Notes, 2015. **8**: p. 600.
45. Brugha, R. and A. Zwi, *Improving the quality of private sector delivery of public health services: challenges and strategies*. Health Policy Plan, 1998. **13**(2): p. 107-20.
46. Tumwikirize, W.A., et al., *Impact of a face-to-face educational intervention on improving the management of acute respiratory infections in private pharmacies and drug shops in Uganda*. East Afr Med J, 2004. **Suppl**: p. S25-32.
47. Sudhinaraset, M., et al., *What is the role of informal healthcare providers in developing countries? A systematic review*. PLoS One, 2013. **8**(2): p. e54978.
48. Tawfik, Y., et al., *Negotiating improved case management of childhood illness with formal and informal private practitioners in Uganda*. Trop Med Int Health, 2006. **11**(6): p. 967-73.

49. Nguyen, D.T., et al., *Does integrated management of childhood illness (IMCI) training improve the skills of health workers? A systematic review and meta-analysis*. PLoS One, 2013. **8**(6): p. e66030.
50. Gouws, E., et al., *Improving antimicrobial use among health workers in first-level facilities: results from the multi-country evaluation of the Integrated Management of Childhood Illness strategy*. Bull World Health Organ, 2004. **82**(7): p. 509-15.
51. Chopra, M., et al., *Integrated management of childhood illness: what have we learned and how can it be improved?* Arch Dis Child, 2012. **97**(4): p. 350-4.
52. Young, M., et al., *World Health Organization/United Nations Children's Fund Joint Statement on Integrated Community Case Management: An Equity-Focused Strategy to Improve Access to Essential Treatment Services for Children*. Am J Trop Med Hyg, 2012. **87**(5 Suppl): p. 6-10.
53. Awor, P., J. Miller, and S. Peterson, *Systematic literature review of integrated community case management and the private sector in Africa: Relevant experiences and potential next steps*. J Glob Health, 2014. **4**(2): p. 020414.
54. Thomson, R., et al., *Has Tanzania embraced the green leaf? Results from outlet and household surveys before and after implementation of the Affordable Medicines Facility-malaria*. PLoS One, 2014. **9**(5): p. e95607.
55. Ikwaube, J.O., et al., *The impact of rapid malaria diagnostic tests upon anti-malarial sales in community pharmacies in Gwagwalada, Nigeria*. Malar J, 2013. **12**: p. 380.
56. Kangwana, B.P., et al., *The effect of an anti-malarial subsidy programme on the quality of service provision of artemisinin-based combination therapy in Kenya: a cluster-randomized, controlled trial*. Malar J, 2013. **12**: p. 81.
57. Talisuna, A.O., et al., *Closing the access barrier for effective anti-malarials in the private sector in rural Uganda: consortium for ACT private sector subsidy (CAPSS) pilot study*. Malar J, 2012. **11**: p. 356.
58. Rutta, E., et al., *Increasing Access to Subsidized Artemisinin-based Combination Therapy through Accredited Drug Dispensing Outlets in Tanzania*. Health Res Policy Syst, 2011. **9**: p. 22.
59. Kangwana, B.P., et al., *The impact of retail-sector delivery of artemether-lumefantrine on malaria treatment of children under five in Kenya: a cluster randomized controlled trial*. PLoS Med, 2011. **8**(5): p. e1000437.
60. Alba, S., et al., *Improvements in access to malaria treatment in Tanzania following community, retail sector and health facility interventions -- a user perspective*. Malar J, 2010. **9**: p. 163.
61. Abuya, T.O., et al., *Evaluating different dimensions of programme effectiveness for private medicine retailer malaria control interventions in Kenya*. PLoS One, 2010. **5**(1): p. e8937.
62. Larson, C.P., T.P. Koehlmoos, and D.A. Sack, *Scaling up zinc treatment of childhood diarrhoea in Bangladesh: theoretical and practical considerations guiding the SUZY Project*. Health Policy Plan, 2012. **27**(2): p. 102-14.
63. Awor, P., et al., *Increased access to care and appropriateness of treatment at private sector drug shops with integrated management of malaria, pneumonia and diarrhoea: a quasi-experimental study in Uganda*. PLoS One, 2014. **9**(12): p. e115440.
64. Awor, P., *Drug shops in integrated community case management of malaria, pneumonia and diarrhoea in Uganda: Appropriateness of care and adherence to treatment guidelines*, in *Faculty of Medicine and Dentistry*. 2016, Bergen, Norway: Bergen.
65. Kerber, K.J., et al., *Continuum of care for maternal, newborn, and child health: from slogan to service delivery*. Lancet, 2007. **370**(9595): p. 1358-69.
66. Diaz, T., S. Aboubaker, and M. Young, *Current scientific evidence for integrated community case management (iCCM) in Africa: Findings from the iCCM Evidence Symposium*. J Glob Health, 2014. **4**(2): p. 020101.

67. MoH, *Intergrated Community Case Management of Childhood Malaria, Pneumonia and Diarrhoea: Implementation Guide*, C.H.D. Ministry of Health, Editor. 2010: Kampala.
68. Awor, P., et al., *Private sector drug shops in integrated community case management of malaria, pneumonia, and diarrhea in children in Uganda*. Am J Trop Med Hyg, 2012. **87**(5 Suppl): p. 92-6.
69. Awor, P., et al., *Drug seller adherence to clinical protocols with integrated management of malaria, pneumonia and diarrhoea at drug shops in Uganda*. Malar J, 2015. **14**: p. 277.
70. PSI. *Franchising for Health*. 2016 [cited 2016 03-06-2016]; Available from: <http://www.psi.org/approach/social-franchising/#impact>.
71. LivingGoods. *Living Goods' Game-Changing Model Empowers Health Entrepreneurs to Deliver Life-Saving Products to the Doorsteps of the Poor*. 2016; Available from: <https://livinggoods.org/what-we-do/>.
72. BRAC. *BRAC Uganda*. 2016; Available from: <http://www.brac.net/uganda>.
73. Bjorkman-Nykqvist, M., et al., *Evaluating the impact of the Living Goods entrepreneurial model of community health delivery in Uganda: A cluster-randomized controlled trial* 2015.
74. Shroff, Z., et al., *Using health markets to improve access to medicines: three case studies*. J Pharm Policy Pract, 2016. **9**: p. 19.
75. de Savigny, D., Teghreed, A (eds) *Systems Thinking for Health Systems Strengthening*. 2009: Alliance for Health Policy and Systems Research, WHO.
76. Bigdeli, M., et al., *Access to medicines from a health system perspective*. Health Policy Plan, 2013. **28**(7): p. 692-704.