



# Seasonal Work, Interrupted Care: Maternal and Child Health Gaps of Brick Kiln Migrants in Bihar, India

## Permanent link

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:37945630>

## Terms of Use

This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at <http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA>

## Share Your Story

The Harvard community has made this article openly available. Please share how this access benefits you. [Submit a story](#).

[Accessibility](#)

SEASONAL WORK, INTERRUPTED CARE: MATERNAL AND CHILD HEALTH GAPS  
OF BRICK KILN MIGRANTS IN BIHAR, INDIA

CHRISTINE BOHNE

A DELTA Doctoral Thesis Submitted to the Faculty of

The Harvard T.H. Chan School of Public Health

In Partial Fulfillment of the Requirements

For the Degree of Doctor of Public Health

Harvard University

Boston, Massachusetts.

May 2018

SEASONAL WORK, INTERRUPTED CARE: MATERNAL AND CHILD HEALTH GAPS  
OF BRICK KILN MIGRANTS IN BIHAR, INDIA

**ABSTRACT**

In India nearly 40% of the population is considered a migrant, yet migration is poorly understood and not prioritized in government policy. Seasonal migrants represent a particularly vulnerable category of people who come from the poorest sectors of society, often from scheduled castes and scheduled tribes. As seasonal migrants move between their home and work locations, continuity of care is interrupted and the portability of benefits denied. Working under what are often exploitative or slave-like conditions, they are systematically excluded from social services, as existing policies have largely failed to provide protection to this population, especially with regard to state-provided services such as healthcare.

This project explores the challenges seasonal migrant workers face in identifying, accessing, and receiving maternal and child health services through the lens of seasonal brick kiln workers. As many as 50 million women and children could be residing as seasonal migrants at brick kilns in India.

A literature review and expert interviews were conducted to provide an overview of the migration landscape in India. This research informed a qualitative study, which was carried out at brick kilns in Bihar through in-depth interviews and focus group discussions with brick kiln workers, brick kiln managers, and healthcare workers. Thematic analysis was used to synthesize findings, which were placed within the Three Delays Framework.

System level barriers to maternal and child healthcare arising from the exploitative nature of the employment system, the power the manager has over his employees, the social segregation brick kiln workers experience from the local population, stigma and discrimination, and the delivery mechanisms of government community health schemes were identified.

There is a need for systematic investments in knowledge and data around seasonal migrants. Surveying methods need to be improved to better count the number of seasonal migrants and understand their health status. The development of pilot projects involving community health workers to ensure maternal and child health programs are accessible is important. Finally advocacy with state and national government, as well as convening of key stakeholders, in order to bring about changes in labour laws is needed.

## TABLE OF CONTENTS

<b>Abstract.....</b>	<b>ii</b>
<b>Table of Contents .....</b>	<b>iv</b>
<b>Abbreviations .....</b>	<b>vii</b>
<b>List of Tables .....</b>	<b>ix</b>
<b>List of Figures.....</b>	<b>x</b>
<b>Acknowledgements .....</b>	<b>xi</b>
<b>Introduction.....</b>	<b>1</b>
<b>Analytical Platform.....</b>	<b>6</b>
<b>Chapter 1: Migration in India .....</b>	<b>6</b>
Overview .....	6
Migration Theories .....	6
Types of Migration .....	9
Definitions .....	11
Migration Patterns and Trends in India .....	13
Estimates of Brick Kiln Workers.....	18
Gaps in Literature .....	20
Migration and Health.....	23
<b>Chapter 2: Health System and Policy Overview .....</b>	<b>25</b>
Maternal and Child Health in India .....	25
Health System Overview .....	28
Relevant Policies and Schemes .....	29

<b>Chapter 3: The Brick Kiln Industry in India .....</b>	<b>40</b>
Overview .....	40
How Bricks Are Made.....	41
Finances and Labour Exploitation.....	41
Effects on Health .....	44
<b>Chapter 4: Research Overview .....</b>	<b>46</b>
Study Aim.....	46
Research Methodology .....	47
<b>Results .....</b>	<b>59</b>
<b>Chapter 5: Qualitative Study Results.....</b>	<b>59</b>
Social Segregation .....	62
Healthcare controlled by brick kiln managers .....	66
Potential enabling factors for healthcare .....	72
Limited access to community health outreach services.....	74
Lack of documentation .....	80
Financial challenges and exploitation.....	84
Stigma and discrimination .....	89
<b>Chapter 6: Discussion .....</b>	<b>91</b>
Key findings from the Case Study.....	91
Legal and Organizational Context.....	100
Implications for BMGF and Other International Organizations .....	104
<b>Conclusion .....</b>	<b>114</b>
<b>A Call to Action .....</b>	<b>114</b>

<b>Summary of Findings.....</b>	<b>115</b>
<b>Avenues for the Future .....</b>	<b>117</b>
<b>Appendix.....</b>	<b>119</b>
<b>Appendix I: Quantitative Analysis of Migrant Health Using NFHS-4 Data .....</b>	<b>119</b>
<b>Appendix II: Policy Summary .....</b>	<b>124</b>
<b>Appendix III: Expert Interviews .....</b>	<b>130</b>
<b>Appendix IV: Interview Guides .....</b>	<b>131</b>
Semi-Structured Interview Guide for Women.....	131
Semi-Structured Interview Guide For Men.....	138
Semi-Structured Interview Guide For Managers and Owners .....	143
Focus Group Discussion Guide For Community Health Workers .....	144
<b>Appendix V: Qualitative Analysis Codes .....</b>	<b>145</b>
<b>Bibliography .....</b>	<b>149</b>

## ABBREVIATIONS

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
AOD	Anganwadi On Demand
ASHA	Accredited Social Health Activist
AWC	Anganwadi Center
AWW	Anganwadi Worker
AYUSH	Ayurveda, Yoga, Unani, Siddha, Homeopathy
BMGF	Bill and Melinda Gates Foundation
BPL	Below Poverty Line
CAS	Common Application Software
CHC	Community Health Center
FCBTK	Fixed Chimney Bull's Trench Kiln
FGD	Focus Group Discussion
ICDS	Integrated Child Development Services
ICO	India Country Office
IDI	In-Depth Interview
IMR	Infant Mortality Rate
INR	Indian Rupee
IOM	International Organization for Migration
JSY	<i>Janani Suraksha Yojana</i>
JSSK	<i>Janani Shishu Suraksha Kayyakram</i>
MBBS	Bachelor of Medicine, Bachelor of Surgery



MCH	Maternal and Child Health
MMR	Maternal Mortality Rate
MOU	Memorandum of Understanding
NHM	National Health Mission
NFHS	National Family Health Survey
NGO	Non-Governmental Organization
NRHM	National Rural Health Mission
NSS	National Sample Survey
PHC	Primary Health Center
RI	Routine Immunization
RMP	Registered Medical Practitioner
RSBY	<i>Rashtriya Swastha Bima Yojana</i>
SC	Sub-Centre
SDGs	Sustainable Development Goals
UHC	Universal Health Coverage
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children's Fund
VHND	Village Health and Nutrition Day
VHSNC	Village Health, Sanitation and Nutrition Committee
WHA	World Health Assembly
WHO	World Health Organization

## LIST OF TABLES

Table 1: Migrants by rural-urban migration stream.....	14
Table 2: Duration since migration .....	14
Table 3: Reasons for migrating during the last decade.....	15
Table 4: Maternal and child health indicators (NFHS-4) .....	27
Table 5: Common factors affecting delays in care, summarized from Thaddeus and Maine, 1994 .....	48
Table 6: Inclusion criteria by participant group.....	55
Table 7: Sociodemographic characteristics of women/mothers (n=20) .....	61
Table 8: Summary of basic ANC of women/mothers (n=20).....	61
Table 9: Medicines dispensed by brick kiln managers .....	68
Table 10: Policy Summary.....	124

## LIST OF FIGURES

Figure 1: Public healthcare infrastructure .....	29
Figure 2: Overview of study phases methodology .....	51
Figure 3: Study area in Patna District, Bihar .....	53
Figure 4: Geotagged brick kilns in Danapur, Maner, Naubatpur, and Phulwari Blocks, Patna District, Bihar .....	53
Figure 5: Transect walk mapping of health services and banking points near brick kilns .....	65
Figure 6: Brick kiln manager hierarchy of resort to treatment .....	67
Figure 7: Three Delays Model (Thaddeus and Maine, 1994).....	93
Figure 9: Organization of key maternal and child health programs .....	103
Figure 10: Organization of the ASHA scheme .....	103

## **ACKNOWLEDGEMENTS**

Many thanks to my committee, Peter Berman, Jacqueline Bhabha, and Jesse Bump, for your kindness, encouragement, and introduction to the topics I care deeply about over the last three years at Harvard. I feel fortunate to have spent time at the BMGF ICO. Thank you to Nachiket Mor for believing in this project and the Health Systems Design Team (Amrita Agarwal, Alexo Esperato, and Stefan Nachuk) for providing a home during my stay. And thank you to all the members of the ICO team for sharing your knowledge and for welcoming me. I am grateful to Tom Newton-Lewis for facilitating my research in Bihar and connecting me with many wonderful people at Oxford Policy Management during my stays in Bihar. Many thanks to Tanmay Mahapatra for graciously supporting the last month of my field work and connecting me with one of my translators. This project would have not been possible without my two wonderful translators, Priyanka Bhagat and Ashok Kumar. Thank you for your hard work and the enjoyable conversations during our long car rides. My peer coaching team, Jenny Hsi and Sadiya Muqueeth, for your relentless presence throughout this project and hopefully far beyond. Mamka Anyona, Vanessa Brizuela, Claire Chaumont, and Pablo Villalobos, cheers to you and our friendships. Enrique Valdespino, thank you for your company and the research support in Bihar. To my wonderful family who have encouraged and enabled my work from the very beginning. And finally, to the many brick kiln workers who shared their stories with me. I will work hard so it was not in vain.

## **INTRODUCTION**

With an estimated one billion migrants globally, more people are on the move than ever before (WHO, 2017). Although international migration and its implications for host countries have dominated the migration discourse, far more people are migrating within national borders than across them. Internal migration is driven by economic, social, political, and economic factors (Rigaud, 2018). Many of the most socioeconomically vulnerable internal migrants are seasonal migrants who migrate under distress, are employed in the informal sector, and are financially exploited. Seasonal migrants represent an invisible population, floating between source and destination area, and living on the periphery of society (UNESCO, 2012). UNDP estimates there are over 100 million seasonal migrants in India who are systematically excluded from social protection programs (Deshingkar, 2009). There is evidence that a significant number of the seasonal migrants are in need of maternal and child health services, as seasonal migrants often migrate as a family unit. To date, little is known about the nexus between seasonal migration and maternal and child health in India.

In India nearly 40% of the population is considered a migrant, yet migration is poorly understood and not prioritized in government policy. Seasonal migrants represent a particularly vulnerable category of people who come from the poorest sectors of society, often from scheduled castes and scheduled tribes. As seasonal migrants move between their home and work location, continuity of care is interrupted and the portability of benefits denied. Working under what are often exploitative or slave-like conditions, seasonal migrants are systematically excluded from social services, as existing policies have largely failed to provide protection to this population, especially with regard to state-provided services such as healthcare (UNESCO, 2013).

Internal mobility in India is increasing. The World Bank estimates there will be an additional 40 million internal migrants in South Asia due to climate change by 2050. A large proportion of these will be in India. The numbers, already vast, will only continue to rise. It is time to develop migrant-inclusive policies to ensure equity across the most vulnerable segments of society.

This DrPH DELTA Doctoral Project\* will explore the challenges seasonal migrant workers face in identifying, accessing, and receiving health services through the lens of brick kiln workers.

Brick kilns are known to almost exclusively employ seasonal migrant labour. A common belief is that seasonal migrant workers have few health needs because only healthy, young males chose to migrate. However, entire families with children and pregnant women migrate to the brick kilns for seasonal work, highlighting the need for maternal and child health services for this population. By my estimate, nearly 50 million women and children could be residing as seasonal migrants at brick kilns in India. While those migrants who engage in strenuous physical labour such as brick making will be healthy in so far as that they are physically capable of the work, children will get sick and pregnancy complications will arise regardless.

In this project I aim to answer the question:

How can access to maternal and child healthcare for seasonal migrant workers in general and for brick kiln workers in particular be improved? In order to do this I propose to:

2. Provide an overview of the migration landscape in India and position the seasonal brick kiln workers within this landscape.
3. Carry out a study of seasonal brick kiln workers in order to understand the challenges they face in identifying, accessing, and receiving maternal and child healthcare services.

---

\* DELTA stands for Doctoral Engagement in Leadership and Translation for Action

4. Identify system level barriers and enablers to accessing maternal and child healthcare services for seasonal brick kiln workers.
5. Recommend health system design changes and next steps for more seasonal migrant-inclusive maternal and child healthcare.

I focus on maternal and child health services provided through the National Health Mission (NHM) and the Integrated Child Development Services (ICDS). The policies stipulate these services should be provided for free to all, especially the most vulnerable in society in an effort to reduce inequities in maternal and child health outcomes. They provide the basis of maternal and child healthcare in India.

This project was supported by and carried out in partnership with the Bill and Melinda Gates Foundation (BMGF). BMGF is committed to improving health in India by partnering with local community organizations, NGOs, academic institutions, development organizations, and the private sector, ensuring its efforts are aligned with state objectives by working closely with Indian national and state governments. The Health Systems Design (HSD) team was created in 2017 to tackle system-level health challenges in India. The intention of this DELTA project is to lay the groundwork for the HSD team to better understand the nexus between health systems and migration.

While BMGF works across India, Bihar is a key focus area and the location of the case study of this project. Bihar, one of India's poorest and most densely populated states, faces many challenges including meeting the healthcare needs of its population of 104 million, 90% living in rural areas (BMGF, 2017). BMGF formed a partnership with the state government in 2010 and focuses on four key aspects of the health system in Bihar:

- Improving the skills and knowledge of community health workers.
- Strengthening the ability of primary care facilities to provide services to women and children.
- Improving the quality of services provided by private clinics and hospitals.
- Expanding the role of women's self-help groups and community organizations in encouraging good health practices (BMGF, 2017).

BMGF works in all 38 districts of Bihar and conducts comprehensive surveys two times per year to measure progress of key indicators (BMGF, 2017).

This paper is organized as follows:

Chapter 1 provides contextual background, providing an overview of migration and health in India. It discusses migration theories, migrant categories (legal, administrative and other), and common definitions of migrants. It also provides an overview of the migration trends and patterns across India and in Bihar. The number of seasonal brick kiln workers is estimated through triangulation of different data sources.

Chapter 2 describes the Indian health system, trends in maternal and child health, and policies and programs that affect migrant health and migrant rights. In particular, the schemes ensuring maternal and child healthcare are highlighted.

Chapter 3 provides an overview of how the brick kiln industry operates in India.

Chapter 4 lays out the project strategy and rationale. It begins with the project approach and the design of a qualitative research study of maternal and child healthcare of seasonal brick kiln workers in Bihar. Thaddeus and Maine's Three Delay Model is used as a framework through



which to analyze delays seasonal brick kiln workers experience in accessing maternal and child healthcare.

The results of the qualitative study of seasonal migrant brick kiln workers are presented in Chapter 5. The seven themes that emerged through the research are discussed and highlighted.

Chapter 6 discusses key results from the qualitative brick kiln study and assesses the Three Delays Model framework as a tool in the contexts of this study. The legal and organizational context in which seasonal migrants are exploited and denied healthcare is also explored. Finally, recommendations for action are provided. BMGF is well positioned to act in three areas: 1) data generation, 2) piloting programs, and 3) advocating with the national and state governments and convening stakeholders.

## **ANALYTICAL PLATFORM**

### CHAPTER 1: MIGRATION IN INDIA

#### *OVERVIEW*

The current migration landscape in India is vast, complex, and to a large extent, unknown. India has a long and troubled history of migration, much of it forced or exploitative in nature. For example, from 1830 to 1920, 1.4 million Indians immigrated to Trinidad, Guyana, Mauritius, Fiji, and other former British, French, and Dutch colonies to work as indentured servants, replacing freed slave labour on coffee and sugarcane plantations (Tinker, 1993). The Partition of India in 1947 into what is India and Pakistan today, resulted in one of the largest mass migrations of humans in history, displacing 15 million people along religious lines, and resulting in the death of another one to two million people (Bharadwaj, 2008). Today, the migration numbers are still similarly staggering. According to the latest census from 2011, 453.6 million people, or nearly 40% of the population, are considered migrants (Government of India, 2011).

#### *MIGRATION THEORIES*

Migration is a complex and multifaceted phenomenon, the subject of study and analysis by a range of disciplines. “Anthropologists have taught us to look at networks...while sociologists and economists draw out attention to the importance of social and human capital...geographers are interested in the spatial dimensions of migration and settlement. Political scientists help us to understand the play of organized interests in the making of public policy; together with legal scholars, they show us the impact migration can have on the institutions of sovereignty and citizenship. Historians portray the migrant experience over time and in all its complexity...Demographers...have the theoretical and methodological tools to show us how such movements affect population dynamics in both sending and receiving societies” (Brettell,

2015). There are numerous migration theories and most address the question of international migration. However, many can be applied to instances of internal migration, including seasonal migration patterns<sup>\*</sup>. This section reviews the most widely referenced contemporary migration theories: neoclassical micro- and macro-economics, ‘new economics of migration’, dual labour market theory, and push-pull factors.

Neoclassical economics explains drivers of migration from a micro and macro perspective. The micro approach focuses on individual decision-making in which each rational individual conducts a cost-benefit analysis in order to decide whether or not to migrate. An overall net-benefit to the individual will lead to migration flows (Sjaastad, 1962). Lee (1966) builds on this theory by arguing that the perception of factors at source and destination matter much more than the actual factors (Lee, 1966). Personal contacts and sources of information weigh heavily in the decision to migrate, and lay the foundation for network theories in migration (Piché, 2013).

Neoclassical macroeconomic theory explains migration through geographic differences in the supply and demand of labour. Areas with a lot of labour relative to capital will have low wages, while areas with a limited labour supply relative to capital will have high wages. This imbalance will lead to a migration of people from areas of low to high wages (Harris, 1970).

This theory is often used to describe rural to urban migration, but can explain circular migration as well, an approach first proposed by Burawoy (Burawoy, 1976). Better opportunities elsewhere lead people to migrate away. However, the dependence on the home-based economy and social system for continued survival, especially in the absence of a social safety net in the destination

---

<sup>\*</sup> Refer to Massey 1993, Piché 2013, and Brettell and Hollifield 2015 for a more comprehensive overview of migration theories

site, explains why migrants return home. The continuous interplay between these two forces explains the circular nature of many migration patterns (Piché, 2013).

This perspective can be applied to the Indian context: India has experienced unprecedented levels of economic growth in the last few decades, generating new jobs and opportunities for many. However, growth has been unequal leading to increased regional disparities. As a result, labour flows have increased as people from less developed regions decide to seek opportunity in more prosperous areas (Mishra, 2016).

The ‘new economics of migration’ theory views the decision to migrate not from an individual perspective, but from the perspective of the family or household (Stark, 1991). People act collectively to not only maximize income, but to minimize risks to the household as a response to external social and economic conditions by diversifying means of livelihoods. For example, in the absence of access to loans, “migration becomes an attractive alternative source of capital to improvements in productivity and ensure stability in consumption” (Massey, 1993). Networks do not only consist of family, but of many stakeholders, including exploitative actors, evident in the existence of vast human trafficking networks within India and across the globe (Krissman, 2005).

The ‘new economics of migration’ approach can be applied to the context of India as follows: the landless poor in rural India have limited access to capital. In the case of a medical emergency, failed crop, or other market failures and catastrophic expenditures, an extended family might decide to send some family members to engage in seasonal labour. They work through a labour contractor who frequently visits their village, but unbeknownst to them, refers the family to a work site where they find themselves in debt bondage, unable to pay off the loan they originally

received. Migration literature shows that wealthier people tend to migrate more than the poorest members of society because they have the means to finance their migration (Collier, 2013).

However, when the poor migrate their vulnerability increases because they often migrate under distress, receive minimal wages (so that bondage may result), are employed in hazardous industries, and are otherwise exploited (Mishra, 2016).

Another framework commonly used to explain migration is the dual labour market theory.

Labour markets in destination areas have an inherent demand for lower-paid, manual, informal, and seasonal labour that will be filled by migrant workers since the native workforce is unwilling to take on such jobs (Piore, 1979). This theory builds on push-pull factors, arguing that it is the pull factors, rather than the push factors influencing migration streams.

Push and pull factors are evoked across migration theories. Push factors (e.g. poverty, few employment opportunities, natural disaster) are associated with factors in the source area, while pull factors (e.g. extended social network, more employment opportunities) are in the destination area (Brettell, 2015). Barriers to movement exist and can lead to people migrating to the most accessible, rather than the most beneficial location (Rigaud, 2018).

#### *TYPES OF MIGRATION*

Migration is a broad term and migrants are often placed into different categories, by border patrol officials, government service providers, scholars, and other stakeholders involved in policy and practice relevant to migration. Common classification categories include:

1. Legality: legal vs. “illegal” (irregular or undocumented)
2. Choice: forced vs. voluntary

3. Crossing borders: international vs. internal, inter-state vs. intra-state, inter-district vs. intra-district
4. Geographic: rural to rural, rural to urban, urban to rural, urban to urban
5. Duration: permanent, semi-permanent, short-term, seasonal, circular, commuting
6. Reason: economic, political, social, environmental
7. Nationality: citizen vs. non citizen (alien, third country national, foreigner)

Some of the classifications are not mutually exclusive or absolute, but policies and legal protection often hinge on the category into which someone is placed. One of the most heated debates playing out in international migration policy discussions is around migration choice. People experiencing forced migration who fall under the official definition of a refugee defined by the United Nations\* are awarded special protections that migrants who cannot demonstrate “a well founded fear of persecution” are not. Many migrants fleeing harsh circumstances, including conflict, environmental disaster, societal or personal violence, and distress migrants who flee to survive, do not qualify as refugees in international law and therefore are unable to secure the international protection they seek.

Meanwhile, internal migrants are excluded from protection as refugees altogether because they have not crossed an international border. Seasonal migrants at brick kilns in India are distress migrants, often trapped in highly exploitative situations. But their access to protection is elusive at best.

---

\* A refugee is someone owing to well founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it (UN General Assembly, 1951).

## *DEFINITIONS*

One of the challenges to studying migration is the lack of consensus around definitions, especially in migrant sub-categories. Someone who is considered a migrant in one context might not fit the definition in another context. This makes it difficult to properly count migrants and develop policies applicable to people's needs.

The International Organization for Migration (IOM) defines a migrant as “any person who is moving or has moved across an international border or within a State away from his/her habitual place of residence, regardless of (1) the person's legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is” (IOM, 2018).

The Indian government uses multiple definitions to define migrants. In the census, two definitions are used to classify someone as a migrant: place of birth and last place of residence. A person is considered a migrant by place of birth if the place of enumeration for the census is different than the place of birth. Similarly, someone is considered a migrant by place of last residence if the last place of residence is different than the place in which he or she is enumerated (Government of India, 2001).

The National Sample Survey Organization (NSSO), part of the Ministry of Statistics and Program Implementation, administers the National Sample Survey (NSS), an annual nation-wide household survey collecting data on various social issues, including migration status. Migration data was first collected on the NSS in 1955, and has since been collected ten other times, the latest being the 64<sup>th</sup> NSS from 2007-2008. In the most recent migration survey, the NSSO defines three different migrant categories: migrant households, migrants, and short-term

migrants. Short-term migration was not assessed on previous surveys. A migrant household is a household that moved to the place of enumeration in the last 365 days preceding the survey. A migrant is someone whose last usual place of residence is different than the place of enumeration. A short-term migrant is someone who was away from the usual place of residence for more than 30 days, but less than six months, in the last 365 days preceding the survey for employment or in search of employment (NSSO, 2007-2008).

The terms seasonal migration, short-term migration, and circular migration are often used interchangeably, though there are nuances in the terms. There is no consensus on a formal definition of seasonal migration in India or internationally. In India, neither the census nor the NSSO defines seasonal migration. The definition of short-term migrant used by the NSSO does not apply to all seasonal migrants because the seasonal migration period can last more than six months. In the brick kiln industry, for example, the migration period is six to nine months. The IOM also lacks a formal definition of a seasonal migrant. The IOM defines circular migration, as “the fluid movement of people between countries, including temporary or long-term movement which may be beneficial to all involved, if occurring voluntarily and linked to the labour needs of countries of origin and destination” (IOM, 2018). This definition is too broad to distinguish seasonal migrants from other types of migrants and is not practical to apply in surveys.

The OECD puts forth a more useful definition. “Seasonal migrant workers are persons employed by a country other than their own for only part of a year because the work they perform depends on seasonal conditions” (OECD, 2001). Though the term applies to international migration, it can be adapted to the context of internal migration. For the purposes of this project, a modified version of the OECD definition, applicable to internal migrants will be used.



Seasonal migrant workers are persons employed away from their home for only part of a year because the work they perform depends on seasonal conditions.

In India, seasonal conditions are determined by the monsoon. Migration takes place around the monsoon and closely related agriculture seasons. Brick kiln making is a seasonal activity because the bricks cannot be made during the wet monsoon season from approximately June to the end of September.

#### *MIGRATION PATTERNS AND TRENDS IN INDIA*

There are two sources of official migrant statistics in India: the census and the NSSO. Both are outdated and incomplete. They especially fail to adequately capture seasonal migrants. This section will provide an overview of the results of these two sources since they are cited for official purposes and provide the foundation for migrant policy in the country.

According to the latest census from 2011, 453.6 million people, or nearly 40% of the population, are considered a migrant (Government of India, 2011). The detailed migration data from the 2011 census has, as of yet, not been released; therefore all analysis is based on the 2001 census data. According to the 2001 census, there are 307 million migrants by place of birth and 314.5 million migrants by place of last residence in India\*. All further analysis will be based on place of last residence since this is more comprehensive and captures migrants who moved at some point in their life, but returned to their place of birth at the time of enumeration.

Nearly the entire migrant population falls under the category of internal migrant, with an estimated 85% categorized as intra-state, 13% as inter-state, and less than 2% as international (over 65% of those migrated more than 20 years ago, most likely at the time of partition or after

---

\* This excludes migrants in Jammu and Kashmir, as Jammu and Kashmir were not included in the 2001 census

the Bangladesh war in 1971) (Government of India, 2001). Table 1 shows migration streams between rural and urban areas. For intra-state migration, rural to rural movements dominate, while rural to urban is the most common movement for inter-state migrants.

**Table 1: Migrants by rural-urban migration stream (Census, 2001)**

	Rural to Rural		Rural to Urban		Urban to Rural		Urban to Urban	
	People in millions	% Distribution	People in millions	% Distribution	People in millions	% Distribution	People in millions	% Distribution
Intra-state	161.0	68.6	36.3	15.3	11.0	4.7	25.8	11.9
Inter-state	11.0	28.2	15.3	39.3	1.9	4.9	10.7	27.4

Over 50% of migrants relocated more than ten years prior to the census survey (Table 2). 32 % of people migrated over 20 years ago, another 22% over ten years ago, and 15% did not list a duration. Less than 3% reported that they migrated in the last year. Thus, according to the census, seasonal migrants could make up at most 3% of the population, approximately 31 million people, but this number is likely much lower because not everyone who migrated within the last year will have been a seasonal migrant. The duration fails to distinguish between people who relocated permanently in the last year, those who were in a new location temporarily, but not for seasonal labour purposes, and those who moved for seasonal employment.

**Table 2: Duration since migration (Census, 2001)**

Time since migration	People in millions	Percentage of total
Less than 1 year	8.8	3%
1 to 4 years	47.2	15%
5 to 9 years	42.1	13%
10 to 19 years	69.4	22%
More than 20 years	101	32%
No duration stated	45.6	14%
Total	314.5	-

The gender ratio of migrants is unequal. 70% of migrants are female, and only 30% are male. This discrepancy is explained through marriage migration. Table 3 summarizes the most common reasons listed for migrating of those who migrated in the last 10 years, and marriage is the most commonly cited reason, at 43%, predominantly by women. However, this statistic has been criticized because it masks those women who migrate after marriage, but also find employment in their new residence (Deshingkar, 2009). The Census only allows for one reason for migrating to be listed, when in reality, there can be multiple drivers of migration.

**Table 3: Reasons for migrating during the last decade (Census, 2001)**

<b>Reason for migrating</b>	<b>People in millions</b>	<b>Percentage of total</b>
Work	14.4	14.7
Business	1.1	1.2
Education	2.9	3.0
Marriage	43.1	43.8
Moved after birth	6.5	6.7
Moved with household	20.6	21.0
Other	9.5	9.7

The most common narrative around migration and Bihar is one of out-migration in search of better employment opportunities outside of one of the poorest states in India. In 2001, Bihar had 1.02 million in-migrants and 2.86 million out-migrants, resulting in a net out-migration of 1.83 million. However, the 2001 Census still considers people moving in and out of Jharkhand to Bihar as intra-state migrants, even though Jharkhand gained independence from Bihar in 2000 (Government of India, 2001).

The NSS conducted in 2007-2008 focused on employment and migration. A total of 125,578 households across the country were included, totaling 572,354 people. The survey identified 33 and 13 per 1,000 households in urban and rural areas respectively as migrant households.

Similarly to the census, the NSS also breaks down the information by rural-urban migration

streams, reasons for migrating, gender, and inter- and intra-state migration trends. Unfortunately, the NSS also fails to capture seasonal migrants, though it appears to do a better job than the Census by having a short-term migrant category. The rate of short-term migrants was 1.7% in rural areas and 0.4% in urban areas across all states. Of those who were categorized as short-term migrants, over 50% were casual labourers. The rate of short-term migration was higher in Bihar at 2.8%, the second highest in the country after Nagaland. In total, the short-term migration rate was 1.3% in India, suggesting the number of seasonal migrants to be at most 15 million people (NSSO, 2007-2008).

The Census and NSS have multiple shortcomings that underestimate migration, especially seasonal migration. In 2009, UNDP released a report arguing that the number of seasonal migrants in India is approximately 100 million based on a review of small-scale studies and NGO reports and assessments. Since the population has increased by 100 million from 2009 to 2016 (World Bank, 2018) and the migration rate continues to rise, this number is in all likelihood much higher today. The authors argue the following reasons contribute to the underestimation of seasonal migrants by official sources (Deshingkar, 2009):

- Short-term movements are underestimated or missed entirely, despite small-scale studies at the village level consistently showing seasonal migration accounts for the bulk of labour migration.
- Women's migration is not adequately captured. The surveys only ask for one reason of migration, for which women list marriage, thereby masking secondary or tertiary reasons for migrating like seasonal work.
- Illegal migration streams are not captured. For example, human trafficking and child labour are grossly underestimated. The Census reports 12.66 million children engaged in

child labour across India, while Human Rights Watch puts the number at more than 100 million.

- Several sectors such as brick kilns, commercial farms, and construction work, which are known to have high numbers of seasonal migrants, are not counted properly.

The failure to capture these groups in official estimates leads to a gross misrepresentation of the migration landscape in India. The Census and NSSO, which are better at capturing permanent migration, show that migration is higher amongst socioeconomically advantaged groups, who tend to not engage in seasonal labour. Smaller studies and NGO assessments show much higher levels of mobility amongst scheduled castes and scheduled tribes than the official estimates, mostly due to seasonal migration (Deshingkar, 2009). Historically, internal migration has been low in India, and although this began to change in the 1990s with the growth of the Indian economy, improved transport and communication infrastructure, and increased levels of education (Mishra, 2016), India is still considered to have low rates of migration (Kone, 2017). In a comparison of internal migration in 80 countries, India ranked last. A recent article published by the Brookings Institute suggests barriers to inter-state migration and that the high numbers of migrants in India were deceptive, since most of the migrants move within districts and for the purpose of marriage (Kone, 2017). However, this analysis was performed using 2001 census data, thereby failing to capture a whole subset of people of the move, seasonal migrants. When considering seasonal migration, this project will assume the estimates provided by UNDP (Deshingkar, 2009), rather than the official government statistics.

A report published by the World Bank in 2018 on internal migration and climate change predicts there will be 40 million internal climate migrants by 2050 in South Asia, primarily affecting the poorest people in the poorest areas (Rigaud, 2018). The southern Indian highlands, especially the

area between Bangalore and Chennai will be climate in-migration hotspots, and the northern Gangetic Plain, the area between Delhi and Lahore, and coastal metropolitan areas such as Mumbai will see high levels of climate out-migration. 2.8% of the population could be forced to migrate within India if current climate projections persist (Rigaud, 2018).

#### *ESTIMATES OF BRICK KILN WORKERS*

The brick kiln industry alone employs millions of people, almost entirely migrant labour, though the actual number is unknown. Approximately 100 workers are employed per chimneystack (Anti-Slavery International, 2017). From my observation, most brick kilns had one chimneystack, though some had two or three. Here, I will assume one chimneystack per brick kiln factory. This may give a low estimate since some brick kiln factories have multiple chimneys. The largest brick kiln factory I visited had three chimneystacks. Brick kiln workers migrate as a family, though the children are never registered by the brick kiln managers (Anti-Slavery International, 2017). I will assume 50 families per brick kiln. The literature on brick kilns only states the number of workers, however, since they migrate as a family unit, there are children present too. My observations showed approximately three children per family. This is in line with the total fertility rate of 3.2 children per woman for the lowest wealth quintile in India (NFHS, 2015-16). For the calculations, I assume all brick kiln workers are from the lowest wealth quintile and I apply the fertility rate of 3.2. This may give a high estimate since not all migrants will have completed their fertility yet.

Anti-Slavery International estimates there to be 100,000 brick kilns in India, though it is not clear how they arrived at this number. Assuming 100 workers per brick kiln, or 50 families with two adult workers, this would result in an estimate of 10 million brick kiln workers, which is the most common number cited in the literature. Accounting for the number of children likely to

accompany their parents to the brick kiln, this would result in an additional 16 million children at the brick kilns, or a total of 26 million people.

A report published by Greentech Knowledge Solutions in 2014, a clean energy advisory firm, estimates there are 140,000 brick kilns across India (Greentech Knowledge Solutions, 2014). Using this estimate, there are approximately 14 million brick kiln workers and 22.5 million children, or a total of 36.5 million people at brick kilns.

According to the 2009-2010 NSS, approximately 5% of the working population, or 23 million people were employed in the brick kiln industry. This highlights the failure of the NSSO to adequately capture seasonal migrants since the 2008-2009 NSS, which focused on migration, only recorded 15 million short-term migrants across all industries, 8 million less than the estimation deduced from the brick kiln employment category on the 2009-2010 survey.

Accounting for the children likely to be present, this would result in an additional 37 million people at brick kilns, or 60 million people in total.

Some states have lists of registered brick kilns. The Bihar Mines Department lists 5,927 legally registered brick kilns in the state and 388 kilns in Patna District for 2016-2017 (Government of Bihar, 2017). However, many brick kilns operate illegally. A separate report lists 644 illegal brick kilns in Patna District alone, out of which 422 are operational as of 2014-2015, the last year for which this information was released (Government of Bihar, 2017). Using the official numbers and applying the same assumptions as above, over 1.5 million men, women, and children are at legally registered brick kilns in Bihar, 100,000 at legally registered brick kilns in Patna District, and an additional 67,000 at illegally operating brick kilns in Patna District.

A new study from 2018 provides a promising tool for estimating the number of brick kilns in India using remote sensing (Boyd, 2018). The study only provides an estimate for the Brick Belt, an area known to have a high density of brick kilns across India, Pakistan, Nepal, and Bangladesh, but not for the whole country. In the future, this method could be used across the whole country to provide a better understanding of the number of people involved. The authors will provide an estimate of the number of brick kilns in Bihar, since Bihar falls within the Brick Belt and the information can be extracted from their existing data. This can be compared to the Bihar Mines Department and potentially shed light on the number of unregistered kilns operating in the state. They will also apply the analysis to the whole country, in order to obtain a country-wide brick kiln count in the future\*.

#### *GAPS IN LITERATURE*

Although there has been significant publication around the topic of migration in India, numerous gaps remain that prevent the topic from being adequately addressed. Based on the literature reviewed, –to my knowledge – the following information appears to be missing or limited in the data:

- **Consistent and inclusive definitions of migrant categories lacking.** Migrant categorization is inconsistent at the global level and in the Indian context. Definitions around seasonal migration are especially lacking. The most common variation is around the length of migration. The length of migration specified, if too short, can exclude entire seasonal migrant groups whose length of migration is sector-specific. The terms seasonal migration, circular migration, and short-term migration are often used

---

\* Doreen Boyd, Personal communication 2018



interchangeably, though they do not necessarily mean the same thing. The variation in terminology also makes it difficult to systematically research the literature.

- **Current households surveying methods systematically exclude seasonal migrants.**

Survey participants are selected from *panchayat* registration lists. Seasonal migrants are not registered in their destination location, and thus, automatically excluded from and not represented in nation-wide household surveys.

- **Seasonal migration primarily viewed from an economic perspective.** The most common discourse around seasonal migration is from a labour and economics perspective. The 2007-2008 NSS focused on migration and employment. Other sectors, for example, health, have not prioritized seasonal migrants as a vulnerable group. Scheduled castes and scheduled tribes are frequently listed as high-priority groups, but once they are on the move, they become invisible.

- **Women and children are not adequately recognized in the context of migration.**

Women are primarily seen as migrating for marriage. The reality of female migration patterns is likely to be much more vast and complex. The rate of migration for secondary reasons, such as employment, is not understood. Many newly married couples who do not own land of their own, will engage in seasonal labour to make a living after marriage. Women also tend to migrate to their natal home to give birth, a major migration stream that is not captured with the current tools. The movement of children is also not well understood. Children often accompany their parents for seasonal work, but they are not included on the work site registers. However, in some households certain children stay behind, often with grandparents, while others accompany their parents. The

number of children on the move, and consequently the planning needed to provide educational and health services, is unknown.

- **Migration data is outdated.** Even though the surveying methods do not adequately capture the reality of migration taking place on the ground in India, migration details from the 2011 census should be released. Working on data from 2001 no longer reflects the situation at hand in a country experiencing rapid changes in economic growth and demographics. This is especially true in the case of Bihar, where the latest migration data available from 2001 combines Bihar and Jharkhand. Seasonal migrants migrating along long-established paths between Bihar and Jharkhand might face additional challenges related to the transferability of services across state lines.
- **Seasonal migrant-heavy industries not properly counted.** Seasonal migrants often work in industries known for exploitation, human trafficking, and debt bondage. Such industries tend to operate outside of official registration and licensing procedures and are thus underreported in government reports.

In conclusion, there is an incomplete understanding of internal migration in India. The most basic foundations are undetermined, with questions like ‘Who is a migrant?’ and ‘How many migrants are there?’ unanswered. Answers to these questions are needed to begin to answer questions at the policy level, such as ‘Which categories of migrants should be the focus of research and policy discussions?’, ‘Who should be responsible for migration policies and programs?’, and “What systems changes are needed to ensure portability of benefits?”. We do know that the numbers involved are large, that internal migration is increasing, and that in order to achieve key health targets, migrants need to be included in social services and incorporated into national policies.

## *MIGRATION AND HEALTH*

Data on migration and health is practically non-existent. The most comprehensive health survey of India, the National Family Health Survey/Demographic Health Survey (NFHS/DHS) from 2014-2015 was fully released in January 2018 and fails to capture migrants as a category. NFHS/DHS from earlier years also fail to capture this population. In the most recent NFHS survey, two questions were included that could begin to stratify by seasonal migrant status. I attempted a quantitative analysis of NFHS-4 to see if these two questions could indeed be used to assess seasonal migrant health. Unfortunately, out of a sample size of 699,686 women aged 15-49, only 118, or 0.012% of the total sample, could be classified as seasonal migrants with a child under the age of one, a number far too small to draw any conclusions about the relationship between seasonal migrant status and antenatal care and facility-based delivery. The only conclusion that could firmly be drawn is that seasonal migrants are not captured in household health surveys. The methodology and results are described in detail in Appendix I.

It is widely acknowledged that migrants, especially seasonal migrants, are excluded from social protection schemes and have difficulties accessing healthcare services (UNESCO, 2012) (UNESCO, 2013) (Mishra, 2016) (Borhade, 2011). However, concrete information is lacking, so it is unclear what the major challenges are. A review of the literature shows some studies and reports on migration and health, but they tend to focus on permanent migrants in urban slums (a category more likely to be captured in surveys), occupational hazards, or are of low quality. Only one study, to the best of my knowledge, has been published on maternal health at brick kilns. However, the methodology and analysis are not rigorous (Siddaiah, 2014).

An impact evaluation conducted by Oxford Policy Management of the Bihar Child Support Programme, a conditional cash transfer pilot aimed at improving child nutrition, found labour

migration, as well as natal migration for birth, to be a major reason for the exclusion of women from the program. At the midline evaluation, 59% of women who did not migrate were enrolled, while only 25% of women who migrated out of their village were enrolled. The endline survey did not reflect such a trend; however, the rates of migration were much lower at the endline. The midline survey was conducted while migrants were in their home villages, while the endline survey was conducted during the migration season (Oxford Policy Management , 2017). The differences between the midline and endline surveys in this report demonstrate how existing surveying methods fail to include seasonal migrants. Programs can be evaluated and the health status of a population can be assessed without realizing that an entire group of people, significant in number, is missing.

## CHAPTER 2: HEALTH SYSTEM AND POLICY OVERVIEW

### *MATERNAL AND CHILD HEALTH IN INDIA*

India has made significant improvements on maternal and neonatal mortality. Nationally from 2000 to 2015, maternal mortality decreased on average annually by 5.1% (WHO, 2015), from 374 to 174 per 100,000 live births (World Bank, 2015), and the average annual neonatal mortality declined by 3.3%, from 45 to 27 per 1,000 live births (Fadel, 2017). Maternal and neonatal death reductions are not experienced equally across geography and socioeconomic groups, however.

The Million Death Study published in 2017 provides the most up-to-date and accurate analysis of cause-specific neonatal mortality between 2000 and 2015 in India (Fadel, 2017). The leading causes of neonatal mortality across India are prematurity or low birth weight (55%), infections (15%), and birth asphyxia or trauma (8%). For neonates, the fastest mortality declines were experienced in urban and richer states. Throughout the study period, neonatal deaths were two thirds higher in rural areas than in urban areas. While neonatal deaths due to infection, asphyxia, and trauma declined overall, deaths due to prematurity and low birth weight rose, especially in rural areas and poor states, which experienced an increase from 13.2 to 17.0 and from 11.3 to 17.8 per thousand live births respectively. This increase was largely driven by an increase of low birth weight in term births (Fadel, 2017).

To achieve the Sustainable Development Goal (SDG) by 2030 for neonatal mortality, 12 deaths per 1,000 live births, the average annual decline in neonatal mortality in India will need to increase from 3.3% to 5.3%. Reducing neonatal mortality due to prematurity and low birth weight in rural and poor states will be essential to reach this goal. The study notes that

“prematurity and low birth weight, and in particular, low birth weight, are strongly linked to largely modifiable maternal and prenatal factors, such as antenatal care” (Fadel, 2017). It is recognized that nearly half of neonatal deaths could be prevented by scaling-up existing facility-based interventions (UNICEF, 2016). For example, UNICEF notes that skilled birth attendants and access to emergency obstetric care can reduce neonatal mortality by 41% (UNICEF, 2017).

Many women in India do not receive lifesaving antenatal, birth, or postnatal care. According to the National Family Health Survey, only 51.2% of women had at least four antenatal care visits, only 21% of women received full\* antenatal care, and only 62.4% of women received a postnatal check-up (NFHS, 2015-16). Geographic and socioeconomic disparities are vast. For example, 31% of women in urban areas receive full antenatal care, while only 16.7% in rural areas do. Differences across states are also evident. In Bihar, only 6.6% of women in urban areas and 3.0% of women in rural areas receive full antenatal care (see Table 4 for summary of indicators) (NFHS, 2015-16). On the obstetric transition model spectrum (Souza JP, 2014), India is considered to be at a complex tipping point. With a maternal mortality ratio of 174 per 100,000 live births (WHO, 2015), maternal mortality remains high and access a barrier for much of the population (first delay), but quality of care is a major determinant of outcomes (third delay) (Souza JP, 2014). In many ways India faces a double burden, needing to simultaneously extend access of even the most basic primary prevention services to millions of women, as well as heavily investing in secondary and tertiary prevention.

---

\* Full antenatal care is at least four antenatal visits, at least one tetanus toxoid injection and iron folic acid tablets or syrup taken for 100 or more days.

**Table 4: Maternal and child health indicators (NFHS-4)**

Indicator	National 2015-16			Bihar 2015-16			Patna District 2015-16			Bihar 05-06
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Total
Mothers who had antenatal check-up in 1 <sup>st</sup> trimester %	69.1	54.2	58.6	50.4	32.7	34.6	63.5	41.9	51.9	18.7
Mothers who had at least 4 antenatal care visits %	66.4	44.8	51.2	50.4	13.0	14.4	31.6	13.1	21.7	11.2
Mothers whose last birth was protected against neonatal tetanus %	89.8	88.6	89	93.1	89.2	89.6	94.1	93.5	93.8	73.2
Mothers who consumed iron folic acid for 100 days or more during pregnancy %	40.8	25.9	30.3	12.3	9.4	9.7	16.2	25.3	21.1	6.3
Mothers who had full antenatal care %	31.1	16.7	21.9	6.6	3.0	3.3	9.7	6.2	7.9	4.2
Mothers who received JSY %	21.4	43.8	36.4	40.9	55.8	53.9	32.4	62.7	47.8	NA
Mothers who received a health check within 2 days of delivery from doctor/nurse/LVH/ANM/midwife/other %	73.1	70.8	65.1	52.6	41.1	42.3	54.6	70.7	63.2	13.4
Children who received a health check within 2 days of birth from doctor/nurse/LVH/ANM/midwife/other %	27.2	23.0	24.3	16.5	10.1	10.8	5.6	11.5	8.8	NA
Institutional births %	88.7	75.1	78.9	74.3	62.7	63.8	91.0	82.7	86.4	19.9
Institutional births in public facility %	46.2	54.4	52.1	42.7	48.2	47.7	38.9	60.1	50.6	3.5
Children age 12-23 months fully immunized	63.9	61.3	62.0	59.7	61.9	61.7	69.8	69.7	69.7	32.8

## *HEALTH SYSTEM OVERVIEW*

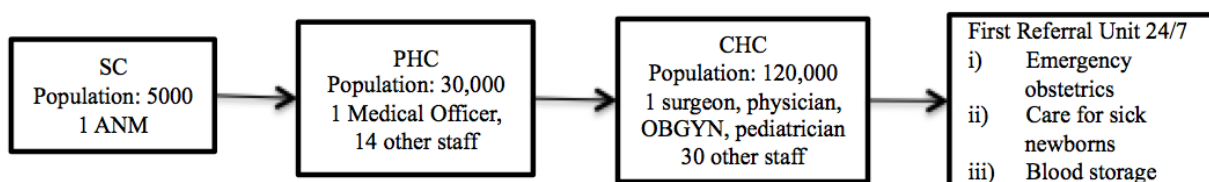
The health system in India is shaped at the central government level, as well as the federal-state system. The central government sets national health policy and supports states in the implementation of health policies, but it is up to the states to organize and deliver health services to the people (Commonwealth Fund, 2016).

Government spending on health is low. In 2013-2014 government expenditures were 1.15% of the GDP, much lower than the average low- and middle-income countries. Total health expenditure was 4.02% of the GDP, 69.1% of which were out-of-pocket (OOP) expenditures. Such high OOP expenditures lead to 63 million Indians falling into poverty every year due to catastrophic health costs (Commonwealth Fund, 2016). Civil servants and employees of specific sectors are entitled to health insurance, as well as certain families living below the poverty line. However, as of 2014 less than 20% of the population was covered by health insurance (Commonwealth Fund, 2016).

Public services provided by the government through tax finances are available to all citizens. Maternal, newborn, and infant care, as well as immunizations and certain disease control programs are provided free of charge. Services are provided through a network of three-tiered primary, secondary, and tertiary care centers (Figure 7). Primary healthcare is the first contact between individuals and the health system and consists of the sub-center (SC) and the Primary Health Center (PHC). Secondary care refers to higher care at hospitals and is provided at block-level Community Health Centers (CHC) and district hospitals or first referral units. Tertiary care is highly specialized and provided by medical colleges and advanced research institutes in urban areas (Chokshi, 2016). The availability and quality of staff, equipment, and drugs varies



significantly across facilities. The government defined the population catchment areas and staffing norms in 1946 (Bhore, 1946), and they are considered inadequate to meet current needs (Gautham, 2014). This is one reason that leads people to seek care through the private sector (Commonwealth Fund, 2016). The private sector is largely unregulated with numerous actors of various quality and qualifications providing services in rural and urban areas. In rural India, private practitioners without formal qualifications provide 70% of all health services, mostly to poor people. There are approximately 1.6 million informal providers and just under 1 million MBBS doctors (Das, 2016).



**Figure 1: Public healthcare infrastructure**

### *RELEVANT POLICIES AND SCHEMES*

Numerous government policies, programs, and schemes exist that regulate employment and labour rights, as well as ensure maternal and child health services. This section describes the most relevant policies, schemes, and acts for health, labour and employment, financial inclusion, and documentation that relate to seasonal migrants. A summary can be found in Appendix II.

### ***Health***

The National Health Mission (NHM) under the Ministry of Health and Family Welfare and the Integrated Child Development Services (ICDS) under the Ministry of Women and Child Development run numerous maternal and child health programs. Many of the programs are jointly implemented at the community level through ASHAs, auxiliary nurse midwives (ANM),

and *Angwanwadi workers* (AWW), who are frontline health workers and for many communities the first point of contact with the health system for pregnant women and children. Together they deliver services and counsel women on the importance regular health check-ups, nutrition, and child health.

#### *Rashtriya Swastha Bima Yojana (RSBY)*

RSBY is a national health insurance scheme launched in 2008 and administered by the Ministry of Health and Family Welfare to cover medical costs for below-poverty-line (BPL) families and unorganized workers from the construction industry, licensed railway porters, street vendors, MNREGA workers, beedi workers, domestic workers, sanitation workers, mine workers, rickshaw pullers, auto rickshaw drivers, and rag pickers. Under this scheme a family is entitled to up to 30,000 INR for hospitalization and 1,000 INR for transportation costs. Beneficiaries must pay a 30 INR annual registration fee. Since 2015 the scheme has been implemented through a decentralized structure at the state level, although a key feature is the portability of benefits across states. After enrolling in a district where the family is listed on the BPL list, benefits can be accessed at any eligible public or private hospital across India. The RSBY benefits card can be split between family members, so that migrating family members and those staying behind can both access the services (RSBY, 2009).

Unfortunately, to date RSBY has shown to be largely ineffective in its two objectives to reduce catastrophic health expenditures and expand access to quality healthcare for the poor. A study from 2017 showed that RSBY did not reduce the probability of incurring inpatient health expenditures and that out-of-pocket health expenditures actually increased by 30%. Several explanations are explored including the utilization of inpatient services not covered by RSBY

once a patient is in the hospital, utilization of services beyond the 30,000 INR cap, the purchase of medications and diagnostics from outside of the hospital, and the fact that inpatient costs only account for 20% of out-of-pocket health expenditures. Finally, in all but a few districts, the enrollment ratio has been less than 50% for eligible households. Not all states participate in the scheme and there are reports of numerous hospitals not accepting RSBY patients because of known delays in receiving reimbursements. The need to be listed on the BPL list and the identify of the household confirmed by a government official means that migrants can only enroll in their home location, not their work site (Karan, 2017).

### *National Health Mission (NHM)*

The National Health Mission comprises the National Rural Health Mission (NRHM) and the National Urban Health Mission (NUHM). Within the national parameters and priorities, states have the authority to develop and implement state-specific plans (NHM, 2015). NHM is a flagship program by the Ministry of Health and Family Welfare and aims to reduce health inequities amongst the most vulnerable groups, especially in the areas of maternal and child health (Commonwealth Fund, 2016).

### *RMNCH+A:*

The Ministry of Health and Family Welfare launched RMNCH+A in 2013 under the NHM “to address the major causes of mortality among women and children, as well as the delays in accessing and utilizing health care services...and ‘continuum of care’ to ensure equal focus on various life stages” (NHP, 2015), among the most vulnerable populations and disadvantaged groups in each state. Health outcome goals include (NHP, 2015):

- Reduction of Infant Mortality Rate (IMR) to 25 per 1,000 live births by 2017

- Reduction in Maternal Mortality Ratio (MMR) to 100 per 100,000 live births by 2017
- Reduction in Total Fertility Rate (TFR) to 2.1 by 2017

RMNCH+A encompasses various health schemes, including JSY (described below), Janani Shishu Suraksha Kayyakram (JSSK) (free delivery and care for newborns), routine immunization (RI) initiatives, and pulse polio campaigns (NHM, 2014).

*Janani Suraksha Yojana (JSY):*

Launched in 2005, JSY is the largest conditional cash transfer program in the world (Lim, 2010). It is entirely funded through the central government and designed to reduce maternal and neonatal mortality by promoting institutional deliveries among poor women through conditional cash transfers. It is a central scheme run by NHM with a focus on low performing states (Assam, Bihar, Chhattisgarh, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttaranchal, and Uttar Pradesh). Each participating pregnant woman receives a JSY card and maternal and child health (MCH) card from the ASHA, who also prepares a birth plan. Below-poverty line certification is generally required for women living in high performing states (NHP, 2015). In Bihar and other low-performing states, a woman delivering at a health facility in a rural area will receive 1,400 INR and a woman delivering in an urban area will receive 1,000 INR. Similarly, the ASHA will receive an incentive of 400 INR in rural areas and 200 INR in urban areas for every woman she refers to the facility for delivery. Initially, the conditional cash transfer was given in cash to the woman after delivery. Due to widespread corruption, the money is now transferred into the woman's bank account. In order to receive the money, the woman must have her own bank account. ASHAs are encouraged to help women set up a bank account, a process that has been explicitly incorporated into their training (NRHM, 2013).

The results of JSY are mixed. JSY has significantly increased the percentage of women obtaining pre-natal care and an institutional delivery. “For every ten women receiving JSY, an additional woman would receive three antenatal care visits, an additional four or five women would give birth in a facility, and an additional three or four women would give birth either in a facility or with a skilled attendant present outside of a facility” (Lim, 2010). However, the case of JSY also demonstrates that increasing access is not enough (Jha, 2014). Although the rates of facility-based deliveries soared (from 2005 to 2015 the proportion of women delivering in a facility increased from 19.9% to 63.8%), there was no significant reduction in maternal mortality associated (Jha, 2014). In addition, the average out-of-pocket expenditure for a facility-based delivery is 3,198 INR in public facilities and 16,522 INR in private facilities, so JSY does not fully compensate women for associated costs (NFHS, 2015-16).

#### *The Accredited Social Health Activist (ASHA)*

The Accredited Social Health Activist (ASHA) program launched in 2005, reaching full scale by 2012, is one of the key components of the NHM in an effort to provide every village with a trained health worker. ASHAs are literate, female members of the community who receive basic training on healthcare and performance-based monetary incentives. They counsel women on the importance of antenatal care, safe delivery, postnatal care, immunizations, family planning, nutrition, and sanitation, and mobilize them to attend check-ups at health centers. In addition, they distribute essential medicines and other medical products such as oral rehydration therapy, iron tablets, birth control pills, and condoms (NHM, 2014). The ASHA’s mandate is to “be a health activist in the community who will create awareness on health and its social determinants and mobilise the community towards local health planning and increased utilisation and accountability of the existing health services” (NHM, 2014). In addition, she “will be the first

port of call for any health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services” (NHM, 2014). They provide their services through home visits, Village Health and Nutrition Days (VHND), and Village Health, Sanitation and Nutrition Committees (VHSNC). They also maintain records of pregnant women, lactating mothers, and children’s immunization schedules, known as due lists. Each ASHA is assigned a catchment area of 1,000 people (NRHM, 2013).

### *Integrated Child Development Services (ICDS)*

The ICDS was launched in 1975 with the intent to reduce childhood malnutrition in children aged 0-6. The program is run through Anganwadi Centers (AWC), each staffed by an Anganwadi worker (AWW) who is tasked to provide six services (ICDS, 2018): supplementary nutrition services, pre-school education, immunizations, nutrition and health education, health check-ups, and referral services. AWWs collaborate with ASHAs and ANMs on the health-related tasks and are an integral part of the monthly VHNDs. Each AWC covers a population of 400-800 or 150-400 per mini AWC.

### ***Financial Inclusion***

#### *Pradhan Mantri Jan Dhan Yojana (PMJDY)*

The Ministry of Finance launched PMJDY in 2014 as an initiative to increase access to financial services for the poor, especially access to bank accounts. Under this scheme bank accounts can be opened at any bank branch in the country with zero balance with the presentation of a valid form of identification (e.g. Aadhaar or Pan card) (Ministry of Finance, 2014; NHM, 2014).

Having access to a bank account is important for migrants, as it provides a way to save money in a safe place throughout the work season and gives workers control over their own earnings rather

than the employer. A bank account is also crucial for pregnant women to obtain the JSY cash transfer since new regulations stipulate the money can only be deposited into the bank account of the woman, not given in cash or deposited into the account of a family member. Seasonal migrants should be able to open a bank account at their home or their work site with minimal paper work. However, in reality banks often deny migrants the right to open a bank account when they are away from their home and most migrants believe it is not possible to open an account outside of their home locale.

### ***Labour and Employment***

#### *Bonded Labour System (Abolition) Act 1976*

This act banned all forms of bonded labour across India. Brick kiln workers most often find themselves in what is called debt bondage. “People in debt bondage end up working for no wages or wages below the minimum in order to repay the debts contracted or advances received, even though the value of the work they carry out exceeds the amount of their debts. Furthermore, bonded labourers are often subjected to different forms of abuse, including long working hours, physical and psychological abuse, and violence“ (OHCHR, 2016).

The act consistently fails to be implemented. Anti-Slavery International (2017) documented the challenges in lodging criminal cases against brick kiln owners, who hold power in the community, and the refusal of district officials and police officers to acknowledge cases of bonded labour.

#### *Contract Labour (Regulation and Abolition) Act 1970*

Most brick kiln workers should be considered contract labourers since a contractor recruits them on behalf of the brick kiln owner. This act, in addition to providing guidelines on the payment of

wages, states that contract labourers are entitled to a canteen, toilet facilities for men and women, drinking water, washing stations, first aid, and a crèche. However, this law does not apply if the work is intermittent or seasonal in nature (Government of India, 1970). Thus, this act does not apply to brick kiln workers who are all employed only seasonal. Many contract labourers are employed seasonally and excluding their protection is a major gap in the act.

### *Minimum Wages Act 1948*

This act entitles workers to a minimum wage (Government of India, 1948). Seasonal labour migrants often do not receive the minimum wage to which they are required. Interstate migrants who agree to a wage with the labour contractor before beginning work are often not aware of the minimum wage in the state to which they are migrating. For example, the minimum wage between April 2017 and March 2018 in Jharkhand was 5977.6 INR per month for unskilled labour (Paycheck India, 2018), while the minimum wage in Bihar from October 2017 to March 2018 was 247 INR per day, or approximately 6,422 INR per month (Paycheck India, 2018). In addition, the minimum wage is regularly adjusted upward, usually every six months. Seasonal migrant workers are often not aware that the minimum wage to which they are legally entitled increased during their working season. In addition, even if the wage per 1,000 bricks is equivalent to the minimum wage or higher, the wages are not per person, but rather per family, including children, who contribute to the brick making efforts.

### *Payment of Wages Act 1936*

The Payment of Wages Act stipulates that employers must pay their employees' wages within a prescribed time limit not to exceed one month, that no unlawful deductions should be made, and that any advances given should not exceed 50% of one month's wages (Government of India,



1936). Labour practices at brick kiln generally fail to comply with all three of these points. The Payment of Wages Act also stipulates that if the labour contractor fails to pay wages, the responsibility falls on the employer. This is important for brick kiln workers who are recruited by a labour contractor to work at the kilns. A new draft labour code on wages, proposed in 2015, but not yet passed, does not include this section and could be used by employers to deny payments to intra-state migrant workers, claiming it is the responsibility of the contractor (Anti-Slavery International, 2017).

#### *The Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act*

The Interstate Migrant Workmen Act of 1979 is the only law specifically aimed at ensuring the welfare of internal migrants in India. It focuses on wages and legal entitlements. The act has numerous shortcomings, however. It applies only to interstate migrants and not intrastate migrants, as well as only applies to employers with at least five labourers (Government of India, 1979). In addition, while it has stipulations on providing adequate housing and covering transport costs, it does not entitle migrant workers to specific healthcare. In its current form the act does little to protect migrant workers and is rarely enforced by the government. A working group formed by the Ministry of Labour and Employment recently made key recommendations to amend the act. Recommendations include revisiting the definition of a migrant, covering both inter-state as well as intra-state migrants, providing health benefits including registration under RSBY, and ensuring the children of migrant workers have access to formal education and adequate nutrition (Borhade A. , 2016).

### *Workmen's Compensation Act 1923, Amendment Bill 2009*

This act was designed to compensate workers and their families for employment-related injuries and death. Workers are compensated with a percentage of their salary or a specified amount, whichever is more. The specified amount in case of death is 120,000 INR and 140,000 INR in case of permanent disability. It also states that employees should be reimbursed for any medical expenses incurred as a result of an occupational injury or disease (PRS, 2018). Occupational diseases are outlined and include common conditions incurred at brick kilns such as bronchial conditions from dust and smoke and burns from firing bricks.

### *Mahatma Gandhi National Rural Employment Guarantee Act MNREGA*

MNREGA, formally known as the National Rural Employment Guarantee Act (NREGA), was rolled out country-wide in 2008. The act guarantees the right to work and provides people with 100 days of minimum wages a year in exchange for manual labour. The goal was to reduce rural poverty and to stem rural to urban migration. MNREGA has the potential to be a safer alternative to seasonal migration. In Bihar, the program has reduced the number of people migrating, but has not had a significant impact to stem large flows (Dutta, 2014).

### *Bihar State Migrant Labour Accident Grant Scheme 2011*

This scheme run by the Government of Bihar Ministry of Labour and Employment compensates the families of deceased migrant workers with up to 100,000 INR in the event of death, 75,000 INR for permanent disability, and 37,500 for partial disability. This scheme only provides compensation within Bihar. If migrants from Bihar are in another state or if a migrant from another state working in Bihar returns home disabled, the compensation cannot be claimed

(Government of Bihar, 2011). Overall, there is little awareness among migrants about this entitlement (Borhade A. , 2016).

### ***Documentation***

#### ***AADHAAR***

Aadhaar is a national identity number based on biometric and demographic data. It was launched in 2010 and now covers 99% of the population. The goal is to “empower residents of India with a unique identity and a digital platform to authenticate anytime, anywhere” (UIDAI, 2016).

Despite numerous controversies and court cases challenging the legality of Aadhaar and raising questions about the reliability of the infrastructure, the scale of biometric mismatches, the protection of privacy and the prevention of tampering with personal data, the government has encouraged people to link their Aadhaar number to various services, including sim cards, bank accounts, and welfare schemes. Aadhaar has the potential to benefit migrants by providing a form of identification accepted across districts and states and providing a platform for the portability of benefits providing the information stored is securely protected (Bhabha, 2017).

## CHAPTER 3: THE BRICK KILN INDUSTRY IN INDIA

### *OVERVIEW*

India's brick-making industry is the second largest in the world after China, producing 240-260 billion bricks per year, and growing at an annual rate between 5-10% (Kamyotra, 2015). From 2005-2030 the construction of buildings is expected to grow at a rate of 6.6% year, increasing the number of physical structures by a factor of five from 2010 to 2030 (Lalchandani, 2012), further increasing the demand for bricks, and thus, migrant labour.

Brick-making is still a manual process in India, where 99% of bricks are molded by hand (Kamyotra, 2015). It is considered a 'traditional' industry, consisting of thousands of small-scale factories in rural and peri-urban areas using locally sourced raw materials and manual processes (Lalchandani, 2012). Brick kilns operate seasonally, generally for six to nine months of the year, as they cannot operate during the wet monsoon season (Lalchandani, 2012).

Across the country, 79% of brick production is through fixed chimney bull's trench kilns (FCBTK), while in Bihar brick production is nearly universally through FCBTKs (Greentech Knowledge Solutions, 2014). As the name suggests, FCBTKs have a fixed chimney, approximately 30 meters tall (Greentech Knowledge Solutions, 2014) that can easily be spotted from a distance. Bricks are arranged in an elliptical shape around the chimney, making the kilns easily identifiable from areal photography and satellite images. The FCBTK method is considered particularly hazardous for workers and does not comply with ILO international labour standards on health and safety (Greentech Knowledge Solutions, 2014). Approximately 100,000 bricks are stacked around the chimney, only covered with sand, and often cave in, leading to fractures, burn injuries, or worse (Greentech Knowledge Solutions, 2014).

### *HOW BRICKS ARE MADE*

Brick-making involves a series of steps, each carried out by migrants from different regions, known for their expertise in a specific task. First, the raw material is procured. This is usually topsoil, leading to environmental degradation of the area. Next, the clay is mixed with water and kneaded with hands and feet for a smooth consistency. Then, the clay is rolled in sand and molded using a wooden form. Workers are paid for every 1,000 bricks they mold. The green bricks are laid out to dry in the sun for approximately two weeks, flipped from side to side every two days for more uniform drying. Finally, the bricks are fired in the kiln for up to a month. The fire is continuous and moved along the elliptical around the chimney. There are three distinct zones: a pre-heating zone, a firing zone, and a cooling zone. Throughout the process bricks are manually stacked in the pre-heating zone and carried away from the end of the cooling zone. Women carry ten bricks at a time on their heads and men carry twenty bricks at a time using a shoulder yoke. For every load they carry, they receive a token, which is recorded at the end of the day and added towards their wages.

### *FINANCES AND LABOUR EXPLOITATION*

Brick making does not only pose occupational hazards, but is associated with poor living standards, and is rife with worker exploitation, child labour, and bonded labour. While there are no official numbers on child and bonded labour at brick kilns, nearly half of the world's 46 million slaves live in India (Global Slavery Watch, 2016) and the 2011 census recorded over 10 million child labourers between the ages of 5 and 14 (ILO, 2017). The brick kiln recruitment and payment system lends itself to exploitation and abuse. Bonded labour most frequently occurs through debt-bondage, which is defined in the *UN Supplementary Convention on Slavery, the Slave Trade and Practices Similar to Slavery* as “the status or condition arising from a pledge by

a debtor of his personal services or those of a person under his control as security for a debt, if the value of those services as reasonably assessed is not applied towards the liquidation of the debt or the length and nature of those services are not respectively limited and defined” (Anti-Slavery International, 2017). A contractor recruits workers in their home villages. People who are in need of a loan will receive an advance from the brick kiln via the contractor in exchange for working at the brick kilns for a full season. Low wages and numerous wage deductions ensure the workers must stay at the kiln for the entire season in order to pay of the debt (Kara, 2012). A report by Anti-Slavery International (2017) on slavery at brick kilns in Punjab found that 96% of workers had taken an advance loan from the brick kiln, which the entire family was working off. In addition, 100% of children aged 14-18 reported working 10-12 hours per day, and 60-85% of children aged 5-14 reported working 7-9 hours each day.

Workers are paid per 1,000 bricks made or transported. Being paid by unit of production by a family rather than time worked per individual incentivizes child labour and generally results in below minimum wage payments. The Anti-Slavery International report found that piece rate wages resulted in 30% lower earnings than minimum wage requirements at the time (Anti-Slavery International, 2017). The same study found that 100% of workers were paid at the end of the brick-making season, rather than monthly, which is the minimum payment schedule required by Indian law. 84% of workers were paid a lower rate than they thought they would obtain at the beginning of the season. Managers lower the rate mid-season or add additional deductions. A seasonal payout makes it difficult for workers to accurately track their rightful earning and the total deductions over time. If the worker’s records differ from those of the brick kiln management, there is often little recourse for the worker (Anti-Slavery International, 2017). By some accounts, “South Asia’s brick kilns are among the most corrosive and violent of any

sector... and brick kiln workers are perhaps the most callously exploited, physically destroyed, and spiritually devastated of all the bonded labourers” (Kara, 2012).

Kara (2012) estimates a brick kiln in Bihar with 50 bonded labour families will generate a net profit of 1,990 USD per labourer per month. This is the highest net profit per labourer of any form of bonded labour in South Asia (Kara, 2012).

The government has passed new regulations that will begin to take effect in Bihar in June 2018\*. Four major changes are set to go into effect that will increase financial pressure on the brick kiln owners. First, the licensing fee for a year will increase from 30,000 INR and 60,000 INR to 100,000 INR and 150,000 INR in rural and urban areas respectively. Second, brick kilns must upgrade their chimney to a more environmentally friendly *zig-zag* chimney. Though this will ultimately reduce coal cost, currently the biggest expense owners face in their operations, it will require an initial investment of approximately 4 million INR. Third, an application for sand mining signed by the land owner (brick kiln owners often rent the land on which their kilns operate) is required to demonstrate that the land has been designated as non-agriculture land. Brick kiln owners consider obtaining this document a major obstacle. In 2017 Bihar stopped all sand mining and sales of sand due to a major corruption scandal involving a sand mafia. This has crippled the construction and brickmaking sectors in the state (Kumar, 2017). Finally, a new electronic receipt system will be implemented to track all brick sales. The brick kiln owners viewed this as financially challenging because it means that corruption in the system will become less common by forcing them to disclose their sales and pay more taxes.

---

\* In-depth interviews, brick kiln managers

## *EFFECTS ON HEALTH*

FCBTKs do not have a permanent roof. Instead, stacked bricks are covered with a layer of ash and sand. Injury due to caving in of the brick structures is a common occurrence. In addition, FCBTKs are considered energy inefficient due to heat loss from the surface and incomplete coal combustion, leading to respiratory illness and cardiovascular disease from exposure to high levels of particulate matter and gaseous pollutants (Skinder, 2014). The high levels of particulate matter, especially PM<sub>2.5</sub>, can have serious maternal and child health consequences. During pregnancy, exposure to high levels of air pollution is associated with higher levels of early fetal loss, premature delivery, and low birth weight (Rees, 2016). Young children experience airway inflammation, acute respiratory infection (e.g. pneumonia) and chronic respiratory infection (e.g. asthma). As children grow older, they can experience cognitive impairments due to delayed brain development. All of these effects compound as adults, leading to high healthcare costs, low income, and a perpetuation of poverty and inequity (Rees, 2016).

Infants and young children are the most vulnerable to air pollution because their immune systems are not yet fully developed and their lungs are still growing. “With every breath, children take in more air per unit of body weight than adults. By extension, when air is toxic, they take in more toxic air per unit of body weight than adults” (Rees, 2017).

Health damaging air pollutants at brick kilns (Skinder, 2014) and their effects on health (Rees, 2016) include:

- Nitrogen oxides: exacerbate pneumonia, asthma, bronchial symptoms, lung inflammation, and leads to overall reduction in lung function



- Sulfur oxides: cause coughing, increased mucus secretion, exacerbation of asthma and bronchitis
- PM10: blocks and inflames nasal and bronchial passages
- PM2.5: can enter the bloodstream and lead to cardiovascular disease

In one study conducted in brick-making areas in Jammu and Kashmir, the air quality index (AQI) was found to be approximately four times higher during the brick-making season than when the kilns were out of operation (Skinder, 2014). In Patna, where the AQI routinely reaches hazardous levels (AQICN, 2018), brick kiln workers are being exposed to some of the highest and most toxic air pollution in the world.

## CHAPTER 4: RESEARCH OVERVIEW

### *STUDY AIM*

This study aims to understand the challenges seasonal migrant brick kiln workers in Bihar face in identifying, accessing, and receiving maternal and child healthcare services. The Three Delays Model is used to assess causes of delays for antenatal care, safe delivery, and general and emergency maternal and child medical treatments. The study compares the field research results against existing programs and policies to identify health system gaps in the context of seasonal migration. This analysis will improve understanding of seasonal migrants' and healthcare providers' perspectives on maternal and child healthcare, and identify potential health system design opportunities to better meet the health needs of this vulnerable population.

The maternal and child health services focused on during this study are the ANC and early-childhood services provided by ASHAs, ANMs, and AWWs at the community health level, as well as access to a facility-based delivery and the corresponding conditional cash transfer scheme. These services have been rolled out nationwide and aim to reach the most vulnerable women and children. They provide the basis of maternal and child healthcare.

### Research Questions:

1. What are the health seeking behaviors for ANC, delivery, and childhood illnesses of seasonal brick kiln workers when they are at the brick kilns? How do they differ from behaviors when they are at home?
2. To what extent do seasonal brick kiln workers have access to the government-sponsored community maternal and child health schemes to which they are entitled?

3. What are the barriers brick kiln workers face in accessing and receiving the schemes they are entitled to?

## *RESEARCH METHODOLOGY*

### ***Framework***

The Three Delays Model, developed by Thaddeus and Maine in their influential 1994 article “Too far to walk: maternal mortality in context”, is widely used as a framework for maternal health and is based on the premise that delays in receiving adequate care for an obstetric complication are largely responsible for poor maternal health outcomes. More than twenty years later the framework remains relevant (Hodin, 2016) and is still considered a leading tool in the field of maternal health. The model identifies three groups of factors, which may prevent women from receiving the care they need: 1) Delays in deciding to seek care, 2) Delays in reaching care, and 3) Delays in receiving care.

The authors note that these barriers primarily affect women living in low-resource settings, particularly in rural areas. The Three Delays Model provides a useful platform from which to consider the many obstacles women encounter in their daily lives in seeking care, and from which to identify, assess, and analyze wider health system factors contributing to poor maternal health outcomes. While the model was originally developed for obstetric complications, it is applicable in different medical contexts. In this project, I apply the model not only to obstetric complications, but to antenatal care, delivery, and maternal and child disease episodes as well.

Thaddeus and Maine describe common factors causing delays in each phase. These are summarized in Table 5. This study assesses these common factors, as well as identifies additional factors unique to the lived experiences of seasonal brick kiln workers in Bihar.

**Table 5: Common factors affecting delays in care, summarized from Thaddeus and Maine, 1994**

<b>Deciding to seek care</b>	<b>Reaching care</b>	<b>Receiving care</b>
-Actors involved in decision-making	-Distribution of facilities	-Adequacy of referral system
-Status of women	-Travel time from home to facility	-Shortages of supplies, equipment, and trained personnel
-Recognition of illness	-Availability and cost of transportation	
-Illness characteristics	-Condition of roads	
-Distance from health facility		
-Financial and opportunity costs		
-Previous experience with the healthcare system		
-Perceived quality of care		

### ***Study Phases***

Figure 2 provides an overview of the study phases. Phase 1 consisted of a literature review on migration and health in India and interviews with 22 experts on migration and/or health from non-profit organizations, international organizations, and academics (Appendix III). Information on migration patterns, existing government schemes, and knowledge gaps was assessed. This information was used to narrow the focus of the work to seasonal migration in the brick kiln industry and maternal and child health, and to develop the study protocol and tools.

Seasonal migrants at brick kilns instead of other industries were selected for the following reasons:

- The number of people employed in the brick kiln industry is large. Focusing on this population can have a significant impact.
- The migration period overlapped with the study period. The brick kilns do not operate during the monsoon season. Migrants arrive at the brick kilns in October or November and stay for six to nine months. Conducting the interviews at the destination rather than the source allowed for the migrants to describe their current situation and provide recent

examples, rather than relying on recall. It also allowed for the brick kiln managers to be interviewed simultaneously to cross-check information.

- Brick kiln labour is almost exclusively supplied by seasonal migrants. Other industries with high numbers of seasonal migrants, such as construction work and agricultural labour, have a mix of seasonal migrants and local labour, making it more challenging to identify seasonal migrants.
- Brick kiln chimneys can easily be identified and tagged on satellite imagery. This allows for a random sample to be selected, rather than relying on government lists of certain industries that may not be up-to-date and fail to capture the illegal or unregistered operations.
- Entire families migrate to the brick kilns for work, rather than only men. This helps break the commonly held myth that health is not a main concern for seasonal migrants because they are mostly young, healthy males.

Maternal and child health was selected as a lens through which to study health systems for seasonal migrants because it covers a wide range of issues to which a health system should be responsive. In particular, continuity of care over an extended period of time, routine care, emergency care, and specific government schemes are covered.

- ANC should take place over a period of nine months and provides the opportunity to look at continuity of care over an extended period of time. Since the seasonal migration period is six to nine months, this provides an opportunity to look at care at the source and destination. In addition, ANC is routine, which is viewed and treated differently from an emergency situation.

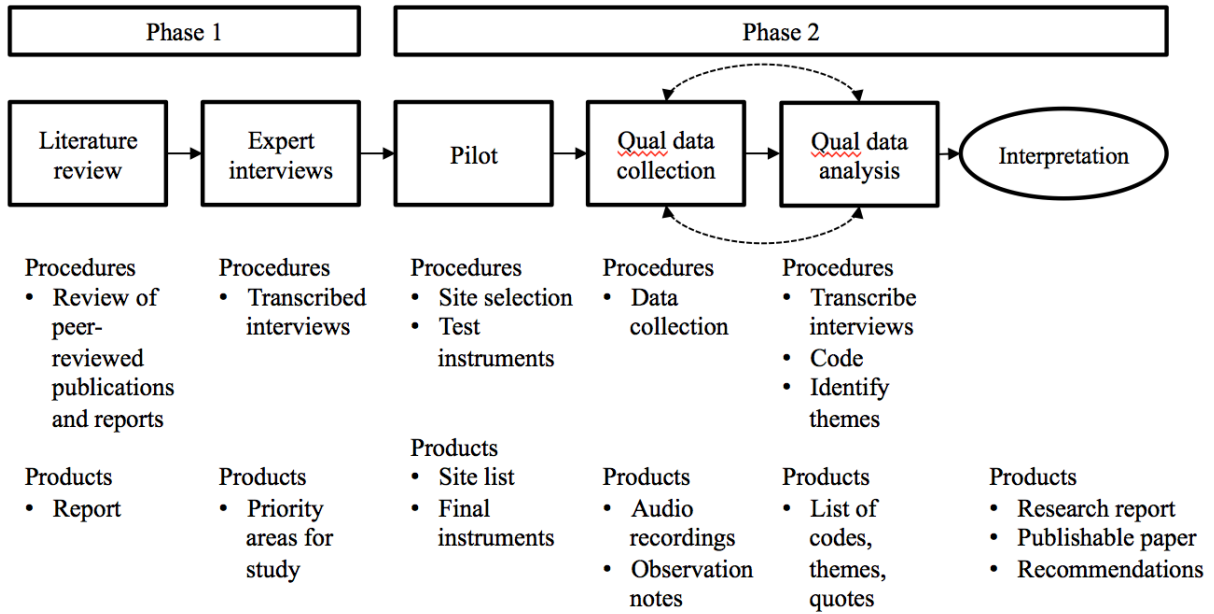
- Delivery provides a concrete anchor event to evaluate. In addition, the accessibility of a specific government scheme, JSY, for seasonal migrants can be assessed.
- Child health, especially in the context of routine childhood immunizations, provides another opportunity to examine continuity of care between the source and destination location.
- General health seeking behavior can be explored through childhood illness episodes in children under the age of two. This also allows for difference in treatment between someone who works (the mother) versus someone too young (the baby) to contribute to brick kiln production to be explored.

The state of Bihar was selected for the following reasons:

- Bihar is a focus state of BMGF and strong relationships have been established with the government and NGOs. The research fell under an existing Memorandum of Understanding between BMGF and the government of Bihar. Existing relationships could be leveraged for advice and support.
- Bihar has complex migration patterns. The narrative around migration and Bihar focuses on Bihar as a migrant source; however, migration into Bihar and intra-state migration are important forces that cannot be ignored. The concern should not only be how migrants from Bihar receive care in other states, but how the Bihar health system itself can cope with treating migrants.

In Phase 2 the study area was identified and study instruments were piloted. Primary data was collected through in-depth interviews (IDIs) and focus group discussion (FGDs) with key informants, including female and male seasonal brick kiln workers, brick kiln owners or

managers, ASHAs, AWWs, ANMs, and doctors. Interview and discussion guides can be found in Appendix IV. Secondary data was collected through observations at the brick kilns and at primary health centers, as well as through a transect walk.



**Figure 2: Overview of study phases methodology**

### *Study Site*

Brick kilns in Patna District were tagged on a Google satellite image by marking each chimney stack. The satellite images were not obscured and chimneys stacks could be easily identified.

Satellite image markings were corroborated with numerous individuals on the ground to ensure known brick kiln areas were not overlooked.

Data collection was conducted in Danapur, Maner, Naubatpur, and Phulwari blocks in Patna District (Figure 3). Danapur and Maner were selected because of the high concentration of brick kilns identified on the satellite images. The brick kilns in the two districts are considered peri-urban and located continuously along the Ganga River on a main road for several kilometers.

Naubatpur and Phuwari were selected because they also have a high density of brick kilns, but represent a rural, more isolated area, compared to Danapur and Maner.

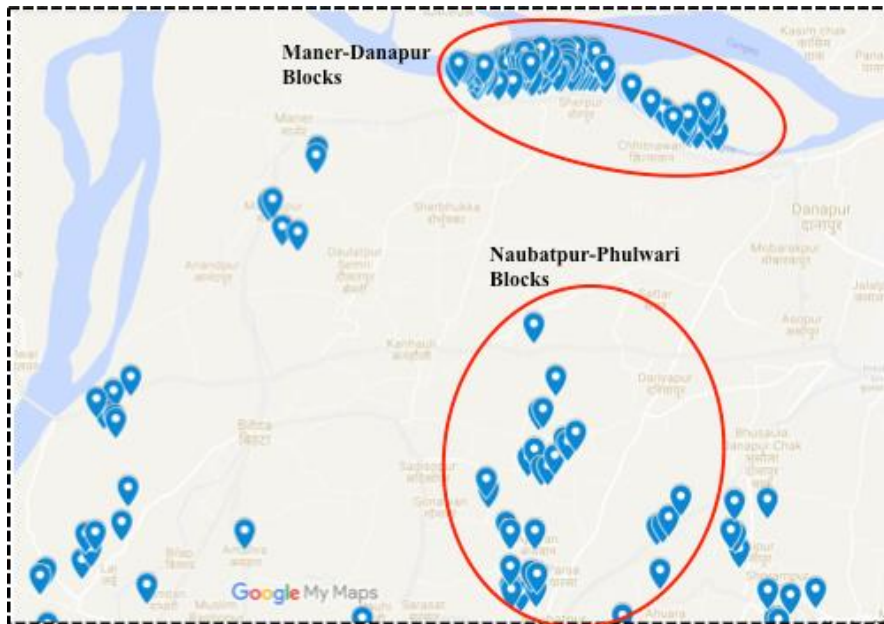
A total of 485 chimneystacks were identified in Patna District, 169 in Danapur and Maner, and 43 in Naubatpur and Phulwari blocks (Figure 4). The Bihar Mines Department lists 5,927 legally registered brick kilns in the state, and 388 kilns in Patna District, the second highest number after Gaya, as of the end of 2016. One limitation to this method is that it is unclear from the imagery if a kiln is operational or how many chimneystacks belong to one factory. While most brick kiln only had one chimney, some had two. Identifying brick kilns through satellite imagery is one mechanism to detect factories operating illegally.

The numbered chimneystacks from the satellite image were randomly selected as interview sites. Two chimneys from Naubatpur, 2 chimneys from Phulwari, 5 chimneys from Maner, and 5 chimneys from Danapur were selected. This method has the potential to over-represent large brick kiln factories, as some factories have more than one chimney stack. It also has the potential to include brick kiln factories that are no longer functional. However, all but one factory we visited were operational, and chimneystacks were never found to belong to the same kiln. Most factories we visited had one chimneystack; though one factory in Maner had 3 (self reported as the largest factories in the region by the owner) and one in Danapur had 2. Chimneys in all four blocks were continuously visited until saturation was reached.





**Figure 3: Study area in Patna District, Bihar**



**Figure 4: Geotagged brick kilns in Danapur, Maner, Naubatpur, and Phulwari Blocks, Patna District, Bihar**

### ***Study Participation***

Four groups of participants were included in this study: 1) female brick kiln workers; 2) male brick kiln workers; 3) brick kiln owners or managers\* ; and 4) healthcare workers. IDIs were conducted with female seasonal migrant brick kiln workers who were pregnant or had delivered a child in the last two years, during which time they were a seasonal migrant worker at brick kilns. Similarly, IDIs were conducted with male brick kiln workers who were seasonal migrants and had a wife who was pregnant or had delivered a child in the last two years, during which the couple was a seasonal migrant at brick kilns. IDIs were conducted with brick kiln owners or managers of brick kilns where women or men were interviewed for this study. FGDs were set up through purposive sampling of ASHAs and ANMs at PHCs whose area of jurisdiction included brick kilns. IDIs were also conducted with ASHAs, ANMs, and AWWs through purposive sampling. An interview with a primary healthcare physician was conducted at the PHC closest to the brick kiln area.

Permission to interview was requested from every brick kiln owner or manager. There was no incident in which access was denied. Due to the strenuous working conditions at the brick kilns, convenience sampling of the migrant workers was employed. Participants reported working for 12-14 hours per day. Workers are paid approximately 450 rupees for every 1,000 bricks constructed. Thus, taking time to be interviewed meant a potential loss of income to the family. During the first week of the study, families had just arrived for the season and were setting up their homes. As such, they were not yet paid for making bricks and had more time to spare for interviews. Interviews were also scheduled during mid-day breaks and on days off. At each kiln,

---

\* The terms brick kiln owners and brick kiln managers are used interchangeably throughout this project. Sometimes the brick kiln owners also managed the site, and sometimes the owner hired a manager. Their day-to-day role and interactions with the workers were the same.

women with young children were approached and a snowballing technique was used to identify and interview women and men who met the inclusion criteria, were taking a break from work, and were willing to participate. Some interviews had to be cut short because managers did not want participants to stop work for more than thirty minutes. On average, 2 women and 1 man per brick kiln met the inclusion criteria and were interviewed. Eight out of the ten men interviewed were the husbands of women who were also interviewed. They often had less time to be interviewed (women take more breaks from making bricks in order to prepare meals and look after young children), so some questions on sociodemographic background were skipped.

**Table 6: Inclusion criteria by participant group**

Participant Group	Inclusion Criteria	Exclusion Criteria
Women	<ul style="list-style-type: none"> <li>- Can speak and understand Hindi</li> <li>- Seasonal migrant</li> <li>- Works at brick kiln</li> <li>- Currently pregnant or has a child under 2. Must have been working at brick kiln during the pregnancy or delivery.</li> </ul>	<ul style="list-style-type: none"> <li>- Declined consent</li> </ul>
Men	<ul style="list-style-type: none"> <li>- Can speak and understand Hindi</li> <li>- Seasonal migrant</li> <li>- Works at brick kiln</li> <li>- Has wife who is pregnant or has a child under 2. Must have been working at brick kiln with his wife during the pregnancy or delivery.</li> </ul>	
Healthcare workers	<ul style="list-style-type: none"> <li>- Can speak and understand Hindi</li> <li>- Provides care to brick kiln workers or works in a catchment area covering brick kiln areas</li> </ul>	
Brick kiln owners or managers	<ul style="list-style-type: none"> <li>- Can speak and understand Hindi</li> <li>- Owns or manages a brick kiln with seasonal migrants who were interviewed for the study</li> </ul>	

### ***Transect Walk***

A transect walk was conducted along the Danapur-Maner main road adjacent to the brick kilns. This road is the site for commercial activities, including small shops, businesses, and the market. Criteria of observation included private health facilities (formally trained allopathic practitioners (MBBS), formally trained AYUSH practitioners, informally trained practitioners (RMP), and other practitioners of traditional medicine), government health facilities, pharmacies, and banking points. Approximately every 100 meters health practitioners were asked about their interactions with brick kiln workers.

### ***Study Instruments***

All interviews and focus groups were conducted using semi-structured guides. IDI and FGD guides for female brick kiln workers, male brick kiln workers, brick kiln owners or managers, and healthcare workers can be found in Appendix IV. The following areas of interest for men and women were covered for both the home and work locations: 1) sociodemographic and migration background and migration 2) antenatal care health seeking behavior; 3) delivery practices and preferences; 4) neonatal care health seeking behavior; 5) decision-making processes to seek out maternal and child medical care in the case of an emergency. Questions for healthcare workers focused on 1) perception of the brick kiln worker communities, 2) health services provided to brick kiln workers, 3) challenges in providing care to brick kiln workers, and 4) perceived differences between brick kiln workers and the local community. The brick kiln owners were asked questions on 1) general background on the brick kiln industry (recruitment practices, government regulations, brick making processes, divisions of labour) and 2) the role of the brick kiln management in providing healthcare to workers.

### ***Data Collection and Management***

The author and two research assistants from Bihar, who served as translators and focus group facilitators, collected all data. The participants gave oral consent, which was recorded on an audio file. Interviews were anonymous and no identifiable information was documented. To the best of our ability interviews were conducted in a private setting. Sometimes this was not possible as private rooms were rarely available and some brick kiln managers stayed within close proximity. Usually a reminder that privacy was needed since we were discussing personal female matters sufficed for the brick kiln owner to go away. In these cases, sensitive questions about salaries and the role of the brick kiln owner in healthcare decisions were skipped or asked at a later point in the interview. No payments were made to participants, but snacks were provided during the interview. Interviews were conducted until thematic saturation was reached from October 2017 to January 2018. Interviews and focus group discussions were conducted with the help of a translator and transcribed in parallel. Audio recordings of the local language were translated and transcribed to provide a word-for-word translation that was not possible during the interview. De-identified transcripts were stored on a password-protected laptop.

Ethnographic observations were made throughout the study period. Field notes were written up after every brick kiln visit, summarizing conversations, observations, and other information not captured in the audio recordings of official interviews.

### ***Data Analysis***

Interviews were analyzed using grounded theory in Atlas.ti. First, a subset of transcripts was analyzed line-by-line through open coding. Next, a codebook was developed and tested by two researchers who independently analyzed two transcripts each. After the codebook was finalized, all transcripts were analyzed line-by-line. Finally, axial coding was applied to develop

categories. The codebook can be found in Appendix V. Codes and categories were developed and analyzed independently from the Three Delays Model. After the analysis was complete, the results were assessed against the Three Delays Model and used to develop a Three Delays Model specific to maternal and child healthcare of seasonal brick kiln workers in Bihar.

All names of people and brick kilns have been changed.

### ***Study Ethics***

Ethical approval was received from the Harvard T.H. Chan School of Public Health Institutional Review Board (Protocol number IRB17-1647). The study fell under the existing memorandum of understanding between the Bill and Melinda Gates Foundation and the State Government of Bihar.

### ***Research Limitations***

This study was conducted in four blocks close to a major city in Bihar and may not reflect the experiences of seasonal brick kiln workers across the state, especially in more remote areas. Only brick kiln workers who understood and spoke Hindi, the dominant language in the brick kiln area, were included. People who speak a language different from the dominant language in the brick kiln area could face additional challenges in accessing care. However, because the migrants interviewed came from various locations from within Bihar and from outside the state, and women who had given birth in the last two years described their experiences at other brick kilns, as well as in the current location, it is reasonable to believe the findings are relevant to the wider experiences of seasonal brick kiln migrants in the region.

## RESULTS

### CHAPTER 5: QUALITATIVE STUDY RESULTS

A total of 48 IDIs and 2 FGDs were conducted and included in this analysis:

- 9 IDIs with women who were pregnant
- 11 IDIs with women who had a child under the age of 2
- 10 IDIs with men who either had a child under the age of 2 or a wife who was currently pregnant and working at the brick kiln
- 2 IDIs with mother-in-laws/grandmothers (one of whom was also a traditional midwife) who had pregnant family members working at the brick kiln
- 9 IDIs with brick kiln owners or managers
- 1 IDI with an ASHA whose catchment area included brick kilns
- 1 IDI with an ANM whose catchment area included brick kilns
- 2 IDIs with AWWs who lived within a few hundred meters of the brick kilns
- 2 IDIs RMPs who saw patients at the brick kilns
- 1 IDI with MBBS who worked at the APHC adjacent to the brick kilns
- 1 FGD with 7 ASHAs whose catchment areas included brick kilns
- 1 FGD with 5 ANMs whose catchment areas included brick kilns.

Additional FGDs with ASHAs and ANMs were planned, but did not take place because from October to February, the months in which the research took place, the weekly ASHA and ANM meetings at the PHC were repeatedly canceled because of immunization campaigns. Despite multiple attempts, after the first FGD, ASHAs and ANMs could not be located at the PHC.

Table 7 summarizes sociodemographic characteristics of the women who were pregnant or had young children and Table 8 summarizes basic findings around access to ANC.



**Table 7: Sociodemographic characteristics of women/mothers (n=20)**

	Age*				Location		Scheduled caste or tribe			Education					Number of children			
	<18	18-22	22-26	26-30	Peri-urban	Rural	SC	ST	Other	None	Some primary	Primary	Some secondary	Secondary	1	2-3	3-4	>4
Women n=20	3	8	7	3	13	6	4	16	0	13	2	3	1	1	2	6	11	1

**Table 8: Summary of basic ANC of women/mothers (n=20)**

	ANC**		Knows current ASHA		Knows nearest gov. clinic	
	Home	Brick kilns	Home	Brick kilns	Home	Brick kilns
Women n=20	20	2	20	1	20	3

\* Several ages had to be estimated since the participants did not always know their age

\*\* No strict criteria are applied

Seven key themes emerged across the IDIs and FGDs of all four participant groups:

1. Social segregation
2. Healthcare controlled by brick kiln owners
3. Potential health enabling factors
4. Limited access to community health outreach services
5. Lack of documentation
6. Financial challenges and exploitation
7. Stigma and discrimination

### *SOCIAL SEGREGATION*

Brick kiln workers rarely return to the same brick kiln for work each season. They go to different towns, regions, or states depending on where the labour contractor sends them. Out of 30 men and women interviewed, 27 worked in a brick kiln the previous year, but only 3 worked in the same brick kiln. As a result, seasonal migrants experience a new environment and unfamiliar surroundings, both geographically and socially, every year.

Brick kiln workers are not integrated into the local community. Although the brick kilns are physically close to the rest of the town, an imaginary line exists, which neither the brick kiln workers nor the local community crosses. Brick kiln workers have little interaction with the local community. Men more frequently left the premises and engaged with people from the local community than women, but overall most brick kiln workers had never engaged in a conversation with someone from outside of the brick kiln, and if they did, it was for business transaction only, for example, buying food at the local market.

*I only communicate with people inside the brick kiln. I have never even been to the market here. I do not mingle with other people. [Woman, IDI, 2 children, peri-urban]*

The brick kiln managers controlled the workers' movement. Though the brick kilns were not fenced off, people rarely left the premises because their manager would not allow it. This was common knowledge in the community, and healthcare workers and other people from the community mentioned this as a key challenge brick kiln workers face. The close monitoring of the movement by the manager further isolated the brick kiln workers. They could not engage with locals to learn and to familiarize themselves with the area. It also limited their ability to seek out medical care, as they needed to request permission first.

*Respondent: The brick kiln accountant doesn't allow us to move from this place and mingle with other people. We can't leave from here easily because if we start to roam around he will question us. So we just focus on our work here.*

*Interviewer: Do they stop you from going out?*

*Respondent: Yes. If we go to the market, if we go anywhere, they tell us to stay inside and work here. [Grandmother, IDI, peri-urban]*

The restriction of movement of workers by the brick kiln owner and the fact that people from the community did not go to the brick kilns, left the brick kiln workers unaware of the resources around them. 17 out of 20 women and 8 out of 10 men interviewed had no idea where to go in the case of a medical emergency. They were unaware of private practitioners in the area (aside from the practitioner to which the manager referred them), as well as where the nearest government facility was located. While some thought there might be a PHC in the nearest town, they had no idea where it was located or how to find it.

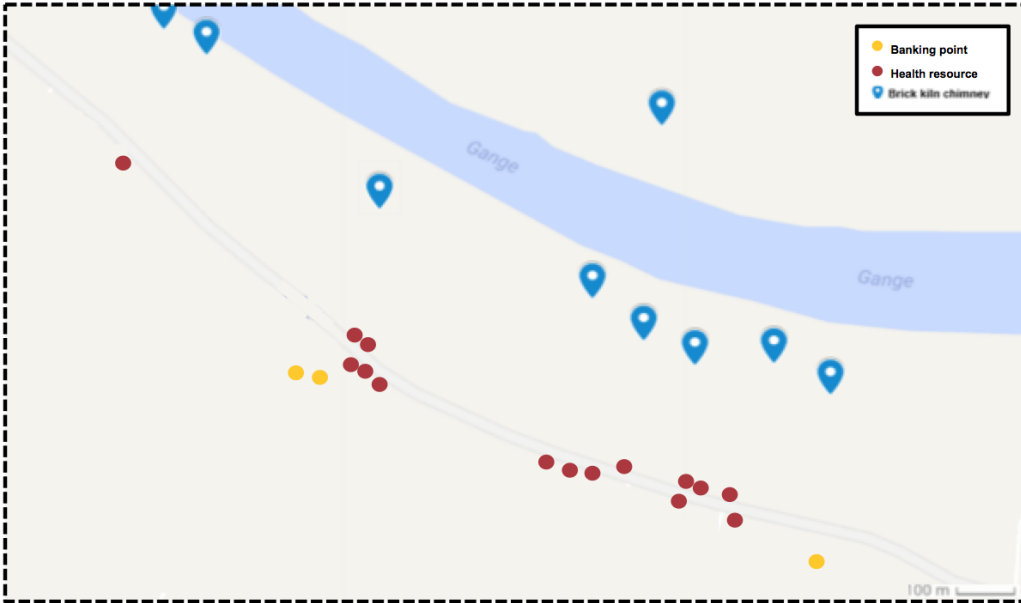
*I don't know anything about this place... Where can we go? It's my first time here.*

[Woman, 1 child, IDI, peri-urban]

From the responses received to questions about where the nearest practitioner or healthcare facility is located and how he or she would get there, the immediate area surrounding the brick kilns appeared void of healthcare services. However, results from a transect walk show numerous practitioners within just meters of the brick kilns. Brick kiln workers were oblivious to resources outside of the brick kiln premise.

A stretch of 1 km along the main road was assessed on the transect walk. On this stretch there were nine brick kilns immediately off the main road, 15 health service points (1 MBBS practitioner, 1 MBBS practitioner with pharmacy, 3 RMP practitioners, 2 RMP practitioners with pharmacies, 1 AYUSH practitioner, 1 quack, 2 quacks with pharmacies, 1 AYUSH pharmacy, and 3 pharmacies). In addition, 3 banking points (2 public sector banks and 1 payment bank) were confirmed. Banking points were assessed in the transect walk because they are needed to set up bank accounts in order for women to receive the JSY conditional cash transfer.

While the transect walk did not assess the quality of healthcare available, it shows brick kiln workers have access to some form of healthcare within a range of no more than a few hundred meters. Thus, when the migrants comment that they do not know where the nearest health facility is and how to get there, physical access should not be a barrier; instead, this speaks to a deep social segregation of the migrant communities from the wider community around them.



**Figure 5: Transect walk mapping of health services and banking points near brick kilns**

A social segregation of the brick kiln community as a whole from the rest of the community exists at the work site. The segregation is at the community level, not at the level of the individual. Brick kiln workers usually come as a husband-wife couple, often with extended family. 28 out of 30 people interviewed had extended family members with them. Often dozens of people from the same village or town will be working at the same brick kiln, all recruited by the same contractor. Thus, while the social ties are not as extensive as back home, a similar micro social network of family members and neighbors exists. However, since they all face the same obstacles to interacting with the local community, the familiar social network fails to connect people with resources in the same way it did back home.

*HEALTHCARE CONTROLLED BY BRICK KILN MANAGERS*

Brick kiln managers are the first point of contact for workers when a medical need arises. The combination of workers' unfamiliarity with the area and not knowing where the nearest health services are, as well as needing the manager's permission to leave the work site, leaves the manager in the role of gatekeeper to medical care. Without exceptions, every woman and man interviewed at the brick kilns said the first step they would take if they needed medical care would be to ask the manager.

*Interviewer: Where will you deliver your baby here?*

*Respondent: It depends on the manager. [Pregnant woman, IDI, peri-urban]*

*Interviewer: Which doctor will you go to?*

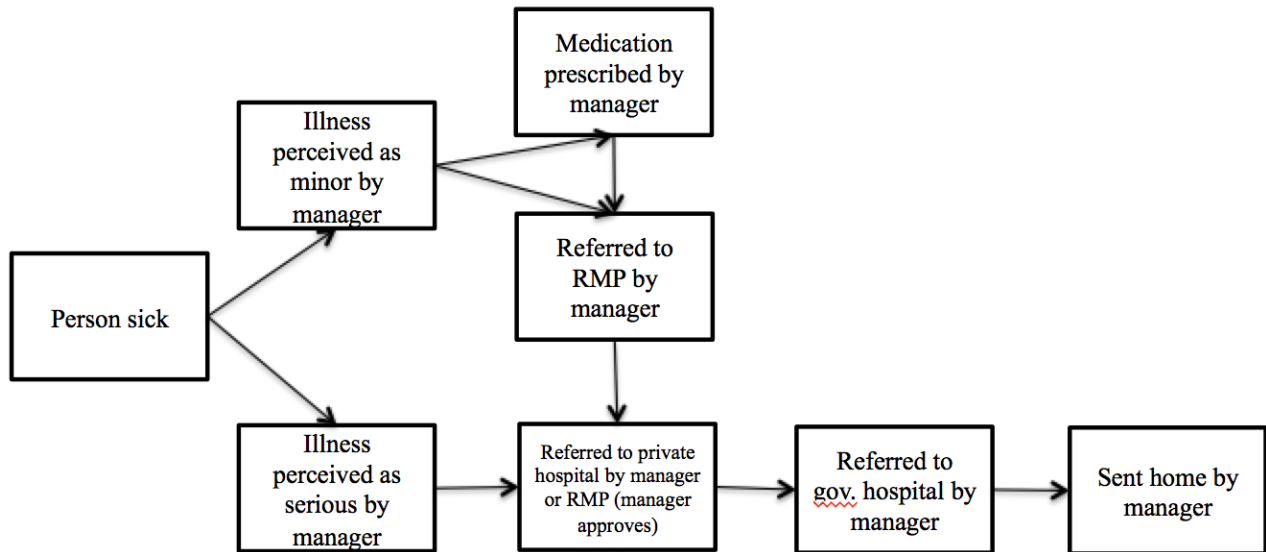
*Respondent: I don't know. Since I don't know about the doctors here, my owner will tell me. [Mother, 3 children, IDI, peri-urban]*

Managers are a major actor in the migrant worker healthcare system. They perform triage, provide referrals, prescribe medications, and finance healthcare. The managers, who have no medical training, decide what the best course of action for each patient is based on their assessment of the situation. Managers have their own hierarchy of resort for treatment. While there will be variation across managers, the general hierarchy of resort of the managers described by brick kiln managers themselves, workers, and healthcare workers is summarized in Figure 6.

*Interviewer: How do you decide which doctor to send people to?*

*Respondent: That is based on my assessment of the situation. I know if someone gets an injury in his leg he has to be sent to the RMP, but if there is a case where he gets hurt in*

*the chest, he needs to be sent to a high-tech hospital. What I think will be good for them is what I suggest. [Brick kiln manager, IDI, peri-urban]*



**Figure 6: Brick kiln manager hierarchy of resort to treatment**

At nearly every brick kiln visited, managers had medicines they dispensed themselves as they deemed appropriate. The in-house pharmacy generally included antibiotics, steroids, and painkillers. A detailed assessment of the on-site medical stock was completed at two brick kilns. Spot checks and verbal reports by managers at other brick kilns support the findings of medicines kept by brick kiln managers, summarized in Table 9. No pediatric formulations were seen in the brick kiln medicine samples. Providing medications on-site for perceived minor ailments without the consultation of a doctor was often the first course of action. The decision to medicate was the decision of the manager, not always that of the worker.

*I don't have any problems related to my pregnancy, but I have a cough. For this I have received medicines from the manager. I have bought medicine and I have finished it, but still I don't feel any better... I haven't seen a doctor. [Pregnant woman, IDI, rural]*

**Table 9: Medicines dispensed by brick kiln managers**

Generic substance	Indian brand name	Use
Metronidazol 400 mg, tablet	Flagyl	Antibiotic
Levofloxacin 250 mg, tablet	Fynal oz	Antibiotic
Dicyclomine 20 mg + Paracetamol (acetaminophen) 325 mg, tablet	Spasmonil	Gut antispasmodic + analgesic
Pheniramine 50 mg, tablet	(illegible)	Antihistamine
Nimesulide 100 mg, tablet	Nicip	Analgesic; NSAID
Prednisolone 10 mg, tablet	Omnacortil	Corticosteroid

When more than medication is needed, but the manager decides the situation is still not serious, he arranges for a doctor's visit. Every brick kiln manager has developed relationships with specific providers to which patients are sent. All of these providers, commonly known as Registered Medical Practitioners (RMP), are private, informal biomedical practitioners and not fully qualified. Some brick kilns had associations with an RMP in town to which they sent patients.

*Interviewer: And how did you find out about Dr. Vijay?*

*Respondent: I first went when my child had a fever. The doctor has an association with the brick kiln owner. He either takes the money at the end or the middle of the season. The doctor takes the money, he received the money from the owner, and then he checks the workers. We must get a slip from the owner and we take it to the doctor. [Father, 4 children, IDI, peri-urban]*



Other brick kiln managers had a formal agreement with an RMP who would regularly come to the brick kiln to provide care for a fixed seasonal price. Again, the manager decided what cases to refer to the RMP based on his assessment of the seriousness of the condition.

*For problems like colds, coughs, fever, and body aches the RMP handles things. We have paid the RMP an annual fee for which he visits, diagnoses and prescribes medicines to [workers] here. He goes around to about twelve or fifteen brick kilns. About 50% of brick kilns here have an RMP. [Brick kiln manager, IDI, peri-urban]*

Finally, for conditions perceived as serious by the manager, patients would be sent to the hospital. A condition could be deemed serious by the brick kiln manager from the very beginning, after the condition has failed to improve, or after the patient's health further declines.

*We know the doctors here so [the workers] visit those doctors first. But if the problem is not solved we pay them and send them to the hospital. [Brick kiln manager, IDI, peri-urban]*

RMPs often recognize the need for more advanced treatment and refer patients to a private or government hospital. This will only be done after the manager agrees to this course of action. The healthcare decision lies in control of the manager who may misjudge a condition or prioritize profits over health.

*First the brick kiln owner contacts me [the RMP]. I do a check-up and if I can't treat them I contact the owner and ask if I can send them to a hospital. Since it is serious it will cost some money. I tell them how much it will be. If the owner agrees, I send them to the facility. [RMP, IDI, rural]*

The manager controls his workers' access to medical care and to the outside world. It is entirely up to him what course of action will be taken. This can have life-threatening consequences if it leads to delays in reaching vital care. I witnessed one situation that highlights the dangers of misdiagnosis by the manager.

The brick kiln manager asked me to come look at a young woman who was approximately six months pregnant and had repeatedly requested to see a doctor. I was with a trained physician at the time, so we agreed to meet with her. Coincidentally I had interviewed both her and her husband the day before, so I was aware of her pregnancy complications and her treatment history. She complained of a headache and had swelling in her feet. The swelling had appeared overnight, as the day before both she and her husband mentioned she was experiencing serious headaches, but no swelling. The manager believed these symptoms were due to anemia and wanted her to take iron tablets. Upon examining the woman, we discovered this to be a severe case of pre-eclampsia. Her blood pressure, confirmed twice, was 220/95, constituting a potentially life threatening medical emergency. Her story emphasizes the lack of agency a pregnant brick kiln worker has over her own antenatal care, and conversely, the life threatening situations that can arise from the brick kiln manager's absolute power over every aspect of his workers' lives.

The desire to not miss out on work time dictates both the actions of the manager and the workers and is one of the main reasons cited for preferring private practitioners to government facilities. Government clinics are known for having long waiting times, and patients are frequently told to return another day. At a private practitioner, the amount of time lost to waiting is minimal. The most frequent reason cited by brick kiln managers for avoiding government facilities was the lost working hours as a result of long waiting hours. In addition, the PHC was only open for visits

from 9am – 2pm, while private practitioners also saw patients in the evening, further reducing the number of working hours potentially lost to a check-up.

*I am from Bihar so I know the conditions of government facilities here. They are not great. If you go to the government hospital, it will take you the entire day to see a doctor, but in a private clinic everything is done fast. The people want fast treatment, and if they get fast treatment they can resume their work more quickly. If we wait for four days for them to get better, then they lose four days, as well as the person who is with them to care for them. And if the worker stays idle for four days, then he will also lose the salary for those four days. So they need quick action and for that they need private treatment.*

[Brick kiln manager, IDI, peri-urban]

The owners did not only control the healthcare of the brick kiln workers, but the ability of healthcare workers to provide care. ASHAs and ANMs said it was difficult to provide care at the brick kilns because the owners would not cooperate with them. The owners were reluctant to facilitate treatments they saw potentially limiting the ability of people to work.

*Respondent 1: The women will not vaccinate their children until they get permission from the owners. And the owners don't want the children to be vaccinated because they get a fever and then the mothers cannot work.*

*Respondent 2: When we meet the manager at the brick kiln, he tells the women to get their children vaccinated at their own risk. If the child gets a fever and creates a problem for the mother to work, then you will not get your salary that day. [ASHAs, FGD, peri-urban]*

Three out of nine brick kiln owners believed that working at the brick kilns had a positive effect on a pregnancy. This response was unprompted and not part of the interview guide, so it is possible this belief is even more widespread. While physical activity is important during pregnancy, the number of hours worked and the strain of the labour is extreme for anyone, especially if she is pregnant, and it can be harmful to the woman and the fetus in the case of complications. The pregnant woman with pre-eclampsia never took a day off. The day after I met her, I returned to the brick kiln to follow-up with her. She spent the whole day carrying bricks from the firing area to the truck, ten at a time. Such heavy work is contraindicated for anyone with pre-eclampsia and can have serious health consequences.

*[Brick kiln workers] usually don't get sick because they are always working so their health is in a very good condition. Actually, people who are heavy workers have fewer complications during delivery than those who are sedentary workers or a housewife...so working here is a good thing. [Brick kiln manager, IDI, peri-urban]*

#### *POTENTIAL ENABLING FACTORS FOR HEALTHCARE*

While the prevailing attitude amongst brick kiln workers and health professionals was that the brick kiln managers' unlimited control over the healthcare of the workers was detrimental to the workers' health by denying them choice, not cooperating with government health programs, or denying care altogether, for a few people working at the brick kilns was a potential enabling factor for accessing healthcare. Healthcare access was highly dependent on the brick kiln manager, and some were more supportive than others.

*The brick kiln owner decides whether the kids get vaccinations or not. There is this brick kiln called Kumar Bricks and the owner there is very nice and he personally calls the children to get vaccinated and brings them to us, even the children who are 10 or 15.*

[ASHA, FGD, peri-urban]

For two out of thirty workers interviewed, having an RMP visit regularly and knowing that the manager can arrange to go to the government hospital if necessary, is more than they had back home. The two people were from a remote village in Jharkhand's tribal belt. Some tribal populations have little contact with their assigned ASHA because the population of 1,000 people assigned to the ASHA's catchment area is so dispersed that regularly visiting everyone is impossible.

At brick kilns, the infrastructure needed to reach care is in place: roads and trucks are easily accessible. Brick kilns are built close to roads and trucks are available so bricks can be transported to sell. Distance to facilities and cost of transport were a concern for many people, especially in cases when workers wanted to seek care on their own. For deliveries and other urgent situations, the brick kiln manager was expected to give permission to leave the work site, and transport and road access were not a concern.

Brick kiln owners want to maximize their profits. This can result in worker exploitation, but it can also provide brick kiln workers with some leverage. In the last few years, brick kiln owners say it has become more difficult to recruit labour, and one of their leading concerns is not having enough workers to keep the brick kiln running. Several people from the community mentioned this as the reason why managers closely monitored the workers' movements. Reports of other brick kilns in the area offering a slightly higher per unit price to poach workers for their

operations were common. However, the labour shortage could also increase the pressure on the managers to keep their workers happy.

*There is so much unity. The workers will stop working [in protest]. Even if we get a call at midnight that a woman is delivering a baby, we will arrange for transport to the hospital. Our business is totally dependent on them, so if we don't take care of them, our business will be affected. [Brick kiln owner, IDI, peri-urban]*

*If the worker is well, then he is able to do work and if he is not okay, then the work will be hampered. The work of the owner will be hampered too. If the child is not okay, then the guardian will also not work, so that's why the owner says to treat the children very carefully because if the child feels better, then the guarding will resume work. [AWW, IDI, rural]*

#### *LIMITED ACCESS TO COMMUNITY HEALTH OUTREACH SERVICES*

Of the five activities an ASHA is expected to fulfill, only one, mobilizing for immunizations, is consistently carried out at the brick kiln. Efforts have been made to try to extend access to health services provided by the ASHA to the brick kilns. However, the current mechanism overextends the ASHA, as brick kiln workers are assigned to ASHAs on top of their regular workload.

ASHAs are linked to a PHC through which their catchment areas are defined. One ASHA is assigned to a population of 1,000. This is based on the permanent, local population. In high-density brick-kiln areas, there can be an influx of tens of thousands of people who reside in the area for six to nine months, but are not considered residents. The PHC has mapped the brick kilns and assigned specific kilns to ASHAs living nearby. The ASHAs interviewed served 2-3

brick kilns each. Assuming the brick kilns were small and only had one chimney, this results in a population increase of 500-800 (assuming 3 children per family), or nearly doubling the population the ASHA is expected to serve. Time constraints prohibit ASHAs from visiting so many people regularly, so ASHAs prioritize their permanent population, and only provide limited services to the brick kilns. The language ASHAs use to describe the total population they are assigned to serve makes a clear distinction between the local population and the brick kilns. Words used to describe the permanent catchment area include “us” and “my community”. Words used to describe the brick kiln population in the catchment area include “outer area”, and “those not from here”.

*The main difference between my catchment area and the brick kilns is that in my allotted area I spend more time. The brick kiln is an outer area and therefore I spend less time here. I am not able to give an equal amount of time to this area. [ASHA, IDI, peri-urban]*

The only services women consistently (though not regularly) reported receiving at the brick kilns were polio and other routine immunizations. Increasing immunization rates across the country is a key priority for India. In October 2017, the Prime Minister launched Intensified Mission Indradhanush, an effort to reach 90% immunization rate by December 2018 (Government of India, 2017). In order to reach this goal, the government identified key populations that must be targeted. Migrants were identified as a high priority group\*. In the past, migrants had been identified as a priority group for polio immunization campaigns. Thus, the immunization micro plans developed at the PHC level include brick kilns as a target area because they are known hubs for seasonal migrants. The brick kilns that were assigned to ASHAs by the PHC were done so with a focus on childhood immunization. Immunization days for brick kilns were set by the

---

\* Personal communication, Bhupendra Tripathi

PHC, and any other services the ASHA provides were left to her discretion. Routine immunizations were supposed to be provided at brick kilns monthly through the ASHA and ANM, and polio drops were administered through separate polio teams. The brick kiln managers at 7 out of 9 brick kilns said that health teams came to their brick kiln, though not always regularly, to provide immunizations, though only a few of the women brick kiln workers interviewed were aware this was happening. Aside from immunizations, ASHAs would respond to a call for ANC services by a pregnant woman at the brick kilns, but they did not actively seek out cases like they did in their permanent catchment area.

*It is not easy for us to give sufficient amount [to the brick kilns]. We come here once per month for immunizations only... We go to each brick kiln once per month. Three Thursdays out of the month are set aside for brick kiln immunization... We also come for pregnant women when we are called...But mostly we provide immunizations. [ASHA, FGD, peri-urban].*

ANMs, who administer immunizations together with ASHAs, corroborated that immunizations are the main focus for the brick kilns.

*At the brick kilns we provide immunizations. We go to brick kilns on Thursdays and try to cover two to three brick kilns in a day. We immunize the children according to the vaccination plan and we immunize the pregnant women for tetanus. [ANM, FGD, peri-urban]*

Most women at the brick kilns do not know who their ASHA is or how to get in contact with her. Out of the 20 women interviewed, only one knew who her ASHA at the brick kiln was, though not by name. In contrast, all 20 women knew their ASHA back home by name and could



describe how to reach her, either by cell phone or by walking to her house. The women consider the ASHA back home as their neighbor, though this term implies more than physical proximity. One of the ASHAs assigned to the brick kilns lived less than 50 meters from a brick kiln, yet for the female brick kiln workers she was out of reach. The invisible barrier separating the brick kilns from the rest of the community extends to the relationship between brick kiln workers and the ASHA too. The ASHA selection criteria stipulate the “ASHA be a woman resident of the village” (NRHM 2013), but in people’s minds the village boundary ends where the brick kilns begin.

*Back home the ASHA is named Munki and she is my neighbor. Whenever we call her she is always ready to come visit us, whether it is day or night...Here I do not have an ASHA.*

[Pregnant woman, 2 children, peri-urban]

Though time constraints did not allow ASHAs to visit the brick kilns regularly, some ASHAs actively avoided visiting the brick kilns due to safety concerns. They tried limiting their visits to the bare minimum and would not conduct a home visit after 3pm. If a pregnant woman went into labour after dark, she had to go to the ASHA’s house on her own to be accompanied to the clinic, instead of the ASHA picking her up.

*Respondent: I can only spend limited time at the brick kiln areas and I can’t spend time in the evening. In my catchment area I provide services at night if they are required, but after 3pm I would call a woman from the brick kiln area to my home, not visit her.*

*Interviewer: What is the reason for not working past 3pm?*

*Respondent: The female security part. I belong to this village and the brick kiln is not considered a good place to be visited by females because of the kind of people here and*

*the kind of activities that take place. This place is not good to come to for normal female members, but I have to come because I have been assigned here and it is my duty.*

[ASHA, IDI, peri-urban]

Given the strenuous work hours at the brick kilns, it could be challenging for women to meet with the ASHA during the day on-site. Equally challenging could be for a woman to meet the ASHA at her home after dark. Women might have difficulties finding the ASHA's house in an unfamiliar environment or at night and the brick kiln owner might deny permission to go off-site if he does not think it is medically necessary.

Anytime an ASHA or ANM needs to visit the brick kilns, they have to go in pairs. This guideline was set by the PHC to address safety concerns voiced by ASHAs and ANMs in the past. The requirement to mobilize a second person to visit the brick kiln further limits the amount of time an ASHA can spend at the brick kiln and her ability to provide services that are not planned well in advance like immunization days.

*Respondent 3: It doesn't feel good from the inside. We can't go [to the brick kilns] alone.*

*Respondent 1: And in the meeting they told us that two ASHAs will go to a brick kiln so they don't feel scared.*

*Respondent 5: When there are two people it feels a little easier and then there is also someone to talk to. [ASHAs, FGD, peri-urban]*

Perception of safety concerns prevents ASHAs from going to the brick kilns. One ASHA had only made one home visit to a pregnant brick kiln worker in the last year. This is something she does daily for the local population. It is not clear if there is actually a safety concern or if this

fear of the brick kilns is a reflection of wider stigma and discrimination against seasonal migrants. It is possible that healthcare workers felt uncomfortable opening up about negative experiences in interviews and focus groups, but when asked if she herself or someone she knows had ever personally experienced harassment or an incident that made her feel uncomfortable, no examples were given.

Finally, ASHAs mentioned that providing services at the brick kilns is time intensive. They felt it took more time to provide a given service to a brick kiln worker than to someone from the local population. The education levels and general understanding of healthcare practices were perceived to be lower in brick kiln workers than in the local population. As a result, ASHAs needed more time – time they did not have – to explain the importance of a procedure.

*Respondent: It takes a lot of time to make [brick kiln workers] understand that it is necessary. After taking a vaccination like pentavalent, the kids develop a slight fever. Now, they take the first dose of pentavalent, but for the second dose we struggle a lot. We need to explain to them a lot. They are tribal and uneducated. Some understand and take the second dose and some don't.*

*Interviewers: Do you face the same challenges to give the second pentavalent dose with the local population?*

*Respondent: Maybe one or two. But they are wiser... Here they are aware that fever is a normal phenomenon, so I don't have that many difficulties here. [ANM, IDI, rural]*

The lack of a regular presence of the ASHA and the myopic focus on immunizations prevents continuity of care, especially for pregnant women who require ANC throughout the nine months of their pregnancy. For example, numerous women reported receiving iron tablets at the

beginning of their pregnancy from their ASHA back home, but their treatment was interrupted once they went to the brick kilns and finished their supply. Given the isolation of the brick kiln community and the strong control the managers hold, ASHAs could be a bridge for brick kiln workers between the brick kilns and the rest of the community, but the lack of a frequent and consistent presence of ASHAs is inadequate for them to fulfill their role as “the first port of call for any health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services” (NHM, 2014).

#### *LACK OF DOCUMENTATION*

While there has been an effort to extend the ASHA program to the brick kilns to a certain extent, AWC services are completely inaccessible to seasonal migrants. The AWWs’ catchment areas only include the permanent population, not seasonal migrants. AWWs do not view the brick kilns as part of their responsibility. Both AWW interviewed, as well as the ASHAs and ANMs, viewed pregnant and lactating mothers and children at the brick kilns as ineligible to receive AWC services.

*Not a single brick kiln falls under the catchment area because they just stay here for 6 to 7 months and after that they go back home. Our catchment area comes from the survey only. Those who have their names enrolled in the voter list will be counted. [Brick kiln] workers don’t have their names enrolled in the voter list here. Only those who have their names enrolled in the voter list are included in the survey. [AWW, IDI, peri-urban]*

Most migrants did not take their children’s immunization records with them because 1) it was considered safer to keep important documents at home, 2) they thought their children had already

completed their immunizations so there was no need further need for the immunization card, and 3) they simply forgot to take them.

Having a record of childhood immunizations is important for continuity of care. Immunizations are the one thing that is actually provided at the brick kilns, so the possibility of continuity of care is more likely than for other conditions. ANMs said if there were no immunization record for a child, they would try to determine how many immunizations the child had received by asking the mother; however, some ANMs said they would not immunize a child if the immunization record was missing.

*Interviewer: What do you do when a child doesn't have the immunization card?*

*Respondent: We ask the mother and she tells us how many injections the child has had in the arm and the thigh.*

*Interviewer: And if she doesn't remember that?*

*Respondent: Then we don't treat them. Because only when the mother can say what vaccinations the child has received, then, and only then, can we give further vaccinations. [ANM, FGD, peri-urban].*

Childhood immunization records are also necessary in order to register at the AWC. Seasonal migrants do not qualify for AWC services at their work location because they are not registered; however, even if seasonal migrant parents were eligible to enroll their children, they would only be able to do so if they could show their children's immunization card.

*I don't have an order for the brick kilns. But as they are adivasi (tribal) I would like to help them. When I get the order I can add their name to the list...But before enrolling I have to see their vaccination card.*

In order to properly plan for immunization administration, ASHAs enumerate all the children in their catchment area and record their immunization status on a due list. This due list is created once per year and used to guide the immunization activities. ASHAs will use this list to mobilize individuals to attend immunization sessions. ASHAs were instructed by the PHC to complete this task every February. This is problematic for brick kiln workers since they arrive at the brick kilns in October. Creating the due list in February leaves the brick kiln worker children unrecorded for four months, which is around half the time they spend at the brick kilns. This helps explain why brick kiln owners said immunizations were conducted at the brick kilns sometimes, but not recently, and ASHAs said they provided immunizations at the brick kilns, yet not a single child of the women interviewed from October to January had received an immunization. This discrepancy demonstrates a deep lack of understanding of or willingness to serve seasonal migrants by the health system. Actions are taken to try to provide immunizations to this population, yet they are systematically excluded by the process.

In order to receive the JSY cash transfer after delivering in an approved facility, a woman must have a bank account set up under her own name. ASHAs have been instructed to help women set up bank accounts and have received training on the process. However, not a single woman who was interviewed and gave birth while at a brick kiln over the last two years received the payout, even if she delivered in a government hospital, because she was unable to open a bank account. The government PMJDY program passed in 2014 allows people to open a bank account at any branch in the country, regardless of their residence. Officially, only an Aadhaar card and two

passport photos are needed to open a bank account. However, there is the widespread belief amongst migrants as well as within the local community, that one can only open a bank account in the location of permanent residence, which must be supported by various documents. Many ASHAs do not attempt to help a woman set up a bank account if they know she is a seasonal migrant because it is considered a waste of time. Three main challenges for migrants setting up a bank account emerged:

- 3) Migrants leave their Aadhaar card at home: 17 out of 20 women said they had an Aadhaar card, but had left it at home with a relative because it was considered safer than taking it to the brick kilns or because they did not think there would be a need for it at the brick kilns. Biometric data captured on the Aadhaar card should eliminate the need to have the card in hand, yet it was the prevailing belief amongst brick kiln workers and health workers that the actual card was needed.

*I left my Aadhaar card in my village. I left it with my brother because it is safe there.*

*Ever since childhood my brother has kept our documents. [Pregnant woman, IDI, rural]*

- 2) Bank requests unnecessary documents and bribes from migrants. Even if a migrant woman has her Aadhaar card, she may be asked to produce documents that are not officially needed.

*I went with one [brick kiln worker] to open an account, but she could not open the account. She had Aadhaar, but the person at the bank started asking for the PAN card and then the electricity bill. The lady did not have an electricity bill, and even if she had it would be under the name of her parent-in-laws. Then they asked for a residence certificate and said we needed 1,000 rupees. [ASHA, FGD, peri-urban]*

3) Migrants do not have time to go to the bank and set up an account. The process can take time, especially if women are sent back to obtain additional documents. Women weigh the guaranteed time lost in wages against the hypothetical JSY amount they could receive.

*Even if I would take her to the bank, she would not come because she does not have time and has to work. [ASHA, FGD, peri-urban]*

#### *FINANCIAL CHALLENGES AND EXPLOITATION*

Most poor people in India do not have access to fair loans. If a sudden need for a loan arises, one option is to take a loan from the contractor in return for working the debt off at a brick kiln. For brick kilns in Patna District, loans up to 50,000 INR\* were provided. Brick kiln workers are paid at the end of the season. The owners keep detailed accounts for each worker, deducting from their wages the weekly food allowances paid out, any other expenses occurred, and the initial loan. For people who took out the maximum amount of 50,000 INR, this usually means they return home at the end of the season with no savings or a few thousand rupees at most\*\*. While some people working at the brick kilns had not taken out a loan (they were recently married couples who were landless and had no other means of earning back home), almost everyone interviewed was working off a debt. Of those working off debt, eighty percent had taken out a loan to cover medical expenses for a family member or for themselves back home. Other reasons listed were wedding and funeral costs. One father took out 150,000 INR\*\*\* from various sources

---

\* Approximately 770 USD as of March, 2018

\*\* Seasons earnings = 72,000 INR. This is a rough calculation based on earning 450 INR/1000 bricks, assuming a family consistently produces 1000 bricks per day and works 6 days per week.

\*\*\* 2300 USD as of March, 2018



to try to cure his toddler with cerebral palsy. Another father took out 14,000 INR\*\*\*\* to help pay for his mother's appendectomy. A grandmother who was at the brick kilns with her grown children, including her pregnant 18-year-old daughter, took out 45,000 INR\*\*\*\*\* to try to treat a painful lump on her son's abdomen. Another father needed only 3,000 INR\*\*\*\*\* to treat a wound on his son's leg, but could not secure the money from any other source, and so committed his family to work at the brick kiln for the season. The situations people described at some brick kilns are an indication of debt bondage, which is alarmingly common at brick kilns in India (Kara, 2012).

*We don't hide that we are poor. If the manager gives us one rupee, then we will take that one rupee... The manager writes many deductions to our name. Even if my husband dies and he has 10,000 rupees debt, then [the manager] will write that to my name, and so the whole life of the labourer goes into repaying the money he has taken. And the manager doesn't give us anything for free. Not even one rupee!* [Mother, 2 children, IDI, peri-urban]

Ironically, taking out a loan to cover a medical expense back home, prevents many from receiving medical care at the brick kiln. If someone already took out the maximum loan amount or has incurred a debt throughout the season that the owner deems too high, additional advances will not be granted. The grandmother with the pregnant daughter, who gave birth at the brick kiln a few weeks before the interview, was unable to take her daughter to the doctor.

---

\*\*\*\* 215 USD as of March, 2018

\*\*\*\*\* 690 USD as of March, 2018

\*\*\*\*\* 45 USD as of March, 2018

*[My daughter] has unbearable pain here [points to abdomen]. The brick kiln owner gave me a slip to visit the local doctor. We got medicines for 30 INR, but my daughter is not getting cured from those medicines. I know I will have to go to another doctor, but that requires a lot of money, and at this time I don't have that money, and the brick kiln owner won't give it to me. [Grandmother, IDI, peri-urban]*

Being at the brick kiln can limit the financial options people have. People are completely reliant on the brick kiln owner, and if he denies additional advances, they have nowhere else to turn. Borrowing money within the brick kiln community is often not an option because everyone is in a similar precarious financial situation, and the wider social network to which people can reach out to in their homes is not accessible.

*Back home we could try to find money from different sources, but here we have no one to ask because everyone is in the same situation as us and has no money to give.*

[Father, 3 children, IDI, rural]

The extent to which healthcare costs are covered by the brick kilns varies from brick kiln to brick kiln and is rife with confusion amongst the workers. During the interviews there were numerous conflicting reports between workers and brick kiln owners. At some brick kilns, the workers claimed the brick kiln covered all medical costs, while the owners said they deducted all incurred medical expenses from the salaries at the end of the season. At other brick kilns, the opposite story was told. It was also unclear how honest the brick kiln owners were in answering this question. It does appear that some brick kilns cover basic medical costs, most likely the cost associated with a check-up by an RMP who has been paid a fixed price for the season. One worker even said he returned to the same brick kiln the following year because of the benefit that

medical expenses were covered. However, most costs associated with medical care are paid for upfront by the brick kiln manager and deducted at the end of the season from the workers' wages.

The following is a general overview of what appears to be happening at brick kilns in terms of healthcare costs. There will be exceptions to this, but the prevailing story is:

1. Brick kiln owners have an arrangement with a private, uncertified, local practitioner who either visits the brick kilns regularly or to whom the brick kiln owner sends patients.
2. Brick kiln owners either pay this doctor a flat rate for the season to cover all check-ups (medications are separate) or pay the doctor a small amount per check-up (approximately 30-50 INR)
3. The workers must pay for any additional medical expenses incurred. This could either be from their own cash savings or through an advance from the brick kiln owner, who will deduct the amount from their wages at the end of the season. Additional medical expenses include:
  - a. Medicines
  - b. Fees for other doctors
  - c. Transport to other clinics (though some brick kilns provide free transport in their trucks when women are in labour)
4. For serious conditions that are expected to be expensive to treat, brick kiln owners will send the worker back home.

For some brick kiln workers who only have minor ailments that can be treated by the RMP and with basic medications, the healthcare situation at the kilns can be acceptable. It becomes problematic when a more serious medical need arises and treatment is beyond the skills of the RMP.

Most workers are unaware of how many expenses they incurred over the year and find it challenging to keep track of their earnings. At the end of the season, their payout could be much lower than anticipated, leading to serious financial instability for the rest of the year. The fear of not knowing how much a healthcare visit will cost them leads many people to avoid them as long as possible.

*Interviewer: How much will be deducted from your salary for that doctor's visit?*

*Respondent: We don't get to know that. The manager knows that.*

[Mother, 3 children, IDI, rural]

The unpredictability of medical expenses is also one reason why people avoid going to government clinics, even for services that are supposed to be offered for free.

*One thing I know is that when you go to [the government hospital] you have to spend your money. You need to take at least 1,000 or 2,000 INR rupees with you. They make you buy this medicine and that medicine from the market, and that is problematic.*

[Grandmother, IDI, peri-urban]

## *STIGMA AND DISCRIMINATION*

ASHAs, ANMs, and AWWs avoided brick kiln areas because of perceived negative behaviors of brick kiln workers. The notion that brick kiln workers consumed a lot of alcohol, and that they were therefore not good places for women to go to, emerged in every interview with healthcare workers.

*Respondent 1: Mostly there are only men there.*

*Respondent 2: And they don't speak with us properly.*

*Respondent 3: And they make mean comments and they laugh at us and their nature is not good.*

*Respondent 1: And they are mostly drunk.*

*Respondent 4: All of us we go there, but we don't feel safe there.*

*Respondent 5: And anything can happen to us there.*

*Respondent 2: When we go there, no one feels safe there. [ASHAs, FGD, peri-urban]*

In the community at large such perceptions were widespread. Across different strata of society in the area, the belief that alcohol consumption and other immoral behaviors were widespread prevailed.

Every healthcare worker interviewed referenced the long working hours as a barrier to care. However, some questioned the validity of their illness and saw it as an attempt to get out of work. There is a notion that brick kiln workers' diseases are not genuine, and are only a distraction from work.

*Children have genuine diseases, but there are some workers, who don't have any illness, but they fake it to avoid work, and the owner knows this. [RMP, IDI, rural].*

However, this stands in contrast to the perception healthcare workers have about the number of hours brick kiln workers spend working. Since brick kiln workers are paid for every 1,000 bricks they make rather than for their time, there is a dissonance between brick kiln wage incentives and healthcare worker perceptions.

Finally, healthcare workers perceived brick kiln workers as caring less about the health of their children than the local population did. Brick kiln workers were accused of lack of concern for the wellbeing of their children and blamed for poor health outcomes.

*Even if the child has a major health problem, they don't go to the doctor, or they just take medicines from the local doctor. They don't care if the child lives or dies. [ASHA, FGD, peri-urban].*

## CHAPTER 6: DISCUSSION

### *KEY FINDINGS FROM THE CASE STUDY*

This study explored the challenges seasonal migrant brick kiln workers in Bihar face in identifying, accessing, and receiving maternal and child healthcare services. The results confirm this population faces unique challenges arising from the lived experience as a seasonal brick kiln migrant. The architecture for the portability of basic maternal and child healthcare services exists, but gaps in implementation largely exclude seasonal migrants from the benefits at the destination site, thereby interrupting continuity of care and denying seasonal migrants services to which they are entitled.

The health seeking behavior of seasonal brick kiln migrants for ANC, delivery, and childhood illness is determined by the brick kiln manager. The brick kiln workers have little agency over healthcare choices and decisions. The labour recruitment system leaves people vulnerable and at the mercy of their employer. Brick kiln workers find work at different kilns every year, thereby preventing them from establishing strong ties at their destination site and leaving them unaware of the health resources around them. The payment system, coupled with debt from advance loans from the manager, leaves workers unable to afford healthcare at the brick kilns and hesitant to seek out care out of fear of additional, unfair wage deductions at the end of the season.

The core government maternal and child health programs are not reaching the brick kiln workers. Brick kiln workers are unaware that they have the same right to care from ASHAs and AWWs as in their home locations. At home, they are brought into the public health system via home visits from the ASHA, while at the work site a connection to the system fails to be established. As a result, once a woman migrates, care is interrupted or ceases altogether. The brick kiln owner fills the void by prescribing medicines himself or sending workers to a RMP with whom he has a

connection and financial arrangement, based on his own assessment of the severity of the situation.

Although women have the right to all ASHA and AWW services regardless of location (Working Group on Migration, 2017), only immunization services are proactively provided to this population. According to the policies, the other services provided by the ASHA are available, but in reality, the ASHA does not have the time or desire to dedicate herself to the brick kiln worker population in addition to her permanent catchment area. AWC services are outright denied. Since the brick kiln workers are unfamiliar with the health services available in their vicinity and since their movement is tightly controlled and limited by the brick kiln owner, a strong, regular connection to the healthcare system via an ASHA would be especially impactful.

A lack of documentation (local registration, Aadhaar card, immunization records) is used as a pretext to deny care. It is not the lack of documentation per se that prevents brick kiln workers from receiving services, but rather 1) corruption (Aadhaar biometrics should suffice), 2) discrimination (community health workers do not take their obligations to this part of their catchment area population as seriously), and 3) failing infrastructure that prevents easy communication between home and destination authorities to transmit information about vaccination status, ANC, and other needs.

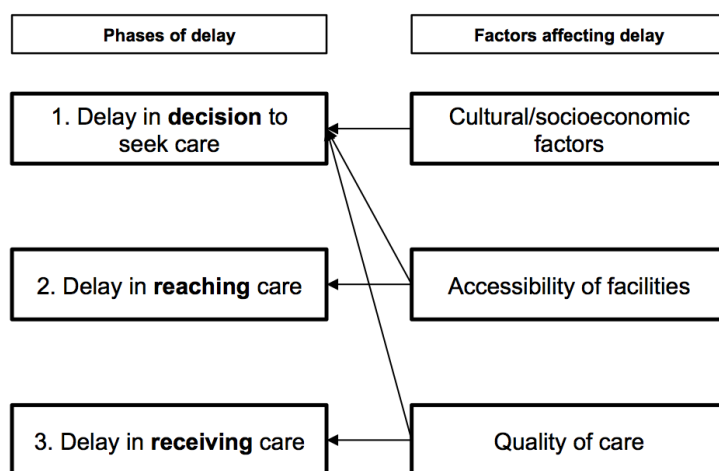
The lack of government health services reaching brick kiln workers is compounded by poor public services in general. In Bihar, public services are of low quality and rife with corruption.



## *Revisiting the Three Delays Model*

### *Extending the Three Delays Model*

The Three Delays Model (Figure 7) is a useful tool to understanding gaps in access to adequate maternal healthcare; however, when revisiting the model in light of the results from the qualitative study at the brick kilns, it became clear that the model does not comprehensively explain the systemic failures to providing maternal and child healthcare. Thaddeus and Maine originally developed the model for obstetric emergencies and it is less applicable to missed opportunities in primary prevention or early detection of pregnancy-related complications through ANC (Pacagnella, 2012).



**Figure 7: Three Delays Model (Thaddeus and Maine, 1994)**

In addition, it was challenging to apply the model to community-based care, like the ASHA and AWW schemes, where a crucial part of the program involves healthcare workers seeking out women, rather than women seeking out care. An ASHA is supposed to be a part of the community and educate women on maternal and child health, as well as remind and mobilize them when their next ANC visit or the next immunization date for their children is due. Home

visits and regular follow-up are a major component of the community health worker model. The Three Delays Model accounts for delays a woman experiences when trying to reach and receive care at a health facility, but the distinction between delays becomes less clear when looking at programs that should be reaching the woman in her own community.

The framework needs to account for emergency care in a facility, preventative care in a facility, and community-based care. The same delay can have a different relative importance depending on the situation. For example, transportation costs are likely to be a bigger deterrent to seeking care for preventative ANC than for an obstetric emergency (Gabrysch, 2009). Gabrysch and Campbell (2009) recognize some factors are relevant to more than one delay and extend the model by not limiting the effects of socioeconomic/cultural factors to the decision to seek care (first delay), but also to reaching care (second delay). They separate accessibility of facilities into physical and economic accessibility.

I believe the underlying social and economic factors seasonal brick kiln migrants experience are profound and permeate every aspect of their lives. The low status of the brick kiln workers relative to the local community, the exploitative nature of the work, the power of the brick kiln manager over his workers, the lack of regulation of labour laws in the industry, the low competence of trained healthcare workers and the lack of enforcement of non-discrimination obligations on service provisions by healthcare workers, the segregation from the rest of the community, and the low status of women in society fundamentally affects care seeking, reaching, and receiving.

Barriers to care for seasonal migrants are summarized and placed within an adapted version of the Three Delays Model framework in Figure 8. An attempt is made to categorize delays into first, second, or third delays, while acknowledging events are not always linear and that some factors affect more than one delay. The framework is from the perspective of the patient, but can have multiple actors affecting the delays. Here the framework does not only apply to a woman seeking care for an emergency at a health facility, but also applies to the community health outreach services she should be receiving. Delays in deciding to seek care relate to decisions of the patient or the caregiver of a child. Delays in reaching care include delays in reaching care experienced by patients trying to reach a facility or contact a healthcare worker (e.g. going to the hospital for delivery), as well as healthcare workers reaching patients for programs that are designed for outreach (e.g. ASHA making a home visit to talk about ANC). Delays in receiving care not only include delays in receiving facility-based care, but also outreach care in the community (e.g. providing immunizations at the brick kiln), as well as entitlements related to care (e.g. receiving conditional cash transfer after delivering in a facility). The experiences in Delays 2 and 3, feed back into the decision-making in Delay 1, linking the providers and the users into the same system (Thaddeus and Maine, 1994).

#### *Delay I: Deciding to Seek Care*

According to Thaddeus and Maine, the first delay, delays in deciding to seek care, does not necessarily increase the use of services, even after increasing the availability of services. This underutilization of services is most commonly associated with costs, distance, quality of care, and socioeconomic factors in the literature (Thaddeus and Maine, 1994).

For the brick kiln workers, cost, quality of care, and socioeconomic factors, as well as being unfamiliar with the healthcare environment contributed to delays in deciding to seek care.

Distance was not a factor, as many brick kilns are located in peri-urban areas close to numerous public and private providers.

Three main barriers to care emerged that relate to cost:

- The inability to take out more loans from the manager to pay for healthcare
- Fear of having an unknown amount of wages deducted at the end of the season due to healthcare expenses covered by the manager
- Fear of losing out on wages for the day due to time lost from work

This speaks to the exploitative financial situation in which brick kiln workers find themselves.

The system is set up to absolutely tie the worker to the manager. Additional loans can be denied and the payout of wages at the end of season prohibits people from accumulating savings and paying for care during the work season.

The unfamiliarity with the health provider landscape also leads people to delay seeking care.

Brick kiln workers did not know how to contact their ASHA and they were unaware of the locations of health providers. They knew the manager would provide them with care from an RMP, but often they questioned the quality of this care.

Finally, socioeconomic factors influenced the decision to seek care. Women expressed concern approaching the manager for issues related to pregnancy. In addition, the need for preventative ANC was not always recognized by patients and the brick kiln managers. Other socioeconomic factors described by Thaddeus and Maine also apply to this context, including low levels of

education, low economic status, low status of women, and failure to recognize disease onset (Thaddeus and Maine, 1994).

### *Delay II: Reaching Care*

The second delay due to barriers in reaching care is traditionally associated with distance to facilities and difficulties in transportation (Thaddeus and Maine, 1994). These factors were hardly at play for the brick kiln workers interviewed. The delays experienced in reaching care once a woman decided to seek care stemmed from the control the brick kiln managers have over their workers' lives, as well as existing government community health services not reaching this population.

Workers must ask permission from their manager to leave the brick kiln and to seek out medical care. If the manager denies this request, a woman will experience delays in reaching care. Managers lack any form of medical training, but they will often try to provide medications themselves first and decide what course of action is most appropriate. Managers are conscious about time lost due to seeking out medical treatment and might decide care is necessary only after a condition has progressed to an emergency.

The ASHA and AWW program also leads to delays in reaching care, in this case, not in the patient reaching a facility, but in a community health worker reaching the women through home visits and VHSDs. AWW services are completely denied to brick kiln workers, and ASHAs only provide limited services. The large catchment area and programming policies that do not align with the seasonal migration calendar, leave women and children at brick kilns to experience significant delays before care reaches them. For example, a woman who wants her child to

receive routine immunizations will have to wait for four months after her arrival at the brick kilns for an ASHA to create the due list and begin to immunize children.

### *Delay III – Receiving Care*

After deciding to seek care and then reaching care, delays can still occur in receiving care. These delays are due to quality of care, in particular poorly staffed and equipped facilities (Thaddeus and Maine, 1994). These delays also appear in the context of the brick kilns, though additional factors contribute to delays as well. As in Delay II (reaching care), the control of the manager and the fact that only limited government health services are provided contribute to delays in receiving care. In addition, lack of documentation and time constraints lead to delays.

The omnipresence of the manager leads to delays in care for two main reasons. First, the manager refers patients to poorly trained RMPs who frequently misdiagnose diseases or provide ineffective medications. Second, once an ASHA and ANM reach a brick kiln to provide immunizations, brick kiln managers will fail to cooperate and even discourage women from immunizing their children.

Immunizations are the only service proactively provided at the brick kiln. Further delays in receiving care can be caused by the ASHA being unaware of the health needs of people at the brick kiln (e.g. ASHA does not know woman is pregnant), the ASHA failing to offer certain services, and the ASHA intentionally minimizing her time at the brick kiln because she feels uncomfortable in that environment.

Poor quality of government health services is highlighted in numerous time delays. Even if a woman makes it to a government health clinic, she still might not receive care because the waiting times are too long, or she is sent back home and told to return another day.

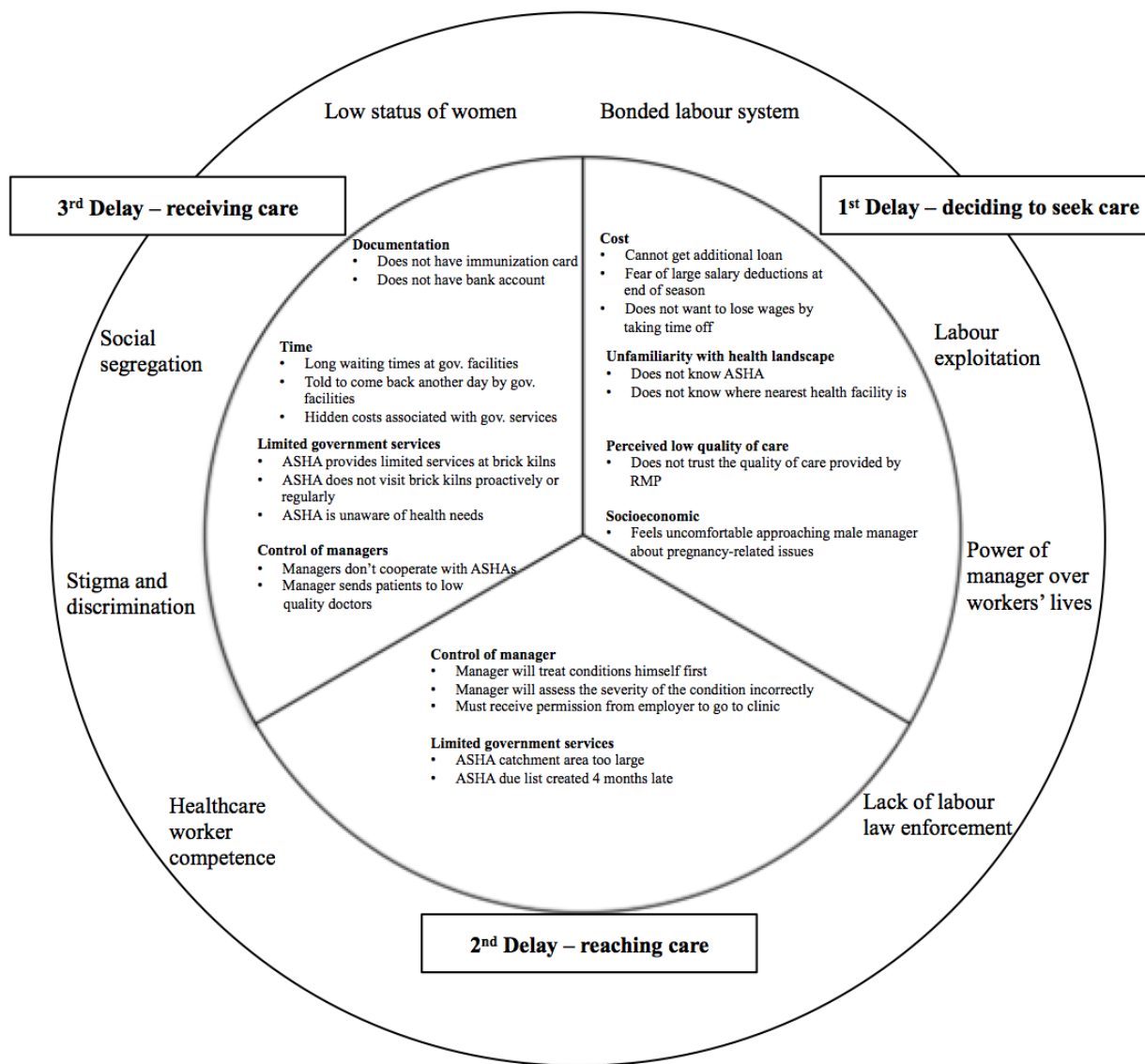


Figure 8: Three Delays Model for seasonal brick kiln workers (adapted from Thaddeus and Maine, 1994)

## *LEGAL AND ORGANIZATIONAL CONTEXT*

### ***Enforcement of Labour Laws***

Bonded labour, although officially outlawed in 1976, is still widespread across India, especially in the brick kiln industry (Anti-Slavery International, 2017). Many of the brick kiln workers I interviewed appeared to be in a situation of bonded labour. Although they are not shackled, fenced in, or otherwise physically restrained, they are living as modern-day slaves. Seasonal migration and healthcare must be viewed in light of this exploitation.

Many seasonal migrants are bonded labourers through debt bondage. Debt bondage can be a generational phenomenon in which debt is passed on to future generations who must continue the vicious cycle of working to pay off a loan under impossible terms. At the brick kilns I visited this did not appear to be the case. Debt bondage was a seasonal phenomenon. At the end of the season the workers will have paid off their debt, but most likely with few extra earnings to take back home due to numerous deductions for food, healthcare, broken bricks, and underpaid wages. They will be free to return to their homes, but will enter into debt bondage again the following season because they have no alternative source of credit. Since they return home with almost no earnings after working off the previous year's loan, they will be forced to borrow money from a contractor again for unexpected expenses such as healthcare payments for an ill child, a funeral, or wedding. If their crops fail, they will be forced to borrow money just to survive.

In addition to violating the Bonded Labour System Abolition Act of 1976, laws regarding payment of wages are violated. The widespread and open disregard for labour laws allows this system to continue to flourish. Prosecutions of offenders are rare (Kara, 2012). Labor inspectors, the police, and the justice system have failed to protect seasonal migrants and allow the bonded



labor system to continue to flourish in plain sight. Brick kiln owners are under no obligation to provide healthcare to the seasonal workers. While some labour laws are blatantly ignored, others do not apply to seasonal migrants. The Contract Labour Regulation and Abolition Act does not apply to seasonal employees, and the Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act only applies to inter-state, not intra-state migrants. The healthcare system cannot be complicit by systematically excluding seasonal migrants from care.

The building blocks to ensure and to provide healthcare to seasonal migrants across India are there, but they need to be enforced and expanded upon to include all seasonal migrants, regardless of migration route or migration duration. The Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act, as well as the potential for the portability of benefits through Aadhaar, and a vast network of community health workers, provide a foundation through which seasonal migrants' rights could be protected and through which healthcare could be ensured. This foundation needs to be strengthened by amending laws to include all types of seasonal migrants, regardless of duration of stay and destination site, enforcing these laws, and ensuring community health workers fulfill their duty of "providing preventive, promotive, and basic curative care... particularly to marginalized communities" (NRHM, 2013).

### ***Health System Organization***

The delivery of community maternal and child health programs is complex. When speaking with an ASHA or AWW, it is important to understand the wider structure in which they operate. At the top, the Ministry of Health and Family Welfare, as well as the Ministry of Women and Child Development, oversee the NHM and ICDS (Figure 9). The programs are mandated at the

national level, but are administered at the state level. This decentralization leads to variations across state lines and challenges the provision of uninterrupted care for seasonal migrants.

The maternal and child health schemes are administered jointly through the NHM and ICDS. For example, a Village Health Nutrition Day (VHND) takes place at the AWC where the ASHA, AWW, and ANM have designated roles to mobilize, educate, and provide treatment to women and children. This requires coordination across two ministries and three schemes. Each scheme is implemented at multiple levels. Nearly 900,000 ASHAs are working in communities across the country (NHM, 2014). The ASHA scheme is implemented across six levels (Figure 10) and her tasks, compensation, and tools differ by state and rural-urban locations. Even if seasonal migrants are legally entitled to access services anywhere and Aadhaar can facilitate this, it is important to remember that systematic changes have to be introduced across many levels, teams, and individuals. A consistent message and the appropriate resources must be sent across national, state, district, block, and village levels that services should be provided to everyone, regardless of origin or place of residence and appropriate support for designing, implementing, and monitoring a more migrant-sensitive health system provided.

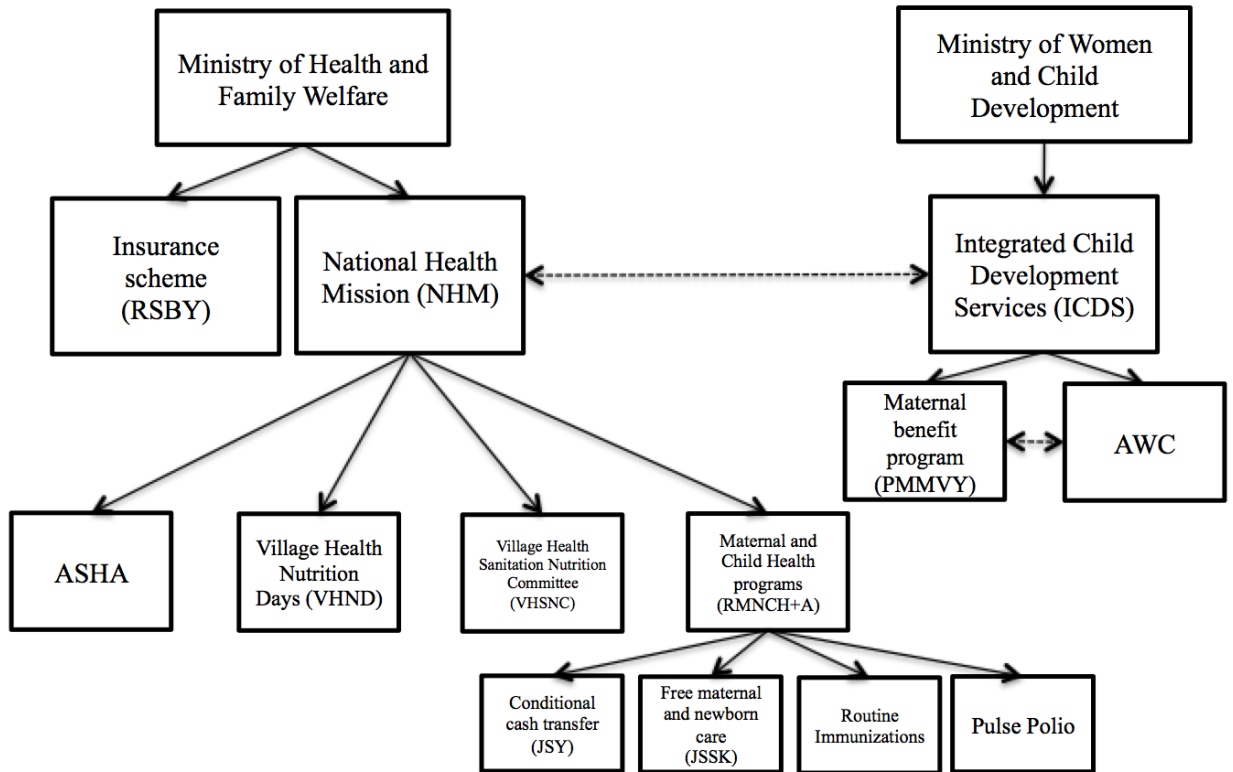


Figure 9: Organization of key maternal and child health programs

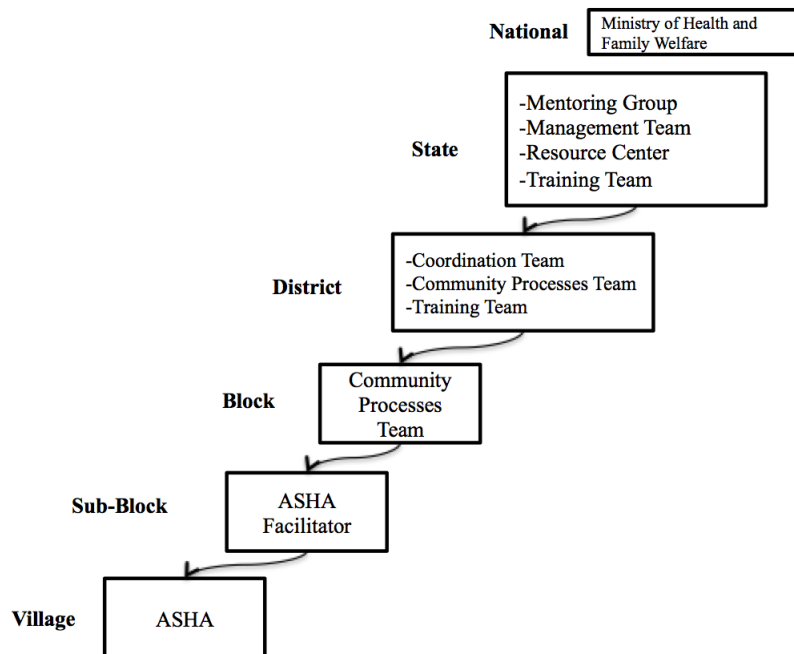


Figure 10: Organization of the ASHA scheme

## *IMPLICATIONS FOR BMGF AND OTHER INTERNATIONAL ORGANIZATIONS*

An estimated 60 million men, women, and children migrate seasonally to brick kilns across India. Brick kiln workers are recruited and work under extremely exploitative conditions. They are an invisible population, not accounted for in surveys and excluded from the most basic healthcare services. There are three main areas in which BMGF is well situated to fill this critical gap in India's health system: 1) data generation, 2) piloting interventions, and 3) advocacy and convening of stakeholders. However, the exploitative nature of the work and gross human rights violations go beyond technical healthcare solutions and the broader context must be considered in which reforms take place. One cannot expect good health and good healthcare in a situation where people are living and working in inhumane conditions.

The results of the study are specific to seasonal brick kiln workers and cannot be generalized across all seasonal migrants. However, many elements of seasonal brick kiln migrants apply to other seasonal migrant groups as well as the other industries employing seasonal migrants which are also known to be exploitative. Thus, the details and specific barriers might vary, but the overarching story is likely to be the same: a story of marginalization and exclusion from social services while working under slave-like conditions.

### ***Definitions, Surveys, and Data***

#### *Definitions*

The current scope of migrant health needs is still unknown. Until up-to-date, reliable data on seasonal migrants exist, it will be challenging to advocate for the issue and to know where to focus efforts. Steps must be taken to better identify, target, and record migrants in the census,

NSS, and NFHS, especially seasonal migrants whose patterns of movement make them invisible in existing surveys. While the NSSO has attempted to capture short-term migrants, the definition still falls short of capturing people who migrate for more than six months out of the year.

Thought should be put into what migrant sub-groups exist in India that have policy and systems implication. Given new trends in migration due to climate change, it is important to revisit the reasons for migration listed in the census and NSSO. In addition, it should be allowed to indicate more than one reason for migration in order to pick up on important secondary and tertiary motives.

### *Surveys*

The Census, NSSO, and NFHS/DHS must better capture migrants, especially seasonal migrants. The current data is the only official source of migrant estimates, cited widely, and used for policy decisions, yet the whole category of seasonal migrants is missing. The Working Group on Migration has made suggestions on how the NSS questionnaire could be improved to better capture migrant data. These recommendations should be built out and incorporated into future surveys. The questions asked on the NSS that relate to migration are dispersed between surveys from 1999 to 2002, making it difficult to have a holistic snapshot of the existing migrant data. Future surveys should include a comprehensive set of questions around migration, so information does not need to be pieced together over several years.

In addition to expanding the questions related to migration on surveys, different approaches in surveying must be taken. Known locations of high seasonal migrant employment (e.g. brick kilns and construction sites) should intentionally be included in the sampling frame in the case of NSSO and NFHS/DHS, and targeted for the Census in order to include seasonal migrants at their

destination sites. Surveys specifically targeting seasonal migrants can be carried out during the months in which they are known to not be migrating in order to include seasonal migrants in their home location. If seasonal migrants are not included for participation in surveys, having expanded migrant definitions and survey questions will have little impact on the understanding of seasonal migration in India.

It is important for the next NFHS/DHS to include questions on migration and expand their sampling frame to include seasonal migrants when they are outside of their homes. The current health status of seasonal migrants is entirely unknown. While this study shows that seasonal brick kiln workers experience challenges to accessing maternal and child healthcare services that people in the local community do not face, we do not know the extent to which brick kiln workers have worse maternal and child health outcomes as a result of their situation compared to other women and children. Given the vulnerabilities of the brick kiln workers and their exclusion from the normal healthcare channels, one should be concerned that they could account for a disproportionate share of negative outcomes. BMGF, with its focus on changing population measures of outcomes, should sponsor some research to answer this question. If they do account for a large proportion of negative health outcomes, investing in efforts to attend to their needs would be critical and impactful since they are so numerous.

The NFHS/DHS analyzes health data through various equity lenses, and seasonal migrant women and children must be identifiable as distinct groups. Current equity lenses in the final NFHS-4 report include residence (urban/rural), state, gender, religion, education level, caste and tribe. Adding migration status as an analytical category would provide invaluable insight into seasonal migrants' access to healthcare.

BMGF should also conduct surveys to document the extent of child labour and preventable maternal and child health hazards at brick kilns and other exploitative seasonal industries. In addition, Specific studies should be carried out in relation to seasonal migration and health outcomes in order to discern if differential health outcomes exist between seasonal migrants, people who remain at home, and people at the destination site. For example, air pollution is known to lead to low birth weight and pre-term delivery. Are these conditions more common in newborns of brick kiln workers living in close proximity to high levels of air pollution compared to the local population living nearby?

### *Electronic Data*

The Common Application Software (CAS) is supported by BMGF and allows the AWW to enter children's data into an application on their cellphone, reducing their workload by eliminating the need to enter records into 11 different registries, and allowing for children to more easily be monitored. The application already has 4 million children enrolled, with plans to cover all AWCs by 2020. In November 2017, the government issued the discontinuation of AWW paper registries\*. A pilot is currently underway in Bihar to integrate nutrition and health data. BMGF is working hard for ministries in other states to also begin to adopt the CAS system and that there will be integration at the national level. A well-designed rollout of CAS data collection for RMNCH+A programs such as the ASHA and AWC schemes will allow for data to be collected for children across different geographic units.

The DISHA Dashboard is an initiative supported by BMGF to unify and digitalize Aadhaar-seeded data from 41 flagship schemes across 20 ministries in order to provide live and

---

\* Nachiket Mor, Personal e-mail communication, 2017

interactive analysis of key indicators. The DISHA Dashboard holds immense potential to ensure seasonal migrants can receive continuity of care by linking their home and work location services electronically.

BMGF should ensure CAS and the DISHA Dashboard are truly inclusive to the needs of seasonal migrants. The system must be implemented in a way that allows people's data to be entered and looked up across districts and states. In an era of sophisticated technologies like biometric identification and electronic medical records, providing continuity of care is a tangible possibility. When further developing the systems and advocating for adoption across the whole country, the unique needs of seasonal migrants moving in and out of different geographic regions should be considered.

### ***Program Pilots***

The CAS program is a successful pilot that has the potential to improve seasonal migrant's nutrition and healthcare by allowing for continuity between source and destination location. Especially once the system is scaled to the national level, children can be followed by an ASHA or AWW regardless of location.

BMGF should continue to fund pilots that will strengthen the health system for seasonal migrants. Using CAS to track children means that they must have access to the health system in the first place, so it is important to implement health system design changes that increase seasonal migrants' interaction with the health system. Since brick kiln workers face many barriers in accessing the health system, especially around a limited ability to seek out services on their own due to the tight control the manager holds over their lives, it is critical to ensure



community health programs reach brick kiln workers at their doorstep year round. In order to do this I propose a three-pronged approach:

1. Providing ASHAs and AWWs with migrant-sensitive training at source locations
2. Training a seasonal ASHA directly from the brick kiln community at the work sites
3. Setting up seasonal AWCs at the work sites

*Providing ASHAs and AWWs with migrant-sensitive training at source locations*

ASHAs and AWW should receive trainings on specific points to convey to people they know will be migrating seasonally. Since large numbers of people often migrate from the same village in search of work, community health workers can reach out to them in anticipation of their journey. The following points are key to ensure continuity of care:

- Migrants should be informed of their right to receive health services across the country.
- Migrants should be encouraged to bring their children's immunization records with them.
- ASHAs should accompany pregnant women to set up a bank account before migrating since it can be harder to set up an account in a different district or state.

This training can be added to the mobile CAS application. For AWWs that do not yet use CAS, an additional page and voice recording can be added to the mobile Kunji materials\* or an equivalent in neighboring states. Since seasonal migrants move across state lines, collaboration between states is important.

---

\* Mobile Kunji is an audiovisual aid for AWWs in Bihar. They can look up topics on maternal and child health on a ring of cards and then dial a corresponding number to pull up an audio recording of a physician explaining more about the topic.

If an AWW learns that a family will be migrating, she can pull up the migration page and inform them about their rights and other information that will facilitate healthcare access at their destination.

*Select and train seasonal ASHAs from the brick kiln community*

Seasonal brick kiln workers are assigned to ASHAs in addition to their regular workload. This can nearly double the population to which they must cater. ASHAs should not be expected to double their already busy workload and expect to absorb the additional numbers. In addition to the ASHAs being overworked, they avoid spending time at the brick kilns and stigmatize the brick kiln population. The combination of the brick kiln workers representing additional, unpaid work and being from an outsider community leaves them vulnerable to neglect by the ASHA. An ASHA is supposed to be a trusted figure from the local community. Therefore, the brick kiln workers should have an ASHA from their own community. At the beginning of the migration season, an additional ASHA selection process should take place for *seasonal ASHAs* from within the brick kiln community. She will receive a short training and work closely with the local ASHA, ANM, and AWW. The seasonal ASHA would act as the point of contact at the brick kilns and connect the brick kiln community with the wider health system. Having someone from the community directly will create more trust in the system. She would receive financial incentives just as the regular ASHAs do in order to compensate for the time lost from work.

*Select and train seasonal AWWs from the brick kiln areas and set-up AWCs at the work sites*

Children at brick kilns need improved nutrition and opportunities to learn. Setting up seasonal AWCs will provide a safe and nurturing space for young children. The government already has provisions in place for setting up additional AWCs. In 2006 the Anganwadi on Demand (AOD)

system was introduced, which enables communities with no AWC and at least 40 children under the age of six to demand an AWC to be set up within three months (Ramachandran, 2014). Most brick kilns meet these requirements. For smaller brick kiln, two or three can collaborate to request an AOD jointly. Since the brick kiln areas are well known and established, it is possible to plan in advance for seasonal AOD centers to be set up. ICDS should ensure a special office is set up for this.

Having seasonal ASHAs and seasonal AWWs extends the basic maternal and child health services to this population. It builds up community health workers from within seasonal migrant communities and links them with the wider health system in an effort to break the control brick kiln owners have over their employees.

### ***Advocacy and Convening***

#### *Advocate*

The 70<sup>th</sup> World Health Assembly held in May 2017, called for increased action around migrant health, resolving “to promote the health of refugees and migrants, and to gather evidence that will contribute to a global action to be considered at the 72<sup>nd</sup> WHA in 2019” (WHO, 2017). Member states are encouraged to adapt the joint WHO, IOM, and UNHCR framework of priorities and guiding principles for migrant health, focusing on monitoring migrant health, policies and legal frameworks, migrant sensitive health systems, and partnerships and networks (WHO, 2010).

BMGF is in a unique position to advocate for and support the implantation of measures to address barriers seasonal migrants face in accessing maternal and child services. BMGF works closely with national and state governments in their existing health portfolio. BMGF should initiate a discussion with government partners at the national and state level on current gaps in the system in regard to seasonal migrant health around the challenges the government sees in addressing this issue, actions that have already been taken, and why this has not been prioritized to date. Particular emphasis should be placed on advocating for true portability of benefits under Aadhaar, developing a better working definition of migrant categories, and improving data collection on seasonal migrants

As the issue of seasonal migration cuts across the responsibility of multiple departments of government, representatives from the Ministry of Health and Family Welfare, Ministry of Women and Child Development, as well as the Ministry of Labour and Employment, and Unique Identification Authority should be engaged, amongst others. BMGF could build on the government's Working Group on Migration based out of the Ministry of Housing and Urban Poverty Alleviation, which released a report on challenges migrants face in the current government scheme architecture in 2017. A high-level stakeholder analysis should be conducted in order to systematically analyze the prospect of introducing more migrant-sensitive policies. In addition, advocacy around improving and enforcing labour laws should be carried out. Current policies and stances on labour inspection, obligations of the public and private health system, obligations of employers, and actions taken based off of the Working Group on Migration's report of recommendations should be assessed. In addition to labour law enforcements, new measures geared at documenting seasonal migrants should be introduced. For example,

employers should be obligated to not only maintain records of adult male workers, but to hand over lists of migrants present at their work site, including the number and ages of children.

Any data collection, program piloting, and advocacy cannot just focus on the provision of health service and health outcomes without addressing labour exploitation and the gross abuse of power by the employers. Without that as a guiding framework, no amount of data generation and service provision is going to substantially and sustainably improve the health and wellbeing of women and children involved in work at brick kilns. The initiatives BMGF embark on must be integrative and span more than simple health metrics and health service provision. Enforcement of statutory obligations regarding access to healthcare provisions, minimum wages, pay periods, work safety, living conditions at the work site, and other labour regulations is needed in order to ensure seasonal brick kiln migrants survive and thrive and a conducive environment for the provision of healthcare is created.

### *Convene*

In addition to advocating for seasonal migrant health with the government and bringing together key government stakeholders, BMGF can support a convening platform for civil society and international organizations. In December 2017, UNFPA hosted a workshop on ‘Internal Migration in India – Key Trends and Policy Issues’. There was widespread interest in the topic and a consensus by all actors involved that migration needs to be prioritized, but as of April 2018 a meeting report has not yet been released. BMGF can build on the desire by civil society and international organizations to begin to tackle this issue, by facilitating convening of actors and supporting key initiatives that come out of such meetings.

## CONCLUSION

### A CALL TO ACTION

The goal of this project was to assess how maternal and child healthcare for seasonal migrants, in particular for brick kiln workers in Bihar, can be improved. It immediately became clear that large gaps in knowledge around migration in India exist. The most basic questions around who is a migrant, how many migrants there are, where they are coming from, and where they are going remain unanswered. The Census and national surveys fail to adequately capture migrants.

Seasonal migrants, in particular, are largely an invisible population, not enumerated in surveys, not registered at destination sites, and frequently exploited and denied rights, especially government sponsored social protection programs like healthcare.

The number of seasonal migrants is unknown, though by some estimates it is at least 100 million. My estimate of seasonal brick kiln workers and their children based on NSS employment data, indicates that more than 60 million men, women, and children could be living for some time each year as seasonal migrant at brick kilns alone. In this case, the number of seasonal migrants across all industries is likely well above 100 million. In Bihar, there could be over 1.5 million men, women, and children engaged in the legally registered brick kilns. This number is likely higher since many brick kilns in the state operate illegally. Given these large numbers, which are only projected to rise in the future as climate change forces people from their homes, policies need to specifically address this population. Measures to address inequities in healthcare, as well as to address the root causes of vulnerability of seasonal migrants must be implemented.

Migration crosses boundaries, not just the people who move from one location to another, but also the different stakeholders that need to be brought together across disciplines and

government departments to pursue migrant-sensitive policies. The issue of migration does not fall under the jurisdiction of one ministry. This might be one reason why it has been neglected for so long. It would be easier to continue to ignore the issues at hand than to have to coordinate across ministries and 36 states and union territories. However, when no one is clearly responsible for a problem that is as complex as seasonal migration, and when those affected are some of the poorest members of society being exploited for profit and unable to stand up for their rights due to gross violations of their human dignity, it is all the more important to not be complicit in this inaction. Migration is projected to intensify over the next decades. It need not be a crisis. We can and should take steps now to ensure the health system allows for mobility of people by investing in programs that are portable and integrated across district and state lines, impacting the lives of millions of people.

#### SUMMARY OF FINDINGS

This project demonstrates that seasonal brick kiln workers are systematically excluded from the healthcare system. The research was carried out in one district in Bihar, but participants shared their experiences from the previous two years during which they were working at brick kilns in different districts across Bihar, as well as in other states. It is reasonable to believe the findings are relevant to the wider experiences of seasonal brick kiln migrants in India. The seven themes that emerged through interviews with brick kiln workers, brick kiln managers, and community health workers are summarized below:

1. Social segregation
  - a. Brick kiln workers rarely return to the same brick kiln, making it difficult for them to build relationships with the local community and healthcare providers.

- b. The brick kiln managers closely control the workers' movements. Even if healthcare resources are nearby, workers will be unaware of them because they rarely leave the work site.
- 2. Healthcare controlled by brick kiln owners
  - a. The brick kiln managers are a major actor in the migrant worker healthcare system.
  - b. They perform triage and decide what course of action to take. The first course of action is often to prescribe medicines, the second step to refer to an unqualified biomedical doctor, and the third step to refer to a private hospital.
  - c. Time and cost concerns often drive the decision-making.
- 3. Brick kiln location as a potential health enabling factor
  - a. Brick kilns are always located close to a road and have a truck available, making it relatively easy to reach health facilities, especially compared to some of the rural areas brick kiln workers come from. This access is dependent on the cooperation of the manager, however. As the results from social segregation show, easy physical access rarely translates into actual access for brick kiln workers and the mobility potential is wasted.
  - b. Some workers view access to an informal provider facilitated by the brick kiln manager positively, especially for minor ailments.
- 4. Limited access to community health outreach services
  - a. Of the five activities ASHAs are expected to carry out, only one (immunizations), was provided to brick kiln workers.
  - b. Anganwadi services were entirely denied to brick kiln workers and their children.



- c. ASHAs were assigned brick kiln populations on top of their regular workload. Coupled with widespread stigma in the local population against brick kiln workers, this resulted in ASHAs keeping their visits to the brick kilns to a bare minimum. As a result, women did not know who their ASHA was and how to connect to the wider health system through them.
- 5. Lack of documentation
  - a. Lack of immunization cards and Aadhaar cards are used as a pretense to deny seasonal migrants healthcare and the right to set up a bank account.
- 6. Financial challenges and exploitation
  - a. Many seasonal migrants find themselves in debt bondage. This gives the manager absolute control.
  - b. Seasonal payouts mean workers have no means to pay for healthcare costs that arise during the work season. If the manager denies an advance, they are unable to seek out care.
- 7. Stigma and discrimination
  - a. The beliefs that brick kiln workers are all alcoholics, fake their illnesses to avoid working, and do not care if their children die influence healthcare providers perceptions of and willingness to provide care to brick kiln workers.

#### AVENUES FOR THE FUTURE

Systematic investment in migrant-sensitive policies is critical for reaching the goal of access to basic quality care for all citizens. Viewing the health system through the lens of seasonal migration shows a deeply splintered system. BMGF is well positioned to act in the following three avenues:

1. Generating data
2. Piloting programs
3. Advocating with the government and convening key stakeholders

I set out to answer questions around access to maternal and child healthcare for seasonal migrants in the brick kiln industry. Seasonal migrants in other industries, such as construction, mining, agriculture, and fisheries, are also likely to face exploitation and experience challenges around the portability of benefits. Maternal and child health is critical. The latest data showing an increase in neonatal deaths in rural areas and poor states due to prematurity and low birth weight between 2000 and 2015 is alarming and improving maternal and child health for seasonal migrants is a critical step towards reaching health goals.

Addressing maternal and child health is just one aspect of health needs of this population. Other aspects of health that are governed through different schemes using different mechanisms will need to be considered as well. Reaching the goal of a largely finished agenda for infectious diseases will require outreach to migrant populations. Similarly, it is important migrants are not left behind as the country scales up efforts to treat rising levels of non-communicable diseases. Disease knows no boundaries and it is essential a health system be designed to treat irrespectively of a person's location.

## **APPENDIX**

### APPENDIX I: QUANTITATIVE ANALYSIS OF MIGRANT HEALTH USING NFHS-4 DATA

#### ***Data***

This study uses data from the 2015-2016 National Family Health Survey (NFHS-4), which was released in January 2018. The NFHS-4 is a nationally representative household survey based on the 2011 census data that includes responses from 601,509 households and 699,686 women aged 15-49 across 29 states and 6 union territories (DHS Final Report). It includes data on antenatal care and delivery for 184,627 births in the five years preceding the survey. If a woman was pregnant more than once in the last five years, the information collected was for her latest pregnancy. Data related to antenatal care and delivery include number of ANC visits, type of ANC provider, location of ANC check-up, specific procedures conducted during ANC visits (urine test, blood pressure, blood sample, weight, abdominal palpitation, nutrition counseling, tetanus injections, advice on hospital delivery, and iron supplements provided), place of delivery, reason for not delivering in a facility, and type of birth attendant present during delivery.

#### ***Variables***

##### ***Independent Variables***

The independent variable is seasonal labour migration status. Since seasonal labour migration is not directly assessed in the NFHS-4, two variables are used to capture seasonal migrants as best as possible. A binary seasonal labour migration indicator was created for women who had a child under the age of one using the following variables available in the NFHS-4 data: answered “yes” to “In the last 12 months, have you been away from home other than parental/in-laws home for

one month or more at a time?” and answered “seasonal” to “Do you usually work throughout the year, or do you work seasonally, or only once in a while?”.

The model was run separately for the composite seasonal labour migration variable, as well as for each individual component.

### *Dependent Variables*

This study tried to explore the effect of seasonal migration on 3 binary variables: 1) attendance of at least four ANC visits; 2) “high quality” ANC services; and 3) facility-based delivery. High quality ANC indicator is defined as attending at least four ANC visits with a skilled health worker and receiving at least 8 of the following ANC procedures: weight measured, height measures, blood pressure measured, urine sample taken, blood sample taken, abdominal palpitation conducted, HIV counseling and testing offered, deworming pills provided for intestinal parasites, nutrition counseling provided, iron supplements provided, tetanus vaccination given, facility-based delivery discussed. The procedures included in the ANC quality indicator are all part of the RMNHC+A government scheme for maternal health and the decision to select eight or more interventions as the cut-off was based on existing literature. When information was missing for a variable or a woman said she did not know, I assumed she did not attend four ANC visits and/or did not receive the specific intervention during her check-up.

### *Analysis*

A multivariate analysis was conducted to examine migration as a risk factor for poor antenatal and facility-based delivery practices, controlling for the effects of age, education, residence (urban/rural), and wealth. The results were not statistically significant, however, due to the small sample size.

All analysis was conducted in Stata 14. See the Do File for all calculations.

### ***Data Limitations***

Several limitations must be considered when interpreting the findings. Data capturing characteristics of migration is limited in the NFHS-4. The independent variable created to represent seasonal migrants will include some people who are not actually seasonal migrants. For example, a non-seasonal migrant could be included if they work as seasonal agriculture labour in their home and spent one month looking after an ill relative away from their home. Not all seasonal migrants will be included. First, they would need to be at their home location in order to be on the list of people to survey. This automatically excludes most seasonal migrants from being included in the survey since they are away from their home around 75% of the time. In addition, this method does not capture for how long women were at their home locations or their work location throughout their pregnancy and where they delivered the baby. Thus, it is not possible to determine if a woman is more or less likely to receive antenatal care or deliver in a facility when she is at her home location or the seasonal work site.

Migration routes are not captured, but are likely to have an impact on the outcome. For example, someone migrating along a well established migration route with a strong social network at both the place of origin and the place of destination could exhibit different health seeking behaviors than someone migrating to a location where there are no existing social ties. The distance of migration is also likely to influence health-seeking behaviors. The DHS data does not allow for a distinction between short migration distances where migrants are able to return to their home more frequently, long migration distances where migrants are away for an entire working season, inter-state, and intra-state migration.

## ***Results***

Out of all of the birth histories taken, 97,579 were for children currently under the age of one.

The questions related to women's employment and time spent away from their home were only asked to a subset of 17, 146 survey participants. Out of these, only 1,657 women said that they had spent more than one month away from their home, aside from visits to parents and in-laws over the last 12 months, and only 1,416 women stated that they were employed seasonally.

There were only 133 women who met all of the criteria to be categorized as a seasonal migrant.

I decided to further only look at women who were in the lowest three wealth quintiles, since my definition of seasonal migration focuses on the most vulnerable members of society. The final number of women who have a child under the age of one and who could be categorized as a seasonal migrant was 118 or 0.12%, far below the approximately 8% of the population that seasonal migrants in India comprise. Further analysis holds no statistical significance.

## ***Do File***

```
drop if b8 > 1 | b8 ==. /*keep only those mothers with child in last year, because we don't have
back employment
data for more than a year.*/
generate seasmig = .
replace seasmig = 1 if v732 == 2 & v168 == 1 & v190 < 4 /* if seasonal AND away from home
more than a month. NOTE.*/
replace seasmig = 0 if v732 == 1 | v732 == 3 & v168 == 0 & v731 == 0 & v190 != 4 | v190 != 5 /*
generate anc4 = .
replace anc4 = 1 if m14 >= 4 & m14 != 98 & m14 !=. /* have had adequate antenatal care visits
if responded and had 4 or more (note that 98 = don't know) */
replace anc4 = 0 if m14 < 4 | m14 == 98 /* have NOT had adequate visits if fewer than 4 or don't
know.*/
generate urbanres=.
replace urbanres=1 if v025 ==1 /* you live in urban area*/
replace urbanres=0 if v025 ==2 /* you live in rural area*/
* coarse analysis*/
prop anc4 if seasmig == 1 /* calculate proportion with ANC4 == 1 among exposed*/
prop anc4 if seasmig == 0 /* calculate proportion with ANC4 == 1 among un-exposed
```

```

* coarse analysis with survey weights
svy: prop anc4 if seasmig == 1 /* calculate proportion with ANC4 == 1 among exposed*/
svy: prop anc4 if seasmig == 0 /* calculate proportion with ANC4 == 1 among un-exposed
* refined analysis (stratification) without survey weights*/
logistic anc4 v212 v107 v190 urbanres seasmig
*Other outcomes to look at:*
generate anemia=.
replace anemia=1 if v457 ==1 | v457 ==2 | v457 ==3
replace anemia=0 if v457 == 4
generate tetanus=.
replace tetanus= 1 if m1 !=0 | m1 !=.
replace tetanus= 0 if m1==0
generate bp=.
replace bp=1 if m42c ==1
replace bp=0 if m42c ==0
generate urine=.
replace urine=1 if m42d==1
replace urine=0 if m42d==0
generate blood=.
replace blood=1 if m42e==1
replace blood=0 if m42e==0
generate dpt3=.
replace dpt3=1 if h7==1 | h7==2 | h7==3
replace dpt3=0 if h7==0 | h7==8
generate polio=.
replace polio=1 if h7==1 | h7==2 | h7==3
replace polio=0 if h7==0 | h7==8
generate facdel=.
replace facdel=1 if m15==21 | m15==24 | m15==25
replace facdel=0 if m15==11
prop anemia if seasmig3 == 1
prop anemia if seasmig3 == 0
prop tetanus if seasmig3 == 1
prop tetanus if seasmig3 == 0
prop bp if seasmig3 == 1
prop bp if seasmig3 == 0
prop urine if seasmig3 == 1
prop urine if seasmig3 == 0
prop blood if seasmig3 == 1
prop blood if seasmig3 == 0
prop dpt3 if seasmig3 == 1
prop dpt3 if seasmig3 == 0
prop polio if seasmig3 == 1
prop polio if seasmig3 == 0
prop facdel if seasmig3 == 1
prop facdel if seasmig3 == 0

```

APPENDIX II: POLICY SUMMARY

**Table 10: Policy Summary**

Category	Name of Policy, Scheme, Act	Year launched	Government Department	Level	Brief Description/Benefit	Eligibility	How it relates to seasonal migrants
Financial Inclusion and Protection	Rashtriya Swastha Bima Yojana (RSBY)	2008	Ministry of Health and Family Welfare	National, decentralized implementation structure at the State level	National health insurance for hospitalization for below-poverty line families. Covers up to 30,000 INR and can be accessed in any city or state	BPL families and unorganized workers from the following industries: construction, railway porters, street vendors, MNEGRA, beedi, domestic workers, sanitation workers, mines, rickshaw pullers, auto rickshaw drivers, rag pickers	Seasonal migrants should be able to benefit from RSBY in any district or state
Labour and Employment	Bonded Labour System (Abolition) Act	1976	Central Government	National	Abolishes the bonded labour system	Applies to all	Many seasonal migrants are living under debt bondage. Industries most commonly employing seasonal migrants are known to have high levels of bonded labour
Labour and Employment	Child Labour (Prohibition and Regulation) Act	1986, amended 2016	Central Government	National	Prohibits children under the age of 14 from working, aside from non-hazardous occupations outside of school	Applies to all	The children of seasonal migrants are frequently engaged in labour at the worksite alongside their parents and do not attend school



**Table 10 (Continued)**

<b>Category</b>	<b>Name of Policy, Scheme, Act</b>	<b>Year launched</b>	<b>Government Department</b>	<b>Level</b>	<b>Brief Description/Benefit</b>	<b>Eligibility</b>	<b>How it relates to seasonal migrants</b>
Labour and Employment	Contract Labour (Regulation and Abolition) Act	1970	Central Government	National	Provides guidelines on the treatment of contract labour including payment of wages and entitlements	Contract workers (excludes seasonal or intermittent workers)	It does not apply to seasonal migrants, but should. Provisions in the act such as guidelines on the payment of wages, entitlement to a canteen, toilet facilities, drinking water, washing stations, first aid, and a crèche, would greatly benefit the working conditions of seasonal migrants
Labour and Employment	Minimum Wages Act	1948	Central Government	National	Entitles workers to a minimum wage	Applied to all	Seasonal migrants are often not paid the minimum wage because they differ by state and change annually. Seasonal migrants are often unaware of these differences
Labour and Employment	Payment of Wages Act	1936	Central Government	National	Stipulates that employers must pay their employees' wages within a prescribed time limit not to exceed one month, that no unlawful deductions should be made, and that any advances given should not exceed 50% of one month's wages	Applies to all	Seasonal migrants are paid at the end of the season. They should be paid every two weeks. Paying them at the end of the season makes it difficult for them to keep track of their wages and makes them dependent on their employer during the work season

**Table 10 (Continued)**

Category	Name of Policy, Scheme, Act	Year launched	Government Department	Level	Brief Description/Benefit	Eligibility	How it relates to seasonal migrants
Labour and Employment	The Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act	1979	Ministry of Labour and Employment	National	Ensures wages and legal entitlements of inter-state migrants	Inter-state migrants, does not apply to intra-state migrants, only applies to employers with at least 5 labourers	The only law specifically aimed at ensuring the welfare of internal migrants in India
Labour and Employment	Workmen's Compensation Act	1923, amended 2009	Central Government	National	Compensates workers and their families for employment-related injuries and death	Applies to a specified group of people such as those employed in factories, mines, and plantations.	Industries frequently employing seasonal migrants are included in this act. Many seasonal migrants would be eligible for this compensation, but are unaware it exists.
Documentation and Identification	AADHAAR	2010	Unique Identification Authority	National	National identity number based on biometric and demographic data	Applied to all	Allows for the portability of social protection benefits across district and state lines
Documentation and Identification	Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	2005	Ministry of Rural Development	National	Guarantees rural households 100 days of manual labour employment at minimum wage	Any person over 18 residing in a rural area willing to do manual labour for minimum wage	Provides an alternative to migration for poor, rural households
Labour and Employment/Financial Inclusion and Protection	Bihar Rural Livelihood Project (Jeevika)	2006	National Rural Livelihoods Mission, World Bank	State	Enhance social and economic empowerment of rural poor by bringing people into self-help groups, increasing earning opportunities, and reducing dependence on high-cost debt from informal sources	Various programs have different criteria, but generally applies to the rural poor	Skill training and job placement for intra-state migrants in Bihar

**Table 10 (Continued)**

<b>Category</b>	<b>Name of Policy, Scheme, Act</b>	<b>Year launched</b>	<b>Government Department</b>	<b>Level</b>	<b>Brief Description/Benefit</b>	<b>Eligibility</b>	<b>How it relates to seasonal migrants</b>
Health	Janani Suraksha Yojana (JSY)	2005	Ministry of Health and Family Welfare, run by NRHM	National	Promote institutional delivery through a conditional cash transfer	Varies by state. In states with high maternal mortality and low levels of facility deliveries, all women are eligible. In better performing states, only BPL women or SC/ST women are eligible for up to two children.	Pregnant seasonal migrants face difficulties receiving the JSY conditional cash transfer because they do not have a bank account.
Labour and Employment	Bihar State Migrant Labour Accident Grant Scheme	2011	Ministry of Labour and Employment, Government of Bihar	State	Compensates families of deceased or injured migrant workers in Bihar	Migrant workers in Bihar, must be in the state in order to claim benefits	One of the few state schemes across India specifically aimed at compensating migrants for work-related injuries or death
Health	Accredited Social Health Activist (ASHA)	2005, full scale in 2012	Ministry of Health and Family Welfare, run by NRHM	National, decentralized implementation structure at the State level	Community health worker program to counsel women on the importance of ANC, safe delivery, postnatal care, immunizations, family planning, nutrition, sanitation, and mobilize them to attend check-ups at health centers, distribute essential medicines and other medical products (oral rehydration therapy, iron tablets, birth control pills, and condoms)	Pregnant and lactating women, children under 6	Many seasonal migrants are women and children are eligible for ASHA services but often denied full access at their work sites

**Table 10 (Continued)**

<b>Category</b>	<b>Name of Policy, Scheme, Act</b>	<b>Year launched</b>	<b>Government Department</b>	<b>Level</b>	<b>Brief Description/Benefit</b>	<b>Eligibility</b>	<b>How it relates to seasonal migrants</b>
Health and Education	Integrated Child Development Services (ICDS)	1975	Ministry of Women and Child Development	National, decentralized implementation structure at the State level	Reduce childhood malnutrition in children. The program is run through Anganwadi Centers (AWC), each staffed by an Anganwadi worker (AWW) who is tasked to provide six services: supplementary nutrition, pre-school education, immunizations, nutrition and health education, health check-ups, and referral	Pregnant and lactating women, children under 6	Many seasonal migrants are women and children are eligible for ICDS services but often denied access at their work sites
Health	Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)	2013	National Health Mission, Ministry of Health and Family Welfare	National, decentralized implementation structure at the State level	Address the major causes of mortality among women and children, delays in accessing and utilizing health care service, and continuum of care to ensure equal focus on various life stages among the most vulnerable populations and disadvantaged groups	Various schemes under RMNCH+A cater to women, children, and adolescents	Many seasonal migrants are women and children. The schemes under RMNCH+A are open to all, but in practice seasonal migrants are not receiving care
Financial Inclusion and Protection	Pradhan Mantri Jan Dhan Yojana (PMJDY)	2014	Ministry of Finance	National	Increase access to financial services for the poor, especially access to bank accounts. Under this scheme, bank accounts can be opened at any bank branch in the	Must have Aadhaar card	Seasonal migrants should be able to open a bank account to claim JSY benefits anywhere

**Table 10 (Continued)**

<b>Category</b>	<b>Name of Policy, Scheme, Act</b>	<b>Year launched</b>	<b>Government Department</b>	<b>Level</b>	<b>Brief Description/Benefit</b>	<b>Eligibility</b>	<b>How it relates to seasonal migrants</b>
					country with zero balance with the presentation of a valid form of identification		

### APPENDIX III: EXPERT INTERVIEWS

<b>Organization</b>	<b>Number of expert interviews</b>
Ajeevika Bureau	1
Bill and Melinda Gates Foundation	8
CARE India	2
Centre for Migration and Inclusive Development	1
DISHA Foundation/Public Health Foundation of India	1
Indira Gandhi Institute of Development	1
International Organization for Migration (IOM)	1
Maternal Health Task Force	1
Oxford Policy Management (OPM)	1
Self Employed Women's Association (SEWA)	1
UNESCO	2
UNICEF	2
UNWomen	1

## APPENDIX IV: INTERVIEW GUIDES

### *SEMI-STRUCTURED INTERVIEW GUIDE FOR WOMEN*

Date of interview: \_\_\_\_\_

Interview location: \_\_\_\_\_

Key informant number: \_\_\_\_\_

**Inclusion Criteria:** Before beginning, confirm that the participant is either currently pregnant or has given birth in the last two years, during which time she was working at brick kilns.

**Consent:** Prior to beginning the focus group, participants will be read the consent form and give oral consent on an audio recording.

**Introduction:** Interviewed should explain the study purpose to the participant and answer any questions she might have.

### **BASIC INFORMATION**

Age:

Religion:

Mother tongue:

Marital status:

Socioeconomic status: SC \_\_\_\_\_ ST \_\_\_\_\_

Highest level of education attained:

Has cell phone?

### **MIGRATION AND OCCUPATION HISTORY**

1. Where are you from? How far is that from here? How did you get here? How many hours did it take?
2. Do you come every year? Do you come to the same brick kiln or different ones? If not, why not?
3. At what age did you first start coming to the brick kiln?
4. Who did you migrate to the brick kiln with?
5. How do you decide which brick kiln to go to? Do you work in other industries seasonally (aside from agriculture) or only at brick kilns?
6. Did other people from your home come here too?
7. What is your main motivation for migrating?

8. What do you do when you have a medical expense? Do you have any savings? Do you borrow money from somewhere? What do you do at home? What do you do at the brick kiln?
9. What is your interaction like with the local community around the brick kilns?
10. Does the brick kiln owner have a similar role here as the village head or are their roles different?

## **FAMILY AND PREGNANCY HISTORY**

1. Tell me about your family.
2. Are you currently pregnant?
3. How many children do you have?
4. How old is your youngest child? How old is your oldest child?

## **ANTENATAL CARE**

*Note: If time was split between brick kiln and home during pregnancy, ask about care in both locations.*

1. Where were you throughout your pregnancy? Home, brick kiln, or both?

### Delays in deciding to seek care

1. What do you do when you are pregnant to make sure you and the baby are staying healthy?
2. Did you have check-ups by a health provider during your pregnancy?

**If no: skip to page 3 (if no for home or brick kiln, skip to page 3 for that component)**

**If yes: (if she was at her home and a brick kiln during pregnancy, ask about both locations, otherwise just one)**

1. If at home: tell me about the care you received.
  - a. What kind of provider was this (private, public, traditional)?
  - b. How did you decide to see this provider instead of another one? Why?
  - c. Did the healthcare worker come to you or did you go to a clinic?
  - d. What procedures were done? (blood pressure, tetanus, urine test, iron tablets, weight, sonogram)
  - e. Did you receive care from multiple providers?
  - f. How many visits did you have?
  - g. Did an ASHA come to visit you?
  - h. If yes, what did the ASHA do and discuss with you? How often did she see you?
  - i. Where any of the following an issue? (distance, finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, didn't know it was important, I didn't know where to go, couldn't get off work, clinic hours were not compatible with work schedule, clinic



too far, lack of transportation options, other). Why was each a specific barrier/cause for delay?

2. Now tell me about the care while at the brick kiln:
  - a. What kind of provider was this (private, public, traditional)?
  - b. How did you decide to see this provider instead of another one? Why?
  - c. Did the healthcare worker come to you or did you go to a clinic?
  - d. What procedures were done? (blood pressure, tetanus, urine test, iron tablets, weight, sonogram)
  - e. Did you receive care from multiple providers?
  - f. How many visits did you have?
  - g. Did an ASHA come to visit you?
  - h. If yes, what did the ASHA do and discuss with you? How often did she see you?
  - i. Where any of the following an issue? (distance, finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, didn't know it was important, I didn't know where to go, couldn't get off work, clinic hours were not compatible with work schedule, clinic too far, lack of transportation options, other). Why was each a specific barrier/cause for delay?
3. Where do you prefer to seek care in your home? Why?
4. Where do you prefer to seek care at the brick kiln? Why?
5. Do you prefer to receive care at your home location or at the brick kiln? Why?
6. Who usually makes decisions about healthcare when you are at home?
7. Who usually makes decisions about healthcare when you are at brick kiln?
8. If you are at the brick kilns working, do you make different decisions about antenatal care than if you are at your home? If yes, how are they different?

### Delays in reaching care

1. Describe your journey to receive antenatal care. Did you experience any difficulties reaching the clinic? If yes, describe the challenges. *Make sure the following are addressed:*

#### Home

- a. How long did it take you to get there?
- b. How did you get there?
- c. Did you have to pay for transport? If so, how much?
- d. Did you have trouble accessing the clinic due to poor roads?
- e. Did you go to the nearest clinic? If not, why not?
- f. Did you go alone or did someone accompany you?

#### Brick kiln

- a. How long did it take you to get there?
- b. How did you get there?

- c. Did you have to pay for transport? If so, how much?
- d. Did you have trouble accessing the clinic due to poor roads?
- e. Did you go to the nearest clinic? If not, why not?
- f. Did you go alone or did someone accompany you?
- g.

Delays in receiving care

- 2. If you went to the clinic for antenatal, what kind of difficulties, if any, did you experience while you were there?
- 3. Did you speak the same language as the health staff?
- 4. What documentation did they require you to show?
- 5. Did you have to pay any money? If yes, how much? For what?
- 6. How were you treated by the healthcare workers? In general, how would you describe the quality of care you received? Were you satisfied with the treatment?
- 7. Would you recommend other women go to the same place? If yes, why? If not, why not and where would you recommend they go?

**If no:**

- 1. If you did not seek care, what made you decide not to?
- 2. Where any of the following an issue? (distance, finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, didn't know it was important, I didn't know where to go, couldn't get off work, clinic hours were not compatible with work schedule, clinic too far, lack of transportation options, other). Why was each a specific barrier/cause for delay?
- 3. If you are at the brick kilns working, do you make different decisions about antenatal care than if you are at your home? If yes, how are they different?

**DELIVERY**

*For pregnant women, ask what they plan to do. For women with young children, ask about their last birth.*

Delays in deciding to seek care

- 1. Did you give birth at your home location, the brick kiln location, or somewhere else? *(make sure location facility/home, government/private are addressed)*
- 2. Can you describe your last birth to me? or Can you tell me how you plan to give birth?
- 3. Did you register the birth of your child? Where (home or brick kiln)
- 4. Do you prefer to give birth at the brick kiln or at your home location? Why?

**If no: skip to page 5**

**If yes:**

5. Was this your preference? If yes, why? If no, why not?
6. How did you make the decision to give birth where you did? Who made the decision?
7. Did you plan in advance where you wanted to give birth?
8. Who attended your birth?
9. Have you heard of JSY (*describe the program*)?
10. Were you a part of JSY?
  - a. **If yes**, how did you hear about the program? What made you decide to enroll? Describe your experience with JSY.
  - b. Did you have to create a bank account for JSY? If yes, what was the process like?
  - c. Do you have an Aadhaar card?
  - d. **If no**, why not? *Did you know about the program? Did you want to enroll but were unable to? Why not? Did you not want to enroll? Why?*
11. If you are migrating to the brick kilns do you make different decisions about giving birth than if you were at your home? If yes, how are they different? How do you decide?

#### Delays in reaching care

1. Describe your journey to the clinic. Did you experience any difficulties reaching the clinic? If yes, describe the challenges. *Make sure the following are addressed:*
  - a. How long did it take you to get there?
  - b. How did you get there?
  - c. Did you have to pay for transport? If so, how much?
  - d. Did you have trouble accessing the clinic due to poor roads?
  - e. How far is the nearest clinic from your home if you walk?
  - f. Did you go to the nearest clinic? If not, why not?
  - g. Did you go alone or did someone accompany you?

#### Delays in receiving care

1. If you went to the clinic for delivery, what kind of difficulties, if any, did you experience while you were there?
2. Did you speak the same language as the health staff?
3. What documentation did they require you to show?
4. Did you have to pay any money? If yes, how much? For what?
5. How were you treated by the healthcare workers? In general, how would you describe the quality of care you received? Were you satisfied with the treatment?
6. Would you recommend other women go to the same place? If yes, why? If not, why not and where would you recommend they go?

#### **If no:**

1. Was this your preference? If yes, why? If no, why not?
2. How did you make the decision to give birth where you did? Who made the decision?
3. Did you plan in advance where you wanted to give birth?

4. Why did you not give birth in a clinic? (distance, finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, lack of transportation options, other)
5. Who attended your birth?
6. Have you heard of JSY (*describe the program*)? If yes, why did you not enroll?
7. If you are migrating to the brick kilns do you make different decisions about giving birth than if you were at your home? If yes, how are they different? How do you decide?
8. Did you register the birth of your child? If yes, where? If no, why not?

### **NEONATAL CARE**

1. What did you do for your infant in the first month of his or her life to ensure good health? (Probe with immunizations, ASHA visit, weighing, Anganwadi worker)
2. Did your newborn receive a check-up from a healthcare worker? If yes, from whom, when and where? If no, why not?
3. What were some of the difficulties you experienced in caring for the health of your newborn?
4. Where did you and your newborn stay during the first month after birth?
5. How did migrating to the brick kilns for work affect how you cared for your baby?
6. From whom do you seek support and advice on questions about pregnancy, birth, and the health of your child? At home? At brick kiln?
7. Do you go to different people at home vs. the brick kiln?
8. Has an Asha visited you here? Has an Anganwadi worker visited you here?
9. Do you know where the Anganwadi center is?
10. Who takes care of the babies and toddlers when you are working at the brick kiln?

### **MATERNAL AND CHILD HEALTH EMERGENCIES**

1. Did you experience a medical emergency during your pregnancy that required medical care? If yes, describe what you did?
2. Have any of your children been ill since you have been at the brick kiln?
3. Do you know where the nearest clinic is located? Do you know where the nearest PHC is located?

#### **If yes:**

- a. Describe their condition.
- b. What did you do to care for them?
- c. Did you seek out medical care?
- d. **If yes:** What was the process to receive care? (Where did you go? How did you decide to go there? How did you reach the facility? What documentation was required? How did you pay for the services?)
- e. **If no:** Why not?

#### **If no:**

1. What would you do if your child suffered from diarrhea?
  - a. (Where would you go? How would you decide to go there? How would you reach the facility? What documentation would be required? How would you pay for the services? Are there any challenges you think you might encounter?)
  - b. How would this be different if you were in your home instead of working at the brick kiln?
2. What would you do if your child broke an arm?
  - a. (Where would you go? How would you decide to go there? How would you reach the facility? What documentation would be required? How would you pay for the services? Are there any challenges you think you might encounter?)
  - b. How would this be different if you were in your home instead of working at the brick kiln?

**Conclusion:** Thank you for your participation. Please feel free to contact us at any time if you have any questions.

*SEMI-STRUCTURED INTERVIEW GUIDE FOR MEN*

Date of interview: \_\_\_\_\_

Interview location: \_\_\_\_\_

Key informant number: \_\_\_\_\_

**Inclusion Criteria:** Before beginning, confirm that the participant is either currently pregnant or has given birth in the last two years, during which time she was working at brick kilns.

**Consent:** Prior to beginning the focus group, participants will be read the consent form and give oral consent on an audio recording.

**Introduction:** Interviewed should explain the study purpose to the participant and answer any questions she might have.

**BASIC INFORMATION**

Age:

Religion:

Mother tongue:

Marital status:

Socioeconomic status: SC \_\_\_\_\_ ST \_\_\_\_\_

Highest level of education attained:

Has cell phone?

**MIGRATION AND OCCUPATION HISTORY**

1. Where are you from? How far is that from here? How did you get here? How many hours did it take?
2. **Why did you decide to work in a brick kiln and not in another industry?**
3. Do you come every year? Do you come to the same brick kiln or different ones? If not, why not?
4. At what age did you first start coming to the brick kiln?
5. **How do you feel about living and working at the brick kiln?**
6. Who did you migrate to the brick kiln with?
7. How do you decide which brick kiln to go to?
8. Did other people from your home come here too?
9. What is your main motivation for migrating?
10. What do you do for the rest of the year when you are not at the brick kiln?

## **FAMILY AND PREGNANCY HISTORY**

1. How many children do you have?
2. How old is your youngest child? How old is your oldest child?

### **ANTENATAL CARE (if wife currently pregnant)**

1. Did your wife have check-ups by a health provider during her pregnancy?

**If no: skip to page 3 (if no for home or brick kiln, skip to page 3 for that component)**

**If yes: (if she was at her home and a brick kiln during pregnancy, ask about both locations, otherwise just one)**

1. If at home: tell me about the care your wife received.
  - a. What kind of provider was this (private, public, traditional)?
  - b. How did you decide to see this provider instead of another one? Why?
2. Now tell me about the care while at the brick kiln:
  - a. What kind of provider was this (private, public, traditional)?
  - b. How did you decide to see this provider instead of another one? Why?
3. Where do you prefer your wife to seek care in your home? Why?
4. Where do you prefer your wife to seek care at the brick kiln? Why?
5. Do you prefer to receive care at your home location or at the brick kiln? Why?
6. Who usually makes decisions about healthcare when you are at home?
7. Who usually makes decisions about healthcare when you are at brick kiln?
8. If you are at the brick kilns working, do you make different decisions about antenatal care than if you are at your home? If yes, how are they different?

**If no:**

1. **Why not? What made you decide not to get pregnancy check-ups for your wife?**
2. *Possible issues: finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, didn't know it was important, I didn't know where to go, couldn't get off work, clinic hours were not compatible with work schedule, clinic too far, lack of transportation options, other. Why was each a specific barrier/cause for delay?*
3. If you are at the brick kilns working, do you make different decisions about **pregnancy check-ups for your wife** than if you are at your home? If yes, how are they different?

### **DELIVERY (if currently pregnant or if delivery happened at the brick kiln since arriving for this season)**

*For pregnant women, ask what they plan to do. For women with young children, ask about their last birth.*

### Delays in deciding to seek care

1. Did your wife give birth at your home location, the brick kiln location, or somewhere else? Why did it happen there?
2. Did she give birth at a facility?

**If no: skip to page 5**

**If yes:**

3. Was this your preference? If yes, why? If no, why not?
4. How did she make the decision to give birth where you did? Who made the decision?
5. Who attended the birth?
6. Have you heard of JSY (*describe the program*)?
7. Was your wife a part of JSY?
  - a. **If yes**, how did you hear about the program? What made you decide to enroll? Describe your experience with JSY.
  - b. Did you have to create a bank account for JSY? If yes, what was the process like?
  - c. Do you have an Aadhaar card?
  - d. **If no**, why not? *Did you know about the program? Did you want to enroll but were unable to? Why not? Did you not want to enroll? Why?*
8. If you are migrating to the brick kilns do you make different decisions about your wife giving birth than if you were at your home? If yes, how are they different? How do you decide?

### Delays in reaching care

1. Describe your wife's journey to the clinic. Did she experience any difficulties reaching the clinic? If yes, describe the challenges. *Make sure the following are addressed:*
  - a. How long did it take you to get there?
  - b. How did you get there?
  - c. Did you have to pay for transport? If so, how much?
  - d. Did you have trouble accessing the clinic due to poor roads?
  - e. How far is the nearest clinic from your home if you walk?
  - f. Did you go to the nearest clinic? If not, why not?

### Delays in receiving care

1. If you went to the clinic for delivery, what kind of difficulties, if any, did she experience while she were there?
2. Did you speak the same language as the health staff?
3. What documentation did they require you to show?
4. Did you have to pay any money? If yes, how much? For what?
5. How were you treated by the healthcare workers? In general, how would you describe the quality of care you received? Were you satisfied with the treatment?



6. Would you recommend other women go to the same place? If yes, why? If not, why not and where would you recommend they go?

**If no:**

1. Was this your preference? If yes, why? If no, why not?
2. How did you make the decision to give birth where you did? Who made the decision?
3. Did you plan in advance where you wanted to give birth?
4. Why did you not give birth in a clinic? (distance, finances, someone told me not to, poor quality of services, I had a bad experience in the past, people don't treat me well, no documentation, lack of transportation options, other)
5. Who attended your birth?
6. Have you heard of JSY (*describe the program*)? If yes, why did you not enroll?
7. If you are migrating to the brick kilns do you make different decisions about giving birth than if you were at your home? If yes, how are they different? How do you decide?
8. Did you register the birth of your child? If yes, where? If no, why not?

**NEONATAL CARE**

1. Did your newborn receive a check-up from a healthcare worker? If yes, from whom, when and where? If no, why not?
2. What were some of the difficulties you experienced in caring for the health of your newborn?
3. How did migrating to the brick kilns for work affect how you cared for your baby?
4. Has an Asha visited you here? Has an Anganwadi worker visited you here?
5. Do you know where the Anganwadi center is?
6. Who takes care of the babies and toddlers when you are working at the brick kiln?

**MATERNAL AND CHILD HEALTH EMERGENCIES**

1. Did you wife experience a medical emergency during your pregnancy that required medical care? If yes, describe what you did?
2. Have any of your children been ill since you have been at the brick kiln?

**If yes:**

- a. Describe their condition.
- b. What did you do to care for them?
- c. Did you seek out medical care?
- d. **If yes:** What was the process to receive care? (Where did you go? How did you decide to go there? How did you reach the facility? What documentation was required? How did you pay for the services?)
- e. **If no:** Why not?

**If no:**

1. What would you do if your child suffered from diarrhea?
  - a. (Where would you go? How would you decide to go there? How would you reach the facility? What documentation would be required? How would you pay for the services? Are there any challenges you think you might encounter?)
  - b. How would this be different if you were in your home instead of working at the brick kiln?
2. What would you do if your child broke an arm?
  - a. (Where would you go? How would you decide to go there? How would you reach the facility? What documentation would be required? How would you pay for the services? Are there any challenges you think you might encounter?)
  - b. How would this be different if you were in your home instead of working at the brick kiln?
1. Do you know where the nearest clinic is located? Do you know where the nearest PHC is located?
2. What do you do when you have a medical expense? Do you have any savings? Do you borrow money from somewhere? What do you do at home? What do you do at the brick kiln?
3. How do you describe the role of the brick kiln owner at the brick kiln?
4. Did you have a problem the owner helped you solve? Explain
5. Did you have a problem caused by the owner? Explain
6. What is your interaction like with the local community around the brick kilns?

**Conclusion:** Thank you for your participation. Please feel free to contact us at any time if you have any questions.

*SEMI-STRUCTURED INTERVIEW GUIDE FOR MANAGERS AND OWNERS*

Date of interview: \_\_\_\_\_

Interview location: \_\_\_\_\_

Key informant number: \_\_\_\_\_

**Consent:** Prior to beginning the focus group, participants will be read the consent form and give oral consent on an audio recording.

**Introduction:** Interviewed should explain the study purpose to the participant and answer any questions he might have.

### **GUIDING QUESTIONS**

1. How many people work at this brick kiln? How many families? How many children?
2. Where are the workers from?
3. Do the same families come every year or do you have new families every year?
4. How many births took place at the brick kiln last season?
5. How many women were pregnant during the last season?
6. What do you do when one of your employees or their children is ill? *Make sure to probe for the decision-making processes. Things to look out for include preference for private vs. public, bringing doctor on site or sending women to clinic, does he make different decisions based on different types of conditions, is he aware of free government services for maternal and child health.*
7. How do they pay for the health services?
8. Does an ASHA come to the brick kiln? If yes, how often? Are her visits regular? How does she conduct her visits?

**Conclusion:** Thank you for your participation. Please feel free to contact us at any time if you have any questions.

*FOCUS GROUP DISCUSSION GUIDE FOR COMMUNITY HEALTH WORKERS*

Date of interview: \_\_\_\_\_

Number of participants: \_\_\_\_\_

Interview location: \_\_\_\_\_

Title of participants: ASHA ANM AWW

**Consent:** Prior to beginning the focus group, participants will be read the consent form and give oral consent on an audio recording.

**Introduction:** Thank you for volunteering your time to participate in this study. We look forward to learning from your experiences working with brick kiln workers over the next hour. As a reminder, all information you share today will remain anonymous. Your names will not be written down and no information you share will be directly linked to you. Before we begin let us review some basic rules to be followed throughout the discussion:

- Only one person should speak at a time. Do not interrupt other participants when they are speaking.
- Do not share any information we discuss today with others.
- Please respect the other participants in this discussion group.
- We are not looking for right or wrong answers. In no way are you being tested. We are here to learn from you.
- Please feel free to ask any questions throughout the discussion if you need clarification.

**Guiding Questions:**

1. Can you tell me about the brick kiln worker communities you work with?
2. How do you reach out to these communities?
3. What are some of the challenges you experience when working with these communities?
4. What health services do brick kiln workers request when you visit?
5. What do you think are the major health challenges facing this community?
6. How do the brick kiln workers differ from permanent residents of similar socioeconomic status in the community in terms of receiving maternal and child health services?
7. Are there any differences for you in providing care to permanent residents of similar socioeconomic status in the community in comparison to the brick kiln workers?
8. What do you think could be done to better provide care to brick kiln workers?
9. Are brick kiln workers able to benefit from JSY from your experience? If not, what are some of the challenges?
10. Is there anything else you would like to add to this discussion?

**Conclusion:** Thank you for your participation. We appreciate the time and energy you contributed to this project. Please feel free to contact us at any time if you have any questions.

APPENDIX V: QUALITATIVE ANALYSIS CODES

<b>Code</b>	<b>Code Group 1</b>	<b>Code Group 2</b>
Belief that it is not necessary to have check-ups unless there is a problem	Attitudes and cultural beliefs	Manager as gatekeeper to outside world
Belief that strenuous manual labour is good during pregnancy	Attitudes and cultural beliefs	
Brick kiln workers don't get sick	Attitudes and cultural beliefs	
Manager provides transport for deliveries	Brick kiln as a health enabling environment	
Pressure for manager to keep workers happy	Brick kiln as a health enabling environment	
Brick kiln selection: good treatment	Brick kiln as a health enabling environment	
Manager covers medical costs	Brick kiln as a health enabling environment	Financial challenges and exploitation
Better care at brick kilns due to increased access to health providers	Brick kiln as a health enabling environment	
Workers are unaware of deduction amounts	Financial challenges and exploitation	
Can't afford to pay for treatment at brick kilns because of existing loan	Financial challenges and exploitation	
Healthcare costs at brick kilns	Financial challenges and exploitation	
Hidden unexpected costs at public clinics	Financial challenges and exploitation	
Brick kiln workers as bonded labour	Financial challenges and exploitation	
Brick kiln selection: more money than in hometown	Financial challenges and exploitation	
Advance loan from brick kiln taken out to cover healthcare costs at home	Financial challenges and exploitation	
Wages	Financial challenges and exploitation	
Brick kiln owners do not have records on children at the worksite	Lack of documentation	
Challenges setting up a bank account	Lack of documentation	
Inability to register with AWC at brick kilns	Lack of documentation	

<b>Code</b>	<b>Code Group 1</b>	<b>Code Group 2</b>
Leaving Aadhaar card at home	Lack of documentation	Limited services provided by ASHA
No AWW at brick kilns	Lack of documentation	
Not receiving JSY payout despite delivering at a facility	Lack of documentation	
Leaving immunization records at home	Lack of documentation	
Limited ASHA visits at the brick kilns	Limited services provided by ASHA	
ASHA is unaware of health issues at her assigned brick kilns	Limited services provided by ASHA	
Immunization micro plans for brick kilns	Limited services provided by ASHA	
ASHA home visits	Limited services provided by ASHA	
Defining the ASHA catchment area	Limited services provided by ASHA	
Run out of medications brought from	Limited services provided by ASHA	
Immunizations are the main focus of health outreach to the brick kilns	Limited services provided by ASHA	
Parallel polio system	Limited services provided by ASHA	
ASHA prioritizes local population over brick kiln workers	Limited services provided by ASHA	
Women do not know their ASHA at the brick kilns	Limited services provided by ASHA	
ASHA provides limited services at brick kilns	Limited services provided by ASHA	
Difficulty providing immunizations at brick kilns	Limited services provided by ASHA	
Continuity of care interrupted at brick kilns	Limited services provided by ASHA	
ASHA not proactive about reaching out to pregnant brick kiln workers	Limited services provided by ASHA	
Female workers feel uncomfortable asking manager about pregnancy needs	Manager as gatekeeper to outside world	
Manager as the gatekeeper to the outside world	Manager as gatekeeper to outside world	
Manager makes healthcare decisions for brick kiln workers	Manager as gatekeeper to outside world	
Manager permission needed to go to a clinic	Manager as gatekeeper to outside world	
Managers have established relationships with doctors to treat workers	Manager as gatekeeper to outside world	
No privacy/space to do check-ups at brick kilns	Manager as gatekeeper to outside world	

<b>Code</b>	<b>Code Group 1</b>	<b>Code Group 2</b>
Manager association with RMP	world Manager as gatekeeper to outside world	
Place of delivery decided by brick kiln manager	Manager as gatekeeper to outside world	
ASHAs do not have enough time to provide services at brick kilns	Manager as gatekeeper to outside world	Limited services provided by ASHA
Preference for private care due to time savings	Manager as gatekeeper to outside world	
Manager acts as pharmacist	Manager as gatekeeper to outside world	
Manager does not cooperate	Manager as gatekeeper to outside world	
Government clinic opening hours not compatible with work hours	Manager as gatekeeper to outside world	Limited services provided by ASHA
Language barrier	Social segregation	
Limited interactions with local community	Social segregation	
Doesn't know where nearest government hospital is located	Social segregation	
Workers do not return to the same brick kiln every season	Social segregation	
Manager monitors movement of workers	Social segregation	
Community support back home	Social segregation	
Parents can't properly care for their children due to long working hours	Stigma and discrimination	
Alcohol use at brick kilns	Stigma and discrimination	
Poor levels of education	Stigma and discrimination	
Brick kiln workers don't care if child dies	Stigma and discrimination	
ASHA feels concerned about safety at brick kilns	Stigma and discrimination	
ASHA finds it easier to treat the local population	Stigma and discrimination	Limited services provided by ASHA
Brick kiln workers lazy	Stigma and discrimination	Limited services provided by ASHA
Reason for working in kiln (other than loan for healthcare)	Other	

<b>Code</b>	<b>Code Group 1</b>	<b>Code Group 2</b>
Brick kiln division of labour	Other	
New government regulations and fees pose challenge to brick kiln owners	Other	
Common diseases	Other	



## BIBLIOGRAPHY

Anti-Slavery International. (2017). *Slavery in India's Brick Kilns & the Payment System Anti-Slavery International Volunteers for Social Justice September 2017 Way forward in the fight for fair wages, decent work and eradication of slavery*. Anti-Slavery International.

AQICN. (2018). *IGSC Planetarium Complex, Patna Air Pollution: Real-time Air Quality Index (AQI)*. Retrieved April 4, 2018, from <http://aqicn.org/city/india/patna/igsc-planetarium-complex/>.

Bhabha, A. B. (2017). India's Aadhaar scheme and the promise of inclusive social protection. *Oxford Development Studies* , 45 (1), 64-79. DOI: 10.1080/13600818.2016.1263726.

Bharadwaj, K. M. (2008, August 30). The Big March: Migratory Flows after the Partition of India. *Economic and Periodical Weekly* , pp. [https://epod.cid.harvard.edu/files/epod/files/khwaja\\_a\\_-\\_the\\_big\\_march\\_epw\\_publish08.pdf](https://epod.cid.harvard.edu/files/epod/files/khwaja_a_-_the_big_march_epw_publish08.pdf).

Bhore, J. (1946). *Report of the Health survey and Development Committee, Vol. II: Recommendations*. New Delhi: Government of India.

BMGF. (2017). *Our Work in India*. Retrieved March 30, 2018, from [www.gatesfoundation.org/Where-We-Work/India-Office](http://www.gatesfoundation.org/Where-We-Work/India-Office).

Borhade. (2011). Health of Internal Labour Migrants in India: Some reflections on the current situation and way forward. *Asia Europe Journal* , DOI 10.1007/s 10308-011- 0293-z.

Borhade, A. (2016). Internal Labour Migration in India: Emerging Needs of Comprehensive National Migration Policy. In Mishra (Ed.), *Internal Migration in Contemporary India*. New Delhi: Sage.

Boyd, D. B. (2018). Slavery from Space: Demonstrating the role for satellite remote sensing to inform evidence-based action related to UN SDG number 8. *ISPRS Journal of Photogrammetry and Remote Sensing* , 7, <https://doi.org/10.1016/j.isprsjprs.2018.02.012>.

Brettell, B. C. (2015). *Migration Theory: Talking Across Disciplines* (3rd ed.). New York: Routledge.

Burawoy, M. (1976). The Function and Reproduction of Migrant Labour: Comparative Material from Southern Africa and the United States. *Journal of American Sociology* , 82 (5), 1031-1042.

Chokshi, M. P. (2016). Health Systems in India. *Journal of Perinatology* , 38 (3), 9-12. doi: 10.1038/jp.2016.184.

Collier, P. (2013). *Exodus*. Oxford: Oxford University Press.

Commonwealth Fund. (2016). *The Indian Health Care System*. Retrieved February 27, 2018, from <http://international.commonwealthfund.org/countries/india/>.

Das, J. A. (2016). The impact of training informal health care providers in India: A randomized controlled trial. *Science* , 354, 80-93. DOI: 10.1126/science.aaf7384.

Deshingkar, P. (2009). *Migration and Human Development in India* . UNDP .

Dutta, M. R. (2014). *Right to Work: Assessing India's Employment Guarantee Scheme in Bihar*. World Bank Group.

Fadel, S. A. (2017). Changes in cause-specific neonatal and 1–59-month child mortality in India from 2000 to 2015: a nationally representative survey. *The Lancet* , 390 (10106), 1972 - 1980. doi.org/10.1016/S0140-6736(17)32162-1.

Gabrysch, S. C. (2009). Still too far to walk: Literature review of the determinants of delivery service use. *BMC Pregnancy and Childbirth* , 9 (34), <https://doi.org/10.1186/1471-2393-9-34>.

Gautham, M. (2014). Informal rural healthcare providers in North and South India. *Health Policy and Planning* , 29, 20-29. doi:10.1093/heapol/czt050.

Global Slavery Watch. (2016). *The Global Slavery Index 2016 Report*.

Government of Bihar. (2011). *Bihar State Migrant Labour Accident Grant Scheme 2011*. Retrieved March 17, 2018, from <http://labour.bih.nic.in/D-Rules.htm>.

Government of Bihar. (2017). *Brick Kilns*. (M. a. Department, Producer) Retrieved 03 25, 2018, from <http://mines.bih.nic.in>.

Government of India. (1970). *Contract Labour (Regulation and Abolition) Act 1970* .

Government of India. (2001). *Data Highlights Migration Tables Census of India 2001*. New Delhi: Office of the Registrar General & Census Commissioner.

Government of India. (1948). *Minimum Wages Act*.

Government of India. (1936). *Payment of Wages Act*.

Government of India. (2017, October). Prime Minister launches Intensified Mission Indradhanush (IMI). *Press Information Bureau* , p. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=171499>.

Government of India. (2011). *Statistics Report 2011 Census*. Office of the Registrar General & Census Commissioner, India, New Delhi.

Government of India. (1979). The Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act.

Greentech Knowledge Solutions. (2014). *Factsheets about Brick Kilns in South and South East Asia*. New Delhi.

Harris, J. a. (1970). Migration, Unemployment, and Development: A Two-Sector Analysis. *American Economic Review* , 60, 126-42.

Hodin, S. (2016). “*Too Far to Walk*”: 20 Years Later, Distance Remains a Barrier to Maternal Health. Retrieved October 10, 2017, from Maternal Health Task Force: <https://www.mhtf.org/2016/10/14/too-far-to-walk-20-years-later-distance-remains-a-barrier-to-maternal-health/>.

ICDS. (2018). *Integrated Child Development Services*. (Government of Bihar) Retrieved March 25, 2018, from <http://www.icdsbih.gov.in/Scheme1.aspx?GL=9&PL=1>.

ILO. (2017). *Fact Sheet: Child Labor in India* . International Labor Organization .

IOM. (2018). *Key Migration Terms*. (I. O. Migration, Producer) Retrieved March 20, 2018, from [www.iom.int/key-migration-terms#Circular-migration](http://www.iom.int/key-migration-terms#Circular-migration).

IOM. (2018). *Who is a Migrant?* (I. O. Migration, Producer) Retrieved March 10, 2018, from [www.iom.int/who-is-a-migrant](http://www.iom.int/who-is-a-migrant).

Jha, A. (2014). Putting Quality on the Global Health Agenda. *New England Journal of Medicine* , 371, 3-5. DOI: 10.1056/NEJMp1402157.

Kamyotra. (2015). *Directions issues for brick kilns in Delhi*.

Kara, S. (2012). *Bonded Labor: Tackling the System of Slavery in South Asia*. New York: Columbia University Press.

Karan, A. W. (2017). “Extending health insurance to the poor in India: An impact evaluation of Rashtriya Swasthya Bima Yojana on out of pocket spending for healthcare. *Social Science & Medicine* , 181 (1), 83-92. doi:10.1016/j.socscimed .2017.03.053.

Kone, Z. M. (2017, December 1). Are invisible walls inhibiting internal migration in India? *Brookings* .

Krissman, F. (2005). Sin coyote ni patron: Why the “migrant network” fails to explain international migration? 39 (1), 4-44.

Kumar, A. (2017, September 15). New corporation to take over hitherto ‘mafia-ruled’ sand trade in Bihar. *Hindustan Times* .

- Lalchandani. (2012). *Towards Cleaner Brick Kilns in India: A win-win approach based on Zigzag firing technology*. Shakti Sustainable Energy Foundation.
- Lee, E. (1966). A Theory of Migration. *A theory of migration* , 3 (1), 47-57.
- Lim, S. L. (2010). India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *The Lancet* , 375 (9730), 2009-23. doi.org/10.1016/S0140-6736(10)60744-1.
- Massey, D. S. (1993). Theories of International Migration: A Review and Appraisal. *Population and Development Review* , 19 (3), 431-66.
- Ministry of Finance. (2014). *Pradhan Mantri Jan Dhan Yojana (PMJDY)*. Retrieved February 27, 2018, from <https://pmjdy.gov.in/scheme>.
- Mishra, D. (2016). *Internal Migration in Contemporary India* . New Delhi : Sage.
- NFHS. (2015-16). *India Fact Sheet*. National Family Health Survey.
- NHM. (2014). *About Accredited Social Health Activist (ASHA)*. (National Health Mission) Retrieved February 27, 2018, from <http://nhm.gov.in/communitisation/asha/about-asha.html>.
- NHM. (2015). *About NHM*. (National Health Mission ) Retrieved February 27, 2018, from <http://nhm.gov.in/nhm/about-nhm.html>.
- NHM. (2014). *RMNCH+A: Reproductive, Maternal, Newborn, Child and Adolescent Health*. (National Health Mission ) Retrieved March 5, 2018, from <http://nhm.gov.in/nrhm-components/rmnch-a.html>.
- NHP. (2015). *Janani Suraksha Yojana (JSY)*. (Government of India) Retrieved March 5, 2018, from National Health Portal: [https://www.nhp.gov.in/janani-suraksha-yojana-jsy-\\_pg](https://www.nhp.gov.in/janani-suraksha-yojana-jsy-_pg).
- NHP. (2015). *Reproductive, Maternal, Newborn, Child and Adolescent Health*. (Government of India) Retrieved February 27, 2018, from National Health Portal: [https://www.nhp.gov.in/reproductive-maternal-newborn-child-and-adolescent-health\\_pg](https://www.nhp.gov.in/reproductive-maternal-newborn-child-and-adolescent-health_pg).
- NRHM. (2013). *Guidelines for Community Processes* . New Delhi : National Rural Health Mission .
- NSSO. (2007-2008). *Migration in India*. National Sample Survey Organization. NSS 64th Round.
- OECD. (2001). *Glossary of Statistical Terms*. (Organisation for Economic Co-operation and Development) Retrieved March 20, 2018, from <https://stats.oecd.org/glossary/detail.asp?ID=2402>

- OHCHR. (2016). *Debt bondage remains the most prevalent form of forced labour worldwide – New UN report*. Geneva: UN Human Rights Office of the High Commissioner.
- Oxford Policy Management . (2017). *Bihar Child Support Programme: Impact Evaluation Endline Report* . New Delhi.
- Pacagnella, R. J. (2012). The role of delays in severe maternal morbidity and mortality: expanding the conceptual framework. *Reproductive Health Matters* , 20 (39), 155-163, DOI: 10.1016/S0968-8080(12)39601-8.
- Paycheck India. (2018). *Bihar Minimum Wage*. Retrieved March 20, 2018, from <https://paycheck.in/main/salary/minimumwages/bihar>.
- Paycheck India. (2018). *Jharkhand Minimum Wage*. Retrieved March 20, 2018, from <https://paycheck.in/main/salary/minimumwages/jharkhand>.
- Piché, V. (2013). Contemporary Migration Theories as Reflected in their Founding Texts. *Population* , 68 (1), 141-164. doi:10.3917/popu.1301.0153.
- Piore, M. (1979). *Bids of Passage*. Cambridge: Cambridge University Press.
- PRS. (2018). *The Workmen's Compensation (Amendment) Bill, 2009*. Retrieved March 17, 2018, from <http://www.prsindia.org/billtrack/the-workmens-compensation-amendment-bill-2009-767/>.
- Rees. (2016). *Clear the Air for Children: the Impact of Air Pollution on Children*. UNICEF.
- Rees. (2017). *Danger in the air: How air pollution can affect brain development in young children*. UNICEF.
- Rigaud, K. K. (2018). *Groundswell: Preparing for Internal Climate Migration*. World Bank, Washington D.C.
- RSBY. (2009). *About RSBY*. Retrieved February 27, 2018, from [www.rsby.gov.in/about\\_rsby.aspx](http://www.rsby.gov.in/about_rsby.aspx).
- Siddaiah, A. (2014). Medicine and Society Maternal healthcare and perinatal mortality among brick kiln migrant workers: A case study. *The National Medical Journal of India* , 25 (5), 280-82.
- Sjaastad, L. (1962). The Costs and Returns of Human Migration. *Journal of Political Economy* , 70 (5), 80-93.
- Skinder, B. (2014). Brick kilns: Cause of Atmospheric Pollution. *Journal of Pollution Effects and Control* , 2 (2), <http://dx.doi.org/10.4172/2375-4397.1000112>.

- Souza JP, T. V. (2014). Obstetric transition:the pathway towards ending preventable maternal deaths. *BJOG* , 121 (1), 1-4. DOI: 10.1111/1471-0528.12735.
- Stark, O. (1991). *The Migration of Labor*. Oxford: Basil Blackwell Publishing.
- Thaddeus, S. M. (1994). Too Far Too Walk: Maternal Mortality in Contex. *Social Science & Medicine* , 38 (8), 1091-1110.
- Tinker, H. (1993). *A New System of Slavery: The Export of Indian Labour Overseas, 1830–1920* (Vol. 2). London : Hansib.
- UIDAI. (2016). *Aadhaar Vision and Mission*. (Unique Identification Authority of India) Retrieved March 17, 2018, from <https://uidai.gov.in/about-uidai/about-uidai/vision-mission.html>.
- UN General Assembly. (1951). *Convention Relating to the Satus of Refugees*.
- UNESCO. (2012). *Internal Migration in India Initiative: For a Better Inclusion of Internal Migrants in India*. Delhi.
- UNESCO. (2013). *Social Inclusion of Internal Migrants in India*. New Delhi: UNESCO.
- UNICEF. (2016). *Maternal and Neonatal Mortality*. Retrieved October 26, 2017, from [https://www.unicef.org/health/index\\_maternalhealth.html](https://www.unicef.org/health/index_maternalhealth.html).
- UNICEF. (2017). *What We Do: Neonatal Health*. (U. INDIA, Producer) Retrieved September 25, 2017, from <http://unicef.in/Whatwedo/2/Neonatal-Health->.
- WHO. (2015). *India: Maternal Mortality 1990-2015*. World Health Organization.
- WHO. (2015). *Maternal Death Surveillance and Response* . World Health Organization .
- WHO. (2017). Seventieth World Health Assembly update, 29 May 2017. World Health Organization .
- World Bank. (2018). *Data: India*. Retrieved March 31, 2018, from <https://data.worldbank.org/country/india>.
- World Bank. (2015). *Maternal mortality ratio (modeled estimate, per 100,000 live births)*. (World Bank Group) Retrieved September 30, 2017, from <https://data.worldbank.org/indicator/SH.STA.MMRT>.