Save the Children®

Maternal and Newborn Health in Urban India

A Monograph based on Literature Review Exercise

Save the Children, India

May 2016

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Rapid urbanization has led to residents suffering disproportionately from ill-health throughout their life-course. In such settings, there are substantial risk to experience disease, injury and premature death, and ill-health may combine with poverty to entrench disadvantage over time.

To respond to these health care challenges in the urban areas of the country, National Urban Health Mission (NUHM) was launched for providing equitable and quality primary health care services to urban population with focus on slum and vulnerable population. State-wise Programme Implementation Plans are being submitted and approved under the mission to enable local governments to actively counter the health care challenges in the urban areas.

Recognizing the complexities in the urban areas and the critical role of stakeholders working to address the health care needs of the urban poor, the National Urban Health Mission welcomes partnerships with all stakeholders and supports and encourages research in the area of urban health.

Save the Children, an active collaborator, has conducted a literature review on status of public health with special focus on maternal and new-born health in the urban poor settings in India. I would like to congratulate **SAVE THE CHILDREN** for this initiative and urge all stakeholders to extract maximum benefits out of this publication for betterment of mother and new-born of urban poor settings.

Dr. Basab Gupta

Message

Public healthcare for the urban poor has lagged behind in India despite good intentions. It suffers from multiplicity of players, non-standardised structure and low investments. Above all, the rich-poor gap is staggering. It has therefore been a challenge to systematically plan priority maternal-newborn health (MNH) services in cities and towns. Not surprisingly, the National Urban Health Mission has lagged behind the National Rural Health Mission by almost a decade.

One reason for this state of affairs has been a relative lack of reliable information and program relevant research in urban MNH. Diversity and dynamics of urban health system make the available knowledge difficult to comprehend and apply. In this context, Saving Newborn Lives (SNL), Save the Children, has made a tremendous contribution by synthesising available literature and research in MNH in urban India.

This monograph is based on well-researched, painstaking review using robust methods. The credentials of the team are impeccable. The flow of the narrative (service delivery, infrastructure, human resources, etc.) follows the health system framework. Gaps and solutions are captured in precise text at the end of each chapter; and discussions and implications are well captured in the final chapter.

This review brings out several facets of urban MNH. Analytic insights into lack of community processes in urban areas in the report are most insightful. Equally, interesting is the capture of most innovations in MNH in cities. The need to design and test next generation primary care models for urban India is a clear priority. Overall scene of urban MNH cries out for more investment, better governance and coordination, and more research.

The recurring theme in the monograph is the paucity of actionable information and evidence. We need studies on urban MNH epidemiology and innovative interventions; we need implementation research to inform scale up of what is known to be effective; we need demonstration sites to showcase replicable models; and we need technical support teams to facilitate implementation and monitoring. The government, the Indian Council of Medical Research and the public health research community together have the responsibility to bridge the knowledge gap.

The monograph provides highly valuable inputs on MNH for the National Urban Health Mission. MNH and urban health stakeholders would gain immensely by insightful repository of information that this review provides.

A must read document for the public health community of India.

Dr. Vinod Paul
Professor & Head
Department of Paediatrics, AIIMS, New Delhi

Preface

Save the Children's 2015 State of the World's Mothers Report, The Urban Disadvantage, brings into sharp focus the health inequities found within cities all over the world. Data from the report demonstrate that while great progress has been made in reducing under-5 mortality globally, in about half of the cities where data are available, the mortality gap between rich and poor children has grown. The poorest children, especially those living in urban slums, have alarmingly high risks of death. These inequalities also exist in cities in high-income countries such as Washington, DC, in the United States.

Given Save the Children's commitment to reaching the most disadvantaged children and families and the growing rates of global urbanization, we believe addressing the challenges surrounding improving health – especially maternal and newborn health – in poor urban areas is increasingly important. We are keen to understand the root causes of these inequalities and to learn from the experience of others about addressing the needs of children and families living in urban slums.

Save the Children's Saving Newborn Lives Program, supported by the Bill and Melinda Gates Foundation, is working actively with appropriate stakeholders and the National Health Mission to explore how the contextual factor differ in urban settings for maternal and newborn health service availability as well as care seeking behaviors. Who are the main service providers to poor urban dwellers? How are those services financed? Are they of sufficient quality to improve health outcomes? How have they targeted the most deprived and poorest families?

A key step in this learning agenda was to undertake a literature review to explore the rich array of programs already in existence in India. The results remind us of how much work has already been undertaken and the rich set of lessons that have emerged. However, it also is evident that most urban health programs have been pilot projects, covering relatively small populations within a fixed time period, and that successful pilots have yet to be scaled up to benefit large population groups. The challenge for India and other countries is to learn how to shape large-scale, well-funded,and sustainable programs such as India's National Health Missions to target services to those who need them the most in varied urban environments. Further, while future investments in urban health must come from government, we must also tap into the vibrant private and corporate sector and involve the service delivery systems of government, nonprofit, and commercial sectors, because everyone has an equal stake in the health and well being of India's women and children.

I would like to thank all of those involved in carrying out this important review and analysis as well as those who guided it. We appreciate the global leadership that India is providing for improving urban approaches to addressing the health of women and children.

Joy Riggs-Perla
Director, Saving Newborn Lives
Save the Children, USA

Message from CEO

Urbanisation is often thought of as being beneficial for economic and social growth, which is what prompts rural populations to migrate to the cities for a better life and better prospects. Being the world's largest democracy, the second most populous country (1.21 billion as per Census 2011) and the tenth largest economy (with a Gross Domestic Product of US$ 1377.3 billion in 2009), India has undergone extraordinary socio-economic and demographic changes. In the past 30 years, the geographically-wide, densely-populated and enormously-varied Republic of India has made remarkable efforts in the field of health, including development of a strategic framework on RMNCH+A in 2013 and the recently launched National Health Mission with a sub-mission (NUHM) on Urban Health as a key component.

Save the Children's Saving Newborn Lives (SNL) programme works with governments and partners to put newborn health on global and national agendas. In India, the programme is working towards evidence-generation, consensus-building and supporting policy and programmatic processes on delivering Maternal and Newborn Health (MNH) in urban poor settings. As a part of this process, a need was felt to review both the published and the unpublished literature on mechanisms, programme platforms, service delivery systems, practices and innovations in MNH in the urban areas of India including, literature on scaling up pilots/ innovations and conceptual frameworks with a specific focus on the urban poor.

It is important that the MNH programmes, though variably existing in the urban space of India, gets a thorough prioritisation and reboot. The whole service delivery mechanism is not in place when it comes to most of the cities in the country. Ambiguity on the information, data, role of departments, leadership, personnel, supply chains and logistics continue to remain.

The findings of this review clearly reflect on the gaps in terms of current availability of health services to deliver MNH care along with the clearly defined paucity of service delivery platforms, governance and mechanisms inclusive of infrastructure, human resources, logistics, supply chain, partnerships and community, level efforts. It further draws our attention to the fact that the gaps with regard to the availability of literature and evidence from the research undertaken in all of the abovementioned aspects of health service delivery for MNH care should not be ignored.

At Save the Children, we consider that both the policy and programmatic efforts along with commitment of working towards the betterment of urban poor mothers and newborns should be augmented especially at this juncture, wherein the country is attempting to understand, develop and formalize the mechanisms for delivering health care to the urban poor mothers and newborns.

This review report affirms the overwhelming constraint of better availability of services for MNH care in urban areas and it distinctly provides a direction to future researchers and policy-makers as to what needs to be done to ensure that MNH care services are delivered to the urban poor.

Thomas Chandy
CEO, Save the Children, India

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The study team wishes to express gratitude to the members of national level Technical Advisory Group (TAG) for their suggestions guidance and insights during the whole process of the review exercise. Specific insights and understanding from Prof. Vinod Paul helped in the overall design and finalization of research questions. Inputs from Prof. N. K. Arora, Prof. Rajib Dasgupta, Dr. Sanjay Pandey and Mr. Gautam Chakraborty were extremely helpful and instrumental in finalizing this report. An especially strong appreciation goes to the officials of Municipal Corporations and associated public health teams of few municipal corporations that provided first hand information on the service delivery aspects.

Much appreciation is extended to the staff of Save the Children, USA especially Ms. Joy Riggs-Perla, Director - Saving Newborn Lives (SNL) Program; Dr. Stephen Wall, Senior Technical Advisor; Dr. Uzma Syed, Technical Advisor - Newborn Health; Dr. Lara Vaz, Senior Advisor - Monitoring & Evaluation; who guided the design of the study. A special thanks goes to Dr. Sudeep Singh Gadok, erstwhile Director of Programmes, Ms. DeepaliNath, Director, Knowledge Management and Mr. Prasann Thatte, Manager Research, Save the Children, India, for their untiring support and technical insights.

A special mention of THOT, the research agency, which helped assemble and assimilate the pertinent information and gave valuable suggestions throughout the study.

This study would not have been possible without the abundant support and guidance of the core team of SNL, India which was led by Dr. Rajesh Khanna, Technical Advisor – Newborn Health, Save the Children, India and Dr. Benazir Patil, Advisor – Urban Health, Save the Children, India. The guidance and appreciation of other colleagues are sincerely cherished.

Acronyms

ANC	Ante-Natal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
BEmOC	Basic Emergency Obstetric Care
BPL	Below Poverty Line
CEmOC	Comprehensive Emergency Obstetric Care
CHC	Community Health Centre
CSSM	Child Survival and Safe Motherhood Programme
DCM	District Community Mobiliser
DRC	District Resource Centre
EmNC	Emergency Newborn Care
EmOC	Emergency Obstetric Care
EmONC	Emergency Obstetric and Newborn Care
FBNC	Facility-Based Newborn Care
FRU	First Referral Unit
HBNC	Home-Based Newborn Care
HMIS	Health Management Information System
HR	Human Resource
HRH	Human Resources for Health
IAP	Indian Academy of Paediatrics
IMNCI	Integrated Management of Neo-natal and Childhood Illnesses
IMR	Infant Mortality Rate
INAP	India Newborn Action Plan
IPHS	Indian Public Health Standards
IMCI	Integrated Management of Childhood Illnesses
IMNCI	Integrated Management of Newborn and Childhood Illnesses
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JSSK	Janani Shishu Suraksha Karyakram
JSY	Janani Suraksha Yojana
KMC	Kangaroo Mother Care

MDG	Millennium Development Goal
MNH	Maternal Newborn Health
NFHS	National Family Health Survey
NHM	National Health Mission
NMR	Neo-natal Mortality Rate
NRHM	National Rural Health Mission
NUHM	National Urban Health Mission
PHC	Primary Health Centre
PPP	Public Private Partnership
RCH	Reproductive and Child Health
RBSK	Rashtriya Bal Swasthya Karyakram
RKSK	Rashtriya Kishore Swasthya Karyakram
RKS	Rogi Kalyan Samiti
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
SBA	Skilled Birth Attendant
SHG	Self-Help Group
SN	Staff Nurse
SNCU	Special Newborn Care Units
SNEHA	Society for Nutrition, Education and Health Action
SRS	Sample Registration System
TAG	Technical Advisory Group
TBA	Trained Birth Attendant
U5MR	Under-Five Mortality Rate
UNICEF	United Nations Children's Fund
UPHC	Urban Primary Health Centre
USHA	Urban Social Health Activist
VHND	Village Health & Nutrition Day
VHSC	Village Health & Sanitation Committee
WASH	Water Sanitation and Health
WHO	World Health Organization

Executive Summary

With rapid urbanisation, as in most developing countries, public health problems in India are increasingly assuming an urban dimension. Largely viewed as a rural society for many decades, the Government of India's conception of primary healthcare was almost entirely rural oriented. The 12th Five Year Plan, stated for the first time that urban expansion will happen at a speed quite unlike anything that India has seen before and, if not well managed, this inevitable increase in India's urban population will place enormous stress on the system[1]. Interestingly, it has been found that the health services in urban areas often observe an "inverse care law": those in greatest need of care have the poorest access to it. Despite the fact that few governments have formulated urban health policies that prioritise the poor, even when such plans and programmes do exist, their implementation is hampered by resource shortages[2]. In India, while the analysis of the NFHS-III data confirms the inequitable health status of the urban poor[3], a number of other studies[4] have also concluded that the health of the urban poor is significantly worse than the health of the rest of the urban population and is often comparable to health conditions in rural areas.

India contributes to 16% of the global maternal deaths and around 27% of global newborn deaths. Reducing the burden of maternal and newborn mortality and morbidity in urban poor settings today requires an expansion of effective Maternal and Newborn Health (MNH) care services and lowering the barriers to the use of such services, especially availability and accessibility. Addressing these barriers can substantially improve the utilisation of services, as well as increase inequity in health outcomes. The launch of the National Urban Health Mission(NUHM) in 2013 as a sub-mission of the National Health Mission(NHM) is being looked at as the very first step to tackle the needs of the urban poor. However, the lack of clarity on the ultimate responsibility for providing public health services in urban areas, lack of demonstrated political will to assume responsibility and accountability for urban services, along with the absence of inter-departmental coordination between the Departments of Public Health, Urban Development, Medical Education, and the Municipal Corporations and the urban local bodies is a greater challenge.

Save the Children's Saving Newborn Lives (SNL) programme, supported by the Bill and Melinda Gates Foundation is a globally recognised leader in newborn health and a respected voice in many low-resource countries. Since its inception in the year 2000, SNL has worked to reach the world's most vulnerable newborns and help them survive their first month of life. By working with governments and partners to put newborn health on global and national agendas, SNL serves as a catalyst for action. To accomplish its goals, the SNL programme works to develop, apply, document and sustain packages of effective, evidence-based newborn care services and practices at scale. SNL provides technical leadership, advocacy, and measurement support. The programme facilitates a cycle of evidence-generation, consensus-building, policy-formulation and-guidance, and programme implementation and learning.

Currently in its third phase (2013-2017) of implementation, SNL in India is working toward generation of practical and feasible solutions for delivery of MNH services for the urban poor in India.

For designing sensitive, responsive and relevant urban health policy and action, it is important for planners and programme managers to understand the context with regard to current systems and mechanisms, potential organisations and best practices, that can be leveraged and built upon to ensure urban institutional reforms and improved governance for MNH in urban poor settings. In order to address this need, SNL commissioned a study that reviewed the literature and looked at available secondary data on MNH in urban poor settings. The study synthesised quality evidence that identified opportunities and gaps in the health system, looked into the factors affecting programming and service delivery; and reflected on potential strategies to help address specific MNH care needs of the urban poor in India.

The review looked at both published and

[1] 12th Five Year Plan: Approach paper on "The Challenges of Urbanisation in India".
[2] http://www.unsystem.org/scn/archives/scnnews01/ch2.htm
[3] National Family Health Survey: Round III reveals that the childhood mortality indicators among the urban poor are higher compared to the urban averages – 72.7 vs. 51.9 for U5MR, 54.6 vs. 41.7 for IMR, and 36.8 vs. 28.7 for NMR.
[4] Islam, Montgomery, and Taneja (2006); Montgomery and Hewett, (2005); Fotso, Ezeh, and Oronje (2008).

unpublished literature on mechanisms, programme platforms, service delivery systems, practices and innovations in MNH in the urban areas of India including literature on scaling up MNH pilots/innovations and conceptual frameworks with a specific focus on the urban poor. The search for evidence involved examining of planning and implementation frameworks, case studies, reports, evaluation and impact assessment reports, strategic frameworks, reports of different programmes and interventions, research studies, surveys, documents and articles. A total of 250 sources were identified and included in the present review.

This review report focuses on the evidence base pertaining to the status, major milestones, problems and challenges with regard to the urban MNH in India, the existing supply side agencies and its linkages, and the existing financial mechanisms and budgetary provisions for the urban MNH.

The findings of the review can be distinctly classified under two different pieces. The first piece reveals the gaps in terms of current availability of health services to deliver MNH care along with the clearly defined paucity of service delivery platforms, governance and mechanisms inclusive of infrastructure, human resources, logistics, supply chain, partnerships and community, level efforts. The second piece focuses on the gaps with regard to the availability of literature and evidence from the research undertaken in all of the abovementioned aspects of health service delivery for MNH care.

While maximum data is available mostly on social determinants of MNH and barriers in accessing services, there is little information available on interventions and models that have worked to address these challenges. In exceptional cases, if certain initiatives did work providing some piecemeal solutions, the sample size was either not large enough for confidence of scalability or these were mostly project-based initiatives implemented and managed by non-governmental agencies dependent on available resources.

The review affirms the overwhelming constraint of better availability of services for MNH care in urban areas. It further confirms two specific aspects: first and foremost, there exists limited or insufficient and inadequate evidence on the availability of services for MNH in urban areas and, secondly, whatever evidence is available shows an absence of any defined structures and mechanisms to deliver services for mothers and newborns in urban poor settings. In the end, the review sets out suggestions not only in terms of requirement of evidence on the aspects of service provision and service delivery mechanism in urban settings but also reflects the need for undertaking rigorous research in the area of urban maternal and newborn health which continues to remain an untouched area of research and learning.

Though the study reflects that the evidence base with regard to the existence of specific policy instruments for this purpose is still being developed, nevertheless, it provides a direction to future researchers and policy-makers as to what needs to be done to ensure that MNH care services are delivered to the urban poor.

Key Findings

- There is an overall lack of clarity with regard to the ultimate responsibility of providing health services and the information on service-provision mechanisms reveals that the health services, vary from city to city. While a few large cities such as Mumbai, Kolkata, and Chennai have used the Indian Population Project to focus on the health infrastructure establishment in urban slums, just a few large Municipal Corporations with good revenue resources have demarcated special resources to provide urban MNH services.

- There is no mechanism for a health worker to make community or home visits; thus; no holistic outreach and follow-up services are available for MNH.

- Referral services are available in corporation hospitals/ district hospitals/ medical college hospitals as well as in several private hospitals. There is no definite system of referral; no linkages between domiciliary, health centre and hospital; and no protocols for admissions to the primary, secondary and tertiary levels.

- Private health providers are the key players in the overall provisioning of services. Multiplicity of providers and lack of coordination among them has led to dysfunctional referral systems and a consequent overload on tertiary-care providers.

- While primary healthcare in urban areas which the poorest sections can easily approach has largely been neglected, there are exceptions of larger metropolises such as Mumbai and Delhi that provide primary healthcare by means of dispensaries, health posts and maternity homes.
- The urban health posts (UHPs) are located mainly in big towns. Small towns continue to be deprived of these facilities.
- The findings of the NFHS-III reflect that the private sector is the main provider of healthcare for a majority of people living in urban areas and the main reason for non-utilisation of public facilities is the poor quality of care.
- The literature does not reflect on the aspects such as staffing mechanisms, training, job satisfaction, appraisals and career development of the staff engaged for MNH care.
- Very little information could be traced on details of the guidelines or protocols for the functioning of primary and secondary level healthcare systems or the logistics required for MNH.
- There is no information available on processes adopted for supply chain management, especially training procedures for staff at the primary and secondary levels to manage the supply chain for drugs & equipment and co-ordination with the blood banks & referral support.
- Lack of research in terms of availability and accessibility of services that may concern women living in urban slums comes across as a great deficiency. The existing literature also hints at the existence of private bodies. However, this does not extensively map the same.
- Various studies reflect on the lack of uniformity in delivery/provision of health services within and across cities. However, these hardly touch on the opportunities for the marginalised at the health service centres, especially for MNH.
- The evidence gathered from the National Health Systems Resource Centre's (NHSRC) city-visit reports indicates a paucity of information on guidelines that govern the health service system and the detail on the facilities available for MNH.
- While some studies do mention the type of facilities providing MNH services which are accessible to the urban poor, it lacks analysis in terms of its functioning, efficiency, governance and monitoring mechanisms.
- Reliable and consistent information on health informatics is scarce. Little or no efforts have been made to conceptualise mechanisms or/and to capture disaggregated, discrete data on health service availability and its performance in relation to urban MNH across cities and states.
- The information from the Health Management Information System (HMIS) features largely around NRHM and the information available for urban and semi-urban places is abysmal. The websites of the National Institute of Health and Family Welfare (NIHFW), NHSRC and urban local bodies (ULBs) such as the Municipal Corporation of Delhi (MCD) mostly include information on communicable diseases, sanitation and hygiene.
- While a number of documents reflect on the role of State Health Departments, Municipal Corporations (MCs), Town Councils, and ULBs in the health sector in general, literature that examines the roles of these bodies in the provision of MNH service is very scanty.
- Very little and inconsistent information is available on financing patterns, the role of local bodies in budget planning, the process adopted for sustaining projects and the decision making in relation to the same across a majority of the cities, especially in urban and semi- urban locations. No information is available on the budgetary allocation process for maternal and newborn health except for some small-scale cash-transfer programmes that exist in various states.

Outline of the Report

This report is organised into the following sections: -

Section I is the introduction that provides an overview of the growing urbanisation in the country, the global, and the Indian urban maternal and newborn health scenario.

Section II focuses on the methodology used in the review and the scope of the study, along with the research questions it intends to address.

Section III presents the findings with regard to each of the components reviewed, and has sub-sections on Service Delivery; Infrastructure; Human Resource; Logistics and Supply-Chain Management; Community-Level Inputs/Processes/Interventions; Governance Mechanisms and Leadership; Financing and Sustainability; Partnerships and Networks; and Inter-sectoral Coordination.

Section IV summarises and discusses the results, assesses the strength and weakness of the evidence base, and provides conclusion.

Annexure 1: Evidence tables of the literature reviewed.

Annexure 2: Tables on city-wise programmes, schemes and innovations.

I. Introduction

Background

Being the world's largest democracy, the second most populous country (1.21 billion as per Census 2011) and the tenth largest economy (with a Gross Domestic Product of US$ 1377.3 billion in 2009), India has undergone extraordinary socio-economic and demographic changes. The population pyramid of India has evolved, with an increase in both the very young and the ageing population. An urbanisation process with megacities and expanded shanty-towns has witnessed a 4.6-fold increase between 1951 and 2001, compared to only a 2.8-fold increase in the total population.

For the past 30 years, the geographically-wide, densely-populated and enormously-varied Republic of India has made remarkable efforts in the field of health. The list of initiatives include the adoption of a National Health Policy in 1983; the 73rd and 74thConstitutional Amendments devolving power to local institutions in 1992; the National Nutrition Policy in 1993; the National Health Policy, the National Policy on Indian System of Medicine and Homoeopathy and Drug Policy in 2002; the introduction of simple health insurance schemes for the poor in 2003; the inclusion of health in the Common Minimum Programme of Government in 2004; the initiation of the National Rural Health Mission in 2005; the development of a strategic framework on RMNCH+A in 2013 and the recently launched National Health Mission with a sub-mission (NUHM) on Urban Health, as one of the key components.

While India accounts for 21% of the world's global burden of disease, and is home to the greatest burden of maternal, newborn and child deaths in the world, there has been a significant achievement with regard to reductions in the Infant Mortality Rate (IMR) from 83 per 1,000 live births in 1990 to 44 per 1,000 live births in 2011, and Maternal Mortality Ratio (MMR) from 570 per 100,000 live births in 1990 to 212 in 2007–2009. Achieving of Millennium Development Goals (MDGs) 4 (reduce child mortality) and 5 (improve maternal health) guided the efforts on ensuring the progress on both the supply and demand side and helped in expanding the availability of effective Maternal, Newnorn and Child Health (MNCH) care services. The most frequently occurring and formidable challenges of modernising the health system, reducing the high out-of-pocket expenditures, addressing the insufficiency &uneven distribution of staff, balancing the service provision (overwhelmingly in private hands) and its quality, and ensuring a better alignment of regulation with present-day needs, continue to remain.

The Urban Context

India's urban growth has been described as following a '2-3-4-5' pattern: annual population growth of 2%, urban population growth of 3%, mega-city growth of 4% and slum population growth of 5%[5]. The urban population increased from 28.6 crore in 2001 to 37.7 crore in 2011. Urban Indians live across 7,935 towns and cities, of which 468 have populations of at least 100,000[6]. Nearly 50% of the urban population of India lives in just five states, namely, Maharashtra, Uttar Pradesh, Tamil Nadu, West Bengal and Andhra Pradesh. Uttar Pradesh, which has just 22% of its population living in urban areas, accounts for almost one-fourth of the total urban population of these five states, purely due to its population size.

Urbanisation is often thought of as being beneficial to economic and social growth and gains, which is what prompts rural populations to migrate to the cities for a better life and better prospects. However, most Indian cities do not have the requisite infrastructure to be able to provide the population with basic amenities such as health. This adversely affects the well-being and health of especially the urban poor. Unaccounted for populations such as the migrant workers and shifting definitions of areas of habitat such as slums, have led to the marginalisation of the urban poor, living alongside drivers of economic growth in India. Being in urban conditions does not provide any advantage to the urban poor.

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[5] Source: p.2, Water and sanitation for Urban Poor: Expansion and exclusion? A Briefing Paper on Related Policies, published by Health of the Urban Poor (HUP) Programme, Population Foundation of India, (September 2012).

[6] 74 cities have been added to this list since Census 2001, which reflects a rapid increase.

The urban poor are seen as a homogenous entity, which they are not. Such a broad definition leads to a greater marginalisation in the provision of basic amenities, because it does not take into account sections of the urban poor population which are excluded, illegal and unaccounted for. As a result, services and provisions do not take them into account and do not reach them. A broad view of the urban poor only plans for services to be delivered to slums, which themselves are not a constantly defined habitat; it also neglects other urban poor populations such as the homeless, migrant labourers, daily-wage workers, construction workers, rag-pickers, people who are institutionalised- male, female & transgender, sex workers and other groups who may not necessarily live in slums, but are socially, economically and geographically marginalised in cities[7].

Various studies have assessed and identified vulnerability factors amongst the slum population that need to be looked into while sketching an overall health programme for the urban population. These have been categorised as residential or habitat-based vulnerability; social vulnerabilities; and occupational vulnerabilities[8].

On the basis of the health burden, it has been found that the vulnerable populations face innumerable barriers, with respect to accessing the public health services, which results in an aversion to seeking care from health centres. Some of the key factors are: lack of comprehensive primary care service in public facilities; ill-timed consultation and long waiting hours; improper location of and long distances to public health services; and disrespectful behaviour by the health providers.

Maternal and Newborn Health: The Indian Scenario

Health outcomes of newborns are shaped by biological factors. Further, the social, economic and cultural environment, make the task complex and demanding. Newborn health is inter-dependent on the health of mothers. Though India has been at the forefront of the global effort to reduce maternal &child mortality and morbidity, given its demographic and cultural diversity, it does face numerous challenges with significant rural-urban, poor-rich, gender, socio-economic and regional differences. Furthermore, maternal and newborn mortality varies considerably between states and regions. Various efforts have been made to address these multi-layered hurdles in achieving optimum MNH care in India. While the two path-breaking interventions, National Rural Health Mission (NRHM 2005) and RMNCH+A strategy (2013), provided unprecedented attention and resources for maternal and newborn health with a focus on rural India, the latter specifically focused on a paradigm shift in perspectives based on the continuum-of-care approach and health system strengthening.

Interventions under NRHM have definitely led to a noticeable increase in the utilisation of hospitals for childbirth, and have resulted in encouraging progress in reducing maternal and newborn mortality rates in rural areas faster than the urban. Thus, a growing realisation that there must now be a more focused approach toward urban MNH, specifically targeted toward the needs of the urban poor, has emerged in the last few years.

Health Structures in Urban India

Over the years, various committees, such as the Bhore Committee 1946, Jungalwalla Committee 1967, Bajaj Committee 1996, Mashelkar Committee 2003 and the National Commission on Macro-economics and Health 2005 have suggested ways to strengthen the health sector. More significant for policy formulation has been the share of urban population to the total population, which has grown substantially from 1951 to 2011.

On the recommendations of the Krishnan Committee, under the revamping scheme in 1983, the Government established four types of UHPs across 10 states and union territories with a pre-condition of locating them inside or close to the slums. The main functions of the UHPs are to provide outreach, primary healthcare and family welfare as well as MCH services. In reality, however, limited outreach

[7] Report and Recommendation of the Technical Resource Group for The National Urban Health Mission, MoHFW (2014).
[8] Report and Recommendation of the Technical Resource Group for The National Urban Health Mission, MoHFW (2014).

activities are being undertaken by the UHPs. Due to the rapid growth of the urban population, efforts were made in the metropolitan cities of Chennai, Bengaluru, Kolkata, Hyderabad, Delhi and Mumbai for improving the healthcare delivery in the urban areas through the World Bank-supported India Population Project (IPP). Only the IPP cities are conducting some outreach activities as community link workers are employed to strengthen demand and access. Limited outreach activities through the provision of link volunteers under the RCH are visible in Indore, Agra, Ahmedabad and Surat.

National Urban Health Mission: The Most Recent Mandate

The Government of India's 12th Five Year Plan builds on the National Rural Health Mission and converts it into a National Health Mission for the whole country. In doing so, it incorporates the developing National Urban Health Mission as a sub-mission.The NUHM aims to meet the healthcare needs of the urban population, with a focus on the urban poor, by making essential primary healthcare services available to them and reducing their out-of-pocket expenses for treatment. This will be achieved by strengthening the existing healthcare service delivery system, targeting the people living in slums, and converging with various schemes relating to the wider determinants of health (such as drinking water, sanitation, and school education), implemented by the Ministries of Urban Development, Housing and Urban Poverty Alleviation, Human Resource Development, and Women and Child Development.

The NUHM endeavours to achieve its goal specifically through a need-based, city-specific, urban healthcare system that will meet the diverse healthcare needs of the urban poor and other vulnerable sections, and through institutional mechanism and management systems to meet the health-related challenges of a rapidly growing urban population. In response to the needs for convergence and public health management, the NUHM envisions that every municipal corporation, municipality, notified area committee and town panchayat will be a planning unit in its own right, with its own approved norms for setting up health facilities. These urban local bodies will prioritise services for the urban poor (in both listed and unlisted slums) and for vulnerable groups, such as the homeless, rag-pickers, street children, rickshaw-pullers, construction and brick &lime kiln workers, and sex workers.

Structural and Human Resource Propositions of the NUHM

Proposition		Serving
Urban Primary Health Centre	U-PHC	50,000 to 60,000 population
Urban Community Health Centre	U-CHC	250,000 to 360,000 population Five to six U-PHCs in larger cities
Auxiliary Nurse Midwife	ANM	10,000 population
Accredited Social Health Activist	ASHA	200 - 500 households
Urban Social Health Activist	(USHA)	1,000 – 3,000 population

The NUHM is currently setting up well-identified, primary healthcare facilities for each segment of the target population that can be accessed conveniently. The UPHC will act as a common platform for availability of all services. Mechanisms of referrals should be operationalised to make the PHC effective; the PHC will also provide outreach services. This will be done by the female health worker, who will be provided mobility support for this purpose. Services will be universal in nature. Community participation will be encouraged by a community link volunteer (Urban ASHA). Creation of community-based institutions, such as Mahila Arogya Samiti (MAS) involving 50-100 households will empower women so that they can demand services.

MNH in Urban Poor Settings

While half of India's population is expected to reside in urban areas by 2030, little is known about the appropriate delivery mechanisms or effective intervention strategies for the urban areas. Urban poor newborns are more vulnerable to many health problems as compared to the non-poor urban counterparts. Evidence from NFHS-III indicates that neo-natal mortality among the urban poor (NMR 37/1000 live births) is higher as compared to the urban average (NMR 29/1000 live births). Similarly, analysis of the NFHS-III (2005-2006) data shows that the NMR among the poorest 20 percent of the population is more than double the NMR of the richest 20 percent. The Urban Health Resource Centre looked at urban data from NFHS-III for 8 cities and found that women in the poorest quartile were substantially less likely to make at least three ante-natal care visits (54% compared with 83%) and to have a birth assisted by a health provider. Their children had higher under-five mortality rates, lower immunisation rates (40% compared with 65%) and higher proportions of stunting (54% compared with 33%)[9]. It is important to note that, while data is available for MNH in urban India, reliable & disaggregated urban data or census data that include slums — focusing on the most vulnerable city-dwellers (often not counted)—is completely absent.

The challenges facing MNH for the urban poor in India are many. The inequities and social exclusions that plague the urban poor lead to inequities in accessing services and systems such as ANC care. The environment that the urban poor live in is not conducive for health and well-being, further aggravating their problems. The mandate for provision of municipal services is unclear when settlements are not notified and their residents do not have tenure, with implications for water supply and collection of waste. There is a lack of co-ordination and convergence between the relevant departments dealing with water and sanitation, housing, transport and health. Thus, the paper trail is sketchy, accountability is minimal, and transport is often the responsibility of the family. For maternal and newborn care, there is a lack of norms for service provision at different levels of health facility. No protocols exist for identifying women at risk and referring them for specialised care.

[9] NFHS 3

II. Methodology

Objectives of Review

This review was undertaken to systematically identify and synthesize evidence from the available literature on the current status of maternal and newborn healthcare services in urban India, particularly with respect to specific components of the health systems and the urban poor population. Additionally, an attempt was made to identify innovations and case studies of the best practices, with reference to their potential for scaling-up. The exercise is expected to help in developing a compendium of relevant literature available on the maternal and newborn health services for the urban poor population in India. This would help the planners, programme managers and researchers in not only identifying the factors and gaps in information affecting delivery of MNH services for the urban poor population, but also plan and design future approaches/models for effective coverage of these services within the context of the NUHM.

Research Questions

a. What are the issues, problems and challenges with regard to urban MNH in India? Specifically with regard to: Service Delivery; Infrastructure; Human Resource; Logistics and Supply-Chain Management; Community-Level Inputs/Processes/Interventions; Governance Mechanisms and Leadership; Financing and Sustainability; Partnerships and Networks; and Inter-sectoral Co-ordination

b. Why do these problems and challenges exist; what are the specific reasons?

c. Which are the various supply-side agencies? What have been their successful interventions along and what are the existing linkages on the supply-side?

d. What are the financial mechanisms and budgetary provisions that exist for the urban MNH?

Methodology

A systematic literature search was planned to identify evidence on the above-mentioned questions and specific criteria were defined for study selection. These criteria were: –

a) Population: All relevant studies available on maternal and newborn health services for the urban poor population. Studies on rural or peri-urban populations were not included.

b) Interventions: Any study pertaining to selected supply side parameters of health system for the delivery of maternal and newborn health services as given under the WHO framework was included. The parameters were: infrastructure, human resources, logistics & supply-chain management, community-level inputs/processes/interventions, governance mechanisms, financing, partnerships and networks and inter-sectoral coordination. There was no restriction regarding the source of funding for the intervention; that is, both public and private sector-funded initiatives/programmes were included.

c) Time period: Interventions and programmes that had been implemented and/or studied over the last 10 years were included.

The review aimed at focusing on interventions and programmes, which had been implemented in

sizeable urban poor populations, in order to lend themselves to scalability. However, as the review progressed, it became clear that there were very few studies available using the pre-defined criteria and, hence, the initial selection criteria were expanded to include:–

- All interventions and programmes on the delivery of maternal, newborn and child health services.
- All interventions and programmes for the urban poor population, irrespective of population size coverage.

Despite expanding the criteria, only limited literature was identified from the public domain. As a result, the search strategy was expanded to include not just grey literature from manual search and cross-referencing, but also literature identified by interviewing subject experts. Moreover, due to lack of sufficient and credible evidence available from the published studies, the design was modified from a systematic literature review to a narrative/descriptive and thematic review of available literature.

Search Strategy

Three data sources were used to collate the evidence: 'computer/ internet-based search', 'manual research' and 'interviews with subject experts'. For the Internet-based search, a combination of free-text words and MeSH words were used to systematically search electronic databases. This process was supplemented by manual search of the grey literature (any unpublished thesis, project report, evaluation, survey etc.), the literature identified from cross-referencing and literature identified by subject experts during interview. Subject experts were interviewed telephonically and/ or in face-to-face meetings using an open-ended questionnaire. Based on their information, efforts were made to contact the local authorities, organisations and institutes concerned, so as to access the relevant literature.

Data Collection and Analysis

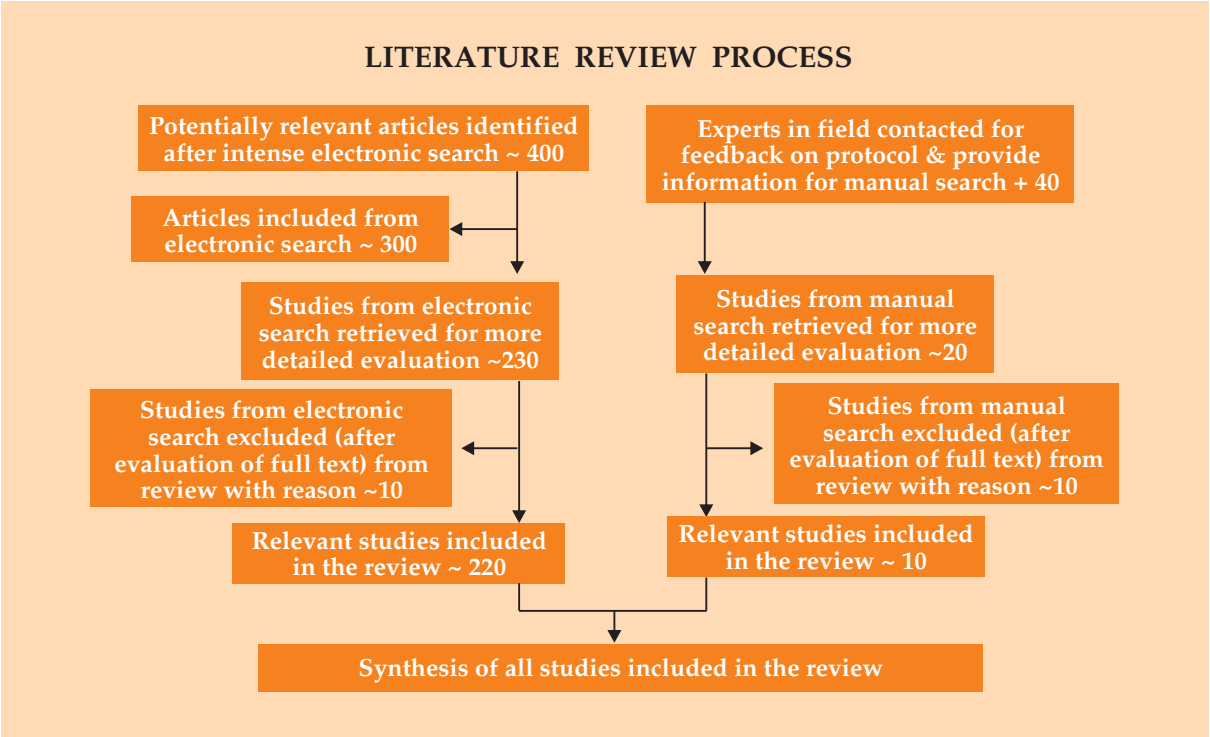
All the studies identified through the search process were indexed for de-duplication and screening. Two review authors independently examined the titles, abstracts and keywords of electronic records according to the eligibility criteria. The results of this initial screening were cross-referenced between the two review authors, and full-text records obtained for all potentially relevant reports. Any disagreements between the two reviewers were resolved by discussion with the review supervisor. Altogether, 300+ sources, over 385 documents and 40+ experts were reached out, to collect the relevant information.

In addition to the above, secondary analysis of the existing data from the urban MNH programmes, processes and large-scale surveys in different parts of the country, was undertaken to substantiate the desk review findings.

The data collected was classified in a theme-based matrix, and further organised in an Evidence Table to tabulate the details of the key aspects that the articles covered .

The **Thematic Synthesis**[10] method was used to synthesise and analyse the findings. This enabled the review team to synthesise findings from multiple qualitative studies by identifying the recurring themes or issues in the primary literature, analysing these themes, and drawing conclusions in the review. The purpose of this method was to develop analytical themes through a descriptive synthesis and find explanations relevant to a particular review question. This method was developed to address specific review questions about the need, appropriateness and acceptability of interventions, as well as the effectiveness of the same. The entire process of the literature review is depicted below:–

[10] 'A guide to synthesising qualitative research for researchers undertaking health technology assessments and systematic reviews', Ring N., Ritchie K., Mandava L., Jepson R., NHS Quality Improvement, Scotland (2011).



Challenges and Limitations

Initially, the research was planned as a systematic literature research for relevant information, following standard methods of search and literature review. Hence, the inception report and research protocol that were developed, were in keeping with this methodology (Please see Annexures 1 and 2).

However, the research surmised that there was a significant shortage of specific information related to maternal and newborn health services in urban India especially for the urban poor population. This was further complicated by the absence of credible information available on the identified supply side parameters of the health system. More work seemed to have been done on the implementation and research on the demand side and the community accessibility perspective, primarily on the barriers (most commonly, social determinants) while accessing MNH care in the urban areas. Inadequacy also prevails in the innovations and best practices attempted in the areas identified for this exercise.

Moving toward specific health system parameters, information was available for some of these; such as community interventions, human resources and service delivery, where interventions and innovations have also been attempted. However, some of the other parameters; such as supply chain management, logistics, partnerships and inter-sectoral convergence were conspicuously absent with evidence. Moreover, the majority of the available literature was targeted at small population sizes, thereby reducing its application for scalability. Another key limitation was that, where there were interventions or innovations, many were either not documented or were documented inadequately, leaving a large information gap.

Most of the documents that could be accessed were reports, opinion documents and articles, and commentaries. Published studies with a large sample size and statistically significant results covering various sub-sections of the supply side were largely not available. The studies were found to be numerically and statistically insufficient in many sections. While there were some quantitative studies and qualitatively rich research reports, they were mostly for one or two themes, rather than for all the aspects. The researchers also had to face inaccessibility of critical and specific UMNH data, especially with regard to city public health systems & HMIS. An intense snowballing efforts did pave access to a few useful documents; however, they were not yet in the public domain and could not be referenced, as they couldn't be off-the-record insights. Most of the articles covered overlapping themes and therefore

impeded segregation. At the same time, these articles did not provide very useful information on possible solutions on those overlapping and multiple themes.

Who has conducted the review?

THOT Consultants, a New Delhi-based social and healthcare communications and advocacy consultancy, was commissioned by the Saving Newborn Lives programme of Save the Children to synthesise quality evidence to identify opportunities and gaps in-the health system; factors affecting programming and service delivery; and potential strategies to address the specific MNH care needs of the urban poor in India.

III. Findings

A. Service Delivery Mechanisms, Logistics and Supply-Chain Management

This section focuses on service delivery mechanisms for MNH, specifically the currently available health services and existing service delivery platforms in the urban areas. The literature reviewed in response to this research question was divided into three sub-sections: **service delivery platforms, infrastructure, and logistics and supply-chain management**. Though these appeared as three separate areas of enquiry at the very beginning of the study, insufficient or limited literature and inter-linkages between the three resulted in a combined section focusing on all three functional areas.

Service Delivery Mechanism: The Basic Mandate

First and foremost, it is important to understand the definition of service delivery mechanism in general. According to the WHO framework, service delivery is one of the 6 core components or 'building blocks' that define health systems. All women need access to good quality maternal health services during pregnancy, delivery and in the post-partum period to ensure their health and that of their infants, irrespective of the status of their pregnancy. Hence, access to and utilisation of quality health services is an important proximate determinant of maternal mortality[11][12][13]. This includes the delivery of interventions to reduce neo-natal, infant, child and maternal mortality, and the burden of various preventable communicable diseases. Service provision or delivery is an immediate output of the inputs into the health system, such as the health workforce, procurement, and supplies and finances. Increased inputs should lead to improved service delivery and enhanced access to services. Ensuring availability and access to health services is one of the main functions of a health system. Such services should meet a minimum quality standard. Different terms such as access, utilisation, availability and coverage are often used interchangeably to reflect whether people are receiving the services they need[14].

Some **key characteristics of a good service delivery**, which are accepted as necessary in any well-functioning health system, are:

1. **Comprehensiveness:** A comprehensive range of health services is provided, appropriate to the needs of the target population, including preventive, curative, palliative and rehabilitative services and health promotion activities.

2. **Accessibility:** Services are directly and permanently accessible with no undue barriers of cost, language, culture or geography. Health services are close to the people, with a routine point of entry to the service network at primary care level (not at the specialist or in hospital level). Services may be provided in the home, the community, the workplace, or health facilities, as appropriate. Access is a broad term with different dimensions.

3. **Coverage:** Service delivery is designed so that all people in a defined target population are covered, i.e. the sick and the healthy, all income groups and all social groups.

4. **Continuity:** Service delivery is organised to provide an individual with continuity of care across the network of services, health conditions, levels of care, and over the life-cycle.

5. **Quality:** Health services are of high quality, i.e. they are effective, safe, centered on the patient's needs and are given in a timely fashion.

6. **Person-centered/ Responsive:** Services are organised around the person, not the disease or the

[11] Bhatia, J.C. (1993). Levels & Causes of Maternal Mortality in South India. Studies in Family Planning, 24(5), 310-318.
[12] McCarthy,J., and Maine,D. (1992).A Framework for Analyzing the Determinants of Maternal Mortality:Studies in FamilyPlanning, 23(1), 23-33.
[13] Fauveau,V., Koenig M., Chakraborty, T., and Choudhary, A. (1988). Causes of Maternal Mortality in Rural Bangladesh; 1978, 1985. Bulletin of WHO, 66(5) 643-651.
[14] Tanahashi, T. (1978). Health Services Coverage and its Evaluation. Bulletin of the World Health Organization, 56:295–303.

financing. Users perceive that health services are responsive and are acceptable to them. There is participation from the target population in the design and assessment of service delivery. People are partners in their own health care.

7. **Coordination:** Local area health service networks are actively coordinated, across types of provider, types of care, levels of service delivery, and for both routine and emergency preparedness.

8. **Accountability and Efficiency:** Health services are well managed so as to achieve the core elements described above, with a minimum wastage of resources. Managers are allocated the necessary authority to achieve planned objectives and held accountable for overall performance and results.

9. **Availability** refers to the physical access or reachability of services that meet a minimum standard. The latter often requires specification in terms of the elements of service delivery, such as basic equipment, drugs and commodities, health workforce (presence and training), and guidelines for treatment.

10. **Affordability** refers to the ability of the client to pay for the services.

11. **Acceptability** of the service predominantly has a socio-psychological dimension and is a pre-condition for quality.

Health Service Delivery in Urban Areas

The process of developing a healthcare delivery system in urban areas has not as yet received the desired attention. Unlike the rural health services, there have been no efforts to provide well-planned and an organised primary, secondary and tertiary care services in geographically delineated urban areas. As a result, in many areas primary health facilities are not available; the limited but the existing primary care services remain underutilised while there is over-crowding in most of the secondary and tertiary centres[15].

The Constitution of India mandates that primary healthcare in urban areas is the responsibility of the Urban Local Bodies (ULBs). As of now, the country has four types of urban health posts, A, B, C and D. The Urban Family Welfare Centres are also of three types, I, II and III. They differ mainly in staffing patterns and, accordingly, in the services provided. They are supposed to mainly provide integrated Reproductive and Child Health (RCH) care. According to the Report and Recommendations of the Technical Resource Group, National Urban Health Mission *(TRG, NUHM), Ministry of Health and Family Welfare, 2014)*[16], it identifies three broad institutional patterns from the perspective of which government takes primary responsibility for organising healthcare in the city[17].

In the first pattern, healthcare facilities are entirely provided by the state departments of health, with no involvement of the Urban Local Body (ULB). There is usually a Municipal Health Officer who is in-charge of a number of non-medical services relating to public health, but even this post is often vacant or lacks the necessary support staff and importance. This is the pattern in all urban areas of states such as Himachal Pradesh and Bihar, and in small towns (typically less than 2 lakh population) in almost all the states.

In the second pattern, a minority of care provision is by healthcare facilities under the ULB and this role is receding. Typically, it is usually a maternity hospital and a few UHPs/ dispensaries and sometimes a cadre of health volunteers who are under the ULB. For the main part, it is the district hospital or medical college hospital that provides the healthcare services and there may be some UHCs under the state government as well. Bhubaneswar is a typical example of this.

In the third pattern, most of the healthcare facilities are under the ULB, which looks after the medical and non-medical public health functions in an integrated manner. The state government may have a few

[15] Planning Commission, Government of India ; Tenth Plan Document (2002-2007, Volume II)
[16] NUHM (2014). Report and Recommendation of Technical Resource Group for the National Urban Health Mission. New Delhi: Ministry of Health and Family Welfare, Government of India.
[17] 73rd and 74th Constitutional Amendment Acts (12th Five Year Plan, 2012).

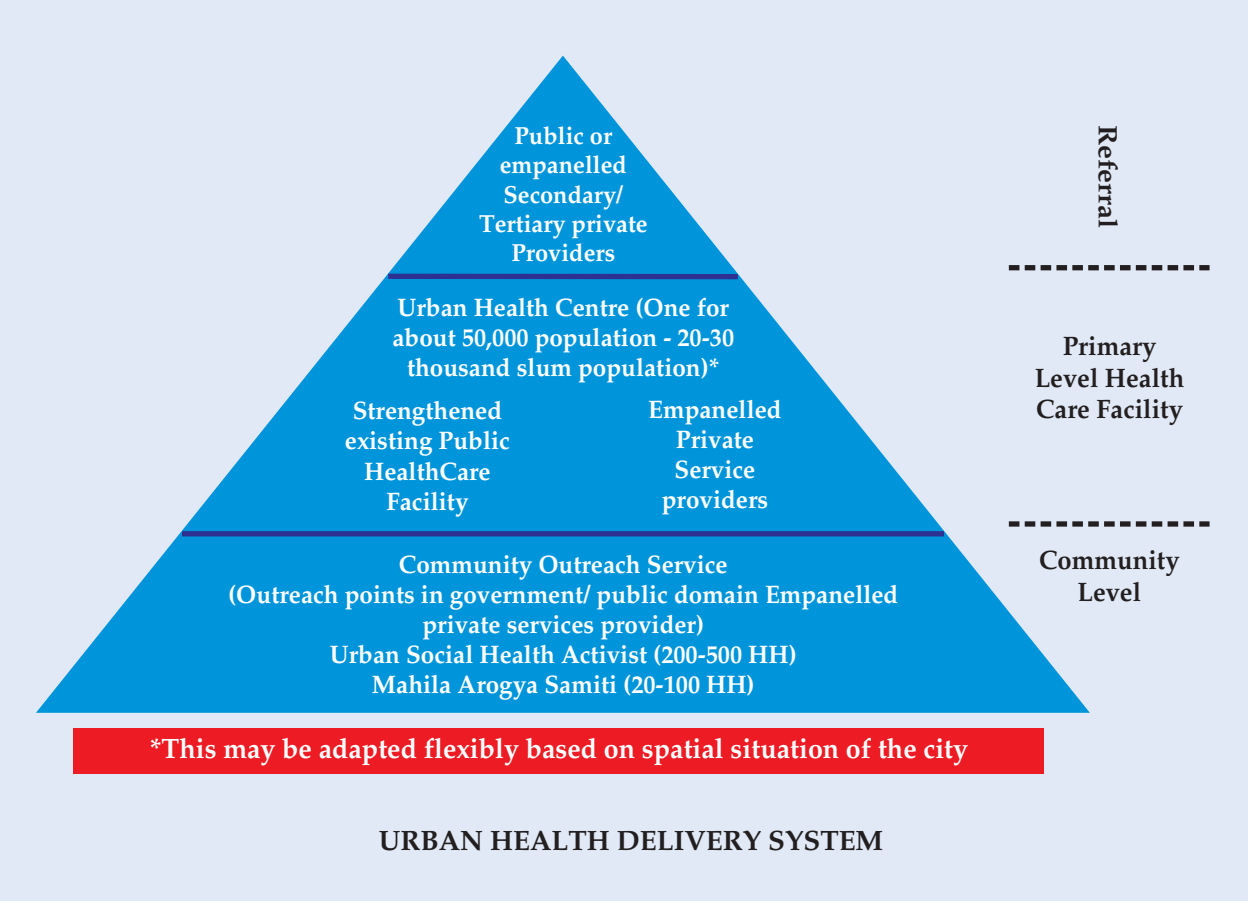
facilities, usually medical college hospitals; but the rest of the functions are delivered effectively by the ULB. This is the pattern in all the major metros: Mumbai, Kolkata, Chennai, Bengaluru, Ahmedabad and Delhi, though in the last the state government too administers several facilities. Among the non-metros, Pimpri-Chinchwad Municipal Corporation, Visakhapatnam, Burdwan and Madurai show this pattern.

Primary care is being accessed at all the five levels: medical college hospitals, secondary care hospitals (two levels), primary care facilities and outreach services. In terms of the frequency of use, an inverse pyramid phenomenon works. The major proportion of curative primary care provision may be occurring at the medical colleges and the district hospitals, with the urban health centres and maternity homes catering to a much smaller proportion and almost no care being delivered at the outreach or community level for a major part of the population. This does not happen to such an extent in a rural setting, because of the distances. However, in urban areas, geographical distance is not a major barrier, and since services are more assured at a higher level, the poor prefer to go there.

Health Service Delivery System as provided in the NUHM Implementation Framework

The National Urban Health Mission aims to address the health concerns of the urban poor through facilitating equitable access to available health facilities by rationalising and strengthening of the existing capacity of health delivery for improving the health status of the urban poor. This is to be done in a manner to ensure that well-identified facilities are set up for each segment of the target population, which can be accessed conveniently.

The NUHM proposes a broad framework rationalising the available manpower and resources, improving access through a communitised risk-pooling mechanism and enhancing participation of the community in the planning and management of the health care service delivery by ensuring a community link volunteer (Accredited Social Health Activist-ASHA/Link Workers from other programmes such as the JNNURM, ICDS, etc.) and establishment of Mahila Arogya Samiti (MAS) and



URBAN HEALTH DELIVERY SYSTEM

Rogi Kalyan Samiti (RKS)[18], ensuring effective participation of urban local bodies and their capacitybuilding, along with key stakeholders, and by making special provision for inclusion of the most vulnerable amongst the poor, development of an e-enabled monitoring system. The quality of the services provided will be constantly monitored for improvement (IPHS/ Revised IPHS for Urban areas).

The framework states that all the services delivered under the urban health delivery system through the Urban-PHCs and Urban-CHCs will be universal in nature, whereas the outreach services will be targeted to the target groups (slum dwellers and other vulnerable groups). Unlike rural areas, sub-centres will not be set up in the urban areas, as distances and modes of transportation are much better. Outreach services will be provided through the Female Health Workers (FHWs), essentially ANMs with an induction training of three to six months, who will be headquartered at the Urban-PHCs. These ANMs will report at the U-PHC and then move to their respective areas for outreach services (including school health) on designated days. They will be provided with mobility support for providing outreach services. On other days, they will conduct Immunisation and ANC clinics at the U-PHC itself. Apart from these, quality antenatal care, including prevention and treatment of anaemia, institutional/safe delivery services, essential obstetric care, post-natal and neo-natal care is to be provided.

To further strengthen the delivery of services, the framework provides for cities to also periodically engage the services of specialist doctors to provide services at the U-PHC based on needs, on a reimbursement basis. The U-PHC can also serve as a collection centre for diagnostic tests in partnership with empanelled private diagnostic centres. Under the NUHM, a uniform healthcare service delivery mechanism with IPHS norms will be developed and the states would be encouraged to adopt these norms for the U-PHCs. Existing hospitals, including ULB maternity homes, state government hospitals and medical colleges, apart from private hospitals, will be empanelled/ accredited to act as referral points for different types of healthcare services; such as reproductive, maternal, newborn and child health.

Despite the supposed proximity of the urban poor to urban health facilities, their access to them is severely restricted. The lack of standards and norms for the urban health delivery system, when contrasted with the rural network, makes the urban poor more vulnerable and worse off than their rural counterpart. Many components of the NRHM cover urban areas as well. These include funding support for the Urban Health &Family Welfare Centres and Urban Health Posts, funding of National Health Programmes such as TB, immunisation, malaria, etc., urban health component of the Reproductive and Child Health Programmes (including support for the Janani Suraksha Yojana in urban areas), strengthening of health infrastructure such as District and Block level Hospitals, Maternity Centres under the NRHM etc. The only limitation has been the fact that norms for urban area primary health infrastructure were not part of the NRHM proposal, setting a limit to the support for basic health infrastructure in urban areas. Municipal Corporations, Municipalities, Notified Area Committees and Nagar (Town) Panchayats with their own distinctive normative were not units of planning under the NRHM.

Currently available Service Delivery Platforms

One primary healthcare facility in an urban area caters to a much higher population as compared to the government norm of one centre for every 50,000 of the population. From the providers' perspective, service delivery in slums is an enormous challenge, given the large and sometimes mobile nature of the slum population. This leaves them with little scope for persuasion for appropriate behaviour with target families. In cities, particularly in the large ones, there is an over-emphasis on super-speciality care centres within the private sector, which are clearly out of the reach of the urban poor.

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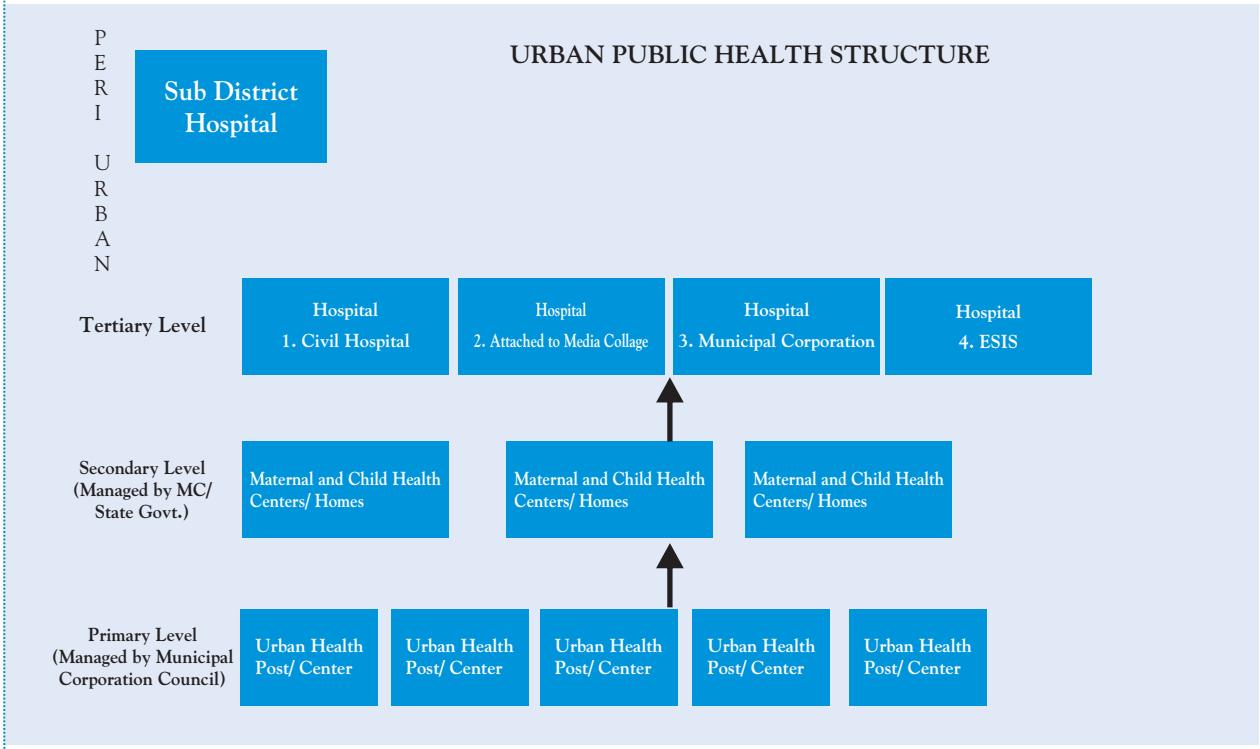
[18]Rogi Kalyan Samiti (Patient Welfare Committee) / Hospital Management Committee is a simple yet effective management structure. This committee, which would be a registered society, acts as a group of trustees for the hospitals to manage the affairs of the hospital. It consists of members from local Panchayati Raj Institutions (PRIs), NGOs, local elected representatives and officials from the Government sector who are responsible for the proper functioning and management of the Hospital / Community Health Centre / FRUs. RKS / HMS is free to prescribe, generate and use the funds with it as per its best judgement for smooth functioning and maintaining the quality of services.

[19] NUHM framework: Table 17:1, Indicative Service Norms by Levels of Service Delivery. No. L 1907/1/2008-UH, Government of India. Ministry of Health & Family Welfare, Department of Health & Family Welfare.



The ULBs, in line with the mandate of the 74th Amendment, manage the primary healthcare services. However, in many cities, such as Delhi, the urban local body, (that is the Municipal Corporation of Delhi (MCD), the New Delhi Municipal Corporation (NDMC), the Delhi Cantonment Board and other para-statal agencies)and the state government jointly provide primary healthcare services.

Two models of service delivery are seen to be prevalent in urban areas. In states such as Uttar Pradesh, Bihar and Madhya Pradesh, healthcare programmes are being planned and managed by the state government. The involvement of the Urban Local Bodies is limited to the provisioning of public health initiatives, such as sanitation, conservancy provision of potable water and fogging for malaria. In other states such as Karnataka, West Bengal, Tamil Nadu and Gujarat, healthcare programmes are being primarily planned and managed by the Urban Local Bodies. In some of the bigger municipal bodies, such as Ahmedabad, Chennai, Surat, Delhi and Mumbai the medical or health officers are employed by the local body, whereas in smaller bodies, the health officers are mostly on deputation from the state health department. Andhra Pradesh has completely outsourced its service delivery to NGOs in the newly created 191 urban health posts across 73 towns. The experimentation, it appears, has been quite satisfactory, with reduced cost.

Seven metropolitan cities, viz. Mumbai, New Delhi, Chennai, Kolkata, Hyderabad, Bengaluru and Ahmedabad, will be treated differently. These cities are expected to manage the NUHM directly through their municipal corporations. Funds will be transferred to them through the state health society on the basis of their PIPs approved by the Government of India.

Efforts were made in the metropolitan cities of Chennai, Bengaluru, Kolkata, Hyderabad, Delhi and Mumbai for improving the healthcare delivery through the WorldBank-supported IPP. Under the programme, 479 urban health posts, 85 maternity homes and 244 sub-centres were created in Mumbai and Chennai as part of the IPP-V and in Delhi, Bengaluru, Hyderabad and Kolkata as part of the IPP-VIII. In several the IPP-VIII cities, partnerships with profit or not-for-profit providers has helped in expanding services. Kolkata had the distinction of implementing the programme through the establishment of an effective partnership with private medical officers and specialists on a part-time basis, fee-sharing basis in different health facilities, resulting in ensuring community participation and enhancing the scope of fund generation.

The Municipal Corporation of Greater Mumbai (MCGM) has a network of teaching hospitals, general

hospitals and maternity homes across Mumbai. In Kolkata, strong political ownership by elected representatives has played a positive role in the smooth implementation of the project and sustainability of the reforms introduced. Bengaluru and Kolkata have fully dedicated maternity homes in adequate numbers that facilitate better follow-up care. In Bengaluru, the management of health facilities has been handed over to the NGOs.

The following box reflects the different systems of urban healthcare present in India especially in the B-level cities or Tier II cities that are immediately next to the mega and metro, cities in the country. This gives an indication of the diversity of health delivery systems in urban India :

Other Tier II or B-level cities: Key Features, Initiatives and Innovations

Agra

In 2004, the UHRC was designated by the Government of India as the coordinating agency for developing a sample health proposal for Agra city. The proposal was to guide the District Health Department as well as the Municipal Corporation to expand health services to the large urban poor population in the city. Based on the assessment, two approaches were followed, that clearly focused on: the involvement of NGOs to recruit and train Community Link Volunteers (CLVs), formulation of Mahila Arogya Samiti (MAS), and NGOs operating the Urban Health Centres, along with the facilitation of linkages between the community and the service providers

Coimbatore

There are nearly 750 hospitals in and around Coimbatore with a capacity of 5,000 beds. The first healthcare centre in the city was started in 1909. In 1969, it was upgraded to the Coimbatore Medical College Hospital (CMCH). It is a government hospital with a bed strength of 1,020 and provides free healthcare. Including the CMCH, the corporation maintains 16 dispensaries and two maternity homes. The city also has many large multi-facility private hospitals. It remains the preferred healthcare destination for people from nearby districts and also from the neighbouring state of Kerala.

Indore

In partnership with the Department of Public Health, the Municipal Corporation of Indore, the district administration, NGO partners and local communities, the Indore Urban Health City Demonstration Programme was initiated in March 2003. The programme operates with the objective of improving maternal as well as child health and nutrition among the slum dwellers. Two programme strategies, the demand-supply and linkage approach and multi-stakeholder ward coordination approach were developed in order to improve the health of slum-dwellers in a consultative manner.

Pune

ThePune Municipal Corporation has a robust health infrastructure comprising 34 OPD units,2 mobile healthcare units operated out of 11 urban health posts, 14 family welfare centres, one general hospital, two secondary hospitals, one special hospital for communicable diseases and one tertiary-care hospital.

Lucknow

Health services in the city are provided by the Department of Medical, Health and Family Welfare, the Lucknow Municipal Corporation, the private sector, Railways Hospital, ESI Hospital & dispensaries and Cantonment Hospitals. Primary healthcare is provided through Tier I centres which include Urban Family Welfare Centres (UFWCs), urban RCH health, school health dispensary, medical care unit and urban RCH nodal unit.

Navi Mumbai

Innovations in health infrastructure in 1992, led to the formation of a five-tier health system consisting of mobile clinics, 20 health posts, 4 maternity and child health hospitals (50-bedded), a general hospital and a super-speciality hospital. A total of 182 link workers were appointed by the NMMC under the RCH-II. Parallel to the RCH, Navi Mumbai rolled out the Sure Start Project and developed excellent mechanisms for maternal and newborn healthcare.

Surat

It has a four-tier system. The first tier comprises a link worker who provides home-based care and support. The second tier includes trained ANMs, trained doctors and visiting paediatricians at the UHCs. The third tier comprises maternity homes and the fourth tier consists of tertiary-care centres, the medical college hospital and civil hospital. Thus, most of the structure at the SMC is similar to the rural structure in Gujarat. The same administration and management pattern has been replicated in the urban areas.

The Report and Recommendations of the TRG, NUHM, Ministry of Health and Family Welfare, 2014, notes that there is an inverse pyramid phenomenon when it comes to the organisation of healthcare services. The major proportion of curative primary care provision is occurring at the medical college and the district hospitals, with the UHC and maternity homes catering to a much smaller proportion, and almost no care occurring at the outreach of community level for a major part of the population. In rural settings, to some extent, it is the distances that disallow, such a pattern. But in most urban areas, geographical distance is not such a major barrier and since services are more assured at the higher site, the poor often prefer to go there. Another big issue in the organisation of primary care services is that primary healthcare in the urban setting is not population-based.

Typically, the urban peripheral facility, be it a health post or health centre, treats all those who come for

services; there isn't a priority responsibility for the health of the population in a defined catchment area. This lack of definition of a catchment area and the connection between the health centre to a given population base has a direct adverse consequence for reaching the vulnerable. Another consequence is that all outreach services are limited and this implies that those with latent illness or inadequate health-seeking behaviours are altogether missed.

Another pattern is that primary health services in most cities are restricted mostly to RCH services and, even within these, to family planning, immunisation and a limited quality of ante-natal care. This is a major reason for reliance on tertiary hospitals or private care providers. The NHRC reports from 31 urban cities[20] in India reflected that, despite being the key facility for providing RCH services in slum areas, post- natal care and newborn care have not been provided by most of these centres, as the ANMs deputed here are not trained to do so. Also, the weak referral mechanisms and poor facilities prevent them from being effective in primary healthcare provisioning. The primary health institutions should be managed by the local governments and ULBs/ PRIs in order to achieve decentralisation and enhance local participation, as mandated in the 73rd and 74th Constitutional Amendment Acts *(XIIth Plan, 2012)*[21]. The IPP- VIII completion report also states that multiplicity of agencies providing health services posed management and implementation problems in all the project cities.

In many urban areas the institution functions under a Municipal Health Officer, who should be a public health officer having qualifications for the same. In most of the states the healthcare centres are being taken over by the state department. So, the Municipal Health Officer often lacks his managerial leadership, which undermines both convergence and effective response if any disease breaks out (NHSRC, 2013).

According to the National Family Health Surveys (NFHS-III, 2006), maternal and child health has remained an integral part of the family planning programme since the time of the 1st & 2nd Five Year Plans (1951-56 and 1956-61). As part of the Minimum Needs Programme initiated during the 5th FiveYear Plan (1974-79), maternal health, child health and nutrition services were integrated with family planning services. In 1992-93, the Child Survival and Safe Motherhood Programme continued the process of integration by bringing together several key child-survival interventions with safe motherhood and family planning activities. In 1996, safe motherhood and child health services were incorporated into the Reproductive and Child Health (RCH) Programme.

A brief review of the chapter on **'maternal health' in the NFHS-III report**[22] provides with details of the status of maternal health service and delivery platforms – ante-natal care services, assistance during child delivery and post-natal care services. The services and programmemes specific to urban maternal and neo-natal health cannot be found directly as it is integrated into the components of general health service system. According to the National Family Health Survey (NFHS-III) report on maternal healthcare services, there is a wide variation in the coverage and quality of antenatal care services, percentage of deliveries by trained professionals and the number of post-natal visits among the states and within the states, with considerable rural-urban differences.

Limitations and Challenges in Expanding the Range of Services

Undoubtedly, India has experienced considerable improvement in accelerating coverage in MNCH care since the Millennium Declaration, 2000. However, the persistent inequity in access to maternal and newborn healthcare across different economic groups masks the average improvement in the majority of states. An important hurdle in addressing this issue has been the identification of the marginalised, deprived people who deserve special attention[23]. Even the migratory nature of the population poses a problem in the delivery of services. Similar concerns have also been raised in the IPP-VIII completion report which states the lack of homogeneity among slum residents, coming from the neighbouring

[20] Ahmedabad, Ambala, Aligarh, Bengaluru, Bardhaman, Bhopal, Bhubaneswar, Chennai, Delhi, Dhamtari, Gangtok, Guwahati, Indore, Jorhat, Kochi, Kolkata, Madurai, Mumbai, Muzaffarpur, Patna, Pimpri – Chinchwad, Pune, Raipur, Satara, Shimla, Trissur, Tumkur, Valsad, Villupurum, Vishakhapatnam, Viziangaram.

[21] Health Mission(NRHM) for the tweflth Five Year Plan (2012-2-17). New Delhi: Planning Commission, Government of India.

[22] NFHS-3. (2007). National Family Health Survey (NFHS-3), Volume I, (2005-2006). Mumbai, India: Indian Institute of Population Sciences (IIPS) and Macro International.

states/countries to the large metropolitan cities, made planning and implementation of social mobilisation activities very challenging.

Limited Budgetary Allocation

Limited budgetary allocation from the central and state governments is a hurdle. The current government health expenditure in India amounts to less than 1 per cent of the GDP (these account for less than 20 per cent of the overall health spending). Further, this ratio is not only low internationally but is even lower compared to our own past experience. This low spending on health and the dominance of private sources of financing make India unique. This reflects the very low priority that governments have accorded to the health sector *(High Level Expert Group, 2011)*[24].

Limited Reach and Scope of Primary Healthcare

Currently, the secondary level of care is provided by the District hospitals and their equivalents, like combined and base hospitals, while tertiary care is provided by the Medical Colleges. However, these are not linked to primary care institutions such as health posts or dispensaries. Consequently, patients approach tertiary hospitals for primary care, which could have been provided elsewhere. The emphasis should be on primary prevention, primary healthcare and secondary prevention, in that order. This approach would be cost-effective and optimise resources at all levels *(WG NRHM,XII FYP, 2011)*[25].

Primary healthcare in urban areas, where the poorest sections can easily approach it has largely been neglected. Larger metropolises such as Mumbai and Delhi provide primary healthcare by means of dispensaries, health posts and maternity homes. In Mumbai, a Public Health nurse usually heads them. They provide basic ante-natal care and primary healthcare through Community Health Volunteers. Maternity homes, headed by an MBBS Medical Officer, are meant for conducting normal deliveries and have support staff for the purpose[26].

A study[27] aimed to find out different aspects and perspectives of a quality maternal care to bring about favourable changes to reach MDG-5, recommends that there is a strong need to improve both coverage & quality of maternal healthcare services with the special emphasis on early registration of pregnancy, percentage of deliveries attended to by skilled personnel, improvement in the consumption of IFA and the number of post-natal visits, in order to achieve the target sets in MDGs.

Unclear and Overlapping Roles and Responsibilities

At the primary healthcare level, Delhi has a network of 987 clinics and dispensaries through theDelhi Government, MCD, NDMC, Delhi Cantonment Board, Central agencies (CGHS, ESIC) and Railways. Under the IPP-VIII, several maternity homes, health centres and health posts have been opened and are being run by the MCD (PHRN, 2010)[28]. Multiple state agencies are providing services. There is an overlapping of services and a lack of coordination among these agencies. Private health providers are the key players in the overall provisioning of services.

The Urban Resource Centres (URCs) are one of the steps taken in response to the needs of the urban poor living in the slums. States such as Andhra Pradesh built 192 urban slum health centres with aid from the World Bank. After the end of the project, the State is running the centres with its own finances (USAID, 2006)[29]. Public-private partnership models are adopted in most of the urban cities to address the needs of the poor living in the slums. Involving NGOs focusing mainly on service delivery, community

[23] Singh, Prashant Kumar, Rai, Rajesh Kumar and Kumar Chandan (2013). Equity in maternal, newborn, and child healthcare coverage in India,Global Health Action, 6: 22217 - http://dx.doi.org/10.3402/gha.v6i0.22217.
[24] HLEG Report on UHC. (2011). High Level Expert Group Report on Universal Health Coverage for India. New Delhi: Planning Commission.
[25] WG Tertiary Care XIIth FYP(2011). Report of the Working Group on Tertiary Care Institutions for the 12th Five Year Plan. New Delhi: Planning Commission.
[26] National Health Policy, 2002.
[27] Kansal, S., Akhtar, M.A. and Kumar, Alok (2011)T Maternal Health Care Services in an Urban Setting of Northern India, International Journal of Current Research, Vol. 33, Issue, 6, Pp.284-286, June.
[28] PHRN. (2010). Public Health Resource Network: Issues in Public Health, Book 16. Delhi: Capital Printers.
[29] USAID, (2006). Review of Public-Private Partnerships Models, published by PAIMAN (Pakistan Initiative for Mothers and Newborns).

collaboration, behaviour change communication and needs assessment of the urban poor living in the slums is also one common response adopted by the Governments towards MNH services. However, lack of institutionalised linkages lead to lack of coordination and, therefore, of accountability.

Multiplicity of providers and lack of coordination among them has led to dysfunctional referral systems and a consequent overload on the tertiary care providers. Even in states where primary healthcare is managed by ULBs, and secondary and tertiary healthcare by the state, the referral chain is not functional *(NUHM, 2012)*[30].

Narrowing of Public Health

Das Gupta (2005) reviewed the state of public health in India and found several conditions and factors responsible for the poor state of public health in India. Some of these conditions reflect the limitations of public health in contemporary India and most of its states.

The private sector is the main provider of healthcare for a majority of the people living in urban areas *(NFHS-III, 2007)*[31]. Private doctors and private clinics are the most commonly accessed source of healthcare. Use of private hospitals increases with increasing wealth quintiles. However, the poor also utilise the private sector more than the public sector (NFHS-III, 2007). A study done in Mumbai from 2005-2007 showed that 16 percent of the women still preferred home delivery, citing reasons such as custom and tradition, rapid progress of labour and fear of hospital staff[32].

An article by Fernandez, A. and Osrin, D[33]., describes the critical first steps taken to revitalise the vast public health system of Mumbai city through the active participation of personnel from within the system. It focuses on one of two components of an ambitious action-research project aimed at improving the survival and health of newborn infants and mothers living in slum communities in Mumbai. The article mentions that while the public health infrastructure is impressive in Mumbai, there are weaknesses in its provision for mothers and infants, and that the special needs of newborn babies are not adequately recognised or addressed. Several inter-related factors are responsible for this weakness. Tertiary hospitals tend to be overburdened as sources of routine pre-natal and delivery care; maternity homes, specifically oriented to the management of routine deliveries, are underused; there is limited or no provision of pre-natal and post-natal care at health posts; inter-sectoral linkages are weak and patterns of referral between institutions have not yet been systematised; there is a lack of standardisation of clinical and administrative protocols, particularly in terms of coherence across a range of healthcare institutions; care provider efficiency and morale are low; and the coverage of home-based care and home-visit systems for the vulnerable, newborn period is generally poor.

Medicalization of all Financial Resources

Medicalisation has resulted into substantial proportions of the urban health budgets being used for expanding subsidised medical training, public sector employment for medical graduates and high-end tertiary medical services. All of which benefit the middle classes and detract from the provision of public and primary health services in urban slums that are important to address the healthcare needs of the urban poor.

Secondly, there are no major programmes focused on strengthening urban community processes. Another important issue faced (NHSRC reports), is weak institutional mechanisms of urban primary healthcare services with other government-run schemes responsible for health determinants related to sanitation, drinking water and environment, along with Integrated Child Development Services. There

[30] NUHM. (2012). National Urban Health Mission, Framework for Implementation. New Delhi: Ministry of Health and Family Welfare, Government of India.

[31] NFHS-3. (2007). National Family Health Survey (NFHS-3), Volume I, 2005-2006. Mumbai, India: Indian Institute of Population Sciences (IIPS) and Macro International.

[32] More, Neena Shah, Alcock Glyn , Das, Sushmita , Bapat, Ujwala , Joshi, Wasundhara, and, Osrin David (2010) 'Spoilt for Choice? Cross-sectional study of Care-seeking for Health Problems During Pregnancy in Mumbai Slums', Global Public Health, First published on: 27 October 2010 (iFirst) DOI:10.1080/17441692.2010.520725

[33] Fernandez A, Osrin D (2006). The City Initiative for Newborn Health. PLoS Med 3(9): e339.DOI: 10.1371/journal.pmed.0030339. Fernandez, A., and Osrin, D.

is also no coordination between the private caregivers and UHCs, which results in duplication of services in certain areas and complete lack of services in other areas.

Health-Seeking Behaviours of the Urban Poor

Studying systems alone may not give us the required answer. A study on health-seeking behaviour with regard to newborn care in urban slums and villages of Anand, Gujarat, revealed wide socio-economic gaps between slums and villages[34]. It revealed that the proximity of the slums to two multi-specialty hospitals and smaller private hospitals did not improve utilization of services. Urban slum dwellers are ignorant about their health needs and also lack a positive attitude for seeking healthcare. Acceptability of existing public health infrastructure in both the areas was poor in contrast to the studies undertaken earlier[35]. Neonatal follow-up, and care for infants that required medical advice, was largely provided by unqualified professionals as high as 72% in the slum areas.

Similarly, a multi-centric study[36] also found that education of immediate healthcare providers and mothers in basic newborn care is a must in urban slums, as similar provisions exist in villages under various government efforts. The study also describes a wide gap in newborn practices in slums of a smaller town as compared to the surrounding villages, which had better practices than slums. Urban slum dwellers were 6 times less likely to seek care. Not seeking ANC and illiteracy were also associated with more home deliveries. Though, a single district study did pose its limitations, similar gaps between rural and urban health settings undoubtedly exist not only in the rest of the state Gujarat but in most other states of India.

Lack of Responsive Healthcare

Responsiveness of the health system to the service-seekers is an important factor that directly impacts health outcome. This involves providing culturally appropriate services with adequate clinical quality. The latter is determined by the availability, efficiency and quality of human resources as well as by the adequacy and regularity in supply of essential commodities such as pharmaceuticals, blood, fluids, contraceptives, and consumables. To ensure these outcomes, the health systems need to provide adequate financing through revenue generation, risk- pooling, and efforts to enhance efficiency through competitive purchasing of services from the private sector *(World Bank, 2005)*[37]. It is an accepted fact that rapid urbanisation in India is characterised by the growing poor/non-poor divides in health and utilisation of the MCH services.

A study on the utilisation of maternal health services among pregnant women in the slums of Delhi[38] suggested that the awareness and accessibility of healthcare equipped with modern maternity facilities has a significant influence on the health-seeking behaviour of women. Since, it may not be possible to establish a health facility staffed with a doctor or a nurse in every slum area of each city, there is a need to increase awareness of the community about benefits of using modern maternity care at nearby health centres for better health outcomes.

Logistics and Supply-Chain Management

The available logistics and supply chain management mechanisms have not taken into account the real needs of the community. A number of studies undertaken across cities to understand the health-seeking behaviours and existing patterns of accessibility reflect that the Urban Health Centres (UHCs) continue to remain underutilised due to lack of medicines, inadequate or inefficient health functionaries, leading

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[34] Archana S Nimbalkar, Vivek V Shukla, Ajay G Phatak and Somashekhar M Nimbalkar, 2013. 'Newborn Care Practices and Health Seeking Behaviour in Urban Slums and Villages of Anand, Gujarat', Indian Paediatrics, Volume 50__April 16.

[35] Gupta, M., Thakur, J.S., Kumar R. Reproductive and Child Health Inequities in Chandigarh Union Territory of India. 2008. Journal of Urban Health, 85:291-9

[36] Srivastava, N.M., Awasthi, S., Mishra, R. (2008).Neo-natal Morbidity and Care-seeking Behaviour in Urban Lucknow. Indian Paediatrics, 45:229-32

[37] World Bank, (2005). Achieving the Millennium Development Goal of Improving Maternal Health: Determinants, Interventions and Challenges; Health, Nutrition and Population (HNP) Discussion Paper. Eds. Lule, Elizabeth,. Ramana,G.N.V., Oomman, Nandini, Epp,Joanne, Huntington, Dale And Rosen, James E., The International Bank for Reconstruction and Development / The World Bank.

[38] Agarwal, Paras. Singh,M.M. Garg, Suneela (2007). Maternal Health-Care Utilisation among Women in an Urban Slum in Delhi, Indian Journal of Community Medicine Vol. 32, No. 3, July.

to a strong preference for private services, especially in the case of MNH services *(NHSRC DATA BASE)*[39].

The situation worsens as one moves to semi-urban locations. A study conducted in Murshidabad town of West Bengal[40] reflects that deliveries are mostly attended to by unskilled personnel. Factors such as distance, connectivity and availability of infrastructural facilities play a predominant role in the underutilisation of maternal and newborn healthcare services[41]. Dealing with a large number of populations in most of the sub-centres increases the work pressure on the ANMs and affects the quality of work. Other infrastructural problems and logistical challenges such as the availability of life saving medicines and vaccines at the health centres compel them to go to private doctors. Nevertheless, the issues of affordability for seeking treatment and childbirth at the facility cost eventually results in women giving birth at home without any trained assistance[42].

In terms of logistics, major gaps were revealed in both the process of review of literature, as well as the issues pertaining to execution of the programme. The prime issue with the litertature available is that a very minor portion of the information deals specifically with the aspects of urban maternal newborn care and is eligible for dicussion on this topic. Some of the existing literature discusses the lack of trust from the communities, with respect to the system. From the literature reviewed, it is evident that the existing resources are underutilised, mainly due to under-staffed facilities and non-availability of services. Moreover, there is also a dearth of literature that focuses on protocols and guidelines with regard to the functioning of primary and secondary level healthcare systems and logistics, specfically for maternal and newborn health in urban spaces.

The insufficiency of logistics and supply chain management surfaces sharply from the data obtained through these studies[43]. Inadequate ratio of health functionaries versus the population it is catering to, lack of equipment and of trained personnel, are some of the shortfalls when one discusses Bhubaneswar city (NHSRC DATA BASE). Most of the ANMs and AWWs largely involved in the delivery of services, lack adequate training. The special programmes, such as JSSK and JSY, are not functioning well enough and provision of MNH services is restricted to immunisation and educating women for institutional delivery (NHSRC DATA BASE). The supply of medicines is inadequate to meet the demands of the people at the community level. To cover a population of nearly 30,000, medicines worth Rs. 6,000 are provided to each urban slum health centre every month. Apart from this, Rs. 5,000 is provided to buy the essential medicines to meet the need of OPD or outreach camps or emergencies; these funds are highly inadequate to meet the demand, both at the OPD and outreach camps[44].

Lack of information on processes adopted for supply chain management, training of staff at primary and secondary-level care, supply chain for drugs and equipment, availability of blood through blood banks and referral support for MNH care reflects a massive gap in secondary literature and calls for research on the availability and accessibility factors that concern pregnant mothers and newborns living in urban slums. The existing literature also hints at the existence of private bodies; however, it does not extensively map the same.

Convergence and Coordination: The Need of the Hour

Convergence in the health sector occurs broadly at two levels: one is at the policy level and the other at the functional level. The matter of convergence at the level of policy- making, planning, and framing of programmes and schemes is very important for designing better implementation strategies (GOI, 2014)[45]. At a functional level, convergence occurs at different levels via actions by various players, including health department officials and community health workers. Various actions are to be performed by

[39] NHSRC DATA BASE (2014): City Study Reports.

[40] Shodhganga (2013),"Maternal and Child Healthcare Service in West Bengal – a Comparative Study"

[41] Shodhganga (2013),"Maternal and Child Healthcare Service in West Bengal – a Comparative Study"

[42] Devasenapathy, N., et al (2014)"Why Women Choose to Give Birthat Home: a Situational Analysis from Urban Slums of Delhi",British Medical Journal,Downloaded from bmjopen.bmj.com on, September 27 2014 - Published by group.bmj.com

[43] NHSRC Database.

[44] Bhubaneswar city report, NHSRC Database.

[45] GOI(2014), Understanding Urban Health : An Analysis of Secondary Literature and Data

different departments in provisioning of health services by collective action (where the goal is set or defined) and different stakeholders engage in a coordinated, inter-departmental effort to achieve the broad goals (GOI, 2014)[46]

An urban health programme focusing on the needs of mothers and newborns needs to promote both inter-sectoral as well as intra-sectoral convergence (GOI, 2014)[47]. The required actions include convergence with Ministries; such as the Ministry of Urban Development, Housing and Poverty Alleviation, Ministry of Women and Child Development, Ministry of Human Resource Development and core departments such as the Ministry of Health and Family Welfare(GOI, 2014)[48]. The Health of the Urban Poor Project (HUP) by the Population Foundation of India (PFI), emphasises the creation of a common platform for the various relevant programmes and departments, to improve the provision of urban health services (GOI, 2014)[49].

There have been some efforts made at mission convergence across the metropolitan cities in the country (Bannerjee, Sharma, 2007)[50]. One of the functional examples can be found in Delhi. The Government of Delhi created 'Samajik Suvidha Sangam', registered as a society, setting an example for mission convergence in the National Capital (Bannerjee, Sharma, 2007)[51]. Similarly, "Mahila Milan" was successful in the design, building and management of toilet blocks in Pune. Further, the Pune Municipal Corporation set a good example through a participatory approach, as it provided an alternative housing solution in the densely populated urban slums, to address the socio-economic determinants of health (NHSRC Data base)[52]. Gujarat also designed a scheme based on public-private partnership (Chiranjeevi Yojana) that aims to increase institutional deliveries in partnership with private nursing homes(Acharya, MacNamee, 2009)[53]. However, the challenges still continue, with a majority of obstetricians and gynaecologists not registering for this scheme and also not many private nursing homes located in remote areas opting to be a partner[54].

The mission convergence in the urban slums emphasises tackling the unsanitary, unhealthy environment and the socio-economic conditions of the poor, as major challenges to attaining better health standards (Bannerjee, Sharma, 2007)[55]. In this regard, the mission recommends a framework for pro-active partnership with NGOs/civil society groups for strengthening the preventive and health promotion activities at the community level (Bannerjee, Sharma, 2007)[56].

Given the current urban provider landscape and consumer preferences, for any scheme such as the RMNCH+A to provide universal comprehensive public healthcare, it must be supplemented through contracting accredited private providers, organisations and NGOs (GOI, 2013)[57]. There are many programmes that have been successfully launched with inter-sectoral coordination, for example, the National Vector-Borne Disease Control Programme (NVBDCP), National AIDS Control Society (NACO), AYUSH, and now the NUHM, (GOI, 2013)[58]. The most critical aspect of all these programmes is to follow a holistic approach to achieve the target goals. The synergy between all these partner agencies and governments, both at the central and state levels, plays a pivotal role.

In Delhi, a few NGOs have successfully engaged the community to improve service delivery. In Andhra Pradesh, the government has used decentralised monitoring and implementation systems along with people's participation, to provide basic primary healthcare and family welfare services to the urban poor[59]. Across and within states, the arrangements for the governance of each of the services and the

[46] GOI (2014), Reaching Health Care to the Unreached : Making the Urban Health Mission Work for the Urban Poor
[47] Ibid GOI (2014), Understanding Urban Health: An Analysis of Secondary Literature and Data.
[48] GOI(2014), Reaching Health Care to the Unreached: Making the Urban Health Mission Work for the Urban Poor.
[49] GOI (2014) Reaching Health Care to the Unreached: Making the Urban Health Mission Work for the Urban Poor.
[50] Bannerjee M, Sharma D (2007) Exchange for the Maternal and Child healthCommunity Consolidated Reply.
[51] Ibid Bannerjee, M, Sharma D(2007).
[52] NHSRC data base (2014, Pune city report).
[53] Acharya A, Paul MacNamee (2009),"Assessing Gujarat's Chiranjeevi' Scheme" Economic and Political Weekly.
[54] Ibid Acharya A, Paul MacNamee (2009),"
[55] Ibid Bannerjee M, Sharma D(2007).
[56] Ibid Bannerjee M, Sharma D(2007).
[57] GOI (2013) January 2013, A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India. For healthy mother and child.
[58] GOI (2013), "NUHM, Implementation framework
[59] Ibid Bannerjee, M., and Sharma D(2007)

mechanisms provided for the urban slum population are very different, so the effectiveness of co-ordination between them also varies widely.

S. No.	Intervention/ Implementing Organisation	City/State	Inference
1	Urban Health Units, Kolkata Municipal Corporation	Kolkata	Key features of the programme are the Honorary Health Workers (HHW), the Sub-Centres and the Health Administrative Units (HAU). Although the programme has Reproductive and Child Health as its core, its only focus seems to be on assisting delivery for pregnant women and immunisation
2	Mukhyamantri Swasthya Yojana	Dhamtari	
3	Mahila Arogyam Samiti (MAS)	Pune	Tackle issues of maternal and newborn healthcare through spreading awareness and assisting the beneficiaries in availing of ANC and institutional delivery in healthcare centers
4	Chiranjeevi Scheme Municipal Corporation	Launched in 2006	The scheme based on public-private partnership (Chiranjeevi Yojana) that aims to increase institutional deliveries in partnership with private nursing homes

Key Findings:

- Unclear responsibility of providing health services, unlike that of rural areas.
- Resources are geared to provide curative care.
- The urban healthcare system is focused on secondary and tertiary care with little or no focus on primary care.
- Urban Health Posts/ Centres (UHPs/UHCs) mainly provide three types of services: Regular (including preventive, curative, IEC activities and training), seasonal (pre-monsoon and monsoon-related activities) and disaster relief (in specific areas in the country).
- Few larger Municipal Corporations with good revenue resources such as Surat, Navi Mumbai, Pune and Pimpri-Chinchwad, have demarcated special resources to provide urban health services.
- There is no definite system of referral; no linkages between domiciliary, health centre and hospital; and no defined protocols for admissions to primary, secondary and tertiary levels.
- The unorganised urban poor have no relationship with healthcare providers and, therefore, mostly access expensive private healthcare, often at the expense of nutrition and other basic necessities.

B. Governance

In their recent book, Drèze and Sen[60] call for a public welfare system that works better for the millions of people living in destitution. They question the pitiable investments in health and education made by the Indian government and pertinently ask- 'what difference does it make to lift millions above some notional poverty line, if they still lack the basics for a decent quality of life'. The NRHM is widely acknowledged as an outcome of the grassroots pressure generated by India's vibrant democracy, which is capable of influencing government policy in pro-poor directions[61]. Over the past few decades, popular movements, non-governmental organisations and other forms of grass roots mobilisation have emerged as local and supra-local forces that have buffered, accelerated, ameliorated and even challenged the state's shifting development agendas[62]. Rather than understanding policies as instructions flowing down from above, policy implementation should be understood as practices that must be situated in the broader domains of knowledge and power in which they are embedded[63].

At this juncture, it is important to study the objectives of the NRHM. The NRHM aimed at architectural correction of the rural health service system and laid great significance on reducing maternal and child mortality through a systematic approach of tracking pregnant women, care during pregnancy, institutional or assisted delivery, and educating communities in new born care[64]. The triad of ASHA, ANM and AWW are entrusted with the responsibility of acting as a catalyst for ensuring change in knowledge, attitude and practices of the community with relation to motherhood and newborn care[65]. The Primary Health Centres and sub-centres are bound to follow specific operational guidelines to manage assisted delivery as well as newborn care corners[66]. However, the challenges of urban health are much more complex, with an unequal access to healthcare facilities. The structure of the city is diverse in nature, with unequal living conditions and inequitable access to basic resources such as water, sanitation, and food[67]. As far as availability is concerned, an ample number of outlets (both government-run and private) exist in the city[68]. The expansion of private bodies in the city has transformed health into a commodity—making it inaccessible for a majority of the population, specifically for the urban poor.

Governance Mechanisms in Urban Health

The urban local bodies, state health departments and other social welfare departments are at the core of governance systems in the city[69]. Although as a policy, management of MNH care needs to be paid attention to, so as to reduce the proportion of maternal and newborn deaths[70], it is an irony that the Municipal Corporation, (the basic unit of local governance in cities) is presently playing a minimal role as far as providing of MNH care is concerned[71]. A perusal of the city visit reports by the NHSRC experts conducted across 31 cities, suggests that most of the Municipal Corporations have been restricting themselves to public health engineering[72].

One of the reports clearly says: "They mainly have the responsibility regarding water and sanitation. Only a single person, who is designated as a Health Officer in the Municipal Corporation, has the responsibility with regards to health. His responsibility is looking after the cleanliness of the drains, dealing with dog bite cases/rabies prevention. There is some fund allocation for insecticide sprayed mosquito nets and people are provided with the same." (NHSRC-Data base)[73].

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[60] Jean Drèze & Amartya Sen, An Uncertain Glory: India and its Contradictions, Princeton University Press, (2013)

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Sen, A. (1999). "Development as Freedom". Oxford: Oxford University Press.

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[67] GOI (2014), Reaching Healthcare to the Unreached: Making the Urban Health Mission Work for the Urban Poor.

[68] Baru (2000), "Privatisation and Corporatisation" http://www.indiaseminar.com/2000/489/489%20baru.htm

[69] Ibid, NHSRC (2014).

[70] Ibid GOI (2014).

[71] Ibid GOI (2014).

[72] NHSRC data base (city reports).

[73] NHSRC Data base (2014) City report.

There exists some evidence on certain activities related to health carried out by the Municipal Corporations across a few large towns and metropolitan cities such as Mumbai, Pune and Surat; however, health per se is run in a piece-meal approach, with MNH holding a small segment in the entire system[74]. The reports for cities such as Kolkata and Madurai show the presence of a system within their Municipal Corporations for the delivery of healthcare. There is an initiative from the Kolkata Municipal Corporation for running of primary healthcare and secondary healthcare services and Medical Education. It runs 144 Ward Health Units (WHUs) in the vicinity of urban poor settings. It has launched an Urban Health Programme in 2002 with key features of Honorary Health Workers (HHW), the Sub-Centres and the Health Administrative Units (HAU). Although the programme has Reproductive and Child Health as its core, its only focus seems to be on assisting delivery for pregnant women and immunisation. Moreover, the facilities available in terms of drugs and equipment are also very limited.

Some of the other urban local bodies studied by the NHSRC field teams, such as those in Madurai, Bhubaneshwar, Gangtok and Ambala are apparently also not very proactive when it comes to providing maternal and newborn healthcare[75]. There are a few facilities such as maternity homes and hospitals that are run by corporations. However, these lack any special focus on maternal and newborn health and the corporations seem much more focused on the prevention of communicable diseases, solid waste management and drainage systems[76]. Urban Health Centres with an ANM stationed for registration of pregnant mothers and immunisation do exist in very few cities. However, many of the community members interviewed reported that they do not prefer the services offered at these urban health centres. In the Dhamtatri district of Chhattisgarh, the maternal and newborn health system was somewhat strengthened with the recruitment of additional urban ANMs and larger involvement of Anganwadi workers for maternal, newborn and child health services under the Mukhyamantri Shahari Swasthya Yojana[77].

The governance mechanisms also lack adequate norms of standardisation as far as logistics and supply chain management are concerned[78]. At present, the urban MNH care programmes do not operate under one uniform umbrella[79]. Secondly, there are no major programmes that are focused on strengthening urban community processes. There is also no coordination between the private caregivers and UHCs, which results in the duplication of services in certain areas and a complete lack of services in other areas[80].

Governance also has a crucial role in bringing accountability and transparency in the health systems as well as in the effectiveness of programmes implemented on the ground. While it maybe difficult to correlate health governance directly with health outcomes, there are processes that can be measured for good governance (such as community participation in the decision-making process). In recent times, the role of governance in monitoring and evaluation has also gained recognition and acknowledgement[81].

The role of State Health Departments, Municipal Corporations (MCs), Town Councils and ULBs is immense; however, the existing literature does not delve deeper into the roles of these bodies in the provisioning of services related to MNH. As this process of review of literature has already revealed, there is a comparative abundance of information on other public health issues and very little on urban MNH in relation to governance (specifically with regard to the role of MCs). As large cities contain a lot of diversity in their social fabric, the provisioning of services is recommended to be consistent with the cultural ethos and felt needs of the community. The health authorities here have to not only play the role of a service provider but also create innovations to address diverse issues of the heterogeneous, marginalised and poor urban population.

The literature available also lacks a detailed analysis ofthe roles of various departments in providing services to the urban mothers and newborns,except for a few examples wherein PPP models are functioning in coordination with NGOs or other private providers/bodies.

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[74] NHSRC Data base (2014), City reports Mumbai, Surat , Pune.
[75] NHSRC Data base (2014) , Bhubaneshwar, Gangtok, Ambala.
[76] Ibid NHSRC (2014).
[77] NHSRC Database, Dhamtari.
[78] Ibid GOI (2014).
[79] Ibid GOI (2014).
[80] Ibid NHSRC Database (2014), city reports.
[81] SOIN (2014).

The governance issue is acute when it comes to implementation and execution. The local self-governance mechanism is not connected to the grassroots and there is immense distrust of the quality and efficiency of the services provided by them. Indeed, the structures of the corporations are mostly non-functional, with very few health services available.

Key Findings:

- Lack of clarity with regard to the specific tasks to be undertaken for maternal and newborn care at Municipal Corporation level.
- No coordination between the private caregivers and UHCs, resulting in the duplication of services in certain areas and a complete lack of services in other areas.
- Governance mechanisms also lack adequate norms of standardisation as far as logistics and supply chain management is concerned.
- Absence of programmes that are focused on strengthening urban community processes.
- Municipal Corporation facilities that exist, lack special focus on maternal and newborn health.

C. Human Resources

In the early 20th century, industrialised countries halved their maternal mortality by providing professional midwifery care at childbirth, and in the 1950s, improving access to hospitals further reduced maternal mortality. A similar picture has been generated by various studies in India, where increased access to skilled attendance at birth with the back-up of a well-functioning health system has resulted in a markedly decreased maternal mortality (Graham, W., Bell, JS., and Bullough, CHW., 2001)[82].Based on these experiences, long-term initiatives and efforts to provide skilled professional care at birth are believed to be the way forward when aiming at addressing maternal mortality. The consensus on the importance of skilled attendance at delivery is also reflected in the MDGs, where the proportion of births attended by skilled health personnel is considered to be a key indicator for the MDG-5 of improving maternal health and reducing maternal mortality.

Unfortunately, in India, with an uneven distribution of overall workforce, the scenario reflects asymmetry in the distribution of health professionals. India also faces difficulties in producing, recruiting and retaining health professionals. Insufficient number of medical schools, low salaries of the existing health workforce, poor working conditions, lack of supervision, low morale, low motivation and lack of infrastructure are the other prominent causes of losing them, for which they tend to migrate to wealthier countries (Lehmann, U., Dieleman, M., Martineau, T., 2008)[83]. To overcome the failure of providing birthing women with skilled attendance, the country had to invest in training Traditional Birth Attendants (TBAs) under the NRHM and in schemes like Janani Suraksha Yojana. (Berer, M., 2003)[84].

The shortage of emergency obstetric services over the last decade has attracted substantial attention. In response to this situation, the government and health organisations have been addressing the challenges related to human resources for health (HRH) planning and management, that deal with both coverage and equity aspects. There is an increasing body of evidence that documents bold initiatives and innovative actions that allow for improved efficiency in using existing human resources, including team approaches to the delivery of intervention, multi-tasking, task-shifting and sharing increased involvement of communities in responding to different health needs etc. However, most of these innovative approaches have been implemented as pilots or time-limited projects, with negligible evidence of success at scale.

As the review reveals, the Human Resource for Health (HRH) function faces a diverse set of issues and challenges from both the internal and external environment. Global competition, technological advancement, changing profile of employees, skill shortages, retention, downsizing and outsourcing are some of the most common HRH challenges. In order to effectively meet these challenges, HRH has to play different roles, as proposed by different scholars. The following section also focuses on the identified gaps, lessons learned, and recommendations that emerge from studies and implementation experiences of HRH interventions for better maternal and newborn health outcomes.

Staffing Mechanisms

A report on the Surat Municipal Corporation (SMC) reflects that the NUHM norms will take some time to come into universal practice. Currently, the SMC is following its own norms with regard to the UHCs and the number of link workers is as per the RCH recommendations. The UHCs were set up on the basis of rural PHC standards and cater to 100,000 population per UHC. The staffing plan is also as per the PHC pattern; hence the UHC staff is much more than what is recommended in the NUHM guidelines. A broader challenge faced by the SMC is with regard to the constantly expanding municipal limits and the

[82] Graham, W., Bell JS, Bullough CHW. 2001. Can skilled attendance at delivery reduce maternal mortality in developing countries? Safe motherhood strategies: A review of the evidence, 17:97–130.

[83] Lehmann, U., Dieleman, M., Martineau, T., (2008). Staffing remote rural areas in middle and low-income countries: A literature review of attraction and retention. BMC health services research. 8(1):19.

[84] Berer M (2003). Traditional birth attendants in developing countries cannot be expected to carry out HIV/AIDS prevention and treatment activities.Reproductive Health Matters. 11(22):36-39.

new villages consequently getting merged in the SMC. Also, no formal 'handing over' process of these new areas has been designed or institutionalised for transfer of authority from the rural to the urban functionaries. Apart from this, there exists an Urban Health Training Centre in Surat (the only one in the entire state of Gujarat), however, no clear guidelines or modules exist on training for MNH care[85].

A case study by Padmanaban et al. 2009[86] in Tamil Nadu, reviewed available literature and secondary data that were drawn from various national surveys and service statistics compiled by the State Government. The study reflects that the state has become one of the top performers in the country in terms of maternal health- with its MMR now at 90 (2007)- as compared to other states, while the overall efforts focused on improvement in: availability of human resources; drugs and supplies; management capacity; monitoring of health services and analysis of maternal deaths. Major challenges still remain in improving the quality of infrastructure and services in rural and peri-urban areas for maternal and newborn health.

According to the World Bank (2010)[87], human resources for maternal and newborn health are limited, with only 0.6 physicians per 1,000 population but nurses and midwives are slightly more common, at 1.27 per 1,000 population. A study conducted by the Urban Health Resource Center (UHRC) in collaboration with the Johns Hopkins Bloomberg School of Public Health, USA and Chhatrapati Shahuji Maharaj Medical University, Lucknow assessed the status of maternal, neonatal, child and reproductive health in the urban slums of Meerut city in Uttar Pradesh[88]. The study used both qualitative and quantitative methods. The household survey from October 2007 to March 2008, covered 15,025 women who had a live or stillbirth in the preceding three years. Referred to as "recently delivered women"(RDW), these were drawn from 44,888 households across 45 slums within the city[89]. The scope of the survey was very similar to the District Level Health Survey (DLHS)/ National Family Health Survey (NFHS), except that the study collected more detailed information on newborn care and was adapted to capture information specific to the urban slum context. The study found that capacity- building of the existing health and paramedical staff on essential newborn care practices, (including cord care, thermal protection, detection of danger signs and timely treatment of the newborn)needs to be a regular event. The staff should be trained at the facility and community level to follow recommended guidelines under the Integrated Management of Newborn and Childhood Illnesses (IMNCI)[90]. Since only 0.5% of the mothers in the study availed of newborn care from a public health facility, due to inhibitions related to the attitude of the staffs there is a need to sensitise the health service providers on communicating compassionately with the poor to help the latter overcome their reservations of availing of services at the public health facilities.

The study also showed that 40% of the home deliveries in the slums were conducted by untrained local *dais*. It also highlighted that majority of the newborns received post-natal check-up and treatment from unqualified practitioners. The study recommended that there is an urgent need to complement the efforts to encourage hospital deliveries with training and competence enhancement of slum level dais and local private practitioners to provide essential newborn care. It suggested that they should be skilled enough to identify the signs of common acute conditions & complications, provide timely initial treatment and appropriate referral.

Another facility level study found that the availability of an adequate number of doctors and nurses is critical for providing quality appropriate newborn care. Besides staff numbers, the skills and the

[85] Benazir Patil (2014). A brief report on urban newborn sub-group as a part of India Newborn Action Plan. Save the Children, India.

[86] Padmanaban P, Raman PS, Mavalankar DV (2009). Innovations and challenges in reducing maternal mortality in Tamil Nadu, India. Journal of Health, Population and Nutrition.2009; 27(2):202.

[87] World Bank. (2010). World Development Indicators. Washington DC.

[88] Meerut was selected for the study, in view of the presence of a large urban slum population (highest among cities in Uttar Pradesh). Situation analysis of the slums revealed the existence of unlisted slums, pockets of underserved slum population and underutilizsation of the existing health services.

[89] The indexed women were the ones who had a live birth during the last 36 months preceding the survey.

[90] Under the Reproductive and Child Health(RCH II) programme of the GOI, the Integrated Management of Newborn and Childhood Illnesses (IMNCI) package has been adapted from WHO/UNICEF's Integrated Management of Childhood Illnesses (IMCI). Since newborn care is an important issue for bringing down the infant mortality rate in India, this aspect has been included in the package adapted by India. This package includes interventions for the care of newborns and young infants (infants under 2 months) by keeping the child warm, initiation of breastfeeding immediately after birth and counselling for exclusive breast feeding and non-use of pre-lacteal feeds, cord, skin and eye care, recognition of illness in newborns and management and/or referral, immunisation and home visits in the post-natal period.

motivation level of caregiving personnel are prime prerequisites, since it has been estimated that the odds of mortality of newborns admitted in Special Newborn Care Units (SNCUs) increase significantly when one nurse cares for more than 1.7 newborns. Paediatric staff ratios are obviously inversely related to mortality rates. While nurses are critical at all levels of care, the availability of neonatologists is also very important, especially for those units providing higher levels of sophisticated care, (such as ventilation) and for the survival of low-birth-weight babies. In the authors' assessment, it was noted that three out of the eight units studied had less number of nurses than the recommended nurse: bed ratio of 1:1.2 and 3 had fewer doctors than the recommended doctor : bed ratio of 1:4. Nurses appeared to play a crucial role in improving newborn survival in these units – the mortality rate across the units dropped with improved nurse:bed ratios. Units with poor ratios had worse outcomes, as expected, and almost 15% of the variation in neonatal mortality rates across the units could be explained due to the factor of nurse:bed ratio. The number of doctors, though an important factor, did not appear to directly influence the NMR as compared to the number of trained nursing staff allocated.

Training and Skill-sets

A recent study by Sumit Malhotra et al, (2014), assessed all facilities for the availability of trained personnel in the labour room or operation theatre in the Nagaur and Chhattarpur districts of India. A competency assessment of healthcare providers in ENC was conducted with a total of 38 healthcare providers, 19 each from Nagaur and Chhattarpur districts. Among them, 14 were doctors (9 specialists and 5 general-duty medical officers), and 24 providers belonged to nursing staff categories (15 staff nurses, 9 ANMs). The individual domainand category-wise average scores revealed that, in most of the domains, knowledge and skill scores were found to be higher or similar in doctors when compared with nursing staff, except for skill domains relating to preparation at birth and breast feeding, where the nursing staff scored higher than doctors. The results in different domains were based on the grading of knowledge and skills into three categories. The majority of the providers scored only moderately satisfactory scores for most of the knowledge domains, except Kangaroo Mother Care (KMC) and breast-feeding, where it was largely satisfactory. The skill scores for all domains were predominantly non-satisfactory.

Role of Informal Providers

A useful study on the role of informal providers in healthcare delivery by the Centre for Health Market Innovations (CHMI) discussed the role of informal providers (IPs) that comprises a plethora of independent and largely unregulated healthcare practitioners. They are a vital source of care for many in the lower and middle - income countries, comprising over 50% of healthcare workers in India and close to 96% in rural Bangladesh, according to some estimates. They are utilised for a wide variety of health interventions and often represent the first point of care for patients, particularly for the urban poor. Although they are heavily utilised, IPs pose a number of significant challenges. They generally have little formally recognised training and usually operate outside the purview of the regulatory authority; hence, the quality of care is not well understood with respect to urban maternal newborn health. Despite these challenges, IPs represent a large component of the private health sector and routinely fill the human resource gaps in formal healthcare provision.

Innovations and Interventions

- **Task-shifting: Lowering the Bar from Paediatricians to Graduate Doctors**

In Gujarat, to combat the shortage of paediatricians for newborn care, the state government launched a short course on "Emergency Newborn Care for Medical Officers" (EmNC) for graduate medical officers. The duration of the course is 120 days, out of which 30 days are spent in an FRU or district hospital,

Sutapa Bandyopadhyay Neogi, Sumit Malhotra, Sanjay Zodpey and Pavitra Mohan (2011). Challenges in scaling-up of special- care newborn units- Lessons from India, Indian Paediatrics, Volume 48, December 17, pp 931-935

Sumit Malhotra, Sanjay P. Zodpey, Aishwarya L. Vidyasagaran, Kavya Sharma, Sunil S. Raj, Sutapa B. Neogi, Garima Pathak, Abhay Saraf (2014). Assessment of Essential Newborn Care Services In Secondary-Level Facilities From Two Districts of India, Journal of Health Population Nutrition, March 32(1): 130-141

managing newborn babies. The nomination is based on an undertaking sought by the state government that, after training, the medical officers will be posted in one of the pre-identified FRUs or CHCs. An online course has also been rolled out on FBNC and medical graduates working in SNCUs can undergo training through these courses.

- **From Nurses to Nursing Aides and Yashoda**

Nurses perform both specialised and unspecialised functions. In Purulia district in West Bengal, in order to partly overcome the severe shortage of trained nurses for SCNU, newborn nursing aides were engaged. Local young women with 10 to 12 years of school education were given hands-on training for six months, followed by a six-month internship at a SNCU. Yashoda, a facility-based ASHA, was introduced in NIPI districts in 2008, as an innovative pilot effort to improve the quality of newborn and related maternal care in those district hospital maternity wards which had a high delivery load. They performed simple housekeeping functions and took care of newborns, under the supervision of trained nurses. Assessment by external experts suggested that they had acquired reasonable levels of skills and their involvement freed up the time of the limited number of trained nurses for more specialised functions.

- **Slum-based Health Volunteers**

The Meerut study by the Urban Health Resource Centre (UHRC) also found that slum-based health volunteers are the crucial agents for influencing community health behaviours, for providing home-based health advice and for building linkages of the community to health facilities. Therefore, a key programme component should be appropriate training, with regular refreshers, as well as supportive supervision of these workers in newborn care. This would enable them to inform the community of correct care practices and also to detect newborns with high-risk of hypothermia and other complications, and refer them to timely and appropriate medical care. The study reflected that slum-based health volunteers not only created a demand for the services in the slums but were also instrumental in facilitating the provision of existing benefits such as the Janani Suraksha Yojana and encouraging the women to deliver at a facility. This helped in building linkages with affordable public/private facilities for appropriate treatment and timely referral. Similar approaches have been proposed in the NUHM framework.

Innovations in Human Resources

S. No.	Name of the Programme	Place Where Functional	Status of the Programme	Inferences
1.	Short course on "Emergency Newborn Care for Medical Officers" (EmNC) for graduate medical officers	Gujarat		The duration of the course is 120 days, out of which 30 days are spent in an FRU or district hospital, managing newborns. The nomination is based on an undertaking sought by the state government that, after training, the medical officers will be posted in one of the pre-identified FRUs or CHCs. An online course has also been rolled out on FBNC and medical graduates working in SNCUs can undergo training through these courses.
2.	Yashoda	Purulia District, West Bengal	2008	To partly overcome the severe shortage of trained nurses for SCNU, newborn nursing aides were engaged. Local young women with 10 to 12 years of school education were givenhands-on training for six months, followed by a six-month internship at an SNCU. They performed simple housekeeping functions and took care of newborns, under the supervision of trained nurses. Assessment by external experts suggested that they had acquired reasonable levels of skills and their involvement freed up the time of the limited number of trained nurses for more specialised functions.
3.	Slum-based Health Vounteers	Lucknow, U.P.		Crucial agents for influencing community health behaviours, for providing home-based health advice and for building linkages of the community to health facilities. Slum-based health volunteers can create a demand for the services in the slums.The volunteers were also instrumental in facilitating the provision of existing benefits such as theJanani Suraksha Yojana and encouraging the women to deliver at a facility. Similar approaches have been proposed in the Government of India's National Urban Health Mission (NUHM). Thus, these volunteers can be forced multipliers and be very instrumental in helping the screened pregnant mothers & newborns reach the right facilities at the right time.

Key Findings :

- No publications were found regarding the individual outcomes of components, such as the shortage of human resource, lack of staff motivation, appraisals, workplace safety and career development on urban maternal and newborn healthcare.
- Availability, retention and training of skilled birth attendants was a major issue. It was seen that in most places doctors and midwives were not available at the time they were most needed, i.e. at night.
- Professional qualification does not necessarily mean that the provider is actually skilled.
- Little information was available regarding the efficacy of the midwife training programme.
- No study was found on the financial component addressing the budget allocation for salaries and allowances, education &training and HRH expenditure data.
- Migration of skilled birth attendants is one of the main causes of workforce crisis.

D. Financial Mechanisms

With the advent of stronger private entities in the area of health service provision, the aspect of overall health financing in India needs to be looked at critically (GOI, 2008)[93]. Although the idea of "health for all" has been restated in many of the committee reports, since the days of the Bhore Committee, it is a relatively low priority in our national economic planning[94]. The expenditure incurred on health in the context of budgetary allocation is rather dismal in developing nations, with India standing much lower in rank (GOI, 2006)[95]. In the 12th Five Year Plan, the health allocation of budgets was increased by about 25% (the base was the total GDP) and states were encouraged to enhance the outlays for health in their annual plans as well (GOI, 2014)[96]. The analysis of recent programmes indicates that the concerns regarding financial management continue to prevail, as obstacles such as governance; transparency and accountability hinder appropriate utilisation of the funds allocated.

There is a lack of clarity on the proportion of funds specifically designated for maternal and newborn health in urban areas in the overall health budget of the city corporation. In recent times, for the country, however, there has been an increase of funds for a broad range of reproductive and child health-related aspects, from 5,288 crore in Phase- I (1997-1998 to 2003-04) to 40,000 crore in Phase- II (covering 2005-06 to 2009-2010)[97]. There is indeed an increase in the funding process with many donor organisations entering into the picture, yet ensuring quality maternal and newborn care services has remained a problem owing to confusion at the stage of implementation, inability to absorb more funds and health workers' discomfort with spending because of their lack of experience with identifying funding priorities and managing money[98]. Corruption has also remained at the core of non-utilisation of the money that has been reserved for health-related action (Singh et al, 2006)[99].

Moreover, many of the primary and secondary care services are considered to be free, the mixture of public-private creates a precarious situation as quality care is only seen to be promised by the private bodies[100]. The scenario, hence, is a cause of a big concern for the urban poor pregnant women and their newborns, since it usually saddles their breadwinners with the burden of high out-of-pocket expenditure (Singh et al, 2006)[101]. As far as the health of the mother and newborn are concerned, the financing of the same is again limited and almost restricted to the cash transfer policy for institutional delivery[102]. The utility of such a cash transfer policy run by various states has remained problematic as the sheer incentive mechanism to generate demands for institutional delivery, does not encompass a holistic approach to handle issues of inadequate health infrastructure, especially for essential emergency obstetric-newborn care; wrong cultural attitudes (that professional pre-natal, intra-natal, post-natal and neo-natal care are unnecessary); provider bias and discrimination against women belonging to marginalised groups and a chronic scarcity of domain specialists[103] .

Secondly, the financial allocation for maternal and newborn care is dependent on the state budgetary allocations through its different units. To begin with, the expenditure to be incurred on maternal and newborn healthcare has very little space in the health planning of the family. One of the major findings of a study conducted indicates that, although health-seeking amongst urban women is better than in rural India[104], the realistic expenditure is surely far higher when it comes to the urban poor[105].

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[93] GOI (2008): 11th Five Year Plan of India, Health and Family Welfare and Ayush" http://planningcommission.nic.in/plans/planrel/fiveyr/11th/11_v2/11th_vol2.pdf

[94] Mukherjee, S., Singh, A and Chandra R(2013): Maternity or Catastrophe: "A study of Household Expenditure on Maternal Healthcare in India Maternity care in India

[95] GOI, 2006, Government Health Expenditure in India: A Benchmark Study" Economic Research Foundation.

[96] GOI, 2014, " Report on Health Nutrition and Family Welfare "(http://planningcommission.gov.in/sectors/index.php?sectors).

[97] Mukherjee, S., Singh, A. and Chandra, R. (2013): Maternity or Catastrophe: "A Study of Household Expenditure on Maternal Healthcare in India Maternity care in India

[98] Singh S et al (2009) "Barriers to Safe Motherhood in India" www.guttmacher.org

[99] Ibid Singh, S. et al (2009).

[100] Ibid Singh, S. et al (2009).

[101] Ibid Singh, S. et al (2009).

[102] Ibid Singh, S. et al (2009).

[103] Ibid Singh, S. et al (2009).

[104] Jogdand, K.S., Yerpude, P., Jogdand, M. (2013): A Perception of Maternal Mortality among Women in an Urban Slum Area of South India. International Journal of Recent Trends in Science And Technology.

[105] Mukherjee, S. Singh, A. Chandra R(2013) : Maternity or Catastrophe: "A study of household expenditure on maternal healthcare in India

The possibility of impoverishment after obtaining maternal and newborn care is much higher amongst the educated section of women. This counterintuitive study indicates that women with middle-level education were 33% less likely to enter into poverty due to out-of-pocket (OOP) maternal healthcare expenditure in urban areas, whereas women with higher education were more likely (76% for rural and 87% for urban) to be impoverished by out-of- pocket expenditure (Mukherjee, Singh, Chandra,2013)[106]. The percentage of impoverishment due to out-of-pocket expenditure is also lower amongst the socially backward sections, by approximately 99% and 98%, for women belonging to the schedule castes (SCs) and schedule tribes (STs) respectively, as compared to women belonging to the 'others' caste category in urban areas[107]. Certain studies also indicate that, in the urban scenario, home birth comes across as an easier and viable option for the poorer sections of the society[108].

Furthermore, the role of the Municipal Corporations (MCs) and Urban Local Bodies (ULBs) in decentralised budgetary planning for MNH care is neither detailed nor fully enshrined in the current NUHM guidelines(NUHM, 2013)[109]. A perusal of the city-level data has details of food, sanitation and money dispersed to its dispensaries but lacksspecific details on MNH expenditure. Moreover, in recent times, many of the cities have concentrated primarily on the aspect of introducing schemes through public-private partnerships (PPP)[110]. Cities located in the state of Gujarat have been one of the important examples of those that have adopted many such schemes for ensuring affordable MNH care (Database, NHSRC)[111].

- **Janani Suraksha Yojana (JSY)**

Under this scheme, the main aim of the NHRM is to reduce maternal and neo-natal mortality rate by incentivising institutional delivery for the mothers falling in the category of below poverty line (BPL), SC and ST, about 8 to 12 weeks prior to the delivery. It is also available to those residing in peri-urban areas as per the NUHM TRG report,usually this area comprises migrants and marginalised populations.

- **Chiranjeevi Yojana (CY)**

Under this scheme, poor women are provided free delivery services by the hospitals of both government andprivate sectors and the obstetricians are paid a flat rate of Rs. 2,800/- (twenty eight hundred rupees) per normal delivery, payable upon conducting every batch of 100 deliveries.

- **Bal Sakha Yojana (BSY)**

Under this scheme, the costs of neonatal care are exempted for BPL mothers who give birth to live babies. All participating paediatricians are paid a flat rate of Rs. 1,300/- (thirteen hundred rupees) per live newborn and the obstetricians are also paid a lump sum of Rs. 30,000 (thirty thousand rupees) in case of a minimum 48 hours of hospital stay, for a batch of every 100 newborns treated.

- **Kasturba Poshan Sahay Yojana (KPSY)**

Under this scheme, Rs. 700/- (seven hundred rupees) are paid to pregnant women on three occasions, i.e. at the time of registration for ANC, for institutional delivery in government hospitals and for immunisation of newborns in government hospitals.

Public-Private Partnerships

Ahmedabad Municipal Corporation in Gujarat also started a public-private partnership in collaboration with the Red Cross Society, where a thalassemia test costs Rs.185/- (one hundred and eighty five rupees) at a subsidised rate, as the same costs up to Rs.500/- (five hundred rupees) at other private hospitals[112]. It is noteworthy that, though cash assistance has been counted as a great measure, criticisms of the

[106] Ibid Mukherjee, S. Singh, A.and Chandra, R. (2013)
[107] Ibid Mukherjee, S.,Singh, A. and Chandra, R. (2013)
[108] Ibid Jogdand, K. S., Yerpude, P.and Jogdand, M. (2013)
[109] NUHM(2014), Executive summary of Technical Resource Group, for National Urban Health Mission.
[110] NHSRC, City Study Report, Ahmedabad
[111] Ibid Database NHSRC.
[112]Ibid Database NHSRC.

Chiranjeevi experience in Gujarat show that it may have lacked foresight regarding issues such as transportation cost, distances to fair-quality institutions, etc. in its budget planning[113]. Another thesis study reiterates that a major drawback in every programme designed for healthcare, including MNH care, is that vast sums of money are being invested without sufficient attention being paid to the key management aspects such as the training of human resources and capacity-building of the government health departments to mentor their officials efficiently for counseling, check-ups, institutional delivery and operating available modern diagnostic tools(Shodhganga, 2013)[114]. Hence, this study suggests major concentration on such issues, both while designing programmes and allocating budgets to the respective programme (Shodhganga, 2013)[115].

Sambhav Voucher Scheme *(http://futuresgroup.com/files/publications)*[116] is another innovative way to harness the resources of the private sector, as well as increase access to quality healthcare services through public-private partnerships (PPP). This approach involves the Government paying private providers for maternal health services rendered to those below poverty line (BPL). It was created under the Innovations in Family Planning Services (IFPS) project, along with the Government of India (GOI) and the United States Agency for International Development (USAID). This is potentially useful in urban areas, where there is a strong presence of the private sector, giving the urban poor an opportunity to avail of quality maternal health services from private hospitals covered under the scheme, thereby improving their access to maternal-newborn healthcare services, assuming proper regulation (http://futuresgroup.com/files/publications)[117].

Key Findings :

- There is an absence of adequate information on financing patterns, the role of local bodies in budget planning and the process adopted for sustaining projects across cities.
- The budgetary allocation is also not segregated for maternal and newborn health, creating an ambiguous state of the evidence.
- Health financing in India needs revisiting, most importantly, taking in view both the demand and the supply side of the maternal newborn care service.
- As far as execution is concerned, there is an urgent need to ensure timely allocation and release of earmarked budgets. There are cash transfer programmes that exist in various states.

[113] Acharya, A. and McNamee, M. (2009) ,"Assessing Gujarat Chiranjeevi Scheme",Economic & Political Weekly.
[114] Shodhganga (2013), "Maternal and Child Healthcare Service in West Bengal – a Comparative Study, Conclusion.
[115] Ibid Shodhganga (2013).
[116] http://futuresgroup.com/files/publications
[117] Ibid http://futuresgroup.com/files/publications

S. No.	Programme/ Scheme	Place	Status	Inferences
1.	Janani Suraksha Yojana (JSY)	Ahmedabad	2005	Under this scheme, the main aim of the NHRM is to reduce maternal and neonatal mortality rate by incentivizing institutional delivery and Rs.500/- (five hundred rupees) areto be paid to those below poverty line (BPL), SC and ST women, about 8 to 12 weeks prior to the delivery. It is also available to those residing in peri-urban areas;usually this area comprises migrants and marginalised populations, as per the NUHM TRG report.
2.	Chiranjeevi Yojana (CY)	Ahmedabad	2006	Under this well-publicised and well-published scheme, the poor women are provided free delivery services by the hospitals of both government & private sectors, and the obstetricians are paid a flat rate of Rs.2,800/- (twenty eight hundredrupees) per normal delivery, payable onconducting every batch of 100 deliveries.
3.	Kasturba Poshan Sahay Yojana (KPSY)	Ahmedabad	2002-03	Under this scheme, Rs.700 (seven hundred rupees) arepaid to pregnant women on three occasions, i.e. at the time of registration for ANC, for institutional delivery in government hospitals and their newborns' immunisation in government hospitals.
4	Bal Sakha Yojana (BSY)	Ahmedabad	2008	Under this scheme, the costs of neonatal care are exempted for BPL mothers who give birth to live babies. All participating paediatricians are paid a flat rate of Rs.1,300/- (rupees thirteen hundred rupees) per live newborn and the obstetricians are also paid a lump sum of Rs.30,000/- (thirty thousand rupees) in case of a minimum 48 hours of hospital stay, for a batch of every 100 newborns treated.
5	Sambhav Voucher Scheme		2005	It is an innovative way to harness the resources of the private sector, as well as increase access to quality healthcare services through public-private partnerships (PPP). This approach involves the Government-paying private providers for maternal health services rendered to those below poverty line (BPL).

E. Health Infrastructure

Adequate infrastructure, including sufficient space, functional equipments, transport facilities and special care divisions such as ICUs, are some of the key requirements for providing health services. While discussing MNH, one needs to look into the aspects of space and the basic instruments used for ante-natal, intra-natal, post-natal and newborn care. Tables shared in the Annexure- 2 provide an overview of the status of infrastructure for MNH care in some cities across the country. These cities were assessed as a part of the NHSRC assessment done by the Technical Resource Group (TRG) team. The cities and towns were selected randomly with no specific criteria.

Present Situation

The situation pertaining to infrastructure across the states is very grave. As reflected from the city reports the majority of the health service facilities are managed out of rented apartments. Most of the urban health centres lack facilities of transport and specialised care for the mothers and newborns. Although in a few of the city reports, it has been clearly mentioned that the building provided for primary and secondary care services was inadequate, the information available on the status of the building is unclear. The reports of the metro cities reveal that the available diagnostics facilities are not sufficient and the special newborn care units, as well as emergency obstetric care, were found to be operating in just a few cities[118].

Transport Facilities

An important aspect that deters connecting pregnant women to health facilities is lack of transport. Although the facilities are well connected through public transport in many metro and bigger cities, transportation, along with communication, continues to remain a challenge in smaller towns.

[118]City Analysis Reports of the TRG, (2013).

Preference for Private Facilities

In many cities, the public health facilities are charging a user fee, resulting in disinterest of the urban poor in accessing public health systems and preferring treatment at private clinics. The fact remains that the public health system lacks trained personnel and the scenario is worse when it comes to handling diagnostic equipment. In a few of the city reports there are discussions on the availability of equipment; however, there is a dearth of human resource to manage the same.

Lack of Comprehensive Approach

As reflected from the reports, the healthcare system available in the country is neither sufficient nor comprehensive when it comes to mothers and newborn babies. The UHCs are not functional and the referral system in effective in just a few of the cities, such as in Sikkim. Although the situation and the design of healthcare varies from one city to another based on population size, the need for a planned and systematic effort toward provision of maternal and newborn care holds true to every urban space; especially when one looks at the number of urban slums, it surely raises a question on the adequacy of infrastructure.

Key Findings :

- The existing literature does not provide sufficient information on the aspects of bed: population ratio, status of buildings, drug and device-supply chains, inventories and also the list of equipment available in each of the cities where the field visits/studies have been conducted.
- Most of the services are housed in old and dilapidated buildings as well as in rental arrangements and lack the necessary infrastructure.

F. Health Management & Information System (HMIS)

The HMIS is essential for an analysis of the existing health scenario. However, both the infrastructure available for health provision in urban settings, (specifically for the poorer sections) and the HMIS, remain abysmal. The reporting of the same is unstructured and needs revamping. The review process for HMIS techniques related to maternal and newborn health care found lacunae in the information management system. The Municipal Corporations and other urban local bodies provide hardly any detailed reporting and analysis for the cities. The MoHFW, in its report, also identifies the loopholes in reporting systems that prevail across the various states at each level of service delivery.

Although Delhi, being the capital of the country, reports of a functional HMIS system, many of the Municipal Corporations in various states of the country seem to be facing issues such as lack of training or absence of management of data. The HMIS implies a system that helps in the management and maintenance of data and the storing of information, on the basis of which one can analyse performance of health units right from the level of sub-centre. As per the protocol given in the NRHM (now part of the NHM), the HMIS process needs to be facility-based (compulsory reporting at every unit of facility) and conducted in monthly, quarterly and annual mode (http://mohfw.nic.in/). However, the overarching problem in the management of HMIS process across the various states is rooted in the inability of the health functionaries to report data in the prescribed format on time. Most of the UHCs are managed without basic facilities such as functional computers (www.nhsrcindia.org). The Project Implementation Plan (PIP) available with the NUHM indicates that every city needs to have a budget and a plan in place for delivering of health services. However, the information on health informatics related to the overall arena of reproductive and child health remains confusing. As mentioned in one of the PIPs, the monetary allocation to the HMIS is 70 lakh rupees (Rs. 70,00,000/-) (http://nrhm.gov.in/nrhm). In the process of review, efforts have been made to have access to guidelines and detailed reporting through the HMIS for the NUHM (on the websites of the NIHFW & NHSRC) and the information on the same is either not accessible or absent with regard to RCH in the NUHM.

The Central Bureau of Health Intelligence deals with information on health; however, most of it pertains to communicable and non-communicable diseases. The engagement of the CBHI in maternal health could be seen in the training of health personnel on various indicators (maternal morbidity, maternal mortality, immunisation rate etc.) of RCH[119]. The MCD (Municipal Corporation of Delhi) website of Delhi, however, holds a mechanism of tracking children for immunisation and also assessment of the nutritional status of children. An online tracking system prevails that provides detailed information on the vaccination schedule and centres of vaccination (mcwis/detail.php). It also contains components of health education pertaining to care during pregnancy. There is, however, no information available on morbidity during pregnancy and childbirth.

In a chapter on health informatics (www.nhsrcindia.org), the NHSRC has identified the problems associated with information on human resources, health management, geographical information system and mobile-related services. It further details that the informatics currently used are not following any common mechanisms, lack of common terminology is hindering the creation of a uniform method of information management. Most of the informatics is now developed on the basis of silos, causing redundancy and ambiguity in the information shared (www.nhsrcindia.org).

To conclude, it can be stated that the aspect of health management in the urban context needs thorough revamping and a uniform mechanism that captures systematic information on the facilities available for overall RCH.

Key Findings :

- The HMIS process that should have indicated the morbidity and mortality issues pertaining to the UMNH is not visible.
- Secondly, as indicated in the reporting formats of MoHFW (a report of various districts within a state), the training required for the health personnel —at the level of PHCs, CHCs and even district hospitals—for maintaining and managing the HMIS is immense.

G. Community Interventions and Innovations

The Alma Ata declaration, 1978 brought the essence of community involvement in healthcare planning (Alma Ata, 1978)[120]. The major aspect that was put into its core was of self-reliance of communities in the planning phase of healthcare. The same spirit was also seen in the five-year planning process of India with the introduction of community health volunteers. The declaration of Alma Ata (1978)[121] strongly argued for the significance of social determinants of health and that the community, the best stakeholder, to ensure accountability of the health service system.

However, the essence of community self-reliance was lost in the efforts when the country got engaged in selective healthcare, and "Health For All" (Das, 2014)[122] has remained an "elusive goal". In the current format of healthcare provisioning, the services to urban mothers and newborns involve the community only in terms of mobilisation, with very little participation in the overall planning (Das, 2014)[123]. The urban healthcare systems for MNH care are advancing with an attitude of correcting healthcare systems in the cities, for the urban poor, and therefore, the learnings from the NRHM ought to be kept in mind (NUHM, 2014)[124].The framework for the NUHM has envisaged ensuring a protective ambit for the mother and newborn and the ideas of community participation surely have to find a place in the same, as it will pose a bigger challenge owing to the densely populated nature of the urban slums and also heterogeneity in their backgrounds and way of life (NUHM, 2014)[125]

[119] (http://cbhidghs.nic.in/)
[120] Alma Ata declaration (1978), http://www.who.int/, The International Conference on Primary Health Care, meeting in Alma-Ata this twelfth day of September in 1978, to promote and protect health for all.
[121] Ibid Alma Ata declaration (1978), http://www.who.int/
[122] Das , .(2014)," Community Participation in Health Care Management in India: Need and Potentials"; India Infrastructure Report 2014.
[123] Ibid Das, A. (2014).
[124] NUHM(2014), Executive Summary of Technical Resource Group, for National Urban Health Mission.
[125] Idid NUHM(2014).

Suggested Framework of the NUHM

The current framework of the NUHM entails the need fora community-based healthcare system, considering the fact that urban areas need a comprehensive system; a single ASHA, as in the rural areas, would not be able to tackle the aspects of organising healthcare(NUHM, 2014)[126]. The most common observation across all cities and states is that there is really no major programme in place that is focused on strengthening urban community processes. A further challenge is that in settlements of the urban poor, there are fewer organic communities than what one may find in villages (NUHM, 2014)[127]. Avillage is much divided by caste and gender inequalities, but is a stable social identity and also holds a stronger social capital(NUHM, 2014)[128]. In cities, however, there is a paucity of structured systems as far as social functioning is concerned and many of the residents living in an urban context are devoid of care owing to their migratory status and absence of a large, family support (NUHM, 2014)[129]. So is the case of women living in such a social fabric, they have access to very few support systems during and after pregnancy. Hence, the urban programme needs to keep this context in mind while designing guidelines for MNH care (NUHM, 2014)[130].

The range of services currently offered by urban ASHAs or other Community Health Workers, to the extent that they are in position, is largely limited to the promotion of immunisation, antenatal care and family planning (GOI, 2013)[131]. The studies conducted across cities point to the fact that the reach of the ASHA to the vulnerable population is limited, since she has neither been equipped by mandate nor been trained to focus on the felt health needs of these marginalised groups (GOI, 2013)[132]. The reach of the ASHA to the marginalized communities is critical, particularly in view of the fact that the NUHM lays substantial emphasis on reaching the invisibles; especially the destitute, the homeless and the marginalised (GOI, 2013)[133].

For bottom-up planning to occur, a community worker operating in isolation is insufficient (www.ifrc.org)[134]. She needs a group of people - a community collective - who can support the process of local planning, given their knowledge of and familiarity with their community and their environments, and their interest in positive outcomes (www.ifrc.org)[135]. The proposed Mahila Arogya Samiti (MAS) under the NUHM is composed of about 15-20 persons, drawn from a neighbourhood cluster (NUHM, 2014)[136]. The Kudumbashree model in Kerala has useful lessons on how to make this committee more representative by drawing one committee member from each cluster of 10 to 20 houses, (NUHM2014)[137]. Promotion of public-private partnerships is required for capacity building, training and building of skills of the health workers and agencies who work on management, monitoring and implementation of health programmes (NUHM, 2014)[138].

Community Interventions and Innovations

The NUHM can adopt and adapt from various community healthcare interventions that have been running across the country. These initiatives are localised and much adapted to the life style of the community they address. A series of experiments has already been conducted for training the existing community with adequate information and hands-on skills for the management of reproductive health issues. A table containing some of the promising community interventions and innovations is shared in Annexure- 2.

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[126] Ibid NUHM (2014).
[127] Ibid NUHM (2014).
[128] Ibid, NUHM (2014).
[129] Ibid NUHM (2014).
[130] Ibid 14 NUHM (2014).
[131] GOI (2013), Mission Work for the Urban Poor, Report of the Technical Resource Group, Urban Health Mission.
[132] Ibid GOI (2013).
[133] IbidGOI (2013).
[134] www.ifrc.org Maternal, Newborn and Child Health Framework, International Federation of Red Cross and Red Crescent Societies.
[135] Ibidwww.ifrc.org
[136] Ibid NUHM (2014).
[137] Ibid NUHM(2014).
[138] Ibid NUHM (2014).

A study conducted on Home-Based Newborn Care (HBNC) in the district of Gadchiroli, comprised of women health workers who undertook home visits on a regular basis, collected information on, and observed and examined mothers and newborns, checked the weight of the newborn every week and treated illnesses such as pneumonia. Other than that, the health workers were also trained in treating neo-natal illnesses through home-based sepsis management (Bang et al, 1999)[139]. This intervention was replicated in the urban areas of Maharashtra and, later, in five other states, under the aegis of Project Ankur (NIPCCD, 2008)[140]. The project focused primarily on building capacity of community-level mobilisers, training of trainers, creating a process to register pregnant women, providing care and also record cases of each newborn. It accorded high importance to attending to neonates right after birth, and in monitoring and recording deaths and still-births (NIPCCD, 2008)[141]. The programme also undertook a stringent process of evaluating its training component through reviewing deliverables set for the community mobiliser. This project could not be scaled up to the national level and ended after the pilot phase itself. (NIPCCD, 2008)[142]

The identified gap of absence in care-giving has been incorporated in many other schemes developed in recent times. A programme under the Norway-India Partnership Initiative (NIPI) named Yashoda was initiated in 2008 with the main objective to improve the quality of maternal and neonatal care in health facilities (http://www.oneindia.com)[143]. The programme was inspired by the concept of legendary Yashoda, the foster mother of Lord Krishna, and "the idea is to give the love and care to the newborns the way Yashoda did to Lord Krishna" (http://www.oneindia.com)[144]. This programme has been greatly effective in the selected districts of India (Varghese et al, 2014)[145].Under this programme, the Yashodas were placed in health facilities where deliveries take place on a regular basis, and their main work was to give care to these pregnant women in the form of counselling on immunisation, breast feeding, family planning, and danger signs during pregnancy and newborn care (Varghese et al, 2014)[146]. This programme helped in increasing the support, care and respect given to the expectant mothers and their families. It was found that there was a 50% increase in women who followed immediate breast feeding after undergoing Caesarean section in the intervention facilities (Varghese et al, 2014)[147]. It also resulted in four to five times increase in postnatal check-ups in the intervention facilities as compared to the control facilities.

'Mamta', an organisation that works on health aspects in Delhi and the National Capital Region (NCR), experimented with a group of community-based health educators(Mamta, 2003)[148]. It initiated a YFHS centre (called "Friends") in the community of Tigri and its function was to connect adolescents to referral clinics, providing them counselling facility, laboratory and dispensary by building linkages (Mamta, 2003)[149]. It also started a programme called 'The 10K Club - a club for the health and development of the poorest' which focuses on improving the quality of maternal and newborn health by eliminating poverty through proper mobilisation of the local community and other partners (NGOs). The Regional Resource Centre of Mamta has focused extensively on training, capacity-building and enhancing technical knowledge amongst various NGOs committees and panchayat members across Punjab, Haryana and Chandigarh (RRC Mamta, 2011)[150]. This has helped in enhancing the capacity and knowledge of the staff, leading to an increase in the number of women registering pregnancy and availing of health check- ups at regular intervals (RRC Mamta, 2011)[151]

The NGO, **Saath** (Annual Report, 2013)[152] located in Gujarat had developed similar programmes with the

[139]Ibid Bang, A. et al(1999)
[140]NIPCCD(2008), DCWC Research Bulletin, Vol. xii.
[141]Ibid NIPCCD(2008).
[142]Ibid NIPCCD(2008).
[143]http://www.oneindia.com
[144]Ibid http://www.oneindia.com
[145]Verghese, B.et al (2014) "Fostering maternal and newborn care in India the Yashoda way: does this improve maternal and newborn care practices during institutional delivery?"
http://www.ncbi.nlm.nih.gov/pubmed/24454718
[146]Ibid Verghese, B.et al (2014)
[147]Ibid Verghese, B.et al (2014)
[148]Annual Report (2003) Mamta Organisation
[149]Ibid Annual Report (2003) Mamta organisation
[150]RRC (2013), Biannual Report Mamta.
[151]Ibid RRC(2013).
[152]Saath (2013), Annual Report.

idea of empowering community level health workers and also establishing a system of constant monitoring and follow-up ofcases of pregnancy and child birth. The maternal and child survival programme titled **Jeevan Daan** began in the year 2004 in association with Ahmedabad Municipal Corporation and Saath International (Annual Report, 2013)[153]. It aimed to reduce infant mortality and morbidity by focusing its efforts on five key technical interventions that are major causes for infant mortality, namely: Pneumonia Case Management; Control of Diarrhoeal Diseases; Nutrition/Immediate Breastfeeding; Expanded Programme on immunisation and Maternal & Newborn Care.

Under the maternal health programme, **Saath** organised fortnightly camps that addressed the concerns of sexual and reproductive health aspects (Saath, Annual Report,2013)[154]. It was diligently accompanied by constant visits to the homes along with street meetings for reducing myths associated with pregnancy and newborn care. The behaviour and attitude of the women living in the targeted areas did see a shift. The number of women availing the services of ante-natal care (ANC), post-natal care (PNC) and also taking better care of nutritional requirements during pregnancy, increased significantly.Apart from the fact that most of the women in the community are devoid of good care during pregnancy, the absence of adequate referral systems stands as a hurdle in ensuring the survival of mothers and newborn babies.

SNEHA, an organisation working in the field of newborn health in Mumbai aimed at establishing an improved referral system for maternal and newborn care (http://www.snehamumbai.org/)[155].In the first year of the project, workshops were organised, bringing together health providers from different levels of service and action groups were formed which met on a monthly basis. These action groups created a database of existing facilities for maternal and neonatal services, using a self-assessment tool (http://www.snehamumbai.org/)[156]. They standardised technical and administrative protocols and ante-natal-neonatal services were also introduced at the health posts, which formed the primary centre at the slums. Besides the participatory approach, 'appreciative inquiry'— a behavioural methodology—was used to empower health providers in the public system and to bring about the change they envisioned in their respective facilities.

Sure Start, an urban maternal and newborn health project implemented by PATH in Maharashtra, revealed that the urban poor face problems due to poor accessibility, weak outreach and inadequate referral systems. Social exclusion, inadequate knowledge and absence of assistance at secondary and tertiary hospitals added to the existing challenges. The main objectives of Sure Start were to generate demand through enhanced individual, household and community mobilisation on the one hand and to strengthen institutional capabilities in order to improve maternal and newborn health in urban areas (www.path.org/publications) on the other hand.[157] **Sure Start** was implemented through partnerships in seven Municipal Corporations of Greater Mumbai, Navi Mumbai, Nagpur, Pune, Malegaon, Nanded and Solapur in Maharashtra(www.path.org/publications)[158]. The key strategies comprised: Need-based BCC; Mobilising community groups; Leveraging available resources; and developing collaborations with the local Municipal Corporations, professional bodies, community-based organisations and academic institutions.

To implement all these strategies in every city, a Common Minimum Programme (CMP) was designed; in addition to the CMP, each of the cities tested an approach or a model with an aim to create a safety net for MNH. PPP, convergence, community-based health insurance, emergency health funds, creation of quality-of-care norms, and empowering the self-help groups were some of the approaches that were tested in seven cities (www.path.org/publications)[159].

Quality-of-Care Model, Mumbai: The main objective of this model was to provide care to pregnant mothers and newborns by ensuring availability, accessibility, appropriateness and acceptability of public and private health services. It also aimed at establishing new antenatal, postnatal clinics and community centres.

[153]Saath(2013), Annual Report.
[154]Ibid Saath, Annual Report (2013).
[155]Ibid http://www.snehamumbai.org
[156]Ibid http://www.snehamumbai.org
[157]Ibid www.path.org/publications
[158]Ibid www.path.org/publications,
[159]Ibid www.path.org/publications

Public-Private Partnership (PPP) Model, Navi Mumbai: This model ensured provision of ANC/PNC and newborn health services through special clinics organised every week at the UHCs. Paediatricians and gynaecologists from the professional bodies such as the IAP and NMOGS attended these clinics under the special partnerships worked out for this project. Under this model, a total of 26,823 pregnant women were examined in 131 clinics and 2,728 cases were sent to special clinics.

The Convergence Model, Pune: The main aim of this model was to create awareness about HIV amongst pregnant women and create a link between Integrated Counselling and Testing Centres and establishing committees such as MOMS (Monitoring of Maternal and Newborn Status). This committee functions by providing health services to mothers who are affected by HIV, with the help of Municipal Corporation & public health facilities. The MOMS committees strictly monitored the families of pregnant women for ensuring ante-natal check-ups, post-natal care and newborn care. It has well incorporated mothers, mothers-in-law and link workers, AWWs to act as a pressure group on families that are not adopting safe health practices for the care of mother and newborns (http://www.surestartdata.com/)[160].

Emergency Health Funds (EHF) Model, Nagpur: The EHF is a financial mechanism which helps in providing health services to mothers and newborns at affordable rates. To attain these objectives, prepaid cards were developed after a thorough assessment of the needs of the community. Nearly 1,160 families have benefited under this EHF model so far and the funds helped in meeting the cost of delivery and treatment of newborns.

Quality of Care Model, Malegaon: Under this model, capacity building of Municipal Corporation staff and participation andmobilization of communities for high quality health services was targeted. Meetings on the quality of care norms in two health posts having an alliance with the Malegaon Municipal Corporation were organized on a regular basis but the major limitation was a lack of trained manpower for providing health services and sustaining this process.

The Volunteerism Model, Solapur: The main objective of this model was to mobilise the community of Solapur by using volunteers to enhance maternal and newborn health services. The model was a success and was accepted by the Solapur Municipal Corporation as a strategy for further improvement. Formulation of a network of 170 Self-Help Groups (SHGs) with adequate knowledge on MNH care was the key aspect.

The Community-Based Health Insurance (CBHI) Model, Nanded: Introduction of service providers' network and a community-based health insurance mechanism known as "Apni Sehat" was introduced in the targeted slum areas of Nanded city. Itensured the availability of funds for the poor slum-dwellerswhocould not meet the cost of institutional deliveries and antenatal care check-ups.

The role of Corporate Social Responsibility (CSR) has also been outlined in some of the interventions across the country. **Biocon Foundation** reiterated the strategy of first assessing the community needs and then establishing a package of health education amongst expectant mothers targeted through self-help groups. They adopted community awareness and a participatory approach in which they closely associated with the women self-help groups. They also organised workshops for mothers and community members on issues such as malnutrition.

Key Findings :

- There is no nationalised and overarching programme focused on strengthening urban community processes for MNH care.
- The literature does not address why many of these interventions were not expanded at a larger scale and there is also a lack of understanding as to why so many of these have failed to address the challenges of MNH care in India.

[160] http://www.surestartdata.com Sure Start in Maharashtra, India.

S. No.	Programme / Agency	State/City	Status	Inference
1	Mamta	Delhi (NCR)	Pre-2003	The 10K Club - a club for the health & development of the poorest' which focuses on improving the quality of maternal and born health by eliminating poverty, through proper mobilisation of the local community and other partners (NGOs). A functional Regional Resource Centre that trained NGOs and Panchayat members across Punjab, Haryana and Chandigarh.
2	Saath	Ahmedabad, Gujarat	2005	1. Jeevan Daan Maternal and Child Survival programme aims at:– a) Pneumonia Case Management b) Control of Diarrheal Diseases c) Nutrition/Breastfeeding d) Expanded programme on immunisation e) Maternal and Newborn Care. 2. Anganwadi centres functional in 23 wards that cater to neonatal health and pregnant women. 3. An RCH programme, which is aligned with the concept of caregiving and indulges link workers for home visits. * The link workers had undertaken rigorous home visits to reduce myths associated with pregnancy and newborn care.
3	SNEHA	Mumbai		Creation of an improved referral system through the following process:- **a.** Bringing together health providers from different levels of service and the formulation of action groups **b.** These action groups created a database of existing facilities for MNH services, using a self-assessment tool **c.** They standardised technical and administrative protocols for providing MNH services.
4	Ankur	Maharashtra	2000 (Pilot project)	**1.** Building capacities of community and level mobilisers the training of trainers. **2.** Creating a process to register pregnant women, give care and also record cases of each newborn. It gave high importance to monitoring and recording deaths and stillbirths. **3.** A stringent process of evaluating its training component through reviewing deliverables set for the community mobiliser.
5	Yashoda	Selected districts	2007	Yashoda has been crucial in training community-level workers for foster care of neonates.
6	Sure Start	Mumbai	2006 - 2012	Quality of Care ensured through availability, accessibility, appropriateness and acceptability of public & private health services.
		Navi Mumbai	2006 - 2012	Public-Private Partnership (PPP) with the professional bodies.
		Pune	2006 - 2012	Convergence of MNH and HIV/AIDS
		Nagpur	2006 - 2012	EHF extended through prepaid cards and health insurance mechanisms.
		Malegaon ,	2006 - 2012	Interface of service seekers and service providers at the QOC meetings held at the Malegaon Municipal Corporation.
		Solapur	2006 - 2012	Mobilise the community of Solapur by using volunteers to enhance maternal and neonatal health services.
		Nanded	2006 - 2012	Introduction of a service providers' network and community-based health insurance called 'Apni Sehat'.

H. Innovative Approaches

Innovation is essential to keep pace with the shifting demographics of a country undergoing rapid economic and social changes, such as India. Without the initiatives of the state government in strengthening the health system, innovations cannot achieve their desired outcome. This section delves into the various innovations that have successfully dealt with the complex issues of decaying public health infrastructure, scarcity of human resources and other relevant factors; which can possibly be adapted to develop a nationalised programme for maternal and newborn care in the urban Indian context.

• Strengthened Health Systems

A dedicated public health cadre under the Directorate of Health Services in Tamil Nadu, has three key directorates, which are organisationally equal, under the Health Secretary. (Gupta et al.2010)[161]. The Directorate has trained public health managers, who are promoted to the Directorate after years of experience in planning and overseeing public health services in both rural and urban areas. Thus, one of the reasons why Tamil Nadu is able to achieve relatively good health statistics, even in urban maternal and newborn care, is its strength in implementation—which is reinforced by a dedicated public health workforce that is appropriately trained and has the relevant experience.

• Greater Budgetary Allocation for MNH

A good example of prioritised budgetary allocation is Muthulakshmi Reddy Maternal Assistance Scheme. In India, most of the states are providing Janani Suraksha Yojana (a Centre- sponsored scheme) money to the mothers who deliver in a recognised health facility. In Tamil Nadu, the state has launched a separate state-funded scheme of Conditional Cash Transfer (CCT) for institutional delivery, i.e. the Muthulakshmi Reddy Maternal Assistance Scheme, introduced in 1989, much before the JSY (introduced in the year 2007, October). It started by offering a cash incentive of Rs. 500/- to each pregnant woman. The scheme was initially run by the Social Welfare Department and subsequently handed over to the Health Department. This particular amount was meant to compensate pregnant women for wage losses during pregnancy. Subsequently, the amount was increased to Rs. 2,000/- and then to Rs. 6,000/-. This amount was recently raised to Rs. 12,000/- per pregnancy and is paid by the government for the first two live births. Apart from wage-loss compensation, another purpose of giving the money is to provide additional nutrition to the mother to prevent anaemia and low-birth-weight babies. This scheme is only meant for Below Poverty Line (BPL) families (Padmanaban et al 2009).

• Health System Innovations

The Tamil Nadu Medical Service Corporation (TNMSC) was set up in 1995 with the primary objective to ensure ready availability of all essential medicines at all the government health facilities. The government of Tamil Nadu adopted a streamlined procedure for its procurement, storage and distribution. The list of nearly 900 drugs was reduced to 240 drugs as per the WHO's model list of essential drugs, accounting for around 90% of the budget outlay for the purpose, leaving other drugs of smaller quantities to be purchased locally by the institutions from out of the remaining 10% of the budget. This innovation has improved availability of drugs in nearly 2,000 government medical institutions throughout the state[162].

• Maternal Death Review (MDR)

MDR is an important strategy to improve the quality of obstetric care and reduce maternal mortality and morbidity. It provides detailed information on various factors at the facility, district, community, regional & national levels and the information can be used to adopt measures to fill the gaps in service

[161]Gupta, M., Desikachari, B.R., Shukla, R., Somananthan, T.V., Padmanaban, P. and Datta, K.K. (2010). 'Special Article: How Might India's Public Health Systems Be Strengthened? Lessons from Tamil Nadu', Economic & Political Weekly, XIV (10).

[162]Padmanaban, P., Raman, P. and Mavalankar, D. (2009). Innovations and Challenges in Reducing Maternal Mortality in Tamil Nadu, India', Health Population Nutrition, 27(2): 202-19. International Centre for Diarrhoeal Disease Research, Bangladesh.

(Government of India, 2010)[163]. Government of Tamil Nadu started compulsory audits of all maternal deaths occurring in the state since 1994. Sensitisation workshops were organised among the health functionaries on the importance of reporting maternal death. The system became fully established when the government of Tamil Nadu issued an order in 2004, stating that all maternal deaths should be audited. The reporting of the maternal death itself is the first important step, because many times people do not even report maternal death cases. The state mandates that each maternal death be reported to the Maternal and Child Health Commissioner, within 24 hours of occurrence, through a telegram or FAX, irrespective of the place of death – public facility or private nursing home or during the time of transit. Multiple sources of reporting are also encouraged, to avoid missing out on any incidents and lapses. Maternal deaths are reported by ANMs, the medical officer posted at the periphery, from the First Referral Unit (FRU), non-government hospitals, district public health nurses and Deputy Director of Health Services. Investigations of maternal deaths are carried out through community-based maternal reviews (verbal autopsy) and facility-based maternal death reviews/clinical audits.

• Technological Innovations

Iron Sucrose Injections

Iron Deficiency Anaemia (IDA) is responsible for 95% of anaemia during pregnancy. Over the past years, various oral, intramuscular and intravenous preparations of iron have been used for correction of IDA in expectant mothers. However, they are associated with significant side effects and it is not possible to achieve the target rise in haemoglobin (Hb) level, in a limited period, when the mother is approaching term.

Iron sucrose injection was approved by the United States of America Food and Drug Administration(USFDA) in November 2000. The recommended schedule is to administer 100 mg intravenously over five minutes, once or thrice weekly, until 1,000 mg has been administered. The rate of administration should not exceed 20 mg per minute. A test dose is also not required and is at the physician's discretion (Silverstien and Rodgers 2004)[164]. Iron sucrose complex achieves a relatively satisfactory level when used in severely anaemic, iron- deficient, pregnant women. A Few state governments in India are conducting initial research on it and the state governments of Bihar, Uttar Pradesh, Karnataka, Tamil Nadu, Maharashtra and Chattisgarh have allocated resources in their Programme Implementation Plans (PIP) for procurement of iron sucrose, for making it available in all primary healthcare settings. The decision to include it has been based on evidence obtained from very small observational studies and on the experience of clinicians who have been using it. Of the above-mentioned states, Tamil Nadu has implemented the administration of IV iron sucrose in primary healthcare settings since 2009 (Srinivasan and Ayyanar 2010)[165].

• Innovative Approaches by the Centre for Health Market Innovations (CHMI)

The documents sourced from the CHMI (www.healthinnovations.org) profile more than 220 programmes that harness private providers to deliver Maternal, Newborn, and Child Healthcare (MNCH) in Low and Middle-Income Countries (LMICs). The CHMI profiles programmes that use innovative delivery and financing mechanisms to improve access, quality or affordability of healthcare for the poor including clinical social franchises, vouchers for safe deliveries, and high-volume/ low-cost maternity hospitals. The overview of the market-based activities in MNCH programmes highlights that over 70% of the CHMI's MNCH programmes are concentrated in South Asia and East Africa and 58% are private and not-for-profit models. The volume of services delivered by the private sector is estimated to be quite high with considerable experimentation with new approaches and models for care. Social franchising, micro-insurance and vouchers are the most commonly applied approaches and have some

[163] Government of India. 2010. Maternal Death Review: Guidebook Maternal Health Division, Ministry of Health and Family Welfare, Government of India.

[164] Silverstien, S.B. and Rodgers, G.M. (2004). 'Parental Iron Therapy Options', Department of Pharmacy Services and Departments of Medicine and Pathology, University of Utah Health Sciences Center, Salt Lake, Utah.

Trends in maternal mortality: 1990 to 2013, http://data.unicef.org/, accessed on 28th March , 2015.

[165] Srinivasan, A.K. and Ayyanar. (2010). 'Intravenous Iron Sucrose Complex Therapy for Iron Deficiency Anaemia in the Pregnant Women'. Published in Compendium of Scientific Papers presented in TNPHCON 2010&2011 and ICONHSS 2010. Department of Health and Preventive Medicine, Dharmapuri District, Tamil Nadu.

evidence of impact such as increased utilisation, improved pro-poor targeting and reduced out-of-pocket spending. More research is, however, needed on the effects on quality, affordability and accessibility.

Innovative use of technology and the development of high-volume, low-cost clinics is becoming more common, particularly to improve operations and processes of care, change patient behaviour and increase access to affordable, quality services. However, evidence on the impact and effectiveness of these models on urban MNCH outcomes is limited.

• Innovative Service Delivery by the Smile-on-Wheels Programme in India

Launched in the year 2006, this is a national mobile hospital programme, catering to the underprivileged children and women in remote rural areas and urban slums, using primarily volunteer physicians and nurses. **Smile-on-Wheels** operates in several locations across India—Chhattisgarh, Delhi, Maharashtra, Odisha, Tamil Nadu and Uttarakhand—reaching nearly 750,000 people in 249 villages and urban slums. Three more units are being added in Ahmedabad, Hyderabad, and Lucknow. Implemented by the Smile Foundation[166], a not-for-profit organisation working in education and healthcare for underprivileged children across India, it operates in the areas where governmental healthcare facilities are scarce, non-existent or non-functional. The mobile vans delivering healthcare at a nominal cost to the community are staffed by specialised medical personnel and are equipped with an x-ray machine, electrocardiogram machine, basic pathological services for blood and urine tests, ante-natal and post-natal services, and an out-patient department for common ailments. The staff performs routine medical examinations, distributes condoms and oral contraceptive pills, and transports severely ill cases to super-specialty clinics. The team also carries out awareness activities on health and hygiene to encourage health-seeking behaviour, focusing equally on preventive and promotive healthcare, including home-based care. The project receives deep community support through a cadre of health volunteers who provide health education, provide counseling and serve as depots for family planning kits, oral rehydration salts, iron tablets etc.

• Innovative Service Delivery and Risk Pooling by the NICE Foundation, India

Launched in the year 2002, this is a health programme providing a wide range of targeted medical services to the most vulnerable segments of society through innovative service delivery and risk-pooling. The **NICE Foundation** operates in Andhra Pradesh and Rajasthan with plans to expand to other states. It is a registered charitable trust based in Hyderabad that designs and implements all health programmes in partnership with state governments, the private sector and civil societies. The NICE Foundation's programmes are financed through public funding sources (including state governments and the central government) and through private donations from individuals and grant-making organisations.

NICE Foundation's Institute for the Newborn: The Institute for the Newborn is a first-of-its-kind specialised institute providing affordable international-quality neonatal care to all segments of society, using a cross-subsidisation model to benefit the poorest. Located in Hyderabad, it is the largest of its kind in South Asia and the institute is a 120-bed facility that networks with all the maternity hospitals in the city and provides neonatal care and referral care to high-risk newborns. The institute runs several 24/7 mobile intensive care units, staffed by a dedicated newborn transport team, that have peri-natal links with its existing government maternity hospitals, private nursing homes and non-governmental organisations. The institute and its clinical care teams also conduct training and research in various areas of neonatology.

• Life Spring Hospitals Private Limited (LHPL)

Founded in 2005, LHPL is a for-profit, high-volume, low-cost hospital providing quality and affordable

[166] The Smile Foundation partners with local organisations in each state to run Smile-on-Wheels, including: Ambuja Cement Foundation (Roorkee, Uttaranchal), Berojgar Mahila Sewa Samiti (Bhilai, Chhattisgarh), Operation Blessing India (Delhi), Orissa Institute of Medical Research and Health Services (Cuttack, Odisha), and Sevadham Trust (Pune, Maharashtra). The Smile Foundation receives funding from several domestic and international partner organisations.

healthcare to women and children from lower income households across India. LHPL operates six hospitals serving 23,000 patients, with plans to scale up to 140 hospitals by 2014 in Andhra Pradesh, Karnataka and Maharashtra. Jointly operated by Hindustan Latex Limited and the Acumen Fund, it is a for-profit hospital operated with a 50/50 equity partnership.

LHPL addresses maternal and child healthcare in India through a chain of high-quality, small private hospitals (20–25 beds) that offer efficient, affordable customised care to its customers ("guests"). Its strategy is to provide services at the lowest possible cost, focusing on the working-class poor in high-population-density urban areas. LHPL's niche is standardisation of processes and specialised provision of maternal and child services, including ante-natal care, post-natal care, deliveries, family planning services, medical termination of pregnancy, paediatric care (including immunisation), diagnostics and pharmacy services. To maintain self-sustainability while serving low-income customers, LHPL applies internal cross-subsidisation, with service rates based on the type of accommodation and not on the quality of service. Under this model, hospitals are expected to become profitable within 21 months and to further reduce costs for services; LHPL is developing relationships with several government-sponsored voucher and insurance schemes (such as the Janani Suraksha Yojana).

Customer Relationship Management: LHPL has developed a unique protocol for customer care, Life Spring CARES (courteous, attentive, respectful, enthusiastic and safe), which all hospital employees are required to observe. To ensure high-quality service, client surveys and discussions with customers are used to obtain feedback which is fed into the operational system to improve overall service.

High-quality services: LHPL provides high-quality services at a low cost by leveraging information technology (they are now setting up a data centre to link all their hospitals) and working with the national and international medical equipment vendors to negotiate better prices for equipment through economies of scale.

• Risk-Pooling by Leveraging Commercial Experience for Social Benefits

Launched in 2005, Arogya Raksha Yojana (ARY) is a health micro-insurance scheme providing affordable, high-quality healthcare for the underserved in rural and urban areas of the Indian state of Karnataka through an accessible provider network of private hospitals and clinics supported by leading doctors and surgeons. ARY insures 70,000 people across seven districts of Karnataka. The programme is a joint project between the Biocon Foundation (the foundation of Biocon Pharmaceuticals Ltd.) and Narayana Hrudayalaya Hospital. Several independent rural service providers support them. The risk is covered by ICICI Lombard and funding for the programme is provided through the Arogya Raksha Yojana Trust.

ARY leverages the expertise of the commercial insurer to provide retail insurance to workers in the informal sector in non-rural areas by bearing the risk and undertaking all insurance administration. Local ARY clinics (run by the Biocon Foundation) create a presence in local communities and provide care to both the insured as well as the uninsured, reduce the costs of insurance claims by providing good primary healthcare (thus reducing rates of hospitalisation for surgical procedures). ARY benefits are comprehensive and include free outpatient consultation; generic medicines at special rates from Biocare pharmacies; diagnostic tests at discounted rates at network hospitals, at Biocare Clinics and approved diagnostic centres; hospitalisation (not leading to surgery) and surgical treatment for more than 1,600 types of surgeries. ARY offers health insurance to workers in the informal sector in the slums of Bangalore (India's third-largest city), who are reached through micro-finance organisations and community-based organisations. In places where no strong community institutions exist, ARY sets up enrolment booths for a limited time each year.

• Chiranjeevi Yojana (CY): Contracting the Private Sector

Established in 2005, CY is a government-organised, quality-driven voucher programme contracting private obstetricians and gynaecologists to provide delivery services to women who live below the poverty line to reduce the maternal and newborn mortality rates. Initially launched in five poor districts

of the state of Gujarat, it was later extended to the entire state, with 892 participating providers who have performed 294,635 safe deliveries per data sourced. Established by the government of Gujarat with support from the Indian Institute of Management, (Ahmedabad) and Sewa Rural–Jhagadia and facilitation by GTZ, it is financed by the Government of Gujarat, with support from the Central Government under the National Rural Health Mission.

The CY was created to significantly reduce maternal and infant mortality by harnessing the existing private sector and encouraging it to provide delivery and emergency obstetric care at no cost to families living below the poverty line. Under the scheme, the government contracts private providers that volunteer to render their services by signing a memorandum of understanding with the district administration. In return, they receive an advance payment to commence services and are compensated at about US$4,500 per 100 deliveries (normal, Caesarean, or with other complications). Any qualified private provider with basic facilities, such as labour and operating rooms and access to blood and anaesthetists can enroll in the programme after a thorough orientation. The CY beneficiaries are enrolled through their family health workers but the scheme uses the existing cards issued to families living below the poverty line (BPL) by the Rural Development Department of the State Government. In the first six months since the launch of the scheme, each provider performed 116 deliveries on average. The institutional delivery rate has apparently increased to more than 81% from an about 54.7% in 2005–06. The CY's long-term goal was to achieve an institutional delivery rate of 95% by 2012.

Benefits Package: The CY uses demand-side financing to provide families living below the poverty line with access to a comprehensive benefits package that covers both direct and indirect costs, including free delivery (with no condition exclusions), free medicines after delivery and transport reimbursement. In addition, as a thoughtful gesture, it offers support to the attendant in exchange for lost wages. The payment method and formula encourages providers to reach a certain volume of work, avoid complicated transaction costs and create a disincentive for unnecessary Caesarian sections. The provider compensation package is designed to account for all potential complications during delivery (estimated at approximately 15% of cases).

Contract Management: The CY's district management authorities require participating doctors to maintain a case file for each patient they serve. Weekly records of the deliveries conducted by the providers are submitted to the local authorities and the Block (sub-district) Health Officer, who regularly visits beneficiaries to monitor service quality and address grievances. Payment to providers is also made through block health officers based on instructions from district authorities. All districts send a monthly report to state authorities for review and feedback.

• Engagement of Community-Level Media: Community Radio

Dissemination of information has been one of the major components of maternal and child health programmes in India. Media campaigns can act as an effective mode to transfer information on good health behaviours and services available for the issue concerned (southasia.oneworld.net)[167]. Community radio has been designed on many occasions for passing information to a larger audience in our past healthcare programmes. The Annamalai University started its community radio called Putholi with the intention of addressing the issue of stigma associated with HIV/AIDS. This resulted in success and the radio station was awarded as well in recent times (southasia.oneworld.net)[168]. The intervention can surely be extended to maternal and newborn healthcare in urban communities. This can be usedwell as a tool to spread information on home-based neonatal care and, in fact, toward creating an environment within communities for building a support system for ensuring safety of the mother and the newborn(southasia.oneworld.net)[169].

[167] Ibid southasia.oneworld.net
[168] Ibid southasia.oneworld.net
[169] Ibid southasia.oneworld.net

Conclusion

To conclude, the innovations that have been able to cater to the needs of communities dwell primarily on the principles of ensuring affordability, accessibility and availability. In the urban Indian context, where the diversity is wide and a subsidised healthcare system is still not present universally, the innovations of effective health finance (low-cost clinic, e-finance) discussed above can prove to be useful. Secondly, as the heterogeneity aspect and absence of social capital adds to the challenges in urban areas, the need to create safer cocoons of care for mothers and newborns through the involvement of NGOs, hospitals and local governance is a must.

Key Findings :

- The innovations have been designed to address the issues of infrastructural decay, crunch in human resource, depleting finance in health, high-cost treatment processes; however, the best practices of these innovations have not been tested on a large scale for maternal and newborn health.
- There is a dearth of literature on how the learnings from the innovations can be used to create integrated models for a national-level programme.

Promising Innovations in Maternal & Newborn Health in India

1.	Muthulakshmi Reddy Maternal Assistance Scheme	Tamil Nadu	Introduced in 1989	State-funded Scheme of Conditional Cash Transfer (CCT) for institutional delivery. It started by offering a cash incentive of Rs.500/- to each pregnant woman. The scheme was initially run by the Social Welfare department and subsequently handed over to the health department. This particular amount was meant to compensate pregnant women for wage losses during pregnancy. Subsequently, the amount was increased to Rs.2,000/- and then to Rs.6,000/-. This amount was recently raised to Rs.12,000 per pregnancy and is paid by the government for the first two live births. Apart from wage-loss compensation, another purpose of giving the money is to provide additional nutrition to the mother to prevent anaemia and low birthweight babies. This scheme is only meant for below poverty line (BPL) families.
2.	Three Staff Nurse Model: 24x7 functional PHCs	Tamil Nadu	Between 2001-2006	This innovation ensures safe delivery services in a PHC to pregnant women, at the onset of labour pains, at any time of the day or night.
3.	Technological Innovations - Iron Sucrose Injections	Tamil Nadu	2009	Iron sucrose is an iron hydroxide sucrose complex in water. It is administered by intravenous (IV) injection or infusion. The recommended schedule is to administer 100 mg intravenously over five minutes, once or thrice weekly, until 1,000 mg has been administered. The rate of administration should not exceed 20 mg per minute. A test dose is also not required and is at the physician's discretion. Iron sucrose complex achieves a relatively satisfactory level when used in severely anaemic iron-deficient pregnant women.
4.	Non-Pneumatic Anti - Shock Garment (NASG)	Tamil Nadu		The Government of Tamil Nadu has incorporated the use of the NASG into its protocols for active management of the third stage of labourand routinely trains staff at all levels for its use. The NASG is now also being kept in all 108 Emergency Management and Research Institute (EMRI) ambulances in Tamil Nadu.
5.	Raksha Project	Bihar, Rajasthan, Tamil Nadu		To implement the 'Continuum of Care' philosophy and, within that, introduce the NASG.
6.	Development of Embrace Baby -Warmer	Bengaluru, Karnataka	2011	The current form of the baby-warmer was also being used as a transport device. Here, if the LBW baby is required to be transported intra-hospital or inter-hospital for any laboratory checks or referrals, the baby-warmer might be used to keep the baby warm. It is seen to be a suitable alternative which is easy to use and cost-effective.
7.	Smile-on- Wheels Programme	Chhattisgarh, Delhi,Maharashtra, Odisha, Tamil Nadu, Uttarakhand, Ahmedabad, Hyderabad, Lucknow	2006	Focusing on women and children, Smile-on-Wheels is a national, multi-centric mobile hospital programme that provides medical care to rural and semi-rural areas and urban slums where governmental healthcare facilities are scarce, non-existent or non-functional. Provide both preventive and curative services to those in need, including outpatient, ante-natal and post-natal services, identification of difficult pregnancies and referral for institutional care, immunisation for mothers and children, minor surgery, blood pressure examinations, electrocardiograms, first aid, iron folic acid tablets, vitamin A prophylaxis and treatment of malnutrition.
8.	Innovative Service Delivery and Risk-Pooling by-NICE Foundation, India	Andhra Pradesh and Rajasthan	2002	It runs two health programmes in Andhra Pradesh - the School Newborn Healthcare Plan, the Tribal Reproductive Newborn Health Programme and also operates the specialised Institute for the Newborn, Hyderabad, which provides neonatal care and conducts training and research. The School Newborn Healthcare Plan has been replicated in three districts of Rajasthan and further rollout is planned in the state.
9.	Innovative Service Delivery by Life Spring Hospitals Private Limited (LHPL)	Andhra Pradesh, Karnataka, and Maharashtra	2005	Specialised provision of maternal and child services, including ante-natal care, post-natal care, deliveries, family planning services, medical termination of pregnancy, paediatric care (including immunisation), diagnostics and pharmacy services.
10.	Arogya Raksha Yojana (ARY)	Karnataka	2005	Health micro-insurance scheme providing affordable, high-quality healthcare for the underserved in rural and urban areas of the Indian state of Karnataka, through an accessible provider network of private hospitals and clinics supported by leading doctors and surgeons.
11.	Chiranjeevi Yojana (CY)	Gujarat	2005	This is a government-organised, quality-driven voucher programme contracting private obstetricians and gynaecologists to provide delivery services to women who live below the poverty line to reduce the maternal and newborn mortality rates.

IV. Discussion and Conclusions

Summary of Findings

Irregularities and complications during pregnancy, child-birth and post-natal period are the leading causes of death and disability among women of reproductive age and newborn babies & infants in developing countries. Providing healthcare services, especially maternal and newborn care, is increasingly understood to be a dynamic system of entitlement and obligations among people, communities, providers and governments. However, the paradox in a country like India is that while the global community still concentrates on efforts to attain health-related Millennium Development Goals (MDGs) based on national strategies to reach high and equitable coverage of health services, the provision of health services, though absolutely necessary, is insufficient and unstructured in urban areas. Thus, on the one hand, the quality of treatment and care provided by the health system in rural areas does become complementary to the global efforts to reach and maintain coverage of health services, the pregnant mother and her newborn from the vulnerable sections of urban settings still struggle for the availability and accessibility of public health services. This only proves that on the other hand, the straightforward indicators for measurement in urban areas are, first and foremost, about the provision of services because unlike its rural counterpart there is no envisaged Primary Health Centre with its planned network in urban slums. Moreover, administration of health services through multiple health authorities, which are not effectively organised, has resulted in duplication of services in some areas and non- existence of health services in other areas[170].

The urban poor are at the interface between underdevelopment and industrialisation. Urban health in the slums presents serious public health concerns and challenges; predominant among them is maternal and newborn health and mortality. Although urban mortality statistics are comparatively better than the rural, there is a wide disparity between the settled urban population and the marginalised slum-dwellers. Hence, the existing urban statistics do not give a true representation of urban slums. Vulnerable urban communities continue to be poorly served. Though this is a result of "service" barriers, it is also a product of inter-related variables, such as poverty, inequitable distribution of primary healthcare services, poor referral systems, vertical programming and attitudinal & management challenges. Understanding how policies and programmes can address both service and demand-side barriers is a central question today.

With the growing urbanisation of poverty—with almost one out of four poor persons living in urban slums—the available indicators for the urban poor compare unfavourably with both the urban and national averages. There is a widespread awareness of the issue in research literature and a growing need for significant increase in research in this area has been felt for the last one decade. The findings of this review also spell out this need reasonably well as the evidence available is relatively meagre. The findings of the review can be distinctly classified under two different pieces. The first piece reveals the gaps in terms of the current availability of health services to deliver maternal and newborn healthcare along with the clearly defined paucity of service-delivery platforms, governance and mechanisms—inclusive of infrastructure, human resources, logistics, supply chain, partnerships and community-level efforts. The second piece focuses on the gaps with regard to the availability of literature and evidence from the research undertaken in all of the above-mentioned aspects of health service delivery for maternal and newborn healthcare.

The conclusions from this review are based on very peculiar findings that dwell largely on the following key facts. While maximum data is available mostly on social determinants of maternal and newborn health and barriers in accessing services, there is little information available on interventions and models that have worked to address these challenges. In exceptional cases certain initiatives did work, providing some piece-meal solutions, then first, the sample size of these interventions was not large enough for confidence of scalability and second, these were mostly project-based initiatives

[170] Armida Fernandez, Jayshree Mondkar and Sheila Mathai. Urban Slum-Specific Issues in Neo-natal Survival, Indian Paediatrics(2003); 40:1161-1166.

implemented and managed by non-governmental agencies. Thus, the review sets out suggestions not only in terms of requirement of evidence on the aspects of the service-provision and service-delivery mechanism in urban settings but also reflects the need for undertaking rigorous research in the area of urban maternal and newborn health which continues to remain an untouched area of research and learning.

Although not much information can be derived from the literature review on the status of maternal and newborn health services in urban India, oflate there are a few stand-alone initiatives that are being undertaken in different parts of the country to strengthen the health service delivery mechanism. The most specific initiativethat is being implemented uniformly across the entire country is the National Urban Health Mission (NUHM). The Government of India's 12th Five Year Plan built on the National Rural Health Mission and converted it into a National Health Mission (NHM) for the whole country. In doing so, it incorporated the developing of the National Urban Health Mission as a sub-mission of the NHM.

The information on the overall lack of clarity with regard to the ultimate responsibility of providing health services in urban areas as it is in rural areas is most well covered. The information on service provision mechanisms reveal that the health services vary from city to city, while a few large cities (such as Mumbai, Kolkata and Chennai) have used the Indian Population Project to focus on health infrastructure establishment in urban slums, only a few large Municipal Corporations with good revenue resources like Surat, have demarcated special resources to provide urban MNH services. In addition, the lack of demonstrated political will to assume responsibility and accountability for urban services, as well as the absence of inter-departmental coordination between the Departments of Public Health, Urban Development, Medical Education, the Municipal Corporations and the local bodies have made matters worse.

A number of studies reveal that the resources invested in urban healthcare deal primarily with curative services; urban health posts/centres (UHPs/UHCs) mainly provide three types of services: regular (including preventive, curative, IEC activities and training), seasonal (pre-monsoon and monsoon-related activities) and disaster management; and the urban healthcare system is focused on secondary and tertiary care, and not on comprehensive promotion, preventive and primary-level services. There is no mechanism for a health worker to make community or home visits and, thus, no holistic outreach and follow-up services are available. A link worker or community health volunteer has been appointed in a few cities that are effectively implementing the NRHM (Urban Component) and RCH-II project. The main role of the link worker is family welfare, maternal and child health, immunisation, health education and demand generation.

Referral services are available in corporation hospitals/district hospitals/medical college hospitals as well as several private hospitals. There is no definite system of referral; no linkages between domiciliary, health centre and hospital; and no protocols for admissions to primary, secondary and tertiary levels. Currently, secondary level of care is provided by District Hospitals and their equivalents(such as combined and base hospitals) while tertiary care is provided by Medical Colleges. However, these are not linked to primary care institutions such as health posts or dispensaries. Consequently, patients approach tertiary hospitals for primary care which could have been provided elsewhere. This is a major reason for their high workload; challenging adequate quality.

A number of policy documents reviewed, reveal that by and large, the service delivery structure and mechanisms in the urban areas continue to be rudderless with a complete lack of clarity on roles and responsibilities vis-à-vis the rural areas, where the district administration is structured and responsible for service provision. Multiple state agencies are providing services. There is anoverlapping of services and lack of coordination among these agencies. Private health providers are the key players in the overall provisioning of services. Multiplicity of providers and lack of coordination among them has led to dysfunctional referral systems and a consequent overload on tertiarycare providers. Even in states where primary healthcare is managed by ULBs and secondary & tertiary healthcare by the state, the referral chain is not functional (NUHM, 2012).

While primary healthcare in urban areas (where the poorest sections can easily approach has largely

been neglected, there are exceptions of larger metropolises such as Mumbai and Delhi that provide primary healthcare by means of dispensaries, health posts and maternity homes. Health posts have been established under the India Population Project, e.g. in Mumbai basic ante-natal care and primary healthcare is provided through Community Health Volunteers and maternity homes, headed by an MBBS Medical Officer; these are meant for conducting normal deliveries and have support staff for this purpose. Similarly, at the primary healthcare level, Delhi has a network of 987 clinics and dispensaries through the Delhi Government, MCD, NDMC and Delhi Cantonment Board and central agencies though the CGHS, ESIC and Railways. (PHRN, 2010).

The UHPs, however, are located mainly in the big towns. Small towns continue to be deprived of these facilities. Though the UHPs are expected to carry out the same activities as the PHCs, their sanctioned staff strength is less. NUHM aims to meet the healthcare needs of the urban population, with a focus on the urban poor, by making available to them essential primary healthcare services and reducing their out-of-pocket expenses for treatment. This will be achieved by strengthening the existing healthcare service delivery system, targeting the marginalised and the people living in slums, and converging with various schemes relating to wider determinants of health (such as drinking water, sanitation and school education) implemented by the Ministries of Urban Development, Housing and Urban Poverty Alleviation, Human Resource Development, and Women and Child Development.

The urban poor are a diverse group of vulnerable populations, such as the homeless, rag-pickers, street children, rickshaw-pullers, construction, brick &lime kiln workers, sex workers and temporary migrants. They do not have stability, lack family support structures and are from varied cultures. Very few documents reflect the responsiveness to the needs of the poorest and the most vulnerable. While the availability of a large number of for-profit and not-for profit private providers encourages them to access private care more than the public facilities, they can hardly form any relationship with healthcare providers. The National Health Policy (2002) states that the public health facilities (with their poor infrastructure and inconvenient timings) are least accessed by the poorer populations and this has a serious implication for increased out-of-pocket payments for accessing private healthcare at the cost of items such as basic nutrition. The findings of the NFHS-III reflect that the private sector is the main provider of healthcare for a majority of the people living in urban areas. Use of private hospitals increases with increasing wealth quintiles. However, the poor also utilise the private sector more than the public sector. The main reason for non-utilisation of public facilities is the poor quality of care.

Studies on the availability of human resources reflect retention and training of the skilled birth attendants as the key bottleneck. Professional qualification does not necessarily mean that the provider is actually skilled. These also reflect the gaps identified in the guidelines on care and practices during pregnancy and the non-availability of doctors and midwives at the time they are most needed, i.e. at night. None of the studies reflect aspects such as staffing mechanisms, training, job satisfaction, appraisals, workplace safety and career development of the staff engaged for urban maternal and newborn healthcare.

Very little information could be traced on details of the guidelines or protocols for the functioning of primary and secondary level healthcare systems or the logistics required for maternal and newborn health in urban spaces. There is no information available on processes adopted for supply chain management, especially training procedures for staff at the primary and secondary level, to manage the supply chain of drugs and equipment and coordination with the blood banks and referral support. Lack of research in terms of availability and accessibility of services that may concern women living in urban slums comes across as a great deficiency. The existing literature also hints at the existence of private bodies however, does not extensively map the same.

Various studies reflect the lack of uniformity in delivery/provision of health services within and across cities. However, these hardly touch upon the opportunities for the marginalised at the health service centres, especially for MNH. The evidence gathered from the NHSRC 31-city-visit reports indicate a paucity of information on guidelines that govern the health service system and the details on facilities available for maternal and newborn health. The existing literature does not provide sufficient information on the aspects of bed: population ratio, status of buildings, drug and device supply-chains, inventories and also a list of the equipment available in each of the cities where the field visits/studies

were conducted. While some studies do mention the type of facilities providing MNH services, which are accessible to the urban poor, they lacks analysis in terms their functioning, efficiency, governance and monitoring mechanisms.

Reliable and consistent information on health informatics is scarce. Little or no efforts have been made to conceptualise mechanisms or/and to capture disaggregated, discrete data on health service availability and its performance in relation to urban MNH across cities and states. The information from HMIS features largely around NRHM and the information available for urban and semi-urban places isabysmal. The websites of the NIHFW, NHSRC, CBHI and ULBs such as MCD, mostly include information on communicable diseases and sanitation and hygiene. The reporting formats of MoHFW on various districts within a state reflect the training required for the health personnel at the level of PHCs, CHCs and even in District Hospitals for maintaining and managing HMIS. Reports of a few city corporations such as Delhi and Mumbai reflect on the adequate reporting system that undertakes necessary actions for training, creation of tracking sheets and monitoring of planned activities.

While a number of documents reflect on the role of State Health Departments, Municipal Corporations (MCs), Town Councils and ULBs in the health sector in general, there is very scanty literature that examine the roles of these bodies in provision of services related to maternal and newborn health. Abundant information is available on other public health issues and the role of Municipal Corporations in managing these. With specific reference to convergence, very little literature is available on the coordination that exists between various departments at the city level. A couple of studies discuss the Public-Private Partnership model that functions in coordination with the NGOs or other private providers/bodies. Scantily available literature on the ULBs reflects the immense distrust on the quality and efficiency of the services provided and talks about the non-functionality of the few available facilities.

Very little and inconsistent information is available on financing patterns, the role of local bodies in budget planning, the process adopted for sustaining projects and the decision-making in relation to the same, across a majority of the cities, especially in the urban and semi-urban locations. No information is available on the budgetary allocation process for maternal and newborn health except for some small-scale cash-transfer programmes that exist in various states.

Discussion

Despite emerging evidence on the challenges and issues faced by a rapidly urbanising India, knowledge on, and availability of, information for understanding the health situation of urban poor mothers and newborns continues to remain insufficient and inadequate. This review examined the evidence on maternal and newborn health in the urban poor environments specifically with regard to the opportunities and gaps in the health system, factors affecting programming and service delivery, and potential strategies that address specific MNH care needs of the urban poor in India. Apparently, the evidence has significantly improved in quantity and quality over the past few decades, but it remains patchy in terms of geography, issues and methods. Broad generalisations are difficult to make, both state-wise and for the different cities specifically.

First and foremost, MNH care calls for a dire necessity of public health services, specifically the primary level care for mothers and newborns in all the urban areas of the country; this is logically followed by the requirement of easy accessibility and its affordability by the urban poor. While the absence of defined and structured primary healthcare in urban areas directly affects the health of the mothers and babies, its indirect impact is seen in the coping strategies and care-seeking behaviours that households adopt in response to their circumstances. Additionally, the evidence also suggests that poor households often face a state of confusion when it comes to dealing with MNH situations. Confusion about their access to peri-natal healthcare services mirrors the confusion of the services themselves – why should a tertiary hospital routinely deliver preventive care?[171] Needless to say, social and cultural barriers are more common in slums where healthcare services are not reachable.

[171] Bhaumik, (2012).

Strengths and Weaknesses of the Evidence Base

This section assesses the strengths and weaknesses of the evidence base with regard to each of the four research questions presented during the review[172]. Two general weaknesses in the available data are discussed first. Firstly, this review of literature on MNH care in urban poor settings has revealed a lack of substantial and robust evidence on the availability of services associated with ante-natal, intra-natal, peri-natal and post-natal care for pregnant mothers and their newborns. Most of the studies located, examine the differences and diversities of service provision in the rural and urban areas in a comparative mode. Accurate and reliable findings on the specific service-delivery structures and platforms, their uniformity across the country, the proposed models by several committees and commissions and its actual implementation, are fairly limited. Further, in the literature available there is virtually very little or no coverage identified on the nitty-gritty of a functional health system, particularly aspects such as human resources, logistics, supply chain management and financing mechanisms. The lack of these data represents a critical gap in the evidence base.

A second weakness in the reviewed literature communicates on the generality of the write-ups, articles and documents, wherein all are trying to touch upon all the aspects of urban health. There are limited number of studies and research documents that talk exclusively about maternal and newborn health in a stand-alone manner rather than considering everything under the broader garb of reproductive and child health. While the evidence base with regard to MNH in the country is strong, with several good quality studies from different states, there are very few that are urban with a handful of these focusing on the urban poor. Another challenging area is the absence of uniformity in terms of pre-requisite and anticipated services in the light of the newly rolled-out NUHM which, nevertheless, is in a nascent stage, plagued by challenges of the very acceptance of proposed uniform structures.

The evidence base on the issues regarding maternal and newborn health in urban India is of better quality because a number of research studies, peer-reviewed articles, projects and programmes have narrated the problems and challenges faced by the urban poor. The results of several studies that are reviewed, although reliable, are somewhat compromised by the want of disaggregated data that can clarify the difference between slum versus non-slum, poor versus non-poor, and long standing residents versus recently migrated populations, in the urban locations.

On the reasons for the existing problems and challenges, the prevalent evidence-base is of medium quality. Examining challenges in relation to the provision of MNH services—that can help assess the situation and suggest solutions—has important limitations. What is obtained is essentially a snapshot of the problems and challenges that have existed for long in some of the larger cities and are now emerging rapidly in most of the cities. This, however, does not capture all the potentially valid reasons for this distressing situation.

The evidence base with regard to third research question on various supply side agencies, the successful interventions along and the existing linkages on supply side is varying for all the three aspects. Insufficient data is available on establishment of outreach services and their effectiveness. Few studies mention mass media campaigns and community education as standalone interventions, though many interventions use the delivery platform of community, including clinical interventions. Many of these community-based interventions reflect a great rate of success but are way beyond scalability because the population covered is minuscule. The studies reviewed also reflect that the state governments and city corporations often collaborate with NGOs & CBOs as satellite nodes linked with larger central offices as a structural arrangement for community outreach programmes.

Evidence is available on overall urban governance that reflect gaps and challenges but lacks reflections on urban health governance, with a complete absence on governance for MNH programmes. Data also reflects generic information on the desirability of inter-sectoral coordination but lacks evidence on any specific coordination beyond the ICDS programme.

[172] a. What are the issues with regard to urban MNH? b. Why do these issues exist- what are the reasons? c. Who are the various supplyside agencies and what have their successful Interventions been along and what are the existing linkages on the supply side? d. What are the financial mechanisms/financial availability/budgetary provisions that exist for urban MNH?

The evidence-base on financial mechanisms/financial availability/budgetary provisions that exist for urban MNH is largely scarce. However, secondary data from a number of Municipal Corporations reflect the expenditure incurred on reproductive and child health services of which MNH is one of the core areas. Robust information is available from two specific documents (the NUHM framework and the Technical Resource Group's report on Urban Health), as these incorporate inferences and recommendations of various committees and sub-committees that worked during the phase of the 12th Five Year Plan. Once again however, the information provides a broader spectrum of expenditure, budgets and finances in the urban areas and cities but does not specifically reflect the disaggregated information on financial mechanisms for MNH.

There are studies that focus on the evaluation of mechanisms established for JSY, JSSK, RBSK, RSBY and Chiranjeevi Yojana; however, there is very little coverage for urban areas. Some evidence on social franchising, micro-insurance and voucher schemes does exist in terms of its impacts such as increased utilization, improved pro-poor targeting and perceived reduced out-of-pocket spending. However, none of the studies focuses on the quality, affordability and accessibility of the services targeted by these vouchers and scheme.

Policy Recommendations and Areas of Future Research

The overwhelming constraint on better availability of services for MNH care in urban areas is starkly visible. The findings presented in this review suggest two specific aspects: first and foremost, there exists very poor evidence on availability of services for MNH in urban areas and, secondly, there exist no defined structures for MNH services for the urban poor. Similarly, the evidence base is relatively weak with regard to the existence of specific policy instruments. Nevertheless, the following tentative conclusions may be reached with regard to what direction researchers and policy-makers should take in order to ensure that MNH care services are delivered to the urban poor.

The possible solutions vis-à-vis the conclusions stated can be mapped from the perspective of the AAAQ (Availability, Accessibility, Affordability and Quality) framework that was laid out in the terms of reference and the initial study protocol under the following sub-heads.

Availability

a. Physical Infrastructure

The need of the hour is certainly to conduct an extensive research on finding the gaps in the existing health structure for MNH care in terms of: number and type of facilities available for urban mother and newborns; the status of infrastructure in the urban centre (as in the few cases where information was available, the health facilities were running in rented spaces, poorly designed, or dilapidated structures); presence of basic facilities such as x–ray, ultrasound, labs and other essential equipment; SNCU and emergency obstetric care units; and suitably equipped transport facilities for pregnant women.

Accessibility

a. Responsive, Sensitive and Standardised Mechanisms

Setting up of standards for institutions for providing primary healthcare and making them accountable to the local government and, in turn, to the citizens, are vital aspects that need attention. The process of providing managerial oversight to UHCs needs to be defined by strengthening primary care services, which means allocating more resources to them and creating a well-defined referral system for secondary and tertiary care. The urban poor are a diverse group of migrants and 'outsiders', mainly from rural areas. They endure tough working conditions and have a poor health status. They have an unsteady relationship with service providers, unlike other city-dwellers. Consequently, any planning for them needs to take this diversity into account. This city-specific planning would require micro-planning by the ULBs. Therefore, urban health centres must be built in adequate numbers to ensure

universal access to slum populations. Urban health posts must be distributed evenly to avoid concentration of facilities in a few cities, or in parts of a city.

b. Effective Outreach

Most of the resources under the NUHM should be allocated for outreach work. Corporations should be strongly encouraged to appoint an ASHA/USHA for every 2,000 population. Effective outreach depends primarily on these link workers.

c. Functional Referral Chain

There is a need of strengthening the referral system as well as managing the issue of variable distance from the health service system. The placement of the health service system within the localities of the urban poor as well as the need of transport facilities must be urgently considered. The tertiary care institutions can provide better quality of specialised care, if the primary level institutions are efficient, and the referral chain is functional. This requires strengthening of the primary and secondary levels of care and a functional referral linkage, with an emphasis on primary prevention, primary healthcare and secondary prevention (WG NRHM,XII FYP, 2011).

Affordability

a. Financing Mechanisms

Research in the field of cost-effective methods of sustainable financing needs to be looked at by the state health departments, donors and NGOs. There should be a sense of urgency and prioritisation in the entire planning process and a dedicated, focused plan of action for urban marginalised maternal and newborn care. The provisioning of funds should be timely and regular to ensure smooth, round-the-clock functioning of the urban, maternal and newborn health services. There should be a detailed study on the needs of the target urban communities before designing any financial plan.

Quality

a. Policy Guidelines

Guidelines that will strictly govern the UMNH facilities at the primary and secondary healthcare centre need to be formulated. Evidence-based effective interventions need to be clearly defined for each level of service delivery. Policy decisions should take into account the specific contexts of the city, as well as the needs of various population groups.

b. Effective Monitoring and Reporting Systems

There is a need to establish an effective monitoring system as the provisioning of services for the urban poor is almost redundant in the space provided. As some of the city reports indicated, in many of the facilities,the absence of trained personnel was an evident issue. There is a need to recruit and trainboth community level workers as well as engage trained professionals to manage the equipment.

c. Incorporating Learning from NRHM

Implementation of NUHM must incorporate lessons learnt through NRHM. Policy decisions need to be taken to address the overt focus on curative services, poor public health and hygiene, problems of pollution, collapsing public healthcare facilities, unregulated private sector expansion in healthcare and the lack of ethics and self-regulation amongst medical professionals. Policy documents must clarify responsible who is the authority to for urban health, after reorganising the public health administration in urban local bodies. There should be uniformity in the basic structure and services, such as sanitation, electricity, waiting rooms and laboratories.

d. Human Resource Planning

Task-shifting and lowering the bar, especially capacitating the graduate doctors to provide essential

newborn care will make a difference. Successful experiments to that effect have been undertaken in states like Gujarat. Involvement of paramedics such as the Yashodas in West Bengal, could be another strategy to support the nurses in the facilities, as the involvement paramedics freed the limited number of nurses for more specialised functions. It is equally important to attract, retain and motivate human resources that are involved in providing special care to newborns. By providing improved work conditions, higher remuneration and recognition of their work in public, the state government of Madhya Pradesh and UNICEF have been able to attract and retain paediatricians and nurses for the special-care newborn units.

Further, the need for a multi-sectoral approach for maternal and newborn health should be emphasised; which includes training of staff, their employment, retention and improved management systems in formal healthcare. The training and education programmes implemented by some of the countries, which improved maternal mortality, need to be taken on alarger scale and implemented. Government, partners, stakeholders and donors need to work together to suit the needs of the urban poor in managing emergency obstetric care and decreasing maternal mortality. More studies need to be conducted focusing on the other HRH management system components, such as supervision, partnership and proper HRH information system development, and their impact on the maternal and newborn healthcare in urban areas.

e. Standardised Service Delivery Protocols

A standard protocol that mandates the existing health service system in the cities to ensure timely care for pregnant mothers and newborns. Research on the current of urban health service delivery mechanisms, from a demand-side perspective is expressly needed.

f. Governance Mechanisms

It is time to strongly underline the roles of local bodies and also ensure convergence within various departments. Special provision that dwells on a bottom-up approach and mandatorily engages the community in the decision-making for UMNH systems. The governance system should also look into the aspects of involvement of the CBOs, training of home-based caregivers, strengthening of services for EOC-ENC, training of link workers for home-based care and facility-based professionals in essential newborn care.

To conclude, it is important that the maternal and newborn health programmes, though variably existing in the urban space of India, gets a thorough prioritisation and reboot. The whole service delivery mechanism, adopted along with the NUHM guidelines, is not in place when it comes to most of the cities in the country. Ambiguity on the information, data, role of departments, leadership, personnel, supply chains andlogistics continues to remain. Most facilities remain under utilised due to an inefficient mechanism of functioning. Extensive research needs to be conducted on the social fabric and the needs of diverse urban target populations. The local bodies that have been eluding or excluded from the key responsibilities; need to create a comprehensive bottom-up plan for urban mothers and newborns. In this case, the community-based interventions (discussed in the chapter for innovations) that have taken place across the country, can be taken as a base for designing & extending a programme that caters to the issues of availability, accessibility, affordability and sustainability of quality-assured services.

A final recommendation for future research is conceptual rather than methodological. Future researchers should make a greater effort to examine the associated linkages with maternal and newborn healthcare in urban poor settings, which are areas that have hitherto received less attention than the other aspects of health. While it is acknowledged that data on MNH care provided outside the formal health sector is more difficult to collect, the lack of such data is critical in settings where a majority of residents live in vulnerable conditions. This reinforces the need to undertake research on the existing health systems and service delivery mechanisms for the urban poor so as to ensure the establishment and management of appropriate mechanisms in the coming years.

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Annexure- 1: Evidence Table– Literature Reviewed

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
1	High Infant and child Mortality rates in Orissa: An Assessment of Major Reasons Jalandhar Pradhan & P. Arokiaswamy Population, Space & Place, 2006	Study report	Public health expenditure, poor socio economic fdeterminants, service delivery	Infant & child mortality rates are high in Orissa. The study finds that this is due to extremely low levels of health sector investments & associated quality of care.
2	Health for Urban Poor: Evidence from Bhubhaneswar, Jaipur and Pune F. Ram, S.K. Singh, D. A. Nagdeve, H. Lhungdim, K.C. Das HUP Baseline Report, 2011	Baseline survey report	Urban Health	The purpose of this report is to assess prevalent behavior & practices in MNCH among the urban poor in the three cities.
3	Existing practices and barriers to access of MCH services – a case study of residential urban slums of district Mohali, Punjab, India Parika Pahwa, Aditya Sood Global journal of medicine and public health, 2013	A cross – sectional descriptive study report	Service delivery, human resource	The study assesses and finds that poor sense of need and on top of it, the providers poor attitude were the main reasons for not utilizing health care facilities and services by women residing in urban slum areas of district Mohali, Punjab.
4	A Strategic Approach to Reproductive, Maternal, Newborn, Child & Adolescent Health (RMNCH+A) in India Ministry of Health & Family Welfare, GoI, 2013 Ministry of Health & Family Welfare, GoI, 2013	Strategy Document	Service delivery, community engagement, monitoring & information system, sectoral convergence.	Life cycle linked maternal and child health care services help to better address the evolving needs of women and children.
5	Maternity or catastrophe - A study of household expenditure on maternal health care in India Saradiya Mukherjee, Aditya Singh, Rakesh Chandra Health, Vol 5, 2013	Study report	Financing	This study found that the urban household maternal expenditure is twice that of rural expenditure, leading to impoverishment.
6	A Study on Utilization of Maternal Services in Urban Slums of Bangalore Ranganath T.S and Poornima C	Research article	Service delivery	To achieve MDG-5, urban slums need improvement, as slum indicators are below urban average. There is poor utilization of maternal services. Awareness is needed in

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	International Journal of Basic and Applied Medical Sciences, Vol 1, 2011			slums by IEC activities
7	ASHAs not enough to deliver Healthcare to urban poor Sonal Matharu Down To Earth, 2012	Opinion article	Community interventions, service delivery	The ASHAs model should be replicated in urban maternal health care service delivery
8	Assessing Gujarat's 'Chiranjeevi' Scheme Akash Acharya, Paul McNamee Economic & Political Weekly, november 28, 2009 vol xliv no 48	Commentary	Service Delivery	The article says that the Chiranjeevi Yojana aims ro remove financial barriers for poor women to access private providers but since most of them take only 'safe cases', it defeats the purpose of accessing providers in complications.
9	Barriers to Safe Motherhood in India Susheela Singh, Lisa Remez, Usha Ram, Ann M. Moore and Suzette Audam Guttmacher Institute, 2009	Report	Service Delivery	The report provides a descriptive overview of maternal health in India and highlights the current status of and recent trends in gaps in the receipt of maternal health care and associated factors.
10	Health of the Urban Poor – Population Foundation of India (HUP-PFI) Pune City Project Population Foundation of India Population Foundation of India, 2014	City report	Urban health	The report is based on a Pune city visit by the HUP-PFI team, which looked at various determinants and hurdles in maternal healthcare delivery and access.
11	India Newborn Action Plan, Ministry of Health & Family Welfare, Govt of India, 2014	Strategy document	Newborn health	This strategy document analysis the current scenario with respect to newborn health in India and lays down a framework to better address the needs of newborn healthcare.
12	The Millennium Development Goals Report, United Nations, 2014	Status report	MDG 4&5	This is a report on the status of MDG 4&5 in various parts of the world in 2013.
13	Growth parameters at birth of babies born in Gampaha district, Sri Lanka and factors influencing them; Priyantha J. Perera, Nayomi Ranathunga, Meranthi P. Fernando, Tania D. Warnakulasuriya, Rajitha A. Wickremasinghe	Original research document	Infant mortality	This research looks at the growth parameters for recording the development of infants in Sri Lanka.
14	District planning tool for maternal and newborn health strategy implementation; WHO	Resource Guide	Planning and implementation, program	Provides national and district health managers / planners with practical resources for the planning and implementation of Maternal and Newborn Health

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
			management, district level Maternal and Newborn Health (MNH) services	(MNH) services towards making pregnancy safer. It is a and practical tool for anyone who is responsible for MNH programme management and all stakeholders at district level. It includes a technical overview on prevalence and causes of maternal and newborn death and disability; highlights strategic directions for improving maternal and newborn health and the key 10 steps required for the proposed district planning framework for MNH.
15	Identifying, Categorizing, and Evaluating Health Care Efficiency Measures; Elizabeth A. McGlynn, Paul G. Shekelle, Susan Chen, Dana P. Goldman, John A. Romley, Peter S. Hussey, Han de Vries, Margaret C. Wang, Martha J. Timmer, Jason Carter, Carlo Tringale, Roberta M. Shanman	Research report	Healthcare efficiency	Present criteria for evaluating health care efficiency measures, and discuss to what degree existing measures meet these criteria.
16	Urbanization, Urban Poverty and Health of the Urban Poor: Status, Challenges and the Way Forward; Siddharth Agarwal, Aravinda Satyavada, S. Kaushik and Rajeev Kumar+	Article	Urban health	This paper analyzes the association between urban poverty and health of the urban poor in India. The health situation among the urban poor is described on the basis of the analysis of the NFHS-2 data by economic status. The paper also outlines some of the challenges in improving health outcomes of the urban poor and the potential operational solutions to address such challenges.
17	The State of the World's Midwifery, 2011 – Delivering Health, Saving Lives; UNFPA	Annual Report	Skilled birth attendants, quality maternal health services	Provides the first comprehensive analysis of midwifery services and issues in countries where the needs are greatest. The report provides new information and data gathered from 58 countries in all regions of the world. Its analysis confirms that the world lacks some 350,000 skilled midwives -- 112,000 in the neediest 38 countries surveyed -- to fully meet the needs of women around the world. The report explores a range of issues related to building up this key health workforce.
18	Reaching Health Care to the Unreached: Making the Urban Health Mission Work for the Urban	TRG report	Urban health, urban poor	A Technical Resource Group (TRG) on National Urban Health Mission was constituted based on 'Terms

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
	Poor; MoHFW			of Reference' issued by Ministry of Health & Family Welfare, Govt of India. There were four Working Groups under the TRG. These are the 'Report and Recommendations' for NUHM submitted by NHSRC
19	Systematic Review on Human Resources for Health Interventions to Improve Maternal Health Outcomes: Evidence from Developing Countries; Zulfiqar A. Bhutta, Zohra S. Lassi and Nadia Mansoor	Review report	HRH, maternal health	This review focuses on the impact of HRH interventions on health care professionals defined as skilled birth attendants to decrease maternal mortality and morbidity. It derives lessons, gaps and recommendations based on the studies conducted on HRH implementations in developing countries.
20	Urban Health - The Emerging Social Imperative For India In The New Millennium; S. Agarwal, K. Srivastava	Review article	Urban health needs	This article looked at and listed out the special needs of urban healthcare, given the diversity in population an needs, as well as the problems that were unique to urban health. It then goes on to suggest some possible solutions to the identified problems.
21	Maternal and Newborn Health Toolkit; MoHFW	Guidelines document	MCH resource gude	Provides support and guidance to policymakers, programme officers, and managers to establish health facilities providing quality maternal and neonatal services.
22	Maternal Mortality: An Indicator of Intersecting Inequalities; Mabel Bianco, Susanna Moore	Debates and research findings article	Maternal mortality, socio-economic factors, gender equality	Gender inequality, poverty and disparities in women's and girls' access to health, education and income as well as socio-cultural status are all key factors that impact maternal health. Based on monitoring developed in Africa, Asia Pacific and Latin America and the Caribbean, diverse Sexual and Reproductive Health and Rights networks, including those working on HIV, researched the linkages between MDG 5 and MDGs 3 and 6. It was affirmed that the only way to improve maternal health is by building and strengthening a comprehensive approach that incorporates cross-cutting issues of gender equality and women's and girls' education and empowerment, elimination of early marriage, poverty alleviation, access to sexual and reproductive health commodities

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				and services including safe abortion, HIV prevention and delivery health care.
23	Maternal and Newborn Care Practices Among the Urban Poor in Indore, India: Gaps, reasons and potential program options	Research report	Maternal and newborn social practices	This report describes maternal-newborn care practices and care of infants aged 2-4 months (feeding practices, morbidity status, immunization status and nutritional status) in urban slum dwellings of Indore city, Madya Pradesh (India). Also discussed in this report, are reasons for following these practices, what facilitates and what hinders following optimal practices and potential program options for their improvement.
24	Examining the "Urban Advantage" in Maternal Health Care in Developing Countries; Zoe¨ Matthews, Amos Channon, Sarah Neal, David Osrin, Nyovani Madise, William Stones	Policy article	Urban maternal health	This Policy Forum article investigates the "urban advantage" to determine whether the urban poor in a range of different countries really do have an advantage over rural populations in health and access to services. It also quantifies the gap between the urban poor and other residents of towns and cities.
25	Reducing Neonatal Mortality in India: Critical Role of Access to Emergency Obstetric Care; Rammohan, Iqbal K, Awofeso N.	Article	Neonatal health; facilities and services	Addressing the main causes of neonatal deaths in India--preterm deliveries, asphyxia, and sepsis--requires adequacy of specialised workforce and facilities for delivery and neonatal intensive care and easy access by mothers and neonates. The slow decline in neonatal death rates reflects a limited attention to factors, which contribute to neonatal deaths. The suboptimal quality and coverage of Emergency Obstetric Care facilities in India require urgent attention.
26	An Assessment of the Quality of Primary Health Care in India; Timothy Powell-Jackson, Arnab Acharya, and Anne Mills	Special article	Quality of PHC	There is limited evidence on the quality of primary health care provision in India. Using data on the availability of inputs from a nationally representative survey of primary health centres, a composite measure of structural quality of care for primary health centres was developed with a view to examine its geographical variation, associations with mortality and healthcare utilisation, and the determinants of better quality, giving particular attention to the role of management.

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				The mean quality score was 52%, with large differences across regions, states and districts. Quality of care was the worst and the variation greatest in states designated by the government as low performing. Good management practices in a facility were highly correlated with better quality of care. The majority of primary health facilities in India fall far short of government minimum standards, in part explaining why most people in rural areas use private providers for outpatient care. Future research should explore the causal relationship between management practices, quality of care and patient outcomes.
27	Social Infrastructure: Urban Health And Education; Laveesh Bhandari	Article	Infrastructure, services	Both for education as well as the urban health care, it is poor delivery of the services that has exacerbated the consequences of poor infrastructure. Both are symptoms of failure of the institutional set-up in delivering what they set out to do and improvements can be brought about by altering the delivery and institutional mechanism.
28	Social Infrastructure; DDA	Article	Strategies for health related infrastructure in Delhi	The quality of life in any urban centre depends upon the availability of and accessibility to quality social infrastructure. Social infrastructure can be looked at in terms of the facilities indicated in the City Level Master Plan, and Community Facilities, which are indicated at the layout plan level in various use zones. The proposed Planning norms and development controls and conditions in respect of various social infrastructure facilities are brought out in the article.
29	Issues In Social Infrastructure: Public Health Infrastructure in Mumbai; Mumbai Transformation Support Unit	Vision document	Social infrastructure in Mumbai	Vision Mumbai document targets at health and education as the key areas of improvement for social infrastructure which would lead to better quality of life for the common citizen of Mumbai. In order to transform Mumbai into a city with globally comparable infrastructure and offer a comfortable quality of life,

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				there is a need to identify the problems and come up with a strategy to reach our goals. First report of the Chief Minister's Task force seeks to improve physical and social infrastructure in Mumbai where delivery of social services will be upgraded to world class levels. This would require drastic improvement in the infrastructure for health and education i.e. improvement in government run hospitals and schools which cater to the common man.
30	Innovative Ways to Meet Health Challenges of Urban India; Radhika Arora, Sourav Neogi, Madhavi Misra	Analysis article	Innovations in maternal and newborn health	A landscape analysis, to create a directory of innovative approaches towards improving maternal and newborn health in India, was undertaken by the Public Health Foundation of India (PHFI). The aim of creating such a database was to use the information to develop detailed audio-visual case studies of select innovations which indicated a potential for scaling-up. Many of these innovations including those under NRHM succeeded in providing promising results in addressing the health needs of the local populace. A directory of 204 innovations addressing maternal, newborn and adolescent health, as well as family planning was compiled. Out of these 11 innovations specifically targeted urban populations. This paper discusses four innovations from the directory, which target urban populations to reduce maternal and infant mortality and improve youth and adolescent health, as well as discusses their potential for scale-up.
31	Targeting Poverty And Gender Inequality To Improve Maternal Health; Silvia Paruzzolo, Rekha Mehra, Aslihan Kes, Charles Ashbaugh	Report	Gender and maternal health	This paper argues that in order to sustainably reduce MMR and improve the overall life chances of poor mothers, policy and programs need, as a matter of urgency, to address two interrelated, root causes of maternal death: poverty, which creates the conditions for inadequate, inaccessible and costly maternal health services in poor and underserved areas, and gender norms that tend to privilege the well-being of men and

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				boys at the expense of women and girls, leading to women's lack of economic options and lack of autonomy. This paper examines the ways in which poverty and gender inequality impact maternal mortality by creating barriers to maternal healthcare access and utilization. It also analyzes strategies designed to increase utilization to identify best practices.
32	Translating Research Findings Into Health Policy; Davis P, Howden-Chapman P.	Paper	Health research health policy	Evidence of the influence of research on health policy is paradoxical. While there is scant evidence that research has had any impact on the direction or implementation of widespread health reforms, research on evidence-based medicine has dramatically increased, despite limited evidence that it has affected clinical practice. These developments have occurred in the context of a general decline in state intervention and provision and a post-modern questioning of researchers' authority. Models of the relationship between research and policy range from one where empirical research rationally informs decision-making, through research incrementally affecting policy, to an "enlightenment" or "infiltration" model, which may operate on a conceptual level. Health research that contributes to large-scale socio-political change may require more methodological pluralism and greater focus on key institutional structures.
33	Strengthening Maternal and Child care, Nutrition & Health in Urban Settings; NIPCCD	Summary Report	ICDS, urban maternal and child health	This is a report of a two day workshop organised by the Ministry of Women and Child Development (MWCD) on 18th and 19th July 2012 at NIPCCD. The objective of the workshop was to understand the challenges in implementation of ICDS in urban settings and to evolve strategies from cross learning.
34	Neonatal Health in India; Common Health	Presentation	Neonatal survival	Study of childbirth practices in Rajasthan and approaches for neonatal survival

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
35	City Initiative for newborn health, Mumbai: Overview and Protocol; Armida Fernandez	Article	Human resources	This article describes the critical first steps taken to revitalize the vast public health system of Mumbai City through the active participation of personnel from within the system. It focuses on one of two components of an ambitious action-research project aimed at improving the survival and health of newborn infants and mothers living in slum communities in Mumbai.
36	Scaling up Maternal, Newborn and Child Health Interventions: The Need for Strategies to Reach the Urban Poor; Robert Black	Presentation	Strategies for maternal and newborn health	Burden of disease in mothers, newborn and children globally and in India. Evidence based interventions that save lives. Grand challenges for improving outcomes
37	Suggested Urban Health Post Model and Sure Start Maharashtra Framework; PATH	Strategy document	Model for maternal and newborn health intervention	This document presents a suggested model for urban intervention in maternal and newborn health after the successful implementation of the Sure Start project in urban slums of Maharashtra, India. In addition, the document provides a diagrammatic representation of the strategy and approach adopted by Sure Start in Maharashtra for demand generation and system linkages.
38	Sure Start in Maharashtra, India; PATH	Project summary document	Innovations	A snapshot of the Sure Start initiative, a seven-year project to improve birth outcomes and ensure the health of mothers and newborns in seven cities of Maharashtra, India. This document presents a concise overview of the improvements in maternal and health practices in the intervention areas.
39	Sure Start: Ensuring the Health and Safety of Mothers and Newborns in India Through Behavior Change and Community Action; PATH	Fact sheet	Community based interventions	This fact sheet outlines community-based interventions that expanded access to skilled birth attendants, established support groups for women, and introduced communications approaches to change behaviors.
41	Sure Start: Helping Mothers and Newborns Thrive; PATH	Fact sheet	Community action	Sure Start is an initiative intended to catalyze sustainable improvements in maternal and newborn health through effective community action in selected districts of Uttar Pradesh and urban sites of

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				Maharashtra, India. The Sure Start project has been designed to complement and support the Government of India's commitment to improving maternal and newborn health. This fact sheet gives an overall picture and progress of the project to date.
42	Sure Start: Saving Lives of Mothers and Newborns in Maharashtra: City-Specific Intervention Models; PATH	Strategy document	Models for quality care and medical assistance	This document summarizes the models employed by Sure Start in urban slum areas of Maharashtra, India, to ensure good-quality care and medical assistance to expectant mothers and newborns: volunteerism, public-private partnership, quality of care, community-based health insurance, convergence of maternal and newborn health and HIV services, and an emergency health fund and prepaid card.
43	Treading a New Path: Stories From the Sure Start Project in Uttar Pradesh; PATH	Report	Health workers	This report shows how health workers in Uttar Pradesh offered information, practical solutions, and emotional support, enabling women to take charge of their health and that of their newborns.
44	Effect of home-based neonatal care and management of sepsis on neonatal mortality: field trial in rural India; Bang AT, Bang RA, Baitule SB, Reddy MH, Deshmukh MD	Study report	Home-based neonatal care	Neonatal care is not available to most neonates in developing countries because hospitals are inaccessible and costly. We developed a package of home based neonatal care, including management of sepsis (septicaemia, meningitis, pneumonia), and tested it in the field, with the hypothesis that it would reduce the neonatal mortality rate by at least 25% in 3 years.
45	Spoilt for choice? Cross-sectional study of care-seeking for health problems during pregnancy in Mumbai slums; More NS1, Alcock G, Das S, Bapat U, Joshi W, Osrin D.	Study report	Care seeking behavior of women	This study considers care-seeking patterns for maternal morbidity in Mumbai's slums. The objectives were to document women's self-reported symptoms and care-seeking, and to quantify their choice of health provider, care-seeking delays and referrals between providers.
46	Prospective study of determinants and costs of home births in Mumbai slums; Sushmita Das, Ujwala Bapat, Neena Shah More, Latika Chordhekar, Wasundhara Joshi and David Osrin	Study report	Home births and factors influencing the same	Around 86% of births in Mumbai, India, occur in healthcare institutions, but this aggregate figure hides substantial variation and little is known about urban home births. The study aimed to explore factors

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				influencing the choice of home delivery, care practices and costs, and to identify characteristics of women, households and the environment, which might increase the likelihood of home birth.
47	Stillbirths and newborn deaths in slum settlements in Mumbai, India: a prospective verbal autopsy study; Ujwala Bapat, Glyn Alcock, Neena Shah More, Sushmita Das, Wasundhara Joshi and David Osrin	Study report	Causes of delay in seeking and receiving healthcare for maternal and newborn health problems	Three million babies are stillborn each year and 3.6 million die in the first month of life. In India, early neonatal deaths make up four-fifths of neonatal deaths and infant mortality three-quarters of under-five mortality. Information is scarce on cause-specific perinatal and neonatal mortality in urban settings in low-income countries. The study conducted verbal autopsies for stillbirths and neonatal deaths in Mumbai slum settlements. The objectives were to classify deaths according to international cause-specific criteria and to identify major causes of delay in seeking and receiving health care for maternal and newborn health problems.
48	Maternal and neonatal health expenditure in Mumbai slums (India): A cross sectional study; Jolene Skordis-Worrall, Noemi Pace, Ujwala Bapat, Sushmita Das, Neena S More, Wasundhara Joshi, Anni-Maria Pulkki-Brannstrom and David Osrin	Data analysis document	Maternal health expenditure	The cost of maternity care can be a barrier to access that may increase maternal and neonatal mortality risk. The article analyzed spending on maternity care in urban slum communities in Mumbai to better understand the equity of spending and the impact of spending on household poverty
49	Intimate partner violence against women during and after pregnancy: a cross-sectional study in Mumbai slums; Sushmita Das, Ujwala Bapat, Neena Shah More, Glyn Alcock, Wasundhara Joshi, Shanti Pantvaidya and David Osrin	Study report	Partner violence	At least one-third of women in India experience intimate partner violence (IPV) at some point in adulthood. The study objectives were to describe the prevalence of IPV during pregnancy and after delivery in an urban slum setting, to review its social determinants, and to explore its effects on maternal and newborn health.
50	Community-based health programmes: role perceptions and experiences of female peer facilitators in Mumbai's urban slums; Alcock G, More NS, Patil S, Porel M, Vaidya L, Osrin D.	Study findings	Peer facilitators	This article presents findings from a study of female peer facilitators involved in a community-based maternal and newborn health intervention in urban slum areas of Mumbai. Using qualitative methods we explore their role perceptions and experiences. Our

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				findings focus on how the facilitators understand and enact their role in the community setting, how they negotiate relationships and health issues with peer groups, and the influence of credibility.
51	Inequalities in maternity care and newborn outcomes: one-year surveillance of births in vulnerable slum communities in Mumbai; More NS, Bapat U, Das S, Barnett S, Costello A, Fernandez A, Osrin D.	Analysis document	Care differential according to economic status	Aggregate urban health statistics mask inequalities. The analysis described maternity care in vulnerable slum in Mumbai, and examined differences in care and outcomes between more and less deprived groups.
52	Tracing pathways from antenatal to delivery care for women in Mumbai, India: cross-sectional study of maternity in low-income areas; More NS, Alcock G, Bapat U, Das S, Joshi W, Osrin D.	Study findings	Sectors and responsibilities in maternal and newborn health	In many cities, healthcare is available through a complex mix of private and public providers. The line between the formal and informal sectors may be blurred and movement between them uncharted. We quantified the use of private and public providers of maternity care in low-income areas of Mumbai, India.
53	A Rapid Assessment Scorecard to Identify Informal Settlements at Higher Maternal and Child Health Risk in Mumbai; Osrin D., Das S, Bapat U, Alcock G, Joshi W, More NS	Rapid assessment report	Informal settlements, high risk populations	The communities who live in urban informal settlements are diverse, as are their environmental conditions. Characteristics include inadequate access to safe water and sanitation, poor quality of housing, overcrowding, and insecure residential status. Interventions to improve health should be equity-driven and target those at higher risk, but it is not clear how to prioritise informal settlements for health action. In implementing a maternal and child health programme in Mumbai, India, we had conducted a detailed vulnerability assessment which, though important, was time consuming and may have included collection of redundant information. Subsequent data collection allowed us to examine three issues: whether community environmental characteristics were associated with maternal and newborn healthcare and outcomes; whether it was possible to develop a triage scorecard to rank the health vulnerability of informal settlements based on a few rapidly observable characteristics; and whether the scorecard might be

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				useful for future prioritisation.
54	Nutritional status of young children in Mumbai slums: a follow-up anthropometric study; Das S1, Bapat U, More NS, Alcock G, Fernandez A, Osrin D.	Study findings	Child malnutrition	Chronic childhood malnutrition remains common in India. As part of an initiative to improve maternal and child health in urban slums, we collected anthropometric data from a sample of children followed up from birth. We described the proportions of underweight, stunting, and wasting in young children, and examined their relationships with age.
55	Conflict, Crisis, and Abuse in Dharavi, Mumbai: Experiences from Six Years at a Centre for Vulnerable Women and Children; Nayreen Daruwalla , Armida Fernandez, Jenny Salam, Nikhat Shaikh, David Osrin	Article	Abuse	The Centre for Vulnerable Women and Children serves clients coping with crisis and violence in the challenging urban setting of Dharavi, Mumbai. We discuss factors that shaped the development of the Centre over six years Intervention was often guided by clients' desire to keep their families together. Successful intervention requires strong links with health care providers, the police, legal services, and community-based organisations
56	Community Mobilization in Mumbai Slums to Improve Perinatal Care and Outcomes: A Cluster Randomized Controlled Trial; Neena Shah More, Ujwala Bapat, Sushmita Das, Glyn Alcock, Sarita Patil, Maya Porel, Leena Vaidya, Armida Fernandez, Wasundhara Joshi, David Osrin	Research Article	Community mobilization, maternal health, urban slums	Improving maternal and newborn health in low-income settings requires both health service and community action. Previous community initiatives have been predominantly rural, but India is urbanizing. While working to improve health service quality, we tested an intervention in which urban slum-dweller women's groups worked to improve local perinatal health.
57	Police investigations: discretion denied yet undeniably exercised; J. Belura, N. Tilleya, D. Osrinb, N. Daruwallac, M. Kumard & V. Tiwarie	Journal article	Police, women's deaths	Drawing on fieldwork in Delhi and Mumbai, this paper explores how police investigations unfolded in the specific context of women's deaths by burning in India. In particular, it focuses on the use of discretion despite its denial by those exercising it.
58	The social construction of 'dowry deaths'; Jyoti Belur, *, Nick Tilley, Nayreen Daruwalla, Meena Kumar, Vinay Tiwari d, David Osrin	Article	Dowry deaths	The classification of cause of death is real in its consequences: for the reputation of the deceased, for her family, for those who may be implicated, and for epidemiological and social research and policies and

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				practices that may follow from it. The study reported here refers specifically to the processes involved in classifying deaths of women from burns in India. In particular, it examines the determination of 'dowry death', a class used in India, but not in other jurisdictions.
59	Shaping cities for health: complexity and the planning of urban environments in the 21st century; Yvonne Rydin, Ana Bleahu, Michael Davies, Julio D Dávila, Sharon Friel, Giovanni De Grandis, Nora Groce, Pedro C Hallal, Ian Hamilton, Philippa Howden-Chapman, Ka-Man Lai, C J Lim, Juliana Martins, David Osrin, Ian Ridley, Ian Scott, Myfanwy Taylor, Paul Wilkinson, James Wilson	Report	Economic growth, demographic change, urban planning	This report argues against the assumption that urban health outcomes will improve with economic growth and demographic change, and instead highlights the need for urban planning for health needs.
60	Cluster-randomised controlled trial of community mobilisation in Mumbai slums to improve care during pregnancy, delivery, postpartum and for the newborn; Neena Shah More, Ujwala Bapat, Sushmita Das, Sarita Patil, Maya Porel, Leena Vaidya, Bhaveshree Koriya, Sarah Barnett, Anthony Costello, Armida Fernandez and David Osrin	Protocol	Community intervention	The protocol describes a trial of community intervention aimed at improving prevention, care seeking and outcomes.
61	Community resource centres to improve the health of women and children in Mumbai slums: study protocol for a cluster randomized controlled trial; Neena Shah More, Sushmita Das, Ujwala Bapat, Mahesh Rajguru, Glyn Alcock, Wasundhara Joshi, Shanti Pantvaidya and David Osrin	Trial report	Community resource centres	The trial addresses the general question of whether community resource centers run by a non-government organization improve the health of women and children in slums.
62	Examining the Effect of Household Wealth and Migration Status on Safe Delivery Care in Urban India, 1992–2006; Prashant Kumar Singh, Rajesh	Study report	Maternal health expenditure	Although the urban health issue has been of long-standing interest to public health researchers, majority of the studies have looked upon the urban poor and

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	Kumar Rai, Lucky Singh			migrants as distinct subgroups. Another concern is, whether being poor and at the same time migrant leads to a double disadvantage in the utilization of maternal health services? This study aims to examine the trends and factors that affect safe delivery care utilization among the migrants and the poor in urban India.
63	Workshop on the Health of the Urban Poor in the Context of NUHM; Dr. A. Dyalchand	Workshop report	Urban poor health, NUHM	Institute of Health Management, Pachod (IHMP) Pune centre, organized a workshop on "Health of the Urban Poor in Maharashtra" from Nov. 4th to 6th, 2008, in collaboration with Yashwantrao Chavan Academy of Development Administration (YASHADA), Pune and the International Institute of Population Sciences (IIPS), Mumbai. The principal objective of the workshop was to identify strategies for effective implementation of health care for the urban poor in the context of the National Urban Health Mission (NUHM) in Maharashtra.
64	Poor Perinatal Care Practices in Urban Slums: Possible Role of Social Mobilization Networks; Zulfia Khan, Saira Mehnaz, Najam Khalique, Mohd Athar Ansari, and Abdul Razzaque Siddiqui	Study article	Urban perinatal practices	To determine the existing perinatal practices in an urban slum and to identify barriers to utilization of health services by mothers.
65	SAARC Social Charter: India Country Report 2014; Ministry of Statistics and Programme Implementation	Country report	Interventions	The current report, fifth in the series, presents the status of achievement on different social development outcomes under different chapters as enumerated in the various Articles of the Charter. The publication sketches a lucid description of the programmatic interventions of the Government of India aimed at raising the living standards of its citizens and providing equal opportunities to hitherto marginalized sections of the society.
66	Maternal, newborn and child health framework; International Federation of Red Cross and Red Crescent Societies,	Framework document	RMNCH	This framework provides guidance and direction to National Societies, their programme managers and all other parties involved in the planning, design and implementation of programmes and interventions in

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				maternal/reproductive, newborn and child health (MNCH, also referred to as RMNCH).
67	A Compendium on Health of Urban Poor in South East Asia: Abstract of select Papers and Reports; Kamla Gupta, Fred Arnold , H. Lhungdim	Report	Urban health & living conditions	This report analyzes health and living conditions in eight large Indian cities (Chennai, Delhi, Hyderabad, Indore, Kolkata, Meerut, Mumbai, and Nagpur). The report is based on data from India's 2005-06 National Family Health Survey (NFHS-3).
68	Maternal Health Policy In India – From Institutional Deliveries to Safe Deliveries; B Subha Sri and Renu Khanna	Policy paper	Safe delivery, maternal health policy	Groups like the Jan Swasthya Abhiyan and CommonHealth have been expressing that the maternal health policy in India needs to move away from the paradigm of institutional deliveries to a paradigm of safe deliveries. What is a safe delivery? How do the Jan Swasthya Abhiyan and CommonHealth envision safe delivery? This paper explores these questions and offers an understanding that has evolved through collective discussions amongst these networks
69	Health Status of Marginalized Groups in India; Zulufkar Ahmad Khanday , Mohammad Akram	Study paper	Health status	The objectives of the present paper are to study the health status of marginalised groups- women's, children's, scheduled castes, scheduled tribes, persons with disabilities, migrants and also the health status of aged in India; the violation of their rights; the double exploitation which women's face in their home and at the work place and also to study how the different factors affecting the health of the marginalised groups.
70	India's country experience addressing social exclusion in maternal and child health; K. R Nayar	Paper	Maternal health, social exclusion	This paper present some of the key initiatives that have been undertaken and the potential implications of these measures for women and child health based on interviews with program managers and health workers as well as review of official documents, published papers, relevant content on official websites, and data sources mainly focusing on the States.
71	Vulnerable Groups In India; Chandrima Chatterjee and Gunjan Sheoran	Research document	Health rights of vulnerable	The health rights of vulnerable groups remain detached from the state systems i.e. policy, programme and

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			groups	practice. The document identifies the vulnerable groups in India, their health and human rights concerns while exploring the degree and kinds of their vulnerability vis-à-vis their location and identity.
72	Why women choose to give birth at home: a situational analysis from urban slums of Delhi; Niveditha Devasenapathy, Mathew Sunil George, Suparna Ghosh Jerath, Archna Singh, Himanshu Negandhi, Gursimran Alagh, Anuraj H Shankar, Sanjay Zodpey	Analysis paper	Service delivery	Increasing institutional births is an important strategy for attaining Millennium Development Goal -5. However, rapid growth of low income and migrant populations in urban settings in low-income and middle-income countries, including India, presents unique challenges for programmes to improve utilisation of institutional care. Better understanding of the factors influencing home or institutional birth among the urban poor is urgently needed to enhance programme impact. To measure the prevalence of home and institutional births in an urban slum population and identify factors influencing these events.
73	Learning, Sharing, Adapting: Innovations in Maternal Health Programming; CARE	Reference guide	Maternal health	CARE's decades of experience in and learning from maternal health programming has resulted in the accrual of a rich body of knowledge. This reference guide on innovations in maternal health programming provides practical examples, evidence, innovations, lessons learned and solutions to new and old challenges to improve program quality and to increase impact.
74	National Consultation on "Potential Role of Private Sector Providers in Delivering Essential Newborn Care in under-servied urban and peri-urban settings"; Save the Children, Lucknow	Consultation report	Urban newborn health care, urban poor	The consultation comprised of national champions of evidence, programmes and policy with regards to newborn care for the urban poor. It is significant to note that the recommendations have pertinently focused on developing a state and city level Governance Structures for Urban Health. The city initiatives and innovations in Uttar Pradesh, Maharashtra and Gujarat have definitely brought forth the evidences of effectiveness of BCC, KMC and other innovative strategies.

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75	Status of birth preparedness and complication readiness in Uttar Dinajpur District, West Bengal; Dipta Kanti Mukhopadhyay, Sujishnu Mukhopadhyay, Sharmistha Bhattacharjee, Susmita Nayak, Asit K Biswas, Akhil B Biswas	Study report	BPCR, maternal mortality	Birth Preparedness and Complication Readiness (BPCR) is crucial in averting maternal morbidity and mortality. Objective of the study was to find out awareness and practices regarding BPCR among pregnant and recently delivered women in Uttar Dinajpur, West Bengal.
76	Progress in Health-Related Millennium Development Goals in the WHO South-East Asia Region; Poonam Khetrapal Singh	Opinion article	MDG in south-east Asia	This article provides a snap shot of progress thus far, key challenges and opportunities in WHO South-East Asia Region and lays down the way forward for the global health agenda post 2015.
77	3.6 Million Neonatal Deaths—What Is Progressing and What Is Not?; Joy E. Lawn, MBBS, MRCP (Paeds), MPH, PhD, Kate Kerber, MPH, Christabel Enweronu-Laryea, MBBS,‡ and Simon Cousens, Dip Math Stat	Opinion article	Neonatal deaths globally	This article reviews progress for newborn health globally, with a focus on the countries in which most deaths occur— what data do we have to guide accelerated efforts? All regions are advancing, but the level of decrease in neonatal mortality differs by region, country, and within countries.
78	Strengthening Maternal & Childcare Nutrition and Health in Urban Settings; NIPCCD	Workshop report	ICDS	A two day workshop was organised by the Ministry of Women and Child Development (MWCD) on 18th and 19th July 2012 at NIPCCD. The objective of the workshop was to understand the challenges in implementation of ICDS in urban settings and to evolve strategies from cross learning.
79	Family Planning: Effect of City Size; UHI	White paper	Family planning	The expansion of family planning services in Uttar Pradesh requires a thorough knowledge of the policy, social, and economic factors that affect contraceptive use. This document is one in a series of white papers that analyse recent data with the aim of understanding the impact of these factors on family planning. Increasing contraceptive use prevents unplanned pregnancy, and reduces maternal and newborn deaths. In this brief, we consider how city size affects contraceptive use. Given that city size is associated with two crucial indicators of reproductive and child health, it would seem important to also consider city

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				size as a factor that might be associated with contraceptive use. Thus the purpose of this brief is to determine whether there are indeed variations in contraceptive use associated with city size, and if there are, to propose strategies that might be employed to increase voluntary contraceptive use in all areas.
80	Inequity in India: the case of maternal and reproductive health; Linda Sanneving, Nadja Trygg, Deepak Saxena, Dileep Mavalankar and Sarah Thomsen	Review document	Social determinants, policies	In India, economic status, gender, and social status are all closely interrelated when influencing use of and access to maternal and reproductive health care. In this review, a framework developed by the Commission on Social Determinants of Health (CSDH) is used to categorize and explain determinants of inequity in maternal and reproductive health in India.
81	The Effect of Health-Facility Admission and Skilled Birth Attendant Coverage on Maternal Survival in India: A Case-Control Analysis; Ann L. Montgomery, Shaza Fadel, Rajesh Kumar, Sue Bondy, Rahim Moineddin, Prabhat Jha	Evaluation report	Human resource, access to and quality of services	The effect of health-facility admission did vary by skilled attendant coverage, and this effect appears to be driven partially by reverse causality; however, inequitable access to and possibly poor quality of healthcare for primary and emergency services appears to play a role in maternal survival as well.
82	Utilization of Maternal and Child Health Care Services by Primigravida Females in Urban and Rural Areas of India; Hemant Mahajan and Bhuwan Sharma	Study article	Service delivery and access	Maternal complications and poor perinatal outcome are highly associated with non utilisation of antenatal and delivery care services and poor socioeconomic conditions of the patient. It is essential that all pregnant women have access to high quality obstetric care throughout their pregnancies. Present longitudinal study was carried out to compare utilization of maternal and child health care services by urban and rural primigravida females.
83	Exposure and Learning Visit to Best Practices Models of Ahmedabad Municipal Corporation (AMC); Plan India - Health of the Urban Poor (HUP) Program;	Tour report	Urban living	Around 1.38 crore people in Bihar live in slums or informal settlements and only 2.8 % urban dwellers have access to piped water supply at home. It is estimated that nearly 60% of the population will be urbanized in next two decades; thereby creating unprecedented challenges. Due to rapid urbanization,

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				25% slums dweller live without access to improved hygiene and sanitation facilities. Supplementing the problem are water quality issues in 50% of the districts. Evidences reflect that lack of safe drinking water and open defecation lead to a range of diseases, while factors such as overcrowding and pollution contribute to health problems.
84	Coverage gap in maternal and child health services in India: assessing trends and regional deprivation during 1992–2006; Chandan Kumar, Prashant Kumar Singh, Rajesh Kumar Rai	Study report	Coverage of services	Increasing the coverage of key maternal, newborn and child health interventions is essential, if India has to attain Millennium Development Goals 4 and 5. This study assesses the coverage gap in maternal and child health services across states in India during 1992–2006 emphasizing the rural–urban disparities. Additionally, association between the coverage gap and under-5 mortality rate across states are illustrated.
85	Public Private Partnerships formed by SNEHA: City Initiative For Newborn Health, ASK partnership, Arogya Sarita; Sushma Shende and others	Paper	PPP for urban newborn health	This paper summarises one NGO's experience in building partnerships with the public sector health system, the outcomes achieved so far and lessons learnt. It also describes the role of each partner and sustainability issues involved.
86	Building the Infrastructure to Reach and care for the poor: Trends, Obstacles and Strategies to overcome them; Dileep V. Mavalankar, K.V. Ramani, Amit Patel, Parvathy Sankar	Review paper	MNH infrastructure	This paper reviews available literature and assesses the coverage and gaps in infrastructure in MNH. It also identifies critical issues in management of infrastructure and analyses their causes and impacts on service delivery to the poor. The paper also reviews impact of reforms on infrastructure and provides some recommendations for improvement of infrastructure management so as to ensure better services to the poor.
87	Toolkit on monitoring health systems strengthening; WHO			Strengthening service delivery is a key strategy to achieve the Millennium Development Goals. This includes the delivery of interventions to reduce child mortality, maternal mortality, and the burden to HIV/AIDS, tuberculosis and malaria1. Service provision or delivery is an immediate output of the

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				inputs into the health system, such as health workforce, procurement and supplies and finances. Increased inputs should lead to improved service delivery and enhanced access to services. Ensuring availability and access to health services is one of the main functions of a health system. Such services should meet a minimum quality standard.
88	Child Health and Immunization Status in an Unregistered Mumbai Slum; Joya Banerjee	Thesis	Immunization	This thesis uses the case of an unregistered urban slum, Kaula Bandar (KB), in Mumbai, India, to examine the determinants of child mortality and immunization coverage using primary quantitative and qualitative data from a household survey (n=226 households) and focus groups. Results Indicate that although immunization services are widely available in urban centers, a "knowledge-action gap" keeps immunization rates low—and child mortality high— in slum communities.
89	Bringing Evidence into Public Health Policy (EPHP) 2012: Strengthening health systems to achieve universal health coverage; Upendra Bhojani, Arima Mishra, NS Prashanth and Werner Soors	Conference papers	Health systems	
90	A Social Determinants Approach to Maternal Health; UNDP	Discussion Paper	Social determinants	The fundamental rationale of the social determinants of health approach is not only that social determinants shape health outcomes but that it is possible to improve health outcomes and reduce health inequities by analyzing and acting on the most influential of those social determinants. This document contributes to these discussions through the lens of one particular global health challenge: maternal health. Maternal health provides a salient example of how adopting a social determinants approach can build synergies across development sectors to accelerate progress on a specific health issue.

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91	Government of West Bengal: The Urban Health Strategy; Govt of West Bengal, Departnment of Health & Family Welfare & Department of Municipal Affairs	Strategy document	Urban health	The Government of West Bengal is committed to ensuring accessible, equitable and quality health care services to the urban population of the State. Towards this end the Department of Health & Family Welfare (DHFW) and Department of Municipal Affairs & Urban Development (DMA & UD) propose to contextualize the strategic framework within which the State shall seek to address the health concerns of the urban poor.
92	Strengthening Health Management Information Systems for Maternal and Child Health: Documenting MCHIP's Contributions; Molly Strachan, Mary Drake, Barbara Rawlins, Vikas Dwivedi, Becca Levine, Moussa Ly, Gbenga Ishola	Project document	HMIS	As part of it its efforts to improve the quality of maternal, newborn, and child health (MNCH) care in low-income countries, MCHIP has taken specific steps to improve the monitoring of MNCH services through strengthening routine HMIS. These efforts have led to better monitoring and evaluation, higher-quality data, and informed decision-making in 28 countries across MNCH interventions. Ongoing efforts to improve HMIS will increase country and global access to information-rich systems to support MNCH program strengthening. This report summarizes successful HMIS-related interventions and innovations in countries where MCHIP is operating and at the global level. It highlights what MCHIP has done to strengthen HMIS and which MCHIP contributions have been integrated and institutionalized in national HMIS systems, and describes lessons learned.
93	Need for Dedicated Focus on Urban Health within National Rural Health Mission; S. Agarwal, K. Sangar	Article	Urban health in NRHM	This paper discusses issues pertaining to health conditions of the urban poor, present status of services, challenges and suggests options for NRHM to bridge the large gap.
94	National Consultation on "Potential Role of Private Sector Providers in Delivering Essential Newborn Care in under-servied urban and peri-urban settings"; Save the Children	Consultation report	Private sector in urban newborn care	The Government of Uttar Pradesh (Ministry of Health and Family Welfare) and UNICEF in partnership with Save the Children and Saving Newborn Lives led a national level consultation titled 'Role of Private Sector Providers in Newborn Care in Under serviced

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				Urban and Peri-urban Setting' that highlighted these challenges and developed a road map which provides a scope for participation of various stake holders in the state so as to take forward the recommendations at the policy and programmatic level.
95	Nourishing Our Future: Tackling Child Malnutrition In Urban Slums; DASRA		Newborn nutrition	Nourishing Our Future focuses on the issue of malnutrition for infants aged 0-36 months in urban slums. This age group is the 'window-of opportunity' where the foundation for physical and cognitive growth potential is established. Despite it being widely known that after 36 months, the long-term effects of malnutrition are irreversible, mainstream efforts to reduce malnutrition are mainly targeted at children between 3-6 years
96	Urban Slum-Specific Issues in Neonatal Survival; Armida Fernandez, Jayshree Mondkar, Sheila Mathai	Article	Systems for urban maternal health	Urbanization is rapidly spreading throughout the developing world. An urban slum poses special health problems due to poverty, overcrowding, unhygienic surroundings and lack of an organized health Infrastructure. The primary causes of neonatal mortality are sepsis, perinatal asphyxia and prematurity. Home deliveries, late recognition of neonatal illness, delay in seeking medical help and inappropriate treatment contribute to neonatal mortality. Measures to reduce neonatal mortality in urban slums should focus on health education, improvement of antenatal practices, institutional deliveries, and ensuring quality perinatal care. Success of a comprehensive health strategy would require planned health infrastructure, strengthening and unification of existing health care program and facilities; forming a system of referral and developing a program with active participation of the community.
97	All Slums are Not Equal: Maternal Health Conditions Among Two Urban Slum Dwellers; Zulfia Khan, Saira Mehnaz, Abdul Razzaq	Study article	Maternal practices	The study examines whether hazardous maternal care practices exist in and whether there are differences in the utilization rates of health services in two different

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	Siddiqui, Athar Ansari, Salman Khalil, and Sandeep Sachdeva			slums.
98	Improving urban newborn health: Challenges and the way forward; Siddharth Agarwal	Paper	Challenges for neonatal care and survival	This paper discusses the situation of neonatal care and survival among the urban poor across states which are at different levels of social development. Challenges in addressing needs of the newborns in urban poor settings operate at community as well as program level and need to be addressed simultaneously. The paper describes these challenges and suggests a way forward in light of the existing opportunities and lessons from successful experiences.
99	Newborn Care Practices and Health Seeking Behavior in Urban Slums and Villages of Anand, Gujarat; Archana S Nimbalkar, Vivek V Shukla, Ajay G Phatak And Somashekhar M Nimbalkar	Study findings	Socio economic factors	Health status of neonates in urban slums has not been studied in smaller towns. A questionnaire was administered to 154 families of 10 urban slums of Anand (population - 197351) and 160 families from 6 villages of Anand district. The socioeconomic and education status of the slum dwellers versus rural participants were significantly lower in urban slums, as compared to villages, Care seeking was low in urban slums, Hindus and illiterate mothers. Health care and socioeconomic status of neonates in slums of smaller cities is poorer than in surrounding villages.
100	Neonatal Care Practices in Urban Villages; Peeyush Grover, Intern,Pragti Chhabra, Professor	Study report	Neonatal care	Neonatal health is the key to child survival. Care practices during delivery and neonatal period contribute to risk of mortality and morbidity. The present study was conducted in two urban villages of east Delhi to study practices during delivery and neonatal period amongst mothers.
101	Comparison Of Prevalent Newborn Rearing Practices, In Urban And Slum Population Of Chandigarh, Ut, India; S Puri, V Bhatia, M Sharma, H Swami, C Magnat	Study report	Newborn practices	To study the home based newborn care practices in slum and urban area of Chandigarh and to compare the practices in both setups.
102	Newborn Care Practices in Urban Slums of Lucknow City, UP; Pratibha Gupta, VK	Study report	Newborn care practices	A cross-sectional study in urban slums of Lucknow city, UP, included 524 women who had a live birth during

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
	Srivastava, Vishwajeet Kumar, Savita Jain, Jamal Masood, Naim Ahmad, and JP Srivastava			last 1 year preceding data collection. Data were analyzed using statistical software SPSS 10.0 for windows.
103	Maternal and neonatal health expenditure in mumbai slums (India): A cross sectional study; Jolene Skordis-Worrall, Noemi Pace, Ujwala Bapat, Sushmita Das, Neena S More, Wasundhara Joshi, Anni-Maria Pulkki-Brannstrom1 and David Osrin	Analysis report	Health expenditure	The cost of maternity care can be a barrier to access that may increase maternal and neonatal mortality risk. We analyzed spending on maternity care in urban slum communities in Mumbai to better understand the equity of spending and the impact of spending on household poverty.
104	State of India's Newborns 2014; PHFI	Report	Newborn health strategies	This second edition of the SOIN report reviews the evidence generated progress and learning in newborn health in India over the past ten years, and actions needed to accelerate progress in newborn health and survival in the decade ahead.
105	Newborn care practices in an urban slum of Delhi; Manju Rahi, DK Taneja, Amrita Misra, NB Mathur, Suresh Badhan	Study report	Newborn care practices	Despite efforts by government and other agencies, neonatal morbidity and mortality continues to be high in India. Among other reasons, newborn care practices are major contributors for such high rates. The aim of the study was to find out the newborn care practices including delivery practices, immediate care given after birth and breast-feeding practices in an urban slum of Delhi.
106	A Tale of Two Approaches: Maternal and Neonatal Healthcare for the Urban Poor; Usha Ganesh	Article	MDG	This article examines two approaches in Bangladesh and India that have made significant inroads to meet the MDG on maternal mortality.
107	Maternal and child health challenge in urban India: The lack of access to preventive care information; Dr Aparna Hegde, Founder and Chairman, ARMMAN			As MAMA prepares to launch in India next month, we take a closer look at the maternal, newborn and child health challenges faced in its urban areas
108	Demand-side Financing and Promotion of Maternal Health: what has India learnt?; Benjamin M Hunter, Ramila Bisht, Indira Chakravarthi, Susan F Murray			This paper undertakes a systematic review of the evidence to consider how demand-side financing has been used and whether there has been any impact on maternal health service utilisation, maternal health, or other outcomes. The findings suggest that a relatively

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				narrow focus on achieving targets has often overburdened health facilities, while inadequate referral systems and unethical practices present overwhelming barriers for women with obstetric complications. The limited evidence available also suggests that little has been done to challenge the low status of poor women at home and in the health system
109	Newborn Care Practices Among Slum Dwellers In Aligarh City, Uttar Pradesh; MH Khan, N Khalique, AR Siddiqui, A Amir			A community-based study was conducted in the field practice area of the Urban Health Training Centre (UHTC), Departnment of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh, UP. 200 pregnant women were chosen for the study, carried out for 1 year. objective was to study the knowledge and practices related to newborn care among slum dwellers in Aligarh. finsings were that there were poor newborn practices among slum dwellers in Aligarh.
110	Poor Perinatal Care Practices in Urban Slums: Possible Role of Social Mobilization Networks; Zulfia Khan, Saira Mehnaz, Najam Khalique, Mohd Athar Ansari, and Abdul Razzaque Siddiqui			To determine the existing perinatal practices in an urban slum and to identify barriers to utilization of health services by mothers.
111	Community Based Newborn Care: A Systematic Review and Meta-analysis of Evidence: UNICEF-PHFI Series on Newborn and Child Health, India; Siddhartha Gogia, Siddarth Ramji, $Piyush Gupta, #Tarun Gera, $Dheeraj Shah, Joseph L Mathew, Pavitra Mohan and Rajmohan Panda			To assess the effect of community based neonatal care by community health workers (CHWs) on NMR in resource-limited settings.
112	Comparison Of Prevalent Newborn Rearing Practices, In Urban And Slum Population Of Chandigarh, Ut, India; S Puri, V Bhatia, M Sharma, H Swami, C Magnat.			To study the home based newborn care practices in slum and urban area of Chandigarh and to compare the practices in both setups.
113	Fostering Maternal and Newborn Care in India the Yashoda Way: Does This Improve Maternal and Newborn Care Practices during Institutional			The Yashoda program, named after a legendary foster-mother in Indian mythology, under the Norway-India Partnership Initiative was launched as a pilot program

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
	Delivery?; Beena Varghese mail, Reetabrata Roy, Somen Saha, Sidsel Roalkvam			in 2008 to improve the quality of maternal and neonatal care at facilities in select districts of India. Yashodas were placed mainly at district hospitals, which are high delivery load facilities, to provide support and care to mothers and newborns during their stay at these facilities. This study presents the results from the evaluation of this intervention in two states in India.
114	Cash Incentives for Institutional Delivery: Linking with Antenatal and Post Natal Care May Ensure 'Continuum of Care' in India; Chandrakant Lahariya			Evaluating the JSY scheme.
115	Janani Suraksha Yojana: the conditional cash transfer scheme to reduce maternal mortality in India – a need for reassessment; Rajesh Kumar Raia, Prashant Kumar Singhb			
116	A Tale of Two Approaches: Maternal and Neonatal Healthcare for the Urban Poor; Usha Ganesh	Opinion article	Public health infrastructure	This article examines two approaches in Bangladesh and India that have made significant inroads to meet the MDG on maternal mortality.
117	Contracting-out of Reproductive and Child Health (RCH) Services through Mother NGO Scheme in India: Experiences and Implications; Ramesh Bhat, Sunil Maheshwari, Somen Saha	Working paper	Partnership with NGOs, management of RCH services	Partnership with NGOs in delivering and provision of Reproductive and Child Health (RCH) services through mother NGO (MNGO) in the un served and under-served regions is one of the important initiatives in India. The scheme involves large number of contracts between government and the NGOs. As of April 2006, 215 MNGOs were working in 324 districts of the country. In addition to this there are about 3 to 4 Field NGOs attached with each MNGO in a district. This paper discusses this scheme with an objective to understand the make up of the partn ership and the development of management capacity in the system.
118	Capacity Building on Management and Implementation of Urban RCH Services and Public Private Partnerships; UHRC	Study tour report	PPP, urban maternal health	UHRC has been working closely with the MoHFW and state governments in developing strategies, operational guidelines and capacity to improve the

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				health of the urban poor. In order to improve capacity of key officers managing urban health programs, an exposure visit was conducted to Municipal health centers in Bangalore managed in partnership with the private sectors. These health centers initiated under the World Bank funded eight round of the India Population Project (IPP-VIII) have been operated successfully by non-governmental agencies for the past several years and some of these NGOs have managed to run these facilities even after the end of the project cycle.
119	Building Public Sector – NGO Partnerships for Urban RCH Services; Siddharth	Editorial	NGO Partnerships, Urban partnerships	The quest for better livelihood opportunities has led to large-scale migration and the mushrooming of slums in several Indian cities. Unfortunately, a significant section of the urban poor do not have access to many of the benefits of urban development. Much of the challenge of delivering services to the marginalized groups lies in identifying them and effectively approaching them, so that limited resources are utilized well and programs address real needs1. There is a presence of the public sector as well as NGOs in urban areas. The growing requirement for health services for the urban poor, owing to rapid urban population growth, necessitates thinking about the collaborative approach of the public and Non profit sector for health services in urban areas
120	Design Research in Neonatal Healthcare in Urban India; Prerak Mehta	Research report	Neonatal health in Urban India	This paper attempts at understanding the core issues plaguing neonatal healthcare amongst the urban sector in India, the approach taken to understand these issues and the implications of the approach. It points out the opportunity for design interventions at various junctures. An attempt has been made to go deeper into the practical problems being faced by the various stakeholders - Mother and family (father, mother-in-law, and maternal members), Doctor and support staff

S. No.	Bibliographic Details	Type of document	Key Characteristics /aspects covered	Abstract/Main findings
				(nurses, attendants), Public health officer/NGO and support staff (aanganvadi and community level health workers), and Baby products shopkeepers.
121	Life Spring Hospitals: Can Specialty Care Facilities Reduce Maternal and Infant Mortality Rates in India?; Carlin Carr	Article	Maternal and infant mortality in India	This article describes PPP in the maternal and neonatal care arena, LifeSpring Hospitals Private Ltd., founded in 2005, has emerged as a leader in providing routine obstetric care and delivery services for expecting mothers in urban poor areas of Southern India.

Annexure 2: City wise MNH programmes, schemes & innovations in some select cities across India

S no	City	Facility that provides care to mother and child	No. of facilities	Status of equipment available/ transport mechanism	Number of total population	Number of slums	Remarks
1	Ambala	RCH centre	3	Caesarean section, an X-ray machine, USG, autoclave, ventilator, anaesthesia, laparoscopy, autoclave, SNCU, Transport not available	4,00000	42 slums	The type of care provided at the primary level RCH centres are that of ANC, immunization, The major problem remains that all the facilities are running in rented apartments (pucca buildings not available in the slums).
		MCH	1				
		MCH II	1				
		Secondary care unit (FRUs)	3				
2	Bardhaman	Health Post	5	Availability of ultrasound and other diagnostic which are chargeable, the maternity home is taking care of antenatal check up, immunization	347,016,	Total slum population 88,000	The facilities available are almost defunct and there is no specific information on the same. The specialized services , transport facility for accessing the services available at maternity ward, the discussion on emergency care provisioning for mother and child is also missing
		Sub Health Post	27				
		Maternity Home at urban hospital	1				
		Satish Sadhu Smriti Poura Swastha Kendra (2nd unit of IPP-VIII(Extn.) Khosbagan	1				
3	Bhopal	Maternity ward with baby friendly environment	NA	Counseling facilities available for reproductive health, RKS is available , there is no clarity on the number of equipment and status of the building	19,14,839	486 slums	The city report indicates existence of facilities for reproductive and new born health however there is no clear indication of the number of units, available diagnostic and new born care facilities
		Counselling Services for Domestic Violence, Gender Violence, Adolescents, etc	NA				
4	Bhubaneswar	Urban health posts that takes care of ANC, immunization	21	The Urban health posts are supposed to provide antenatal care, immunization. No lab technologies available associated with mother and new born health care.	8, 81,988	50-60 slums	Most of the Urban slum health centers in the city are either running in rented buildings or community centers. There are PPP under NRHM and indeed there is often duplication of information as the same population is being catered by the urban health posts and the PPP units

Table: An analysis of HMIS across districts of various states

Name of the district	Method	Status of HMIS
North Dinajpur (West Bengal)	HMIS / MCTS (mother and child tracking)	Although HMIS / MCTS information is sent to the block but feedback is not received properly from the block, at both town and village levels.
Coochbehar (West Bengal)	HMIS / MCTS	SC level officials are not properly trained in this format. Although HMIS / MCTS information is sent to the block but feedback is not received properly from the block.
Sitapur (Uttar Pradesh)	HMIS / MCTS	District Hospital-Sitapur: At the DH one staff is engaged for HMIS and no one for MCTS. DH reports for HMIS are neither timely nor complete. CHC Laharpur: At the CHC there is one person who looks after HMIS and same person also looks after the MCTS activities. The HMIS and MCTS data pertaining to the CHC are being provided as per the prescribed timelines and are complete. Data validation checks to some extent for HMIS data are being undertaken prior to upload of the data on the portal. PHC Barai Jalalpur: At the PHC there are two persons who look after HMIS and MCTS. The HMIS and MCTS data pertaining to the PHC are being provided as per the prescribed timelines and HMIS reporting is complete while as MCTS is complete to 80 percent level. Data validation checks to HMIS data are being undertaken prior to upload of the data on the portal. MCH Centre Madhavpur: The ANM reported that she sends complete data relating to HMIS and MCTS in time and it was informed by district officials that data are of reasonable quality as far validation of these data are concerned.
Pilibhit (Uttar Pradesh)	HMIS / MCTS	District Hospital-Pilibhit: At the DH no separate staff is engaged for HMIS and MCTS. DH reports for HMIS are timely and complete. CHC Puranpur: At the CHC there are two persons who look after HMIS and three persons who look after the MCTS activities. The HMIS and MCTS data pertaining to the CHC are being provided as per the prescribed timelines and are more or less complete. Data validation checks to some extent for HMIS data are being undertaken prior to upload of the data on the portal. PHC Madhotanda: At the PHC there are two persons who look after HMIS and MCTS. The HMIS and MCTS data pertaining to the PHC are being provided as per the prescribed timelines and they are also complete. Data validation checks to HMIS data are being undertaken prior to upload of the data on the portal. SC Ram Nagra: The ANM reported that she sends complete data relating to HMIS and MCTS in time but it was informed by district officials that data are not always validated when we receive them from ANM (discrepancy)
Lakhimpur Kheri (Uttar Pradesh)	HMIS / MCTS	District Hospital- Lakhimpur Kheri: At the DH, one staff is engaged for HMIS and MCTS. DH reports for HMIS are timely and complete but no MCTS entries are being done. HMIS data are not validated before sending to the CMO Office. SC Katoli: The ANM reported that she sends complete data relating to HMIS and MCTS in time but it was informed by district officials that data are not always validated when we receive them from ANM.
Kaushambi (Uttar Pradesh)	HMIS / MCTS	CHC Sarai Akeel: At the CHC no information could be received on HMIS and MCTS.
Hardoi (Uttar Pradesh)	HMIS / MCTS	District Hospital-(Female)-Hardoi: At the DH one separate staff is engaged for HMIS and MCTS. Timeliness is apparently maintained and data validation checks are applied. However, complete data is not reported.
Tiruchirappalli District (Tamil Nadu)	HMIS / MCTS	Data entry in the central portals HMIS and MCTS are not done at the peripheral / facility level. The data from HMIS portal and the PICME portal are transferred to the central portals at the district and state levels respectively. The data quality is far from satisfactory and the timeliness and the accuracy need to be improved. Utilization of the data from the portal at the peripheral level is not noticed.
Krishnagiri	HMIS / MCTS	Data entry in the central portals HMIS and MCTS are not done at the peripheral / facility level. The data from

District (Tamil Nadu)		TNHMIS portal and the PICME portal are transferred to the central portals at the district and state levels respectively. The data quality is far from satisfactory and the timeliness and the accuracy need improvement.
Bundi district (rajasthan)	HMIS / MCTS	It is because in many places ANMs are newly appointed and they did not received any formal training of HMIS recording and reporting HMIS data are using for review of performance of RCH indicators. One of the problems in ensuring good HMIS data is multiplicity of record keeping of some of the indicators like BCG and some cases of delivery also.
Delhi	HMIS / MCTS	Adequate number of trained personnel engaged in HMIS

Source: https://nrhm-mis.nic.in/

Some promising community interventions and innovations

Table of Chapter : Community Intervention				
S no	Program/ implementation agency	State /City	Status	Inference
1.	Mamta	Delhi (NCR)	Pre-2003	The 10K Club - a club for the health & development of the poorest' which focuses on improving the quality of maternal and new born health by eliminating poverty through proper mobilization of local community and other partners (NGOs) .A functional Regional Resource Center that has trained NGOs , NGO committees, Panchayat members across Punjab, Haryana and Chandigarh. This has given special emphasis on mobilising women for registration, ANC , PNC
2	Saath	Ahmadabad, Gujarat	2005	1. Jeevan Daan Maternal and Child Survival program aims at a) Pneumonia Case Management b). Control of Diarrheal Diseases c). Nutrition/Breast Feeding d). Expanded program on immunization e)Maternal and Newborn Care 2. Anganwadi centers functional in 23 wards that caters to neonatal health and pregnant women. 3. An RCH program which is aligned with the concept of care giving and indulges link workers for home visits. * The link workers had undertaken rigorous home visits to reduce myths associated with pregnancy an new born care.
3	SNEHA	Mumbai		Creation of a improved referral system through following process a) Workshops were conducted, bringing together health providers from different levels of service and action groups were formed which met on a monthly basis. b) These action groups created a database of existing facilities for maternal and neonatal services,

				using a self-assessment tool c) They standardized technical and administrative protocols and antenatal and neonatal services were rendered through primary care units in slum settlements.
4	Ankur	Maharashtra	2000, (Pilot project) ,	1. Building capacity of community level mobilisers, training of trainers, 2. Creating a process to register pregnant women, give care and also record cases of each new born. It gave high importance to monitoring and recording deaths and still births. 3. The program also had undertaken a stringent process of evaluating its training component through reviewing deliverables set for the community mobiliser
5	Yashoda	Selected districts of India	2007	Yashoda has been crucial in training community level workers for foster care of neontas.
6	Sure Start	Mumbai : Quality of Care model	Prior to 2012	The main objective of this model was to provide care to pregnant mothers and newborns with the help of availability, accessibility, appropriateness, and acceptability of public and private health services. It also aimed at establishing new antenatal, post-natal clinics and community centers.
		Navi Mumbai		Public-Private Partnership (PPP) model NGO's like DISHA came forth for ensuring community participation and supervision for improving the quality of maternal health care services. The objective of this model was to provide services like ANC/PNC clinics, special clinics and yoga facilities for pregnant women. #Under this model, a total of 26,823 pregnant women were examined in 131 clinics and 2728 cases were sent to special clinics
		Pune The Convergence model		The main aim of this model was to create awareness amongst pregnant women about HIV and creating a link between Integrated Counseling and Testing Centers and establishing committees like MOMS (monitoring of maternal and newborn status). It has well incorporated mothers, mother in laws, link workers, AWWs to act as a pressure group on families for safer mother and new born care
		Nagpur , Emergency Health Funds (EHF)		EHF is a financial mechanism which helps in providing health services to mothers and newborns at affordable rates. To attain these objectives, prepaid cards were developed after a thorough research on the need assessments of the community through social marketing campaigns. Nearly 1160 families have received benefit under this EHF model so far and the money has apparently helped in meeting the cost of delivery and treatment of newborns.
		Malegaon , Quality of Care model		Under this model, capacity building of municipal corporation staff and participation & mobilization of communities for high quality health services was targeted. Meetings on the quality of care in two health posts having an alliance with the Malegaon Municipal Corporation was being held on a regular basis *the major limitation of this program was a lack of trained manpower for health provisioning and sustaining this process.
		Solapur		The main objective of this model was to mobilize the community of Solapur by using volunteers to

		The Volunteerism model		enhance maternal and neonatal health services. The model was a success and accepted by the Solapur Municipal Corporation as it showed the development of its network of 170 self-help groups (SHGs) who held adequate knowledge about MNH care
		Nanded The Community Based Health Insurance (CBHI) model		Introduction of a service providers' network and employing community based health insurance known as "Apni Sehat", was introduced in targeted slum areas of Nanded city. Its aim was to start a health insurance scheme among the poor urban slum dwellers, who could not meet the cost of institutional deliveries and antenatal care check-ups.
4.	Muthulakshmi Reddy Maternal Assistance Scheme	Tamil Nadu	Introduced in 1989	State-funded scheme of conditional cash transfer (CCT) for institutional delivery. It started by offering a cash incentive of Rs. 500 to each pregnant woman. The scheme was initially run by the social welfare department and subsequently handed over to the health department. This particular amount was meant to compensate pregnant women for wage losses during pregnancy. Subsequently, the amount was increased to Rs. 2000 and then to Rs.6000. This amount was recently raised to Rs. 12,000 per pregnancy and is paid by the government for the first two live births. Apart from wage loss compensation, another purpose of giving the money is to provide additional nutrition to the mother to prevent anemia and low-birth weight babies. This scheme is only meant for below poverty line (BPL) families.
5.	Three Staff Nurse Model: 24x7 functional PHCs	Tamil Nadu	Between 2001-2006	This innovation ensures safe delivery services in a PHC to the pregnant women, at the onset of labor pains, at any time of the day or night.
6.	Technological innovations - Iron Sucrose Injections	Tamil Nadu	2009	Iron sucrose is an iron hydroxide sucrose complex in water. It is administered by intravenous (IV) injection or infusion. The recommended schedule is to administer 100 mg intravenously over five minutes, once or thrice weekly, until 1,000 mg has been administered. The rate of administration should not exceed 20 mg per minute. A test dose is also not required and is at the physician's discretion. Iron sucrose complex achieves a relatively satisfactory level when used in severely anaemic iron deficient pregnant women.
7.	Non-Pneumatic Anti-Shock Garment (NASG)	Tamil Nadu		The Government of Tamil Nadu has incorporated the use of NASG into its protocols for active management of third stage of labour and routinely trains staff at all levels for its use. NASG is now also being kept in all 108 Emergency Management and Research Institute (EMRI) ambulances in Tamil Nadu.
8.	Raksha Project	Bihar, Rajasthan, Tamil Nadu		To implement the 'Continuum of Care' philosophy, and within that introduced the NASG.
9.	Development of Embrace Baby Warmer	Bengaluru, Karnataka	2011	The current form of the baby warmer was also being used as a transport device. Here, if the LBW baby is required to be transported intra-hospital or inter-hospital for any laboratory checks or referrals, the baby warmer might be used to keep the baby warm. It is seen to be a suitable alternative, which is easy to use and cost effective.
10.	Smile on Wheel Program	Chhattisgarh, Delhi Maharashtra,	2006	Focusing on women and children, Smile-on-Wheels is a national multi-centric mobile hospital program that provides medical care to rural and semirural areas and urban slums where governmental healthcare facilities are scarce, nonexistent, or nonfunctional. Provide both preventive and curative services to those

		Orissa, Tamil Nadu, Uttarakhand, Ahmedabad, Hyderabad, Lucknow		in need, including outpatient, antenatal, and postnatal services, identification of difficult pregnancies and referral for institutional care, immunizations for mothers and children, minor surgery, blood pressure examinations, electrocardiograms, first aid, iron folic acid tablets, vitamin A prophylaxis and treatment of malnutrition.
11.	Innovative service delivery and risk pooling by NICE Foundation, India	Andhra Pradesh and Rajasthan	2002	It runs two health programs in Andhra Pradesh - the School new born healthcare Plan, the Tribal Reproductive New born health program and also operates the specialized Institute for the Newborn, Hyderabad, which provides neo-natal care and conducts training and research. The School new born healthcare Plan has been replicated in three districts of Rajasthan, and further rollout is planned in the state.
12.	Innovative service delivery by Life Spring Hospitals Private Limited (LHPL)	Andhra Pradesh, Karnataka, and Maharashtra	2005	Specialized provision of maternal and child services, including antenatal care, postnatal care, deliveries, family planning services, medical termination of pregnancy, pediatric care (including immunization), diagnostics, and pharmacy services.
13.	Arogya Raksha Yojana (ARY)	Karnataka	2005	Health micro-insurance scheme providing affordable, high-quality healthcare for the underserved in rural and urban areas of the Indian state of Karnataka, through an accessible provider network of private hospitals and clinics supported by leading doctors and surgeons.
14.	Chiranjeevi Yojana (CY)	Gujarat	2005	This is a government organized, quality driven voucher program contracting private obstetricians and gynecologists to provide delivery services to women who live below the poverty line, to reduce the maternal and newborn mortality rates.