



# The Nature of Competition faced by Private Providers of Maternal Health Services in Uttar Pradesh, India

---

April 2017



## Acknowledgements

The research in this report was supported by funding from MSD through its MSD for Mothers program. Funding was used for general financial support, including staff salaries, travel, and overhead. MSD had no role in the design, collection, analysis and interpretation of data; in writing of manuscripts; or in the decision to submit a manuscript for publication. The content of this report is solely the responsibility of the authors and does not represent the official views of MSD. MSD for Mothers is an initiative of Merck & Co., Inc., Kenilworth, N.J., U.S.A.

This report was prepared by: Catherine Goodman<sup>1</sup>; Meenakshi Gautham<sup>1</sup>; Richard Iles<sup>1</sup>; Katia Bruxvoort<sup>1</sup>; Manish Subharwal<sup>2</sup>; Sanjay Gupta<sup>2</sup>; and Manish Jain<sup>2</sup>

<sup>1</sup> Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London, United Kingdom

<sup>2</sup> Impact Partners for Social Development (Impact), Delhi, India

## TABLE OF CONTENTS

<b>Acknowledgements.....</b>	<b>2</b>
<b>Abbreviations .....</b>	<b>6</b>
<b>Executive Summary.....</b>	<b>8</b>
<b>1 INTRODUCTION .....</b>	<b>11</b>
1.1 Study rationale	11
1.2 Aim and Objectives	12
<b>2 METHODS.....</b>	<b>13</b>
2.1 Conceptual framework	13
2.2 Study setting	14
2.3 Facility mapping	16
2.4 Survey of facilities providing deliveries	18
2.5 In-depth interviews	19
<b>3 RESULTS .....</b>	<b>22</b>
3.1 Market Structure	22
3.1.1 Number and type of facilities	22
3.1.2 Three broad type of private delivery facility	25
3.1.3 Key characteristics of delivery facilities	27
3.1.4 Growth of the market	31
3.2 Pricing and Payment	32
3.2.1 Price of delivery	32
3.2.2 Price setting	34
3.2.3 Insurance	36
3.3 Non-Price Competition	38
3.3.1 Location	39
3.3.2 Infrastructure and equipment	40
3.3.3 Hotel features	42
3.3.4 Staff and consultants	44
3.3.5 Marketing	49
3.3.6 Agents and commissions	51
3.4 Interventions affecting Private Facilities	57
3.4.1 Regulation	57
3.4.2 Maternal health-related interventions	60

3.4.3	Impact of public sector strategies on the private sector	62
<b>4</b>	<b>DISCUSSION.....</b>	<b>64</b>
4.1	Study Strengths and Limitations	64
4.2	Key Findings for Informing Policy	65
4.3	Intervention Options	67
<b>5</b>	<b>References .....</b>	<b>70</b>

## FIGURES

Figure 2-1 Conceptual Framework.....	13
Figure 2-2 Map of Uttar Pradesh showing Nature of Competition study sites .....	15
Figure 3-1: Mapped facilities in (a) Kanpur Nagar Zones 1 and 2, (b) Kannauj and Kanpur Dehat, and (c) Bareilly and Rampur.....	23
Figure 3-2 Share of deliveries by facility type and study site .....	30
Figure 3-3 Mid-point of price ranged charged in general ward for (a) normal delivery and (b) C-section	34
Figure 3-4 Key elements of non-price competition .....	38
Figure 3-5 (a) Owner qualifications and (b) Non-MBBS owners that employ MBBS staff or consultants..	44
Figure 4-1 Building blocks for enhancing private sector performance.....	67

## TABLES

Table 2-1 Demographic, geographic and health indicators for study sites .....	16
Table 2-2 Key maternal health and utilisation indicators for study sites .....	16
Table 2-3 Mapped urban wards and block towns across the three study sites .....	17
Table 2-4 Private delivery facilities surveyed of those mapped .....	18
Table 2-5 Characteristics of private facilities included in IDIs .....	20
Table 2-6 Characteristics of allied service providers and stakeholders included in IDIs .....	20
Table 3-1 Type of facilities .....	22
Table 3-2 Facility categories.....	27
Table 3-3 Characteristics of facility owners .....	28
Table 3-4 Number of beds .....	29
Table 3-5 Services offered .....	29
Table 3-6 Facility utilisation .....	30
Table 3-7 3-firm and 5-firm concentration ratios of deliveries in the past month.....	31
Table 3-8 Years in operation .....	31
Table 3-9 Mid-point of price range for delivery (Rupees, median (IQR)) .....	33
Table 3-10 Insurance / cashless scheme empanelment .....	36
Table 3-11 General infrastructure .....	40
Table 3-12 Medical infrastructure .....	40
Table 3-13 Private rooms .....	43
Table 3-14 MBBS and medical specialist salaried staff and visiting consultants .....	45
Table 3-15 Delivery referrals from other facilities.....	52
Table 3-16 Delivery patients brought to facilities by ASHAs and Dais.....	52
Table 3-17 Referrals for allied services.....	56
Table 3-18 Registration and records.....	58
Table 3-19 Interventions and affiliations .....	61

## Abbreviations

ANC: Antenatal visit

ANM: Auxiliary Nurse Midwife

ASHA: Accredited Social Health Activist

AYUSH: Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy

BAMS: Bachelor in Ayurvedic Medicine & Surgery

BHMS: Bachelor in Homoeopathic Medicine & Surgery

BUMS: Bachelor in Unani Medicine & Surgery

BR: Bareilly and Rampur study sites

CEmOC: Comprehensive Emergency Obstetric Care Services

CHC: Community Health Centre

CME: Continuous Medical Education

CMO: Chief Medical Officer

FBO: Faith-based Organisation

FOGSI: Federation of Obstetrics and Gynaecology Societies of India

GDP: Gross Domestic Product

HLFPPT: Hindustan Latex Family Planning Promotion Trust

INR: Indian Rupees

ICU: Intensive care unit

IDI: In-depth interview

IMA: Indian Medical Association

IQR: Interquartile range

IUD: Intra uterine device

IVF: In vitro fertilisation

Jhpiego: International, non-profit health organisation affiliated with Johns Hopkins University

JSY: Janani Suraksha Yojana

KKD: Kannauj and Kanpur Dehat study sites

KN: Kanpur Nagar study site

LSHTM: London School of Hygiene and Tropical Medicine

MBBS: Bachelor of Medicine and Bachelor of Surgery

MET: Maternal Healthcare Markets Evaluation Team

MfM: MSD for Mothers

MSD: Merck Sharp & Dohme

NABH: National Accreditation Board for Hospitals

NABL: National Accreditation Board for Testing and Calibration Laboratories

NFHS: National Family Health Survey

NICU: Neonatal intensive care unit

NoC: Nature of Competition

NSS: National Sample Survey

OBGYN: Obstetrics and Gynaecology

OT: Operating theatre

PFP: Private for profit

PHC: Primary Health Centre

PNFP: Private not for profit

PRO: Public Relations Officer

QI: Quality improvement

RMP: Rural medical provider

RSBY: Rashtriya Swasthya Beema Yojana

SC: Scheduled Caste

ST: Scheduled Tribe

TPA: Third party administration

UP: Uttar Pradesh

USD: US dollar

WHP: World Health Partners

## Executive Summary

The private healthcare sector dominates the delivery of healthcare in India, and while use of private facilities is lower for maternal healthcare than for general curative care, it is still substantial and increasing. The interventions funded by MSD for Mothers have a strong focus on the private sector, and anticipating and interpreting their effects requires an understanding of the nature of competition in these markets. We aimed to develop this understanding by studying the market for delivery services in Uttar Pradesh, where several MSD for Mothers projects were operating.

This study investigated (i) the market structure for maternal healthcare, in terms of number and types of providers, their characteristics and market shares; and (ii) private provider conduct in terms of their competitive strategies in relation to price setting, non-price competition, integration and collaboration. We used our findings to explore the implications for accessibility and quality of maternal healthcare, and for the design of policies and interventions related to the private sector.

The study was conducted in five contrasting districts in Uttar Pradesh: Kanpur Dehat, Kannauj, Rampur and Bareilly, and two of the urban zones of Kanpur Nagar. Data collection comprised a systematic mapping of all healthcare facilities, a quantitative survey of all facilities providing deliveries (N=265), and in-depth qualitative interviews (N=92) with facility staff, allied providers (e.g. ambulance drivers, pathology labs, ASHAs), and other key informants.

Nearly 4000 healthcare facilities were identified in the mapping. Of these around 9% provided deliveries, of which 78% were private for-profit, 1% private not-for-profit and 21% Government. The delivery facilities were highly clustered, particularly in larger cities (Bareilly, Kanpur Nagar), and outside of this in the larger district centres. The number of private delivery providers has grown rapidly over the last decade, though some rural areas remain distinctly under-served. Facilities could be grouped into three broad categories: (i) those providing advanced multi-specialty care and critical care (which we term tertiary – 46% of delivery facilities), (ii) those with sufficient capacity to manage caesarean sections and normal deliveries but not advanced critical care (which we term secondary – 43%), and (iii) those with only normal delivery capacity (which we term primary – 11%).

Facilities were mostly small, with on average only 15 beds, and 14 deliveries per month, and the vast majority were owned by individuals or family partnerships. There was substantial variation in facility infrastructure; just under a half had intensive care units, in-house pathology or ultrasound, while very few had blood banks. However, nearly 90% had private rooms, indicating the importance of the hotel aspects of care in this sector. Most facilities were owned by qualified doctors (MBBS), but a significant minority (16%) had AYUSH owners only, and the provision of delivery care through under-qualified staff was common at the lower-end of the market. All facilities relied heavily on visiting consultants (93% used at least one, and a facility on average worked with 6 different consultants). At lower-end facilities on-call OBGYN and anaesthetists were regularly called in for specific procedures, while at high-end facilities OBGYN rented the services of certain hospitals for the deliveries of patients within their practice.

Deliveries were usually priced as all-inclusive delivery “packages” including clinical care, hotel aspects, medicines and tests. In general wards normal deliveries cost on average USD 68, compared with USD 167 for C-sections, with a private room adding about USD 30. The vast majority of payment was in cash; only a few high-end facilities were empanelled in “cashless” / insurance schemes, and while some facilities had



enrolled in the Government subsidised insurance scheme for the poor (RSBY) it was said to be functioning poorly.

Beyond price, key dimensions of competition included location, infrastructure and equipment, hotel features, and staffing – with the reputation of individual clinicians and whether they are female being particularly important. The ‘healthiest’ economic locations were said to be those easily accessible to patients, close to other private facilities, and close to a Government hospital from which referred patients could be obtained.

Most facilities put considerable effort into marketing, especially new facilities without an established reputation. Key strategies included pamphlets and hoardings, health camps (“open day” charity and promotional events at the facility or in villages), and many large and medium-sized facilities employed dedicated marketing agents, termed PROs. A key finding was the involvement of private providers in a complex set of networks with allied providers, frequently involving commission payments. Many facilities paid commissions to agents who introduced patients to facilities – particularly private ambulance drivers, ASHAs, rural medical providers (RMPs) and Dais – with payments typically 30% of the full patient fee. The system of giving commissions extended to diagnostic providers and sometimes medical stores, who would in turn pay facilities for referring patients to them.

Government regulation was extremely light. Only 47% of facilities were listed as registered, inspections were rare, dual practice was extremely common, and regulation was rarely considered a major constraint on operation. The majority of facilities did not have any support / affiliations with organisations focused on quality improvement for maternal health, with only a minority having received training, joined a social franchise, or having membership of FOGSI (the OBGYN professional association). However, the private sector was substantially indirectly influenced by the performance of the public sector. On the one hand poor public sector quality and a lack of public sector C-section availability in rural areas were pushing women into the private sector, while on the other hand financial incentives for women delivering at public facilities (JSY) and free public ambulance services had substantially reduced demand for middle and lower-end private facilities.

The nature of competition and regulation described above had important implications for the availability, quality and affordability of delivery care. Availability was highly variable, leading to intense competition and questionable business practices in urban areas, but a very worrying lack of secondary and tertiary care in most rural areas. Quality concerns included a lack of qualified staff, and heavy reliance on visiting consultants, likely affecting the timeliness and continuity of care, and supervision of more junior staff. Another key quality concern was the chaotic referral systems from government facilities which left women at highest risk at the mercy of middle-men with a strong financial stake in their referral location. More generally, typical delivery prices and the lack of subsidised insurance implied that private sector facilities would have been unaffordable for poorer groups, and even for middle-income groups the financial burden could be high, with commission payments significantly increasing patient charges.

Based on these findings, we highlight a set of potential “building blocks” for improving the accessibility and quality of private sector delivery care. The creation of a firm foundation requires at a minimum the implementation of universal registration of private facilities (including AYUSH providers), and systematic and risk-based regulatory inspections. This will represent a major political and logistic challenge but is critical as a basis for the development of a mature and safe healthcare system. Building on these foundations, there should be a set of interventions focusing on institutionalising quality improvement.

There is a major gap in the implementation of quality improvement strategies, with almost no training for lower-level providers and very limited CME for their higher-end counterparts, and a lack of appropriate accreditation schemes targeted to all but the highest-end facilities. The fragmented nature of the market (many small providers performing few deliveries each) implies that engaging in facility-by-facility in quality improvement will be a substantial challenge, unless there is greater consolidation of the market and/or careful targeting of facilities. Finally, demand is of course a huge influence on provider performance. Improving patient information may reduce the need for commission-earning agents, and improve quality of care, for example through report cards, or mobile/ online review platforms. Careful consideration should also be given to third party payment mechanisms, such as vouchers, subsidised insurance and contracting out, with a particular focus on emergency cases referred from public facilities. Finally, providers are heavily affected by competition, and for most providers the government sector remains an absolutely key competitor. This implies that an appropriately financed and good quality public sector is likely to be one of the most important influences on not only public but also private sector performance.

# 1 INTRODUCTION

## 1.1 Study rationale

The private healthcare sector dominates the delivery of healthcare in India (1). The combined category of private doctors, clinics and hospitals accounted for 72% of care seeking in rural areas and 79% in urban areas (2). While use of private facilities is lower for maternal healthcare than for general curative care, it is still substantial and increasing. Comparison of maternal healthcare utilisation data between India's National Family Health Survey-III (NFHS-3) in 2005-2006 and the most recent NSS in 2014 shows that public sector utilisation had increased by 30 percentage points to 50% of all births nationally, but private facility births also increased by 13 percentage points to around 33% (48% in urban areas and 23% in rural areas)<sup>1</sup> (2, 3). The national percentage of home births had fallen rapidly by over 40 percentage points, to approximately 20% in 2014 (2).

There is an extensive literature on private healthcare provision in India, particularly focusing on certain disease areas such as TB, HIV and childhood diseases (4-6). Much less has been written specifically about India's private maternal healthcare sector, and the majority of this is from the public health or anthropology literature. By contrast, the application of economic frameworks to better understand competition and regulation is largely absent from India's maternal healthcare literature, with no studies available on prices and price-setting practices among maternal healthcare providers, or on their other competitive practices.

The interventions implemented and assessed through the Merck, Sharp and Dohme (MSD) for Mothers (MfM) programme have a strong focus on strategies involving the private sector, such as investment in social franchise networks, accreditation of private providers, and development of public accountability mechanisms. These interventions take place within the context of markets where private providers compete for patients, competing both with each other and with the public sector. Anticipating and interpreting the effects of current and future interventions funded by MfM would therefore benefit from an understanding of the nature of competition in these markets.

This study aims to address this gap, by using a markets perspective that draws on theoretical insights and empirical evidence from the economics literature, and a mix of quantitative and qualitative data. Our focus is on the state of Uttar Pradesh (UP), as two MfM interventions are taking place in this state (Pathfinder International/WHP and Jhpiego). A third MfM-funded project, which is being implemented in Rajasthan by HLPPT, was originally developed and still operates in UP. This choice of location therefore maximizes the relevance of the work to the MfM evaluation.

This study builds on other MfM-funded research activities in UP, specifically the Matrika Impact Evaluation, and Matrika Case Study, complementing and extending their contributions in several ways. First, this Nature of Competition study covers a broader range of private providers than those directly involved in Matrika, providing a more holistic assessment of delivery provision. Secondly, the study includes the Matrika intervention districts, but also encompasses both more culturally diverse and more urban areas of UP, allowing for consideration of the generalizability of MfM approaches. Finally, the

---

<sup>1</sup> Maternal healthcare data in the NSS 2014 report is only provided by rural and urban sectors only. The figures used above are indicative of the estimated combined utilisation figures.

economics framework will provide new perspectives and insights on provider operation, facilitating an understanding of the likely appropriateness and effectiveness of future policies/interventions.

## 1.2 Aim and Objectives

### AIM

To understand the nature of competition faced by private providers of maternal health services in Uttar Pradesh.

### OBJECTIVES

1. To assess the **market structure** for maternal healthcare in **three contrasting study sites** in Uttar Pradesh, in terms of number and types of providers, their characteristics and market shares.
2. To understand private **provider conduct** in terms of their competitive strategies in relation to price setting, non-price competition, integration and collaboration.
3. To explore the potential **implications** of market structure and private provider conduct for access to and quality of maternal healthcare, and for the design of private sector policies and interventions.

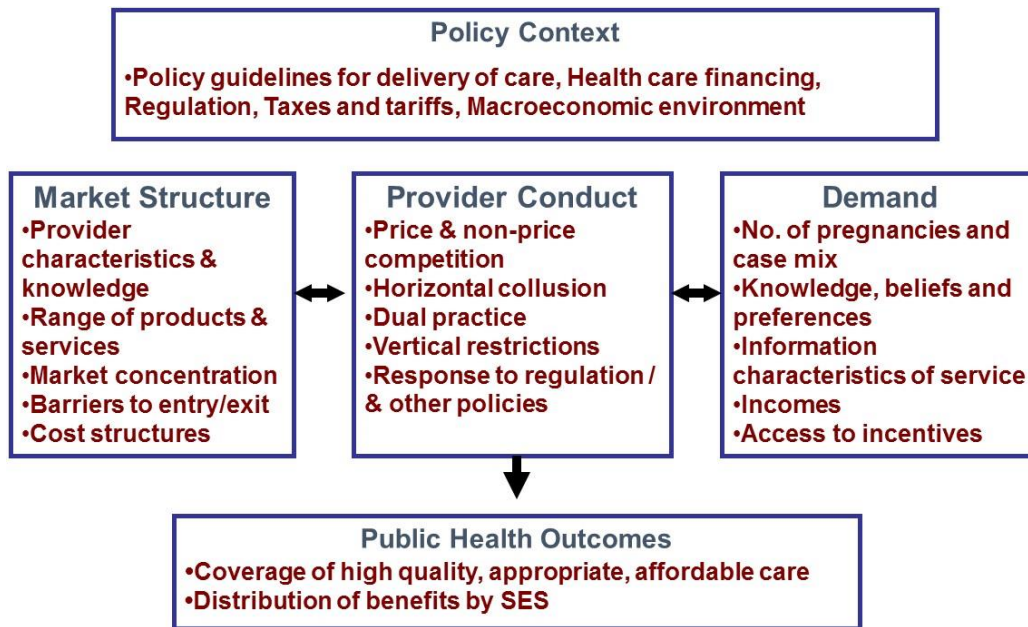
## 2 METHODS

The study drew on a conceptual framework around market structure, conduct and performance, and a literature review on private sector maternal healthcare provision in India. Data collection was conducted in three study sites in Uttar Pradesh, and comprised: 1) mapping of all healthcare facilities in the three study sites, 2) a quantitative survey of facilities providing deliveries, and 3) in-depth qualitative interviews with providers, officials and other key informants. Each component of the study is described below. Ethical approval was obtained from the Institutional Review Boards of LSHTM and the CMS, New Delhi.

### 2.1 Conceptual framework

The conceptual framework is based on a modified version of the structure, conduct, performance (SCP) paradigm from the industrial organisation economics literature (Figure 2-1). The interplay of market structure (e.g. number of sellers, market concentration, barriers to entry), provider conduct (competitive strategies) and consumer demand is hypothesized to determine the nature of competition in the market for maternal healthcare services, and so influence the coverage of high quality, appropriate, affordable care, and its distribution across socioeconomic groups. This takes place within a policy context determined by government guidelines for delivery of care, health care financing arrangements, regulation, taxes and tariffs, and the macroeconomic environment.

Figure 2-1 Conceptual Framework



Together with the literature review, the conceptual framework has guided data collection in terms of the type of information gathered and the hypotheses explored.

## 2.2 Study setting

Uttar Pradesh is the most populous state in India with a population of 199.8 million people in 2011 (7), now estimated to be over 220 million. The state is divided into 18 divisions and 75 districts. The population is predominantly rural (77%). Eight cities in Uttar Pradesh contain more than 1 million people (Kanpur, Lucknow, Ghaziabad, Agra, Varanasi, Meerut, Allahabad, Bareilly) (8). Approximately 30% of the population is illiterate and 38% live below the poverty line<sup>2</sup> (7, 9). The interquartile range of per capita annual income (Net Domestic Product) across the districts in 2012-13 was USD 348 (INR 23,193) to USD 629 (INR 41,859). Those districts in the western region of the state (i.e. closer to Delhi) have higher average per capita incomes (USD 641), compared to those in the eastern region (USD 353) (10). In 2010-2011, Uttar Pradesh's total fertility rate was an estimated 3.6, and the median age at first live birth for women between 15-49 years was 22 years (11).

The religious and caste characteristics of Uttar Pradesh show the strong presence of both Hindu and Muslim populations, and of Scheduled Caste communities. Approximately 80% of the populations of India and Uttar Pradesh are Hindu, with the majority of the remaining 20% Muslim (12). The percentage Muslim across UP's districts ranges from 51% in Rampur (western region) to 3% in Lalitpur (southern Bundelkhand region) (12). The distribution of Scheduled Caste (SC) and Tribe (ST) communities across Uttar Pradesh has less variance than for religious identity. The percentage SC and ST across districts ranges from 11% (Baghpat in western region) to 35% (Pratapgarh in eastern region) for SC communities, and less than 1% (58 districts) to 21% (Sonbhadra in eastern region) for ST communities (13, 14).

For this study we selected three contrasting areas of UP in order to document a range of maternal healthcare markets, reflecting UP's heterogeneity. While our aim is not to provide representative data for UP as a whole, we wished to explore key variations in healthcare markets across the State that may be linked to (a) urban / peri-urban / rural setting, (b) proximity to large cities (e.g. Kanpur, Bareilly), (c) socio-economic status (SES), and (d) religious orientation (Hindu / Muslim). We also wished to include one area that was part of the Matrika programme. Each study area contains two districts / zones, in order to ensure a sampling frame with a sufficient number of private health facilities.

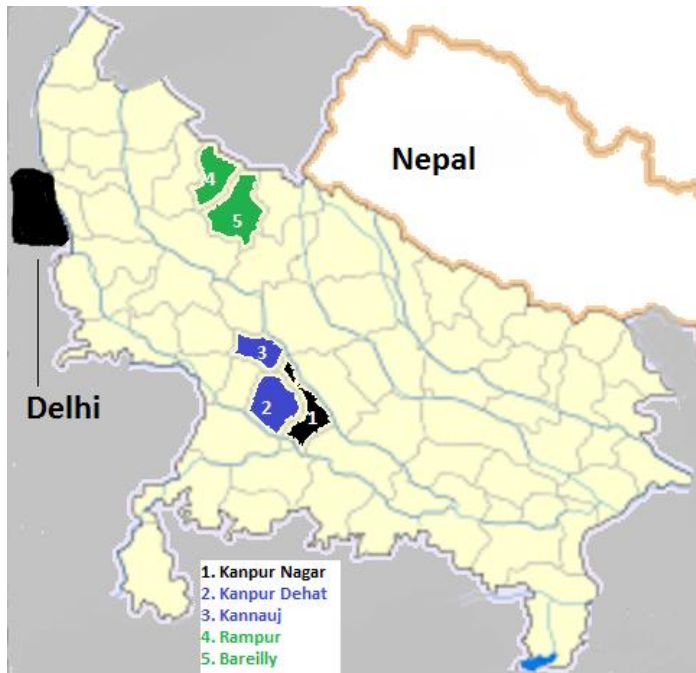
We therefore selected three areas as follows (Figure 2-2):

- The contiguous Matrika districts of Kannauj and Kanpur Dehat (KKD study site);
- The contiguous districts of Bareilly and Rampur (BR study site); and
- Two 'zones' of urban Kanpur city in Kanpur Nagar district, Zone 1 which is relatively high income and central and Zone 2 which is lower income and includes peripheral areas of the city (KN study site).

---

<sup>2</sup> The poverty line used is based on the Planning Commission's Uttar Pradesh threshold of INR 664 (rural) (USD10) and INR 800 (urban) (USD12.1) per capita per month for the period 2009-2010.

Figure 2-2 Map of Uttar Pradesh showing Nature of Competition study sites



Key data on the social, demographic and health indicators for the three study sites and for UP as a whole are shown in Table 2-1 and Table 2-2. Note that these data are shown for the whole district of Kanpur Nagar including its rural areas, rather than the two selected zones. Comparing the BR site to the KKD Matrika districts, BR is less rural, with a lower proportion of scheduled castes, and lower maternal mortality. However, BR has lower female literacy, higher fertility, and lower government institutional delivery. BR also has a higher Muslim share of the population. Data for Kanpur Nagar District are similar on some indicators to KKD (e.g. % Muslim, % scheduled caste), but show lower fertility, and infant and neonatal mortality, and higher female literacy and ANC coverage. Use of private facilities for delivery in 2012 ranged from 10% of all births in Kanpur Dehat to 27% in Kanpur Nagar and Rampur. The city of Kanpur (which forms part of Kanpur Nagar District and within which the KN study zones are located) is the largest in Uttar Pradesh with an urban population of 2.8 million people with 110 urban wards. According to the Urban Health Initiative, as of 2009, there were 289 maternity/nursing homes in the city and an estimated 587 unregistered private ‘doctors’ catering for residents of Kanpur’s slums (15).

Table 2-1 Demographic, geographic and health indicators for study sites

	Uttar Pradesh	KN	KKD		BR	
		Kanpur Nagar	Kannauj	Kanpur Dehat	Bareilly	Rampur
<b>Demographics</b>						
Population (in millions, 2011)	199.8	4.6	1.7	1.8	4.5	3.3
Rural population (%)	78	34	83	90	65	75
Female Literacy (%)	57	75	63	67	48	44
Muslim (%)	19	16	17	10	35	51
Scheduled caste (%)	21	18	19	26	13	13
Marriage below legal age by females (%)	33	13	23	19	37	21
Fertility (lifetime)	3.3	2.1	3.3	2.8	3.6	3.5
Sex ratio at birth (females per 1000 males)	921	889	925	956	996	918
<b>Geographic indicators</b>						
Largest town / city population (,000)	2768	2768	85	24	986	349
Proximity of largest town to nearest major city <sup>1</sup> (km)	-	-	84	60	-	67
<b>Health indicators</b>						
Maternal mortality ratio (per 100,000) <sup>2</sup>	258	240	240	240	196	222
Infant mortality (per 1,000)	68	37	79	65	78	60
Neonatal mortality (per 1,000)	49	24	55	41	52	45

<sup>1</sup>A major city is defined as a city in Uttar Pradesh with a population > 500,000.

<sup>2</sup>MMR is calculated for a group of districts, not individually.

Sources: Census 2011; AHS 2012; DLHS 2007-08 (11-14, 16, 17)

Table 2-2 Key maternal health and utilisation indicators for study sites

	Uttar Pradesh	KN	KKD		BR	
		Kanpur Nagar	Kannauj	Kanpur Dehat	Bareilly	Rampur
<b>Pregnancy (%)</b>						
Antenatal care three visits or more	38	53	27	33	23	46
Mothers who receive at least TT 1 injection	84	86	86	84	77	91
Mothers who took IFA more than 100 days	10	23	4	13	5	6
<b>Place of delivery (%)</b>						
Government facility	39	34	43	46	24	29
Private facility	18	27	15	10	23	27
At Home birth	42	38	41	43	52	45

Source: AHS 2012 (11)

### 2.3 Facility mapping

A key challenge in studying private healthcare providers in this setting is the lack of a sampling frame or full list of relevant facilities on which to base the study, reflecting the very incomplete registration of private facilities. We therefore began our research with a systematic mapping of public and private healthcare ‘facilities’ across the three study sites. For the purposes of this study, ‘facilities’ were defined as providers of clinical services who operate from a fixed location, who may operate as public, for-profit or charitable/trust, and whose services may be based in any system of medicine. At the facility locations signage and advertising may or may not be present. Diagnostic labs and medical stores were not considered as ‘facilities’, and we also excluded specialist optical and dental providers. All public facilities were included with the exception of the most peripheral units termed sub-centres which do not provide delivery care in these sites.



In the KN study site, the mapping was conducted throughout the two selected zones, each comprising 18 wards (Table 2-3). In the KKD and BR study sites, the mapping was conducted in all district towns and block centres, as the vast majority of facilities are concentrated in these centres (as a result a limited number of facilities in rural areas, or along main roads outside of these centres may have been excluded).

*Table 2-3 Mapped urban wards and block towns across the three study sites*

	KN		KKD		BR		Total
	Zone 1	Zone 2	Kanpur Dehat	Kannauj	Bareilly	Rampur	
Wards	18	18	0	0	71	40	<b>147</b>
Block towns	0	0	10	8	15	7	<b>40</b>
<b>Total</b>	<b>18</b>	<b>18</b>	<b>10</b>	<b>8</b>	<b>86</b>	<b>47</b>	<b>187</b>

This mapping sought to be as exhaustive as possible and provide a census of facilities in a given study site. The initial identification of healthcare facilities was based on several sets of information about the name, location and services provided by facilities. Sources of information included: i) Chief Medical Officer (CMO) list of registered facilities for each district, ii) list of facilities identified by internet searches, and iii) information about facilities given by local community-level key informants.

The mapping was conducted in three stages:

- The first stage involved collecting and organising available lists of private facilities. Lists of private facilities from CMOs and internet searches were: i) compiled in English and Hindi, and ii) sorted by geographical location within study sites (e.g. zone, ward or block centre). Ward level maps were obtained from Municipal Offices in Kanpur, Rampur and Bareilly to assist data collectors in navigating and co-ordinating data collection across teams.
- In the second stage, mappers and supervisors collected local information about healthcare providers from community level key informants. Key informants included: i) a local Government facility, ii) a drug store operator within a local cluster of drug stores, iii) an Anganwadi worker or nurse, iv) a dai, and in urban areas v) a pathology lab operator. We aimed to select a range of key informants, geographically dispersed across a given ward or sub-block centre. Key informants were asked to provide the names and locations of healthcare facilities in the immediate area, and to confirm the facilities on the CMO and internet lists. We probed specifically about any un-signed delivery centres/locations, such as private homes or rural medical providers (RMP) who typically have no qualifications, or AYUSH clinics.
- In the third stage the mappers walked or drove down every street and alley in a given ward in pairs, confirming the location of any facilities previously identified from lists of key informants, and identifying additional visible facilities. For each private facility identified information was recorded digitally in the *GPS Essentials*<sup>®</sup> app on mobile phones and on a paper-based pro-forma. The name, location, type of facility (government, private for-profit, private charitable), and system of medicine was noted, together with whether the facility was believed to provide deliveries, based on signage, or enquires at reception or with local residents. Mappers obtained only publicly available information, and did not interview facility staff, so no consent procedures were required.

The mapping was completed over 3 months (Feb-April 2016) by a team of 15 mappers, 2 team managers and 1 mapping supervisor, with continual monitoring and support from Impact Partners and LSHTM staff.

To ensure the quality and comprehensiveness of mapping, initial data from all sites were visually inspected on maps, and cross-checked with other available lists (e.g. Sky-health facilities in the same block towns), and through re-mapping of selected areas by Impact Partners staff. As a result 31 wards and block towns were identified where there was concern that some areas may have been missed, so these were remapped and any additional facilities identified were added to the census. Finally, during the subsequent provider survey (see below), surveyors occasionally identified facilities that had not been included in the mapping, and these were also added.

## 2.4 Survey of facilities providing deliveries

A survey was conducted of all private facilities recorded as providing deliveries during the mapping (including both for-profit and not-for-profit facilities). The survey mainly addressed the first study objective of documenting market structure and provider characteristics, covering: i) facility characteristics, ii) infrastructure, iii) staff numbers and qualifications, iv) services provided, v) availability of equipment and medicines, vi) reported practices for typical delivery cases seen, vii) referral practices, viii) links with allied service providers, ix) participation in any programmes / associations and other business practices, and x) prices charged for delivery. The survey was conducted in Hindi using paper questionnaires, and piloted outside the study areas. Where it was not possible to conduct an interview on the first visit, facilities were visited up to three times. Where possible the clinician in charge of delivery services (often the owner or medical superintendent) was interviewed. Where this person was very busy, some sections of the questionnaire (on infrastructure and business practices) were answered by a manager, but we made every effort to ask the questions related to clinical care of a staff member responsible for deliveries. Informed oral consent was obtained from interviewees. The survey was completed over 3 months (March-May 2016) by a team of 8 data collectors, working in pairs. Training and supervision were provided by Impact Partners and LSHTM staff.

Table 2-4 shows the number of private delivery facilities approached for the survey, and the number where surveys were successfully completed.

*Table 2-4 Private delivery facilities surveyed of those mapped*

	KN	KKD	BR	TOTAL
Identified during mapping	75	48	287	410
Survey completed	54	26	182	262
Difference (identified minus completed)	20	22	104	148
Reasons for difference:				
Provider not found	1	0	1	2
Health facility vacant	0	1	2	3
Stated deliveries not performed	10	12	91	113
Refused	10	6	11	27
Other <sup>1</sup>	0	3	0	3

<sup>1</sup>Includes 1 Sky Health Centre in KKD purposefully not surveyed as it was selected for MET case study data collection and we wanted to avoid respondent fatigue, and 2 facilities in KKD whose details were not fully recorded during mapping.

Of the 410 private delivery facilities identified during the mapping, surveys were completed for only 262. Of the 148 where a survey was not completed, 5 were not found or the facility was vacant. A much higher number (113) were reported as not eligible because when approached for the survey they stated that they did not perform deliveries, even though they had been recorded as delivery facilities during the mapping. In these cases, their delivery status was checked, either by phone calls and personal visits by

Impact Partners staff (in KKD and KN), or by re-visits by the survey team (in BR). Three reasons for these discrepancies were identified. The majority of these facilities had staff that would examine pregnant women at the facility but would then conduct the delivery at another facility, while a minority were confirmed not to have delivery services. Thirdly, 8 inpatient facilities in KN and one facility in BR, were identified during mapping as providing delivery, as indicated by sign boards and/or local knowledge, but facility staff would not confirm this. We suspect that these 9 facilities may have provided delivery but denied this to avoid spending time completing a survey, or because they were concerned they could be accused of violating regulations. Data collection staff felt that such denials were most common in cases where facilities were unlikely to have an OBGYN, or in some cases even an MBBS, on their regular staff. In addition, 27 facilities directly refused to participate. This implies a refusal rate of 9.3% of eligible identified facilities. If the 8 facilities thought likely to have lied about their delivery status are also considered as “refusals”, the refusal rate increases to 11.8%.

The discrepancies between the number of delivery facilities identified during the mapping and confirmed during the survey highlights one key finding of the study - the practical difficulties of even identifying which facilities provide delivery care, in an environment where many facilities are not registered, and some may be violating regulations, and are concerned about the consequences. As it is likely that facilities with less qualified staff could be more likely to deny performing deliveries or to refuse, results on structural quality measures such as qualified staff or infrastructure and equipment should be considered as maximum estimates.

Analysis was conducted in Stata. As we did not take a sample of facilities, but instead aimed to interview all facilities in the study sites that stated that they provided deliveries, we do not present confidence intervals around estimates. Missing data are indicated with a footnote where ten or more total observations were missing.

## 2.5 In-depth interviews

The in-depth interviews (IDIs) primarily addressed the second objective of understanding private provider conduct, competition, and their referral and other networks. Research questions included:

- Which public and private providers do facilities compete with for patients?
- To what degree and in which ways do private providers engage in price competition?
- To what degree and in which ways do private providers engage in non-price competition?
- What links are there between private facilities, between public and private facilities, and with allied service providers (e.g. ambulances, diagnostic labs, ASHAs etc)?
- How do competitive and regulatory pressures affect the technical quality of care delivered?

IDIs were conducted with three sets of interviewees:

- Private delivery facility owners/ managers (N=34). Facilities were purposively selected out of those included in the facility survey to provide variation in terms of bed size, number of deliveries, whether they had an OBGYN on staff, whether they performed C-sections, rural /urban location, owner’s religion, private for-profit v charitable status, time in operation, and prices charged for deliveries. We aimed to interview the person most involved with the management of the maternal health services business.

- Allied service providers who have interactions with private delivery facilities, such as ASHAs, Dais, ambulance drivers, visiting consultants, staff from medical stores, diagnostic centres and blood banks, rural medical providers (RMPs), and public sector health staff (N=46)
- Government officials and other stakeholders at the State and District/Ward level (N=12). Interviewees included government staff responsible for regulation and supervision of private providers, representatives from professional associations, and NGO / research staff who work with private providers (e.g. organisations involved in training or social franchising).

The characteristics of the respondents are shown in Table 2-5 and Table 2-6. Of all facilities approached, 10 refused, and were replaced with facilities with similar characteristics.

*Table 2-5 Characteristics of private facilities included in IDIs*

	KN	KKD	BR	Total
Ownership				
For-profit	11	11	9	31
Faith-based and other not-for-profit	1	1	1	3
Owner's religion				
Hindu	10	11	6	27
Muslim	2	1	3	6
Christian	0	0	1	1
No. of beds				
0-10	1	8	4	13
11-30	10	3	1	14
>30	1	1	5	7
No. of deliveries per month				
0-10	5	9	5	19
11-30	6	1	3	10
>30	1	2	2	5
Performs C-sections				
Yes	12	8	8	28
No	0	4	2	6
<b>Total</b>	<b>12</b>	<b>12</b>	<b>10</b>	<b>34</b>

*Table 2-6 Characteristics of allied service providers and stakeholders included in IDIs*

	KN	KKD	BR	Lucknow	Total
Allied Service Providers					
ASHAs	0	3	3		6
Dais	2	1	2		5
ANM/Staff Nurse	2	4	2		8
RMP	0	3	3		6
Ambulance	2	1	2		5
Diagnostic Centre	2	2	1		5
Blood Bank	2	0	1		3
Medical Store	0	2	1		3
Visiting consultants	2	0	1		3
PRO	0	2	0		2
<b>Total</b>	<b>12</b>	<b>18</b>	<b>16</b>		<b>46</b>
State and district level stakeholders <sup>1</sup>	2	2	3	5	12

<sup>1</sup> We also drew on 7 scoping interviews conducted with stakeholders in KN and Lucknow as part of the preparation for the study.

It is recognised that private providers may be unwilling to talk freely about their own practices where these are considered legally or commercially sensitive. We aimed to address this in three ways: (i) by

reassuring them that the information provided would be confidential, (ii) by asking questions about their perceptions of the behaviour of similar providers (rather than asking about their own behaviour), and (iii) by triangulating through the interviews with allied service providers and stakeholders.

Informed oral consent was obtained from all interviewees. All IDIs were conducted by Impact Partners and/or LSHTM staff, using semi-structured interview guides. Interviews lasted between 45 mins and 3 hours, and were conducted in Hindi or English, depending on the respondent's preference. Where possible, interviews were digitally recorded, though interviewees frequently declined permission for recordings. In all interviews, detailed handwritten notes were taken. Interviews were transcribed in the language of interview, translated into English where necessary, and checked by the interviewer. IDI data were then subjected to framework analysis (18). All transcripts were read by LSHTM researchers to identify the main themes or experiences identified by respondents, and an initial coding structure developed reflecting both key themes from the conceptual framework and issues arising from the data. The coding structure was then applied using NVIVO software. The coded data was analysed for commonly occurring themes, areas of congruence and divergence and explanations of different types of behaviours in these markets.

### *Fieldwork*



## 3 RESULTS

The results are organized into 4 sections. We begin by describing the structure of the market for delivery care (section 3.1), including the key characteristics of the providers. We then turn to provider conduct, focusing first on price (section 3.2), and then on non-price competitive strategies (section 3.3), before considering the impact of government and NGO interventions in section 3.4.

### 3.1 Market Structure

#### 3.1.1 Number and type of facilities

Table 3-1 shows the total number of healthcare facilities of all kinds mapped in each study site. In total 3,976 facilities were mapped, of which 96% were private for-profit, 0.6% private not-for-profit and 3% Government.

Table 3-1 Type of facilities

	KN	KKD	BR	TOTAL
<b>Private for-profit</b>				
Delivery facilities	62 (6.4)	36 (6.0)	195 (8.1)	293 (7.4)
Non-delivery inpatient facilities	16 (1.7)	2 (0.3)	28 (1.2)	46 (1.1)
MBBS outpatient clinics	604 (62.0)	310 (51.5)	1,413 (58.9)	2,327 (58.5)
AYUSH outpatient clinics	200 (20.5)	74 (12.3)	410 (17.1)	684 (17.2)
Other outpatient clinics (unqualified) <sup>2</sup>	51 (5.2)	125 (20.8)	203 (8.4)	379 (9.5)
Other- type unclear	9 (0.9)	12 (2.0)	83 (3.4)	104 (2.6)
<b>Sub-total</b>	<b>942 (96.7)</b>	<b>559 (92.8)</b>	<b>2,332 (97.1)</b>	<b>3,833 (96.3)</b>
<b>Private not-for-profit</b>				
Delivery facilities	3 (0.3)	0 (0)	1 (0.05)	4 (0.1)
Non-delivery inpatient facilities	1 (0.1)	0 (0)	0 (0)	1 (0.05)
MBBS outpatient clinics	3 (0.3)	0 (0)	0 (0)	3 (0.1)
AYUSH outpatient clinics	7 (0.7)	1 (0.2)	7 (0.3)	15 (0.4)
Other outpatient clinics (unqualified)	0 (0)	0 (0)	0 (0)	0 (0)
Other- type unclear	1 (0.1)	0 (0)	1 (0.05)	2 (0.05)
<b>Sub-total</b>	<b>15 (1.5)</b>	<b>1 (0.2)</b>	<b>9 (0.4)</b>	<b>25 (0.7)</b>
<b>Government<sup>1</sup></b>				
Delivery facilities	2 (0.2)	31 (5.2)	38 (1.6)	71 (1.8)
Non-delivery inpatient facilities	6 (0.6)	5 (0.8)	4 (0.2)	15 (0.4)
MBBS outpatient clinics	8 (0.8)	5 (0.8)	7 (0.3)	20 (0.5)
AYUSH outpatient clinics	2 (0.2)	1 (0.2)	9 (0.4)	12 (0.3)
<b>Sub-total</b>	<b>18 (1.8)</b>	<b>42 (7.0)</b>	<b>58 (2.5)</b>	<b>118 (3.0)</b>
<b>TOTAL</b>	<b>975 (100)</b>	<b>602 (100)</b>	<b>2,399 (100)</b>	<b>3,976 (100)</b>

<sup>1</sup>Includes municipal corporation and state government sponsored facilities. Excludes sub-centres which are peripheral health posts that never provided delivery care in these study sites. <sup>2</sup> often referred to as rural medical providers (RMPs)

Focusing just on delivery facilities, 77.8% were private for-profit, 0.9% private not-for-profit and 21.3% Government. In rural areas Government delivery facilities comprised some of the Primary Health Centres (PHCs) which should have an MBBS doctor and perform normal deliveries though this is not always the

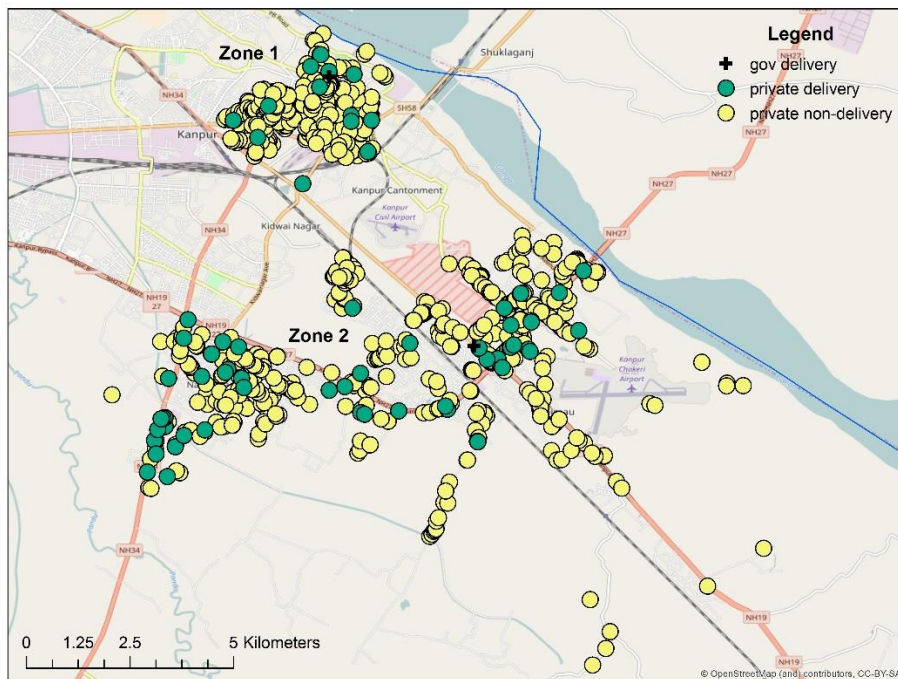


case, and Community Health Centres (CHCs) which should have a gynaecologist and surgeon, and be able to perform C-sections, though this was said to be rarely possible in practice. C-sections were available at district hospitals and more advanced critical care in the big city government hospitals.

Maps of government delivery, private delivery, and private non-delivery facilities are shown by study site in *Figure 3-1* (note the larger scale in the Kanpur Nagar map compared with the other two). The maps illustrate the very large number of private facilities, and how they are heavily concentrated in the urban areas of Kanpur Nagar, Bareilly city and Rampur town. However, only just over 10% of all private facilities report providing deliveries (Table 3-1). Private delivery facilities still massively out-number government delivery facilities in urban areas (e.g. 75:1 in the KN Zones). By contrast, outside of these major urban areas, private and government delivery facilities are more similar in number (1.5:1 in KKD). In these more rural areas the maps also indicate the clustering of private facilities in block centres, generally very close to government delivery facilities. This would be expected given that these are the major population centres, located on or close to national highways<sup>3</sup>. *Figure 3-1* shows how in Kanpur Nagar private facilities are concentrated along the main highways.

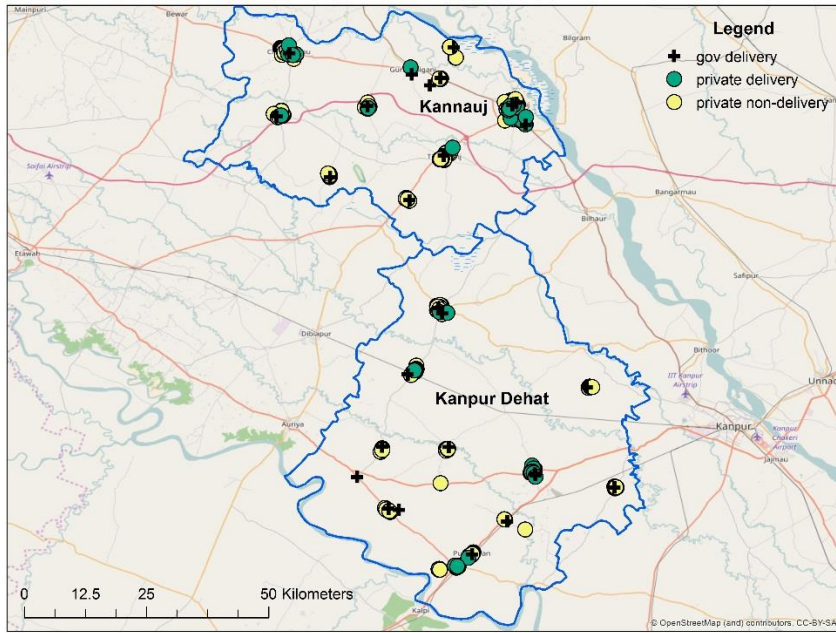
*Figure 3-1: Mapped facilities in (a) Kanpur Nagar Zones 1 and 2, (b) Kannauj and Kanpur Dehat, and (c) Bareilly and Rampur*

(a) Kanpur Nagar Zones 1 and 2 (KN)

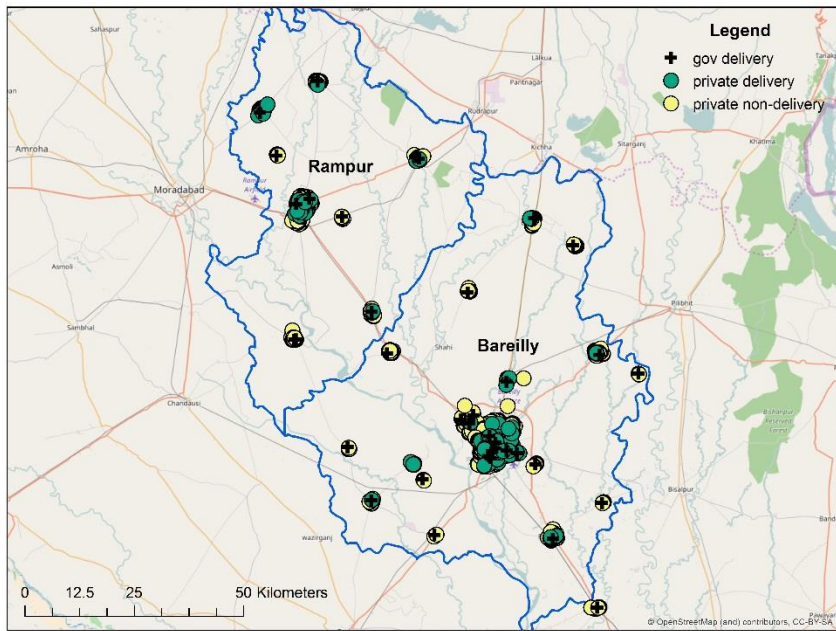


<sup>3</sup> Our mapping strategy outside of major cities was to cover only district towns and block centres, so it is possible some more peripheral private facilities were missed. However, informants indicated that private delivery facilities were very rarely found outside district and block towns.

(b) Kannauj and Kanpur Dehat (KKD)



(c) Bareilly and Rampur





### 3.1.2 Three broad type of private delivery facility

During the IDIs we asked interviewees how they would categorise the range of private facilities providing delivery care. Respondents had many varied ways of grouping facilities, reflecting their location, size, infrastructure, services, staffing, clientele, level of luxury etc., but one of the most important factors mentioned was the sophistication of the delivery services provided. In general facilities could be grouped into three broad categories: (i) those providing advanced multi-specialty care and critical care (which we term tertiary), (ii) those with sufficient capacity to manage caesarean sections and normal deliveries but not advanced critical care (which we term secondary), and (iii) those with only normal delivery capacity (which we term primary). (Note that the primary/ secondary/tertiary terminology is our own “short-hand”, rather than terms widely used in the market).

*In periphery hospitals they do normal and C sections and in centrally located place like this more complicated cases come. In this way they can be divided into small with only normal deliveries, second which do normal and C sections...nursing homes which can take some complicated cases and bigger hospitals which provide specialized care to complicated cases (Tertiary facility 3, Zone 1 Kanpur Nagar)*

**Tertiary facilities** providing advanced and multi-specialty care were concentrated in the big cities of Kanpur and Bareilly. Some tertiary care services like ‘*nephrology, neuro-surgery, gastro-enterology, oncology, orthopaedic and orthoscopic surgery*’ were termed super-specialties. Tertiary facilities were typically equipped with an intensive care unit (ICU), sometimes including high-end technology, and infrastructure such as neo-natal ICUs (NICUs), in-house laboratory and ultrasound facilities:

*It has been 5 months since we have opened this nursing home. We also own X Hospital which is very old and is running from past 16 years and is equipped with gynecologist and also specialists in trauma, medicine and have ICU. There are 3-4 physicians, trauma specialist and MD (Medicine) who visit that hospital and are on ‘on-call’. (Tertiary facility 9, Bareilly)*

The higher-end tertiary facilities were said to mainly serve the wealthy upper and middle class segments in cities, and those with insurance and education, although a few respondents said they also provided emergency or referral care to a few low income clients:

*Mainly upper class, upper middle class and few lower middle class come here. Upper class are stinking rich people. (Tertiary facility 1, Zone 1 Kanpur Nagar)*

The less sophisticated tertiary facilities that were located in the peripheral areas catered to less wealthy patients and to the rural middle classes.

**Secondary facilities** were concentrated in cities, or in the district centres of Kanpur Dehat, Kannauj and Rampur. They typically had operating theatres (OT) and provided both normal and C-section deliveries (when staff were available), but could not cope with more complex cases, and typically did not have a general or neonatal ICU.

*.....basically husband-wife both are doctors. This here is our residence also nearby....Here there are a lot of patients who can't go to top facility, for them in a small budget we work. The primary treatment that is there, nursing care, maternal care, caesarean, we operate on those. And all the*

*complicated cases that are there, we refer them to the higher centre, including government medical colleges... and in the private sector, the big nursing homes that are there... (Secondary facility 1, Zone 2 Kanpur Nagar)*

Secondary facility clients came from both urban and rural areas, often travelling 20-40km to reach a city facility. Typically, they were from a middle income background that were willing to pay for care they perceived as better than at Government facilities, but could not afford high-end big city hospitals. One respondent described middle income as meaning an income of INR 15,000-20,000 (USD 233-310) per month.

*Almost all, 99% of patients come from lower-middle or middle class. Poor patients do not come to my facility as they feel that INR 50 consultation fee is very high for them. Richer people go to outside Swar like Rampur or Moradabad or nearby in Uttarakhand district (Kashipur). (Diagnostic provider 1, Rampur)*

**Primary facilities** were concentrated in the more rural blocks and were mostly equipped for normal deliveries only.

*In this region there are at least 10 clinics that are running. But they don't have any facilities.... Whole infrastructure even I don't have, I don't have for operation, but for normal delivery I have all the facilities. (Primary facility 5, Rampur)*

The lower-end of this category also included assorted local practitioners including nurses and *dais* working outside formal facilities:

*Respondent: There are nurses in government hospitals and they conduct deliveries at their homes. There is a Mamta Bai, Usha Bai and Seema Bai. There is a Nirmala also and so many others. (All names changed)*

*Interviewer: Do they work like Dais?*

*Respondent: They conduct deliveries and have made small nursing homes. (Primary facility 4, Kanpur Dehat)*

We present the survey data by these three categories or segments, defining primary facilities as those doing normal deliveries only (11% of all delivery facilities surveyed), secondary facilities as those providing C-sections but without an ICU (43%), and tertiary facilities as those with an ICU (46%). *Table 3-2* shows this breakdown by study district / zone. This categorisation is not perfect in segmenting facilities as, for example, the standard of an ICU can vary widely across facilities, and its value depends on the availability of the right medical professionals, plus some facilities may have mis-reported whether they did C-sections – perhaps out of fear of regulatory repercussions. However, we find that these categories facilitate an understanding of the commonalities and heterogeneity of the market.

Table 3-2 Facility categories

	KN Z1 N=9	KN Z2 N=45	Kanpur Dehat N=11	Kannauj N=15	Bareilly N=159	Rampur N=23	Total N=262
<b>Primary</b>	0	2.2	9.1	33.3	10.7	21.7	11.1
<b>Secondary</b>	66.7	44.5	72.7	60.0	36.5	52.2	43.1
<b>Tertiary</b>	33.3	53.3	18.2	6.7	52.8	26.1	45.8

### 3.1.3 Key characteristics of delivery facilities

In this section, we present some basic characteristics by facility type, covering their owners, bed numbers, services offered, utilisation and years of operation.

About half of primary facilities had at least one female owner compared with around a third of secondary and tertiary facilities (Table 3-3). The majority of owners in all three facility types were Hindu; approximately a quarter of primary and secondary facilities had Muslim owners, compared with only 8% of tertiary facilities. Ownership was mostly individual or husband and wife partnerships, and most owners performed both managerial and clinical roles. Most owners were local residents – with around a third of secondary and tertiary owners and two thirds of primary owners living at the facility. The majority of secondary and tertiary owners had at least an MBBS qualification, although a few had non-medical or AYUSH-trained owners. In primary facilities, less than a third were MBBS qualified, with close to half being AYUSH trained, and some had no medical qualification (but these nearly all said they had management roles only, and most employed salaried staff with an MBBS or specialization – see section 3.3.4). Ownership of multiple facilities or multiple healthcare or non-healthcare businesses was rare.

Table 3-3 Characteristics of facility owners

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Gender<sup>1</sup> (%)</b>				
Female	55.2	33.9	30.0	34.5
Male	55.2	77.1	85.8	78.7
<b>Religion (%)</b>				
Hindu	72.4	75.7	89.2	81.5
Muslim	27.6	21.6	8.3	16.2
Christian	0	0.9	0.8	0.8
Sikh	0	0	1.7	1.2
Other – not specified	0	0.9	0	0.4
<b>Ownership type (%)</b>				
Individual	86.2	70.8	71.7	72.9
Partnership (Husband & Wife)	10.3	14.2	17.5	15.3
Partnership (Family)	3.5	3.5	3.3	3.4
Partnership (Other)	0	6.2	1.7	3.4
Company (Private Ltd or Public Ltd).	0	0	5.0	2.3
Faith-based or other not-for-profit	0	5.3	0.8	2.7
<b>Owner(s) live(s)<sup>1</sup> (%)</b>				
At facility	62.1	36.4	39.2	40.5
Same Block/Town	31.0	62.7	58.3	57.1
Other	6.9	1.8	2.5	2.7
<b>Role of owner(s)<sup>1</sup> (%)</b>				
Management only	17.2	8.9	5.0	8.0
Clinical only	0	2.7	0.8	1.5
Management & Clinical	82.8	85.7	93.3	88.9
Does not work at facility	0	2.7	0.8	1.5
<b>Medical qualification of owner(s)<sup>1</sup> (%)</b>				
MBBS (no specialisation)	10.3	15.5	10.9	12.4
MBBS (specialisation)	24.1	57.3	67.5	58.3
AYUSH Dr (BAMS, BUMS, BHMS)	44.8	13.6	12.5	16.6
Nurse (B or D Nursing)	0	0	0	0
Pharmacist	0	0	0	0
Other <sup>2</sup>	10.3	9.1	4.2	7.0
None	13.8	6.4	8.3	8.1
<b>Owens other healthcare facilities<sup>3</sup> (%)</b>	3.5	8.9	4.2	6.2
<i>Of which:</i> Number of other healthcare facilities- median (IQR)	1 (1, 1)	1 (1, 2)	2 (1, 3)	1 (1, 2)
<b>Owens other healthcare businesses<sup>4</sup> (%)</b>	0	0.9	0.8	0.8
<i>Of which:</i> Number of other healthcare businesses- median (IQR)	-	5 (5, 5)	2 (2, 2)	3.5 (2, 5)
<b>Owens non-healthcare businesses (%)</b>	0	1.8	0.9	1.2

<sup>1</sup>Sums to more than 100% as there may be more than one owner.

<sup>2</sup>Includes ANM, BEHMS/BEMS, a range of diploma degrees, and unspecified qualifications.

<sup>3</sup>Includes outpatient and inpatient facilities.

<sup>4</sup>Includes drug shops, medical equipment shops, and wholesale businesses.

Most facilities were relatively small, with a median of 15 beds (Table 3-4). Nearly all primary facilities had 10 or fewer beds, but nearly 30% of tertiary facilities had more than 30 beds, and there were 7 facilities with 100 or more beds (all but one in Bareilly).

Table 3-4 Number of beds

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
Number of inpatient beds (%)				
0-10	96.6	51.3	16.7	40.5
11-30	3.5	43.4	54.2	43.9
More than 30	0	5.3	29.2	15.7
Number of inpatient beds – median (IQR)	5 (2, 8)	10 (10, 18)	20 (13.5, 39.5)	15 (10, 24)

Most facilities (93%) practiced allopathic medicine only; however, a quarter of primary facilities reported that they drew on both the allopathic and AYUSH systems (Table 3-5). All facilities provided normal deliveries, and about 90% provided C-sections (by definition, these were secondary and tertiary facilities only). Most also provided antenatal care, and many provided general outpatient and inpatient services, though this was less common in primary facilities. Post-natal check-ups were reported to be widely available. Most facilities provided some kind of contraceptive services, though these were by no means comprehensive across all methods.

Table 3-5 Services offered

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Systems of medicine (%)</b>				
Allopathic only	74.1	92.6	98.2	93.1
AYUSH only	0	0.9	0	0.4
Combination Allopathic & AYUSH	25.9	6.5	1.8	6.5
<b>24/7 operation (%)</b>	78.6	97.2	99.1	96.0
<b>General services (%)</b>				
General outpatient	55.2	85.0	90.0	84.0
General inpatient	62.1	85.0	90.8	85.1
<b>RNMCH services (%)</b>				
Normal deliveries	100	100	100	100
C-sections	0	100	100	88.9
Antenatal care	86.2	96.5	99.2	96.6
Post-natal health checks	86.2	91.1	100	94.7
Fertility treatment	48.3	66.1	81.7	71.3
IVF (In-Vitro Fertilisation)	0	3.5	3.3	3.1
Child immunization	31.0	51.3	69.2	57.3
Abortion	17.2	35.7	65.0	47.1
Female sterilisation	17.2	46.9	73.3	55.7
Male sterilisation	0	13.4	20.8	15.3
IUD (Intra-Uterine Device)	37.9	69.0	85.8	73.3
Oral contraceptive pill	20.7	50.4	42.9	43.7
Condoms	17.9	33.9	27.5	29.2
Injectable contraceptives-DMPA	51.0	49.6	70.0	56.9
Contraceptive implant	0	11.6	17.5	13.0

The typical number of deliveries reported per month was low – only 10 for normal deliveries and 4 for C-sections (Table 3-6). It is possible that facilities under-estimated these figures to some degree, perhaps out of concern that the information might be relayed to tax authorities, but they still likely give a picture

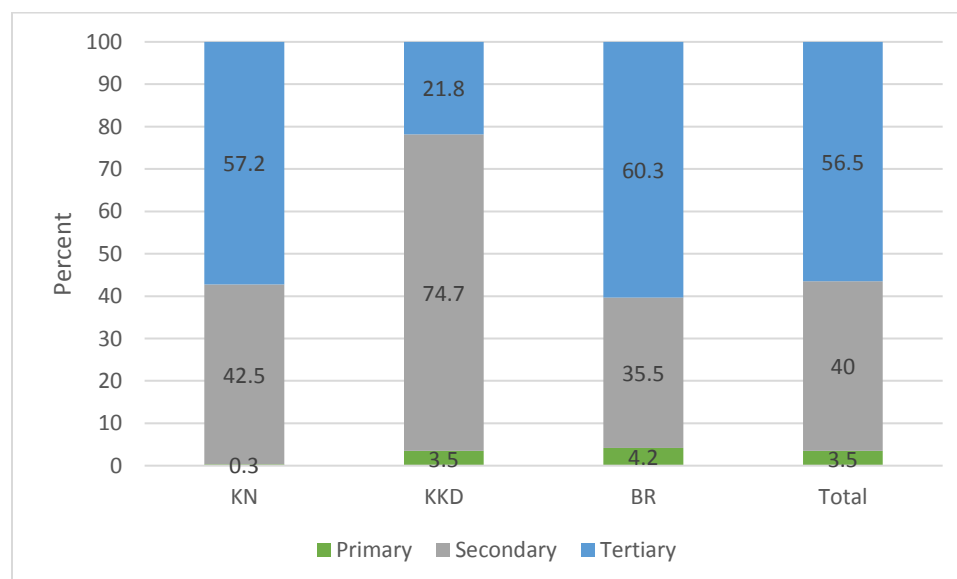
of the general scale of operation. Although we did not collect data on delivery numbers for all government facilities, IDI informants said that it was common for CHCs to perform 200 deliveries a month, with district hospitals doing up to 500 a month, and the public sector was agreed to be the most significant provider of institutional delivery outside of larger towns and cities, and the most common choice for low income and some middle-income households.

*Table 3-6 Facility utilisation*

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Median services performed per month (of those providing the service)</b>				
All deliveries- median (IQR)	4 (2, 6)	13 (7, 24)	18 (11, 30)	14 (7, 25)
Normal deliveries – median (IQR)	4 (2, 6)	10 (4, 20)	12 (7, 20)	10 (5, 20)
C-sections – median (IQR)	-	3 (2, 7)	5 (3, 8)	4 (3, 8)
ANC consultations– median (IQR)	100 (20, 150)	60 (25, 150)	150 (50, 250)	100 (30, 200)
General outpatients – median (IQR)	100 (50, 200)	100 (50, 200)	200 (100, 300)	150 (80, 200)
General inpatients – median (IQR)	30 (6, 65)	25 (15, 50)	50 (25, 150)	35 (20, 100)

These findings indicate that tertiary facilities would be responsible for 56.5% of all private sector deliveries, secondary facilities 40.0%, and primary facilities 3.5% (Figure 3-2).

*Figure 3-2 Share of deliveries by facility type and study site*



It is also interesting to consider how concentrated the market is i.e. to what degree are a few busier facilities responsible for a large share of the private facility delivery market. A standard measure of this is the n-firm ratio, which measures the market share of the n largest firms. We calculated the 3 and 5-firm

ratios for private facilities for each study district (Table 3-7), though it should be noted that these districts are not self-contained markets with many clients travelling across district boundaries for delivery care. Moreover, we were not able to interview about 32 delivery facilities (Table 2-4), which means that all ratios will be somewhat over-estimated. However, the results give a general indication of relatively high concentration in all districts except Bareilly; the top 5 facilities surveyed were responsible for over half of all private deliveries in Kanpur Dehat, Kannauj and Rampur.

*Table 3-7 3-firm and 5-firm concentration ratios<sup>1</sup> of deliveries in the past month*

	<b>Kanpur Nagar N=54</b>	<b>Kanpur Dehat N=11</b>	<b>Kannauj N=15</b>	<b>Bareilly N=159</b>	<b>Rampur N=23</b>
3-firm ratio	23.2	73.6	47.8	6.5	40.6
5-firm ratio	32.9	83.8	69.7	10.2	53.6

<sup>1</sup>The 3-firm (5 –firm) ratio measures the percentage of deliveries conducted by the 3 (5) facilities providing the highest number of deliveries in the study district, out of all private facility deliveries interviewed in that study district.

During IDIs we asked facilities about the importance of delivery care within their total revenues. The responses were quite variable, but in general delivery care tended to be most important for primary facilities (50% or more of total turnover), very variable for secondary facilities (6-100%), and least important for city-based tertiary facilities (8-30%). Only one faith-based hospital in the city was run entirely on delivery income, reflecting vision of the founder to provide delivery care for local women by an ‘all women staff’.

### 3.1.4 Growth of the market

While around half of all facilities had been in operation for over a decade, there was also evidence of substantial recent entry in to the market, with around a fifth of tertiary facilities and a third of secondary facilities having opened in the previous 4 years (Table 3-8).

*Table 3-8 Years in operation*

	<b>Primary N=29</b>	<b>Secondary N=113</b>	<b>Tertiary N=120</b>	<b>Total N=262</b>
<b>Years in operation</b>				
Median (IQR)	6 (4, 13)	8 (3, 14)	10 (6, 16)	9 (4, 15)
Less than 5 years	31.0	33.6	21.7	27.9
5 < 10 years	27.6	23.9	20.8	22.9
10 < 20 years	27.6	23.0	40.0	31.3
20 or more years	13.8	19.5	17.5	17.9

During the IDI, several respondents spoke about the rapid growth of the private sector over the last two decades. New facilities were said to have opened primarily within the big cities, as well as in District towns such as Akbarpur in Kanpur Dehat and larger block towns such as Chibramau in Kannauj.

*When we started in 1993 there were only a few hospitals. Now there are 16-17 within a radius of 5 kms. (Tertiary facility 3, Zone 1 Kanpur Nagar)*

This had reportedly particularly increased competition for secondary level facilities, who faced strong price competition, and had to adopt a range of strategies to generate demand (see Section 3.3.5), while also competing closely with Government facilities as a result of the JSY incentive scheme (see Section 3.4.3).

However, respondents also noted that some rural areas remained very under-served, with very limited C-section capacity from either the Government or private sector, and a complete lack of facilities that could manage birth complications, meaning that vulnerable women could have to travel long distances for emergency care:

*Rampur district is at least 25kms from here, and when patient is in a serious condition, even 1 minute or 5 minutes are too much for them. The patient should get immediate facility. The child's head is coming, and the patient's condition suddenly becomes serious, so there should be one such big facility here that instead of sending them to Rampur or Bareilly or any other big place....Swar region doesn't have a big setup- where full facility is there. And it is very important to have one. Sometimes it happens that from here we refer the patient, on the way the condition of the patient gets serious. (Primary facility 5, Rampur)*

These under-served areas also tended to have the weakest transport infrastructure be inhabited by poorer communities. To illustrate, in blocks such as Akbarpur and Chibramau which were located along national highways, there were several secondary level facilities capable of C-section deliveries, but in Tanda in Rampur which was quite far from the district centre and not located on a national highway, there were none.

*There are no good private facilities over here. The place does not have railway connectivity. Roads are not that good. There are no good doctors available in private hospitals – they are not adequately educated. (ANM 1, Rampur)*

## 3.2 Pricing and Payment

### 3.2.1 Price of delivery

All facilities priced delivery services as broad 'packages', with separate packages for normal and caesarean deliveries, and for general wards and private rooms (where offered). Packages were intended to cover the full cost of the delivery, including the doctors' charges, medicines, diagnostic tests and hospital stay:

*Deliveries are conducted in form of package...and it includes all medicines, doctor fees and hospital charges. Deliveries are done on packages only. In normal delivery majority is the doctor fee as medicines are less required.... In case of caesar profit of hospital is more since patient stay is more, ranging from 5 to 7 days. (Tertiary facility 12, Zone 2 Kanpur Nagar)*



Facilities generally gave a range of prices for each package, typically varying by INR 1-2 000, depending for example on whether the patient had any prior complications, the type of private room, or how much they thought the family could afford (see price setting below).

We asked survey respondents to give us the typical price range for a normal delivery and the typical range for a C-section, and then calculated the mid-point of the ranges provided. In Table 3-9 we present the median of these mid-points of the price ranges provided. According to survey respondents, a normal delivery would typically be priced at INR 4,500 (USD 68) in a general ward, and INR 6,500 (USD 98) in a private room, and a C-section INR 11,000 (USD 167) and INR 13,500 (USD 205) respectively. There was relatively little difference in the medians of prices given across facility types, with the price of a normal delivery only INR 1,000 higher in a tertiary compared to a primary facility.

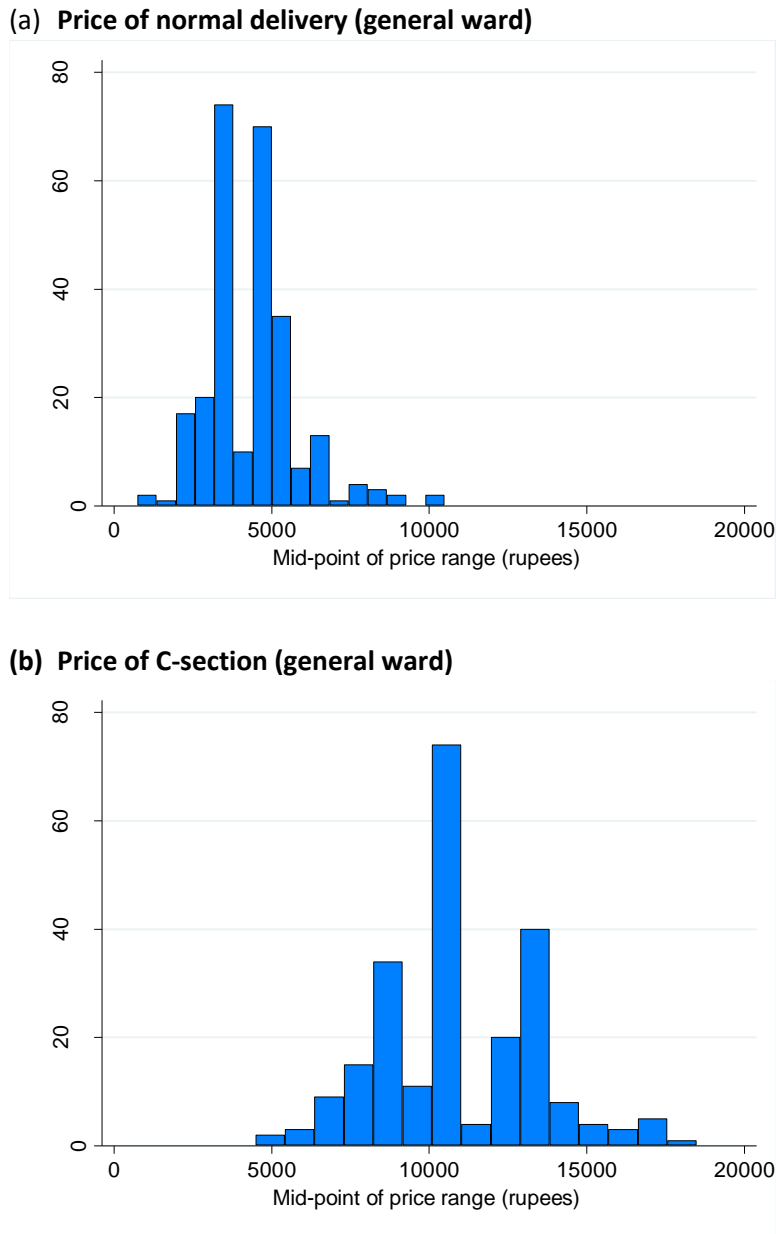
*Table 3-9 Mid-point of price range for delivery (Rupees, median (IQR))*

	<b>Primary N=29</b>	<b>Secondary N=113</b>	<b>Tertiary N=120</b>	<b>Total N=262</b>
<b>Normal deliveries</b>				
General Ward	3500 (3500, 4500)	3750 (3250, 4500)	4500 (3500, 5500)	4500 (3500, 5500)
Private Rooms	6000 <sup>1</sup> (4500, 9000)	5500 (4500, 7000)	7000 (5500, 8500)	6500 (5500, 8000)
<b>C-Section deliveries</b>				
General Ward	-	11000 (9000, 12500)	11000 (11000, 13500)	11000 (9000, 17500)
Private Rooms	-	13500 (11000, 15750)	14500 (13500, 17250)	13500 (13000, 16500)

<sup>1</sup> Less than half of primary facilities have private rooms (n=11) (see Table 3-13).

Figure 3-3 shows the full distribution of the mid-points for (a) normal and (b) C-section deliveries, both in general wards, indicating that the maximum prices were around INR 10,500 and INR 18,500 respectively. Maximum prices for private wards were INR 16,500 and INR 22,500 respectively (data not shown). Interestingly IDI respondents gave slightly higher prices in all categories, and much higher maximum prices in the highest-end hospitals (up to INR 25,000 for normal delivery and INR 100,000 for C-section), perhaps indicating that they felt more comfortable discussing their prices in the more relaxed IDI encounter, and that prices reported under survey conditions may be biased downwards to some degree.

Figure 3-3 Mid-point of price ranged charged in general ward for (a) normal delivery and (b) C-section



### 3.2.2 Price setting

In discussing how prices were set, IDI respondents referred to their costs, competition from other providers, and patient ability to pay. Key costs mentioned were the capital and recurrent costs of medical infrastructure, the costs of hotel services, staffing, electricity (including generator costs for frequent power cuts), and tax. Commission fees to agents bring patients to the facility were also mentioned as an important cost (see section 3.3.6 below). One respondent also highlighted the importance of maintaining their profit margin:

*This is our minimum policy. If we are doing business and don't get even a minimum of 20% profit, then it's no use of doing business. (Secondary facility 15, Kanpur Dehat)*

Most respondents also spoke about conforming to the local market rates in order to remain competitive. A few reported going around and surveying the market before determining their own price structures. Even one facility's low rates could affect the entire market:

*Because of X Hospital, no one can change the rates. They charge minimum for the delivery cases. X hospital has ruined the market of entire Kannauj. (Secondary facility 13, Kannauj)*

A few respondents mentioned that costs and charges were increased by about 5-10% each year. However, others said that they had not increased their prices over the last year even though all costs had increased because they feared losing patients to lower priced facilities in the neighbourhood. Most respondents said that they also kept the patient's ability to pay in view while quoting the package rates, leading to variations in the price of a given package across clients – generally of INR 1-2,000 but the variation could be as high as INR 7,000. They wanted to remain affordable for the poorer patients but also charge higher rates from those who could afford it.

Patients were also said to actively demand discounts. The smaller hospitals in the city outskirts and in rural blocks, appeared to face particularly strong bargaining from patients:

*...delivery cases do not yield money as people do not want to pay even the minimum amount you demand. If you want INR 3000 for a normal delivery, they will start negotiating from INR 500-600. (Primary facility 2, Rampur)*

Local politicians also asked for discounts; some facilities said they had no option but to entertain these requests, while others said they had a strict 'no-discount' policy for these cases. A few even reported that patients and their relatives could create a 'nuisance' when their request for a discount was turned down.

A few respondents from such facilities shared that, since it was difficult to fix rates, it was common practice to avoid giving bills to patients as this could lead to other patients asking questions:

*If you make a bill then you will not be able to justify about the charges, like you charged 13000 from Rekha Devi for general ward and so why did you charge 15000 from Shyama Devi. It demands an explanation. How did you calculate? So you can be caught in an audit (financial). So if there is no bill, then there is no audit. (Secondary facility 15, Kanpur Dehat)*

If the patient was genuinely poor, nearly all the facilities said they would help in different ways such as transferring the patient to a government facility, reducing or waiving the doctor's fee, or sometimes even paying for the patient's expenses:

*But if someone is truly poor, then we do charity from our end. For that... there are many options for charity, pay for them... we do that. Money is not everything. If we really think that it is a poor patient. (Secondary facility 1, Zone 2 Kanpur Nagar)*

There were also a few charitable hospitals which charged lower prices as part of their mission to serve poorer groups. In Kanpur Zone 1 one charitable hospital had much lower charges than other city facilities hospitals, using a number of strategies to keep their prices down:

*There is a difference of 75% in our rates and normal rates being charged outside. Visiting doctors also charge less amount in comparison to the amount charged by other doctors...doctors also do cases free of cost. Whatever 'Zakat' (a required alms or religious tax under Islam, to be paid by the wealthy) comes, we pay from that money. There is a separate fund also, whenever there is a need ... we use that fund' (Secondary facility 3, Zone 1 Kanpur Nagar).*

They also cross-subsidised poor patients by charging higher fees to wealthier patients who opted for private rooms:

*There are 6 private rooms. Where we take 50% of fees and from that money we serve this (poorer patients)..there are some patients who could only pay 50%. We enquire about them from people; we get their investigations done...(to confirm their economic status) (Secondary facility 3, Zone 1 Kanpur Nagar)*

### 3.2.3 Insurance

The vast majority of payments for delivery were made in cash; generally in the higher-end tertiary and secondary facilities about half would be payable on admission, and the remainder before discharge. In lower-end facilities the advance could depend on the patient's paying capacity at the time of admission, with many facilities saying they were flexible about the amount and timing of advance payments. Very few facilities were enrolled in insurance schemes (Table 3-10).

Table 3-10 Insurance / cashless scheme empanelment

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Affiliation with RSBY<sup>1</sup> (%)</b>	4.8	27.6	18.1	16.7
<b>Government cashless schemes (%)</b>	0	9.1	9.2	8.1
(n)		(10)	(11)	(21)
of which: Covers delivery costs (%)	-	100	100	100
<b>Private company cashless schemes (%)</b>	0	1.8	6.7	3.9
(n)		(2)	(8)	(10)
of which: Covers delivery costs (%)	-	100	85.7	88.9

<sup>1</sup>Missing 17 observations (8 primary, 5 secondary, 4 tertiary)

Around a fifth of secondary and tertiary facilities were enrolled in Rashtriya Swasthya Beema Yojana (RSBY), although this was very rare for primary facilities. RSBY is a government funded health insurance scheme, launched in 2008, with beneficiaries entitled to hospitalization coverage up to INR 30,000 per annum ([www.rsby.gov.in](http://www.rsby.gov.in)). Three facilities also said that the scheme was not functioning at the time of the study, although it was unclear whether this was a temporary or longer-term issue. However, it was clear that there was widespread dissatisfaction with programme. The majority of facilities said they had given up working with RSBY, due to reimbursement rates (which were said to be too low for the higher-end facilities), the amount of paperwork, and challenges in obtaining their payments from the Government (one was owed up to INR 2,500,000 or USD 39,000), including being asked to bribe officials:

*Earlier we were also empaneled with RSBY but now we have dropped it. Their team comes for check as we bill under RSBY. Even though we have genuine cases, they ask for a bribe, which we are not willing to pay as the emoluments are anyways very low. (Secondary facility 8, Zone 2 Kanpur Nagar)*

However, respondents also spoke about the fraudulent practices of health facilities affiliated with RSBY:

*People have taken governments schemes, with these people do fraud. Fake patient is made to lie down, they take money from them, there are hospitals like these here, near us. Okay? But we do not force these things. (Secondary facility 1, Zone 2 Kanpur Nagar)*

*This dispute came to us... that I (the RSBY provider) did so much work.. and I am not getting the money for it. Insurance company asked the surgeon that how have you made so much amount? That surgeon one man only... that surgeon was operating 2 patients at 2 places within interval of half an hour, distance of 100 KMs. How is it possible? (Government stakeholder, Lucknow)*

A few, mainly tertiary, facilities were affiliated with other “cashless” schemes, often referred to as TPAs<sup>4</sup>, though among these facilities, only a minority of their patients were paid for by a third party, with out of pocket payment remaining the dominant form. Government cashless schemes included the Central Government Health Scheme (CGHS), and the Employees State Insurance Corporation (ESIC), while private schemes included Star Health, Bajaj Alliance, ICICI prudential and various other corporate schemes. Some high-end facilities were empaneled with many different schemes e.g 10-20.

*Board showing insurance companies with which the facility is empaneled*



<sup>4</sup> TPA is a company/agency or organisation holding a license from the Insurance Regulatory Development Authority of India to process claims as an outsourcing entity of an insurance company. They function as an intermediary between an insurance provider and the insured.

A few respondents from secondary facilities said they would like to be affiliated with private insurance companies like Star Health, depending on which ones their clients subscribed to. However, the high standards demanded by the private insurance companies were a barrier:

*We are presently not empaneled with any medical insurance company and do not plan to get associated in near future as we do not have the facilities required for the purpose. Such agencies come to survey and the requirements mainly are – private rooms, air conditioner in the rooms and television. (Secondary facility 17, Zone 2 Kanpur Nagar)*

In more remote areas, the smaller primary facilities were never empaneled with these schemes, and were typically not aware of the insurance markets:

*In our area, no provisions are there for any type of insurance or any other services. All these are available in Moradabad and may be in Rampur but not sure. (Primary facility 2, Rampur)*

### 3.3 Non-Price Competition

Besides price, there were many other factors that influenced clients' choice of facility:

*Primarily, patients look for people they know at the facility level. After that they search for type of facility and the fees; then they check the behavior and communication of doctor and staffs; they also see other services available at the facility...patients consider the money and behavior as the most important factors.. (Secondary facility 2, Kanpur Dehat)*

We have summarized the key areas of non-price competition in Figure 3-4, and discuss each area in detail below.

Figure 3-4 Key elements of non-price competition



### 3.3.1 Location

Location was considered vital in influencing facility demand. The ‘healthiest’ economic locations for private facilities were said to be those easily accessible to patients, close to other private facilities, and close to a Government hospital.

Easy access was very important for patients; many respondents explained that this was why many secondary facilities were located strategically along highways, especially the main roads leading into large towns, as can be seen from the mapping of delivery facilities (*Figure 3-1*). This made them easily accessible from the surrounding rural areas:

*This being a by-pass road, patients come here directly with ease, majority of those are from rural areas who cannot afford costly hospitals in the central part of the city. This is also the reason because ASHA can bring patients to these nursing homes. (Medical store 1, Bareilly)*

Respondents also said that it made good business sense for facilities to be located in clusters, allowing patients to check out different options within a small radius:

*If this is a market and I open a hospital, it is much better to have 4-5 hospitals rather than one.....I am getting my marketing done and if a patient comes to my hospital, it is not that he will come to my hospital only, he can go anywhere. We go to markets and that’s how we purchase things. (Secondary facility 15, Kanpur Dehat)*

Nonetheless we also found a few instances of doctors who had set up facilities in the more remote areas due to personal and familial reasons, including local roots and kinships:

*In this area, there are no qualified doctors, because of which we started with our own set-up here. Moreover, this building is owned by my in-laws. This belongs to my husband’s family. We wanted to serve the local community who are our own people and women strongly follow ‘Purdah’ system (veil). (Diagnostic provider 1, Rampur)*

Another important factor for secondary facilities was locating close to a government facility, in order to benefit from Government referrals. Government facilities would refer delivery clients to a higher level government hospital for a birth complication and a possible C-section, but patients were often reluctant to travel the distance to the referral hospital, and instead preferred (or were encouraged) to approach the nearest private facilities – leading to clustering of private facilities in these areas.

*District Hospital opening is very easy as the government is focusing on delivery services and patient is going there free of cost as 108 (free ambulance) is there to carry the patient to the hospital. When the patient gets referred, he lands in the market. So, in the market, there is other also besides me. So it is better opportunity to work here rather than anywhere else. That we have made*

*and there is nothing bad about it. District hospital is a good thing provided the doctors are good and patient flow is there. (Secondary facility 15, Kanpur Dehat)*

### 3.3.2 Infrastructure and equipment

Table 3-11 and Table 3-12 show the availability of general and key medical infrastructure respectively. Nearly all facilities had an electrical supply and a back-up source, and most had a wired phone line or mobile phone. Three-quarters of facilities had an internet connection, though this varied from less than half in primary facilities to more than 90% in tertiary facilities. Around two thirds of facilities do not have their own transport, though a minority (12%) of tertiary facilities owned an ambulance.

*Table 3-11 General infrastructure*

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Electricity supply (%)</b>				
Mains electricity connection (n)	96.6 (28)	100 (113)	100 (120)	99.6 (261)
<i>Of which:</i>				
Has electricity now	92.6	97.3	99.2	97.7
Has alternative electricity source	92.3	97.3	99.2	97.6
<b>Communication (%)</b>				
Wired phone line or mobile phone	86.2	92.9	99.2	95.0
Internet connection	44.8	67.0	90.8	75.5
<b>Transport<sup>1</sup> (%)</b>				
Pick-up van (no built-in medical equipment)	0	20.4	28.8	21.9
Ambulance (with built-in equipment)	0	0.9	11.9	5.8
Other <sup>2</sup>	3.5	5.3	1.7	3.5
None	96.6	73.5	58.0	69.0

<sup>1</sup>Sums to more than 100% as some facilities had more than one type of transport.

<sup>2</sup>Includes motorbikes, personal transport, and vehicles rented or on call.

Nearly all secondary and tertiary facilities had an operating theatre (reflecting the definition of secondary facilities as those doing C-sections), but only a quarter of primary facilities did (24%). Less than half of facilities had an intensive care unit (ICU), these being by definition the tertiary facilities. About half of facilities had in-house pathology and ultrasound services, and 77% reported having an in-house medical store, though again these were less common in primary facilities and most frequent in tertiary facilities. In-house blood bank services were rare (4.3% or 11 facilities).

*Table 3-12 Medical infrastructure*

Percent of facilities with:	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
Operating theatre	24.1	94.7	99.2	88.9
Intensive care unit (ICU)	0	0	100	45.8
Pathology	20.7	33.6	64.2	46.2
Ultrasound	7.1	39.6	65.0	47.9
Blood bank	0	4.6	5.0	4.3
In-house medical store	51.7	67.6	92.5	77.3



Having the capacity for C-sections was seen as a key factor in allowing facilities to compete with the Government sector as no PHC and very few CHC were providing C-sections in practice. Survey data indicated that on average 30% of deliveries were C-sections in private facilities, though for 6 facilities this was over 75%. Except in the faith-based hospital, the proportion of caesarean to normal deliveries that respondents reported was typically in the range of 50% but could be as high as 99%-100%. Respondents attributed high C-section rates primarily to client preferences for a planned and pain-free delivery, together with a high-risk case-mix often reflecting referrals from other facilities, and less often economic incentives for facilities:

*We get mainly high risk cases. So most of our deliveries are C-secs. Also because SES are high, people also want a planned surgery. They do not want to go in for normal delivery – say that they want a C-sec delivery. Because they don't want to experience pain in normal delivery and simply say that do surgery to avoid those kind of problems (Tertiary facility 3, Zone 1 Kanpur Nagar)*

Variations in medical infrastructure were said to be a key aspect of non-price competition between private facilities, and very important in determining price, including facilities for advanced care such as an operating theatre, an intensive care unit (ICU), a neo-natal ICU (NICU) and ventilators, among others.

*Nowadays pregnant women visit hospitals during pregnancy and they are well informed if there is going to be any complication during delivery. So they prefer hospital where there is facility of surgery and blood. We also recommend same to such cases. (Tertiary facility 4, Bareilly)*

*So these days .. the system of NICU is running a lot. So some people go more because NICU facility they will get... if they assume there is some trouble with the child. (Ambulance 1, Zone 2 Kanpur Nagar)*

In-house services for diagnostics (e.g. ultrasound, MRI and CT scanners) were also said to give facilities a competitive edge:

*When we started this hospital back in 1987 we had TLC, DLC (white blood cell counts), X-Ray. At that time I was the only person providing X ray services here. Currently, we are equipped with ultrasound machine. There is also one Maya Hospital besides this who has similar kind of facilities in this part. Maya hospital also provide maternity services and so there is lot of competition with them. (Tertiary facility 2, Bareilly)*

Other potentially important in-house services included a medical store and an ambulance, with these services said to act as an added attraction to patients who could get all care “under one roof”, and as an important source of profits:

*We do have in-house pharmacy in our hospital. It definitely is beneficial since medicines and surgical equipment are immediately available when required especially in times of C-section or surgery. . it also gives profit to the hospital as we can get medicines at a discounted price and we sell it to the patients at the retail rates and offering a 10 per percent discount to the patients if they purchase the medicines from our pharmacy. Thus, we earn profit from the sale. (Secondary facility 8, Zone 2 Kanpur Nagar)*

*Yes, we have our ambulance, diagnostic services and a medical store. In fact profit is less if these are done from outside. Here they get each and every service under one roof like a shopping mall. They feel happy after getting discharged as they don't have to face any problem. Usually, patients face different problems at different places. (Tertiary facility 9, Bareilly).*

A few respondents at the tertiary level described how some facilities were moving into more specialised maternal care arenas, such as fertility treatments, particularly IVF. One even mentioned the introduction of stem cell preservation (preserving the baby's umbilical cord stem cells in a bank, in case they are needed later for a stem cell transplant in conditions such as leukaemia), though they felt this was a 'scam' to make big money:

*I studied the whole system of incentivizing that is changing the entire healthcare....the latest is the stem cell....It is biggest racket growing in India. This preservation of the cord blood is done in most efficient business practice way. The caesarean will cost 20,000 and they will charge 80,000 for stem cells and tell you that it will be preserved for 20 years. (Tertiary facility 1, Zone 1 Kanpur Nagar)*

### Delivery Rooms



### 3.3.3 Hotel features

In addition to medical infrastructure, hotel features, such as the quality of the physical space within facilities, and the availability of private rooms, were also central in attracting patients – both from other private facilities and from Government facilities, where hotel aspects of care were known to be poor.

Private rooms were available in 89% of facilities (Table 3-13). In tertiary facilities, where nearly all facilities had private rooms, the median number of rooms was 4.5.

Table 3-13 Private rooms

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
Has private rooms (%)	41.4	89.4	99.2	88.6
Number of private rooms – median (IQR)	0 (0, 2)	3 (2, 4)	4.5 (3, 8)	4 (2, 6)

Many tertiary facilities complemented their high-end clinical care with luxury hotel-like accommodation that included a variety of differently priced private rooms, some with air conditioning and television sets, and some with en-suite bathrooms:

*Interviewer: Like those with money where will they go? Will they come here (city periphery) or go somewhere else?*

*Respondent: Why would they come here? They will go to Bareilly, get it done in an AC room there. (Dai 2, Bareilly)*

One respondent from a tertiary facility described such luxury hospitals as ‘conciierge’ hospitals, emphasising the focus on customer service. Even among the lower cost secondary hospitals and some primary hospitals there was an increasing trend towards offering basic private rooms to middle class clients:

*For instance! something what we do now is that we personally say that general (ward) is for you; if there is a delivery, you lie in the general ward. Alright? Now that we are definitely thinking that those who are well off, for them we remove the general word from the package. For you (the rich), we have these facilities (special private rooms), and this is a package for those people. (Tertiary facility 5, Zone 2 Kanpur Nagar)*

One respondent described another innovative feature, somewhat like a ‘self-service apartment’ type of option that they offered rural patients:

*All of our patients who come here, they feel this way, that they are in their residence and not in a hospital. And the second thing is that when outstation patients come, we give them gas cylinder and a stove and allow them to make their own food – Khichdi – (rice and lentils), boil some milk and have some tea. (Secondary facility 10, Zone 2 Kanpur Nagar)*



Private room at tertiary facility

### 3.3.4 Staff and consultants

#### Staff qualification and reputation

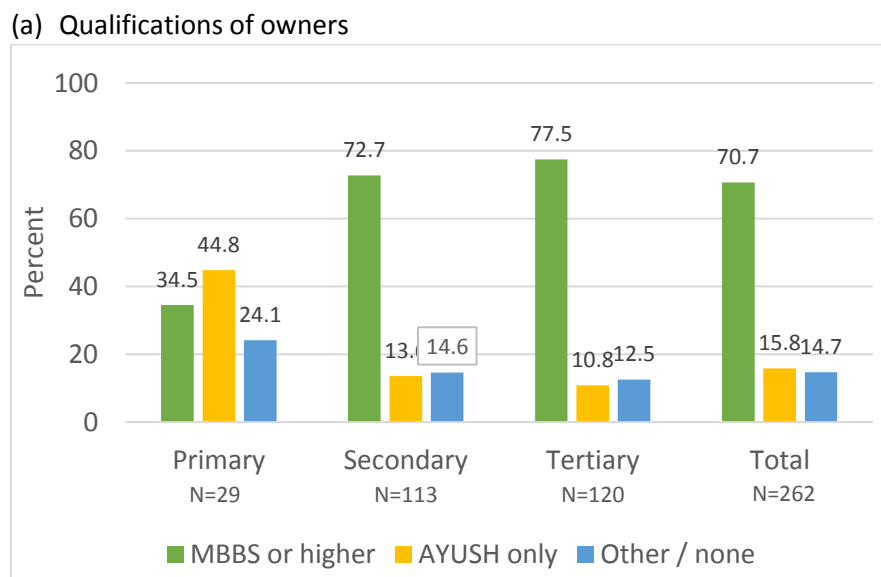
Both facilities and allied providers reported that staff qualifications were very important in attracting patients and the success of their business – and that those facilities with the highest medical qualifications and specializations had a distinct competitive edge and reputation in the market. One respondent emphasised that staff qualifications (and medical equipment) were much more important than the external hospital grandeur:

*Irrespective of how many glasses (architectural façade) you have put in the hospital...glass and story (number of floors) do not matter. Qualification, education and facilities matter. Our hospital is small, but we give full focus to this thing that the facility should be good and the doctors should be qualified...Our hospital is known in all these things. (Secondary facility 1, Zone 2 Kanpur Nagar)*

Facilities with more technically qualified staff could charge higher rates, especially in peripheral areas where it was difficult for facilities to get qualified doctors.

As described in Table 3-3 above, around three quarters of secondary and tertiary facilities and about a third of primary facilities said their owners had at least an MBBS qualification (Figure 3-5a). For those without an MBBS owner, we explored the availability of MBBS doctors, either as salaried staff or as visiting consultants (Figure 3-5b). Salaried staff with an MBBS or higher were employed by 75% of facilities without an MBBS owner. All facilities with a non-MBBS owner said they had either salaried staff or a visiting consultant with an MBBS or higher, with the exception of three primary facilities, two of whom had AYUSH qualifications.

Figure 3-5 (a) Owner qualifications and (b) Non-MBBS owners that employ MBBS staff or consultants



(b) Non-MBBS owners that employ MBBS staff or consultants

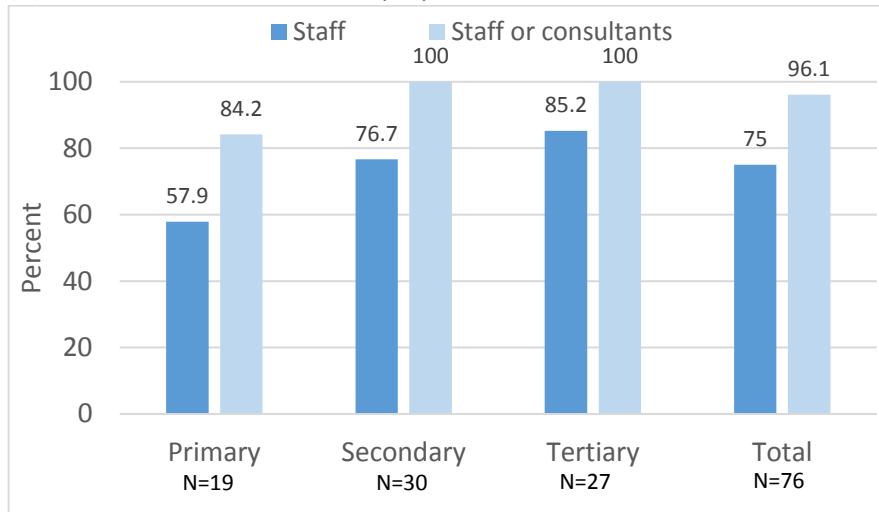


Table 3-14 shows the types of MBBS and specialist on staff and as visiting consultants. OBGYNS were reported to be on the regular staff of around 80% of facilities, in contrast to anaesthetists who were only on salaried staff at 9%. The use of visiting consultants was very common, with anaesthetists and surgeons being particularly frequently used.

Table 3-14 MBBS and medical specialist salaried staff and visiting consultants

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Salaried staff (% of facilities with ≥ 1)</b>				
MBBS – no specialisation (median)	10.7 (1)	51.3 (1)	46.7 (1)	44.8 (1)
OBGYN (median)	69.0 (1)	77.0 (1)	88.3 (1)	81.3 (1)
Anaesthetist (median)	0 -	3.5 (1)	15.8 (1)	8.8 (1)
Surgeon (median)	6.9 (1)	21.2 (1)	51.7 (1)	33.6 (1)
Paediatrician (median)	3.5 (1)	13.3 (1)	27.7 (1)	18.8 (1)
<b>Visiting consultants (% of facilities with ≥ 1)</b>				
Has any visiting consultant (median)	65.5 (1)	95.6 (5)	97.5 (7)	93.1 (6)
MBBS (no specialisation) (median)	20.7 (1)	59.3 (1)	53.3 (2)	52.3 (2)
OBGYN (median)	20.7 (1)	53.1 (1)	46.7 (1)	46.6 (1)
Anaesthetist (median)	37.9 (1)	69.9 (1)	80.0 (2)	71.0 (2)
Surgeon (median)	20.7 (1.5)	85.0 (1)	89.2 (2)	79.8 (1)
Paediatrician (median)	24.1 (1)	60.2 (1)	69.2 (1)	60.3 (1)

Despite our attempts to encourage open responses, and to distinguish between salaried staff and visiting consultants, we suspect that during the survey some facilities may have over-reported the qualifications of their staff, and especially the presence of OBGYNs on salary. By contrast, during IDIs secondary hospitals were said typically to have limited specialist personnel for surgical care and to be highly dependent on 'on-call' consultants.

*Look, on call, what happens is that they also have on call doctors. Maximum are that category only, I mean in our Kanpur I have seen this only. Even those who call themselves great go through this condition as well, that doctors are not permanent, but on call. What is the need for the doctor to sit uselessly? We have to give the service. (Tertiary facility 5, Zone 2 Kanpur Nagar)*

We also heard cases of those providers who went beyond their remit and provided surgical care without the services of a properly skilled consultant:

*All the private hospitals have same facilities. In X Hospital, Dr. XY, who is not qualified at all does the surgery himself, even gives anesthesia himself and thus saves money there also. He does not refer his patients to Hallet Hospital in Kanpur. (Secondary facility 13, Kannau)*

In the more remote areas with only primary level facilities, there was a critical shortage even of MBBS doctors, and facilities here were usually served by AYUSH and non-medically qualified persons, such as informally trained nurses.

*Yes, we do have a few facilities but there is no facility which has the qualified allopathic doctor. In all, all doctors are either BUMS/BAMS or RMPs. All these are private clinics and claim that they also undertake deliveries....they have kept nursing staff who mainly conduct deliveries. (Primary facility 2, Rampur)*

Respondents noted the challenges of attracting MBBS doctors out of the larger cities, given the lack of infrastructure and economic opportunities in the more rural areas:

*This is a very interior area sir. This is one of the cheapest regions sir, and here doctor, MBBS doctor, isn't there amongst us in the private. The condition is not good here. There are no amenities or facilities here. Big doctors are not able to get through their expenses here so will they sit here? (RMP Amar Singh, Derapur, KD)*

Both in rural and urban areas, there were also major challenges attracting other types of qualified staff, particularly nurses with proper degrees and diplomas. This implied that some of the nursing staff in some secondary and most primary facilities had been mainly trained on the job only. This quote from a high-end tertiary facility about the challenges of getting qualified staff for accreditation purposes serves to highlight the rare presence of such qualified staff in most facilities:

*We are continuously on the lookout for trained GNM nurses (with a diploma/degree). We are accredited, so as part of that requirement, we have to keep these nurses. We are also accredited by AERB for X-ray installations. So X ray technicians also have to be qualified. Radiology officers also have to be qualified. (Tertiary facility 3, Zone 1 Kanpur Nagar).*

Beyond staff qualifications, respondents also noted the importance of the reputation of specific clinicians in attracting patients. Reputation could be based on a variety of factors besides the perceived technical competence of providers, and including providers' compassion for poor people, or the familiarity and trust that some well-known providers had gained over the years, almost establishing them as a brand:

*Look! in our area what one has seen the most! there is a Manju Pandey – her name sells like brand. Like while buying surf powder - people ask give us Nirma - they do not say surf or detergent powder. Similarly, in this area, Manju Pandey's name sells like Nirma brand. She started here when this place was still a jungle... the patients still recall her name so she is a front runner. (Secondary facility 10, Zone 2 Kanpur Nagar)*

Staff reputations were said to relate to their interpersonal skills, as well as their technical abilities:

*My patients say this too – ma'am, that whenever we come, we come here, so I do not feel I am at a hospital, but at home.. (Secondary facility 10, Zone 2 Kanpur Nagar)*

*Most important is that .. Sir [Dr. XX] himself see all the patients. When he goes on rounds in the ward more than half of the patient gets cured just by seeing him. They feel that doctor himself is coming to ask about their condition (PRO 1, Kanpur Dehat)*

Finally, female providers had a definite edge, based on the preferences of delivering women. Nearly all OBGYN were female, and it was very common for facilities to be run as a husband-wife partnership, with the wife frequently a gynaecologist

*My wife is also a doctor – an anesthetist, from PGI Lucknow...and my brother's wife is also a doctor, a gynaecologist (Tertiary facility 3, Zone 1 Kanpur Nagar)*

This had the benefits of containing costs as specialist services were available on site:

*What happens here is, wife is residential, lives right here, nearby.... will come in two minutes. The neighbour (facility) would not be able to do this. So obviously their rates would be higher...they would not be able to do it for less. (Secondary facility 1, Zone 2 Kanpur Nagar).*

Popular female providers included non-gynaecologists also, including those with an AYUSH or nursing training. These providers typically conducted normal deliveries in small primary level facilities in the more remote areas, and were in high demand locally:

*For delivery cases, I call Dr. XX (a BUMS lady doctor) who stays nearby as local people want a lady doctor. Also, my wife is still studying and completing her BUMS and after getting BUMS degree, she will join me to conduct deliveries. (Primary facility 2, Rampur)*

By contrast, the religion or caste of the clinician was rarely said to influence the choice of provider. However, there was one example of a charitable hospital established to enable Muslim women who observed 'purdah' and could not therefore be treated by male providers, to obtain institutional deliveries.

*It is a charity hospital for weaker sections. It is run for women only and by women only. We have been told that those women who are unable to get their delivery done... this hospital was started for them. Women should not get 'beparda' (unveiled or exposed to men) so we started this hospital. (Secondary facility 3, Zone 1 Kanpur Nagar)*

### The role of visiting consultants

As indicated in Table 3-14, the use of visiting consultants was very common. Two thirds of primary facilities used consultants, usually working with just one, while in secondary and tertiary facilities it was almost universal, with a median 5 and 7 consultants per facility respectively). The tertiary facilities that provided the most advanced and multi-specialty care could even work with over 90 different consultants.

*Other hospitals have many visiting consultants..... There is one person there whose only work is to phone and call consultants and maintain their accounts (Secondary facility 8, Zone 2 Kanpur Nagar)*

Respondents explained three different types of working arrangements with consultants, though the three models could co-exist in one facility. In the first model consultants would simply visit a facility regularly and conduct their own outpatient clinic, being paid either a fixed amount every month, or on the basis of the number of patients seen. In the second model, the consultants would be 'on-call', visiting a range of facilities when required, receiving a fixed fee for service, or an agreed percent (e.g. 30-50% of the client's total bill). The facilities would have a number of consultants from a particular speciality such as gynaecology or anaesthesiology on their books, to ensure that they could find one available when needed. This was mutually beneficial, as then the doctors could occupy their time more fully across facilities, with some of them also running their own hospitals or clinics.

*We will be in touch with 3-4 anaesthesiologists. They also have 4-5 hospitals they go to. So if one is not available then we call another. (Professional association rep 1, Bareilly).*

*Basically you have to increase the acquaintance with doctors so that they give work. Right now I only have 4 hospitals. All these hospitals are maternity only. Or else surgical/general. (Consultant 1, Bareilly)*

In the third model, higher-end gynaecologists would have their own outpatient practices where they would enroll women and conduct antenatal care, but would contract with one or more tertiary facilities, where they would effectively rent services for their patients' deliveries. The consultant would pay the facility for all aspects of care apart from their own fee i.e. ward, operating theatre, nursing staff, medicines etc., and then would bill the patient directly themselves, or in some cases the patient paid the hospital and doctor separately. Individual consultants were generally linked with many facilities, termed an "open



panel” of consultants, which provided their patients with a choice of delivery locations depending on their preferences, medical need and/or budget. The occasional high-end hospital ran a “closed panel”:

*Open panel means that consulting doctors are attached to a hospital and bring their cases for surgery or other services. They can also take their patients to other hospitals if the patients want to. Closed panel is fixed for a hospital and those consultants only work for that hospital. X hospital (a large 100 bedded hospital) has a closed panel and we are open panel... We have an open panel of about 90-95 doctors of which 6-7 are OBGYNs...Anyone who is qualified can work here...we also have a closed panel..(Tertiary facility 3, Zone 1 Kanpur Nagar)*

Board outside facility displaying names of visiting consultants



### 3.3.5 Marketing

Most respondents recognised the importance of marketing to their facility, and this need was most acute at the time of setting up a new facility. One respondent summarised the effort and motivation required:

*Medical line is one such line where it takes time to earn people’s trust; one has to work really hard. Since the patient is already visiting the hospital for the last so many years, it takes time to switch over to other hospital. If patients don’t come for one month, this does not mean we should close the hospital and go to home but one has to struggle to attract the patients. (Secondary facility 12, Kanpur Dehat)*

The majority of facilities marketed their services through single or multiple strategies, ranging from print advertising on hoardings and in newspapers, to “health camps”, the use of marketing staff, and provision of incentives /commissions to agents bringing new patients.

Many facilities also mentioned the importance of word-of-mouth recommendations from patients, and there were a few who said they did not do any advertising, because their reputation was established and this was sufficient to create demand:

*Interviewer: What do you do so that more and more delivery cases come to you?*

*Respondent: We don't do anything – people come to us out of their trust on us – and they keep coming. (Secondary facility 2, Kanpur Dehat)*

*Since we are running this hospital for almost 25-30 years with successful deliveries, people generally come to us and they also refer our hospital to their friends and relatives. (Secondary facility 3, Bareilly)*

However, just as a facility's good reputation spread far and wide, any negative developments could be equally damaging:

*Everyone tells one another. However one wishes, they go there.....but if one case out of 10 goes bad, then people turn against that place. (RMP 1, Rampur)*

Mass print media such as hoardings and newspaper advertisements were often used when facilities were starting up. Even facilities in small blocks advertised in local newspapers or through door-to-door distribution of pamphlets. One respondent said that unregistered facilities might be afraid to advertise publicly in newspapers due to their legal status. However, paying for newspaper advertising was also said to be valuable in winning over the local media and avoiding adverse publicity were any complaints made about these facilities!

*Hospitals who give their advertisements to the newspapers, they get full advantage because advertisements are the earning work to run the newspaper. In return, these newspapers do not publish any true or ambiguous news about these hospitals. This is a relationship. Like X Hospital writes unnecessary diagnostic tests for the patients. (Ambulance driver 2, Bareilly).*

However, even the tertiary city facilities did not invest in this for long as mass media advertising was quite costly, and officially under the Medical Council Code of Ethics doctors were not allowed to promote their services in mass media:

*You can see hoardings on prominent locations...these hospitals pay 30,000 per month. Not so prominent place it is 8000 per month. Medical Council of India does not allow you to put up advertisements. They allow us to provide information (related to health matters). We had put up advertisement in newspaper once...one advertisement costed 75,000 one time. We did that for IVF (In Vitro Fertilisation). (Tertiary facility 1, Zone 1 Kanpur Nagar)*

Moreover, most facilities recognized that mass advertising was not enough to get good patient loads:

*But people don't start coming immediately because of a hoarding. It has to be reinforced through other channels as well, like word of mouth. What happens in this is that people find out through each other. (Tertiary facility 5, Zone 2 Kanpur Nagar)*

To spread the word in more direct ways, many facilities organised health camps, with secondary and primary facilities placing more emphasis on this than tertiary ones. These camps were usually held close to rural communities, or on the facility premises, and involved teams of doctors providing free services and medicines for certain conditions, with maternal health occasionally included. The camps provided good local publicity and also served as referral sources for the facilities, with follow-on patients receiving discounts when they came for treatment later.

*What people do...put up tents, in different areas, in rural villages. Two doctors go there. And in that the lady doctor that is there, is mostly for females. Female OPD that is there, gynae problems that are there, whatever it is, everything comes under that...female patient prefers to show to a lady doctor. So that service we give free of cost...and at that time we give medicines free of cost for 1-2 days. So what happens with that is that the patients get impressed there, and then that patients comes till here then. This is our routine that goes on in the village, except for during the rain. Winter-summer we have camps regularly. Patient load is there, our advertisement happens. If we see 100 patients there, then 10 patients come to us within the next week. And those patients we give special response to, who come through the camp. 30% off, okay? Off in the doctor's fee, 10%-20% in the hospital bill. From everywhere they get a benefit. They also feel that our work is getting done nicely at discounted rates...(Secondary facility 1, Zone 2 Kanpur Nagar)*

Finally, many large and medium sized facilities employed marketing agents, termed “PROs” (public relations officers), who encouraged patient referral from a range of agents. We explain more about their role in the next section on “Agents and Commission”.

### 3.3.6 Agents and commissions

A very common feature of the market was the payment of commission to agents who brought new clients to the facility. To investigate this in the survey, we collected data on delivery referrals received from other facilities (Table 3-15), and from ASHAs and Dais (Table 3-16). The survey data indicated that only 18% of facilities reported receiving delivery referrals from other facilities, and that these were relatively infrequent (median number of 4.5 referrals in previous three months). Payment was given to the referring facility in around one-third of referring connections, typically INR 1,500 (USD 18).

Table 3-15 Delivery referrals from other facilities

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Facilities receiving delivery referrals from other health providers (%) (n)</b>	6.9 (2)	18.6 (21)	18.3 (22)	17.6 (46)
<i>Of which:</i>				
Number of referring health providers- median (IQR)	1 (1, 1)	1 (1,2)	1 (1, 2)	1 (1, 2)
Number of all delivery referrals received from other health providers in the past 3 months- median (IQR)	1 (0, 1)	6 (3, 8)	3.5 (2, 6)	4.5 (2, 7)
<b>Number of referring connections</b>	<b>Primary N=2</b>	<b>Secondary N=36</b>	<b>Tertiary N=30</b>	<b>Total N=68</b>
<b>Provider type (% of referral connections)</b>				
Government	50.0	14.7	26.7	21.2
Private commercial facility	50.0	85.3	73.3	78.8
<b>Common reasons for referral (% of referral connections)</b>				
Normal deliveries	50.0	61.1	56.7	58.8
C-sections	0	58.3	46.7	51.5
Emergency <sup>1</sup>	50.0	27.8	50.0	38.2
Unspecified	0	16.7	3.3	10.3
<b>Distance away from provider referring to (kms) (% of referral connections)</b>				
<5 km	100	65.7	46.7	58.2
5 to less than 20 km	0	28.6	13.3	20.9
20 km or more	0	5.7	40.0	20.9
<b>Payment given to referring facility (% of referring connections)</b>	0	33.3	34.8	33.3
Of which: Payment amount (rupees)- median (IQR)	-	1500 (1500, 1500)	1500 (1000, 2250)	1500 (1000, 1500)

<sup>1</sup>Emergency includes bleeding, cord around baby's neck, serious cases, and other unspecified emergencies.

Hardly any facilities reported receiving patients from ASHAs or Dais (3%) during the survey, and most said that they paid them nothing or very little.

Table 3-16 Delivery patients brought to facilities by ASHAs and Dais

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Do ASHAs bring women to this facility? - yes (%) (n)</b>	3.5 (1)	4.4 (5)	2.5 (3)	3.4 (9)
<i>Of which:</i>				
Number of cases referred in past 3 months- median (IQR)	5 (5, 5)	4 (2, 5)	10.5 (1, 20)	4.5 (1.5, 6)
Payment to ASHAs per woman (rupees) – median (IQR)	0 (0, 0)	0 (0, 300)	1000 (1000, 1000)	150 (0, 1000)
<b>Do Dais bring women to this facility? - yes (%) (n)</b>	0 (0)	4.4 (5)	0 (0)	1.9 (5)
<i>Of which:</i>				
Number of cases referred in past 3 months – median (IQR)	-	5 (2, 6)	-	5 (2, 6)
Average payment to Dais per woman (rupees) - median (IQR)	-	150 (0, 1150)	-	150 (0, 1150)

These results were in strong contrast to the IDI data which was full of discussion of the importance of commission payments in the market, particularly to ASHAs, ambulance drivers and RMPs, with one respondent summing up the market as follows:

*“People compete more on commissions than on quality”*

This discrepancy between the quantitative and qualitative data likely reflects the ambiguous status of commission payments, which are very common in many markets in India but officially outlawed by the Medical Council of India Code of Ethics<sup>5</sup>, and the greater willingness of respondents to discuss this topic in a more relaxed IDI setting, and when they were asked about the practices of others rather than themselves.

Many respondents described the payment of ASHAs to provide patients, either directly as their first point of care, or as a referral from Government facilities. As noted under “Location” above, private facilities benefited from being close to Government facilities as they could encourage ASHAs (and sometimes nurse midwives) to bring patients referred to higher level government facilities to their private hospital instead. As district hospitals could be far from many blocks, entailing substantial travel and time costs, these referral patients were said to form an important clientele for private facilities. The ASHAs / nurses would then receive an incentive from the private facility:

*There are hospitals who pay INR 4000-5000/- to the ASHAs, ANMs or staff nurses on per case basis. They give this money to bring complicated cases from the government hospitals to their hospitals. (Secondary facility 6, Kannauj)*

The incentive amounts varied but were quite large; some facilities said they might pay a certain percentage of the patient cost (e.g. 20% or 30%), while some just provided a fixed reimbursement for expenses of INR 500-1000. To maintain and manage their network of ASHAs, some facilities distributed sweets and sarees on local festivals, or used other channels of entertainment:

*There is one X hospital in this area, they get many delivery cases. ASHA sends patients in large numbers to that hospital. Everyone’s commission is set in advance. Every third month (quarterly) there is party in ABC hotel for them (organized by X Hospital). They arrange all sort of entertainment activities for the invitees. They spend lakhs of rupees on a single day. These ASHAs also get gifts - sweets and clothes. (Medical store 1, Bareilly)*

Facilities were also said to pay Dais and local RMPs, often to bring patients from far away rural areas:

*We appointed a boy who used to stick pamphlets on the clinic of those doctors who are Jholachhap (unqualified/informally trained) and those doctors used to send their patients to us with a slip so that they can claim commission afterwards. If a patient is known to the local RMPs, we give them concession. (Diagnostic provider 1, Rampur)*

---

<sup>5</sup> “6.4.1 A physician shall not give, solicit, or receive nor shall he offer to give solicit or receive, any gift, gratuity, commission or bonus in consideration of or return for the referring, recommending or procuring of any patient for medical, surgical or other treatment.”

*I do get incentives for referring the cases to the hospitals. In case it is C-section, I get a commission of INR 3,000 while the doctor gets 7,000 for the delivery. (Dai 1, Zone 2 Kanpur Nagar)*

Most ASHAs and ANMs denied receiving any favours in exchange for patient referrals themselves, but they seemed to be aware of the practice and suggested that others might be doing it. An RMP too denied receiving any favours from private facilities:

*They had invited me few times, they asked me - Doctor Saab please come for lunch. But I never went. (RMP 2, Rampur)*

Some facilities also said they never gave commission (particularly at the tertiary level), and others that they had given up this practice due to its large and increasing costs.

*Yes, during the initial days, we had a craze. We had a meeting with a few jholachhap doctors to bring cases. We were ready to give commissions but later we realized that we will have to charge extra money from the patient for paying the commission. (Primary facility 3, Kannauj)*

We heard one doctor's account of how the intensity of this competition and the monetary demands of the local ASHAs and informal providers had forced him to withdraw his delivery services in a big rural block centre near Kanpur:

*The quacks and the ASHAs at first used to charge INR 1000 per patient and after that it went up to INR 2000 and then I thought that if it continues like this, then the cost of services will shoot up and our services will hamper. So to stabilize the cost, we stopped entertaining ASHAs and then the patients stopped coming to the hospital. The patients were now being manipulated. Now, those who entertain ASHAs and quacks, the patients go there. .... The patient is trapped and is traded. The person who takes him there earns a profit. (Secondary facility 15, Kanpur Dehat)*

Private ambulance drivers were another source for patient referrals, with one facility describing how drivers might call up a range of hospitals when they get a patient to see who will give the best commission:

*When they pick up a patient, after that they call the (hospital) management first that sir I'm getting a patient. What is it for? For this. And tell me sir how much will you give me, what will you give me? So they say that Okay sir, I'll just let you know. (Tertiary facility 5, Zone 2 Kanpur Nagar)*

One ambulance driver reported that he was particularly impressed with the system of one facility for incentivizing the drivers 'honestly' by recording their number plates:

*Some people are honest in their work. Like X hospital, they make a slip in the name of driver who drops the patients. What they do - On a bill of INR 1 lakh they give INR 30,000 to private drivers very honestly. They have installed CCTV and they note down the ambulance driver vehicle number and name at the time when driver reaches the hospital for dropping the patients. (Ambulance driver 2, Bareilly).*

In facilities that employed PROs, these staff members were central in the relationships with agents such as ASHAs, RMPs and ambulance drivers. PROs were typically salaried hospital staff whose main task was to travel around in about 50-100 villages, spreading information about their hospitals' services and networking with potential agents.

*Other hospitals hire PRO's to increase their business. They bring patients there from rural areas and small hospitals nearby on the basis of salaries and commission. They have contacts with Dais and chemists as well. PRO's receive salaries of up to 15,000 rupees. A lot of PRO's work at X hospital. They get salaries on the basis of the business they get or else they are kicked out. When they go out in the field to get patients, their expenses like stay, food and petrol are all given to them. This can only be done by bigger hospitals, we cannot afford (Tertiary facility 12, Zone 2 Kanpur Nagar)*

This strategy of connecting with patients through agents appeared to be related to the local communities' psychology of approaching a good facility through someone who was known to them:

*Patients want immediate care. They consider the doctor's availability as well as the quality of care along with the amount that needs to be spent. People also check if there is someone who is known through some known people. (PRO 2, Kanpur Dehat)*

A few PROs we interviewed were well networked with health staff in the bigger government facilities and they also kept themselves informed about the status of pregnant women in the neighbouring villages. One PRO described his work for us in great detail:

*Mainly we search for delivery cases which regularly come to this hospital. At the back of this district hospital, there is a women's hospital where all the delivery cases come and largely, the complicated ones as they are referred by the CHCs and PHCs or ANMs. ....If you want cases from these ASHAs then you need to have contact numbers of the ASHAs. So, I have mobile numbers of around 250 ASHAs from different villages through which I remain in touch with them. They inform me about the cases they are bringing to the women's hospital as they can only bring cases to Govt. hospitals. After reaching women's hospital, these ASHAs then somehow obtain the referrals for their cases to Kanpur Nagar as emergency cases. Then, they call us for the cases to take them to our hospital. By the time, they convince the patients and their families to avoid going to Kanpur Nagar when they can get the same delivery services at XX area itself in a private hospital. Considering the convenience, patients and family easily get convinced. We also provide them quality care at our hospitals.*

*Sometimes in case of emergency or for better care, they directly bring cases to our hospitals. We provide them incentives which ranges from INR 1500 to 2500-3000 depending upon the situation. I also establish the contacts with the ASHAs to know the status of pregnant women in their areas to assess the situation and take the decisions in terms of mobilizing ASHAs to come directly to our hospital. (PRO 2, Kanpur Dehat)*

As big government facilities were crucial catchment locations for the surrounding private facilities, they could attract more than one PRO, which could at times lead to a conflict:

*There was news recently that in district hospital, people from private sector were roaming. They were picking-up the patients. So what happened was that a patient was approached from 2 hospitals and they got engaged in a fight on the issue that the patient will go to their respective hospitals. Means there were two dogs for a single chapatti. (Secondary facility 15, Kanpur Dehat)*

While some respondents clearly saw these practices as inappropriate and possibly unethical, one was of the strong view that this also helped women access good timely delivery care, and that there was nothing wrong in taking patients to a nearby private facility:

*But if public sector doctor is not there or doctor is not available, then surely she will take to some nearby private sector. And this is good for the client! That at least he has option to go to public sector or private sector. So I will not blame, whether ASHA is taking to private sector or to public sector. It depends on the situation. Many a times you have done so much for public sector, but at night time you are not getting doctors. You are not getting nurse to deliver the baby. Then the ASHA has to take it somewhere else. At that time if they go to private sector it's nothing wrong! What's wrong in that? At least client should get service. (NGO Stakeholder 1, Lucknow)*

The system of giving commissions extended to allied providers, who would in turn pay facilities for referring patients to them for tests or other services. During the survey we asked facilities whether they referred delivery patients to other centres. Around one-third reported referring women elsewhere for pathology and ultrasound (though this was lower in tertiary facilities, which were more likely to have these services in-house) (Table 3-17). Most facilities reported sending women elsewhere for blood bank services, as these were rarely available in-house.

Table 3-17 Referrals for allied services

Percent of facilities sending women to specific providers for:	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
Pathology	42.9	50.0	20.8	35.8
Ultrasound	46.4	42.5	17.5	31.4
Blood bank	57.1	92.5	95.0	89.9
Medical store	17.9	12.6	4.2	9.3

These referrals do not necessarily indicate that any payment took place. However, during the IDI, many respondents reported the existence of a widespread commission system, particularly with diagnostic laboratories and sometimes with medical stores. Pathology and imaging centres reportedly offered commissions ranging from 30% up to 70% of the patient fee.

*We set up an x-ray and a pathology..... Then till 10 years like right now work was done without a commission. Soon after the set-up of other pathologists the commission business started and now the other pathologist like XX pathologist, the doctors everyone takes the commission. (Diagnostic services 2, Zone 1 Kanpur Nagar)*



Public sector doctors were also reported to demand such commissions when referring patients for private sector diagnostic tests:

*Interviewer: In Government hospitals is ultrasound done from outside (private)?*

*Respondent: Yes – everything is done from outside. Doctors get a direct commission for this. Government doctors prescribe specific pathology centers where they send the patients for the testing. Doctors get 30% commission for referring. We don't have the commission system ourselves... (Diagnostic services 3, Kanpur Dehat)*

We also heard of commission-based referrals between two pathology centres:

*People come here from far off places. They come here because we have the digital x-ray machine, no one else has it. So if the patient goes to the other pathologist who has not bought this machine, he (the referring pathologist) will come directly to our hospital. He will definitely ask for the money. For example, if the x-ray is charged 250 he will take 60-70 from us. (Diagnostic services 2, Zone 1 Kanpur Nagar)*

By contrast the blood banks appeared to be untouched by commissions, perhaps because there were very few of these and competition between them was much less intense. A few facility respondents said they asked the pathology centres not to give any commission to them, but instead to pass on a discount to their patients, especially the poor ones:

*Commission is such that if in a month we send 4 patients then they give 100 rupees per patient. Sometimes we say no as well, that don't give us this .... But then they still give. Some we say that reduce theirs instead. I tell the doctors that don't take my referral money from them. Reduce it for the patient and do their ultrasound. (Primary facility 5, Rampur)*

### 3.4 Interventions affecting Private Facilities

#### 3.4.1 Regulation

The private sector was not entirely without regulatory input, but the extent to which this was followed in practice was limited and variable, and it was rarely mentioned as a major constraint on operation. Facility registration was a typical example of this. The registration process involved obtaining licenses from allied agencies such as the Pollution Control Board and the Fire Safety Department, and submitting various pieces of data on facility infrastructure, bed numbers and specific procedures. Registration required the presence of an MBBS doctor on staff. Most facilities were aware that they had to register with the local health department and renew this registration periodically. Some facilities said they had to renew their registration annually, but it was not clear to all. We obtained the local health department lists of registered facilities from the Chief Medical Officers (CMO) and compared them with our surveyed delivery facilities. We could find only 47% of the facilities we surveyed to the CMO lists (Table 3-18). To some degree this could reflect the difficulties of matching facility names, or out-of-date CMO lists that do not reflect the most recent registrations, but in general it appeared that a high proportion of facilities were not registered

at all. This included some very prominent facilities on main roads in cities. Registration rates were quite consistent across study sites (ranging from 46% in Bareilly and Rampur to 55% in Kanpur Dehat and Kannauj, indicating that this was a general issue. As one Government official said:

*Money is taken every year for registration. The court said that those who are not registered should not work, the rest should. Now the opposite is happening (Government official 1, Lucknow)*

Table 3-18 Registration and records

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
Registration on CMO lists (%)	8.0	50.5	53.1	47..2
Keep delivery records (%)	82.8	97.3	96.7	95.4
Report delivery records to Health Department (%)	81.5	95.5	98.3	95.3
Report births to Municipal Corp. or Gram Panchayat (%)	19.2	41.9	40.7	39.0

It was notable that registration was particularly low among primary facilities – reflecting the ambiguous regulatory status of AYUSH providers. They were not prohibited from offering delivery care, but neither could they be registered, as registration of a private health facility required the presence of an MBBS doctor:

*We are not registered by the CMO as of now. As per the rule, now BAMS can attend delivery cases. This rule has come into existence for the last one year. So, CMO also doesn't interfere now. We had approached CMO for our registration. CMO told us do not get disturbed and continue our work. He has not done our registration. (Primary facility 3, Kannauj)*

The lack of an MBBS doctor on staff also affected some secondary facilities. One explained how they managed to get around the requirement of having an MBBS doctor on staff, by connecting with a local doctor:

*I don't do surgeries, I don't do surgeries, but other than this I see everything else...if I am unable to handle patients....then we call doctors, like Dr. X – his name is along with mine, on my letter pad, the name XX is clearly written, for sure, .... in this way we have been covered and we also feel less scared. And the doctors sign the birth certificates. (Secondary facility 10, Zone 2 Kanpur Nagar)*

A senior government official explained that the country's new legislation for health facility registration, known as the Clinical Establishments Act would streamline registration procedures. This had been passed at national level in 2010, and officially adopted by the UP Government, which was in the process of adapting the Bill to the state's context, before it could come into effect. However, the bill was stuck awaiting approval at a senior ministerial committee due to political pressure to debate it further from both MBBS and non-MBBS practitioners. The IMA was opposed to this Act as they argued it would be challenging for most small and medium sized secondary facilities to meet the standards, while others were concerned that non-MBBS facilities would be closed down:

*It (the Act) is pending at the government level. After the implementation of the rules, many jhola-chaap (unregistered, unqualified providers) will be uprooted, so they don't want to pass it. There*

*is the election next year, so they don't want to disagree with the people. (Government official 1, Lucknow)*

Inspections appeared to be quite rare and ad hoc. The registration process included a health department inspection visit, which was said to provide scope for corruption and high-handedness. Interviewees also mentioned problems with the Pollution Control Board not collecting waste on time and the facilities being blamed for poor waste disposal. One respondent argued that the systems were ineffective as some unregistered and poor quality facilities had managed to escape inspection:

*Few months back, there was an inspection check in this area where the unregistered clinics had hidden their name boards. It looks like a tent house from outside - when you see it from a distance, but inside these tent houses - operations take place inside. (Diagnostic provider 1, Rampur)*

A government stakeholder highlighted the consequences of weak regulation for the generally poor quality of care in private facilities, irrespective of their registration status:

*Other than NABH (nationally accredited hospitals, which were very few) quality is not proper. Hospitals have been opened in the residence (in providers' homes). There is no proper setup. In the X-ray room, it is all open. There is untrained manpower, waste is thrown anywhere. All this is not good quality. There is no quality of establishment. (Government official 1, Lucknow)*

A controversial area from a regulatory perspective was dual practice – i.e. government MBBS and specialist doctors who also worked in their own or others' private facilities. This was officially outlawed in UP, where government doctors were paid a "Non-Practicing Allowance" (NPA), specifically to compensate them for not working in the private sector. A senior government stakeholder emphasised that dual practice was "totally not permitted", and estimated that only 1% of government doctors did this. Some facility owners also said that dual practice did not occur, at least at their own facilities. However, others presented a very different picture, with dual practice as extremely common, with one facility even owned by the Deputy CMO of the district!

*Here 90% of government doctors have their own nursing homes at their residence. However, I don't know about the government doctors who are visiting private hospitals for consultation practice. (Secondary hospital 13, Kannauj)*

*I am aware that government doctors are working as consultants with the private hospitals. Their way of functioning is either they do not have letterhead and prescribe medicines on plain paper or use other person's letterhead for prescription.. As per my knowledge 100% government doctors are associated with private hospitals and doing private practice. (Secondary hospital 11, Zone 2 Kanpur Nagar)*

In the survey nearly all facilities said they kept delivery records, and that these were reported to the Health Department (Table 3-18). These reports were on a variety of paper-based formats, not fully standardized across districts. This seems surprisingly high, with a more mixed picture emerging from the IDI, indicating that such records are in practice unlikely to be comprehensive or fully up-to-date, and that this was not

followed up closely by the health department. However, the few facilities enrolled in social franchises (Merrygold and Sky Health) mentioned that strong emphasis was placed on records within these organizations.

All facilities were required to give birth certificates to children born in their facilities, and these were supposed to be reported to the local authorities. During the survey a little over a third of facilities said they reported births to the Municipal Corporation or Gram Panchayat. Birth certificates were said to be much in demand by parents too, as they were required for school enrolment. A few respondents said that families of babies born at home could until some time ago, obtain birth certificates from the local government facilities with the ASHA or nurse midwife notifying the birth, but the government was no longer allowing this as they wanted births to happen in institutions. As a result, some families with home births would approach private facilities to provide fake certificates, but the ones we spoke to said they did not entertain these requests, or else kept their certificate charges very high so as to deter people from making such demands.

*So those who have deliveries at home, they will not have a birth certificate. It is over now – it has been clearly reported in the newspapers. Now it is not possible. (Secondary facility 10, Zone 2 Kanpur Nagar)*

One specific area where we saw much greater emphasis on regulation as in relation to ultrasound services. Under the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act to stop female foeticide, facilities with ultrasounds were required to have a license and had to submit meticulous case records of every ultrasound conducted. Posters stating that the facility was licensed and warning that sex-selection was illegal were prominently displayed in many facilities. However, a few interviewees said it was difficult to comply with some of the of the other requirements for the license, such as having a fully qualified radiologist, due to the general shortage of trained human resources:

*In this city, there are about 400 hospitals and only 9 radiologists. How can one work according to the Government policy that every ultrasound centre should have a qualified radiologist? Total 9 radiologists cannot work for everyone (as per the load). So, tell me how ultrasound etc. can be done because everyone cannot do it. (Tertiary facility 8, Bareilly).*

This situation was therefore ripe for corruption as some facilities had to resort to bribing inspection officials to get their license renewed. One respondent who spoke about this said that officials were more concerned about overly scrutinizing the physical aspects of the facility, than being concerned about whether the sex determination tests were being conducted ethically or not.

### 3.4.2 Maternal health-related interventions

We explored the degree to which private facilities were involved in any interventions or associations that focused on quality improvement for maternal health (Table 3-19). Membership of associations was variable across the facility types. IMA membership was reported by 59% of facilities and was most common in tertiary facilities. FOGSI membership was also more common in tertiary facilities (around a

third) than in secondary or primary facilities. Hardly any facilities said their staff had received from any delivery-related training in the last 2 years, though during ID some IMA/FOGSI members said they had received knowledge updates through workshops and seminars. Around 7% of facilities were members of a social franchise, mainly Merrygold which focused on maternal health.

Table 3-19 Interventions and affiliations

	Primary N=29	Secondary N=113	Tertiary N=120	Total N=262
<b>Staff membership of associations (%)</b>				
Indian Medical Association (IMA)	22.2	50.9	75.7	59.2
Federation of ObGyn Societies of India (FOGSI)	3.7	13.0	34.8	22.0
Trained Nurses Association	3.7	1.9	0	1.2
Private Medical Practitioners Association	0	0.9	0.9	0.8
UP Nursing Homes Association	0	0.9	0	0.4
<b>Training (%)</b>				
Any staff attended delivery-related training within last 2 years	0	4.5	2.5	3.1
WHP/Sky	-	0.9	0	0.4
Merrygold	-	0	0.9	0.4
Other <sup>1</sup>	-	3.6	1.7	2.3
<b>Member of Social Franchise programme (%)</b>	0	5.4	9.3	6.6
WHP/Sky	-	0.9	0	0.4
Merrygold	-	0.9	7.6	3.9
Other <sup>2</sup>	-	3.6	1.7	2.3
<b>Participate in public-private partnership (%)</b>	0	2.7	8.3	5.0
Hausla Sajhedari	-	2.7	4.2	3.1
Sambhav	-	-	1.7	0.8
Other <sup>3</sup>	-	-	2.5	1.2

<sup>1</sup>Includes IMA, Nestle, PSI/HSA, SIFPSA, and UPS Medical Faculty (Jhpiego was mentioned during the IDIs but not in the survey)

<sup>2</sup>Other includes Paigami Insaniyat, Delivery, and unspecified social franchises. It was not possible to verify if these were actually social franchise programmes.

<sup>3</sup>Includes Delivery and unspecified voucher schemes.

The Hausla Sajhedari programme had been started the year prior to this study to accredit facilities for family planning services including sterilization. This was a public-private partnership led by the National Health Mission of Uttar Pradesh with technical assistance from Population Services International. Registration and reimbursement procedures were all online, with the aim of time, effort and scope for corruption. The scheme accredited private facilities based on standards related to infrastructure, infection prevention and staffing, and provided indemnity insurance to participating facilities. There were plans of extending this to cover maternity services as well, but these were still under development.

The 'Sambhav' voucher scheme was mentioned a couple of times – referring to a now discontinued programme that provided vouchers to poor women to access good quality maternity and other reproductive health services from private facilities in the five big cities of Uttar Pradesh including Kanpur. This had been discontinued as it had been considered redundant when RSBY began (as one government official said '*that scheme killed this scheme*'), though as noted above, there were indications that RSBY was not functioning at the time of our data collection.

Just a handful of 3-4 tertiary hospitals were said to be accredited with official national bodies, such as the National Accreditation Board for Hospitals (NABH) or the National Accreditation Board for Testing and Calibration Laboratories (NABL), reflecting that fact that these accreditation standards were extremely difficult to achieve for most of the market. One facility that had obtained NABH accreditation said the process had taken two years, though he noted that there was a 15% price premium for being accredited.

Key stakeholders in responsible senior positions whom we interviewed, strongly recommended interventions focused on training and upgrading of facilities that were most utilised by the people, including those managed by non-MBBS providers:

*You definitely have to think from a patient's perspective. We need to think for public. If it's convenient for them, they are able to access the healthcare. Only thing that we should focus more on is fulfilling the requirements of the facilities they are accessing, skill-based component must be developed there. It is an important component for its betterment and improvement. (Professional Association rep 2, Kanpur Nagar)*

*Doctors don't go to the villages...and you don't want to give work to UNANI ones there! Our concept is that as many BUMS doctors that are there, give them an integrated pharma course, add 1 year of pharmacy course. What will happen with that is that these people will do their own studies, and with the pharmacy course they will handle the allopathic medicine. This will be formal training. (Government official 1, Lucknow)*

Some respondents from secondary peripheral facilities endorsed these perceptions. However, it was also noted that a government order to train and utilise AYUSH providers in this manner had been stayed by the Court due to opposition from the IMA. At the time of this study in 2016, the state was approaching elections, and the political climate was not conducive to any major health reforms that could elicit negative repercussions from the influential medical community.

### 3.4.3 Impact of public sector strategies on the private sector

The large and growing market share of the public sector in institutional deliveries was attributed in part to two key public sector policies: (i) the Janani Suraksha Yojana (JSY) incentive scheme which provided financial incentives to ASHAs and women when the women delivered in public hospitals; and (ii) free ambulance services for transport to public facilities, known as 102 (for maternal health) and 108 (for general care):

*In 28 years of my services, I have seen around 95% of deliveries taking place in government hospitals. The changes are due to good services. Patients can now avail 24 hours' ambulance services - 102 and 108 ambulances. The patients are also getting INR 1400/- under JSY scheme. All these reasons are making patients attracted towards the government hospital. (ANM 1, Rampur)*

Both JSY and 102/108 were said to be working well, with only occasional mentions of corrupt practices such as bribe payment to Government staff or the creation of false records:

*In total, I can say that JSY and Ambulance services are the boon for the women. Every family wants to avail the government services as these are free of charge. (Primary facility 2, Rampur)*

Some high-end facilities said they had not been much affected by these changes as they catered to a wealthier clientele who were unlikely to see Government facilities as an option, or be motivated by the JSY incentive:

*It hardly matters to those with money. INR 1000-1400 hardly matters to them. They still go to the private sector. They are not affected. (Professional association rep 3, Bareilly).*

However, most tertiary, secondary and primary facilities and Dais noted that these policies had a negative effect on demand for their services:

*Previously around 25 to 30 normal and caesarean deliveries used to take place in a month. But after NRHM and JSY got implemented, it has declined to 10-15 deliveries in a month. (Secondary facility 6, Kannauj)*

On the other hand, it was also said that private facilities had benefited from the general increase in demand for institutional delivery, and specifically from the spill-over of patients from government facilities as these became more crowded, and were felt to have limited capacity for surgical and advanced care.

## 4 DISCUSSION

### 4.1 Study Strengths and Limitations

We undertook a mixed methods study of the nature of competition for private sector delivery providers in Uttar Pradesh, drawing on a combination of a mapping of all healthcare facilities in selected districts, a survey of all delivery providers, and IDIs with facility staff, allied providers and other stakeholders. The mapping is the most comprehensive conducted to date in UP, and the study is the first to use an economic framework to India's maternal healthcare market. The data sources provide a rich source of information about these private providers, allowing triangulation across methods which is crucial given the sensitivity of the topics covered.

However, a number of limitations should be noted. First the study covered only 5 out of UP's 75 districts. These were selected to provide a mix of urban/ peri-urban and rural locations, and variation in religious / cultural and SES make-up of the population. However, the data cannot be considered representative of UP as a whole. In particular, the study did not include the poorest districts where private deliveries are least common.

The second limitation relates to the challenge of obtaining a reliable sampling frame for delivery facilities. Due to the lack of reliable lists of facilities, we made great efforts to map all facilities in our study areas, including walking each street in the cities, district towns and block centre. However, it remains possible that some facilities were missed, particularly those that are least well-advertised, or any that were in rural areas outside of block centres, though these were thought to be rare. In addition, as noted in Methods, some facilities may have denied doing deliveries when these were actually performed. In both cases, this would imply that lower-end delivery facilities, especially the smaller unregistered ones in rural interiors, were most likely to have been missed, which could have biased up our estimates of variables such as qualifications and infrastructure. However, from discussions with our key informants we did not feel that we were missing large numbers of delivery facilities in these categories, and concluded that the general picture of the market presented likely remains valid.

Based on our qualitative data, we divided the market into 3 broad delivery facility types: primary facilities who performed normal deliveries only, secondary facilities who did C-sections but had no ICU, and tertiary facilities which had an ICU. This categorisation is not perfect – partly as some facilities may have mis-reported their C-section or ICU status – but also because facilities are much more multidimensional than these cut-offs would apply. However, we found this a very fruitful way to organise our data, which identified three groups that exhibited variation on many of our key indicators, and could help tailor interventions to different provider and different SES client groups.

Finally, the study covered issues that were sensitive from commercial, ethical and regulatory perspectives, meaning that one might expect respondents to be unwilling to discuss certain topics and / or to deliberately mislead about their own practices. We aimed to address this by reassuring them that we were not connected with the health or taxation authorities, and that their responses were confidential. We also often asked questions about other actors in the market rather than focusing on their own behaviours. Finally, we bore in mind these sensitivities throughout the analysis of the data.



## 4.2 Key Findings for Informing Policy

Here we review the key findings from the study, and identify the most important implications for access to and quality of maternal healthcare, and for the design of private sector policies and interventions.

### ***Availability of delivery care***

The total number of private facilities is huge – running to nearly four thousand in these study sites – but less than 10% (297) of these provided deliveries. The delivery facilities are also highly clustered, particularly in larger cities (Bareilly, Kanpur Nagar), and outside of this in the larger district centres. The growth of the number of facilities had led to a crowded marketplace in cities, leading to quite intense competition between facilities. This was particularly felt among the secondary and lower-end tertiary city facilities, who cater to the expanding rural and peri-urban “middle class”, with implications for the strategies they needed to adopt to maintain and develop their business (see below).

Qualified staff are similarly clustered in cities, reflecting the economic opportunities for them professionally and the benefits for family life, meaning that private sector care was much more limited outside major towns/ cities, particularly in relation to C-sections, care for other complications and blood banks. Many secondary facilities were highly dependent on the availability of consultant specialists who were based in cities for C-sections, and primary facilities with no C-section capacity were also more common. One would expect government PHCs and particularly CHCs to fill this gap in rural areas, by providing qualified staff and C-section capacity, but in practice this was rarely available, meaning that many women would travel substantial distances for delivery care – either electively or in an emergency once complications developed. This raises the question of why CHCs in these rural areas are not providing C-section care as they should do, reflecting perhaps the complexities of staffing the public sector with appropriately qualified doctors and the lack of task shifting of C-section care to less qualified staff (C-sections are commonly performed by clinical officers in other LMIC settings).

### ***Quality of delivery care***

Given the high degree of variability in the availability of appropriate infrastructure and qualified personnel, one would expect the quality of delivery care provided to be similarly highly variable. While the vast majority of facilities claimed to have an MBBS doctor as an owner or on staff, and over 80% claimed to have an OBGYN on staff, IDIs indicated that the availability of qualified personnel was much patchier in practice. In fact interviews highlighted providers with low levels of training engaging in care beyond their scope, and depending heavily on nursing staff, who frequently lacked formal qualifications themselves. The study also highlighted the crucial role of visiting consultants within the market – with nearly all facilities relying on consultants to some degree, most working with many consultants, and most consultants working with many facilities. This likely has implications for the timeliness and continuity of care, and supervision of more junior staff. In general one would expect this to substantially increase the challenges of ensuring quality standards within a facility, when the senior staff present are so variable.

One of the reasons for relying on consultants was the highly fragmented nature of the markets, with most facilities performing very low numbers of deliveries (median of 14 per month). In addition to reducing the potential to fund full-time MBBS and specialist staff, it has been noted that the provision of high quality maternity care requires a relatively high caseload, because without this practitioners will only rarely see key complications, and will therefore struggle to maintain their skills in managing these.

Another particular area of concern were the chaotic referral mechanisms, especially from rural government facilities unable to cater for delivery complications. As a result of a combination of long distances to larger government referral facilities, and the profit incentives and commission payments of closer private facilities, women at the highest risk of poor birth outcomes were at the mercy of a set of middle-men (and women) who may or may not have had the best interests of the patient at heart, but certainly had a strong financial stake in the outcome. This is extremely unlikely to lead to good continuity of care at this key stage, may lead to poor choices of private facilities, and/or substantial financial burdens to women who had planned to have a free government delivery.

We did not assess clinical quality in this study, but major concerns in this respect have been raised by other MET work<sup>6</sup>. We did however, clearly document a severe lack of quality regulation / quality assurance / quality improvement activities. Based on our MET work and other studies, two clear contrasts stood out between private delivery facilities in East Africa and in UP. First, although the African private healthcare sector is notoriously poorly regulated, regulatory control was even lower in the UP private sector. Facility registration had not been implemented fully, inspections were rare, and few facilities saw regulation as a major influence on their operation – though it could sometimes be an irritation. The status of AYUSH-staffed facilities was ambiguous as they were allowed to provide deliveries but not allowed to register, meaning that the providers with the lower level of qualifications were falling outside the regulatory system entirely. This lack of regulation appeared to reflect a questioning among the private sector medical elites as to whether the government really had the right to regulate their work, and whether the proposed standards were really necessary reflecting in turn the political power of this group. Secondly, in comparison to East African facilities in Uganda or Kenya for example, UP private delivery facilities were much less likely to be engaged with any NGO support for training or broader social franchise activities. Whereas some East African facilities are linked with several different NGO initiatives, the vast majority in UP were not linked to any. This may reflect lower prioritisation of India by development agencies given its average income level, and the sheer scale of the challenge of private sector engagement given the number of facilities.

### ***Affordability of delivery care***

Typical prices reported in the survey ranged from USD 50 to 120 for a normal delivery, and from USD 130 to 250 for a C-section, with indications from IDIs that these may have been even higher in practice. Average per capita income in UP was around USD 488 in 2014-15<sup>7</sup>, indicating that these amounts would be unaffordable to most of the population, with poorer groups having only the government options available to them, and thus a lack of accessible CEmOC options. Even for middle income clients, the economic burden was potentially high, especially where C-sections were required, given the very low coverage of private insurance – which mainly appeared to be restricted to a small proportion of the clients in the highest-end tertiary facilities.

The RSBY insurance scheme should have provided subsidised access to some private providers for poorer groups, but it was clear from the IDIs that this had not been working well, was unpopular with providers. Moreover, there were indications that the RSBY scheme was actually not functional at the time of the study, and previous maternity voucher schemes had been discontinued. In the absence of any such subsidies it would be expected that any interventions to improve quality in secondary and tertiary delivery

---

<sup>6</sup> See Matrika Impact Evaluation and Case Studies reports.

<sup>7</sup> <http://trak.in/2012/average-per-capita-income-indian-states/>

providers will mainly target the better off (as indicated in the Case Study assessment of the SES of delivery clientele at Matrika Franchise clinics).

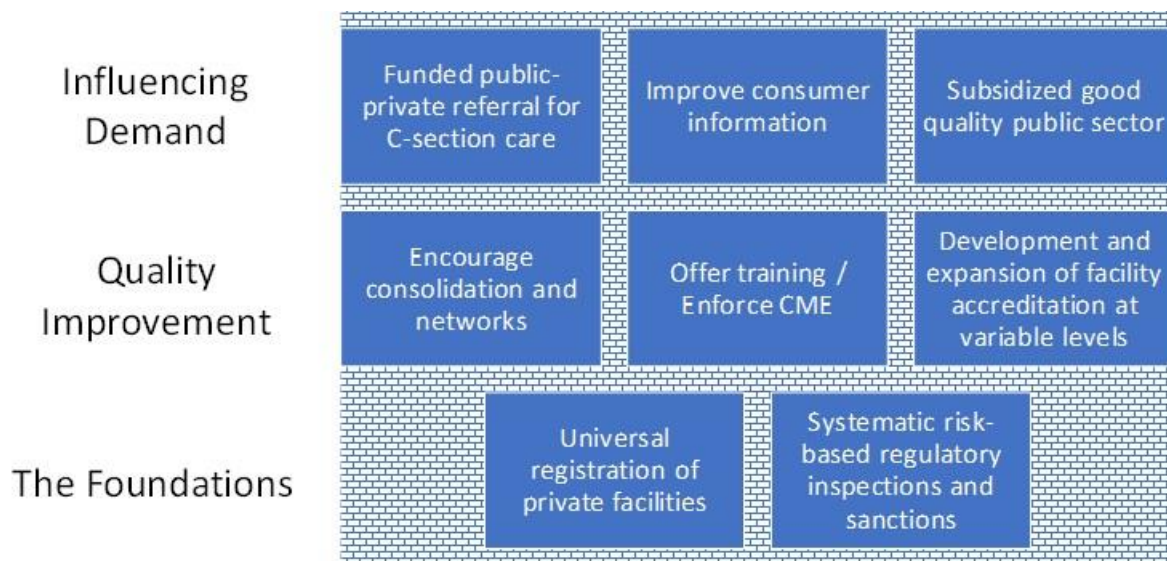
While the high levels of competition in the market clearly had a restraining effect on prices charged, competition was also increasing facility costs by forcing most providers to resort to commission payments for agents bringing patients to facilities. Providers were frequently paying ASHAs, Dais, RMPs and ambulance drivers to bring them patients, and the commission amounts were really large, often as much as 30% of the full patient fee. This behaviour was to a degree considered normal, but also to a degree outside of the law and unethical, meaning that it was hard to discuss openly until a rapport had been developed. The immediate implications would appear to be to push up prices for consumers, and to potentially compromise quality of care, if agents are incentivised to take patients where their commission is highest, rather than where they think quality will be best.

However, it is important to also consider the market features that lead to the opportunities for these commissions in the first place. Agents have such power over patients because of the patients' lack of information for facility choice. This reflects the large number of facilities available, the challenges of observing quality of care, and the relative infrequent use of delivery services by families (compared for example to care for minor ailments). This implies that clamping down on commission payments is unlikely to be possible in the current context. However, it raises the question of how the need for such agents can be reduced by improving information provision directly to women, or by regularizing referral systems.

### 4.3 Intervention Options

Figure 4-1 highlights the potential building blocks for private sector engagement. Any one of these blocks involves a very complex consideration of effectiveness, cost-effectiveness, acceptability and equity impact, which would require in-depth discussion with local providers, policy makers and other stakeholders. However, this brief summary provides some key suggestions of important areas of focus, based on the study findings.

Figure 4-1 Building blocks for enhancing private sector performance



### ***The regulatory foundations***

A firm foundation requires at a minimum the implementation of universal registration of private facilities (including AYUSH providers), and systematic and risk-based regulatory inspections. This is a massive challenge in the Indian context, due to the size of the private sector, the diversity of providers and the politically contested nature of different provider roles. However, in the development of a mature and safe healthcare system these foundations are critical.

### ***Quality improvement***

The next step is to implement and institutionalize effective quality improvement (QI). The lack of engagement with most private providers implies that there is a major gap in the market here and that many facilities may be keen to participate in training / CME, as long as activities are appropriately targeted to their level of qualification. The study also highlights that training and other QI interventions need to involve not just those on staff at the facility, but also the large body of visiting consultants, who may be much harder to engage than facility owners or employees.

Voluntary accreditation programmes are also likely to play an important part in quality improvement and quality signalling, especially if they are linked to the potential for empanelment in government and private sector cashless schemes as the insurance market grows. To impact on facilities used by patients other than the wealthiest, accreditation systems will need to be established with a range of levels, with the lower levels realistically attainable by mid-range facilities.

However, given the fragmented nature of the market, engaging facility-by-facility in quality improvement will be a substantial challenge given the resource intensive nature of QI, unless there is greater consolidation of the market. Consolidation might be encouraged through more effective regulation of staff qualifications, which would encourage facilities to merge or work more closely together in order to meet staffing requirements, and/or through third party payers such as RSBY or private/government cashless schemes limiting empanelment to larger facilities or to facility networks. However, while the consequences of such consolidation in cities and large towns are likely to be beneficial, in more rural areas better regulatory enforcement could also reduce access further to the populations currently least well served, and run the risk of pushing poor quality facilities underground. An alternative approach could be to target specific facilities for QI initiatives (and regulatory inspection) area by area, based on their market share and local needs. Our analysis of market concentration showed that the busiest facilities were responsible for a relatively high share of the private delivery market – with the top 5 facilities accounting for over 50% of the market in 3 of the 5 districts covered. This implies that a programme targeting facilities with high delivery caseloads could be relatively efficient in covering a high proportion of private sector deliveries, outside of major cities.

### ***Influencing demand***

Demand is of course a huge influence on provider performance. As noted above, improving patient information may reduce the need for commission-earning agents, and can improve quality of care, for example through independently verified facility report cards, or mobile/ online review platforms such as the Merck for Mothers funded White Ribbon Alliance. Demand can also be influenced by third party payment mechanisms. The loss of the Sambhav voucher scheme and the curtailment of RSBY meant that subsidised delivery care was no longer available in the private sector, and careful consideration should be

given as to whether this should be revived in some way, and how best to do this. An issue particularly highlighted in the research was the vulnerability of emergency cases referred from public facilities, who faced long distances to government referral hospitals, and therefore often found themselves directed to local private facilities, and presumably with unexpected bills. A priority may therefore be the consideration of funding for emergency government referrals in rural areas, or contracting arrangements to a limited number of higher quality private facilities.

Finally, providers are affected by competition, and for most providers the government sector remains an absolutely key competitor, as shown by the impact of both poor public sector quality of care in pushing women into the private sector, and free public care and JSY financial incentives in pulling them out. This implies that an appropriately financed and good quality public sector is likely to be one of the most important influences on not only public but also private sector performance.

## 5 References

1. IIPS, Macro International. National Family Health Survey (NFHS-3), 2005-2006: India. Mumbai: International Institute of Population Sciences,, 2007.
2. National Sample Survey Organisation. Key Indicators of Social Consumption in India Health. In: Ministry of Statistics and Programme Implementation, editor. New Delhi 2015.
3. Pathak PK, Singh A, Subramanian SV. Economic inequalities in maternal health care: prenatal care and skilled birth attendance in India, 1992-2006. *PloS one*. 2010;5(10):e13593.
4. Sreeramareddy CT, Qin ZZ, Satyanarayana S, Subbaraman R, Pai M. Delays in diagnosis and treatment of pulmonary tuberculosis in India: a systematic review. *The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Disease*. 2014;18(3):255-66.
5. Darak S, Panditrao M, Parchure R, Kulkarni V, Kulkarni S, Janssen F. Systematic review of public health research on prevention of mother-to-child transmission of HIV in India with focus on provision and utilization of cascade of PMTCT services. *BMC public health*. 2012;12:320.
6. Mathew J, Patwari A, Gupta P, Shah D, Gera T, Gogia S, et al. Acute respiratory infection and pneumonia in India: A systematic review of literature for advocacy and action: UNICEF-PHFI series on newborn and child health, India. *Indian Pediatr*. 2011;48(3):191-218.
7. Government of Uttar Pradesh. Statistics Of Uttar Pradesh, Lucknow: Uttar Pradesh Information Department; 2015 [Available from: <http://up.gov.in/upstateglance.aspx>].
8. Government of India. List of cities with their population: Census of India; 2011 [Available from: [http://www.censusindia.gov.in/towns/up\\_towns.pdf](http://www.censusindia.gov.in/towns/up_towns.pdf)].
9. Government of India. Monitoring Poverty in Uttar Pradesh (A Report on the fourth Poverty & Monitoring Survey (PSMS-IV): 2009-2010). State Planning Institute, Planning Department; 2014.
10. Government of Uttar Pradesh. District Domestic Product Lucknow: Directorate of Economics and Statistics; 2015 [Available from: [http://updes.up.nic.in/STATE%20ACC%20STATISTICS/NDDP%20&%20GDDP/statedomestic\(b\).htm](http://updes.up.nic.in/STATE%20ACC%20STATISTICS/NDDP%20&%20GDDP/statedomestic(b).htm)].
11. Government of India. Annual Health Survey 2012-13 fact sheet. In: Registra General, editor. New Delhi 2014.
12. Government of India. Census 2011 - Data on Religion: Officer of the Registra General and Census Commissioner; 2015 [Available from: [http://www.censusindia.gov.in/2011census/population\\_enumeration.html](http://www.censusindia.gov.in/2011census/population_enumeration.html)].
13. Government of India. Census 2011 - Data on Scheduled Castes: Officer of the Registra General and Census Commissioner; 2015 [Available from: [http://www.censusindia.gov.in/2011census/population\\_enumeration.html](http://www.censusindia.gov.in/2011census/population_enumeration.html)].
14. Government of India. Census 2011 - Data on Scheduled Tribes: Office of the Registra General and Census Commissioner; 2015 [Available from: [http://www.censusindia.gov.in/2011census/population\\_enumeration.html](http://www.censusindia.gov.in/2011census/population_enumeration.html)].
15. National Urban Health Mission. Kanpur City Implementation Plan. 2014.
16. Government of India. Final Population Total - Literacy (female, rural): Officer of the Registra General and Census Commissioner; 2015 [Available from: [http://www.dataforall.org/dashboard/censusinfoindia\\_pca/](http://www.dataforall.org/dashboard/censusinfoindia_pca/)].
17. Government of India. DevInfo India: Officer of the Registra General and Census Commissioner; 2011 [Available from: <http://www.devinfo.org/indiacensuspca/libraries.aspx/Catalog.aspx>].
18. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. *The qualitative researcher's companion*. 2002:305-29.

