

PUBLIC PRIVATE PARTNERSHIPS

For Improving Maternal and Neonatal Health Service Delivery



2013

A Review of the Evidence

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Funded by the Maternal and Newborn Health Programme
Research and Advocacy Fund (RAF)

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Health Service Delivery

The correct citation for this report is:

Zaidi, S., Salam, R., Rizvi, S. S., Ansari, S., Bhutta, Z., et al. (2013). Public Private Partnerships for Improving Maternal and Neonatal Health Service Delivery, Research and Advocacy Fund, British Council Islamabad.

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Acknowledgement

Public Private Partnerships for Improving Maternal and Neonatal Health Service Delivery - A Review of Evidence is a project funded by the Maternal and Newborn Health Programme Research and Advocacy Fund (RAF) of the British Council Pakistan and is implemented by the Women and Child Health Division of the Aga Khan University Karachi.

The team is grateful for fieldwork support and insights provided by the provincial Maternal, Neonatal and Child Health Programs of the Department of Health, national NGOs, international NGOs and experts. It is also grateful for the external peer review provided by the University of Aberdeen.

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Acronyms

ANC	Antenatal Care
BLDS	British Library for Development Studies
CBA	Controlled Before After
CBHI	Community Based Health Insurance
CCTs	Conditional Cash Transfers
CemONC	Comprehensive Emergency Obstetric and Neonatal Care
CPR	Contraceptive Prevalence Rate
EmONC	Emergency Obstetric Care
EPOC	Effective Practice and Organisation of Care
GOB	Government of Bangladesh
ICDS	Integrated Child Development Services
IDA	International Development Association
IDS	Institute of Development Studies
INHP	Integrated Nutrition and Health Programme
LMIC	Low- and Middle Income Countries
MDGs	Millennium Development Goals
MHFW	Ministry of Health and Family Welfare
MNH	Maternal and Newborn Health
NCMS	New Co-operative Medical System
NGO	Non-governmental Organisation
NHI	National Health Insurance
NPPI	Norway-Pakistan Partnership Initiative
OOP	Out of Pocket
PNC	Postnatal Care
PPP	Public Private Partnership
PSC	Poverty Score Card
PSI	Population Services International
RCT	Randomized Controlled Trials
SCTS	Social Cash Transfer Scheme
SRSO	Sindh Rural Support Organization
TFR	Total Fertility Rate
UNICEF	United Nations International Children's Emergency Fund
USAID	US Agency for International Development
WHO	World Health Organisation

Executive Summary

Pakistan's currently lags behind regional countries in terms of progress towards the Millennium Development Goals 4 and 5. To accelerate progress synergies need to be developed across the public and private sectors which often tend to work in silos. Pakistan currently lacks a strategy on Public Private Partnerships (PPPs), however as a first step evidence is required on whether, PPPs have worked, which are the more effective models and what factors can improve success?

We reviewed evidence from Low and Middle Income Countries (LMICs) on the effectiveness of Public Private Partnerships for Maternal and Newborn Health (MNH) and the comparative edge of different PPP models. A systematic Cochrane style review was undertaken so as to only include high quality studies for credible evidence. As a supplementary exercise, we also landscaped local PPPs in Pakistan that address MNH. These commonly have not been evaluated for performance review and were hence not eligible for the systematic review. However, the landscaping provides information on the distribution, design and focus of PPPs in Pakistan.

There is an extensive range of PPP interventions across LMICs for strengthening MNH service delivery. One subset includes private financing with government provision and involves interventions such as community based insurance scheme, organisations purchasing maternity services from government health facilities and NGO support for MNH to government health facilities. There is lesser documentary evidence on this. The other subset involves the state purchasing, through use of government health budget or foreign development assistance, private sector MNH services so as to expand service coverage or improve the management of service delivery. This has a larger range of initiatives and includes the contracting of NGOs and private practitioners' services, as well as Vouchers, Conditional Cash Transfers (CCTs) and National Health Insurance (NHI) schemes that purchase MNH services from private health providers.

The review of evidence from 27 PPPs provides encouraging and significant evidence of overall impact on increasing the use of maternal health services. Overall PPP interventions significantly improved Antenatal Care (ANC), C-Sections and institutional delivery. There is suggested increase in Postnatal Care (PNC), however, measurements are insufficient and cannot be generalized. Data is thin on maternal mortality, although existing data is indicative of decrease in maternal mortality by 28%. There is insufficient data on neonatal health services making it difficult to draw effective conclusions.

Within the range of maternal care services, the type of service that increased through PPPs depends on PPP modalities. Voucher schemes through private and public sector partnerships improve both pre and post pregnancy care utilization as well as access to facility based births, however, there is little impact on emergency care. Evidence from maternal CCTs is indicative of increase in deliveries and drop in maternal mortality but this needs reporting from a larger pool of studies. Contracting out of services can result in positive impact in delivery and ANC, however such results are not guaranteed in all contracting interventions. There is little evidence of increased access to emergency and postnatal care with contracting out and contradictory results on immunization. Both NHI schemes and Community Based Health Insurance (CBHI) result in significant improvement in facility based births and C-Section, but with little evidence of translation into promotive pregnancy care. User fee exemption initiatives involving reimbursement of private provider by the state for fee exemption have conclusively resulted in increasing births at health facilities. There is little evidence where quality of care improves through PPP interventions and with a focus on access, tends to be overlooked in terms of specification in intervention and its measurement.

PPPs require standardized service packages. Most PPPs interventions inadequately cover the full range of maternal, child and EmONC services; there is scant attention to neonatal care services and they are also affected by issues concerning payment modalities, state ownership and health system support. Administrative costs of PPPs are not known and are expected to scale up.

While most PPPs have a pro-poor intent there is less evidence to suggest that PPPs have indeed resulted in equitable utilization by the poor. There is a dearth of evidence on other purported goals of PPPs such as reduction in patient expenditure and cost efficiency. An intent to evaluate needs to be incorporated at the start of the PPP intervention in order to have better designed and comprehensive evaluations.

In Pakistan there are several indigenous PPPs in place for MNH. The most popular form of PPP initiatives involves private sector financial and technical support to augment government health facilities, contracting out of health care facilities to NGOs and some recent examples of small scoped voucher schemes. Most have largely sprung up through efforts of MNH related interest groups in response to weak government services while some have been purposively introduced by the state as part of health systems strengthening innovations.

Khyber Pakhtunkhwa has the largest concentration of PPPs, involving government financing of NGO services, to fill coverage gaps in remote locations or to improve the functionality of existing services across the province. Sindh and Balochistan are most prolific in terms of models involving NGO support to existing government health facilities for improving MNH service delivery. The Punjab has the fewest examples of PPPs.

Pakistan has a moderately sufficient market of both local NGOs and International NGOs (INGOs) for undertaking PPPs. Although performance evaluations are commonly lacking, PPPs have succeeded in providing staff and support for functioning of health facilities in remote locations. The main constraint is that both PPP models lack monitoring, accountability and oversight platforms and continue to grow in the absence of a strategy.

In summary, while there is a positive trend for PPPs in Pakistan, it currently requires a sense of direction, the need to learn from experience of other developing countries and an evidence based strategy to strategically identify areas where PPPs are needed. Types that are most well suited should be selected and an adequate service package with incentives and support should be put in place. This review attempts to fill some of these knowledge gaps by highlighting achieved outcomes, comparative strengths of different PPP models and areas that need more information.

1.1 Aim

This study aims to systematically review global evidence on effectiveness of Public Private Partnerships (PPPs) on Maternal and Newborn Health (MNH) and comparative edge of different PPP models. Additionally, it also landscapes local PPPs in place in Pakistan that could not be included in the systematic review due to lack of rigorous evaluation.

1.2 Background

Pakistan has lagged behind in terms of progress on Millennium Development Goals (MDGs) 4 and 5. An estimated 276 Pakistani women die for every 100,000 live births and only 34% deliver in facilities.[1] The infant mortality rate is 78 per 1,000 live births and under-five mortality rate is 94 deaths per 1,000 live births, Total Fertility Rate (TFR) remains high at 4.1 children born per woman and the modern method Contraceptive Prevalence Rate (CPR) has stagnated at around 30% for the past several years[1].

Public Private Partnership (PPP) is a phenomenon that has gained popularity in recent times. In health sector it is defined as an institutional relationship between the government and the private sector (non-profit organisations, for-profit private sector, to achieve a shared health-creating goal on the basis of a mutually agreed division of labour)[2]. It requires a written agreement that specifies the reciprocal rights and obligations of each organisation involved, the objectives of the partnership, and how the partnership will be managed or governed [3].

Pakistan's traditional model of service delivery supported by the Ministry of Health and the provincial Departments of Health has the public sector as the financier and provider of health service delivery. However the public sector remains underutilized with 67% of the total number of institutional births taking place in private health facilities[1].

On the financing front it is estimated that private health expenditure, mainly from household Out of Pocket (OOP), accounts for 66% of the national health care expenditure[4]. Although the private sector is firmly entrenched in Pakistan its role has not been institutionally harnessed towards MDG 4 and 5. Poorly functioning services in turn linked to staff, drug and equipment shortages and poor supervision, forces clients to shift to the private sector use despite higher OOP expense and unregulated quality of care[5, 6]. There are also recent instances of private sector supplementing MNH services at public sector hospitals and primary facilities through provision of funds and technical support. Although the private sector is firmly involved in providing MNH services in Pakistan, its role has not been strategically linked towards accomplishing MDG 4 and 5 with both the public and private health sectors functioning in silos. Innovative interventions are required to strengthen service delivery, harnessing the private sector both for the delivery and financing of care.

There are ample instances of PPPs for MNH, implemented in Low and Middle Income Countries (LMICs), using different partnership arrangements between the public and private sectors. In Pakistan the notion of PPPs in the public policy sphere is mainly confined to private sector contribution to financing, infrastructure development and maintenance[7] while private sector partnership for service delivery receive less policy emphasis. A number of hybrid PPP models for service delivery have cropped up in recent years in the area of Maternal and Neonatal Health driven by donor support, philanthropic support and in certain instances through support of provincial governments[8]. These have usually followed an adhoc adoption process rather than being guided by evidence. Moreover, many initiatives are loosely dubbed as PPPs even though they may lack meaningful participation due to lack of a common understanding and application of a standardized definition.

In 2010 Pakistan the 18th Constitutional Amendment devolved the Ministry of Health, along with 16 other social sector ministries to the provinces, and the provinces are now the drivers of health reforms[9]. The post devolution scenario provides a window of opportunity for context specific innovations, in each of the four provinces, using different modalities of partnerships with the private sector. An evidence-informed strategy is needed to guide choice of PPP interventions, modifications in design and decisions to up-scale or discontinue.

Knowledge gaps: A major gap is the lack of collated evidence on PPP performance to choose between competing PPP models. Although there are many international publications on PPPs, there is need to sift for high quality evidence for basing conclusive recommendations and is provided through a process of systematic review of evidence. A global review, systematically comparing different models of PPPs for MNH, has so far not been attempted. Systematic reviews, where undertaken, have been for a specific PPP intervention or for a particular service area rather than the whole range of MNH services. Available systematic reviews include evaluation of cash transfers for child health[10] and voucher assessment for reproductive health.[11] A more wide scoped systematic review by Zaidi et al (2012)[12] assessed different financing interventions, including those involving PPPs, for performance in terms of basic and emergency obstetric care but the review did not extend to neonatal care.

Utility of the study: The findings are expected to inform the international and national policy audience as to whether to implement PPPs and if so which PPP models to scale-up and modify for improved service delivery. More specifically within Pakistan it is intended to be of assistance to provincial governments and other relevant stakeholders such as local and national NGOs, development partners and experts in developing context specific and effective interventions to deliver MNH services through better performing PPP models.

1.3 The Study & its Objectives

This report provides a review of various PPP interventions in LMICs with respect to Maternal and

Neonatal Health and aims towards evidence based policy response. In this context, primary and secondary objectives of this study are:

Primary Objective:

- To systematically review the performance impact of PPPs implemented globally on maternal and newborn health care.

Secondary Objective:

- To landscape key Public Private Partnerships in Pakistan not included in the systematic review

The first part of the report gives the findings of the systematic review on areas of impact by the PPP interventions. It applies scientific filters to rule in rigorous evaluations of PPP studies with the intention of providing robust and relevant evidence to objectively assess the performance impact of PPPs for MNH.

The second part landscapes local PPPs in Pakistan. It was anticipated that several of the local PPPs in Pakistan may not have been rigorously evaluated and therefore may not qualify for systematic review. Hence a landscaping study of local PPPs has been undertaken in a consultative process with key stakeholders in the provinces to at least provide the range and scope of PPPs in Pakistan in the area of Maternal Neonatal Health. Although it does not provide performance related information but its value lies in terms of distribution of PPPs, design related features, contribution for MNH and stakeholders perceptions regarding its implementation.

1.4 PPPs and their Categorization

The term PPP is often loosely applied to a wide range of interventions; this study carefully applies standardized international definitions to carefully select PPPs that involve an institutional partnership between the public and private sector. A public private partnership can be categorized by i) the intended goal that it is contributing to, and ii) the respective role of public and private sectors. PPPs contribute to various products within the health system and a product based classification is given below[13]:

- Resource mobilization
- Developing a product
- Distributing a subsidized product
- Strengthening health services
- Strengthening health systems
- Educating the public
- Improving product quality or regulation
- Knowledge exchange

1.5 Limit and Scope of this Study

For the purpose of this study our focus was on PPPs arrangements for service delivery so as to get a confined focused of review. PPPs focused at the service delivery level were chosen as these were considered to have the most direct effect on MNH performance while other areas, such as product development, human resource development, knowledge exchange etc., although pertinent to MNH were considered to have a more indirect effect and a less direct causal association on MNH outcomes Within service delivery our focus was on formal contractual arrangements between the public and private sector for service delivery and financing.

Figure 1.1: Public Private Partnerships: Division of Roles

		Provision of Services	
		PUBLIC	PRIVATE
Financing of Services	PUBLIC		
	PRIVATE		

Source: World Health Organisation. Report on Interregional Meeting on the Public/Private Mix in National Health Systems and the Role of Ministries of Health, 1991. Geneva.

The scope of PPP review did not include regulatory, quality assurance or capacity development interventions aimed at service delivery. It also did not include informal arrangements.

The WHO Framework (1991)[14] was used to characterize the two major domains of partnership: i) PPPs in which the private sector provides financing while the public sector provides services, and ii) PPP with the public sector provides financing and the private sector provides services. These were conceptually outlined in a two by two matrix that show different models for health care i.e. health care can be delivered entirely through public financing and provision, or by private financing and provision, or alternatively by partnerships between the public and private sector based on a demarcated or service delivery role as shown in the two shaded boxes.

1.6 PPP Interventions Examined

Based on the above defined scope of study, we ruled in PPP interventions that involved the role of private sector as provider of government funded services or financier of government provided services, bound by formal contractual arrangements between the state and the private sector entities There were several documented PPP interventions involving government purchase of privately provided services, but evaluated instances of PPP interventions involving organized private sector financing to government health facilities were few. The only evaluated mechanisms seen were the Community Based Health Insurance (CBHI) initiatives implemented and managed by organized and registered community based organisations.

The PPP interventions studied are described below:

Vouchers: Voucher is a pre-paid card or token provided to clients for obtaining a particular service or package of services from trained health service providers at partial payment or free of cost[15]. The service provider can be the public or private sector. They are expected to increase utilization by simulating demand and enhance quality by encouraging competition amongst providers for voucher recipients. Vouchers included here are those funded by the public sector with service delivery provided by private providers who have been trained and accredited for this purpose.

Cash transfers: This involves a cash transfer to client/ patient at the health service delivery outlet after availing the specified health service and is used to encourage uptake of services by clients[10]. It is expected to increase utilization by simulating demand amongst clients. Cash transfers funded by the public sector for care provided at private sector facilities were included in this model.

Contracting out: Involves leasing of services to private providers by the public sector based on a stipulated agreement and targets and using public sector financing[16, 17]. It is intended to increase the utilization, quality and efficiency of services through competitive tenders and performance targets. There are two types of contracting:

- Management Contract is that whereby the budget and managerial authority of a public sector facility gets transferred to the private sector for more efficient management. It is intended for example: contracting of Basic Health Units (BHUs).
- Service Delivery Contract involves public financing for provision of a defined service by the private sector which is difficult for government to provide and services provided through the private sectors own facilities and infrastructure[17]. These are particularly geared towards quick rollout of service coverage in areas where there are gaps while allowing for increased quality through competitive tenders. Example: health care services in remote areas, services to specific disadvantaged such as refugees, provision of supplementary diagnostics or community awareness etc.

National Health Insurance: Involves risk pooling across entire or large segment of the population to ensure coverage for a package of health services. National Health Insurance (NHI) programs are funded by the state and services provided can be availed at either public or private facilities. In this model we have included those NHI schemes that involved free or subsidized health care provision at private facilities with funding provided by the state[18].

User fee reduction: Schemes exempt either the whole fee or subsidize major portion of the fee for healthcare services, and apply across the public and private sector facilities. User fee exemption schemes involving health care provision at private health facilities with the exemption cost borne by the public sector have been included in this model[19].

Community Based Health Insurance (CBHI): This is a risk pooling mechanism for the rural poor and those working in the informal sector who are less likely to be covered by formal insurance. It involves voluntary contributions by households and management of funds by an organized and registered community group or organisation that in turn purchases services from hospitals and primary facilities. CBHI schemes are therefore privately funded and involve formal contractual arrangements; services can be provided by the public or private facilities. CBHI schemes involving purchasing of service from public sector hospitals were included in this model[20].

I. SYSTEMATIC REVIEW

2.1 Types of Studies

We considered all available published literature on the impact of various PPP models that met the framework and quality assessment parameters. Studies were included that

- (a) had delivered Maternal or Neonatal or Maternal and Neonatal health services;
- (b) had been implemented through a Public Financing and Private Provision Model or a Private Financing and Public Provision Model with a shared goal of health service strengthening (Chapter 1);
- (c) reported on either primary or secondary outcomes (Box 2.1);
- (d) had been undertaken within Low and Middle Income Countries (LMICs), and
- (e) met the risk of bias inclusion criteria for study design. The Effective Practice and Organisation of Care Group (EPOC) criteria was identified for assessment of Randomized Controlled Trials (RCTS) and a modified EPOC methodology was applied for the risk of bias assessment of quasi experimental, Controlled Before After (CBA) studies and cross sectional designs with control[21].

2.2 Types of Outcome Measures

Primary outcomes, in relation to the primary objectives, were service utilization and health outcome changes in MNH. Utilization related to use of Basic Emergency Obstetric and Neonatal Care (BemONC), or Comprehensive Emergency Obstetric and Neonatal Care (CemONC) or use of any routine services such as Antenatal Care, Postnatal Care, facility based birthing, or neonatal check-up which may be a well-baby check-up of care sought in case of illness. Secondary outcomes targeted other aspects for which PPPS are commonly initiated, and these included service quality, equitable utilization, client (OOP) expenditure and cost efficiency of services.

The primary and the secondary outcomes are presented in Box 2.1:

2.3 Data Sources

A search was made of various databases and search engines including peer reviewed and grey literature databases. This included publications, reports and information on websites. The search was carried out during August to December 2012.

The following principal sources of electronic reference libraries were searched: the Cochrane

Box 2.1: Outcomes Measures

Primary Outcome: Service utilisation

- Proportion of women received at least 3 ANC visits
- Proportion of women delivered at health facility
- Proportion of women delivered by skilled birth attendants
- Proportion of women delivered at health facility that underwent C-Section
- Proportion of women with assisted deliveries
- Proportion of women received 1 PNC visit within 48 hours
- Proportion of neonates received BCG injection
- Proportion of neonates received newborn check-up within 48 hours
- Proportion of sick newborns treated at health facility

Primary Outcome: Health Care Outcomes

- Peri-natal mortality
- Neonatal mortality
- Low birth weight babies
- Maternal mortality

Secondary Outcome: Quality of Care

Proportion of pregnant women received iron supplementation
 Proportion of pregnant women received TT immunization
 Proportion of clients satisfied with services

Secondary Outcome: Out of Pocket Expenditure

% reduction in OOP expenditure

Secondary Outcome: Equity Effects

Proportionate increase in service utilization in low income/ lower SES group
 Proportionate increase in service utilization for those at further distance from health facility
 Proportionate decrease in OOP health expenditure in the low income/ lower SES group
 Proportionate decrease in OOP health expenditure for those located further away from health facility

Secondary Outcome: Efficiency

% reduction in unit cost of service

Library, Medline, PubMed, Popline, LILACS, CINAHL, EMBASE, World Bank's JOLIS search engine, CAB Abstracts, British Library for Development Studies (BLDS) at IDS, the WHO regional databases, WHOLIS, World Bank Database, ELDIS, GREYLit, SIGLE Oxford Policy Management Group, Save the Children USA, Abt

for Health Reform, as well as the IDEAS database of unpublished working papers, local government websites, Google and Google Scholar. A hand search of bibliographies was made to identify additional sources of information.

An initial set of mesh words was developed at the

Box 2.2: MeSH Terms
AND

- | | |
|--|--|
| <ul style="list-style-type: none"> • Public private partnership OR • Private financing OR • • Private sector OR • • • Contract* OR • Contracting out OR • Cash transfer* OR • Voucher* • Fee* OR • Charge* • User fee* OR • Fee exemption OR • Payment schemes OR • Pay for performance OR • Health Insurance OR • Social insurance OR • Community insurance OR • Insurance schemes OR | <ul style="list-style-type: none"> • Health services • Maternal health OR • Mother* OR • Newborn* OR • Newborn health OR • Maternal newborn health OR • Maternal child health |
|--|--|

Associates, and Management Science for Health, International Institute of Social Studies of Erasmus University Netherlands, Partnerships

start and subsequently refined. MeSH terms were used singly and in combination, and are detailed in Box 2.2.

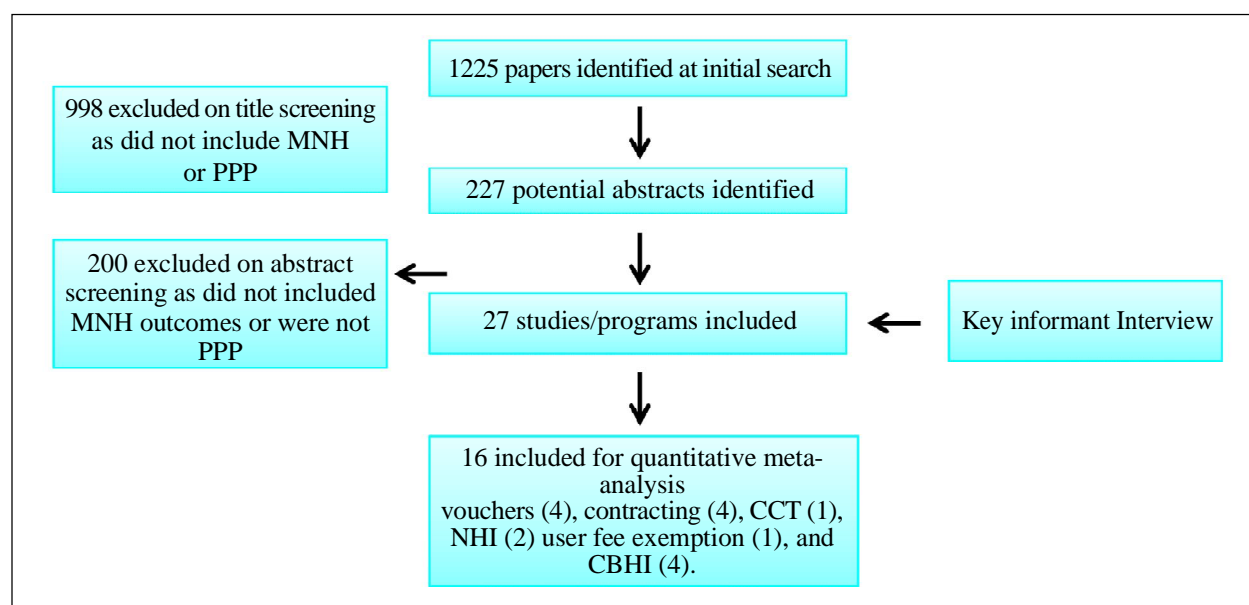
2.4 Data Extraction

The project team set up a triage process with standardized criteria for ensuring validity. The search initially yielded 1225 titles, and application of further filters resulted in 227 abstracts for review. Of these, 27 studies met the criteria for inclusion while 16 reported data for pooled analysis (Figure 2.1). The titles and abstracts were screened by two researchers to identify studies meeting the inclusion criteria. A third researcher then reviewed all the screened studies. Any disagreements on selection of studies between the two researchers were resolved by review of study by the third researcher.

2.6 Assessment of Risk of Bias

Since all of the included studies were quasi or pre-post designs, we assessed the quality of the evidence using the modified EPOC methodology for the risk of bias assessment of quasi and controlled before after (CBA) studies [21]. We slightly adapted for the standard criteria recommended by EPOC to match the particularities of the studies found in our field of interest. For example, criteria about following-up patients or doctors were not relevant as most of the studies used population level data, hence we did not include these criteria. We assessed the studies on the following six point criteria:

Figure 2.1: Search Flow Diagram



2.5 Data and Outcome Reported

After retrieval of the full texts of all the studies that met the inclusion criteria, information from each study was collated into extraction grids. These reported on:

- Author and year of publication
- Type of PPP intervention
- Type of study design: RCT, time series, quasi experimental, controlled before-after, cross sectional with control
- Minimum 1 year duration of PPP intervention
- Geographical location and coverage
- Service package and beneficiaries
- Outcome measures reported
- Assessment of risk of bias

- Baseline characteristics
- Equivalent control sites
- Protection against exclusion/selection bias
- Protection against contamination
- Reliability of the outcome measure
- Methodological limitations

Each criterion was scored either 'DONE', 'NOT CLEAR' or 'NOT DONE' based on the findings reported in the paper. Table 2.1 summarizes the quality of each included study.

Table 2.1: Risk of Bias Assessment

Study	Study Design	Baseline characteristics	Equivalent control sites	Protection against exclusion or selection bias	Protection against contamination	Reliability of the outcome measure	Methodological limitations
Bangladesh [22, 23] Ahmed, 2011 and Schmidt 2010	Quasi study with pre-post evaluation	Clearly mentioned	Not mentioned	clearly mentioned	Not clearly mentioned	Clearly mentioned	Not possible to explore whether the caesareans carried out under the voucher scheme were necessary or not
India [24] (Bhat R 2009)	Survey with pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	Not given
Bangladesh [25] (Nguyen, 2012)	Pre-post evaluation with matched comparisons	Clearly mentioned	Clearly mentioned	Clearly mentioned	Not clearly mentioned	Clearly mentioned	No adequate data to assess rigorously the quality of services provided to the voucher beneficiaries. Cross-sectional results could be biased if women in the compared sub-districts managed to obtain vouchers.
Kenya [26] (Obare, 2012)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Clearly mentioned	Not clearly mentioned	It might have been under-or over-estimated. There was leakage of vouchers to non-poor women in programme sites. Survey participants were not randomly selected.
Pakistan [27] (Agha 2011)	Pre-test post-test quasi experimental design	Clearly mentioned	Clearly mentioned	Inclusion criterion clearly mentioned	Clearly mentioned	Clearly mentioned	Changes in observed quality were not tracked over time.
Nicaragua [28] (Maluccio, 2004)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not Clearly mentioned	Clearly mentioned	Selection bias risk due to attrition
Malawi [29] (Miller)	Pre-post evaluation	Not mentioned	Not applicable	Clearly mentioned	Not Clearly mentioned	Clearly mentioned	Not given
Mauritania [30] (Renaudin, 2008)	Pre-post evaluation	Clearly mentioned	Not applicable	Not mentioned	Not mentioned	Clearly mentioned	Not given
India [31] (De Costa 2009)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not Clearly mentioned	Clearly mentioned	The calculation of maternal mortality ratios are estimated based on the crude birth rates. Exact number of births was not documented in Amarpatan (either year) or Maihar
India [32] (Dongre 2010)	Pre-post evaluation with control	Clearly mentioned	Clearly mentioned	Clearly mentioned	Clearly mentioned	Clearly mentioned	Not given

India [33] (Lim 2010)	Pre-post evaluation with control	Clearly mentioned	Clearly mentioned	Clearly mentioned	Clearly mentioned	Clearly mentioned	None experimental evaluation of the historic data
Zaire [34](Criel, 1999)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Clearly mentioned	Not Clearly mentioned	Referral compliance did not measure patient delay.
China [35] (Long, 2010)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	Data on the frequency and timing of pre-natal visits and the expenditure of delivery care are subject to recall bias.
Guinea [36] (Ndiaye, 2008)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	Not given
Senegal [37] (Smith, 2006)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	
India [38] (Baqui, 2008)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not Clearly mentioned	Clearly mentioned	Limited by the available data, long recall periods, the improvements in indicators were limited, which may have limited the ability to detect changes in equity.
Nigeria [39] (Igwegbe, 2011)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	Not given
Guatemala [40] (M. La Forgia, 2005)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	Some data was cross-sectional
Cambodia [41] (Schwartz, 2004)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not mentioned	Clearly mentioned	The independent effects of the location of the household and the wealth of the household on the likelihood of a child being fully immunized are intuitive
Bangladesh [42] (World Bank 2005)	Pre-post evaluation	Clearly mentioned	Not applicable	Clearly mentioned	Not Clearly mentioned	Clearly mentioned	Potential factors associated with stunting, underweight, and wasting were not examined. The association between pregnancy weight gain and birth weight was not examined.
Bangladesh 2007 [43]	Pre-post evaluation	Clearly mentioned	Not applicable	Not clearly mentioned	Not clearly mentioned	Not clearly mentioned	Not given
Pakistan [44] (Martinez 2010)	Quasi study	Not applicable	Clearly mentioned	Clearly mentioned	Clearly mentioned	Clearly mentioned	Absence of baseline data
Philippines [45] (Kozhimanni I, 2009)	Pre-post evaluation	Clearly mentioned	Not mentioned	Not Clearly mentioned	Not mentioned	Clearly mentioned	No individual-level data on insurance coverage or specific clinic usage for the women
Ghana [46] (Penfold, 2007)	Pre-post evaluation	Clearly mentioned	Not mentioned	Clearly mentioned	Not mentioned	Clearly mentioned	The inferential strength of the study is relatively weak

2.7 Meta-Analysis

We performed statistical analysis using the Review Manager Software version 5.1. Data of short listed studies was pooled for meta-analysis. Meta-analysis was done to evaluate the overall effectiveness of the PPPs. Data was then further collapsed into the two major models of Model 1 involving Public Financing and Private Provision and Model 2 involving Private Financing and Public Provision. This provided sufficient data for pooling. In addition, we also ran meta-analysis for the individual PPP interventions such as contracting out vouchers, CCTs, national insurance schemes, user fee exemptions, community based insurance schemes, and any other PPP interventions identified. However not all PPP interventions had sufficient volume of data.

Due to the diversity in the nature of interventions and outcomes reported in the included studies, statistical heterogeneity was expected while pooling the results of the studies. For all studies, we tried to report the outcome measures before and after the interventions, but these were not systematically available. Ideally, we would have calculated the impact of the studies by comparing the outcome measures in both intervention and control areas. This was not possible, due to insufficient data reported in the original papers. For dichotomous data, we presented results as summary risk ratio with 95% confidence intervals. For continuous data, we used the mean difference between trials if outcomes were measured comparably. Heterogeneity between studies was assessed using the I-squared statistic, P value of <0.1 (on chi-square) and by visual inspection of forest plots. When high levels of heterogeneity between trials (exceeding 30%) were identified, further exploration was conducted by subgroup analysis.

We initially undertook fixed-effects meta-analysis for combining data where trials examined the same intervention, but then we repeated the analysis and applied random-effects meta-analyses as an overall summary because of substantial methodological

heterogeneity between and among the studies. The differences in estimates from two sub-group meta-analyses were tested using the method described by Altman and Bland [47]. We performed subgroup analyses by various models of PPP and also by various mechanisms where possible.

II. LANDSCAPING STUDY – PAKISTAN

2.8 Stakeholder Interviews

In each of the four provinces inception meetings were held with the Program for Maternal, Neonatal and Child Health for introduction to the project and identification of key PPPs. This was followed by key informant interviews with stakeholders implementing the identified PPPs and included INGOs, national NGOs, and public sector representatives. Further interviews were selected through snowballing. Altogether 25 interviews were conducted, with 07 in Punjab, 06 in Sindh, 06 in KP and 06 in Balochistan. The interviews were guided by a semi-structured topic guide. Information was collected on i) design of PPP intervention; ii) respective roles of public and private sector; iii) service package, coverage and beneficiaries; iv) notable achievements and v) underlying constraints or success factors.

Ethical approval from Aga Khan University's Ethics Review Committee was obtained prior to the interviews, all interviews required written informed consent and confidentiality of interviewee identity was maintained in analysis and write-up.

2.9 Document Review

The interviews were supplemented by review of relevant documents related to the local PPP interventions in Pakistan. Documents were requested during the interview, however, it yielded relatively little material as stakeholders either did not have written documentary evidence on PPPs or were reluctant to share written material. In addition, desk review of published and grey literature was carried out through two sources. This involved electronic search on websites of PPP schemes, websites of NGOs, PubMed and Medline, CAB Abstracts and Google Scholar. It also involved looking up important policy and programmatic reports.

2.10 Synthesis

Desk review data was extracted into thematic grids that systematically organized the information by the type of PPP, implementing partners, coverage, scale, beneficiaries, evaluation and monitoring mechanisms, and bottlenecks faced in implementation. Transcripts from key informant interviews were transcribed, manually coded and key information extracted into grids. Both the two data sources were matched for synthesis.

3.1 Yield of Studies

From the larger pool of documented PPP interventions only 27 studies met the selection criteria. These were predominantly distributed across South Asia, Asia Pacific, Africa and Latin America. This review summarizes the results from these 27 studies with meta-analysis from 16 studies. These included studies on vouchers (4), contracting (4), CCT (1), NHI (2) user fee exemption (1), and CBHI (4). There was a considerable gap between the number of schemes and the consequent number of high quality evaluations. The 27 included studies covered PPP interventions from 16 countries; eight from Africa (Ghana, Malawi, Nigeria, Kenya, Mauritania, Guinea, Senegal, Congo), two in South Asia (India, Bangladesh), one in East Mediterranean (Pakistan), two in the Americas (Guatemala, Nicaragua) and three in Western Pacific (Cambodia, Philippines, China) (Figure 3.1).

Contracting, vouchers and CCTs were the most well evaluated PPP intervention. Other schemes such as CBHI, NHI, and user fee exemption had a much lower yield of quality evaluations in the promotion of documented scheme on the ground. Contrast, contracting had the largest number of documented initiatives but a much lower proportion of studies met the quality filter. CCT initiatives were well documented; however studies targeting MNH were scarce as most CCTs health schemes targeted pre-schoolers or school going children.

3.2 Study Designs

Pre-post evaluation was the most commonly used methodology for program evaluation. Of the 27 studies, 2 were Cluster Randomized Control Trials, 3 were quasi experimental studies while 22 were pre-post evaluations (Figure 3.2)

Figure 3.1 Geographical Distribution of Selected Studies

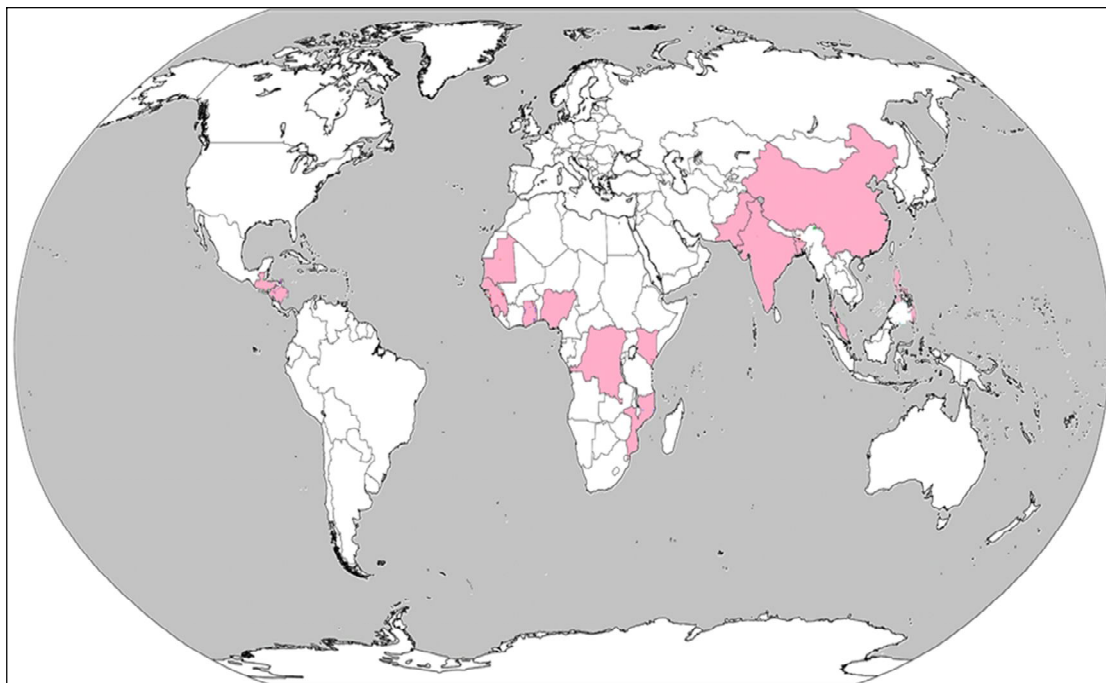
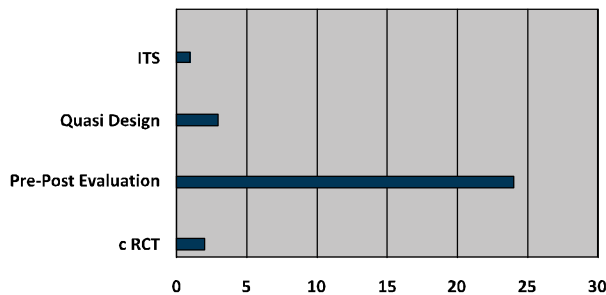


Figure 3.2 Number of Studies according to the Study Design



3.3 Interventions Provided by Selected PPP Studies

Vouchers schemes involved funding support by the government and provision by both private and government providers. Accredited private providers and at time also government health facilities provided services free of charge to low income pregnant women in return for a pre-paid government supported voucher. The services targeted maternity care, often inclusive of complicated deliveries and transport support. Community awareness and demand creation through health workers often accompanied voucher distribution. Voucher schemes selected were from Bangladesh, India, Pakistan and Kenya.

Cash transfer schemes usually had cross-cutting health, nutrition and education linkages. These involved funding support by the government and provision by both private and government providers. Identified pregnant women were motivated to register with accredited private providers and government health facilities for maternity care and/or child immunization, and also receive nutritional supplements. Cash stipends were provided by service provider upon conclusion of the visit and intended to compensate the client for a day's productive time costs and OOP expenditure. One of the selected studies offered full range of maternity services; another provided only transport for maternity care, while other two schemes provided immunization for newborns. Cash transfer schemes were supported by community based motivators and counselling sessions. There were 2 schemes from India, and one each from Nicaragua and Malawi.

Contracting involved government funding support for service provision by NGOs in areas of

less coverage. There were different variations of contracting seen in the selected studies. While in some contracting initiatives the NGOs were contracted to manage government facilities through management contracts, in others NGOs were contracted through service delivery contracts to supplement services at government facilities or provide services through their own network of health facilities. Services provided included maternal and child health services but service targets and incentives were usually not specified in contracts. Most contracting schemes did not involve outreach support. Selected contracting studies were from Bangladesh, India, Pakistan, Cambodia, Guatemala and Nicaragua.

In the National Health Insurance (NHI) schemes the government reimbursed private and public health facilities for provision of maternity care to low income clients, through contracts made with individual providers. Higher income rackets were required to pay annual premiums and seek contribution from employers. The two selected studies were from Mauritania and Philippines, both covered delivery and EmOC while one also additionally covered pregnancy care visits and child care.

In User Fee Exemption (UFE) initiative the government reimbursed private and public health facilities from charging user fee to low income women, through contracts made with private providers. The selected study was from Ghana and involved delivery services and EmOC.

Community Based Health Insurance (CBHI) schemes involved purchasing of maternity care services from government and private providers at negotiated rates by community based health organisation so as to provide EmOC access to rural communities. Grass-roots level community based organisations identified the package of services, collected and managed premiums and negotiated fixed rates with district health facilities through contracts. Most schemes tended to have full or highest rate of reimbursement for EmOC and delivery, with partial or no cover for pregnancy care. Selected studies were from Senegal, Zaire, Guinea and China.

See Table 3.1 for detailed description of each intervention

Table 3.1: Description of Interventions

Study (Country/ Author/Year)	Study Design	Service Package	Intervention Duration	Stakeholders	Beneficiaries
VOUCHER SCHEMES					
Bangladesh (Ahmed, 2011 and Schmidt 2010)[22, 23]	Quasi study with pre-post evaluation	ANC, PNC, delivery, pregnancy complications, transport, baby gift box on delivery and cash for nutrition supplement	2007 onwards	Ministry of Health & Family Welfare, assisted by DFID, World Bank and UN Agencies, contracting with private providers	All pregnant women in 33 sub districts in Bangladesh
Bangladesh (Nguyen, 2012)[25]	Pre-post evaluation with matched comparisons	Same as above	Same as above	Same as above	Same as above
India (Bhat R 2009)[24]	Survey with pre-post evaluation	ANC, delivery, C-Section, transport for complicated delivery to identified women below poverty line	2006 onwards	Chiranjeevi Scheme-Gujarat Provincial government, contracting with private obstetricians and general practitioners	Pregnant women below poverty line families in 25 districts of Gujarat
Kenya (Obare, 2012)[26]	Pre-post evaluation	ANC, PNC, delivery, Family Planning, additional vouchers for all women (poor and non-poor) seeking sexual and gender-based violence recovery services	2006 onwards	Government of Kenya, assisted with KFW Germany, contracting with private practitioners	Disadvantaged women in 3 districts, and low income settlements in Nairobi
Pakistan (Agha 2011 [27])	Pre-test post-test quasi experimental design	ANC, PNC, delivery, transport, referral support for complicated delivery to identified	2010-11	Provincial government Punjab, assisted by USAID local NGO, contracting with private providers	One rural district
CONDITIONAL CASH TRANSFERS (CCTs)					
India (De Costa, 2009)[31]	Pre-post evaluation	Cash stipend for transportation for pregnancy referrals and incentives for early registration of pregnancy to client and accompanying motivator	2003-2004	Rewa Medical University and Department of Public Health Madhya Pradesh, contracting with private providers	Low income pregnant women in Madhya Pradesh

India (Dongre 2010, Lim 2010) [32, 33]	Pre-post evaluation with control	Cash stipend for ANC, Institutional and Skilled delivery, PNC and newborn immunization for those below poverty line. Limited to first two live births, and extended to third birth on agreement for sterilization.	2005-2010	District authorities with public and private facilities	Identification of Low income (BPL) pregnant in both urban and rural areas women
Nicaragua (Maluccio, 2004)[28]	Pre-post evaluation	Food security transfer to eligible households on bringing their children under age of five for preventive health care appointments including immunization, nutrition counselling and growth monitoring	2002 onwards	Red de Protección Social (RPS) - contracting with private and public providers	Rural Nicaragua Households with extreme poverty
Malawi (Miller 2009)[29]	Pre-post evaluation	Cash stipend to eligible households for immunization, nutrition counselling and growth monitoring	June 2006 onwards	Social Cash Transfer Scheme (SCTS)	Households in the lowest expenditure quintile
CONTRACTING					
India (Baqui, 2008)[38]	Pre-post evaluation	ANC, PNC, delivery, C-Section, nutrition supplements. Contracting of NGO for management of health facilities and provision of health and nutrition preventive services using community-based workers	2003 onwards	Integrated Nutrition and Health Project of Women & Child Health Program of government assisted by World Bank, involving contracting out to NGOs.	Women and children under five, 2 rural districts. Targeting 10 million population
Bangladesh (World Bank 2005)[42]	Pre-post evaluation	ANC, PNC, delivery, C-Section, PNC, nutrition supplements for children under 5 years, immunization. Contracting of NGO for management of health facilities and provision of health and nutrition preventive services using community-based workers.	2000 onwards	Integrated Nutrition and Health Project of Women & Child Health Program of government assisted by World Bank, involving contracting out to NGOs	Women and children under five. Targeting 30 million population
Bangladesh (Islam 2005) [43]	Pre-post evaluation	ANC, institutional delivery, complicated delivery including assisted birth, C-Sections, PNC Service delivery contract for provision of primary health care services	1998-2011	Chittagong City Corporation supported by ADB, contracting with local NGOs	Slums in 4 city corporations namely Dhaka, Chittagong, Rajshahi and Khulna targeting an estimated 4 million population
Nigeria (Igwegbe, 2011)[39]	Pre-post evaluation	Complicated delivery and C-section Contracts for strengthening of emergency care services at hospital and facility level.	2005 onwards	Federal government's Service Compact with all Nigerians (SERVICOM) for maternal health at Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria	Pregnant mothers in the area

Guatemala (La Forgia, 2005)[40]	Pre-post evaluation	Contracting out to NGOs for provision of ANC, Delivery, PNC, Family Planning and Nutrition supplements. Management contracts with NGOs for government health facilities as well as service delivery contracts with NGOs for provision through their own facilities	1997 onwards	NGOs contracted by government.	Pregnant mothers and children under five years from underserved areas. 88 NGOs contracted. Targeting an estimated 3.4 million population.
Cambodia (Blushan 2002, Schwartz, 2004, Bloom 2005)[41, 48, 49]	RCT and Pre-post evaluation	ANC, institutional delivery complicated delivery including assisted birth, PNC, PHC services Immunization Management contracts with NGOs for government health facilities as well as service delivery contracts with NGOs for provision through their own facilities	1999 onwards	Government contracting with multiple NGOs	Pregnant women and children aged 12–23 months. 9 districts. Targeting 1.5 million population.
Pakistan (Martinez 2010)[44]	Quasi Design	ANC, Institutional delivery, PNC, immunization. Single NGO contracted through management contract for running of Basic Health Units, Dispensaries and MCH Centres contracted to	2005 onwards	Provincial governments contract an NGO through the Department of Health with oversight and support by the Planning and Development Department.	General population – all ages. 69 districts, covering 2,392 Basic health Units
NATIONAL HEALTH INSURANCE (NHI)					
Mauritania (Renaudin, 2008)[30]	Pre-post evaluation	ANC consultation inclusive of laboratory workup and ultrasound scan, delivery, C-section, ambulance transportation for EmOC and PNC	2002 onwards	National Programme for Safe Motherhood, contracting with private and public health providers with support from district health teams	Pregnant women in 3 regional capitals
Philippines (Kozhimanni, 2009) social[45]	Pre-post evaluation	ANC, delivery, C-Section, PNC, Family Planning, child preventive services through hospital and Well Family clinics, supported through insurance scheme.	1997 onwards	Local government contracting with more than 1500 private and public health facilities	Poor households determined by a means test, with higher income supported by employers and self for annual premiums

USER FEE EXEMPTION					
Ghana (Penfold, 2007) user[46]	Pre-post evaluation	Delivery, complicated delivery, C-Section Free maternity, mainly delivery services, provided at public and private facilities, through reimbursement of fixed amount to providers.	2003 onwards	Public and private facilities reimbursed by the government through national and regional budgets	Pregnant women in 6 regions of Ghana
COMMUNITY BASED HEALTH INSURANCE (CBHI)					
Zaire (Criel, 1999)[34]	Pre-post evaluation	C-Section and complicated delivery. 20% co-payment rate in case of hospital admission; the patient is covered by the hospital insurance scheme only if referred by a health centre to the hospital	1986 onwards	Bwamanda insurance scheme. NGO supported services delivered by district health care	Rural north-west Zaire
China (Long, 2010)[35]	Pre-post evaluation	C-Section, institutional delivery Reimbursement either as a fixed proportion of expenditures or a fixed amount for facility based delivery or caesarean section	2003 onwards	New Co-operative Medical System (NCMS) financed by individual household contributions supported by central and local government, purchasing from district health facilities	Pregnant women in western rural China. 86% population coverage
Guinea (Ndiaye, 2008)[36]	Pre-post evaluation	C Section, complicated deliveries, Transport for EmOC. Full reimbursement for EmOC, partial support for deliveries and ANC depending on extent of funding mobilized from community.	1997 onwards	Community based organisation, supported by government and UNICEF	Pregnant women in rural areas
Senegal (Smith, 2006)[37]	Pre-post evaluation	Coverage for either delivery or ANC. Deliveries a more popular option and covered by more than half of the schemes.	1989 onwards	CBHI schemes supported by mutual health organisations, contracting with district health care providers including government facilities	Pregnant mothers. 79 CBHI schemes

3.4 Coverage of PPP Interventions

Vouchers had extremely limited population coverage with most schemes numbering between few hundred to few thousand clients. CCTs in comparison tended to have larger population coverage extending from 0.1-9 million. Contracting schemes had variable coverage with large coverage of more than 10 million seen in India, Pakistan Bangladesh, Cambodia and Guatemala but smaller scoped schemes in Nigeria. National Health Insurance Schemes and User Fee exemption had extensive coverage within implementing countries. CBHI coverage was less than 1% in three countries with close to universal coverage in China. See Table 3.2.

deliveries and C-Sections, while 14 also offered ANC support. There was considerable variation in offering of PNC. At least 5 initiatives offered transport support for maternity care. Family planning was offered by only 3 schemes and gender based violence coping services by 1 scheme. Newborn care was less well addressed. Well baby visit was offered by only one initiative, newborn immunizations were offered by 5 schemes and child health services by 3 schemes. Only three initiatives provided nutrition supplements.

Contracting initiatives had the more comprehensive packages as these included child care and maternity care but were not tied to payments to providers or incentives to providers. Vouchers and CCTs had well covered packages for maternity, inclusive of

Table 3.2: Population Coverage

CCT	Vouchers	Contracting	National Insurance	CBHI	User Fees
0.1-9 million clients. Specifically targeted to pregnant women and children in ultra-poor households that are also labour constrained	290-60,581 clients. Targeted to poor pregnant women. Families earning less than a particular level of income and owning certain assets were considered as poor [24]. Sometimes Poverty Scorecard was also used[50]	Across several districts and regions. No specific targeting, with coverage to general population	70-95 % of country population. Targeting not well-defined. Exemptions and low premiums to poorer population	1-86% of total population. Mostly universal coverage. Flat premium for all only a few targeted poor	Across districts and regions. Exempting all mothers from delivery fees in health facilities. Targeting not well-defined

3.5 Service Packages

Packages of care varied widely across the mechanisms of care (Table 3.3). Services offered ranged from safe motherhood, transportation, family planning, and gender based violence recovery services to, nutrition supplements and child care.

Of the 27 studies, nearly all, with the exception of 1 intervention, offered support for delivery, 16 offered emergency obstetric care including complicated

pregnancy care, delivery, EmOC and often transport but lacked coverage of child care. The CBHI, NHI and User Fee Exemptions mainly targeted delivery and EmOC only, ANC was either partially covered or not covered by premiums or exemptions and there was lack of provision for PNC.

Table 3.2: Service Packages delivered through PPPs

	Maternal Care				Neonatal Care		Child Health	Cmprhs MNCH package
	ANC	PNC	Delivery	EmOC	Well baby/ Immunization	Illnesses	Nutrition & Immunization	
User Fee Exemption [46]								
CBHI[34-37]								
NHI[30, 45]								
Voucher [22, 24-26, 50, 51]								
Contracting Out[38, 40, 43, 44, 48, 49, 52 54]								
CCT[28, 29, 32, 33, 55]								

3.6 Beneficiaries

Most of the programs targeted pregnant women for maternity, while very few additionally target newborns. Initiatives that focused solely on child health, such as a number of CCTs, were not included being outside the scope of this review.

Studies initiatives largely intended to target the poor but few had explicit targeting mechanisms. Targeting mechanisms varied with some having lower premiums or full exemptions as in the case of insurance schemes; voucher distribution or cash transfers under Voucher schemes or CCTs, or pulling in NGOs for service delivery in under-served areas through contracting out. Few, however, have systematic targeting mechanisms. CCTs and vouchers specifically target the poor using poverty means testing. NHIs and CBHIs rely on a community based consultation processes for identifying the poor. CBHIS although managed by community mostly, often failed to cover the poorest and also relied on community consultation for identification of the poor. Older contracting schemes essentially relied on choosing underserved locations to reach the poor but did not differentiate between the poor and non-poor recipients. More recent maternity focused contracting initiatives use more systematic methods such as means testing, marginality index or piggybacked on existing schemes such as recipients holding Below Poverty Line cards.

3.7 Stakeholders

Most of the PPPs were financed by the state and in certain cases with assistance provided by development partners or UN agencies. NHI schemes, User Fee Exemptions and several of the contracting and CCT initiatives were government led initiatives. Individual practitioners as well as NGOs were the usual private health sector entities that were contracted for services.

While there may be several instances of private sector financing support to government services, the studies retrieved for this review primarily included the CBHI schemes. The community based organisations contracted with district government facilities, and in certain instances community contributions were supplemented by UNICEF or state support.

There was variation in terms of the state partner involved with PPP arrangements. PPPs were managed by the provincial/ sub-national governments and in others instances were managed by national ministries and vertical programs. Both models also existed within the same country, as for example in India where the Cash Transfer Program of JannaiSurkahaYogna was managed through a vertical national program while cash transfer for transport was managed at the state level through an operation research model.

II. PERFORMANCE IMPACT

3.8 Outcome Measures Reported

Most of the studies reported only on the service utilization outcomes that included ANC, PNC, assisted delivery, and skilled birth attendant, C-Sections, institutional delivery and immunizations. Service utilization data on neonatal health was poor being confined to reporting on BCG immunizations in two studies only. None of the studies reported on newborn check-up, or on visits to provider for neonatal illness. Amongst health outcomes, data on maternal mortality and studies did not report neonatal health outcomes, including perinatal, neonatal mortality and low birth weight.

Outcome definitions varied and were not consistent across the studies. The reporting of ANC varied from at least one visit to 3 or more while the timing of PNC varied from 3 to 7 days after delivery. We, therefore, report ‘At least one ANC’ and ‘PNC within 3 days after delivery’ to standardize the outcome measures.

Data on secondary outcomes was limited. Equity impacts were reported in contextual terms but disaggregated data for health care utilization by socio-economic quintiles were presented in very few studies and hence could not be pooled. None of the studies reported on cost efficiency or changes in patient OOP expenditure. The primary and the secondary outcomes targeted, reported in studies and pooled are presented in Table 3.4 below:

Table 3.4: Outcomes Targeted and Pooled

Outcomes Targeted	Outcomes Reported	Outcomes Pooled
Service utilization	Women receiving at least 1 ANC visit	Women receiving at least 1 ANC visit
Proportion of women received any 3 ANC visits	Institutional delivery	Institutional delivery
Proportion of women delivered at health facility	Women delivered by skilled birth attendant or had assisted delivery	Women delivered by skilled birth attendant or had assisted delivery
Proportion of women delivered by skilled birth attendants	C-Section rates	C- Section rates
Proportion of women delivered at health facility that underwent C-Section	Women delivered by skilled birth attendant or had assisted delivery	Women delivered by skilled birth attendant or had assisted delivery
Proportion of women with assisted deliveries	Any PNC within 3 days of birth	Any PNC within 3 days of birth
Proportion of women received 1 PNC visit within 48 hours	Not reported	Not pooled
Proportion of neonates received newborn check-up within 48 hours	Not reported	Not pooled
Proportion of sick newborns treated at health facility	Only maternal mortality reported	Maternal mortality pooled
Service utilization: Health care outcomes	Specified in three studies. Out of pocket expenditures reported in contextual factors	Not pooled
Peri-natal mortality		
Neonatal mortality		
Maternal mortality		
Quality of Care		
Proportion of pregnant women received iron supplementation		
Proportion of pregnant women received TT immunization		
Proportion of clients satisfied with services		
Out of Pocket Expenditure		
% reduction in OOP expenditure		

Equity Effects	Reported in contextual factors	Not pooled
Proportionate increase in service utilization in low income/ lower SES group		
Proportionate increase in service utilization in those at further distance from health facility		
Proportionate decrease in health expenditure in the low income/ lower SES group		
Proportionate decrease in out-of-pocket health expenditure in those located further away from health facility		
Secondary Outcome: Efficiency		
% reduction in unit costs		
Contextual Factors	Reported in some studies	Not pooled

3.9 Reported Evidence from Selected Studies

Reported results of all 27 studies are presented here (See Table 3.5), 16 of these were poolable and presented in Section 3.10.

There were six voucher studies from five schemes, all of which reported an increase in facility based births. Highest effect for delivery is reported from Bangladesh maternal voucher scheme. Five studies additionally reported an increase in PNC and three studies reported an increase in ANC. Results were not separately reported for EmOC, 4 of the voucher studies were additionally pooled for meta-analysis.

Out of our CCT studies, despite having maternity services and newborn immunization, only two provided measurements on MNH services. Both studies were from India and reported an increase in facility based births, while one study also reported an increase in ANC. Maternal mortality reduction was reported from the transport voucher operational pilot in India and a decline in perinatal mortality was reported from JSY maternal voucher scheme also in India. The studies from Nicaragua and Malawi on preventive child care services and nutrition measure danthropo metric effects but improvements were non-significant. None of the studies were poolable for meta-analysis.

Of the nine contracting studies, only four studies from three schemes in Cambodia, Bangladesh and Pakistan reported an increase in facility based births. Three of these studies, and a study from India, also

reported an increase in ANC. Instances of increases in PNC were fewer and confined to three studies. Only five of the nine contracting studies could be pooled for meta-analysis.

The two studies for NHI from Mauritania and Philippines, and one of user fee exemption from Ghana similarly reported an increase in facility based births. There was no increase reported in ANC, and PNC increase was confined to only one study. Maternal mortality measurements were only taken in one study and showed significant reduction. All three studies were pooled for meta-analysis.

All four CBHI studies from Zaire, Senegal, Guinea and China showed an increase in institutional delivery with strongest impact seen in Zaire. At least three studies from Zaire, China and Guinea showed an increase in C-Section rate. There was no increase in PNC and significant increase in ANC was limited to only one Study from Guinea.

Of the eleven studies that did not report poolable data, 2 were from voucher schemes in Pakistan and Bangladesh (Agha 2011 and Schmidt 2010), 4 were from CCTs in India, Nicaragua and Malawi (Lim 2010, Dongre 2010, Mallucio 2004 and Miller 2009) and 5 from contracting in Cambodia, Pakistan and Bangladesh (Bhushan, Schwartz, Bloom, Martinez, Islam).

Table 3.5: Reported Outcomes in Selected Studies

	Institutional Delivery and C-Section rates	ANC	PNC	Other Health Outcomes
VOUCHER				
Agha 2011[27]	Institutional delivery increased by 19.2% points in voucher beneficiaries one year after intervention	Increase by 21.6% points in voucher beneficiaries one year after intervention	Increase by 31.2% points in voucher beneficiaries one year after intervention	n/a
Schmidt 2010 and Ahmed 2011[22, 23]	Improved institutional delivery : RR of 2.23 [1.62, 3.08] and RR of 15.96 [6.76, 37.67] in richest and poorest tercile respectively	Improved ANC by 1.64 [1.34, 2.02] and 3.14 [2.07, 4.76] richest and poorest tercile respectively	Improved PNC by 2.10 [1.67, 2.65] and 6.41 [4.30, 9.57] in poorest and richest tercile respectively	n/a
Nguyen 2012[25]	Significant improvement RR of 2.01 [1.74, 2.32]	Improved ANC by 1.21 [1.17, 1.26]	Significantly improved PNC by 2.02 [1.71, 2.39]	n/a
Obare 2012[26]	Significant : improvement RR of 1.26 [1.16, 1.37]	Non-significant impact on ANC	Significantly improved by 1.08 [1.02, 1.15]	n/a
Bhat 2009[24]	Significantly improved institutional delivery by 26% (RR: 1.26, 95% CI: 1.20, 1.33)	n/a	Non-significant impact on PNC	n/a
CCT				
De Costa 2009 [31]	n/a	n/a	n/a	Significant reduction in maternal mortality by 57% (RR: 0.43, 95% CI: 0.22, 0.85)
Lim SS 2010[33]	Increased by 43.5% (95% CI=42.5-44.6), SBA guided delivery increased by 36.6% (35.6-37.7)	Increased by 10.7% (95% CI=9.1-12.3)	n/a	Decline by -3.7%(-5.2/-2.2) in peri natal mortality and -2.3% (-3.7/-0.9) in NMR
Dongre A 2010[32]	Positive difference of 3.7%- 6.9% points	n/a	n/a	n/a
Mallucio 2004[28]	n/a	n/a	n/a	Non-significant impacts on childhood stunting and wasting with significant reductions of 34% in underweight
Miller 2009 [29]	n/a	n/a	n/a	Non-significant impacts on childhood stunting and wasting with significant reductions of 42% in underweight
CONTRACTING				
Baqui 2008[38]	n/a	Improved by 2.21 [2.11, 2.32] and 3.06 [2.88, 3.25] in richest and poorest tercile	Improved by 4.54 [4.16, 4.94] and 8.51 [7.54, 9.60] in richest and poorest tercile	n/a
La Forgia 2005[38]	n/a	n/a	Non-significant impact	Significant reduction in neonatal immunization rates 0.94 [0.92, 0.96]
Bloom 2005[48]	Positive difference of 18% points (p<0.01)	n/a	Positive difference of 18% points (p<0.01)	n/a
Bhushan 2002[49]	Increase by 142 % point	Increased by 241% point	n/a	n/a
Martinez 2010[44]	Difference of 19.4% point	Increased by 31% point	n/a	n/a
Islam 2005[43]	Difference of 26% points	Difference of 79% points	Difference of 68% points in contracted over non-contracted	n/a

World Bank (BINP) 2005 [42]	Significantly improved : RR of 1.47 [1.39, 1.55]	n/a	n/a	n/a
Igwegbe 2011[53]	n/a	n/a	n/a	Progressive reduction in MMR and RR of maternal mortality, with an increase in live births
Schwartz 2004[54]	n/a	n/a	n/a	After 2.5 years of intervention substantial increase in the proportion of children who were fully immunized
NHI				
Kozimannhil 2009 [45]	Increased institutional delivery: RR of 1.08 [1.03, 1.14]	n/a	Improved PNC by 1.09 [1.06, 1.12]	n/a
Renauddin 2008[30]	Increased institutional delivery and C-Section rates : RR of 1.55 [1.53, 1.57] and 3.02 [2.34, 3.91] respectively	n/a	n/a	n/a
USER FEE EXEMPTION				
Penfold 2007[46]	Significant increase of 23% in one of the two intervention areas	n/a	n/a	Significant reduction in maternal mortality by 37% in one of the intervention areas
CBHI				
Criel 1999[34]	Increased cesarean birth rates: RR of 2.67 [2.08, 3.41]	Marginal increase in ANC 1.09 [1.00, 1.20]	n/a	n/a
Long 2010 [35]	Increased institutional delivery and C-sections: RR of 1.75 [1.61, 1.90] and RR of 2.72 [2.03, 3.66] respectively	n/a	n/a	n/a
Nadiye 2008 [36]	Increased C-section rates : RR of 2.46 [1.95, 3.10]	Significantly increased ANC by 1.44 [1.41, 1.46]	n/a	n/a
Smith 2006[37]	Increased institutional delivery: RR of 1.29 [1.07, 1.56]	Non-significant impacts on ANC	Non-significant impacts on PNC	n/a

3.10 Reported Evidence on Quality of Care:

Of the twenty seven studies, six studies from five initiatives reported on quality of care outcomes including vitamin A and patient satisfaction. These

were reported for contracting services in Bangladesh, Pakistan, Cambodia and Guatemala, and for voucher scheme in India. Table 3.6 summarizes the data for quality of care measures.

Table 3.6: Outcome Reported on Quality of Care

PPP Intervention	Quality of Care
	Contracting
Bangladesh Integrated Nutrition Project (BINP)[42]	Vitamin A supplementation: increased by 2.7 % points, in intervention areas over non-contracted Iron supplementation: increase by 47% point in contracted over 3 non contracted Tetanus Toxoid 2: decreased by 2 % points in contracted sites
Bangladesh [43]	Female client satisfaction: 30% point increase for contracted services over non contracted

Cambodia [48]	No change in performance of BP checks during ANC visits in both models Increase in staff presence by 50% point in contracting in and 75% point in contracting out Supervisory visits increased by 2.7 per month in contracting out over control; insignificant change in contracting in Health centre functionality index increased 83% point in contracting in, 47% point in contracting out
Guatemala [40]	Increase in foliate provision Increase in iron provision Increase in TT provision
Pakistan [44]	Service quality: Better availability of drugs Better physical upkeep Mixed pattern with staff: higher presence of female doctor and lower of paramedic staff
Vouchers	
India Chiranjeevi Scheme[24]	2% point increase in patient satisfaction in beneficiaries over non-beneficiaries

3.11 Findings from Meta-Analysis

Overall performance impact of PPP: 16 out of 27 studies were eligible for meta-analysis and pooled for analysis. We found though PPPs had an overall significant positive increase in utilization of routine maternal health services with a RR of 1.72 (95% CI: 1.54, 1.91). The heterogeneity was high (Chi2: 5240, I2=99%); therefore, a random effect model was used.

Antenatal care: Eight studies [22, 25, 26, 35-38, 52] were pooled for this outcome. ANC improved significantly (RR: 1.55, 95% CI: 1.28, 1.88).

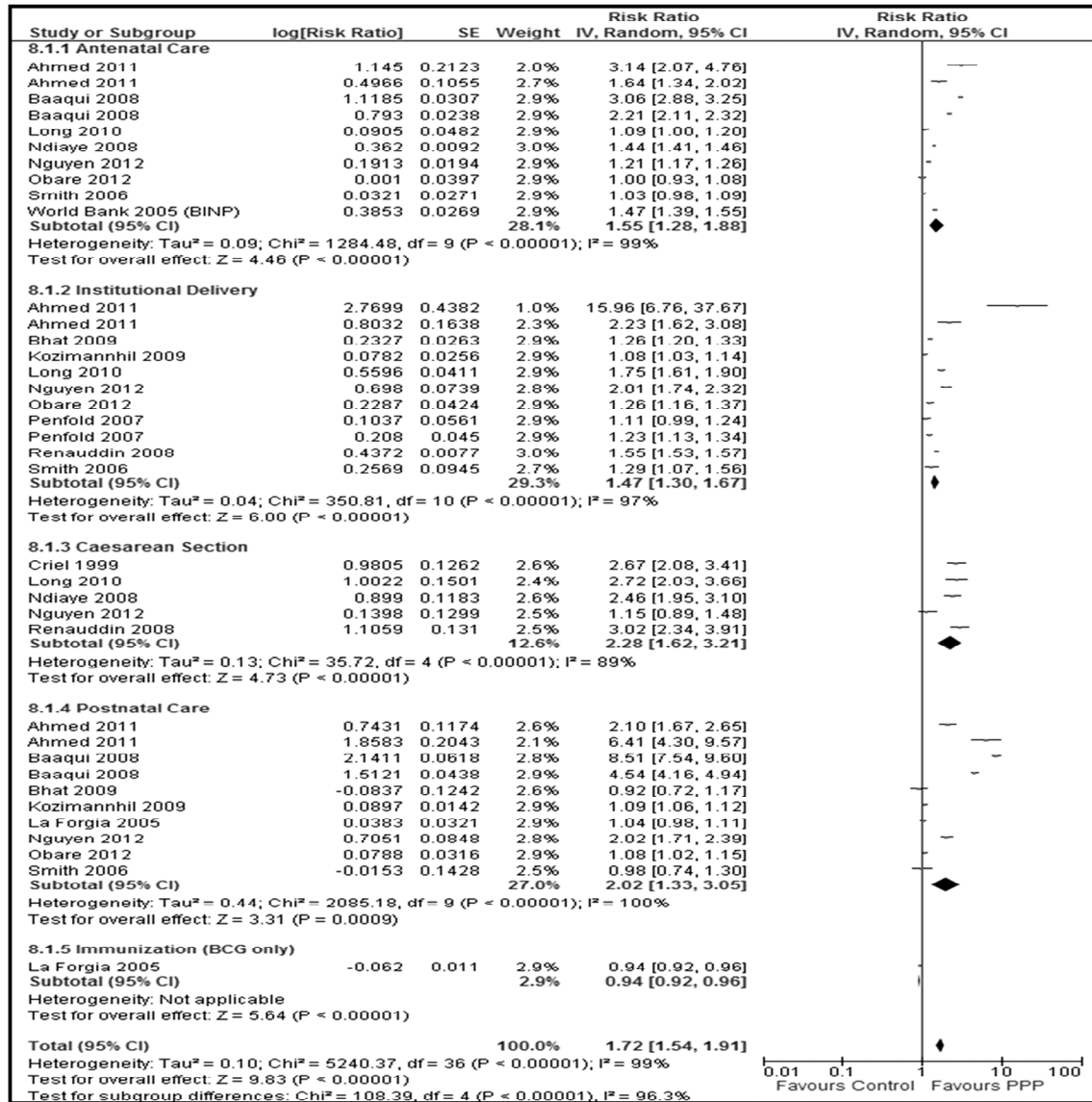
Institutional delivery: The data could not be pooled for this indicator however, significant increase in institutional delivery was seen in Cambodia contracting out scheme while significant but small increase was seen in schemes from India.

Suggestive increase was seen in Bangladesh and Pakistan BHU contracting.

Caesarean sections: Five studies[25, 30, 34-36] were included showing significant impact on C-sections with RR: 2.28, 95% CI: 1.62-3.21)

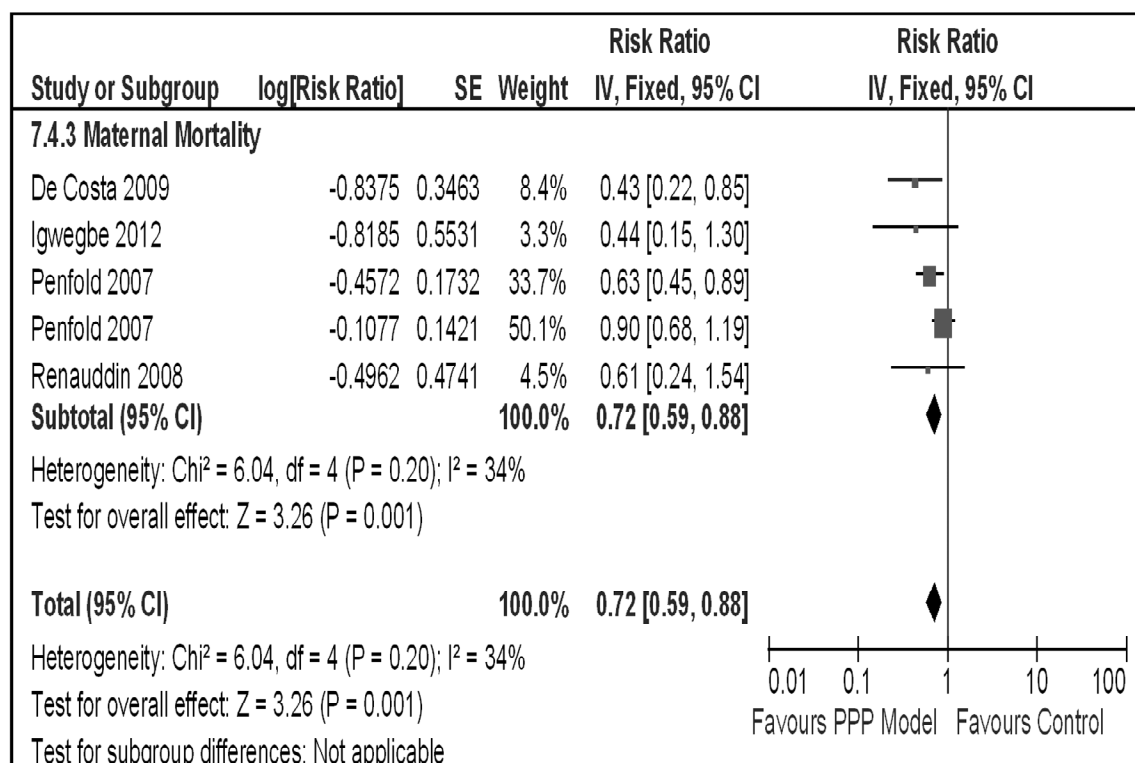
Postnatal care: Eight studies[22, 24, 26, 37, 38, 40, 45, 56] were pooled for this outcome. It showed significant increase in the PNC with a RR: 2.02, 95% CI: 1.33, 3.05.

Newborn immunization: The results for BCG vaccination were available only from a single study [40] and should be interpreted with caution. The results show that the control model had higher BCG rates than the PPP model.



Maternal mortality: The analysis of four studies [30, 46, 53, 55] showed significant decline in maternal mortality by 28% (RR: 0.72,

95% CI: 0.59-0.88). There was no data on neonatal mortality, perinatal mortality or low birth weight.



3.12 Performance by PPP Interventions

Table 3.7: Summary Impacts on Health Service Utilization

PPP Mechanisms	Estimates (95% CI)						
	ANC	C-Section	Institutional Delivery	PNC	Immunization (BCG)	Maternal Mortality	Child Health Outcomes
Overall PPPs	1.55 (1.28-1.88)	2.28 (1.62-3.21)	1.47 (1.30-1.67)	2.02 (1.33-3.05)	0.94 (0.92-0.96)	0.72 (0.59-0.88)	
Voucher	1.41 (1.14-1.76)		1.85 (1.43-2.40)	1.89 (1.18-3.02)			
Contracting	2.15 (1.45-3.18)			3.42 (0.96-12.24)	0.94 (0.92-0.96)		
User fee exemption			1.17 (1.06-1.30)			0.76 (0.54-1.08)	
NHI		3.02 (2.34-3.91)	1.30 (0.91-1.84)			0.61 (0.24-0.54)	
CBHI	1.18 (0.92-1.51)	2.69 (95% CI: 2.37, 3.06)	1.56 (1.39-1.75)	0.98 (0.74-1.30)			
CCT						0.43 (0.22-0.85)	Improved underweight, height gain and reported illness

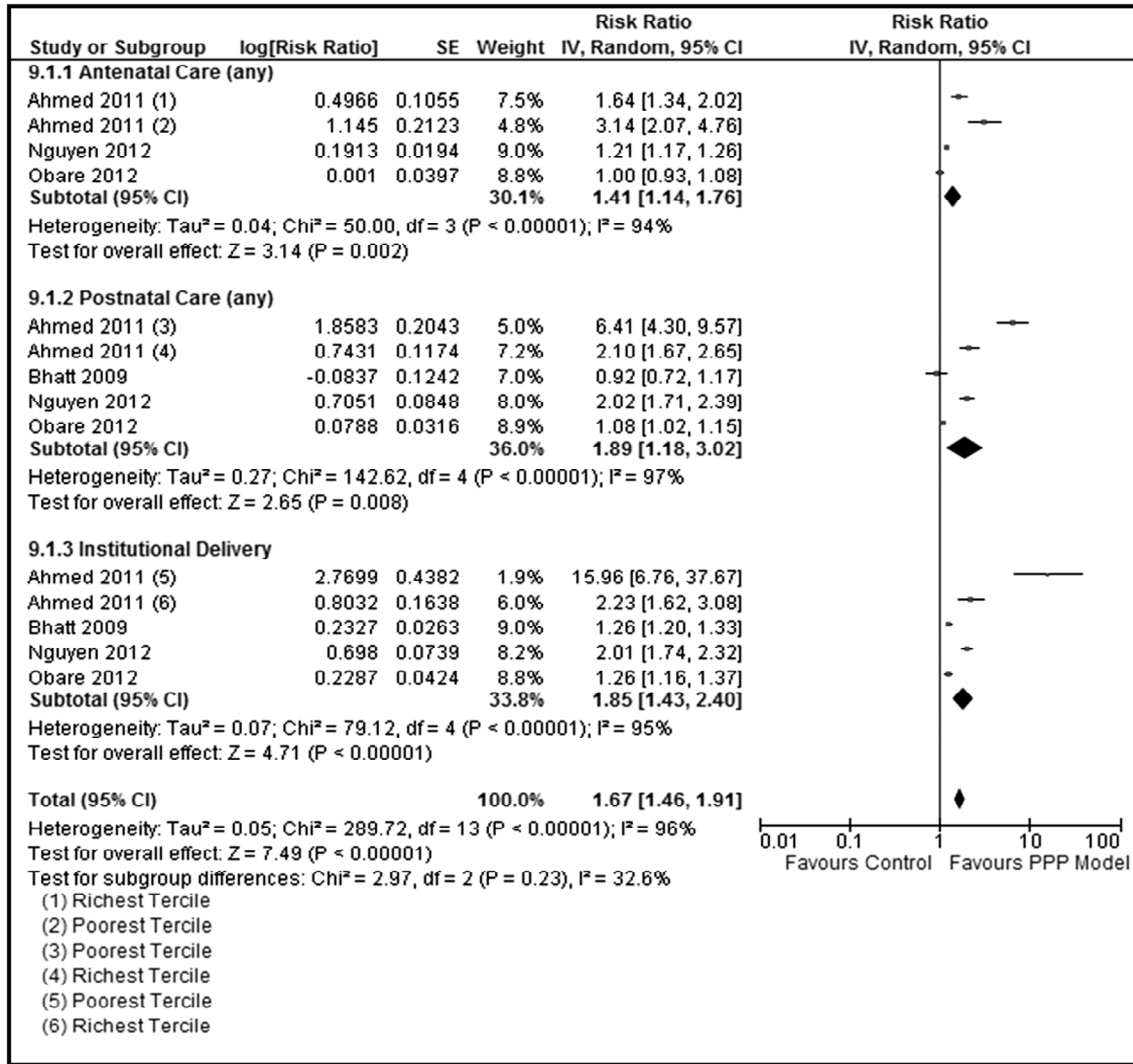
3.13 Voucher Schemes:

Of the six studies selected, 04 were poolable and were from Bangladesh, India and Kenya [22, 24, 26, and 56]. Overall voucher schemes had a significant improvement on maternal health with a RR: 1.67, 95% CI: 1.46, 1.91. Data on neonatal health service data was not available. The heterogeneity was high (Chi²: 289.72; I²=32.6%), hence a random effect model is used.

Antenatal care: Three studies [22, 26, 56] based on data obtained from Bangladesh and Kenya showed that the voucher schemes significantly increased ANC with a RR: 1.41, 95% CI: 1.14, 1.76. The individual impacts range from RR: 1.00 (95% CI: 0.93, 1.08) to RR: 3.14 (95% CI: 2.07, 4.76).

Postnatal care: The analysis of the four studies showed a significant increase in postnatal care with a RR: 1.89, 95% CI: 1.18, 3.02. The individual RR across studies ranged from RR: 0.92 to RR: 6.41.

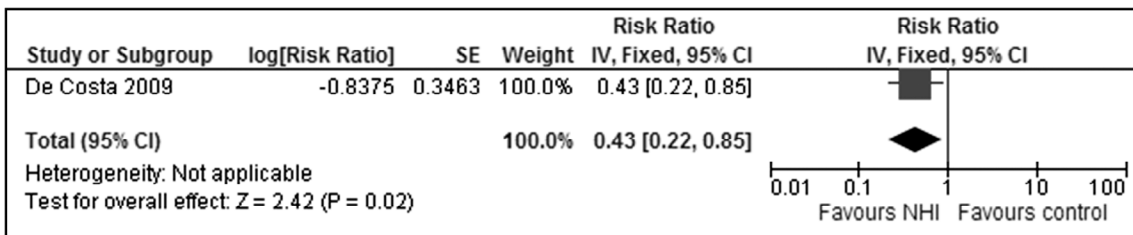
Institutional delivery: Four Voucher schemes from Bangladesh, India and Kenya also significantly increased institutional deliveries (RR: 1.85, 95% CI: 1.43, 2.40).



3.14 Conditional Cash Transfer:

Five studies from four cash transfer programs were selected from India, Malawi and Nicaragua [28, 29,

32, and 33]; however these could not be pooled. One study from India also reported significant reduction in maternal mortality by 57% (RR: 0.43, 95% CI: 0.22, 0.85)[55]



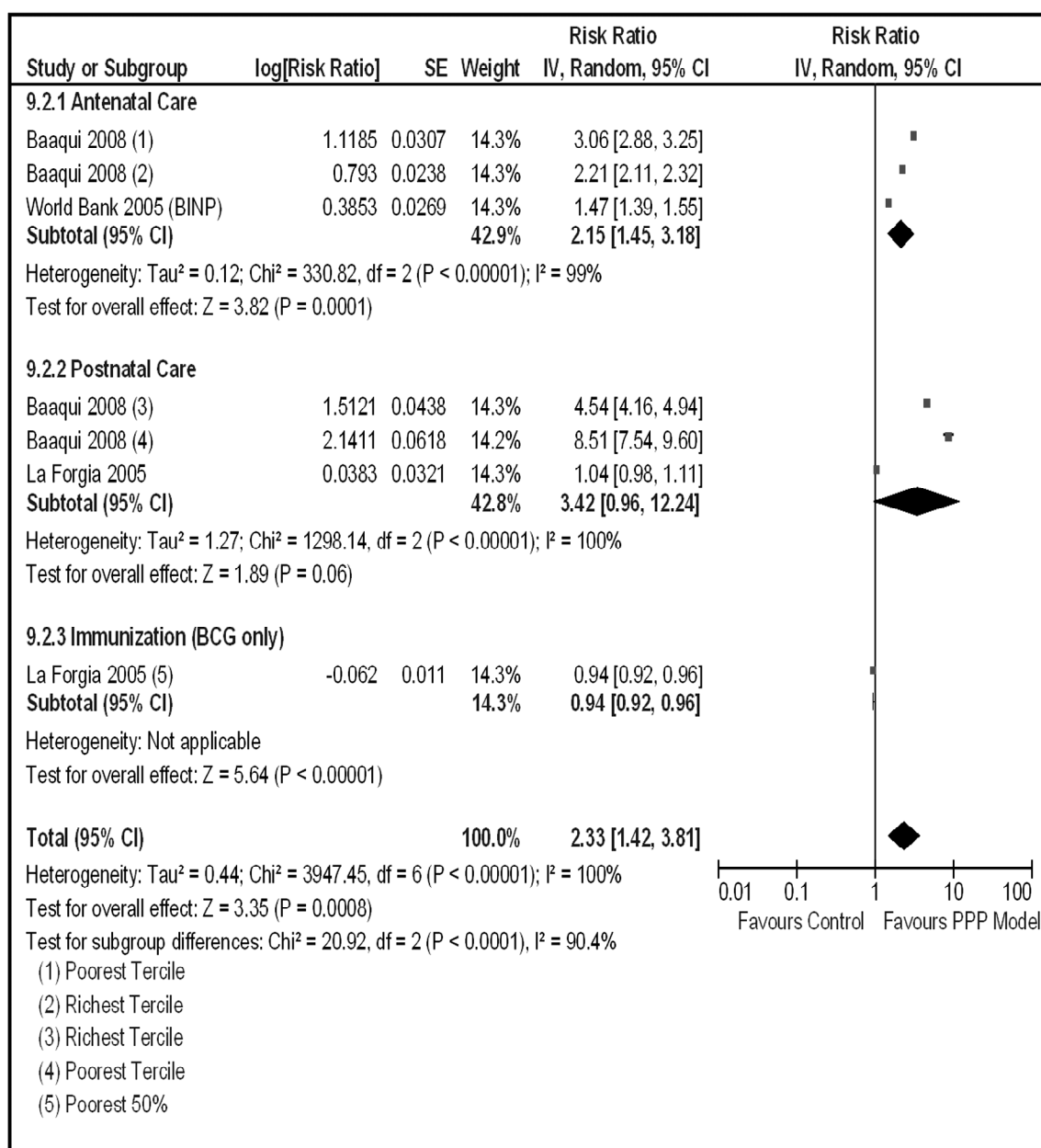
3.15 Contracting:

Of the nine contracting studies selected, four studies [38, 40, 41, and 52] from India, Nigeria, Guatemala, Cambodia and Bangladesh were pooled. Contracting had a significant positive impact on maternal health service utilization (RR: 2.33, 95% CI: 1.42, 3.81), however there is varying impact on different services. There is also data from one study on neonatal immunization coverage but shows a negative impact. The heterogeneity was high ($\text{Chi}^2=3947.45$; $I^2=100\%$), hence a random effect model was used.

Antenatal care: Contracting had a significant positive increase in ANC utilization with a RR: 2.15, 95% CI: 1.45, 3.18. This is shown from two studies [38, 52] which were from India and Bangladesh.

Postnatal care: The results from two studies [38, 40] did not show any significant increase in PNC with RR of 3.42, 95% CI: 0.96, 12.24

Immunization: Only one study reported coverage for BCG vaccination only. The results from a single study showed that the traditional model was better when compared to contracting.

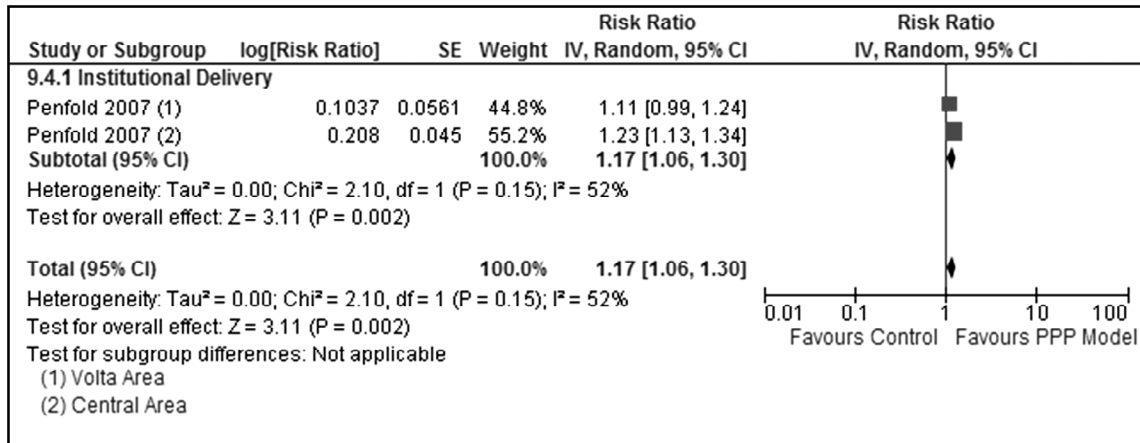


3.16 User Fee Exemption:

Only one study from Ghana[46] was selected and was also poolable. It had an overall significant impact on maternal health service utilization with a RR: 1.17, 95% CI: 1.06, 1.30. Data on neonatal health was not available.

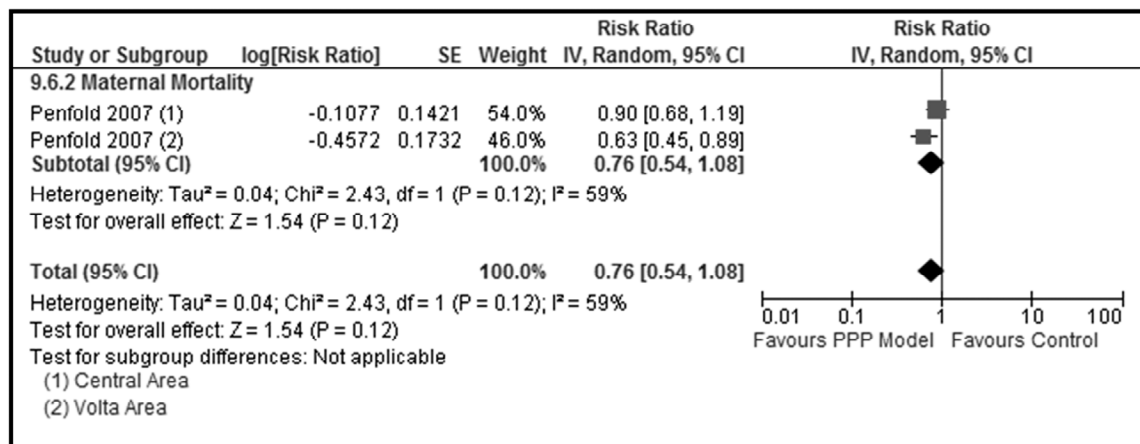
significant improvement on maternal health with a RR: 1.48, 95% CI: 1.15, 1.89). Data on neonatal health services was not available.

Caesarean Section: The analysis of the one study [30] from Mauritania showed significant increase in C-Section with a RR: 3.02, 95% CI: 2.34, 3.91.



Institutional delivery: Only one study[46] (two data sets) was included in the analysis for this outcome which reported significant increase in institutional delivery (RR: 1.17, 95% CI: 1.06, 1.30).

Institutional delivery: The results of two studies [30] from Mauritania and Philippines showed a non-significant increase in institutional delivery with a RR:1.30, 95% CI:0.91, 1.84



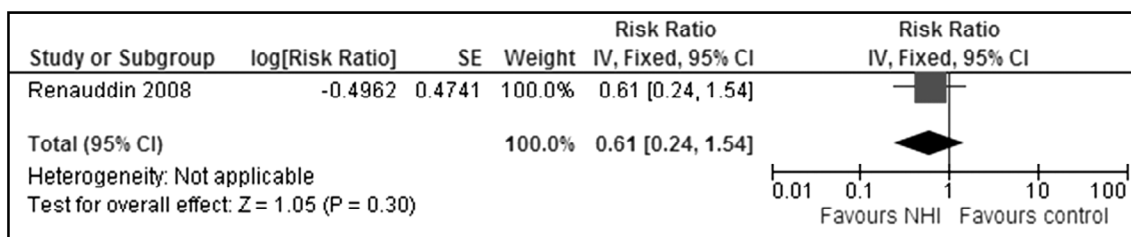
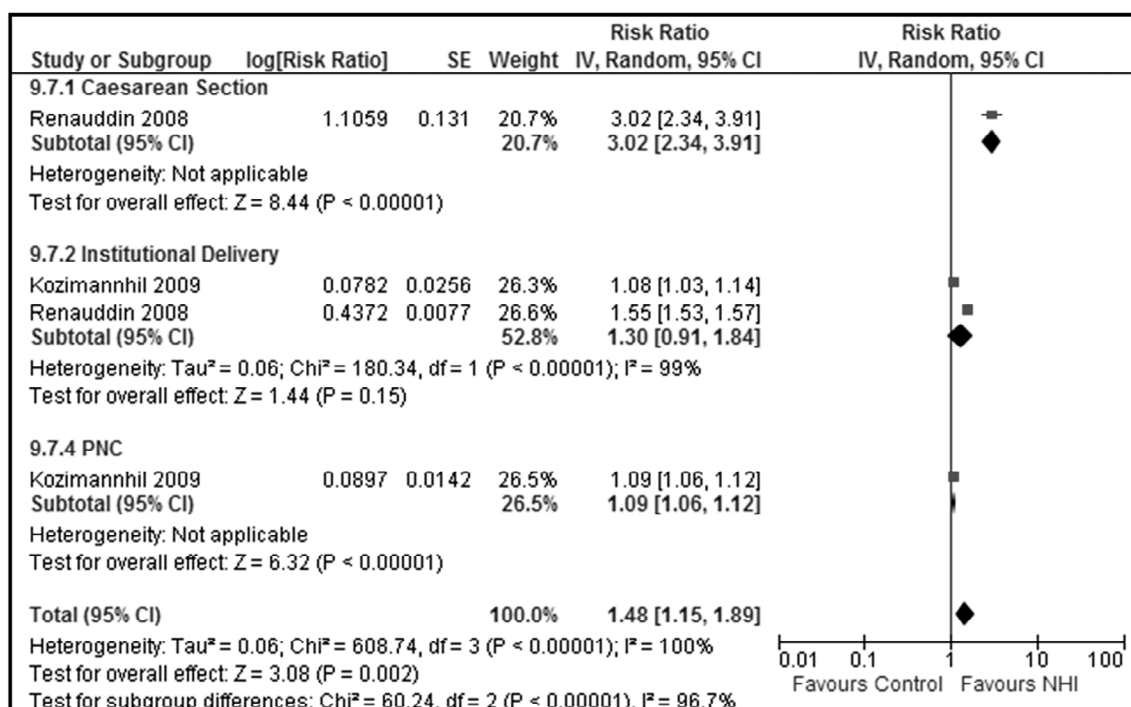
Maternal mortality: Data was available from only one study [46] in Ghana and did not show any significant impact on maternal mortality.

PNC: Data from one study in India showed significant increase in PNC with an RR of 1.09 (RR: 1.06-1.02)

3.17 NHI:

Two studies were selected for NHI from Mauritania and Philippines [30, 45, 55] showing an overall

Maternal mortality: Data from one study [30,55] showed non-significant reduction in maternal mortality.



3.18 CBHI:

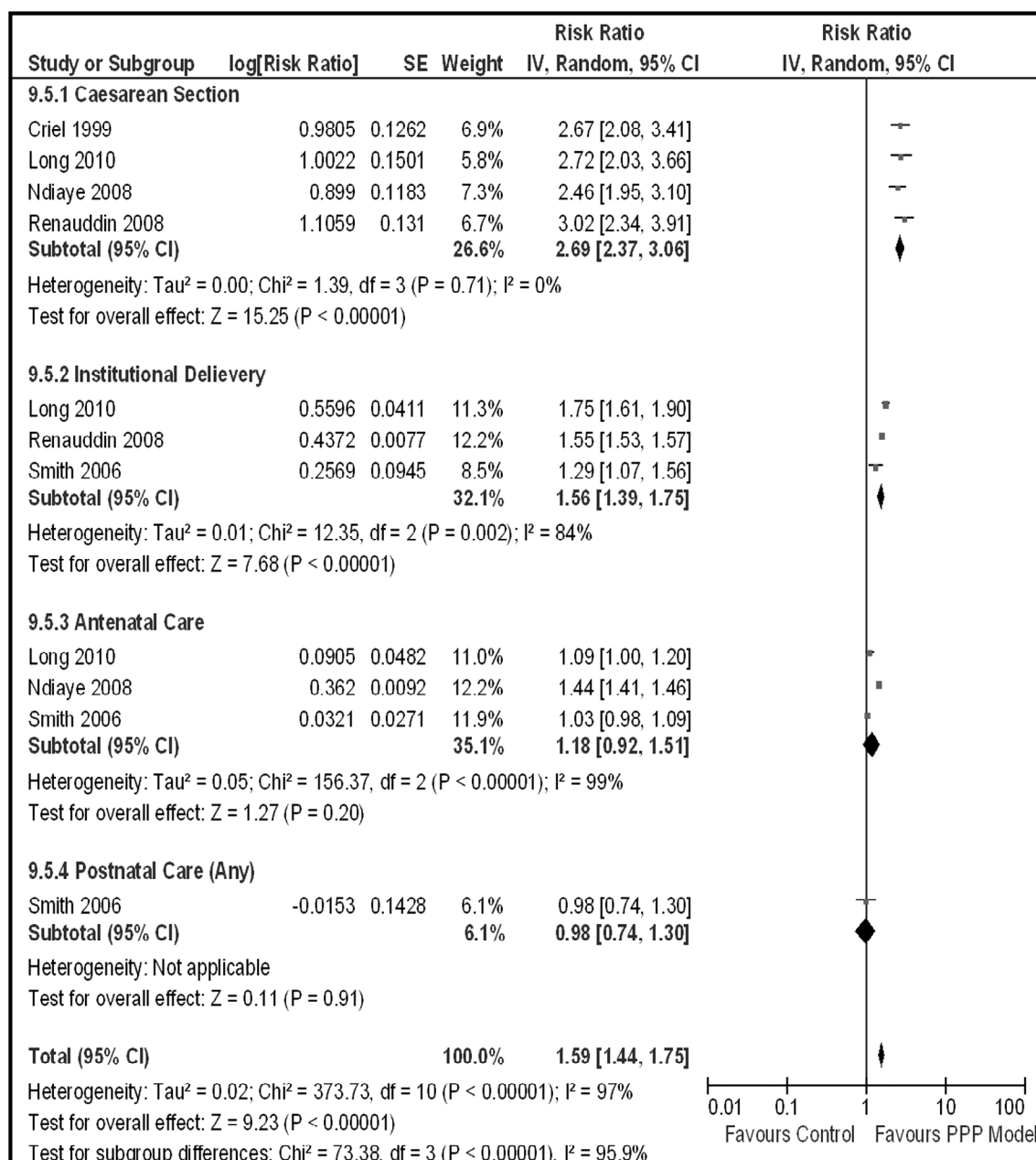
We found that the CBHI schemes from four studies [34-37] from Congo, China, Guinea and Senegal significantly improved the overall maternal health outcomes with a RR: 1.59, 95% CI: 1.44, 1.75, however the individual effect for antenatal and postnatal care was non-significant. Data was not available for neonatal care. The heterogeneity was high (Chi²: 258; I²=98%), consequently a random effect model was used.

Antenatal care: Three studies [35-37] showed that the overall impact of insurance did not result in a significant increase in ANC.

Caesarean Section: The analysis from three studies [30, 34-36] showed that insurance schemes have a positive and significant increase in C-Sections with a RR of 2.59 (95% CI: 2.24, 3.00).

Institutional delivery: The analysis of three studies [30, 35, 37] showed significant increase in institutional delivery through with a RR: 1.52, 95% CI: 1.13, 2.05.

Postnatal care: The analysis of one study [37] showed no impact on postnatal care (RR: 0.98, 95% CI: 0.74-1.30)



3.19 Contextual Factors Influencing Implementation:

The shortlisted studies reported on different factors that constrained or enhanced implementation of PPP. These can be broadly divided into payment, health system and political factors (Table 3.6).

Payment related factors:

- Certain vouchers studies reported delay in the release of funds and hence delayed

reimbursements to providers. In some instances the patient OOP expenditure on transportation and accommodation exceeded the reimbursed amount and led to unanticipated payments by patients. Administrative costs of vouchers are not reported by studies and may be a constraint in further scaling up.[22, 25, 50, 51]

- Contracting results were often closely linked to the payment incentives in the contract. Incentives in the older contracting initiatives

as seen in Cambodia and Guatemala [40], tended not to be performance linked or linked at most to ANC care and have not translated into increased delivery. Incentives in the newer contracting schemes in India were linked to specific targets for facility based delivery and had higher rates.

- Report from Mauritania presented the issue of insufficient bonuses for service providers for the additional workload which demotivated them [30].
- CBHIs reportedly did not reach the poorest as these families could not afford premiums and there were no exemptions available[34]. In certain CBHI the premiums were inadequate to cover administrative and service costs leading to demotivation of service providers and reporting of poor quality of care by patients.
- Most schemes started without prior information on unit costs of service provision and as a result fund insufficiency for EmOC and normal delivery was reported for vouchers, CBHI, NHI and User Fee. Fund insufficiency in turn resulted in low provider motivation and patient expenditure on drugs. In case of NHI and User Fee, topping up of payments to provider helped in circumventing provider demotivation. In contrast there is little information on proportion of costs covered by CCT [28, 29, 40].

Health system related factors: Poor infrastructure, resources and capacity to implement the programs commonly hampered implementation.

- In certain instances due to insufficient dissemination of information eligible pregnant women did not make use of CCT and Voucher Schemes [28, 29].
- Shortage of voucher books and leakage of vouchers to non-poor women were reported in some studies [25].

- An issue particular of Contracting Schemes was variable government support and limited budgetary control and autonomy to the organisation to which the health facilities were contracted out.
- In the case of User Fee redemption, there was high demand for services resulting in additional work load for the staff [46].
- Misuse of resources by selling the drugs and creating shortages have also been reported from Mauritania [30].
- Supply side constraints, related to inadequate supplies, were observed at government facilities in several schemes.
- Absence of evaluation and monitoring systems was reported for the Insurance and User Fee exemption schemes with better systems and data or CCTs and Vouchers.

Political factors:

- Strong political support by government in African countries was seen in the Use of Fee Exemption, NHI and CBHI. CBHI in Senegal [37] had strong support by both community groups and the government resulting into extensive nationwide coverage and up-scaling into a national insurance scheme supported with government funds.
- Contracting faced issues of low buying particularly reported for management contracts Management contracts also were constrained by low autonomy (16, 20).
- Instances of leakages and misuse have been reported for CCTs, [32, 33, 40] however, there is little information available for Vouchers.

1. Type And Distribution Of PPP Initiatives

This section reports on key Public Private Partnership Initiatives in place in 2012 in the four provinces of Pakistan. While this is by no means an exhaustive list, an attempt has been made to broadly put together the existing Landscape of Public Private Partnerships in the area of Maternal and Newborn Health.

Through a consultative process 29 key Public Private Partnership (PPP) initiatives were identified bound by formal agreements between the public and private sector, and focused on MNH services provision. Sindh has the highest number of PPP initiatives in place, followed by KP and Balochistan, with least in the Punjab. Of the 29 PPP initiatives across Pakistan, 16 were being implemented in partnership with local NGOs and 13 with INGOs. See Table 4.1

involved local hybrid schemes whereby financial and technical support for MNH was provided by NGOs to government health facilities and services were jointly provided. A larger number of initiatives were seen in the second category but had more limited population coverage.

2. Service Packages

Of the 29 initiatives mapped, 12 were directly focused on MNH while the other 17 had MNH as part of a broader primary care or hospital based service package.

In KP all the initiatives, with the exception of one, had MNH services as part of a larger service package. These initiatives involved contracting out of services and were targeted towards health service delivery reforms. PPP initiatives specifically focused on

Table: 4.1 PPPs Models in Pakistan

MODELS	BALOCHISTAN	KHYBER PAKHTUNKHWA	PUNJAB	SINDH	TOTAL
FINANCE: Public SERVICE: Private	1	5	2	3	11
FINANCE: Private SERVICE: Private & Public	6	2	2	8	18
TOTAL	7	7	4	11	29

In the PPPs documented, the respective roles of public and private stakeholders were underwritten by a formal agreement or memorandum of understanding. Broadly two types of PPPs for Maternal and Newborn Health (MNH) service provision were seen in Pakistan. One category involved public financing of the delivery of MNH services by the private sector and included contracting out initiatives and a few voucher schemes. These were only a handful in number but covered an extensive number of districts. The second category

MNH services were mainly found in Sindh and Balochistan and provided both routine and emergency care services. These had sprung up in response to weak MNH services and were supported by interest groups mobilized around MNH. See Table 4.2

Table 4.2: Service packages as part of Public Private Partnerships

	Primary Health Care	Maternal Care		Family Planning	Immunisation	Neonatal Care	Newborn or Child Illnesses	Nutrition	Training to CMWs or LHV's
		Routine Services	EmOC						
Punjab									
Balochistan									
KP									
Sindh									

Initiatives involving public purchase of privately provided services mostly offered routine pregnancy care and well-baby check-up services, and only 2 of 11 initiatives provided comprehensive MNH services. Conversely initiatives involving NGO led technical and financial support to government health facilities were more variable and offered either routine services, or EmONC services, or both routine and EmONC services.

3. Beneficiaries of PPPs

Of the 29 PPPs, 14 initiatives targeted the general population, 12 specifically targeted women and children, while 3 were positioned towards Internally Displaced Persons (IDPs).

The PPPs targeting refugees and IDPs were mainly in Balochistan and Khyber Pukhtunkhwa but short tenured PPPs were also seen in Sindh and the Punjab during floods.

Although most initiatives are aimed at poor pregnant women and children only three used a specific targeting mechanism. The Population Services International (PSI) supported Green Star used a Poverty Score Card to target poor women in Badin and Shikarpur districts of Sindh and in DG Khan District in Punjab. CONTECH International identified poor pregnant women in Kasur and Rawalpindi also using a poverty index.

4. Respective Roles, Stakeholders, & Interventions Public Financing and Private Provision

There are an increasing number of initiatives in Pakistan where the public sector fully or partially finances the NGO sector for MNH service provision, usually through Contracting Out schemes but also

through at least two voucher schemes. The President's Primary Health Care Initiative (PPHI) comprises the largest contracting out initiative; however, other smaller contracting out schemes have also emerged.

There are 11 initiatives across the four provinces, inclusive of KP (5), followed by Sindh (3), the Punjab (2) and Balochistan (1). Operational funds are provided by the public sector through either its own budget or through development assistance marked for the government. Funds are routed to NGOs for either contract management of government health facilities or for voucher management. In some cases NGOs have also supplemented the operational funds through their own resources.

Balochistan: There is only one such PPP initiative in Balochistan and involves the Contracting out of BHUs under the PPHI, as similarly done in other provinces. No other significant Contracting Out initiative has been undertaken through public financing.

- Balochistan -PPHI: 554 Basic Health Units and 4 other primary health facilities across all 30 districts of Balochistan have been contracted out through a management contract between the provincial department of health and Balochistan Rural Support Program (BRSP). As in other provinces, the government provided the operational budget while the BRSP provided management of the selected health facilities for facility based primary health, refurbished the facilities and also provided supplementary operational funds. MNH services include antenatal, natal, postnatal and neonatal care, birth spacing, immunization and provision for extra staff such as lady doctors.

Khyber Pakhtunkhwa: KP has the highest number of initiatives involving government finance of NGO provided services through Contracting Out arrangements. Selected government facilities have been formally contracted to four local NGOs and one INGO through MOUs signed between the respective NGOs, the provincial Department of Health and district governments. The PPHI initiative under the (SRSP) is the largest contracting out initiative. In addition, there are at present at least five other medium to small sized contracting initiatives of which two involve management contracts for hospitals in Nahaqi and Pubbi while the other three initiatives involve management contracts for primary care facilities. Furthermore, arrangements for large scale contracting out in six other districts, supported by the multi-donor initiative, are also underway.

- **Nahaqi satellite hospital in Peshawar district** has been contracted through a management contract by the Department of Health to the **Abaseen Foundation**. The DOH has provided infrastructure, staff and operational funds while Abaseen Foundation is responsible for administration and service provision. Services include emergency care, routine pregnancy care, and nutrition as well as outreach activities such as LHW supervision and immunization.
- **The Pubbi satellite hospital in district Naushera, birthing centres in Bunair, and RHCs in Mardan** have been contracted by the DOH and district government to **Rahbar**. Rahbar runs RHCs and dispensaries in Mardan i.e. 2 RHCs (Toora and Shahbaz) and in 2 UCs in 2 Civil Dispensaries (CDs). Rahbar has been responsible for the up gradation of birthing centres at government facilities with support earlier provided by PAIMAN and then by the Asian Development Bank (ADB) to the DoH. Training to facility health staff and outreach LHWs and TBAs is also provided. The contracted Pubbi and Bunair satellite hospitals provide general health services including MNH services for the general population while the initiative in Mardan specifically targeted IDPs. The Pubbi Hospital

had been earlier contracted to **Merlin**.

- **BHUs in 17 districts** have been contracted by the DOH to **Sarhad Rural Support Program (SRSP)** through a management contract under the **Peoples Primary Healthcare Initiative (PPHI)**. The SRSP is responsible for the provision of primary care services including MNH services at the BHUs, while the operational budget is provided by the DOH and supplementary funds top up by the SRSP.
- **RHC Nizampur in Naushera** district has been contracted out by the district government through a management contract to **United Rural Development Organisation (URDO)**. The public sector provided the operational budget while URDO was responsible for provision and up gradation of antenatal and post-natal care, deliveries and school health sessions etc.
- **RHC Shagram in Chitral** has been contracted out by the district government through a management contract to **Aga Khan Health Services Pakistan (AKHSP)** for upgrading of RHC to provide CemONC and management of routine facility based and outreach services in this remote catchment area. While the government provided the operational budget for the RHC, the AKHSP provided administration, extra staff and equipment and supplemented funds to top up the operational budget. The contracting is being expanded to include 2 other RHCs in Chitral.

The Punjab: There are two PPP initiatives in the Punjab that involve the purchase of NGO services using government funds or through development assistance funds provided for the government. The major initiative involves the Contracting out of BHUs and additionally there is a smaller scoped voucher scheme. Both of the initiatives are being implemented by national NGOs under respective MOUs signed with the provincial DOH and district governments. While the Contracting Out initiative is targeted towards the general population, the voucher scheme specifically targets MNH in low income women.

- BHUs in 12 districts inclusive of 844 BHUs and 200 other health facilities have been Contracted Out by the Department of Health to the **Punjab Rural Support Program (PRSP)** under the **Chief Minister's Initiative for Primary Health Care (CMIPHC)**. As in the other provinces, the DOH has provided the operational budget, staff and infrastructure while the PRSP manages and refurbishes the facilities and also provides supplementary operational funds. MNH services include antenatal, natal, postnatal and neonatal care, birth spacing, and immunization.
- The **Sehat Sahoulat (Health Voucher) Card Scheme** is being implemented in Kasur and Rawalpindi through funds earmarked by the ADB for the Punjab government Voucher management services are being provided by **Contech International**. Health vouchers for B-EmONC and C-EmONC services are issued to poor pregnant women identified by the Lady Health Workers (LHWs) through poverty index scoring to avail antenatal, natal, post-natal and birth spacing services. Vouchers are redeemable in over 100 facilities across two districts. Since the private sector is more accessible and generally provides better quality care, private health care providers are given preference in voucher redemption.

Sindh: There are two such PPP initiatives in Sindh involving the purchase of NGO services through funds provided by the government budget or through development assistance provided for the Sindh government. One of this is the Contracting Out initiative through the PPHI and another involves vouchers through the **Norwegian Pakistan Partnership Initiative (NPPI)** which is jointly managed by UNICEF and the Department of Health. Both the initiatives are being implemented through national level NGOs. The (NPPI) scheme is specifically targeted towards MNH services while the PPHI targets general primary care inclusive of MNH.

- **PPHI** through the (SRSO) is providing services in 22 districts in Sindh managing 553 BHUs

and 382 other facilities. The contracts are with respective district governments and supported with extension contracts with provincial government. The package of services is the same as provided in other provinces and targeted towards the general population.

- **MNCH Voucher scheme** has been underway in the two districts of Badin and Shikarpur. It is financed through funds provided for the Sindh government by the **NPPI**. Fund management and quality assurance is by the **UNICEF** as the intermediary body, the government provides oversight while voucher management is provided by the **GREEN STAR**. The MoU has been signed by UNICEF, Department of Health and Green Star. Vouchers can be redeemed at accredited public and private sector facilities for antenatal care, delivery, postnatal care, sick newborn care, family planning services, and separately by private transporters for referral support. Funds from the redeemed vouchers are distributed over various functions with 50% fund utilized by the providers for care provision, 25% retained at the facility for facility improvement and 25% are earmarked for the district health officer. Beneficiaries are selected through a poverty score card.

5. Private Sector Support to Government Health Facilities

There are also a number of hybrid PPP initiatives in Pakistan in which the government is not the financier of services but actually the recipient of financial and technical support provided by NGOs to government managed health facilities, through formal partnership agreements.

NGOs either through funding mobilized through their own internal and philanthropic sources or through foreign development assistance are augmenting services at hospitals and primary care facilities being managed by government. Service augmentation at government health facilities by NGOs has typically included facility refurbishment, provision of staff and supplies, management support and training of government health staff. These initiatives have lesser coverage than the widespread

contracting schemes under the PPHI however there is a higher number of such initiatives, and are popular amongst both NGOs and government. There are 18 key initiatives in Pakistan with 8 in Sindh, 6 in Balochistan, 2 in Khyber Pukhtunkhwa and 2 in the Punjab.

Balochistan: Balochistan has six PPP initiatives of which two providing MNH as part of primary care service and the remaining four specifically focus on MNH services exclusively. Only two of the PPPs initiatives are supported by a local NGO, the Balochistan Rural Support Program, while the remaining four are supported through INGOs providing relief work in refugee populations, namely the Medicine San Frontier, Mercy Corps and Save the Children, USA. Mercy Corps has the largest initiative in Balochistan under this category.

- **Mercy Corps** has recently entered into a partnership with the government to strengthen services in **90 BHUs across Quetta, Turbat and Gwadar districts** through funds received from the US based Bureau of Population and Refugee Management (BPRM) and USAID. The services include general primary care services but also include MNH. Mercy Corps will finance the refurbishment of facilities, and contribute to service delivery through management support to facilities, in-service training to LHWs and train government staff on monitoring.
- **Mercy Corps** has been supporting the Integrated Afghan Refugees Health Assistance Program directed towards the Afghan refugees, mainly female and children. Eight working stations (birthing places) have been established with labour rooms in urban slums of Quetta. Basic EmONC services are being provided and also referral support for tertiary care.
- **Medecines Sans Frontieres (MSF)** has been strengthening District Headquarter Hospitals for **CemONC services in Chaman, Qila Abdullah and Dera Murad Jamali** financed through international philanthropic funding. There is also a similar initiative for Kuchlak

MCH Centre and Kuchlak RHC to improve B EmONC services. In both initiatives, the MSF provides support for refurbishment as well as ongoing management support through staff, technical staff and supplementation of supplies.

- **Balochistan Rural Support Program (BRSP)** supports B-EmONC and C-EmONC services through funds received from the **European Commission** in 8 government health facilities in **Mustang and Pishin**. The health facilities include 4 Rural Health Centres, 2 Taluka Head Quarter Hospitals and 2 District Headquarter Hospitals. BRSP provides support for service upgrading, salary support to extra staff and EmONC services in government facilities, while oversight is provided by a provincial Steering Committee.
- **Balochistan Rural Support Program (BRSP)** supports routine and emergency MNH services through funds received by the Pakistan Poverty Alleviation Fund in **3 Basic Health Units and 3 Taluka Head quarter Hospitals in Khuzdar, Kharan and Jhal Magsi**. BRSP provides financing support for services as well as and service strengthening through staff training, construction of Mobile Health Units, capacity building of traditional birth attendants and of Lady Health Workers, and the training of health care providers in B-EmONC and C-EmONC services including surgical care.
- **Save the Children Fund (SCF)** has been supporting **EmONC services for Afghan refugees in Chagi in Hub district** through funding received from AusAID, UNHCR, GAVI, Global Fund and RAF. This is modelled on the earlier Batagram model and involves augmentation of EmONC services at the Rural Health Centre level and of C-EmONC services at DHQ level along with establishment of referral linkages from RHC to DHQ. Save the Children provides support for facility refurbishment and supplements the operational budget for EmONC, while additional revenues are generated through user fee for extra diagnostic services that have been introduced

at the RHC and DHQ. Save also provides management support and staff for EmONC services to strengthen existing government services.

Khyber Pakhtunkhwa: Khyber Pukhtunkhwa has two PPP initiatives under which NGOs are providing support to augment MNH services at government primary and secondary health facilities. Both of these initiatives are supported by INGOs namely Medicine San Frontiere and Merlin, and the initiatives specifically target MNH services.

- **Medecines Sans Frontieres (MSF)** has been supporting safe motherhood services at 50 Basic Health Units in **Peshawar district** through funding received from international philanthropic funding. Antenatal care is provided at the BHUs while high risk cases are referred to the MSF supported hospital in Peshawar using high risk pregnancy cards. The MSF finances the provision of skilled staff and supplies to the BHUs for antenatal consultation and transport support to referred high risk patients. MSF issues high risk pregnancy cards for further investigation in the facilities to which a patient is referred.
- **Merlin** has been supporting **MNH and family planning services** in **districts Naushera, Swat, Bunair and Peshawar** through funding received from the European Union and Social Thompson Benevolent Fund Trust (STDBF). Merlin has supported the refurbishment of facilities for MNH and family planning services, and also contributes to service delivery through management support and provision of skilled health staff. The health facilities include one DHQ, 2 RHCs, 1 BHU and 2 civil dispensaries in Naushera, in 19 frontline health facilities in Swat and 5 BHUs in Peshawar.

The Punjab: There is a dearth of notable long term initiatives in the Punjab involving formal contractual partnerships NGO and private sector for support to MNH related support to government facilities most initiatives have been short-lived and emerged during the 2010 floods.

- **Emergency relief work:** A number of NGOs provided technical support in the Punjab during 2010 floods using development partner and philanthropic funding to strengthen government health facilities for essential health and nutrition services in southern Punjab districts. Key NGOs included International Medical Corps, Merlin, Care and Path International. Services supported through government infrastructure were childhood immunization, micronutrient supplementation, treatment of reproductive diseases, promotion of infant and young child feeding practices, general clinical services and referral care to secondary care hospitals. Most of the initiatives were short-lived ranging between 10 months to a year.

Sindh: The highest numbers of such partnership initiatives are present in Sindh and mostly led by local NGOs. Of the eight PPPs initiatives, five are with local NGOs namely **Child Aid Association, Tabba Foundation, Health And Nutrition Development Society, Aga Khan Health Services Pakistan, HOPE**, while two are led by INGOs namely **Merlin** and **Save the Children**. Four of the initiatives are funded through philanthropic funds while the other four are funded by development partners.

- In **Civil Hospital Karachi** the **Gynaecology Operations Theatres** has been funded and refurbished by pooled contributions from the alumni of Dow University of Health Sciences Class of 1984. Similarly the **Emergency Operation Theatre** has been refurbished by the graduates of the Class of 1976 through philanthropic pooled contributions.
- **Paediatric Oncology Unit and a Cytology Laboratory** have been set up at the **National Institute of Child Health** at Jinnah Hospital Karachi funded by the **Child Aid Association** through the mobilization of philanthropic donations. The Child Aid Association apart from establishment of the unit is responsible for equipment, medicines and management support on an ongoing basis while clinical services and day to day running are provided by the government staff.

- Support to the **maternity ward at Jinnah Hospital Karachi** is being provided by the **Tabba Foundation** through philanthropic funds. Tabba Foundation has financed the maternity ward building and its equipment and also provides operational support through drugs, meeting maintenance bills and salaries of sanitary workers. Service provision responsibility is jointly shared with the government providing clinical care services, and the Tabba Foundation providing management support to the ward.
- The **Health and Nutrition Society (HANDS)** with funding from Pakistan Poverty Alleviation Fund, is strengthening service delivery in 10 health facilities including **9 Basic Health Units and 1 Rural Health Centre**. The RHC in Jam Kanda in district Karachi has been converted to a secondary care facility providing C-EmONC services. Financing for refurbishing, equipment and supplementary support to the operational budget is provided by HANDS, primary care services are provided by the government, while management support as well as supplementary staff for nutrition and MNH are provided by HANDS.
- **Merlin** has been supporting government health facilities in 4 districts of Sindh including **Dadu, Badin, Thatta and Jamshoro**. Support is being provided to District Headquarter Hospital, Taulka Head quarter Hospital, Rural Health Centre and Basic Health Units in terms of infrastructure support, essential commodities, training, supplementary staff and referral services.
- **Save the Children** has been responsible for service augmentation of B-EmONC and C EmONC services at **District Headquarter Hospitals and Taluka Headquarter Hospitals in the three districts of Dadu, Khairpur and Sukkur**. Funds were provided by USAID through the PAIMAN initiative. SAVE has provided financing for refurbishing of maternity units, and has also trained government staff on emergency neonatal care, infection control and

surgical skills, while clinical care is provided by the government staff.

- The **Aga Khan Health Services Pakistan** with funding from the Pakistan Poverty Alleviation Fund is augmenting B-EmONC services at **RHC KetiBunder in Thatta district**. The AKHSP has supported the upgrading of services and operational support for MNH services, also provides management support and salary of recruited MNH staff. The government provides routine services at RHC other than MNH. The AKHSP has recently started support to **B EmOC services in Mirpur Sakro Taluka of Thatta district**.
- **Health Oriented Preventive Education (HOPE) Foundation** with funding from UNICEF and Asia Foundation is working in Thatta district to improve access to EmONC services by strengthening services at government health facilities. HOPE provides supplementary staff and does overall management of the health centres.

Monitoring and Evaluation of PPPs: While there are a substantial number of Public Private Partnerships in Pakistan, these are weak in terms of monitoring and evaluation. Most PPP initiatives have not been externally evaluated for health care utilization, quality and outcomes. Existing monitoring is confined to internal monitoring, confined mostly to reporting of outputs with little known about quality parameters or impact on coverage targets such as Skilled Birth Attendance and perinatal mortality. Furthermore, the monitoring systems being followed by different PPPs lack standardization, with some reporting on the government's District Health Information Reporting System, others following their internal programmatic monitoring, while still others have rudimentary information systems.

PPPs despite having formal agreements between the public and private sector suffer from considerable communication gaps. Provincial government Health Departments lack necessary information about several on-going PPPs. Private partners infrequently interact with government counterparts, and the existing

interaction mostly relates to sorting of contractual arrangements. Moreover, within the government systems there is weak communication between district and provincial tiers which leads to inadequate flow of information related to PPPs in place and their progress. There is also an absence for forums for stewardship and coordination of PPPs within governments, and this weakens regular reporting and accountability.

6. Opportunities and Bottlenecks Faced By PPPs

Opportunities: There are a fair number of Public Private Partnership initiatives in Pakistan, most are home-grown intrinsic initiatives and have a presence across all provinces. PPPs have been successful in drawing in NGOs into remote areas and to serve disadvantaged populations. Both types of PPPs have been successful in pulling in the private sector to underserved areas.. There is an ample NGO market in Pakistan, both local and INGOs, to undertake PPPs for Maternal and Neonatal Health services. Sindh has the highest presence of local NGOs, followed by Khyber Pukhtunkhwa and Punjab, while Balochistan in comparison to other provinces mainly relies on INGOs rather than local NGOs for PPPs.

Constraints: PPPs at present are growing in the absence of a strategy. Development of a strategy requires a work culture conducive to the use of evidence and the adaptation of evidence with contextual realities. There is also a lack of forums and of frameworks for accountability, oversight and monitoring of Public Private Partnership Initiatives.

PPPs in Pakistan are also facing other issues that require recognition and response. One of the major hindrances for initiatives in KP, Balochistan and the less secure districts of upper Sindh is of security concerns for staff retention and for outreach activities. At the same time these areas are conversely those most in need of MNH service strengthening. As in areas uncovered by Lady Health Workers, the attempts to have a less skilled community health workforce has been challenging and faced difficulty in retaining trained workers. Moreover, there is considerable variance in procurement procedures followed by different NGOs and lack of an attempt towards standardised supplies procurement.

In case of Contracting Out of health facilities, has been troubled by sub-optimal collaboration between NGOs and government counterparts. NGOs tended to be taken as competitors by the public sector leading to friction on transfer of budget to NGOs. Ownership of Contracting Out varied from contract to contract with relatively smoother functioning seen in the smaller scoped contracts as opposed to the large scaled PPHI contracts. Delayed release of funds also is also reported by initiatives involving government purchase of related NGO services resulting in cash flow problems.

Pakistan's currently lags behind regional countries in terms of progress towards the Millennium Development Goals 4 and 5. To accelerate progress synergies need to be developed across the public and private sectors which often tend to work in silos. Pakistan currently lacks a strategy on Public Private Partnerships, however as a first step evidence is required on whether PPPs have worked, which are the more effective models and what factors can improve success?

We reviewed evidence from Low and Middle Income Countries (LMICs) on the effectiveness of PPPs for Maternal and Newborn Health and the comparative edge of different PPP interventions. There is an extensive range of PPP interventions across LMICs for strengthening MNH outcomes. We focused on PPPs for strengthening service delivery through a range of interventions that involve formal partnerships between the public and private sector for either financing or delivery of MNH services. One subset involves state financing, through the use of government health budget or foreign development assistance, private sector MNH services so as to expand service coverage in underserved areas or improve the management of existing service delivery network. This has a larger range of initiatives and includes the Contracting out of services, pre-paid Voucher, Conditional Cash Transfer, National Health Insurance schemes that purchase MNH services from private health providers for free or subsidized service provision to disadvantaged population. The other sub-set includes private financing with government provision and involves interventions such as Community based Insurance Scheme organisations purchasing maternity services from government health facilities as well as examples of philanthropic support for MNH to government health facilities. There is lesser documentary evidence on this and evidence is confined to Africa.

A systematic Cochrane style review was undertaken so as to only include high quality studies for credible

evidence. As a supplementary exercise, we also landscaped local PPPs in Pakistan that address MNH. These commonly have not been evaluated for performance review and were hence not eligible for the systematic review. However, the landscaping provides useful information on the distribution, design and focus of PPPs in Pakistan.

Systematic Review

Range and depth of PPPs: The systematic review came up with 27 PPP interventions across LMICs. Design of PPP interventions was seen to vary by regions. CBHIs are seen mostly in Africa, CCTs and vouchers originated from Latin America and are now increasingly being applied in South Asia, NHI schemes purchasing services from private providers are reported from Asia Pacific and Africa, while contracting out to NGOs and individually practicing general practitioners and obstetricians has a distribution across different regions.

The scale of implementation differs by PPP interventions. State supported schemes that involve the private sector such as NHI schemes, contracting out and user fee exemptions were seen to have extensive coverage. CCTs had reasonable coverage while Vouchers and CBHIs mostly had lesser coverage.

Service packages lack standardization and vary widely across PPP interventions. Most packages are heavily tilted towards maternity care overlooking newborn care. There is also a delink between child care and newborn care, as several of the child focused PPPs do not have newborn care packages and could not be included in the review or those that had not been sufficiently evaluated for newborn care. Even within maternity care, few interventions offer the full range of pregnancy care, delivery, EmOC and post-natal care. Delivery at health facility is offered by nearly all selected interventions; slightly more than half also offer EmOC support, a lesser number

offer ANC support, while there is wide variation in PNC provision vouchers, CCTs and contracting offer a comparatively broader coverage than NHI, CBHI and user fee exemptions that are targeted around EmOC and normal delivery.

Performance Impact of PPPs: The review of evidence from 27 PPPs provides encouraging and significant evidence of overall impact on increasing the use of maternal health services. Pooled analysis shows that PPP interventions overall significantly improved ANC, institutional delivery and PNC. A number of initiatives studied also offered E-mOC services but there are fewer measurements. A strong positive increase in C-Section is seen from all studies that provided measurements but these are few and hence results can be taken as indicative rather than confirmatory. Complicated delivery is less known as studies did not usually differentiate between facility based normal and complicated deliveries, with most relying on utilisation rates rather than audits. Data is thin on maternal mortality, although existing data is indicative of decreased in maternal mortality by 28%. There is insufficient data on neonatal health services making it difficult to draw effective conclusions.

Within the range of maternal care services the type of service increased through PPPs depends on PPP modalities. Vouchers schemes through private and public sector partnerships improve both pre and post pregnancy care utilization as well as access to facility based births, however there is little impact on emergency care. CCTs aimed at child preventive care and nutrition services are positioned at children under five rather than newborns hence show little impact on neonatal outcomes while maternity related CCTs as seen in India show increase in facility based births deliveries and reduction in maternal mortality. Contracting out of facilities and practitioners usually involve most comprehensive service packages as compared to other schemes but their results are less impressive. There is visible increase in ANC, but lesser positive impact on deliveries while there is no evidence for EmOC. While several contracting out programs include child immunization services, only in one instance was this evaluated and showed a significant drop in immunization. CBHI schemes result in significant improvement in facility based

births and C-Section, but with little evidence of translation into promotive pregnancy care. There is insufficient evidence on NHI and user fee exemption initiatives due to dearth of eligible studies; however, existing evidence indicates increase in facility based health facilities in both facilities.

There is much less data on quality of care. Existing evidence is from contracting out studies as these have a distinct focus on supply side improvement. Reported outcomes vary from process related indicators, such as TT immunization, to input related outcomes, such as staff presence, and are too diverse to draw conclusions. Other PPP interventions such as vouchers, CCTs, insurance schemes and user fee exemptions are primarily focused on demand creation and access to services, with little attention on quality. Standardized quality indicators need to be written across PPP interventions.

While most PPPs have a pro-poor intent there is little evidence of whether PPPs have indeed resulted in higher utilization by the poor. There is also a dearth of evidence on other purported goals of PPPs such as reduction in patient expenditure and cost efficiency. An intent to evaluate needs to be incorporated at the start of the PPP intervention in order to have better designs and comprehensive evaluations.

Underlying factors: The unevenness in terms of type of maternal service consumed by clients is due to an absence of standardized care packages across PPP interventions as well as variation in incentives for utilization. Most PPPs inadequately covered the full range of maternity services, and there is scant attention to neonatal care services across most PPP interventions. PPP interventions are also affected by issues to do with cost and payment modalities such as adequacy of funds, timely release and linking of results with payment incentives. Administrative costs of PPPs are not known and are pertinent for scaling up. Health system readiness is also critical to provide proper information and motivation to clients, response to increased demand for care, and effectively regulate quality of care provision. Lastly, state ownership emerges as an important factor for facilitation of implementation, funding commitment and scaling up.

Information gaps & research needs: A reasonable yield of data was selected for systematic review, comprising 27 studies on formal partnerships around service delivery and financing arrangements for MNH. However there was a gap between the number of actual PPP initiatives on the ground and the number of robust evaluations. Despite an increasingly large number of PPP interventions seen in LMICs, not all PPP designs have been well evaluated for maternal and neonatal health. One explanation could be that PPPs are often driven by larger political policy imperatives such as need for rapid expansion of services to the poor, providing access to free services etc., and have less time to invest for operational pilots or for baseline and end line surveys. Contracting, Vouchers and CBHIs were better evaluated with a higher number of relevant studies whereas; NHI and User Fee Exemption had a much lower yield of quality evaluations in comparison to the schemes on ground. Conditional Cash Transfers provide ample evidence for child health but insufficient data for maternal and neonatal health.

Methodologies followed in evaluations also need improvement as PPPs end to start off without evaluation being built into the design of the PPP intervention, resulting in absence of baseline data and questions over comparative control sites. Studies evaluated, in comparison to large trials run for disease control programs, mostly confirmed to pre-post evaluation while there is a dearth of cluster RCTs and time series design. There is also a need to systematically probe contextual factors as not all studies report on these factors. Furthermore, the administrative costs of implementation are not reported by studies and are expected scale up.

Landscaping PPPs from Pakistan: PPPs in

Pakistan: In Pakistan there are several Public Private Partnerships in place for MNH, however, most have not been rigorously evaluated hence were not eligible for a systematic review. Majority of PPPs have been initiated in the absence of a PPP strategy, and are largely indigenous models having sprung up through efforts of MNH related interest groups in response to weak government services. Additionally, there are also examples of MNH service strengthening as part of health systems innovations in Pakistan and

these have included through the contracting out of facilities undertaken as part of PPHI and non-PPHI schemes.

Type of PPPs: The range of PPPs is narrow and includes NGO support to augment government health facilities, contracting out of government health facilities to private providers and some instance of voucher schemes. As yet there is an absence of CBHI, CCTs and franchising of private providers in the area of MNH. The most popular form of PPP initiatives is an indigenous model found in Pakistan. It involves private sector support to augment government health services, and is welcomed by the public sector. Private sector entities supporting government facilities largely prefer to manage provided financing support and accompanied by technical support. There are comparatively fewer examples of the public sector purchasing from the private health sector reportedly due to lesser ownership in the public sector.

Provincial features: Punjab has the fewest examples of PPPs as compared to the three smaller provinces. The most prolific examples of PPPs are found in Sindh and Balochistan primarily driven by NGO support to the government sector. In Sindh these are implemented by local NGOs and sustained by support from a vibrant non-profit sector. In Balochistan they are being implemented by INGOs focused around refuges and conflict area. The initiatives in both Sindh and Balochistan have been taken by the non-profit sector. In contrast, in Khyber Pakhtunkhwa there is a concentration of PPPs led by the public sector whereby the government has purchased services from NGO providers to fill coverage gaps in remote locations or to improve the functionality of existing services across the province.

Opportunities and bottlenecks: There is a moderately sufficient presence of both local NGOs and INGOs in Pakistan for undertaking PPPs; they have also been successful in drawing in NGOs to under-served areas. Remote locations and vested local interest groups pose a challenge to finding adequate skilled staff to serve in remote areas, a challenge that so far NGOs have met but may not keep up amidst deteriorating security conditions. However, the main constraint is that both PPP models

lack monitoring, accountability and oversight platforms and this blunts communication between partners, ownership, performance accountability and provision of lessons learnt for a home-grown PPP strategy.

Conclusions:

- PPPs commonly increase access to maternal care services however there is less evidence on newborn care. Within maternity care, delivery services are most commonly improved by PPPs while there is variation in ANC, PNC and EmOC by type of model.
- The type of PPP model influences impact on specific service. Vouchers increase access to ANC, delivery and PNC, contracting out improves delivery and ANC rate but benefits are not always guaranteed in contracting schemes, NHI, user fee exemption and CBHI improve access to delivery and EmOC services.
- PPPs are affected by political ownership, autonomy, strong health systems and payment incentives.
- PPPs require standardized service packages and inadequately cover the full range of MNH services.
- In Pakistan there are several indigenous PPPs involving private sector support to augment government health facilities in addition to contracting out schemes. However PPPs lack a strategy, initiative in this connection has largely been taken by the private sector, and there is an absence of performance accountability mechanisms for necessary modifications and expansions of PPPs.
- PPPs need incorporation of an intent to evaluate at the start of the PPP intervention, use of better designed evaluations and evaluation of a standardized range of MNH services. Equity, quality measures, patient expenditure reduction and cost efficiency aspects have not been well evaluated despite being intended outcomes of PPPs.

Recommendations

- PPPs should be designed with an intent to evaluate program effectiveness from the initiation of the intervention
- Programs should also systematically analyse the contextual factors for future sustainability and program replication
- Programs should be implemented with better designed and standardized evaluations for a range of MNH services
- Equity, quality measures, patient expenditure reduction and cost efficiency aspects should also be evaluated

REFERENCES

1. Demographic and Health Survey 2006-07. <http://www.measuredhs.com/pubs/pdf/FR200/FR200.pdf>. Edited by Macro International Inc. Calverton MU. Islamabad, Pakistan: National Institute of Population Studies; June 2008.
2. Buse K, Walt G: Global public-private partnerships: part I-a new development in health? *Bulletin of the World Health Organisation* 2000, 78(4):549-561.
3. Widdus R: Public-private partnerships for health require thoughtful evaluation. *BULLETIN-World Health Organisation* 2003, 81(4):235-235.
4. Government of Pakistan Statistics Division. National Health Accounts Pakistan (NHA) 2007-08.
5. Zaidi S, Bhutta ZA. Result Based Financial Mechanisms for Improving Maternal, Newborn and Child Health Outputs. 2009. Accessed from <http://mother-childlink.tghn.org/articles/result-based-financial-mechanisms-improving-maternal-newborn-and-child-health-outputs/>.
6. The World Bank Institutions. The World Bank Annual Report 2010. Accessed from <http://siteresources.worldbank.org/EXTANNREP2010/Resources/WorldBank-AnnualReport2010.pdf>.
7. ECC: Pakistan Policy on Public Private Partnerships, Private Participation in Infrastructure for Better Public Services. 2010.
8. Batley R, McLoughlin C: Engagement with Non State Service Providers in Fragile States: Reconciling State Building and Service Delivery. *Development Policy Review*, 28(2):131-154.
9. 18th Amendment Bill. National Assembly of Pakistan. http://www.na.gov.pk/uploads/documents/report_constitutional_18th_amend_bill2010_020410_.pdf.
10. Lagarde M, Haines A, Palmer N: Conditional cash transfers for improving uptake of health interventions in low and middle-income countries. *JAMA: the journal of the American Medical Association* 2007, 298(16):1900-1910.
11. Bellows NM, Bellows BW, Warren C: Systematic Review: the use of vouchers for reproductive health services in developing countries: systematic review. *Tropical Medicine & International Health*, 16(1):84-96.
12. Zaidi S SS, Bhutta ZB, Salim R: Financing Support Platforms for BMONC and CMONC: A Global Landscape Review. 2012.
13. Kickbusch I, Quick J: Partnerships for health in the 21st century. *World Health Statistics Quarterly* 1998, 51(1):68-74.
14. World Health Organisation. Report on Interregional Meeting on the Public/Private Mix in National Health Systems and the Role of Ministries of Health, 1991. Geneva.

15. Patouillard E, Goodman CA, Hanson KG, Mills AJ: Can working with the private for-profit sector improve utilization of quality health services by the poor? A systematic review of the literature. *International Journal for Equity in Health* 2007, 6(1):17.
16. Loevinsohn BP: Health education interventions in developing countries: a methodological review of published articles. *International journal of epidemiology* 1990, 19(4):788-794.
17. Loevinsohn B, Harding A: Buying results? Contracting for health service delivery in developing countries. *The Lancet* 2005, 366(9486):676-681.
18. Mills Economics of health in developing countries 1986.
19. Meesen B. Removing user fees in the Health sector in low income countries. A multicounty review. UNICEF. 2009.
20. Ekman Br: Community-based health insurance in low-income countries: a systematic review of the evidence. *Health Policy and Planning* 2004, 19(5):249-270.
21. Suggested risk of bias criteria for EPOC reviews. <http://epoc.cochrane.org/sites/epoc.cochrane.org/files/uploads/Suggested%20risk%20of%20bias%20criteria%20for%20EPOC%20reviews.pdf>.
22. Ahmed S, Khan MM: Is demand-side financing equity enhancing? Lessons from a maternal health voucher scheme in Bangladesh. *SocSci Med* 2011, 72(10):1704-1710.
23. Schmidt J-O, Ensor T, Hossain A, Khan S: Vouchers as demand side financing instruments for health care: a review of the Bangladesh maternal voucher scheme. *Health Policy* 2010, 96(2):98.
24. Bhat R, Mavalankar DV, Singh PV, Singh N: Maternal healthcare financing: Gujarat's Chiranjeevi Scheme and its beneficiaries. *J Health PopulNutr* 2009, 27(2):249.
25. Nguyen HTH, Hatt L, Islam M, Sloan NL, Chowdhury J, Schmidt JO, Hossain A, Wang H: Encouraging maternal health service utilization: an evaluation of the Bangladesh voucher program. *Social Science & Medicine* 2012.
26. Obare F, Warren C, Njuki R, Abuya T, Sunday J, Askew I, Bellows B: Community-level impact of the reproductive health vouchers programme on service utilization in Kenya. *Health Policy Plan* 2012.
27. Agha S: Changes in the proportion of facility-based deliveries and related maternal health services among the poor in rural Jhang, Pakistan: results from a demand-side financing intervention. *International journal for equity in health* 2011, 10(1):1-12.
28. Maluccio J, Flores R: *IMPACT EVALUATION OF A CONDITIONAL CASH TRANSFER PROGRAM: THE NICARAGUAN RED DE PROTECCIÓN SOCIAL*. Washington, D.C.: International Food Policy Research Institute; 2004.
29. Miller C, Tsoka M, Reichert K: The Malawi Social Cash Transfer and the impact of \$14 per month on child health and growth. *Health Policy Plan* 2009.

30. Renaudin P, Prual A, Vangeenderhuysen C, OuldAbdelkader M, Ould Mohamed Vall M, Ould El Joud D: Ensuring financial access to emergency obstetric care: Three years of experience with obstetric risk insurance in Nouakchott, Mauritania. *International Journal of Gynecology & Obstetrics* 2007, 99(2):183-190.
31. De Costa A, Patil R, Kushwah SS, Diwan VK: Financial incentives to influence maternal mortality in a low income setting: making available 'money to transport' experiences from Amarpatan, India. *Global Health Action* 2009, 2.
32. Dongre, A., Effect of Monetary Incentives on Institutional Deliveries: Evidence from India. August 27, 2010.
33. Stephen S Lim., et al., India's JananiSurakshaYojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *Lancet*. 375(9730): p. 2009-23.
34. Criel B, Van der Stuyft P, Van Lerberghe W: The Bwamanda hospital insurance scheme: effective for whom? A study of its impact on hospital utilization patterns. *SocSci Med* 1999, 48(7):897-911.
35. Long Q, Zhang T, Xu L, Tang S, Hemminki E: Utilisation of maternal health care in western rural China under a new rural health insurance system (New Cooperative Medical System). *Trop Med Int Health* 2010, 15 (10):1210-1217.
36. Ndiaye P, Kaba S, Kourouma M, Barry AN, Barry A, Criel B: MURIGA in Guinea: an experience of community health insurance focused on obstetric risks. *Studies in Health Service Organisation and Policy* 2008, 24:117-148.
37. Smith K: Mutual Health Organisations and Reproductive Health in Senegal www.healthsystems2020.org/files/1587_file_Tech104_fin.pdf. USAID; 2006.
38. Baqui AH, Rosecrans AM, Williams EK, Agrawal PK, Ahmed S, Darmstadt GL, Kumar V, Kiran U, Panwar D, Ahuja RC: NGO facilitation of a government community-based maternal and neonatal health programme in rural India: improvements in equity. *Health Policy Plan* 2008, 23(4):234-243.
39. Igwegbe AO, Eleje GU, Ugboaja JO, Ofiaeli RO: Improving maternal mortality at a university teaching hospital in Nnewi, Nigeria. *Int J Gynaecol Obstet* 2010.
40. La Forgia GM: Health system innovations in Central America: *lessons and impact of new approaches*: World Bank Publications; 2005.
41. Brad Schwartz J, Bhushan I: Improving immunization equity through a public-private partnership in Cambodia. *Bull World Health Organ* 2004, 82(9):661-667.
42. World Bank: Bangladesh development series the bangladesh integrated nutrition project effectiveness and lessons <http://siteresources.worldbank.org/NUTRITION/Resources/BNGBINP8.pdf>. 2005.
43. Islam MT, et al. Improvement of coverage and utilization of EmOC services in southwestern Bangladesh. *Int J Gynaecol Obstet*, 2005. 91(3): p. 298-305; .

44. Martinez DJ, et al. Third-Party Evaluation of the PPHI in Pakistan 2010, DFid-HLSP, Technical Resource Facility and SOSEC, Vol. 17 2,.
45. Kozhimannil KB, Valera MR, Adams AS, Ross-Degnan D: The population-level impacts of a national health insurance program and franchise midwife clinics on achievement of prenatal and delivery care standards in the Philippines. *Health policy* 2009, 92(1):55-64.
46. Penfold S, Harrison E, Bell J, Fitzmaurice A: Evaluation of the delivery fee exemption policy in Ghana: population estimates of changes in delivery service utilization in two regions. *Ghana medical journal* 2007, 41(3):100.
47. Altman DG, Bland JM: Statistics Notes: Interaction revisited: the difference between two estimates. *BMJ: British Medical Journal* 2003, 326(7382):219.
48. Bloom E, Brookings I. Contracting for health: evidence from Cambodia. 2006: Brookings Institution 2005.
49. Bhushan I, Keller S, Schwartz S. Achieving the twin objectives of efficiency and equity: contracting health services in Cambodia. 2002: Asian Development Bank 2005.
50. Agha S: Changes in the proportion of facility-based deliveries and related maternal health services among the poor in rural Jhang, Pakistan: results from a demand-side financing intervention. *Int J Equity Health* 2011, 10:57.
51. Schmidt JO, Ensor T, Hossain A, Khan S: Vouchers as demand side financing instruments for health care: a review of the Bangladesh maternal voucher scheme. *Health Policy* 2010, 96(2):98-107.
52. World Bank. Bangladesh development series the bangladesh integrated nutrition project effectiveness and lessons <http://siteresources.worldbank.org/NUTRITION/Resources/BNGBINP8.pdf>. 2005.
53. Igwegbe AO, Eleje GU, Ugboaja JO, Ofiaeli RO: Improving maternal mortality at a university teaching hospital in Nnewi, Nigeria. *Int J Gynaecol Obstet* 2011, 116:197-200.
54. Schwartz JB, Bhushan I: Improving immunization equity through a public-private partnership in Cambodia. *Bull World Health Organ* 2004, 82(9):661-667.
55. De Costa A, Patil R, Kushwah SS, Diwan VK: Financial incentives to influence maternal mortality in a low income setting: making available 'money to transport' - experiences from Amarpatan, India. *Glob Health Action* 2009, 2.
56. Nguyen HTH, Hatt L, Islam M, Sloan NL, Chowdhury J, Schmidt JO, Hossain A, Wang H: Encouraging maternal health service utilization: an evaluation of the Bangladesh voucher program. *Social Science & Medicine*.

LIST OF STAKEHOLDERS

PUNJAB

- Contech International
- MNCH program Punjab
- PRSP

SINDH

- Green Star
- Child Aid Association
- HANDS
- Save the Children
- Tabba Foundation
- HOPE foundation

KHYBER PAKHTUNKHWA

- BRSP
- Mercy Corps
- MNCH program
- MSF
- Save the Children

BALUCHISTAN

- Abaseen Foundation
- United Rural Development Organisation
- Rahbar
- MSF
- Merlin
- Sarhad Rural Support Program (SRSP)

Declaration

“I have read the report titled *Public Private Partnerships for Improving Maternal and Neonatal Health Service Delivery - A Review of Evidence*, and acknowledge and agree with the information, data and findings contained”.

A handwritten signature in black ink, appearing to read 'Shehla', with a horizontal line underneath.

Dr Shehla Zaidi
Principal Investigator

