DETERMINANTS OF MOTIVATION AND JOB SATISFACTION AMONG PRIMARY HEALTH WORKERS: CASE STUDIES FROM NIGERIA AND INDIA

By
Aarushi Bhatnagar

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Abstract

Objective: In addition to a numerically adequate and skilled workforce, a well functioning health system relies on motivated and high performing health workers. Current efforts to motivate primary health workers, particularly in the public sector, in low-resource settings commonly focus on extrinsic measures such as better financial incentives. While these are necessary given low salaries and an expenditure-income mismatch, the role of intrinsic factors and organizational determinants need to be studied in greater detail, specific for each context, and integrated more comprehensively in such strategies. The objective of this dissertation is to explore individual and organizational determinants of motivation and job satisfaction among alternate cadres of public sector primary health workers using examples from Nigeria and India. It aims to answer the following research questions:

1. What are primary health workers' perceptions of motivating factors in the work environment, particularly supervision and leadership, in Nasarawa and Ondo states in Nigeria? (Paper 1)
2. How does the introduction of a performance-based financing (PBF) scheme change the perceived motivation of health workers in Wamba district, Nigeria? (Paper 2)
3. What are the factors of job satisfaction among primary-level clinicians in the state of Chhattisgarh, India? What is the association between job satisfaction and intention to leave? (Paper 3)

Methods: This thesis uses three case studies to understand determinants of motivation and job satisfaction among primary health workers in rural parts of Nigeria and India.

- Paper 1 uses a qualitative design to explore perceptions of health workers about motivating factors in their working environment in two states in Nigeria. The study included 38 in-depth interviews with primary health workers and district level managers. Thematic content analysis was used to identify motivating and demotivating factors across cadres and location of health workers.
- Paper 2 describes a qualitative assessment of changes in perceived motivation of health workers with the introduction of a performance-based financing scheme in a pilot district in Nigeria. In-depth interviews were conducted with 34 health workers and five PBF project managers and data were analyzed using the framework approach.
- Paper 3 uses exploratory factor analysis to identify domains of job satisfaction using data from a cross-sectional survey conducted among 146 primary-level providers, belonging to four distinct cadres (Medical Officers, AYUSH Officers, Rural Medical Assistants, Paramedical staff) in the state of Chhattisgarh. It identified individual and organizational predictors of job satisfaction using multiple linear regression and measured the association between job satisfaction and intention to leave.

Results: Three case studies identify determinants of motivation and job satisfaction at individual and organizational levels:

- In Paper 1, findings show that health workers perceive to be motivated by both intrinsic (self-efficacy, religion, choice of profession) and extrinsic (good working

environment including supportive supervision, monetary incentives, recognition, organizational justice) factors. Moreover, they considered supervision and leadership from within the facility, provided by the officer in-charge, to be more effective than from the district health management team. In addition to inadequate remuneration, health workers were dissatisfied by an unequal salary structure.

- In Paper 2, results indicate that health workers receiving PBF payments reported to be 'awakened' by performance bonuses and improved working environments including routine supportive supervision, availability of essential drugs and greater cohesion among staff. They recounted being more punctual, hard working, committed and proud of providing better services to their communities. In comparison, health workers in non-PBF facilities complained about the dearth of basic equipment and lack of motivating strategies. However, health workers from both sets of facilities considered there to be a severe shortage of manpower resulting in excessive workload, fatigue and general dissatisfaction.
- In Paper 3, domains identified for job satisfaction among health workers included job attributes supporting family life, working abilities and extrinsic incentives. Higher job satisfaction was found to be associated with receiving supervision and permanent employment. It was found to be significantly different between cadres of health workers with Rural Medical Assistants having the lowest score. It was also highly correlated with health workers' intention to leave their current position.

Conclusions: Results from this dissertation suggest that motivation and job satisfaction of primary health workers in Nigeria and India are influenced by certain individual

characteristics (vocation, self-efficacy, religion), financial and non-financial extrinsic incentives, and several organizational structures and processes including supervision, leadership, fairness in distribution of resources and responsibility, staff dynamics and team cohesion. In each case study the broader socio-political climate also plays a dominant role, either directly or indirectly, in affecting health worker behavior. Although latent phenomena, understanding motivation and job satisfaction can generate research leading to programmatic recommendations that strengthen health systems performance.

Committee of Thesis Readers

Committee Members:

Asha George, DPhil
Assistant Professor, Department of International Health

David H. Peters, MD, DrPH MPH
Professor and Chair, Department of International Health

Kitty S. Chan, PhD
Associate Professor, Department of Health, Policy and Management

W Henry Mosley, MD, PhD
Professor - Emeritus, Department of Population, Family and Reproductive Health

Alternate Committee Members:

Krishna D. Rao, PhD
Assistant Professor, Department of International Health

Jill T. Owczarzak, PhD
Assistant Professor, Department of Health, Behavior and Society

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Abbreviations

AYUSH	Ayurvedic, Yoga, Unani, Sidha, Homeopathy
CHEW	Community Health Extension Worker
CHO	Community Health Officer
FA	Framework Analysis
FMOH	Federal Ministry of Health
JCHEW	Junior Community Health Extension Worker
JHSPH	Johns Hopkins School of Public Health
LGA	Local Government Area
LMIC	Low and Middle-Income Countries
MO	Medical Officer
NRHM	National Rural Health Mission
OIC	Officer In-Charge
PHC	Primary Health Center
PBF	Performance-Based Financing
RBF	Results-Based Financing
RMA	Rural Medical Assistant
SMOH	State Ministry of Health

Chapter 1: Introduction

1.1 Introduction and Rationale

The workforce is one of the most crucial pillars of a health system, considered the "*human link that connects knowledge to health action*" [1]. Most resource-constrained settings, particularly in rural areas of low and middle-income countries (LMICs), suffer from inadequate strength and skill-mix of health workers along with sectoral and regional imbalances in their distribution resulting in acute shortages to meet population needs and achieve national health targets [2]. Apart from availability, insufficient productivity, competency and responsiveness of health workers has also been a serious concern in LMICs [1, 3]. Hence, in addition to increasing production and ensuring retention of capable health workers, it is equally important to enable them to continuously improve their performance to tackle current and emerging challenges. An essential step, among others, for doing so requires enhancing levels of job satisfaction and motivation of health workers [3-5].

Motivation, particularly in the work context, is defined as "*willingness to exert and maintain an effort towards organizational goals*" and is regarded to develop in individuals as a result of the interaction between individual, organizational and cultural determinants [5]. On the other hand, job satisfaction is referred to as "*a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience*" [6]. Although highly related, and often used interchangeably, motivation and job satisfaction are distinct constructs [7, 8]. While the former pertains to a person's intention to achieve organizational goals the latter is a reference to his/her attitude or emotional state related to that organizational setting. Despite these differences the two concepts, fundamental to

any human resource, are interdependent and hence influenced by a similar set of individual (self-concept, expectations, needs), organizational (structure, processes, resources, culture) and socio-cultural factors (client expectations, influence of culture on organizations, reforms) [5, 9, 10].

While these factors have been studied extensively in developed countries, the literature base for LMICs is still growing. Moreover, even within LMICs, most of the research on motivation and job satisfaction has focused on health workers in secondary or tertiary hospital settings rather than at the primary level. Primary health institutions in LMICs, especially in the public sector, typically, suffer from weaker organizational structures, processes and resources and usually cater to less educated clientele based in remote areas. These issues further compound many of the human resource challenges, affecting health workers' motivation and performance as well as retention in these positions. This is particularly a problem for medical doctors who often compete for more lucrative employment opportunities in urban areas, higher institutions and/or private sector. Many LMICs have been compelled to either strengthen existing cadres or create alternate ones in order to experiment with 'task-shifting' from doctors to these other non-physician cadres [11]. However, there is a dearth of evidence on factors influencing motivation and job satisfaction of these alternate primary health workers.

Moreover, current efforts to motivate primary health workers, particularly in public sector, in low-resource settings commonly focus on extrinsic measures such as better financial incentives [12]. While these are necessary given low salaries and an

expenditure-income mismatch, the role of intrinsic factors and organizational determinants need to be studied in greater detail, specific for each context, and integrated more comprehensively in such strategies. This dissertation aims to contribute towards strengthening the evidence base on determinants of motivation and job satisfaction among alternate cadres of primary health workers, in the public sector, using three case studies from Nigeria and India. The first study explores factors of motivation among primary health workers from Nasarawa and Ondo states in Nigeria, focusing particularly on perceptions on supervision and leadership as sources of motivation. The second is an assessment of changes in perceived motivation due to the introduction of a performance-based financing scheme in the pilot district of Wamba, Nasarawa in Nigeria. The third study measures domains of job satisfaction among physician and non-physician providers in the state of Chhattisgarh in India along with individual and organizational predictors of job satisfaction.

1.2 Literature Review

1.2.1 Motivation and Job Satisfaction: Definition and Relationship

Motivation can be described as the "conscious or unconscious stimulus, incentive or motives for action toward a goal resulting from psychological or social factors, the factors giving the purpose or direction to behavior" [13]. Motivation, specifically in the work context, can be defined as "willingness to exert and maintain an effort to succeed at work, achieve the organization's goals or to help the team reach its goals" [14, 15]. Furthermore, work motivation is "conditioned to satisfy individual needs" and occurs in a

situation “when esteem, feelings of growth and competence are tied to performance” [16, 17]. Thus, work motivation (hereby referred to as motivation) can be understood as a psychological process aimed at achieving both personal and organizational goals, developed amongst workers due to a combination of their personal needs and desires, the organizational context within which they work and the community they are a part of.

Job satisfaction is defined as a “pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience” [6]. It is a “result of employees perception of how well their job provides those things that are viewed as important” [18]. Simply put, it is an attitudinal variable describing how people feel about their jobs, either in its entirety (global approach) or its different aspects (facet approach) [19]. The most prominent job characteristics eliciting an affective response from a worker include: the job itself (extent to which work provides interesting tasks, opportunities for learning), pay (amount and perception of equitable remuneration), opportunities for promotion (degree to which job provides professional advancement), supervision (technical and emotional support from supervisors), and co-workers (degree to which fellow coworkers are technically proficient and socially supportive) [18, 20].

Both motivation and job satisfaction are multifaceted latent constructs implying that they cannot be observed but only inferred. While the former pertains to an individual’s intent, based on his/her intrinsic values and contextual circumstances, to achieve personal and organizational goals, the latter is a positive emotional state resulting from facets of that organizational setting as well as from achieving its goals. Although not synonymous, they

are extremely interdependent affecting each other as well as a worker's performance. For example, a school of organizational psychologists consider satisfaction to be the final result of the motivation sequence implying that a highly motivated employee is said to contribute more in order to achieve organizational goals and in turn is satisfied with his or her achievements/rewards from doing so [21]. In addition, it is also regarded that greater satisfaction in one's job is said to be a part of the motivational process resulting in greater motivation to continue to expend effort [5]. Several theories, as described in the next section, have aimed to explain each construct, their association with each other and their relationship with performance.

1.2.2 Theories of Motivation and Job Satisfaction

Motivation and job satisfaction have been researched extensively while studying organizational behavior in industrialized countries and are generally explained by two sets of overlapping theories classified as content and process theories. The former perspective focuses on identifying specific needs or values most conducive to motivation and job satisfaction based on the assumption that people are motivated by the desire to satisfy their inner needs and values [6]. However, these theories are often not successful in explaining the "process of motivation" and are unable to clarify why people are motivated by one factor over another at a given level [22]. The second approach, in turn, focuses more on the underlying cognitive processes including understanding factors that initiate, direct, sustain and halt behavior [13]. These shed light on the overall context, highlighting practices and interactions, in which work is done and the reactions of

employees to work [22]. The following section briefly describes some of these theories and their contribution to better understanding work motivation and job satisfaction.

The most commonly cited content theory is Maslow's Hierarchy of Needs which stated that people need to satisfy five needs in the following order- physiological (adequate salary, working conditions), security (job security, safety at work), affiliation (positive interactions with co-workers and managers), esteem (recognition, promotions), and self-actualization (autonomy, fulfillment form job) [13, 23]. While research to validate the Hierarchy of Needs theory has shown mixed results, it has concluded that those with low-skill jobs are satisfied with fulfilling the lower order needs (physiological and security) whereas those with high skill jobs are more concerned with the remaining three [24].

The two-factor or motivation-hygiene theory, put forward by Herzberg, postulated that factors of satisfaction and motivation (achievement, recognition, work itself, responsibility) were different to those for dissatisfaction (working conditions, supervision, interpersonal relations, compensation) among interviewed accountants and engineers in USA [25]. According to Herzberg, the presence of these motivators had the potential to create job satisfaction though in their absence job dissatisfaction did not occur. Although this theory has been criticized severely it has greatly helped managers to identify situational factors that can motivate their employees [22].

Hackman and Oldham's Job Design theory or Job Characteristics Model also identified motivational job characteristics, though did not disaggregate them into motivators and

"hygiene factors". The theory postulated that five core job dimensions of skill variety, task identity, task significance, autonomy and feedback led to better internal work motivation, job satisfaction, performance and attendance. It concluded that job enrichment only motivates employees with more knowledge, higher order growth needs for autonomy, responsibility, task variety, feedback, and recognition and better satisfaction with the work context [26]. The Job Diagnostic Survey based on this theory has been used extensively to assess work motivation and job satisfaction among employees in both developed and developing countries.

As mentioned above, process theories study *how* motivation and job satisfaction occur as opposed to *what* motivates and satisfies people. Equity theory stated that a person evaluates his/her outcomes and inputs by comparing them with those of others. Further work on this theory has shed light on consequences on worker motivation and behavior (exert less effort, change perception of self or co-workers, quit job) in situations where they perceive inequity [27]. Organizational justice theory, adds on to Equity theory, and states that leaders should not only be fair to their workers but should also be perceived as being fair [24]. Organizational justice encompasses three components – distributive justice (how employees feel they are being treated in comparison to others with regard to distribution of resources/salaries), procedural justice (with regard to processes such as promotions, appraisals) and interactional justice (relating to the dignity and respect afforded to individuals in interpersonal communications) [28, 29].

Goal-setting theory, as the name suggests, postulated that working towards a goal influences work motivation. In order for goals to affect performance, an individual must be truly committed to attaining the goal which in turn depends on their values, abilities as well as situational constraints [30]. Research further proposed that setting a specific goal motivated workers more than not setting one and performance, given commitment to a goal, was better higher or more challenging the goal [31].

Vroom's Expectancy theory derived a mathematical relationship showing that motivation of a person in a given situation related to performance depends on expectancy (the perceived probability that exerting a certain amount of effort will lead to performance), instrumentality (the belief that performing at a certain level will lead to a desired outcome), and valence (the probability that this outcome is valued by others) [32]. Understanding the effort-performance, performance-reward and rewards-goals relationships for an individual worker helps to explain why he/she is not motivated in the job and identify the particular linkage affecting his/her motivation.

Bandura's Social Cognitive theory proposed that goals, self-evaluations of progress, outcome expectations, values, social comparisons and self-efficacy were key motivational processes [33]. Individuals set goals, act according to their values and desired outcomes, and evaluate their progress towards attainment of those goals while comparing their progress with others. Self-efficacy defined as "one's judgment of how well one can execute courses of action required to deal with prospective situations" [34]

is crucial to motivational processes, stimulating performance directly as well as indirectly by attaining personal goals which have a direct effect on performance [35].

Self-Determination theory classified motivation as autonomous (doing an activity wholly volitionally) and controlled (doing an activity under external pressure) [36]. The theory aimed at understanding the content of a worker's goal and the reasons why he/she pursues the goal (for autonomous or controlled reasons) [37] thereby concluding that motivation is multi-dimensional and different types of motivation influence different behaviors [36]. In addition, empirical work based on the theory suggested that both types of motivation varied depending upon the satisfaction of three basic psychological needs including the need for autonomy, competence and relatedness [38, 39].

Locke attempted to formulate an integrated framework (Figure 1.1) combining many of the above theories to propose a motivation sequence [21]. According to this framework, motivation sequence began with needs since the "ultimate goal of goal-attainment is need fulfillment". In order to satisfy needs one took certain actions which were guided by one's values. Further, the framework suggested that a person set goals for a specific situation as per his/her values. Goals and self-efficacy directly affected performance while self-efficacy also had an indirect effect. Performance resulted in rewards or which further led to achievement of self-satisfaction or avoidance of dissatisfaction. In addition, Locke and Latham conducted further empirical work to show that satisfaction also indirectly, through improving organizational commitment, resulted in subsequent performance [35].

In summary, these theories have provided a wealth of information on the multidimensional aspects of motivation and job satisfaction, their determinants at the individual and organizational levels as well as their interdependence. However, most of the empirical work based on these studies has been done in industrial settings in developed countries. Validation of these theories in developing countries, especially within the health service delivery organization, is limited. Empirical work of this nature is urgently needed to contribute to literature on organizational behavior in health care in a developing country setting and particularly for frontline health workers.

1.2.3 Determinants of Motivation and Job Satisfaction in LMICs

In recent years, many studies have contributed to understanding determinants of motivation and job satisfaction among different cadres of health workers in low and middle-income countries. An extensive literature review was conducted and results were synthesized using Franco et al's conceptual framework of health worker motivation in the context of health sector reform [5]. According to this framework (Figure 1.2) factors of work motivation can be categorized into the following: individual processes, immediate organizational work context and cultural dynamics. Individual processes, as described in the section above, pertain to a person's goals, values and expectations along with self-efficacy. The framework further characterizes organizational factors into organizational resources, structures (hierarchies, autonomy, management, feedback), processes (communication, procedures of work), and culture (set of shared norms, leadership). The broader cultural factors include association between existing social norms and

functioning of an organization as well as societal values and expectations manifested as relationships between clients and health workers.

Individual factors

Many studies have found that health workers are intrinsically motivated for various reasons including their altruistic nature or other individual traits, academic and career aspirations, social and educational history and exposures, and the desire for respect and recognition [14, 40-44]. These factors influence their choice of profession and desire to serve their community due to a "sense of responsibility". Among these health workers, vocation and professional commitment were found to be strong sentiments [41, 45, 46]. A few studies also highlight the role of self-efficacy and competency among health workers in achieving higher satisfaction from their work [47, 48].

Organizational factors

Organizational resources

i. Pay and financial incentives

In most developing countries, low salaries are considered to be the main grievance among health workers resulting in low levels of satisfaction and motivation and consequently high attrition from the health sector as well as intra and inter country migration [2, 12, 28,

47-58]. Other studies have argued that salary is one of, if not, the most important pre-requisite for motivating health workers [42, 43, 59]. Apart from regular salaries, health workers are dissatisfied due to lack of additional monetary incentives or allowances, especially to cover transportation costs [60]. Low salaries and lack of incentives have found to make health workers consider that they are not being appreciated or valued for their efforts [41, 59].

In recent years, many countries have adopted performance-based financing (PBF) schemes in order to provide additional financial incentives to health workers. Although, empirical evidence of impact of such schemes on health worker motivation is limited to a few studies, particularly from sub-Saharan Africa, indicate that health workers found increase in salaries to be motivating [61-66]. However, a study from Afghanistan concluded that pay-for-performance did not affect extrinsic motivation of health workers [67]. Similarly, in other countries health workers were frustrated by irregularities in payment [64, 68-70] and relative amount of performance incentives as compared to increased workload [68, 71].

ii. Non-financial incentives

A growing body of literature has focused on the role of non-financial incentives in improving job satisfaction and motivation. A few studies have reported that work content is an important domain of job satisfaction [48, 53, 72] and in a particular case even more important than income [73]. Providing housing, particularly good housing, has been

found to have motivating effects and plays a significant role in shaping employment preferences especially for remote areas [59, 60, 74, 75]. Further training and continued education, motivate health workers by providing them with prospects to gain more knowledge, improve skills and advance in their careers [40, 60, 74, 76-78]. Similarly, lack of opportunities for promotion, professional development, and training have been reported to be one of the key reasons for dissatisfaction among health workers [28, 51, 52, 54, 58, 59, 77, 79, 80]. Other studies have also found how small incentives such as providing meals or beverages to health workers have had motivating effects [40, 43]. Furthermore, health sector policies and reforms particularly pertaining to promotion, continued medical education and better remuneration also affected work motivation [14, 60].

Organizational structures and processes

In general, studies found low levels of satisfaction and motivation among health workers due to poor working conditions including lack of essential medicines and equipment, insufficient staffing, inadequate amenities and security [28, 40-43, 47-56, 59, 73, 81]. Supportive supervision, leadership and good management practices have been reported to have a strong positive influence on work motivation and job satisfaction [12, 43, 82-85] while many have reported dissatisfaction with inadequate management support including lack of proper supervision [48, 51], poor communication with higher authority and absence of performance feedback [50, 52, 77]. In addition, a few studies noted the

importance of performance feedback or 'coaching' to have motivating influences on health workers [61, 64, 86].

A handful of studies have reported that health workers were discontented by lack of autonomy [4] and perceived unfairness in distribution of resources and decision-making processes [28, 43, 50]. For example, assessment of PBF programs in a few settings found bonus payments to be de-motivating in cases where the distribution was not transparent and perceived to be inequitable [61, 68, 71]. On the other hand, the literature suggests that strong inter-personal relations at work and sense of team spirit were associated with higher satisfaction among health workers [47-49, 53, 87].

Cultural and community factors

There is limited evidence of cultural factors affecting health worker behavior especially about cultural influences on organizational functioning. However, a number of studies have indicated that recognition from the community is a source of motivation and satisfaction and hence indicates that client expectations are valued by health workers [47, 55, 72].

Thus, studies conducted in LMICs suggest that there are individual, organizational and cultural determinants of motivation and job satisfaction. Most studies emphasize the role of financial and non-financial incentives, particularly those providing professional growth opportunities, as well as resource availability for better working conditions in increasing

health worker job satisfaction and motivation. However, this evidence base requires to be strengthened further particularly for understanding the influence of socio-political and cultural factors such as societal values about health, social norms of work ethos, societal expectations about accountability and the broader health sector vision and agenda on health worker motivation. In addition, a deeper insight into organizational dynamics at the primary health level is needed. Most of the literature on organizational structures, processes, and culture in the health sector is based in hospitals which have very distinct identities and ways of functioning than primary health centers. There is a need to bridge this knowledge gap to understand organizational determinants and their relationships with the overarching structure of the existing health system especially in the context of resource-constrained settings. Although common themes emerge from studies conducted in LMICs, factors of motivation and job satisfaction are likely to vary across, and even within, countries and hence more context-specific research is required to inform policy makers and planners to design appropriate strategies for their respective settings.

1.3 Conceptual Framework and Research Questions

1.3.1 Conceptual Framework

Figure 1.3 describes the conceptual framework used to guide the objectives of this dissertation. It is adapted from two existing frameworks, Locke's motivation sequence (Figure 1.1) and Franco et al's conceptual framework for health worker motivation in relation to health sector reform (Figure 1.2), and findings from the literature review. The framework describes determinants of motivation and job satisfaction at the individual,

organizational and cultural level and aims to capture the dynamic relationship between motivation, job satisfaction and performance. It suggests that motivation in an individual results from a combination of his/her personal needs, value systems, goals, expectations and self-efficacy coupled with the work or organizational environment he/she is positioned in while also influenced by the broader cultural context. Motivation together with a person's knowledge and environment lead to his/her performance. Franco et al called this a combination of "will do" (internal drive) and "can do" (enabling environment) aspects of performance [5]. The consequences of this performance leading to either awards or punishment result in job satisfaction or dissatisfaction respectively and can also subsequently affect motivation [35]. In addition, the framework also shows a direct linkage between job satisfaction and individual and organizational characteristics [20].

The overall objective of the dissertation is to identify determinants of motivation and job satisfaction among primary health workers, including "alternate or non-physician providers", from three distinct settings in Nigeria and India. The specific research questions for each paper are described below:

1.3.2 Research Questions for Paper 1

1. What are primary health workers' perceptions of motivating factors in the work environment in Nasarawa and Ondo states in Nigeria?
2. What are primary health workers' experiences with supervision and leadership practices and perceptions of their motivating effects?

Paper 1 aims to find sources of motivation in the work environment perceived by primary health workers in Nasarawa and Ondo in Nigeria with a particular emphasis on opinions on supervision and leadership practices. While the study focused on organizational structures, processes, resources prevalent at the primary health care level it also aimed to identify differences in perceptions for different types of primary health workers (doctors, nurses, community health officers). Hence, drawing from individual characteristics, including demographic, social and educational background, described in the framework. Health workers included in the study were from two diverse regions of the country i.e. Nasarawa in the north-central typically with lower socio-economic status as compared to Ondo in the south-west. The study also looked for comparisons across these broader cultural and social contexts.

1.3.3 Research Questions for Paper 2

1. How does the introduction of a performance-based financing (PBF) scheme change the perceived motivation of health workers in Wamba district, Nigeria?
2. What are the differences in working experiences and perceptions of motivating factors between health workers participating in a PBF scheme as opposed to those who are not?

The objective of Paper 2 is to understand how health workers' experiences and perceived motivation have changed since the introduction of a PBF scheme in a pilot district in Nigeria. Under this scheme health facilities directly receive financial incentives, every quarter, based on the quantity and quality of services provided by them. They have

autonomy to utilize these funds for operational costs and bonus payments for individual health workers, with a ceiling of 50% for the latter [88]. In addition to monetary incentives, the scheme also initiated a few structural changes both within facilities as well as between facilities, higher authority and the community including more autonomy to health workers, reinforced supervision and greater participation of community leaders in decision-making. Thus, the "PBF package" includes a combination of different organizational structures, processes and resources and is also embedded within the community leadership structures. Moreover, sharing of monetary incentives between health workers provides a glimpse of the existing nature of organizational citizenship behavior and culture.

1.3.4 Research Questions for Paper 3

1. What are the domains of job satisfaction among primary health workers, including physician and non-physician providers, in the state of Chhattisgarh, India?
2. What are the individual and organizational predictors of job satisfaction?
3. What is the association between domains of job satisfaction and health workers' intention to leave?

Paper 3 aims to identify domains of job satisfaction among four different cadres of primary health workers, including both physicians and non-physician providers, in the state of Chhattisgarh in India and further seeks to find individual and organizational predictors of job satisfaction. Thus, it draws from the conceptual framework to categorize job satisfaction domains as content of the job, resources (pay), structures (promotions,

supervision, autonomy), and culture (co-workers). Moreover, it aims to identify differences in these domains by individual characteristics of health workers particularly focusing on the distinction between physician and non-physician providers. It also measures the association between job satisfaction and intention to leave which could subsequently have implications for performance.

It is important to note here that while each dissertation paper is based on this framework, it focuses on only certain components of it rather than in its entirety. It does not aim to find associations between these constructs or the cyclical nature of their relationship with health worker performance.

1.4 Organization of the Document

The rest of this dissertation is organized as follows:

- Chapter 2 describes the study settings and data sources used, including details on sampling and data collection procedures, for each of the three papers

- Chapter 3 explores the motivating factors in the work environment perceived by primary health workers' in Nasarawa and Ondo states in Nigeria (Paper 1)

- Chapter 4 assesses how the introduction of a performance-based financing scheme has changed perceived motivation among primary health workers in the district of Wamba, Nasarawa state in Nigeria (Paper 2)

- Chapter 5 identifies domains and predictors of job satisfaction among four distinct cadres of primary health workers, including physicians and non-physician clinicians, in the state of Chhattisgarh, India (Paper 3)

- Chapter 6 summarizes the findings from each context and draws conclusions and recommendations for them

Main tables and figures for each chapter are presented at the end of the chapter while additional tables and text are in appendices.

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1.6 Tables and Figures for Chapter 1

Figure 1.1 Locke's Motivation Sequence

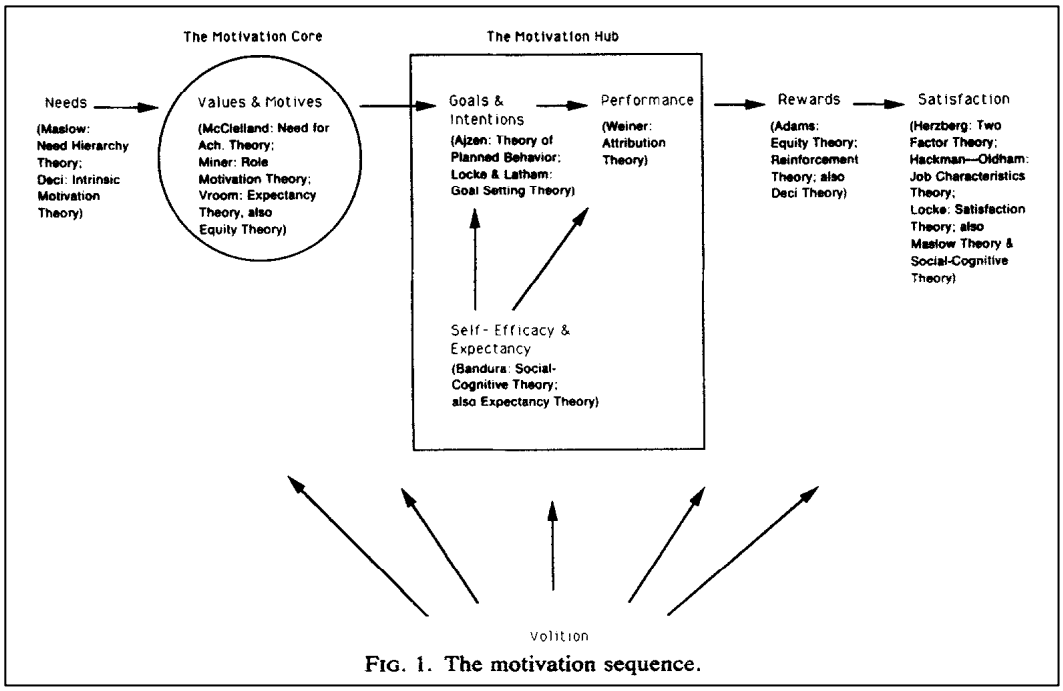
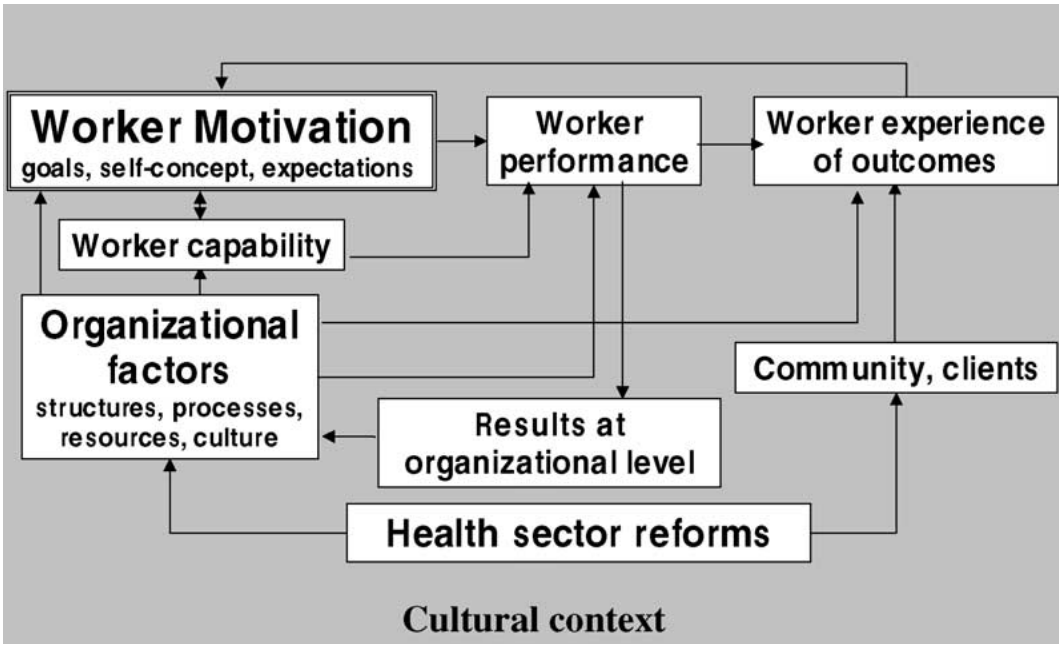


FIG. 1. The motivation sequence.

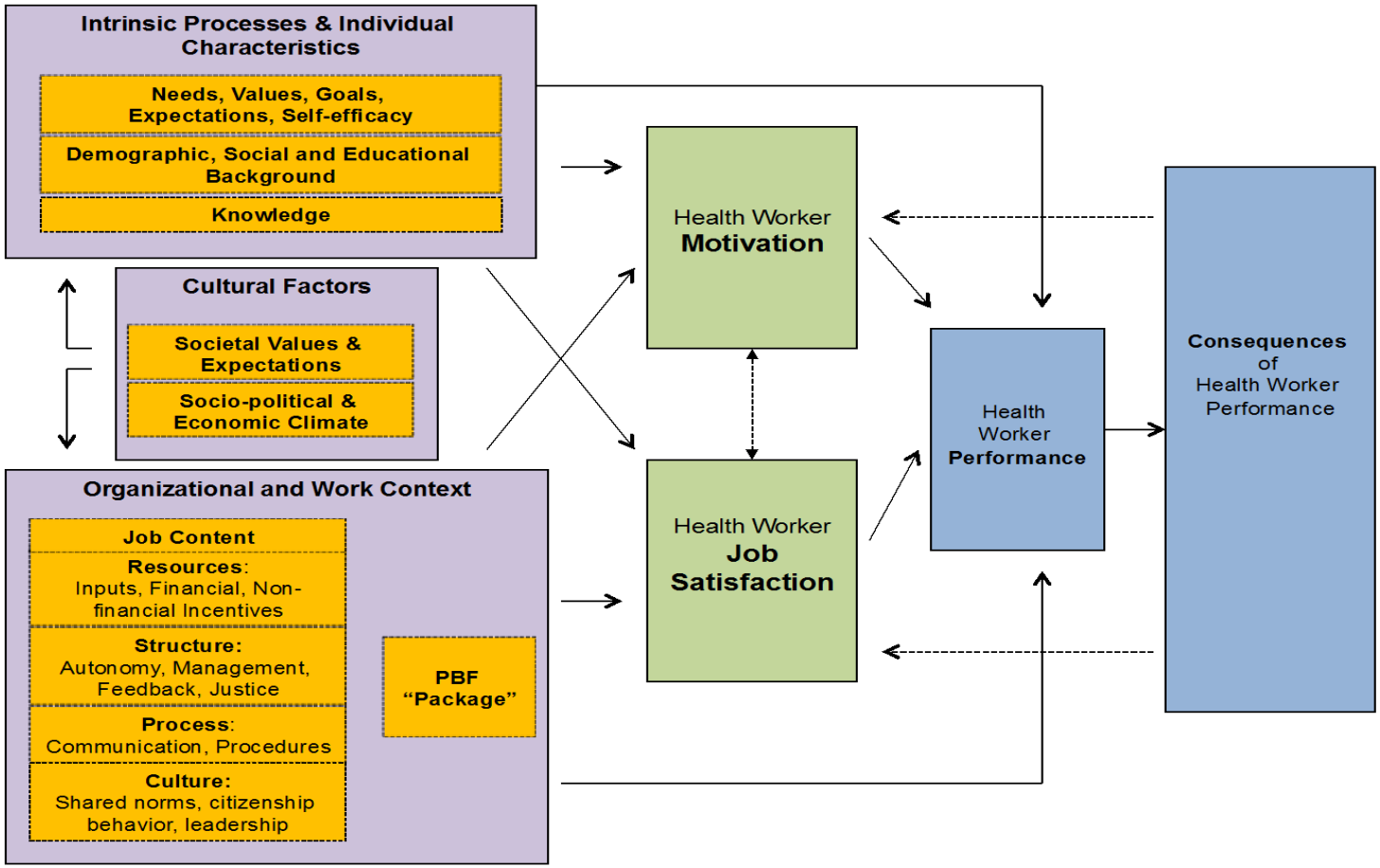
Source: Locke (1991)

Figure 1.2 Franco et al.'s Conceptual Framework for Health Worker Motivation



Source: Franco et al (2002)

Figure 1.3 Conceptual Framework for the Dissertation



Source: Adapted from Locke (1991) and Franco et al (2002)

Chapter 2: Study Setting and Data Sources

This dissertation comprises of three distinct studies conducted in Nigeria and India. The first and second are based in the states of Nasarawa and Ondo in Nigeria, as a part of the same parent project though have different study populations. The third study was conducted in the state of Chhattisgarh in India. This chapter provides background for each setting and specific information on data sources for the same.

2.1 Study Setting: Nigerian Context for Papers 1 and 2

Nigeria is located in western Africa and is the most populous country on the continent with 160 million people [1]. It is comprised of 36 states and the Federal Capital Territory of Abuja. It has about 250 ethnic groups and the population is roughly equally divided between Muslims and Christians. Oil and natural gas production and export are the main sources of revenue for the economy, which has a GDP of $414.5 billion [2]. However, GDP per capita of $1224 and Human Development Index of 0.459 (156th in the world) [1] reflect the unequal and poor socio-economic development of the country.

2.1.1 Overview of the Health System

Nigeria has a large but under-performing health system which has not succeeded in reducing deplorable maternal and child health indicators prevalent in the country [3, 4]. With a maternal mortality ratio of 545 for 100,000 live births and under five child mortality rate, at 157 per 1,000 live births in 2008, Nigeria contributes towards 10 percent of world's maternal deaths and ranks second highest for infant deaths [5].

Furthermore, despite substantial investment in health and total health expenditure of 5 percent of GDP, Nigeria has made limited progress over the last few years. Demographic Health Surveys (DHS) conducted in 2003 and 2008 show that antenatal care coverage fell from 60.1 to 58 percentage over this time period. Similarly, measles vaccination coverage increased only by ten percentage points. In addition, inter-regional and inter-state disparities in health outcomes are also stark with the northern states faring worse off than southern. For example, in the North East and North West zones only 6-8 percentage of children in the age group of 12-23 months are fully vaccinated, as compared to almost 40% in the southern zones [6]. Table 2.1 further describes these variations for other health outcomes and service delivery indicators.

According to a World Bank study conducted in 2005, there were 54 tertiary health care facilities (including 15 teaching hospitals, 8 psychiatric hospitals, and 3 orthopedic hospitals, as well as 27 Federal Medical Centers distributed among the states) operated by the Federal Government and only one private sector tertiary hospital in the country. At the secondary level there were 855 public sector, operated by the state governments, and 2147 privately-owned secondary facilities. Lastly, there were 13,000 public sector primary health care (PHC) facilities under Local Government Authorities and 7,000 private PHC facilities. However, this information is likely to be incomplete and out of date. For example, the National Primary Health Care Development Agency (NPHCDA) has constructed 600 Model Primary Health Centers in the country. Similarly, more private secondary and tertiary hospitals have been established over the last decade.

The health system in Nigeria follows a decentralized governance structure with the Federal Ministry of Health (FMOH) responsible for providing overall stewardship for health policies. The State Ministries of Health (SMOH) and Primary Health Care (PHC) Department at the Local Government (LGA) implement these policies though are not accountable to FMOH for their health care expenditures[1]. In terms of service delivery, the federal, state and local governments are exclusively responsible for tertiary, secondary and primary services respectively. The three levels of the health system function in isolation resulting in poor coordination between primary and first referral services [7]. The National Primary Health Care Development Agency (NPHCDA) was created as a 'parastatal' institution to remedy this imbalance and provide overall guidance for all primary health care activities. However, their reach and influence at the LGA level is still limited. Furthermore, LGAs often suffer from delayed and unequal financial transfers, and are infamous for lack of accountability for the financial resources received [8]. The resulting combination gravely affects service delivery at the primary level as facilities are not equipped with adequate staff and essential drugs and equipment to provide adequate quantity and quality of health services.

Most of the public health expenditures are on salaries of personnel leaving limited resources for drugs, equipment and supervision. A health facility survey conducted in 2001 covering 674 facilities in 202 LGAs (out of 774) found that 40% had less than a quarter of the set of minimum package of equipment. Similarly, 46% of facilities surveyed had less than half of the essential drugs available [9]. A more recent health

[1] Resources from the Federation Account, are shared between levels of government according to an allocation formula. However, this allocation is not done sectorally and states and LGAs are not required to provide budget and expenditure reports to the federal government. As a result, the effective influence that the Federal Ministry of Health (FMOH) may have over primary and secondary health services, and that the State Ministries of Health (SMOHs) may have over primary services is limited.

facility survey conducted in four states found that a dismal state of the infrastructure with two of five facilities sampled having leaky roofs and broken doors and windows. Moreover, less than three-quarters of the facilities had waste disposal, electricity, fridge/icebox or toilets [10].

2.1.2 Overview of the Health Workforce

Nigeria with about 39, 201 doctors, 124, 629 registered nurses 88, 796 midwives, amounting to 30, 100 and 68 health workers per 100,000 population, has more than the average health worker density compared to rest of Sub-Saharan Africa [11]. Moreover, doctor and nurse density as well as doctor-nurse ratio are in line with similar countries in terms of GDP per capita [12]. Other trained medical staff includes dentists, pharmacists, laboratory scientists, physiotherapists, radiographers, health record officers and environmental officers. In addition to these cadres, Nigeria also has a large network of community health workers including distinct cadres of community health officers (CHOs), community health extension workers (CHEWs) and junior community health extension workers (JCHEWs)[2]. Traditional birth attendants and village health workers have been trained in a significant proportion of communities, but most do not receive regular support from the health system [7]. Another characteristic feature of the health workforce in Nigeria is the large number of untrained staff, including attendants, orderlies, guards, who typically constitute more than half the workforce strength in PHC facilities [8].

[2] CHOs, CHEWs and JCHEWs are facility-based health workers who have received a diploma in health technology

There are wide variations in the types of providers found at different levels (Table 2.2). In general, medical doctors are found mostly at the tertiary and secondary levels; with specialist doctors available only in tertiary institutions. Nurses, midwives, pharmacists and laboratory technicians are also positioned at tertiary and secondary facilities. At the primary level, CHOs, CHEWs and JCHEWs are the prominent cadres while doctors, nurses and midwives are available in limited numbers. In this context, CHOs, CHEWs and JCHEWs are actually facility based rather than typical community health workers living and functioning within the community. Each cadre undergoes a different training program and has a different career path. While doctors are scarcely available at the PHC level, nurses, midwives, CHOs and CHEWs, though available, hardly ever meet the required numbers set by the Ward Minimum Health Care Package (WMHCP)[3]. Given different training and skill-set, each type is responsible for providing specific services.

There are large disparities across the geographic zones of the country with the northern states having a lesser density of health workers as compared to the national average and the southern states (Figure 2.1). For example, the Midwifery Service Scheme (MSS) launched in 2008[4], focused more on northern states as compared to southern for meeting the shortage of trained midwives [13]. The governance and political economy of different regions also varies significantly in Nigeria with each state having its own complexities in

[3] Warm Minimum Health Care Package prescribes the following health workers for a primary health center in Nigeria: 1 Community Health Officer, 1 Public Health Nurse, 3 Community Health Extension Workers, 4 Nurse/Midwives. However, based on health facility mapping data from Federal Ministry of Health, these standards have not been met in almost all PHC centers across the country but most definitely in the 6 states covered under this study.
[4] Scheme sought to provide an emergency stopgap to the human resource shortage of skilled birth attendance in the primary health care system by recruiting and positioning midwives, along with essential equipment, in existing primary health centers across the country.

health workforce management [8]. The non-uniform presence of national health programs and donor agencies across the country also bring about a variation in the working environments health workers function within. There are also significant variations in the workload depending upon the type of facility and the geographic regions (including urban versus rural) in the country with the load being typically higher in hospitals in urban settings [7, 11]. There are disparities in the availability of health workers between urban and rural areas as well as public and private sectors. Most specialist doctors are found in private facilities in urban settings.

The attraction of higher salaries in the private sector, particularly in urban areas, as well as in foreign countries, leads to high attrition of the health workforce from primary health facilities; the attrition being higher than from secondary or tertiary institutions [11]. Moreover, a 2003 survey of health staff in five states found that between 10 and 25% expressed the wish to move to another part of the country [7]. Nigeria also suffers from wide-scale migration of health workers, particularly doctors, to Western countries. The World Health Organization, in 2006, reported that about 12% of doctors trained in Nigeria are working in Organization for Economic Co-operation and Development (OECD) countries alone [14].

There are many problems that affect the health workforce, particularly in the public sector. Recruitment for health workers entails complicated processes, including shared responsibility of hiring between the state and local governments. For example, health workers above grade 7 are hired by the state while those below are recruited by the LGA. This has typically resulted in health facilities being staffed with untrained workers such

as health attendants, orderlies, security guards who have close political connections with authorities within the LGA. Remuneration packages for the same cadre and grade of health worker differ by the type of facility, typically being higher for tertiary and secondary. Moreover, salaries levels are generally low, often delayed and force health workers to seek other employment opportunities. Additional incentives for training, higher education, hardship allowances for remote facilities are not provided. Health workers are subjected to poor conditions at the health facilities, including lacking essential equipment to work with, drugs to provide treatment and basic amenities to meet their comforts. Inadequate supervision and weak management practices make the working environment even less favorable [10].

The National Human Resources for Health Strategic Plan (2008-2012) concludes that the current health system and institutional structure is not conducive to maintain a motivated health workforce. It further identifies some of the efforts being made to motivate and retain health workers particularly in rural areas. These include a revised salary scale for health professionals, and preferential treatment (in terms of allowances) for working in the public sector. For improving availability of health workers in rural areas a hardship allowance is also proposed [11].

2.1.3 Overview of Parent Project for Papers 1 and 2

The National Strategic Health Development Plan of Nigeria (2010) focuses on results-based approaches to improve the health system and service delivery [15]. In line with this, FMOH, NPHCDA, governments of three participating states (Adamawa, Nasarawa

and Ondo), and the World Bank launched a results-based financing (RBF) project in 2012. The design of the project includes providing monetary rewards to facilities as well as to local and state governments based on achievement of certain identified indicators. These financial rewards will be used for improving the working condition of health facilities, increasing take-home salary of health workers and reinforcing supervision and management practices by local and state governments.

The RBF scheme has been implemented in three pilot states of the country for a duration of five years – Adamawa in the north-east, Nasarawa in north-central and Ondo in south-west. The RBF project includes the following output-based financing components at two levels in the health system:

(i) Disbursement-linked indicators (DLIs) at the LGA and state levels: LGA Department of Primary Health and State Ministry of Health receive incentive payments based on improvements in specific health service delivery and health outcome indicators as well as in institutional processes such as health management information systems, financial record keeping and the like.

(ii) Performance-based financing (PBF) at the health facility level: Health facilities receive additional financial incentives based on verified quantity and quality of services provided by them. Facilities have autonomy to spend a part of these additional resources on operational costs of the facility (improving structures, procuring drugs and equipment) and the remaining on performance-based bonus payments to their staff, with the latter being capped at 50% of the total revenue received by them. In addition to monetary

incentives, PBF has been designed to bring about structural changes in the organization as well. For example, quality of services provided by facilities is verified by a structured quantitative checklist which would be used by supervisors from the LGA PHC Department. Similarly, health facilities are expected to prepare a "business plan" to set their targets along with strategies to achieve them and meet once a month to review their progress. PBF was initiated in three pilot LGAs one in each of the three project states in the beginning of 2012: Furfore (Adamawa), Wamba (Nasarawa), and Ondo East (Ondo). The scale-up of the project to other LGAs commenced in December 2013 and is being currently carried out in a phased manner.

2.1.4 Data Sources, Role of Student Researcher and Funding for Paper 1

Paper 1 was conducted as a part of a situational analysis of the health workforce in Nasarawa and Ondo states before the launch of the pilot PBF program in July-August 2011. The objective of the study was to identify motivating factors perceived by health workers based in primary health centers and first-referral hospitals as well as to distinguish these factors between different cadres. In addition, it aimed to document experiences of health workers and district-level managers with current supervision practices and leadership. In-depth interviews were conducted with primary health workers drawn from four LGAs: Nasarawa Eggon and Doma in Nasarawa, Ondo East and Akure in Ondo. In addition, structured interviews were conducted with key informants, including officials at the LGA and state governments. Finally, a document review of existing human resource policies and programs, salary structures, and related

government reports was carried out. The detailed sampling approach and data collection methods are described in Chapter 3.

This study was designed and conducted, including carrying out all interviews, by the student researcher for her doctoral dissertation. She was based in Nigeria, at the time, as a research assistant with the Department of International Health, Johns Hopkins School of Public Health (JHSPH) on a project aimed to provide technical assistance to the World Bank and Government of Nigeria on designing the impact evaluation of the parent RBF project. The funding for this study also came from this project. Ethical approval for the study was obtained from the Institutional Review Board at JHSPH.

2.1.5 Data Sources, Role of Student Researcher and Funding for Paper 2

Paper 2 was conducted as a part of an assessment of progress of PBF in the pilot LGAs after being implemented for about 18 months. It aimed to understand perceived changes in motivation experienced by health workers after being a part of the PBF program in the pilot LGA of Wamba, Nasarawa. In-depth interviews were conducted with primary health workers from each facility selected for implementing PBF in Wamba as well as PBF managers at the LGA and state level. In addition, in-depth interviews were also carried out with health workers from an adjoining LGA, Nasarawa Eggon, to identify differences between perceptions of those in the PBF program with those who are not. The study was conducted in August-September 2013. A detailed description of the sampling approach and data collection methods are provided in Chapter 4.

This study was designed by the student researcher for her dissertation. It was conducted in her capacity as a consultant to the World Bank country office in Nigeria and was also sponsored by them. Due to her prior work on the impact evaluation of the PBF project and subsequent familiarity with health facilities/workers in Wamba implementing PBF she did not conduct the interviews herself. Instead, she hired a qualified research assistant, outside of the World Bank network and not known to the study population, and trained him to conduct the interviews. However, she closely monitored the data collection process, holding daily debriefing meetings with the research assistant, and listening to audio recording of interviews on the same day to provide feedback. She conducted the interviews in the adjoining LGA of Nasarawa Eggon herself, which did not have any linkages to the PBF project. Ethical approval for the study was obtained from the Institutional Review Board at JHSPH.

2.2 Study Setting: Indian Context for Paper 3

India is located in South Asia and is the second most populous country in the world with a population of 1.21 billion [16]. With 28 states and 6 union territories, it is a country of wide diversity in socio-cultural, linguistic, religious and ethnic identities. In the past decade, it has achieved great economic prosperity though the gross national income per capita remains far below the global average [17]. Despite having a large public and an even larger private health system, India lags behind in key health service delivery and health outcome indicators. Under five mortality remains high at 61 per 1000 live births

and a maternal mortality ratio of 200 per 100,000 live births suggests that India is still far from achieving the Millennium Development Goals for maternal and child health by next year [17]. It contributes to the highest proportion of communicable diseases worldwide and also has a steadily growing burden of non-communicable diseases [18, 19]. Moreover, there are wide disparities across geographical regions and between urban and rural areas. For example, in 2001-05 infant mortality rates were 50% higher in rural areas as compared to urban [20].

2.2.1 Overview of the Health System

India has a large health system with mixed ownership and several systems of medicine. The public sector, comprising of central and state governments as well as municipal and local bodies, delivers services through a hierarchical structure of health facilities ranging from sub-centers (per 5000 population), primary health centers (per 30,000 population), community health centers (per 100,000 population), district hospitals and specialty/research hospitals [21]. According to the Bulletin of Rural Health, as of March 2012, there were 148,366 sub-centers, 24,049 primary health centers and 4833 community health centers in the country [22]. On the other hand, the private sector consists of "not-for-profit and "for-profit" organizations including super-specialist hospitals, nursing homes, clinics, unqualified allopathic practitioners, trained practitioners of indigenous systems of medicine and traditional health care providers. Although, this heterogeneous sector is mostly unregulated, it provides 80% of all ambulatory care and 50% of in-patient treatment in the country [23].

Latest estimates suggest that India's total health expenditure, as a percentage of GDP was 4.2% [24]. However, this amounted to PPP$132 making it one of the lowest expenditures per capita in the world [25]. Moreover, government funding accounted for only 1.2% of this expenditure. Given only about 10% of Indians are covered under some form of health insurance, majority of health expenditure in India is out-of-pocket [26]. Health is a "state subject" in India implying that the responsibility of administering and financing health sector predominantly lies with state governments and they contribute towards two-thirds of the total public financing. The Central government provides the remaining through national vertical disease control programs as well as integrated health systems initiatives such as the National Rural Health Mission (2005) and National Health Mission (2013).

The National Rural Health Mission (NRHM), launched in 2005, was envisaged to be an 'architectural correction to the health system' [23]. It aimed to incorporate a variety of strategies, including substantial increases in government funding for health, integrating vertical health & family welfare programs, providing a female health activist in each village, de-centralized health planning, strengthening of rural hospitals, providing untied funds to health facilities and mainstreaming traditional medicine systems into the public health system [26]. It covered the entire country, with special focus on 18 states, which have relatively poor infrastructure and demographic indicators. In 2013, scope of NRHM was expanded to urban areas to launch the National Health Mission.

2.2.2 Overview of the Health Workforce

India has a diverse health workforce trained in several systems of medicine. In addition to

allopathic health service providers (doctors, dentists, nurses, midwives, pharmacists, laboratory technicians etc.), India also has physicians trained in Indian systems of medicine - Ayurveda, Yoga, Unani, Sidha and Homeopathy, collectively known as AYUSH. In a few states, new cadres have been introduced to meet state-specific human resource needs. For example, the state of Chhattisgarh has deployed Rural Medical Assistant (RMA) – a cadre trained in allopathic medicine through an "abridged MBBS degree". Finally, India also has an extensive network of community health workers called ASHA – Accredited Social Health Activists – who are trained to provide preventive health services as well as basic primary level curative treatment [27].

Estimates based on the Census (2001) show that India has a combined density of about 11.9 allopathic doctors, nurses and midwifes per 10,000 population though when adjusted for qualification, it falls to one fourth of this number [28]. Moreover, India's health workforce is unevenly distributed across the country and between urban-rural areas as well as public-private sector. For example, the north-central states, typically with lowest socio-economic and health indicators, have the lowest health worker densities. Similarly, a highly disproportionate number (60%) of health workers are based in urban areas while a majority (70%) is employed by the private sector thereby resulting in acute shortages of qualified providers in the rural public sector of the country [22, 28].

The Indian Public Health Standards recommend three Medical Officers at a PHC with at least one being female, along with one AYUSH Officer. However, the existing structures usually have one Medical Officer many of whom are often absent from their positions [22]. While many developing countries have experimented with task shifting specifically by creating alternate cadres of clinicians [29], India's initial attempts to do the same were

not successful. However, with the coming of the NRHM, there was a revitalized effort to address shortages of qualified providers particularly in rural areas. As a result, AYUSH providers were recruited, on a contractual basis, at PHCs second in command to a MBBS doctor, and were allowed to prescribe both AYUSH and allopathic treatment [30, 31]. Similarly, a few states, Chhattisgarh and Assam, invested in creating a new cadre of providers called the Rural Medical Assistant (RMA) with three years of training to serve in rural areas. In Chhattisgarh, RMAs received a degree of Practitioner of Modern and Holistic Medicine at the end of their three-year course work in allopathic medicine followed by a one-year internship focused on rural health. They were subsequently recruited to public sector PHCs as a second officer, though in most cases they were de-facto the main clinical provider.

2.2.3 Overview of Parent Study and Data Sources for Paper 3

This study was conducted as a part of a wider assessment of quality of care provided by different types of primary health providers in the state of Chhattisgarh in India. Chhattisgarh, located in the central part of India, comprises of 18 districts with a population of 25 million people with 41% living below the poverty line [32]. It is a predominantly rural state with low levels of literacy, particularly among females, and is also home to many of the primitive tribes of India. Large areas of the state are currently experiencing armed conflict diminishing basic amenities including transportation and communication facilities, electricity, water supply and skilled human resources. The main objective of this parent study was to compare quality of care provided by four cadres of

providers – Medical Officer, AYUSH Officer, RMA and other paramedical staff - positioned in primary health centers and the main clinicians for it in Chhattisgarh.

This study was conducted in collaboration between the Public Health Foundation of India, National Health Systems Resource Center, and the Chhattisgarh State Health Resource Center and was funded by the World Health Organization. A cross-sectional survey of primary health centers along with their catchment populations was conducted during July-September 2009. Instruments used for data collection included (1) clinical vignettes to assess competence of health workers (2) background information and job satisfaction of health workers (3) exit interviews of patients to assess patient satisfaction and aspects of provider practice during the consultation (4) household survey of catchment population (5) facility assessment to determine structural quality of care. These five questionnaires were translated to Hindi and back translated to validate translation and underwent several rounds of pretesting.

The sampling frame for the study included a listing of PHCs and their staff compiled based on information supplied by the Department of Health and Family Welfare, Chhattisgarh and verified with district level management teams. The list excluded PHCs located in unsafe areas. The listing of 706 PHCs in Chhattisgarh were classified into six groups according to the main clinical provider present – regular Medical Officer (MO) (210), contractual MO (123), AYUSH Officer – consisting mostly of Ayurvedic physicians (169), RMAs (63), Paramedics (53) and Others (88). In a few cases, PHCs had both medical officers and AYUSH providers and were classified as regular MO facilities.

The ‘Paramedics’ group consisted mostly of pharmacists and auxiliary nurse midwives while ‘Others’ comprised of dressers and other support staff. Simple random sampling was used to select a representative sample of 40 PHCs within each group. To validate this classification health workers at the selected PHC were telephonically contacted to verify who provides clinical services.

This sample size was calculated on the basis of the minimum number of PHCs required to detect a 15% difference in mean patient perceived quality scores between two groups with 90% power and a Type-1 error of 5%. Since the parent study aimed to measure differences in quality of care provided by four specific cadres, only PHCs in the regular MO, AYUSH, RMA, and Paramedic group were sampled while those belonging Contractual MO and Others groups were excluded.

Data collection was carried out by a group of 21 interviewers recruited and trained specifically for this survey. They were mostly graduates with degrees in physiotherapy, pharmacy and social work and were fluent in Chhattisgarhi (local dialect). Training of interviewers was conducted over a period of eight days and included both classroom sessions and field training. Data collection was conducted in two phases with the first phase focusing on data on provider competence and job satisfaction. The main clinical care provider in the selected PHC was asked to visit a designated center at a specific date and time. They were interviewed by a team of two on the clinical vignettes and self-administered the form on job satisfaction after giving consent to participate. The interviewed clinical care providers were offered an honorarium, according to government norms, for participating in the study. Patients and households were sampled in the second phase of the study.

2.2.4 Role of Student Researcher for Paper 3

The student researcher was a co-investigator for the parent study in her capacity as a Research Associate at the Public Health Foundation of India. She was directly involved in the designing of the study, developing instruments, training of interviewers, monitoring of data collection, analyzing data and report writing. The study was approved by the Institutional Review Boards at the Public Health Foundation of India and the World Health Organization.

2.3 References for Chapter 2

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2.4 Tables and Figures for Chapter 2

Table 2.1 Disparity in Health Outcomes and Service Delivery across Nigeria

Zone	Infant Mortality Rate	Children Who are Stunted (%)	Children 12-23 Months Fully Vaccinated (%)	Births attended by skilled personnel (%)	Use of Modern Family Planning Methods (%)
North Central	**77**	44	26	43	11
North East	109	49	8	16	4
North West	91	53	6	10	3
South East	95	22	43	82	12
South South	84	31	36	56	16
South West	59	31	43	77	21
National Average	75	41	23	39	10

Source: Nigeria Demographic Health Survey 2008

Table 2.2 Training, Availability and Service Provision by Cadre in Nigeria

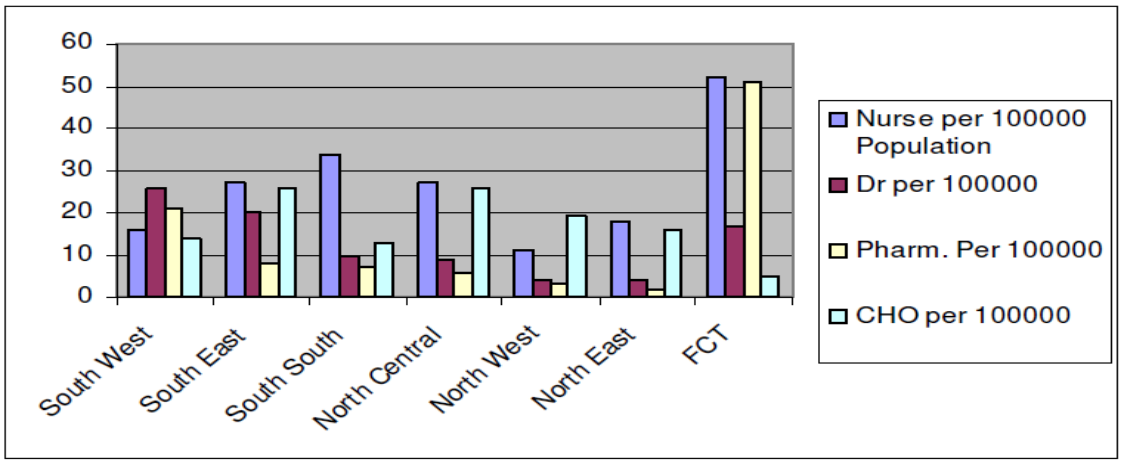
Cadre	Training	Services	Facility Type*
Doctors	MBBS Degree (6 years)	Consultations, deliveries, surgeries	FRH – Yes PHC – Rare
Nurse/midwives	BS Degree (4 years)	Consultations, deliveries	FRH – Yes PHC – Less frequent
Community Health Officers (CHOs)	Diploma (2 years)	Primary outpatient consultations, immunizations	FRH – Yes PHC – Yes
Community Health Extension Workers (CHEWs)	Diploma (3 years)	Primary outpatient consultations, immunizations	FRH – Yes PHC – Yes
Midwives	Diploma	Normal deliveries	FRH – Yes PHC – Less frequent

*FRH=First-referral hospital; PHC=Primary health center

Table 2.3 Comparison of Medical Doctor, AYUSH Provider and RMA

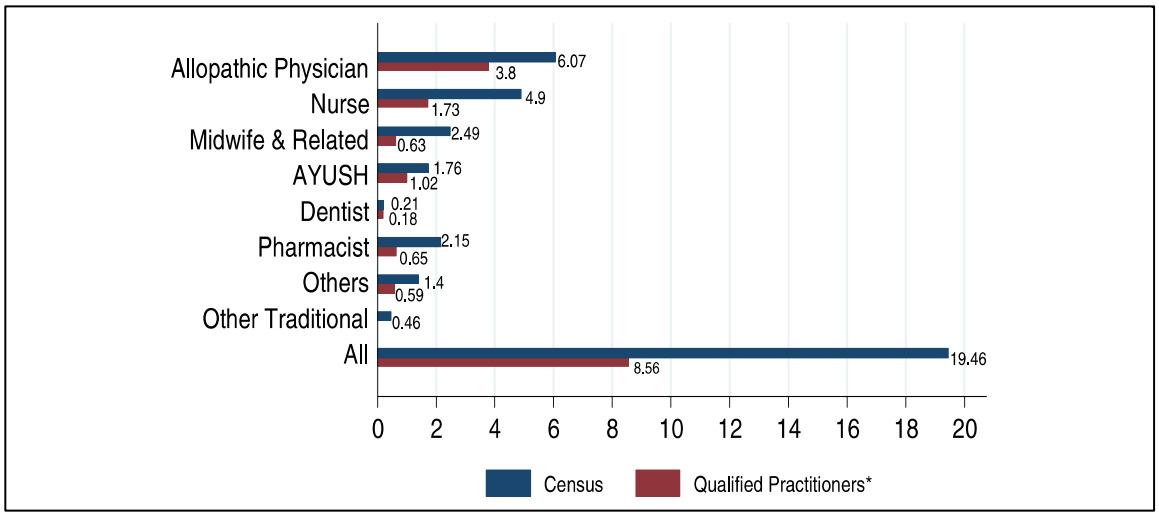
	Medical Doctor	AYUSH Provider	Rural Medical Assistant
First (undergraduate) Degree	MBBS	BAMS (Ayurveda); BUMS (Unani); BSMS (Siddha); BHMS (Homeopathy)	Diploma in Modern and Holistic Medicine
Duration of training	4.5 years course work + 1 year internship	4.5 years course work + 1 year internship	3 years course work + 1 year internship in rural health
Content of training relative to MBBS		BAMS also includes training in allopathic medicine (anatomy, modern physiology and basic pathology)	Same as MBBS but pertaining to primary and secondary health only
Services/procedures allowed relative to medical doctor		• Assist in implementation of all national and state health programs • Provide preventive health care • Dispense allopathic medicines to control communicable diseases and vector and water borne diseases • Provide basic maternal and child health care including deliveries, managing basic complications in pregnancy • Medico-legal cases, post-mortem	• Assist in implementation of all national and state health programs • Provide preventive health care • Provide primary health care services and referral • Provide basic maternal and child health care including deliveries, managing basic complications in pregnancy • Perform simple operative procedures • Not allowed medico-legal cases and post-mortem
Availability	All of India	All of India	Chhattisgarh, Assam
Nature of employment in public sector	Regular or contractual	Contractual	Contractual

Figure 2.1 Zonal Distribution of Health Workers across Nigeria



Source: National Human Resources for Health Strategic Plan, 2008-2012

Figure 2.2 Health Worker Density in India in 2005 (per 10, 000 population)



*Census estimates were adjusted for health worker qualification

Source: Rao KD, Bhatnagar A, Berman P (2012)

Chapter 3: Health Workers' Perceptions of Motivating Factors in the Work Environment in Nasarawa and Ondo States, Nigeria: An Exploratory Qualitative Study (Paper 1)

3.1 Abstract

Background: Current efforts to motivate primary health workers in Nigeria focus attention to extrinsic measures such as better financial incentives. While these are necessary given low and unequal salaries and an expenditure-income mismatch, the role of other organizational determinants have not yet been integrated, on a large scale, in these strategies. The primary aim of this study is to identify these motivating factors at individual and organizational levels, their interactions and effects on the ability and willingness of an individual to achieve their professional goals.

Methods: Exploratory qualitative research was conducted involving in-depth semi-structured interviews with 29 primary health workers, including doctors, nurses, midwives and community health workers in two states in Nigeria - Nasarawa and Ondo. In addition, nine key-informant interviews were conducted with state and district level officials. Interviews were digitally recorded, transcribed and coded. Thematic content analysis was conducted to identify common themes as well as unique narratives from respondents.

Results: Findings show that health workers perceived both intrinsic (self-efficacy, religion, choice of profession) and extrinsic (good working environment including supportive supervision, monetary incentives, recognition, organizational justice) factors to be motivating. Moreover, they considered supervision and leadership from within the facility, provided by the officer in-charge, to be more effective than outside (from the

district health management team). In addition to inadequate remuneration, health workers were dissatisfied by an unequal salary structure.

Conclusions: Policy makers and planners in Nigeria, as well as those in other similar resource-constrained settings, should consider streamlining salary structures, introduce hardship allowances and integrate non-financial extrinsic incentives in strategies to motivate health workers. In addition, officer in-charges of primary health centers, identified as a source of motivation in their role of a supervisor and leader, should receive additional leadership and management training in order to help them balance their role as health providers, supervisors and managers. Further research on understanding how to improve motivation, particularly stemming from vocation and value systems, as played by the role of religion, could enable policy makers to better satisfy the needs of frontline health workers.

3.2 Background

Given the labor-intensive nature of health service delivery, health worker motivation is a critical input for improving health worker performance and health service delivery outcomes. Motivation can be described as the “conscious or unconscious stimulus, incentive or motives for action toward a goal resulting from psychological or social factors, the factors giving the purpose or direction to behavior” [1]. Motivation, specifically in the work context, can be defined as "willingness to exert and maintain an effort to succeed at work, achieve the organization’s goals or to help the team reach its goals" [2, 3]. Furthermore, work motivation is “conditioned to satisfy individual needs” and occurs in a situation “when esteem, feelings of growth and competence are tied to performance” [4, 5]. Thus, work motivation can be understood as a psychological process aimed at achieving both personal and organizational goals, developed amongst workers due to a combination of their personal needs and desires, the organizational context within which they work and the community they are a part of.

In recent years, many studies have contributed to understanding determinants of motivation among different cadres of health workers in low and middle-income countries [2, 6-19]. Reviewing these studies, using Franco et al’s framework of health worker motivation [20], factors of work motivation can be categorized into the following: individual processes including intrinsic and extrinsic sources, organizational/institutional factors and cultural/social dynamics. Many studies have found that health workers are intrinsically motivated for various reasons including their altruistic nature or other individual traits, academic and career aspirations, social and educational history and

exposures, and the desire for respect and recognition [2, 6-8, 16, 21]. These factors influence their choice of profession and desire to serve their community due to a "sense of responsibility". Among these health workers, vocation and professional commitment were found to be strong sentiments [7, 22, 23].

Other studies have argued that salary is one of, if not, the most important pre-requisite for motivating health workers [6, 13, 16]. In most developing countries, low salaries are considered to be the main grievance among health workers resulting in high attrition from the health sector as well as intra and inter country migration [15, 18, 24, 25]. Apart from regular salaries, health workers are dissatisfied due to lack of additional monetary incentives or allowances, especially to cover transportation costs [26]. Low salaries and lack of incentives have found to make health workers consider that they are not being appreciated or valued for their efforts [7, 13].

Nonetheless, a growing body of literature has focused on showing how incentives need not be financial in nature in order to motivate health workers. Providing housing, particularly good housing, has been found to have motivating effects and plays a significant role in shaping their employment preferences especially for remote areas [13, 26-28]. Similarly, further training and continued education opportunities, motivate health workers as it is a way for them to gain more knowledge, improve their skills and hence advance in their careers [8, 19, 26, 27, 29, 30]. Promotions are also important non-financial incentives that instill the confidence in health workers that their performance is being recognized and they are progressing in their professional paths. Other studies have

also found how small incentives such as providing meals or beverages to health workers have had motivating effects [8, 16].

Another set of factors affecting motivation of health workers pertain to performance management and organizational context. Lack of essential medicines and equipment, insufficient staffing, inadequate working conditions including poor amenities and security, and relationship with colleagues and managers have been commonly documented [6-8, 13, 14, 16, 31]. Furthermore, health sector policies and reforms particularly pertaining to promotion, continued medical education and better remuneration also affected work motivation [2, 26]. Organizational justice and commitment have been found to be important organizational determinants for motivating the staff [16, 32]. Supportive supervision, leadership and good management practices have also been reported to have a strong influence in motivating health workers [10, 12, 15, 16, 33, 34].

The existing literature, hence, suggests that while financial incentives, including salaries and allowances, are necessary to motivate health workers, they are unlikely to be sufficient. Studies on health workers in developing countries, particularly sub-Saharan Africa, have shown the importance of non-financial incentives, such as recognition, supervision, better working environment, leadership, for keeping the health workforce motivated [8, 11, 12, 14]. Moreover, there is evidence to illustrate how intrinsic and cultural factors also affect motivation of health worker [2, 31, 35]. In contrast, there is a limited amount of evidence or information on factors affecting work motivation among

primary health workers in Nigeria. Current efforts to motivate primary health workers in Nigeria focus attention to extrinsic measures such as better financial incentives [36]. While these are necessary given low and unequal salaries and an expenditure-income mismatch [25], the role of other organizational determinants have not yet been integrated, on a large scale, in these strategies.

Study objectives:

The primary aim of this study is to identify these motivating factors, at individual and organizational levels, their interactions and effects on the ability and willingness of an individual to achieve their professional goals. In addition, this study also aims to explore, in greater detail, health workers' perceptions and experiences with the nature of supervision and leadership they receive.

***Study setting*:**

This study was conducted in Nasarawa and Ondo states as a part of a larger baseline situational analysis of the health workforce prior to the launch of a performance-based financing scheme in the two states. Nasarawa and Ondo belong to two distinct geo-political regions in Nigeria, north-central and south-west respectively, with wide variations in socio-economic as well as health indicators (Table 3.1) [37]. In addition, Ondo also has a free maternal and child health program and a national insurance scheme in many of its districts [38].

Ward Minimum Health Care Package prescribes the following skilled health workers for a primary health center (PHC) in Nigeria: one Community Health Officer (CHO), one Public Health Nurse, three Community Health Extension Workers (CHEW), and four Nurse/Midwives [43]. Each cadre undergoes a different training program, is responsible for providing specific services and has a distinct career path in the Nigerian civil service [36]. Health facility mapping data indicates that the national standards for human resources for health are not met in almost all PHC centers across the country [44]. Doctors, rarely available at PHCs, are more likely to be positioned at general hospitals and tertiary medical institutions.

3.3 Methods

3.3.1 Research Design

This study used an exploratory qualitative research design to understand sources of motivation among health workers in two states of Nigeria – Nasarawa and Ondo. It entailed in-depth semi-structured interviews with doctors, nurses, community health officers (CHOs) and community health extension workers (CHEWs) at primary health centers (PHCs) and general hospitals, as well as key informant interviews with ministry of health officials.

3.3.2 Respondent Selection

In order to gain a holistic comprehension of health workers' perceptions about motivation, maximal variation sampling [45] was adopted with the aim of including respondents from different cadres and varied working environments. The study was conducted in four local government areas (LGAs) i.e. equivalent to districts. These were selected based on health system performance indicators from official records such as quantity of immunization and antenatal care services and strength of health staff. Thus, from each state, one better and one poor performing LGA were identified. Within a LGA, three facilities were purposively selected based on the following criteria (1) size: comprehensive versus basic (2) location: urban versus remote (3) performance: based on utilization of services available from the existing health management information systems (Appendix 1). In addition, at least one general hospital from each state was also selected.

The initial sampling approach was to interview two health workers from each selected facility, including the officer in-charge (purposively selected) and another health worker randomly selected from the staff roster. However, only one health worker was available in two facilities while the OIC was not available at three selected PHCs. Thus, a total of 29 health workers were interviewed, including 2 doctors, 14 nurse/midwives, 13 CHEWs/CHOs (Appendix 1). Doctors were found only at the two general hospitals visited, one in each state. In addition, nine key informants from different levels of government institutions in the health sector, including LGA, state and federal, were also interviewed.

3.3.3 Data Collection Instruments and Process

In-depth interviews with health workers covered a range of topics including their reasons for joining the profession, understanding of organizational goals of the health system, factors which enabled and deterred them from accomplishing their professional goals, as well as individual and organizational factors that they considered would improve their motivation and performance (Appendix 2). Health workers were also asked about their perceptions of and experiences with supervision and leadership and how it affected their performance. In addition, experiences of officer in-charge (OIC) of selected facilities were also documented. The main objective was to identify their attitudes and behaviors as a leader and their efforts for team building and motivating their subordinates. A semi-structured interview guide was prepared based on research objectives, discussions with the research team and key informants in Nigeria. It was initially pre-tested on two health workers at a PHC in the Federal Capital Territory of Abuja. The interview guide changed marginally to incorporate certain themes that emerged during pre-testing and some of the initial interviews.

Structured qualitative interviews with key informants from the Federal Ministry of Health (FMOH), state hospital management board (HMB), Local Government Area Primary Health Care (LGA PHC) Department and National Primary Health Care Development Agency (NPHCDA) were also carried out to gain further information on contextual factors such as existing health worker remuneration and incentive structures, process of recruitment of health workers for primary health centers, qualifications and training

received by different cadres. Additional contextual information, was also collated from official documents and reports maintained by the federal and state government agencies.

All interviews were conducted by the author, between 15 July and 6 August 2011, one-on-one in a private setting in English and were audio recorded after receiving verbal consent from the respondent. Except for five interviews, which were conducted outside the health facilities (in a coffee shop) as they were closed due to an ongoing strike, all others were carried out within the premises of the facility. In addition, a field manual was maintained to include responses, verbal and facial reactions of respondents, as well as notes on the environment and condition of the health facility. The researcher also kept a journal to record her own reflexivity while conducting interviews and subsequently during analysis of data. Both field manual and reflexive journal contributed to validation of findings. All digital recordings of interviews were transcribed verbatim and checked for quality.

3.3.4 Data Analysis

Thematic content analysis was used to describe data from interviews. To begin with, based on study objectives a priori codes were derived. On reading a sample of transcripts, based partly on grounded theory [46], relevant emergent codes were also identified and a codebook containing both a priori and emergent codes was developed (Appendix 3). A team of researchers validated the codebook following which all transcribed interviews were coded using Atlas.ti. Interview data were further organized and examined for

patterns and variations across geographical areas as well as between different cadres of health workers. Perceptions of OIC about supervising and leading their staff were matched with those of their staff about the OIC's leadership and managerial abilities. Once the data were coded and categorized, analytical notes were written and further codes were generated. Validation of the analysis was achieved by periodic discussions with local collaborators and research team members at JHSPH. Following analyses of data, using principles of Grounded Theory, a literature review of existing theoretical frameworks of work motivation was conducted to further aide analysis and substantiate the study.

3.3.5 Ethical Considerations

The study was approved by the Institutional Review Board at Johns Hopkins School of Public Health. All interviews were conducted in a private setting after taking oral consent from the respondents.

3.4 Results

3.4.1 Characteristics of Respondents

The final sample of respondents (Table 3.2) included 2 doctors, 14 nurse/midwives, 9 Community Health Extension Workers (CHEW) and 4 Community Health Officers/Technicians (CHO). Of the 29 respondents, 21 were women, 16 were from Ondo while the remaining 13 from Nasarawa. Most of the respondents had been in the civil service for duration of 10-20 years and had worked previously within the same state. All, except three, had been working in their respective facility for at least two years. Almost all respondents originally belonged to the state they were working in. However, with the exception of a handful, none of them lived in the same area as the health facility. They commuted either on a daily basis from the main town or worked for a week-long shift at a time.

3.4.2 Perceptions of Motivating Factors in the Work Environment

The following section describes the main findings from the study, found to closely match the theoretical framework by Franco et al. [20], categorizing sources of motivation at the individual, community and organizational level (Table 3.3).

Vocation, self-efficacy, desire to help and service to God:

Most of the respondents wanted to join the health profession from their youth, albeit many were aiming to become a medical doctor but were not successful in getting admission into medical school. They chose this profession given their desire to improve health of the community and to be *'answerable to their god'* for serving humanity. An overwhelming majority of respondents considered the ability to help their people, teach

them better health practices and save lives, particularly those of pregnant women and children, to be a significant motivating factor.

My motivation to stay here is just to enlighten them on what to do and let them know what health is." [CHEW, PHC, Ondo]

Recognition and enhancing knowledge:

Many respondents mentioned being encouraged by recognition received from the community. Those who were non-residents of the communities considered that they were welcomed and treated 'like their own' by its members.

"*The community, I can remember the first place that I worked, they appreciated it. Because when I was going, some of them even, they wanted to go to my employer so that they can retain me back that they don't want me to go.*" [CHEW, PHC, Nasarawa]

A few respondents also described their motivation to improve technical knowledge for future professional gains. They, particularly younger respondents, wanted to learn how to tackle commonly seen diseases, conduct safe deliveries and grow professionally.

"The reason I became a CHO is that I want to improve technically about my work, to be the head of a place like where I am today". [CHO, PHC, Ondo]

Difficult working conditions:

Shortage of staff: According to most respondents, health facilities were inadequately staffed to handle patient load and health problems of their catchment areas. In addition,

lack of doctors at PHCs implied referral of critical patients and complicated deliveries to general hospitals; reportedly creating a feeling of incapability among nurses and CHEWs. Most respondents talked about spillover effects of these shortages in their personal lives, particularly among female health workers "in their job as a woman at home". They had to work harder, often doing continuous shifts without any break, and complained of exhaustion.

"We need more fund, so that the government will be able to recruit more staff, then put the right people in the right position. Where nurses, midwives are supposed to be, should not be where they will be replaced by community health workers because most of the time when patient comes in labor, especially in the middle of the night and there are cases beyond the person on duty, they have to call." [OIC/Nurse, PHC, Ondo]

Lack of essential drugs and equipment: A majority of health workers talked about their frustration with the shortage of drugs, equipment and infrastructure at their health facilities. Irrespective of the state, LGA, cadre of health worker, every health worker interviewed brought up the issue of no or inadequate supply of drugs. They felt they were a "consulting unit" instead of a primary health center as they had to turn away patients without giving them drugs which should ideally be provided free of cost. They also reported to be working without necessary equipment required for safe deliveries, adequate beds to admit patients, reagents to conduct laboratory tests or vehicles for transporting sick patients. They criticized lack of housing amenities provided to them, including unhygienic state of toilets. Their emotions ranged from deep anger with the

government for not providing drugs and equipment to sheer helplessness on turning away their patients.

"There is poor equipment here, plain truth. Because some equipment we use our personal money to buy it to solve our problem. Let's say this one, this sphygmomanometer, I bought it with my own money. Not long ago, it was spoilt. I will still rebuy it because the government does not have it." [CHEW/OIC, PHC, Nasarawa]

Absence of basic amenities: Health workers complained about lack of electricity and water at their facilities. They reported to have conducted deliveries in candle or torch light and asked patients to bring their own water, especially pregnant women for deliveries. Another major source of discontentment amongst them, particularly women, was poor security at the health facilities given most did not have a proper fence or guards. Many found it extremely difficult to reach their place of work due to poor roads and lack of transport options. They also feared for their safety given terrible conditions of the roads and wanted insurance as a part of their salary package.

At night we have just one night guard and being a government worker he will feel that this work is not my father's job or it's not even worth risking my life for. So most of the time, they may not come or when they come, they are also too tired." [Nurse, PHC, Ondo]

Inadequate and unequal remuneration:

In general, respondents were dissatisfied with low and unequal wages as well as lack of any compensatory incentives. They did not think that their incomes matched with the level of work and effort they were putting in. Some health workers believed that they

should receive additional compensation for being posted in rural areas given they were away from their families, working under difficult conditions and risking their personal safety. A couple of them also thought that they should receive an extra allowance as their work exposed them to many dangerous illnesses such as HIV/AIDS, hepatitis etc. A few respondents were agitated by the discordance in base salaries between LGA, state and federal government levels. Even with the same basic training, those working in LGA governed PHCs earned substantially less than their colleagues in state secondary hospitals and federal tertiary hospitals.

"I'm a midwife, I may have my mate in a federal hospital, we did the same midwifery, we started together we qualified the same day, the same certificate, but because they are with the federal, they are taking N100,000 and because I'm in the state, I'm collecting N50,000. Is that fair? You don't expect me to perform much." [Midwife, General Hospital, Nasarawa]

Supervision as a form of incentive:

Health workers reported that external supervision, from the local, state and federal government levels usually consisted of infrequent and brief visits to mostly check health facility records without providing any written feedback on performance. A few also complained that supervisors did not acknowledge their complaints regarding lack of essential supplies. Although many considered supervision to be a form of motivation they seemed to be discontent with their experiences with it. A nurse described a typical description of a supervision visit as follows:

"The data collected for the health center, they normally go through it. If the thing is low, they say 'ahn ahn, this thing is low, improve on it'. If the data is okay, they will say it's okay and that we should keep it up." [Nurse/OIC, PHC, Ondo]

Internal supervision provided by OICs, on the other hand, reportedly was more helpful to health workers for gaining knowledge, correcting mistakes, improving quality of care and boosting confidence.

"*If you are supervised, you get to know the areas you are lacking and next time you will want to do it right. That's motivation*." [Nurse, PHC, Nasarawa]

Discussions with supervisors (including key informant interviews with external supervisors) corroborated perceptions of health workers, to a large extent, that supervision was not usually supportive in nature and insufficient in terms of frequency, structure and feedback. External supervisors complained of lack of resources, particularly transportation support, for being able to effectively supervise. OICs, on the other hand, had better access to health workers for providing supervision but a couple also talked about facing challenges in terms of balancing their responsibilities as a teacher, manager and health provider.

"If we don't go out they relax, they are not motivated then they feel left out. If we want things to improve at the local level, fulcrum is supervision." [Key informant, Nasarawa]

Staff dynamics and effective leadership:

Despite poor working conditions, health workers exhibited a sense of teamwork among their colleagues with most reporting that they had friendly and cordial working relations. They considered themselves to be part of a family, helping each other and working towards achieving the "same goals". They were able to resolve conflicts amicably and often relied on one another to do procedures that they were not confident of doing themselves.

"We work as a team, as you can see now I'm the only community health officer on duty, she is the only nurse on duty, we work together. If I'm seeing an antenatal case, I will say ok my sister, this is an antenatal case, how do we handle it, so you see the working relationship is good." [CHEW, PHC, Nasarawa]

Almost all health workers talked about having a positive experience with their OICs who they considered their leader, a father/mother figure and role model. They looked up to their OIC to solve their problems whether it was dealing with patients, conflicts with colleagues or raising issues and complaints with higher authorities. They also talked about their OICs encouraging them by giving them "small-small" incentives in the forms of occasional meals, transportation allowances or medicines for their own illnesses. They looked for certain traits in their leaders such as the ability to teach, supervise and discipline, build good interpersonal relationships, trouble shoot problems, and be accommodating and patient.

"*It (leadership from OIC) helps me to work better because I wish to be like him. To have the knowledge and even more. You know best experience is the best teacher, I wish to attain the level they are at and even more.*" [CHEW, PHC, Ondo]

3.4.3 Differences across Types of Facilities, States, Geographic Areas and Cadres

On the whole, most respondents appeared to be facing similar difficulties in their work environments regardless of type and performance of facility. However, there were subtle differences in responses across different states. For example, the presence of a medical doctor as the PHC Coordinator at the LGA PHC Departments in Ondo reportedly boosted the confidence of respondents in managing complicated cases and gave them more opportunities to enhance their knowledge. In addition, presence of the National Health Insurance Scheme (NHIS-MDG) for maternal and child health in one of the LGAs in Ondo, which provided capitation payments to health facilities for purchasing drugs, equipment, created a more conducive environment for health workers to treat their patients.

There was also a difference in responses depending upon remoteness of the facility. Health workers positioned in more remote (> one hour from main road) facilities expressed a much stronger desire for housing and transportation support as compared to others. They usually worked at the PHCs on a weekly shift basis and had to live, away from their families, either at the facility itself (using in-patient wards) or were accommodated by someone in the community. Their working conditions were typically

poorer and they dealt with a community which was more likely to be resistant to using services provided by them.

The main differences in responses between doctors, nurses and community health workers related to their capacities to provide services. For example, nurses and midwives having had maximum interactions with pregnant women were encouraged by their abilities to conduct safe deliveries and prevent maternal mortality. CHEWs, on the other hand, were motivated by being able to provide a range of services for various illnesses and wanted to gain additional clinical knowledge, at times aspiring to be nurse-midwives, in order to be able to prosper both academically and financially. Doctors, as supervisors of their LGA/hospitals, had the easiest access to higher levels of government but reported to bear the brunt of its inefficiencies particularly while being the spokesperson for their subordinates.

3.5 Discussion

Results from this study suggest that health workers perceive to be motivated by both intrinsic (self-efficacy, religion, vocation, humanity) and extrinsic (good working environment, monetary incentives, recognition, organizational justice) factors. Moreover, they considered supervision and leadership from within (provided by the OIC) to be more effective than from outside (from the district health management team) of the health facility. In adherence to Herzberg's "two-factor" theory of motivation [47], motivating factors appeared to be different from demotivating ones. Health workers reported to be dissatisfied with a poor working environment, low or unequal salaries and lack of

supervision and support from higher authorities. However, when asked what motivated them they responded by saying it was their desire to serve the community, improve health of their people and save mothers and children from preventable illnesses and adverse conditions.

A limitation of this study was that the research team had made initial contact with potential respondents via the LGA PHC Department. Given this information was narrated to them through higher authorities, it is likely that health workers were cautious about what they said during the interview and perhaps sugar coated some of the challenges that they faced particularly pertaining to supervision and their relations with higher authorities. As this was the only way to reach the health facilities and take appointments with the staff, it could not be avoided. However, discussions with key informants at the LGA, state and federal level, as well as a document review of existing reports by the government and other agencies, confirmed most of these findings. In many cases, health workers insisted on taking the interviewer around the facility to show the poor working conditions. Lack of essential drugs and equipment, inadequate supervision and weak management practices in Nigerian PHCs is also documented in other studies [48]. Key informants from the LGA and state corroborated that supervision was indeed insufficient in terms of frequency, structure and feedback. These supervisors complained of lack of resources, particularly transportation support, for being able to effectively supervise facilities under them. In addition, a couple of respondents, although consented to participate, were clearly uncomfortable to communicate freely. This could have been a combination of language barriers as well as intimidation of a foreign researcher.

Despite the limitations, these findings reiterate the importance of intrinsic needs and values and how they could affect health workers' performance. The sense of vocation, altruism and professionalism expressed by health workers in this study is also documented from other settings [2, 6-8, 16, 22, 23]. Among factors in the work environment, health workers' responses also largely corroborated with those from other low and middle-income countries. While many mentioned inadequate salaries and lack of allowances [6, 13, 15, 16, 18, 24, 25], the most recurring grievance amongst them was the shortage of drugs making them incapable of providing proper treatment to their patients [6-8, 13, 14, 16]. In addition, supervision, particularly one that involved coaching, providing feedback on performance and boosting confidence went a long way in motivating them [10, 33, 34]. Similarly, a sense of belonging to their facility, spirit of teamwork and problem-solving leadership also encouraged them further. Recognition from their supervisors and community also reportedly motivated them [6, 16, 17].

While low salaries were not brought up to a large extent, the fact that there was a disparity either across states or the level of health facilities was a major grievance among health workers, particularly nurse/midwives. In line with equity and organizational justice theories of motivation and related empirical evidence [32, 49-51], this is of crucial importance. The embitterment of not being treated equally by the government was de-motivating. Key informant interviews also confirmed that remuneration packages for the same cadre and grade of health worker differed by the type of facility, typically being higher for tertiary and secondary. According to them, the government had been in the

process of providing equal pay for the same grade of civil servants, however, the mandate was still under review and not observed by all states yet.

Most health workers considered their OIC to be their leader and immediate supervisor and in general were content with the level of support they were receiving. This is an important finding for further improving the management of health centers. Given frontline health workers are indeed looking up to their OICs as their leaders then it is essential that the leadership skills of OICs are further enhanced. At present, however, OICs interviewed had not received any additional leadership or management training either during their degree programs or as a part of in-service training. Most OICs reported challenges of balancing their responsibilities as a teacher, manager and health provider. Furthermore, they were constrained by lack of adequate resources to ensure smooth functioning of their facility and to incentivize their staff. Lastly, the hierarchical structure of the health system did not give them any autonomy to run their facility, making them dependent on higher authorities for both resources and directive for day-to-day running.

Results from this study provide insight into health workers' perceptions of several organizational determinants of motivation and performance, existing at the frontline, which need to be studied further and streamlined into human resource management policies.

- *Designing a combination of financial and non-financial extrinsic incentives*: While it would not be prudent, based on these data, to state that financial incentives or

additional monetary payments would not affect health workers, particularly in a country like Nigeria, this study supports current evidence in emphasizing the importance of non-financial extrinsic factors in motivating health workers. Changes to existing supervision instruments to include performance feedback, additional training opportunities tied to performance (particularly for CHEWs that are not trained in many services), and enhancing community engagement by creating accountability and redressal mechanisms could deepen the appreciation and recognition health workers receive from their supervisors, peers and clients.

- *Making managers better leaders:* As leaders of frontline health workers, OICs and district-level managers require additional training particularly in a resource-constrained environment, to strengthen their capacities to innovate, plan, direct and motivate their staff. Further research on the effects of different styles of leadership on motivation could also influence designing such training programs for managers [52-54].

- *Deeper exploration of role of organizational justice*: While this study captured the narratives of several health workers, further research on causes and implications of 'distributive organizational justice' i.e. variations in salaries needs to be conducted. Of crucial importance is to understand whether this is a phenomenon among specific types of health workers, how is it changing behavior and attitudes of health workers towards their jobs and colleagues, what implications does it have on staffing norms

and what are the interim solutions in the absence of political reforms changing salary structures.

- *Strategies to improve motivation particularly pertaining to vocation and value systems, including religion:* Given most health workers talked about joining the profession to save lives and as a service to God, further research is required to strategize how policy makers could better cater to these intrinsic desires of health workers. In particular, researchers need to identify whether teaching institutions, faith-based organizations and government recruiting agencies could play a role in internalizing and strengthening these values among health workers.

3.6 Conclusion

These findings add to the knowledge base of health worker motivation studies, particularly in Nigeria where such research is scarce. These results are indicative of the importance of intrinsic and non-financial extrinsic factors in motivating health workers. Health planners, policy makers and donor agencies, should take into account these factors, particularly those at the organizational level, while designing strategies to motivate the health workforce. The conclusions of the study also point towards improving the leadership and managerial capacity of officer in-charges of health facilities. OICs with such enhanced skills are likely to motivate health workers by providing better supervision as well as creating a more conducive and supportive environment.

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3.8 Tables and References for Chapter 3

Table 3.1 Description of Study Site

	Nasarawa	Ondo	Nigeria	Source
Population (in millions)	1.9	3.9	160	[39]
% Literate	42	66	51	[40]
% Delivered in a facility	40	56	36	
% Children fully vaccinated	20	47	25	[41]
% Children stunted	35	24	37	
# Public Primary Health Centers	609	460	21,808	[42]
# Doctors	215	250	16, 572	
# Nurse/midwives	1021	1475	121, 243	[25, 36]
# Community health workers	3420	1337	19, 268	

Table 3.2 Characteristics of Respondents

Characteristics of Respondents	N = 29
Sex	
Female	21
Cadre of health worker	
Doctor	2
Nurse/midwives	14
Community Health Officers/Technicians	4
Community Health Extension Workers	9
Local Government Area (District)	
Remote & poor performer, Ondo	8
Peri-urban & better performer, Ondo	8
Remote & poor performer, Nasarawa	5
Peri-urban & better performer, Nasarawa	8
Type of Health Facility	
General Hospital	6
Comprehensive PHC	8
Basic PHC	15
Key Informants	N= 9
LGA PHC Directors	4
Hospital Management Board Directors	2
Ministry of Health Officials	3

Table 3.3 Sources of Perceived Factors of Work Motivation

Level	Motivating Factors	De-motivating Factors
Individual	• Vocation • Desire to improve health • Desire and ability to help community • Service to God • Enhance knowledge	
Community	• Recognition and appreciation from community	• Low utilization of services • Resistance from community
Organizational	• Hardship allowances • "Confidence-building" supervision • Teamwork • "Problem-solving" leadership • Small perks like meals and beverages	• Shortage of drugs and equipment • Poor infrastructure including lack of housing, toilets • Inadequate manpower • Lack of electricity and water • Poor access to health facility • Poor security at work place • Inadequate remuneration • Unequal salary structure

Chapter 4: How has Performance-based Financing Changed Health Workers' Perceived Motivation? Results from a Qualitative Study in Wamba District, Nigeria (Paper 2)

4.1 Abstract

Background: In 2012, Government of Nigeria launched performance-based financing (PBF) in three districts providing financial incentives to health workers based on the quantity and quality of service provision. They were given autonomy to use these funds for operational costs and performance bonuses. This study aims to understand changes in perceived motivation among health workers with the introduction of PBF in Wamba district, Nigeria.

Methods: The study used a qualitative research design to compare perceptions of health workers in facilities receiving PBF payments in the pilot district of Wamba to those that were not. 39 in-depth semi-structured interviews were conducted with health workers from PBF and non-PBF facilities along with program managers of the PBF project. Framework analysis was used to identify patterns and variations in responses. Facility records, including evaluation of health workers for distribution of bonus, were collated and triangulated with qualitative data.

Findings: Health workers receiving PBF payments reported to be 'awakened' by performance bonuses and improved working environments including routine supportive supervision and availability of essential drugs. They recounted being more punctual, hard working, committed and proud of providing better services to their communities. In comparison, health workers in non-PBF facilities complained about the dearth of basic equipment and lack of motivating strategies. However, health workers from both sets of facilities considered there to be a severe shortage of manpower resulting in excessive workload, fatigue and general dissatisfaction.

Conclusion: PBF strategies can succeed in motivating health workers by bringing about a change in incentives and working conditions. However, such programs need to be aligned with human resource reforms including timely recruitment and appropriate distribution to prevent burn out and attrition. As people working on the frontline of constrained health systems, health workers are responsive to improved incentives and working conditions, but need more comprehensive support.

4.2 Background

In recent years, many low and middle-income countries (LMICs) have adopted performance-based financing (PBF) to improve health service delivery and outcomes [1]. PBF is a results-based financing approach where financial incentives are directed to providers, on a fee-for-service basis for specified services, contingent on the quality of services [2]. This change from input-based financing rests on the assumption that provision of performance-based incentives will motivate health workers to 'change behavior significantly and achieve results' and 'translate their knowledge into better practice' [3, 4]. PBF is also considered a solution for the asymmetric principal-agent problem where agents (health workers) lack incentives to perform while principals (employers) do not have any means to hold them accountable [5].

Several theories in organizational psychology support the notion that schemes like PBF can influence motivation of health workers. Maslow's Hierarchy of Needs theory [6] and Herzberg's motivation-hygiene theory [7] would suggest that by providing financial incentives and addressing the issue of low salaries received by health workers in most LMICs [8-12], PBF could indeed have a motivating potential. Moreover, more recent theories, such as Cognitive Evaluation Theory and Self-Determination Theory [13, 14], also imply that PBF could affect specific types of motivation albeit differently. According to them, financial incentives could enhance extrinsic motivation but reduce intrinsic rewards which are in the form of satisfaction from the content of the job itself [13].

While PBF has been found to increase institutional deliveries and preventive patient visits for maternal and child health services [4], as well as improve productivity [15] and quality of care [4, 16, 17] provided by health workers, the overall evidence base of potential impact of PBF on health systems performance in LMIC remains inadequate [18]. Moreover, the effects of PBF on health worker motivation in LMIC have not been systematically evaluated and in the limited studies that have attempted to do so results remain mixed at best [19]. Even fewer studies have attempted to understand the "how and why" of the impact of PBF on motivation [20].

Findings from Rwanda show that health workers found increase in salaries motivating [5, 21, 22]. They also reported that dysfunctional behavior, such as absenteeism, decreased and health workers considered their work to be more appreciated giving them a heightened sense of responsibility [5, 21]. Similarly, a study from Zambia reported that overall satisfaction of health workers was found to be higher in PBF facilities as compared to non-PBF [23]. In Burundi, staff were retained in PBF facilities and those from other areas were found to migrate to them due to attraction of additional incentives [24]. Health workers in Kenya indicated higher satisfaction with increased salary especially since it greatly helped them to provide for their families [25]. They were also motivated by the recognition received from the community and improved working conditions. In addition, a few studies also noted importance of performance feedback or 'coaching' introduced through PBF to have motivating influences on health workers [21, 25, 26].

On the other hand, a study from Afghanistan concluded that pay-for-performance did not affect extrinsic motivation of health workers [16]. Similarly, in other countries health workers were frustrated by irregularities in payment [25, 27-29] and relative amount of incentives as compared to increased workload [27, 30]. Moreover, PBF payments were found to be de-motivating in cases where the distribution was not transparent and perceived to be inequitable [21, 27, 30]. Finally, in Nepal and Democratic Republic of Congo, bonus payments were found to create competition and conflict among health workers [31, 32].

Study Setting: PBF in Nigeria

Nigeria has a large but under-performing health system which has not succeeded in reducing deplorable maternal and child health indicators [33, 34]. With a maternal mortality ratio of 545 for 100,000 live births and under five child mortality rate at 157 per 1,000 live births in 2008 Nigeria contributes towards 10 percent of world's maternal deaths and ranks second highest for infant deaths [35]. Despite substantial investment in health and total health expenditure of 5 percent of GDP, Nigeria has made limited progress over the last few years [36]. In 2012, the Government of Nigeria, financed by the World Bank, initiated a PBF pilot in three local government areas (equivalent to districts), in distinct parts of the county, to address these challenges. Under this scheme, health facilities directly receive financial incentives, every quarter, based on the quantity and quality of services provided by them. They have autonomy to utilize these funds for

operational costs and bonus payments for individual health workers, with a ceiling of 50% for the latter [37].

Study objectives:

The objective of this study is to document the experiences of and understand changes in perceived motivation of health workers since the introduction of PBF. In doing so, it aims to contribute to the empirical evidence on effects of PBF on health worker motivation focusing particularly on how and why these changes took place. The study is based in Wamba, one of the selected districts for piloting PBF, located in Nasarawa state in the north-central geopolitical zone of Nigeria.

4.3 Methods

4.3.1 Research Design

To obtain an in-depth understanding of perceptions of health workers about their working environment and level of motivation, particularly with the introduction of PBF, while working in the primary health care setting in Nigeria, a qualitative research design was adopted, drawing on in-depth, semi-structured interviews with health workers and district managers triangulated with facility records from 11 health facilities that received PBF since the beginning of 2012.

4.3.2 Respondent Selection

The study was based in Wamba and Nasarawa-Eggon Local Government Areas (LGAs) – equivalent of districts. Health workers from all 11 health facilities in Wamba implementing PBF were interviewed. These facilities had been purposively selected for PBF in January 2012 given they were the "most functional health facility" in their respective wards i.e. had at least one clinical health provider, provision of immunization and institutional delivery services, and availability of water and laboratory facilities. In order to understand and compare perceptions of health workers not associated with PBF, health facilities from an adjoining LGA, Nasarawa-Eggon, were also selected. Nasarawa Eggon is one of the better performing LGAs in the state as seen from service delivery data reported by the Health Information Management System (HMIS). Two LGAs share a border and have similar socio-cultural characteristics. A list of most functional facilities, using the same criteria used for PBF facilities in Wamba, was identified using available data and finally eight were visited.

From each facility in Wamba, the officer in-charge (OIC) and another experienced clinical provider were purposively selected, as they were likely to be most engaged with PBF (Appendix 4). A similar approach of interviewing OIC and an experienced provider was planned for Nasarawa-Eggon, however in most facilities only one health worker was available. Hence a total of 12 interviews were conducted till data saturation was achieved. Key informants including LGA primary health care (PHC) coordinators from both LGAs, and state PBF project managers were also interviewed. The LGA PHC coordinator, as a part of PBF, is expected to verify quality of services provided at PBF

facilities using a standardized checklist on a quarterly basis. The sample size was considered adequate given the nature and design of the study [38]. It included all facilities implementing PBF and two most involved health workers from each facility. The key informants were directly engaged in designing, planning, implementing and supervising the program. In addition, 12 health workers from comparable facilities from a similar LGA allowed for an adequate representation of perceptions of health workers in facilities without the program.

4.3.3 Data Collection Instruments and Process

In-depth, face-to-face, interviews using a semi-structured questionnaire were conducted with selected participants (Appendix 5). While a guide was prepared for these interviews, this method allowed respondents to talk freely and bring up different topics and themes [39]. Those in PBF facilities were asked to describe their experiences at work with a focus on changes brought about with introduction of PBF since January 2012. They were probed about perceived changes in their working conditions, own behavior and performance as well as that of their co-workers. Interviews with respondents from non-PBF facilities discussed their environment at work and sources of motivation and frustrations. On the basis of Franco et al's motivational outcome framework, all health workers were asked to describe their level of excitement, pride, commitment, contribution and effort associated with work [40]. Discussions with key informants revolved around their observations regarding changes in motivation and performance of health workers since PBF started, and their perceived assessment of differences between motivation of health workers in PBF and non-PBF health facilities.

Interviews were conducted at the health facilities, between 2 August and 13 September 2013, by a team of two qualified researchers. In addition to digitally recording the interviews, they took field notes and maintained a reflexive diary to note subjectivity in terms of their reflections and actions during the entire process of data collection. This was a useful approach, one commonly followed in qualitative research, and ensured rigor in recording important findings and emerging ideas during the interviews [41]. The team also conducted daily debriefing meetings to share and discuss their experiences and introduce additional themes for subsequent interviews. Researchers collected basic administrative data from each facility including information on attendance from the staff roster and general observation of facility working conditions. Lastly, data from PBF monitoring system on quantity and quality of services provided was also obtained. All audio recordings were transcribed verbatim concurrently and additional notes maintained by researchers were appended to the transcript.

4.3.4 Data Analysis

Data were analyzed using framework analysis (FA) with the aim to identify commonalities and differences in order to find relationships between different parts of data thereby seeking interpretations clustered around themes [41]. FA was developed and has been increasingly used in recent times for healthcare research, as a pragmatic and applied approach, to inform policy and practice [41-44]. Using this approach, five steps of data analysis [45, 46] were followed beginning with listening to audio recordings,

reading and re-reading transcripts, field notes and reflexive diaries to familiarize with data. A codebook was developed a priori based on study objectives but was modified to include emergent themes following an initial review of data (Appendix 6). Both researchers conducted line-by-line coding, using Atlas.ti, for a set of transcripts to gain a holistic understanding of what was said during the interviews. Findings were discussed to merge different codes and create new ones to develop a working analytical framework, which was subsequently applied by indexing remaining transcripts. Data were then charted in an excel matrix by summarizing them from each transcript under a given category. Finally, common and divergent themes were identified and mapped with other related or unrelated categories to look for relationships and explanations. For example, for a health worker reporting improvement in his efforts since PBF was introduced, connections were drawn to his descriptions of changes in staff dynamics, working conditions and additional incentives. At this point, data from the interviews was also triangulated with service provision and quality data obtained from the facility and PBF monitoring system. This enabled researchers to see differences in perceptions of respondents from better performing facilities compared to poor performers. Among health workers, differences in perceptions between OICs and non-OICs were also analyzed.

4.3.5 Ethical Considerations

The study was approved by the Institutional Review Board at Johns Hopkins School of Public Health, USA and the National Health Research Ethics Committee, Nigeria. Each

interview was conducted in a private setting, after taking oral consent, where the respondents could talk openly without the anxiety of their opinions being overheard by their co-workers or supervisors.

4.4 Results

4.4.1 Characteristics of Respondents

A total of 34 health workers from both the PBF and non-PBF LGA, along with five key informants from the district and state government participated in the study. Table 4.1 describes characteristics of the respondents. Most of the health workers had been in the medical profession for at least ten years and belonged to the communities they were posted in. A majority wanted to become health providers to help people and 'save lives'. A few were encouraged by family members to join while some were enamored by health providers, particularly nurses for their neat uniforms, based on personal experiences of being treated by them. Among those in the PBF facilities, in most cases only the officer in-charge had received training on PBF and had disseminated it to his or her staff.

4.4.2 Changes in Working Environment Attributed to PBF

Respondents from PBF facilities talked about experiencing astonishing changes in their working conditions over a period of one year since the introduction of the PBF project. When asked to rank, in their opinion, the most significant change, half of them spoke

about improvements in their physical working conditions, while a majority of the remaining considered increase in utilization of their services to be most crucial (Table 4.2). Routine monitoring data from the project and interviews with respondents also confirm these achievements experienced by health workers.

Improved working environment:

From "having nothing but a dilapidated structure which acted like a consulting unit" they boasted of functional, newly renovated and furnished facilities stocked with all required drugs and essential equipment. In addition, many facilities were also able to construct toilets, waste disposal pits and boreholes. In the case of one particular remote facility, the staff had been able to construct quarters so they could sleep there instead of commuting daily on a difficult terrain. These improvements in their working conditions had a positive influence on their morale and ability to help their communities.

"These changes in fact is giving us great job satisfaction and everybody is trying to see that he puts in his best. Without some of these structures you find out that sometimes you see a patient, [but] you are reluctant" (ID151, CHO/OIC)

Positive Community Response:

According to administrative records, the 11 PBF facilities in Wamba, on average, experienced nearly tripling of patient consultations for outpatient care (Figure 4.1) while institutional deliveries have increased by nearly 30% since the initiation of the project.

"Like before the PBF when we came in a week we use to have only two or three patients but now in a day 10, 15, 20 patients" (ID122, CHEW)

They credited lower cost of treatment, especially free antenatal and delivery, provision of new services, such as family planning and laboratory diagnostics, their efforts to carry out 'social marketing' of their services plus the availability of drugs and better physical condition of their facilities to increased utilization by the community. In addition, they also gave additional incentives to their patients such as baby toys and clothes to pregnant women in order to encourage them to deliver at their facilities.

"The Wamba community has responded to the PBF, if you look at the data for family planning in 2010-2013 there is a big change which means the need was there but there was nobody to respond to that need" (Key Informant 3)

Reinforced supervision and monitoring:

The two most notable changes experienced by respondents regarding external supervision were its frequency and intensity. Supervisors from the LGA PHC Department reportedly visited these facilities on a monthly basis and used a structured checklist to supervise the staff. As a part of the process, supervisors assessed the structural quality components as well as treatment protocols followed by the staff. Given that the scores received on the checklist contributed towards determining the amount of bonus they would receive for the facility, health workers considered this process to be vital to their success in the program. They felt constantly monitored but were happy about the 'supportive' nature of

the newly reinforced supervision and considered the checklist to stimulate them and ensure ‘ that they do what is expected of them’ especially with regard to correct treatment protocol. They also attributed putting in more effort to improve their working conditions, particularly cleaning and disinfecting their facilities, to regular supervision.

"Then they will grade it (checklist) and at the end they will total the points then divide it by there own format which I don’t know then give us the percentage. If we are improving we’ll see it with our eyes, if we are not improving then we will wake up". (ID1101, CHEW/OIC)

However, a few respondents considered the checklist to follow very strict criteria for judging them. This came up usually in reference to the checklist requiring them to have a fence around the facility, dig a waste pit and maintain cold chain systems for vaccine storage – something they considered was beyond their management and should fall under the mandate of the LGA though their complaints were not addressed by the LGA. Discussions with the key informants also revealed that this was indeed a point of contention between a few facilities and the LGA.

“Support cannot come from anywhere, I keep on telling them. Some of them have been building their waste pit and some of them even have refrigerators for themselves. They used a part of their money to buy it so I think gradually they will be able to do it. They are saying they have autonomy so they don’t have anybody to come and doing these services for them. That’s how I am looking at it.” (Key informant 1)

In addition, health workers also talked about being visited by other groups for routine monitoring, particularly those that came from the capital city of Abuja. It was a matter of pride for some of them that officials coming from a far distance were assessing their work. A couple of them also mentioned that their officer in-charges had become stricter in terms of supervising their work internally as she did not want any mistakes which would lead to a low score on the checklist.

"Before PBF it was okay but with PBF, I'm more on their neck because I wouldn't want a situation whereby tomorrow I will be called upon to explain." (ID191, CHEW/OIC)

In addition to routine supervision, one health worker was also conscious of counter verification efforts to be conducted by the state government. She talked about being more careful while treating her patients knowing that they could be part of the project's client satisfaction surveys.

"The workload has increased now because we have to be careful how we relate to the client because there will be a time when they will be assessed to know how were they treated in the facility so we have to take care to treat them ok so that when interview is being asked on them they will give us a positive feedback." (ID171, Nurse/OIC)

Additional bonus payments:

Interestingly, while respondents did not rank performance bonuses as the most significant change brought about by the program every interviewed health worker described the

effect of that change in their work. Most were very happy receiving additional payments on top of their salaries and considered it to boost their morale, bring them joy, and have additional resources to take care of their families. These bonuses reportedly motivated them to work harder and become more punctual.

"If you want more money, work as much as possible, if you don't want money, then you can sit at home…that's how we have been doing" (ID121, CHEW/OIC)

"It motivates us a lot because the money helps us in many ways so most of the staff are putting more efforts and dedication to their duty" (ID1101, CHEW/OIC)

Bonus payments were calculated for individual health workers based on a performance evaluation framework called the indice tool. Each health worker was scored, on a monthly basis, against varied criteria including his/her attendance, punctuality, tasks accomplished, general behavior towards other colleagues. Most health workers seemed to be content with the evaluation criteria and amount they received relative to both their own inputs as well as their co-workers albeit the sharing of bonus introduced a sense of healthy competition among them.

"Everybody knows his indice and what is expected. This thing is based on your work and performance, you could be a senior staff but a junior staff can earn higher than the senior ones because of the extra duties they perform" (ID161, Midwife/OIC)

"...when one is given more than one he will know that person worked more than him so he will also put in more effort next time" (ID1101, CHEW/OIC)

However, respondents from a high performing facility thought the bonuses were not adequate given the amount of additional work they were putting in. One of them also felt that it was 'nothing to write home about' as compared to her salary. The program manager at the state level also informed about a recent raise in salary structures of some cadres making the share of bonus payments relatively lower. A couple of respondents, both officer in-charges, thought the indice tool was not favorable to junior and non-clinical staff and feared that they might quit or not work as effectively. The general opinion among them seemed to be that given everyone is working together to maximize payments for the facility, they should benefit equally. There was an exception to this response, who thought his performance was superior to others but was not reflected in the distribution of bonus payments.

Changes in staff dynamics:

The PBF project brought about other changes in staff dynamics as well. All health workers interviewed mentioned having cordial relations with their colleagues where they 'worked in harmony' and 'were part of the same family'. Most also seemed to be of the opinion that the project had brought them closer and made them a more effective team. They attributed various reasons for this including more frequent team meetings, at least once a month as mandated by the project, where they strategize together how to improve quantity and quality of their services. A couple of them were also more conscious of

being a team player since the indice tool assessed them on that criterion. Driven by the common objective of maximizing their earnings they joined hands to ease each other's burden of work.

"Now even though we know that everybody has his own section but if you are less busy and there is work in another section, we work together, so we work as a team now than before" (ID151, CHO/OIC)

Another reason for the increased cohesiveness narrated by a few health workers was the fact that they now had a central bank account for the facility and every transaction was duly reported. This prevented the prior practice of some workers, usually officer in-charges, keeping earnings from sale of drugs for themselves.

"(Before) we do our treatment the money goes to our OIC, the OIC will pocket the money quietly, the subordinate will just be there like machine working for the OIC, but the coming of the PBF that one is cancelled. Whatever is got its for the clinic and its for all of us" (ID142, Lab technologist)

Improvement in quality of services and knowledge:

A few health workers attributed better availability of drugs, equipment, particularly for the laboratory, job aides and standard treatment guidelines, made possible with the introduction of PBF, to help them improve the quality of their services. The supervision

checklist also graded them on aspects of technical quality such as their knowledge of symptoms and treatment protocols for common ailments hence 'keeping them on their toes'. Many talked about learning something new from these experiences whether it was to reduce the excessive prescription of antibiotics, treat malaria with ACT and not chloroquine or use correct methods for disposing medical waste.

"Before there was too much use of antibiotics, we were not doing lab investigation but now we don't treat a patient without a lab investigation, and the drugs too we were purchasing the drugs from the approved pharmacy but before we were buying it from any pharmacy" (ID151, CHO/OIC)

Relations with local/state government and enhanced autonomy:

A few OICs also talked about having greater autonomy than before whereby they don't have to wait for the local government to purchase drugs for them or repair their facilities. They could decide, in consultation with their communities, how to spend PBF funds to further improve their facilities.

"PBF made us autonomous, yes, we don't depend on the local government and what is coming to us the local government has nothing to do with it. It is only the clinic and then the community because we manage the clinic with it and provide things that will help the community." (ID151, CHO/OIC)

However, as mentioned above there were still a few facilities that relied on the local government to help them with major construction work or provide for their electricity and water demands. They also depended on the state government to hire additional staff. However, in the meantime some of these facilities hired voluntary workers, both clinical and non-clinical, out of their PBF payments in order to manage facility needs on their own.

***Increase in workload**:*

Almost all health workers talked about experiencing a much heavier workload than before. Firstly, their facilities had been upgraded to provide services for 24 hours every day of the week, making them rotate in shifts. However, with only two or three clinical staff in a facility, they had to each put in longer hours and were displeased about having to sacrifice their family time. Improved facility conditions along with concerted efforts to conduct outreach campaigns and lower or no cost of treatment, resulted in significantly higher patient volumes. A program manager at the LGA level described the increase in workload as follows:

"The workload has increased because now they have to fight out for patients, to look for patients themselves because they know there is monetary incentive attached to it. Before they will just sit down if patients come they will attend to them, if they don't come they will not attend to them so they had nothing to lose. But now they are losing money if they don't get patients." (Key informant 1)

In addition to treating increased number of patients, they felt overwhelmed by the amount of record keeping they were expected to do. While they understood the importance of maintaining patient records, and some even appreciated gaining these additional skills, the tedious nature of the work coupled by the fact that they didn't have extra hands to help out made it strenuous.

"The workload is multiplied not even increased, it's multiplied. Honestly you discover that some of these registers are very very very technical and voluminous, it's not even one, you discover that we have about fifteen registers, you fill this, you fill that and at the end of the day you become exhausted. More so that we don't have enough staff to maybe share responsibility around, you discover that only two, three are been loaded with this, in fact there are added responsibility with the introduction of PBF." (ID191, CHEW/OIC)

Other challenges:

The most recurring and frustrating challenge reportedly faced by health workers was critical shortage of trained staff. Health workers complained about exhaustion, lack of time for personal commitments and inability to provide quality services to their patients. Key informant interviews with project managers at the state and LGA levels also corroborated this scarcity and explained a politically driven embargo on recruitment exercised by the ruling government to be the main reason behind it.

"We are only about 2 or 3 trained staff here, so we cannot even run shifts, sometimes we come in the morning and you will have to work throughout and sometimes you get tired that you cannot even perform again". (ID191, CHEW/OIC)

Another issue discussed by several respondents was the paucity of space followed by beds in their facilities resulting often in a shared ward for both male and female patients. Lack of electricity also seemed to be a problem for many facilities, despite having funds to buy and fuel generators, particularly for maintaining cold chain systems. A couple of health workers felt that they could still use additional basic equipment while a couple others wanted to create advanced facilities such as having a blood bank or computers for data recording. Health workers, especially from the three most remote facilities, described their challenges with the difficult terrain, lack of mobile phone signals and vehicle for referral of patients.

"On several occasions if I refer a patient, I will be moving up and down looking for a machine, use my money to pay because I want that person to survive" (ID161, Midwife/OIC)

While discussing challenges unique to the PBF project, the most common complaint was the delay in receiving payments. They had experienced a long lag, of almost a year, between the first two payments. This particularly affected voluntary staff whose only source of income was from these funds. Secondly, prices at which the PBF project purchased services from facilities had been lowered in the second year due to changes in

project design. This also caused a great amount of dissatisfaction among many respondents as it directly resulted in a reduction of their individual bonuses.

"Let it not kill the morale of the staff to the program, I think let them revert to the old (prices)" (ID141, CHEW/OIC)

A few respondents also wanted more training on PBF as well as potential support to further their medical education. A couple of respondents wanted demand-side incentives to be given to the community as well as specific members of the community who participated in their monthly committee meetings.

4.4.3 Changes in Perceived Motivation since Introduction of PBF

All respondents were asked a set of direct questions pertaining to motivation, its definition, determinants and outcomes. All except one respondent referred to motivation as an extrinsic force – something that was *given* to them, whether it was money, gifts, recognition, appreciation, or training to “encourage them to work harder”, “push them to put in their best”, "make them happy or feel recognized”. On the contrary, when asked to describe what motivates them many brought up intrinsic factors such as desire to save lives and help people out of altruism or perform their duty towards their community and God. In addition, a few also gave examples depicting self-efficacy or sense of achievement in one’s own ability to also be motivating.

When questioned what about the PBF project motivated them, the most recurring answer was the additional bonus followed closely by improvements in working conditions and increased utilization of services by patients. A few exceptional cases also talked about having increased responsibility, better working relations with their colleagues and desire to learn more.

"PBF has given me a wider responsibility, I'm not just restricted to my own facility alone, there are some issues that may be at other facilities that if they do not understand they will come to me and we rub minds together to find solutions" (ID171, Nurse)

Health workers were asked to describe changes in their excitement, pride, commitment, contributions and effort levels since the introduction of PBF (Table 4.3). Most responded by saying they had become more excited to come to work knowing that they had a good working environment and high patient turnover. They had been 'awakened' by PBF and many reportedly had become more punctual about coming to work and conscientious about 'what was expected of them'. This was resonated in responses of health workers about their colleagues as well and could also be seen in the attendance register for staff maintained at the facilities.

"I was very lazy, if I came (to work) I will just stand, if patients come I will say you come and see the patient but with the PBF now I use to see patients myself" (ID122, CHEW)

Health workers were reportedly honored on receiving recognition and respect not only from their communities but also globally. They 'felt large' working in the biggest or neatest or best-equipped facility in their communities. They were also proud of their own personal accomplishments and of gaining more knowledge as compared to their colleagues in non-PBF facilities.

"The pride I have is because we are known, I can say all over the world because of this PBF, in the internet you get the name of our community" (ID151, CHO/OIC)

Respondents considered that they had contributed substantial time and effort in to their work often at the expense of their personal lives. A couple also spoke about using their personal money for further improvements in the facility. They found themselves to be committed to their work, giving up other personal and professional duties, to ensure the success of PBF in their facilities. A few referred to missing weekly church or a relative's funeral or rejoining work after only a couple of weeks post childbirth as examples of strengthened commitment to their work.

"When you look at our performance index you discover that this clinic, both in quantity and quality, we are getting about 70-80 percent, so I felt PHC XXX (name disclosed) is one the facilities picked as the PBF program and since we are succeeding, I will count myself as one of the contributors" (ID191, CHEW/OIC)

In general, all respondents suggested that their colleagues were as committed to and proud of the work as them. They considered that they were also putting in longer hours, not sitting idle and working harder to ensure better patient care and were doing so happily without complaining and with willingness to learn more. However, there were some health workers who narrated instances of frustration displayed by their co-workers who were unhappy about increased workload and making sacrifices of their family time.

"If they are not proud of their work they will not sit down here and work overtime, if not they would have strictly been observing their closing time, when it is time they will just leave but when some enjoys his work he will stay and do the work up till 12 hours" (ID112, JCHEW)

Project managers at the LGA and state levels also believed that there was indeed a change in the behavior and attitudes of health workers. They attributed this change mainly to receiving individual bonus payments, additional funds to maintain their facilities, better supervision and in-house training. One of them also considered leadership exhibited by the OIC to improve teamwork and individual efforts, while another suggested improved management to 'make the most of the human resources at its disposal'. When asked to rank PBF facilities, in their opinion, by the staff's motivation level, the usual response matched the order of overall performance of the health facility according to administrative records.

"(Before) if a health worker was supposed to work from morning to 2pm he will leave earlier because he knows there was no regular supervision, and secondly he will know that there will be no incentive coming to him but when the PBF came in, the criteria is outlined for everybody that now this is competition" (Key Informant 2)

4.4.4 Experiences of Health Workers at Non-PBF Facilities: Key Differences

The main differences in working conditions, as described in Table 4.2, highlighted by health workers from non-PBF facilities included lack of basic equipment, particularly for conducting deliveries and laboratory investigations, essential drugs and physical infrastructure. While a few facilities mentioned having a drug revolving fund, initially supported by the local government, most did not. They usually prescribed drugs to patients who were expected to buy them from local vendors. They considered this inability to provide cheaper treatment a reason for low utilization of their services. They were disappointed with the support from the LGA for improving their working conditions but were aware that the LGA also lacked financial resources to help them. While a few health workers talked about being satisfied by their salaries, most did not feel that they were 'being given motivation in terms of money'. In one particular health facility, the OIC had devised a system of sharing any surplus left from the drug revolving fund equally to her staff to motivate them.

Health workers in non-PBF facilities reported to have cordial relationships with their co-workers whereby they supported each other and resolved their differences in an amicable

way. Lack of punctuality was often cited as the cause for friction. They received supervision, either on a monthly or quarterly basis, from different agencies such as the local government, state-led disease specific programs and non-government organizations. A couple of them mentioned the use of a checklist, however, these references were for disease-specific supervision activities. Respondents seemed content with the supervision they received though they did not mention any motivating effects. Similar to their colleagues in PBF facilities, these health workers also unanimously complained about the dearth of skilled providers in their facilities preventing them from running shifts and dealing with the patient load.

4.5 Discussion

This study aimed at understanding how and why health workers' perceived motivation changed as a result of participating in a PBF scheme. Health workers receiving PBF payments reported to be 'awakened' by performance bonuses and improved working environments including routine supportive supervision, using an integrated checklist, and availability of essential drugs. They recounted being more punctual, hard working, committed and proud of providing better services to their communities and being recognized for it. Supervisors of the PBF project also considered a change in the attitudes of these health workers who, in their opinions, had become more self-sufficient and diligent. In comparison, health workers in non-PBF facilities complained about the dearth of basic drugs and equipment and lack of motivating strategies or additional allowances. While they received regular supervision from different agencies they did not mention its influence on their motivation. However, health workers from both sets of facilities considered there to be a severe shortage of manpower resulting in excessive workload, fatigue and general dissatisfaction.

In line with existing theories and empirical evidence, the "PBF package" indeed appeared to improve perceived extrinsic motivation of health workers in Wamba, Nigeria [13, 21, 22, 25, 26, 47]. However, it is essential to note that it was not only individual bonus payments but also improved working conditions, including a more cohesive team, opportunities to enhance skills, reinforced supervision, resulting in performance-based scores, and recognition from the community led health workers to reportedly work harder and qualitatively better. This is befitting given the role of such non-financial incentives

has been found to be significant in motivating health workers in Nigeria [48]. This also supports the notion that design of PBF is crucial and depends on a number of complementing factors [3]. A key distinction in responses between health workers in PBF and non-PBF facilities, despite the latter reportedly receiving regular supervision was the fact that supervision in PBF facilities resulted in performance feedback tied to incentives. This 'carrot' and 'stick' approach in supervision led to more conscientious behavior on part of health workers. Rigorous quantitative methods can be used to further develop and test hypothesis about the impact of the *incentives* versus other (resources/supervision) effects of the PBF package on motivation of health workers.

The role of PBF in diminishing intrinsic motivation has been debated extensively [49]. Findings from Rwanda also support this debate by suggesting that PBF led to 'gaming' i.e. encouraged health workers to forge data to show enhanced performance in order to claim higher incentives [5]. While this relationship is difficult to measure and this study did not directly intend to, none of the respondents, including PBF managers, talked about this behavior amongst their colleagues. On the contrary, several narratives by health workers described improved working condition, attributed to PBF, to enhance their abilities to treat people thereby satisfying their aspirations of saving lives and achieving goals that drove them to their profession in the first place. Similarly, a few others also talked about the influence of this project in improving their knowledge and self-efficacy. However, these findings, although corroborating with those from Burundi [26] and Tanzania [50], need to be further investigated, under experimental settings, in order to understand the influence of PBF on intrinsic motivation.

A study on coping strategies of health workers from Nigeria shows that, despite having higher salaries as compared to other public civil servants, health workers faced substantial income-expenditure mismatch resulting in them 'illegally' selling drugs and medical equipment [12]. While receiving financial incentives motivated health workers, a few considered the absolute bonus amount to be small relative to their salaries and efforts. In light of the fact, as mentioned by a few respondents, that the PBF program reportedly replaced the practice of health workers opportunistically selling drugs to patients and keeping the money for themselves, one can question whether these bonus payments are adequately making up for their previous coping strategies. A key informant also considered this to be a concern particularly for senior staff, whose salaries had recently been increased, as they were relinquishing additional income of selling drugs on their own. Program designers and managers need to monitor distribution of individual bonus payments closely in order to prevent health workers from losing interest or 'gaming'. In addition, size of the incentive required to bring about the desired change in behavior needs to be studied in greater detail [3].

Health workers perceived changes in the sense of belonging to their respective health facility, recognition they received for being a part of it and pride in its overall improvement. They also thought working relationships with their co-workers had become stronger and more energetic with the common goal of maximizing bonus payments both for themselves but also their facilities. In addition, a majority also considered the distribution of bonus to be fair relative to their position and amount of effort. These are important findings, particularly while viewing them from a lens of organizational

citizenship and organizational justice concepts. These organizational determinants have found to be linked with improved job satisfaction of health workers and overall organizational effectiveness [51, 52]. In addition, a few studies have also established a positive relationship between performance-based payments and organizational citizenship although they are mostly for other fields and developed countries [53]. As PBF in Nigeria scales up to other settings, further research on such issues could provide a deeper understanding of these organizational dynamics.

While results-based financing approaches, particularly PBF, have been launched in almost 30 low and middle-income countries, only a handful of studies have aimed to examine how and why such paradigm changes are affecting health workers' motivation and performance. This study aimed to bridge this gap and provide insights in to health workers' experiences with and perceptions of PBF schemes in Nigeria. Moreover, by comparing perceptions of health workers from non-PBF facilities the study also identified differences and similarities in challenges experienced, on the whole, in the Nigerian health system. Triangulation of responses by health workers, their colleagues and program managers along with facility records and other administrative data allowed for a more holistic understanding of perceived changes expressed by respondents. This was particularly crucial for understanding how health workers defined motivation and what they found to be motivating. Having said that, the study could only conclude about reactions on perceived motivation and hence needs to take into account for subjectivity in responses.

Another limitation of the study is that it is based in only one out of the three pilot PBF districts. While the selected district is the average performer of the three, it excludes perceptions of health workers from the extreme ends of the spectrum. Also, given the other two districts are from distinct socio-political regions, the study could be missing certain cultural and political aspects related to PBF and its influence over health workers' motivation. However, monetary and time constraints, along with security conditions in certain parts of the country, did not allow for a larger study sample. A final limitation of the study is that respondents were contacted through the LGA PHC department as this was the official and only way to reach them. Moreover, respondents were also aware that they were participating in an analytical study under the PBF project funded by the World Bank. Hence, potential of social desirability bias in their responses cannot be completely ruled out. However, wherever possible, responses were triangulated with interviews by other co-workers and managers as well as administrative data to counteract this possible bias.

4.6 Conclusion

PBF strategies can be successful in motivating health workers by bringing about a change in incentive schemes as well as working conditions. In addition, changes in intensity and nature of supervision as well as staff dynamics, brought about by PBF, also contribute towards encouraging health workers to put in their best efforts. However, such programs need to be aligned with human resource reforms including timely recruitment and appropriate distribution of health workers in order to prevent burn out and attrition. The

statewide embargo on recruitment of health workers in Nasarawa resulting in staff vacancies, skewed distribution amongst the active workforce and abrupt changes in government salary structures could pose to be potential pitfalls.

Given most health workers in PBF facilities complained about excessive workload, PBF planners need to be mindful of the "double-bind" phenomenon in which time taken for record keeping could conflict with attending to patients [49]. In the absence of new recruitment, program managers could provide additional trainings to health workers, particularly non-officer in-charges, to manage record keeping more efficiently.

Based on lessons learnt from other settings [28, 30], planners and policy makers in Nigeria need to be cognizant about effects of delays in payment and inconsistent design of PBF on health worker motivation and performance. Most health workers were dismayed by the reduction in their bonus amounts due to an unexpected, mid-point change of prices of their services as well as agitated by the long intervals between their quarterly payments. Although the study was conducted during the pilot phase where the project was under review, as PBF scales-up to other parts of Nigeria, policy makers should be coherent about its design and timely implementation. As people working on the frontline of constrained health systems, health workers are responsive to improved incentives and working conditions, but need more comprehensive and consistent support.

4.7 References for Chapter 4

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4.8 Tables and Figures for Chapter 4

Table 4.1 Characteristics of Respondents

Characteristic	Number (Total =39)
Sex	
Female	22
Male	17
Age (in years)	
Mean (SD)	44 (8)
Respondent from	
PBF facility	22
Non-PBF facility	12
LGA/State government	5
Characteristic	**Number (Total =34)**
Health worker cadre	
Nurse/Midwife	10
Community Health Officer	4
Community Health Extension Worker	14
Junior Community Health Extension Worker	3
Laboratory Technician	3
Health worker designation	
Officer in-charge (OIC)	15
Non-OIC, permanent clinical staff	18
Non-OIC, voluntary clinical staff	1

Table 4.2 Differences in Perceptions of Working Environment between PBF and Non-PBF Facilities

Thematic Areas	Examples from PBF	Non-PBF
Structural environment: Drugs, equipment and infrastructure	"Even when a patient comes, even when it is an emergency you just admit him and you will be running up and down looking for drugs but now we have enough drugs with the coming of this PBF" (ID111, CHEW/OIC) "We have all the equipment that primary health care is suppose to have" (ID131, CHO/OIC) "Before it was only one consultation room, one store but now see we have one, two, three consultation rooms and a lab so we constructed these with the help of the PBF" (ID122, CHEW)	"The little one that we have here we use to give them, the others we don't have we use to write for them to go and buy. We tell them that after they buy the drugs they should come show us and if it is the right one they will continue with it and if its fake one we use to still write the correct one for them" (ID271, CHEW) "If an adult enters here most of them they want to take their BP and then you will lack what to do, you will just look stupid like that" (ID221, CHEW/OIC) "We have a borehole but it is spoilt so when we tell them (LGA) to come and repair they don't. Just last week we tasked ourselves (contributed personal money) and repaired it so it is now manageable" (ID231, Nurse/OIC)
Salaries and financial incentives	"Whenever the money (bonus) comes there is so much joy, you would even think they not receiving salaries because of the joy that comes with it" (ID182, Lab technologist) "That (bonus) really helped me to take care of my family" (ID1112, Nurse)	"It (salary) doesn't come on time and it's not even enough though money can never be enough for human being but this one is too small." (ID242, Nurse) "Well, I can say it (salary) is motivating because before we were taking just chicken change but now they have decided to increase the salary, its not really the real figure but compared to what we were given before to now, its better" (ID212, Nurse)

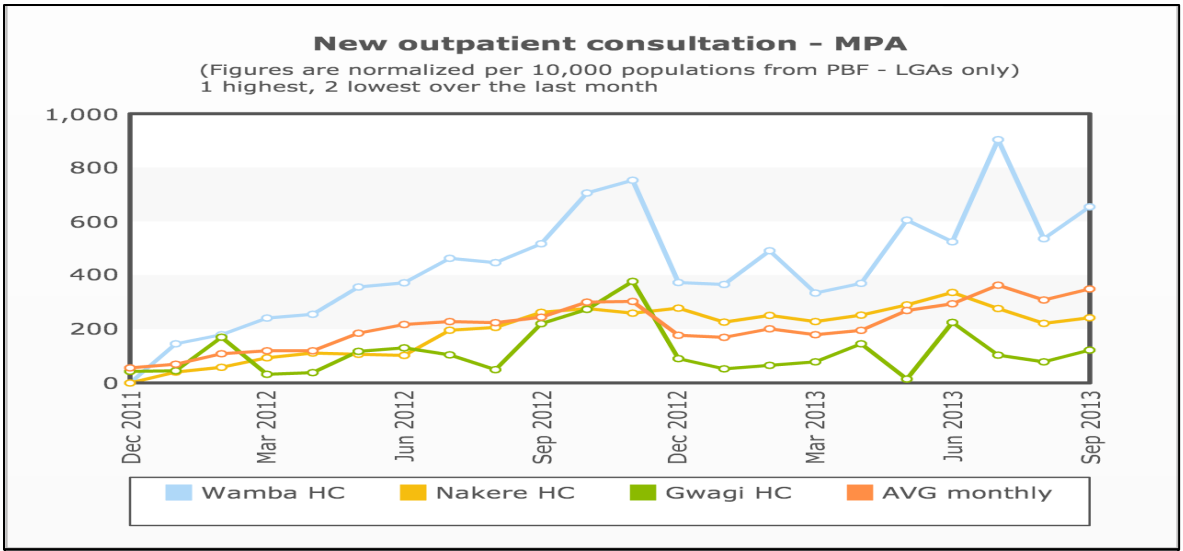
Relations with co-workers	"Before everybody was working on his own, if I have my drugs I give to my patient and I put the money inside my pocket" (ID111, CHEW/OIC) "We work together as a team. When you come here you wont know who is in-charge who is attendant because we assist each other to make sure that things are in order" (ID162, CHEW)	“We don’t have problem. You know even teeth and tongue they bite but they stay together so if we have problems we tackle it within ourselves” (ID261, CHEW) “Like in the labor room, if a staff has difficulty, maybe she doesn’t know how far a woman has reached, if she is doubting she will call on any of us, or maybe in listening to the fetal heart she cannot pick it well, she invites another to come and they share it together, we work in cordially relationship” (ID251, Nurse)
Supervision	“Before we rarely have supervision by the local government but as of now with the PBF it is more strict and more frequent because they have to monitor the activities of this program and in fact their supervision helps to discover weakness and progress on the work” (ID1101, CHEW/OIC) “Nature of supervision is different from before, they are leaving notes behind for the staff to follow-up on, a copy of the checklist is left behind in the facility” (ID131, CHO/OIC)	“When they do come they normally have check list that they do fill the information in and the supervision used to be okay, they have to know the number of patients seen, and notifying conditions like measles, cholera” (ID242, Nurse) “When they come to supervise us e.g. like in malaria, the Malaria Control Manager, they have a checklist whereby they ask some questions and ask us to carry out the procedure in their own presence and then they correct us in some areas that they think we should be corrected and they give us feedback and even Institute of Human Virology, they come here quarterly to supervise us and give us feedback.” (ID211, CHO/OIC)
Community participation	“In this program we are giving (them) incentives…we go to the market to buy small, small clothes. If a woman attends antenatal clinic and comes back to deliver we give her incentives” (ID161, Midwife/OIC) "Yes the community are really happy, they are appreciating the PBF because of the services rendered and especially with the renovation of the clinic" (ID162, CHEW)	“There is this belief in the community that they don’t want to give birth in the clinic because they are used to it in fore fathers time and some of them are afraid of a token amount that are being charged like, the soap that is used in washing one or two things when they are here present. So that token amount and other materials and items discourage them from coming to the clinic but meanwhile some come but not all of them.” (ID241, CHEW/OIC)
Shortage of health workers	“If we are enough staff, we can run at least three shifts, patients will come here and meet us. You know sometimes in the night because of lack of staff the patient will come in and not meet anybody, they will have to go to our houses”	“Hmmm their pride is not all that too good because they complain that the load of the work is too loaded on them that they are over working. The patients they see is greater than their number that is the patients is greater far, far than the number of the health staff here.” (ID241, CHEW/OIC)

	(ID191, CHEW/OIC) "You know the staff here when the work is too much and they feel they are overworked, maybe they intended to do something after work and due so much work here I am not able to meet up with that commitment that is when there is a problem" (ID112, JCHEW)	"The challenge is that we don't have adequate staff and the most problem that I am having right now, we have only one staff for night duty. Once if that staff is sick or his family is down or he has a burial then that shift is being shaken and have to make some arrangement and its not really sweet" (ID211, CHO/OIC)
Record keeping	"Before the PBF started the work wasn't that much because we didn't even keep records, when we treat and discharge the patient we just file the card, we don't write the records like in the OPD registers. We didn't even have the registers, you see, that was how it was before." (ID112, JCHEW)	"Sometimes the statistics will not be done at the stipulated time because too much work, truly this place we have so many registers. We have so many NGOs so everyone will like to get his own report" (ID212, Nurse)
Patient Volume	"When we record patients in November, they were not up to ten but now I'm telling you from this month we have more than 100 patients and we are receiving those from other clinics, you know we are serving the whole ward" (ID111, CHEW/OIC)	"Sometimes depends on the weather, like now only yesterday we didn't get patients but from last week we get about 10 or 11 people. Sometimes in the night is the problem, there's nobody in the night." (ID281, CHEW/OIC)
Autonomy	"At least we have autonomy at the facility level, we don't wait for the local government to may be give us approval to buy drugs, no we don't wait for them to come and do some repairs in the facility" (ID171, Nurse/OIC)	"They (LGA) will just promise us that they will come and repair it (generator) but up till now since last year they use to promise us but up till now we no see any sign of repairing" (ID271, CHEW)

Table 4.3: Qualitative Changes in Perceived Motivation among Health Workers in PBF Facilities

Thematic Areas	Examples
Excitement with bonus payments, better working conditions and increased patient turnover	"The first bonus that was given to us, every staff was really impressed because every staff solve his immediate problem with it and was happy with it and every staff have the enthusiasm that he want to work to earn more by next quarter" (ID131, CHEW/OIC) "Before during the rainy season, a whole week would go by and you would not see one patient but now every day you will find no lack of patients in this clinic so it shows that our work that we are doing is good and seeing people trooping inside I mean into this clinic it makes me feel happy because if at all we are not doing right they would have not come so because of this PBF in fact I'm really happy" (ID151, CHO/OIC)
Pride in self-efficacy and receiving recognition	"I've really changed the place. The credit now comes back to me that yes I've changed this place during my times because this place was not as it is now" (ID181, CHO/OIC) "I am happy that my name doesn't stop here that it is somewhere in the WHO and World Bank. I never knew that my name will even go to anywhere like this" (ID121, CHEW/OIC) "I am very proud and I know it is the PBF that has elevated me to this position. I am very happy because this clinic is well known in Wamba local government. We normally come in as 2nd or 3rd in terms of performance" (ID182, Lab technologist)
Conscientiousness and hard work	"Supervision has made us put in more effort everybody is challenging himself so to put in his best and also with the PBF program everybody wants to put in his best so that his services will be marketable" (ID141, CHEW/OIC) "Before some people they were not even care to come to work but with this program they know that if they didn't come it will affect them in their own bonus too" (ID151, CHO/OIC)
Level of commitment	"Let me not exaggerate I think both myself and my staff, we are 100% committed because we are doing all our best to see that this PBF comes to succeed and its succeeding based on our performance" (ID191, CHEW/OIC) "My eagerness to come to work at every time shows I am 100% committed to my duties most especially here during these PBF activities" (ID122, CHEW)
Burn out and personal sacrifices	"I have no time for my family because I am always here so I am more committed to this work" (ID1102, JCHEW) "Sometimes I think I should go back or resign because of the workload" (ID172, Nurse)

Figure 4.1 New Outpatient Consultations in Wamba since Introduction of PBF



Source: Nigeria PBF Portal
Available at https://nphcda.thenewtechs.com/

Chapter 5: Factors and Implications of Job Satisfaction among Primary Health Workers in Chhattisgarh, India: Results from a Cross-Sectional Study (Paper 3)

5.1 Abstract

Objective: A well-functioning health system, particularly for primary health, relies on satisfied, motivated and high performing health workers. This study aims to identify factors and predictors of job satisfaction among four distinct types of health workers in primary healthcare facilities in Chhattisgarh, a state in central India. Secondly, it explores the association between job satisfaction and health workers' intention to leave.

Methods: The study used a cross-sectional survey of 146 primary health workers including – Medical Officers, AYUSH Officers, Rural Medical Assistants and Paramedical staff. Exploratory factor analysis was used to categorize domains of job satisfaction from a contextually adapted 22-item scale based on the Job Description Index. Individual and organizational predictors of job satisfaction were identified using multiple linear regression. Binomial logistic regression was conducted to measure the association between job satisfaction and intention to leave.

Findings: Domains identified for job satisfaction among health workers in Chhattisgarh comprised of job attributes supporting family life, working abilities and extrinsic incentives including autonomy – this explained 41% of total variance. Job satisfaction was found to be significantly different between cadres of health workers with Rural Medical Assistants having the lowest average scores. Receiving supervision had a

significant positive relationship with job satisfaction. Moreover, higher job satisfaction was found to significantly reduce odds of intention to leave by 50%.

Conclusion: This study contributes to the evidence base for understanding factors influencing job satisfaction in developing countries, focusing particularly on primary health centers, rather than hospitals, as well as on alternative cadres of frontline health providers. Findings suggest that greater importance needs to be assigned to providing extrinsic benefits for supporting family life and professional development, particularly for contractual staff. In particular, policy makers should reexamine ways of improving satisfaction and support provided to the newly created Rural Medical Assistant cadre especially if it is likely to be introduced in other parts of the country. Although, receiving supervision was found to improve job satisfaction further research should be undertaken to identify effects of different styles and nature of supervision.

5.2 Background

In addition to a numerically adequate and skilled workforce, a well-functioning health system relies on satisfied, motivated and high performing health workers. Job satisfaction is defined as a 'pleasurable or positive emotional state resulting from the appraisal of one's job or job experience' [1]. It is fundamental to any set of human resources given that it is intricately linked with motivation, being its '*affective component'* [2] and is hypothesized to be a key determinant of performance [3-8]. Although related, motivation and job satisfaction are different constructs and can be explained (as in Chapter 1) by several overlapping theories in organizational sciences. For example, Maslow's hierarchy of needs and Herzberg's two-factor theory identify motivating elements of the job or the work environment which result in satisfaction of needs of human beings [9, 10]. Others considered job satisfaction to be achieved by performing adequately in order to pursue one's values [1].

According to many theorists, most prominent job characteristics eliciting an affective response from a worker include: the job itself (extent to which work provides interesting tasks, opportunities for learning), pay (amount and perception of equitable remuneration), opportunities for promotion (degree to which job provides professional advancement), supervision (technical and emotional support from supervisors), and co-workers (degree to which fellow coworkers are technically proficient and socially supportive) [11, 12].

Several studies conducted in low and middle-income countries (LMICs) also support these hypotheses. A few have found work content to be an important domain of job satisfaction [13-15] and in a particular case even more important than income [16]. In general, studies have reported low levels of satisfaction with salary and financial incentives [13, 14, 17-25]. Lack of opportunities for promotion, professional development, and training have been reported to be one of the key reasons for dissatisfaction among health workers irrespective of cadre [18, 21-23, 26-30]. Many have also reported dissatisfaction with adequate management support including lack of proper supervision [14, 21], poor communication with higher authority and absence of performance feedback [20, 22, 26]. On the other hand, empirical evidence suggests that strong inter-personal relations at work and sense of team spirit are associated with higher satisfaction among health workers [13, 14, 17, 19]. For example, a study from Papua New Guinea found that "having a best friend at work" among nurses in a hospital setting was an important contributor of higher job satisfaction [31].

Apart from these domains, studies have also found working conditions such as availability of infrastructure and equipment to affect job satisfaction [13, 14, 17-25]. Similarly, health workers were dissatisfied by lack of autonomy [4] and improper organizational procedural justice processes especially when they are not involved in decision making [18, 20]. Limited research on intrinsic factors also highlights the role of self-efficacy and competency among health workers in achieving higher satisfaction from

their work [14, 17]. Similarly, receiving recognition and appreciation from the community has also been documented as a source of satisfaction [15, 17, 24].

Studies have reported differences in job satisfaction by sex, age, cadre, areas of work and expertise, professional education, location and sector [17, 27, 32, 33]. For example, a study conducted in Malawi showed that mid-level Medical Officers tend to be less satisfied with their working conditions and relations with colleagues as compared to mid-level nurses [19]. A study from India found those who had spent a longer time in their current position to be more satisfied [30]. A comparative study in three African countries documented lower rates of satisfaction among health workers in public hospitals as compared to public clinics, health centers and mission hospitals [33].

Although empirical evidence on effects of job satisfaction on performance of health workers in low and middle-income countries is limited, a few studies have been able to suggest that job satisfaction influences intention to leave [13, 34-36] and burnout [37, 38] – both important predictors of actual turnover of health workers [8, 39]. For example, a study conducted amongst midwives in Senegal reported a negative association between experiencing emotional exhaustion and satisfaction from remuneration and a positive relationship between voluntary quitting and dissatisfaction from continuing education [37]. Similarly, satisfaction from supervision was found to be a significant predictor of turnover intent among primary health nurses in South Africa [13].

Study setting

This study was conducted as a part of a wider assessment of quality of care provided by different types of primary health providers in the state of Chhattisgarh in India. Chhattisgarh, located in the central part of India, comprises of 18 districts with a population of 25 million people with 41% living below the poverty line [40]. It is a predominantly rural state with low levels of literacy, particularly among females, and is also home to many of the tribes of India. Large areas of the state are currently experiencing armed conflict diminishing basic amenities including transportation and communication facilities, electricity, water supply and skilled human resources.

Chhattisgarh has some of India's worst health indicators. According to the National Family Health Survey (2005-06), the infant mortality rate (70.8) and levels of child malnutrition were alarmingly higher than the national average while life expectancy at birth and institutional deliveries were much below it [41]. Chhattisgarh has an overall health worker density of 15 per 10,000 population and a doctor and nurse density of 4 and 5 per 10,000 respectively [42]. In addition, it also has about one AYUSH Officer per 10,000 population [42]. AYUSH is an acronym for Ayurvedic, Yoga, Unani, Sidha and Homeopathy referring to formally recognized Indian traditional systems of medicine. An important human resource innovation by the state has been the introduction of a cadre of allopathic practitioners with short duration of training, the Rural Medical Assistant (RMA), to serve in primary health centers (PHCs) [43].

According to National Rural Health Mission (NRHM) guidelines, a PHC in India should have a medical doctor as the main Medical Officer or officer in-charge (OIC) along with an AYUSH Officer thereby mainstreaming Indian systems of medicines in the formal sector [44]. However, due to shortage of Medical Officers, AYUSH Officers are often heading PHCs by themselves [45, 46]. Similarly in Chhattisgarh, though trained and recruited to support medical doctors, RMAs are also often de-facto the main clinical providers. There is a dearth of evidence on how these 'alternate or non-physician clinician' providers are performing as well as what factors, particularly in the organization, are influencing their job satisfaction, motivation and performance.

Study objectives

The objective of this study is to identify domains of job satisfaction among four cadres of health workers in primary healthcare facilities in Chhattisgarh. It also aims to identify individual and organizational predictors of job satisfaction. It explores the association between domains of job satisfaction and intention to leave by health workers.

5.3 Methods

5.3.1 Study Design

The study used a cross-sectional design including PHCs in Chhattisgarh with four different types of clinical providers who were either the actual or acting officer in-charges. These included Medical Officers (MO), AYUSH Officers, Rural Medical Assistants (RMA) and Paramedical staff (including pharmacists and nurses).

5.3.2 Selection of Health Workers

Since the parent study focused on the main clinical provider i.e. actual or de-facto officer in-charge, he/she was purposively interviewed from selected PHCs. The sampling frame for the study included a listing of PHCs and their staff based on information supplied by the Department of Health and Family Welfare, Chhattisgarh and verified with district level management teams. The list excluded PHCs located in unsafe areas. The listing of 706 PHCs in Chhattisgarh were classified into six groups according to the main clinical provider present - regular MO (210), contractual MO (123), AYUSH Officers – consisting mostly of Ayurvedic physicians (169), RMAs (63), Paramedics (53) and Others (88). The ‘Paramedics’ group consisted mostly of pharmacists and auxiliary nurse midwives while ‘Others’ comprised of dressers and other support staff. Simple random sampling was used to select a representative sample of 40 PHCs within each group. This

sample size was calculated on the basis of the minimum number of PHCs required to detect a 15% difference in mean patient perceived quality scores between two groups with 90% power and a Type-1 error of 5%. Only PHCs in the regular MO, AYUSH, RMA, and Paramedic group were sampled while those belonging to Contractual MO and Others groups were excluded from the parent study. Detailed information on sampling and sample size determination for the parent study are published elsewhere [47].

5.3.3 Instruments for Data Collection

Following instruments were used to obtain data for relevant analyses:

(i) **Health Worker Questionnaire for measuring characteristics, job satisfaction and intention to leave:** Background information on health workers, including demographics, educational and professional history, in-service training and supervision received, was collected using a structured questionnaire. In addition, respondents were asked to complete a contextually adapted 24-item instrument, based on the Job Description Index (JDI) [12], on their level of satisfaction with different job attributes. JDI originally included six main components of a job namely the job itself, job content, people on the job, pay, opportunities for promotion and supervision. Based on an extensive literature review and discussions with a panel of health systems experts in Chhattisgarh, additional relevant items pertaining to the job

and working environment were also included. The final scale included eight items grouped under "job content and work environment", nine items relating to "extrinsic benefits" including salary, professional growth opportunities, support for family, three items covering aspects of "autonomy and security" and three under "intrinsic abilities" for carrying out tasks (Appendix 8). In addition, it also included an item on overall job satisfaction. The instrument was self-administered on a four-point Likert scale ranging from very unsatisfied, unsatisfied, satisfied and very satisfied.

Respondents were also asked about their intention to leave or get a transfer from their current position. Moreover, they were asked to specify the time frame (immediately, within two years or never) within which they wanted to leave their current position. They were also asked to elicit reasons for their response.

The questionnaire was translated to Hindi and pretested on a sample of 16 health workers – four from each group - prior to the main survey to check for language, format, comprehension of questions and duration.

(ii) **Facility Assessment:** In order to measure the association between job satisfaction and structural working conditions available to respondents, data on facility assessment collected during the survey was also used (Appendix 9). The facility assessment questionnaire included information on general facility characteristics including building condition, availability of drugs, equipment and staff, service

provision and utilization. A facility infrastructure index was constructed by combining ten items like the presence of electricity, water, toilet, separate examination room, delivery room, staff quarters, cold chain and laboratory facilities.

5.3.4 Data Collection and Entry

Data for the study were collected, in two phases, between July and September 2009. Data were entered into a database created using CSPro [48]. All forms were double entered by independent data entry operators. No personal identifiers were entered into the database. STATA 13 [49] was used for data analysis.

5.3.5 Analytical Methods

(i) Exploratory factor analysis to identify domains of job satisfaction: Exploratory factor analysis was done on 22 items with the 4-point Likert scale using principal component factor extraction and orthogonal varimax rotation. One item "the school your children go to" was excluded as it did not apply to many respondents and had more than 10% missing values. To determine the appropriate number of domains, three criteria were used: Kaiser-Guttman criterion of eigenvalue>1 [50], scree test (number of factors in the vertical portion of the curve) [51], and percentage of variance explained by the domain >5% [52]. A cut-off of 0.4 was established for significant factor loadings [52]. Given at least a sample of five is required for each

item on the scale, a sample of 146 health workers was found to be adequate for 22 items [53-56].

Internal consistency of the scale was measured using Cronbach's alpha- a function of scale length and inter-item correlation [57]. Construct validity of the scale was measured using correlation between ranking for overall job satisfaction scale item ("Your overall satisfaction with your job") and sub-scale and aggregate scores obtained from factor analysis.

Mean scale scores were computed for each domain, scaled out of 100 and standardized (expressed as standard deviations from the overall sample mean). Given there were no theoretical or empirical justifications for items having different weightage in determining the composition of job satisfaction, weighted scores were not calculated. Analysis of variance (F-test) was used for comparing mean domain scores across different types of health workers (cadre and employment type), as well as other sample characteristics such as demographics (sex, marital status), and work conditions (supervision, training).

(ii) Linear regression for predictors of job satisfaction: Regression analysis was conducted to identify predictors of job satisfaction domains using scale scores of each domain as the dependent variable. Table 5.1 describes independent variables considered for regression including socio-demographic (sex, age, marital status,

number of children, area of residence), health worker specific (cadre, employment type,) and organizational (supervision, training received, facility infrastructure score,) characteristics. These variables were identified based on empirical evidence on predictors of job satisfaction described in the literature review above. The level of significance was set at a p-value <0.05. Multicollinearity between independent variables was assessed by bivariate correlations and variance inflation factor (VIF). Regression diagnostics, using residuals, were performed to check for validity of assumptions of normality (Shapiro-Wilk test and QQ plot) and homoscedasticity (residual versus fitted values scatter plot).

(iii) Logistic regression for measuring association between health workers' job satisfaction and intention to leave: Intention to leave was measured by a dichotomous variable with a value of '1' for 'intending to leave current job within next two years' and '0' for 'not intending to leave at all'. Association between domains of job satisfaction and intention to leave was measured by bivariate and multivariate binomial logistic regression.

5.3.6 Ethical Considerations

The study was funded by the World Health Organization and conducted by the Public Health Foundation of India in collaboration with the National Health Systems Resource Center and the Chhattisgarh State Health Resource Center. It was approved by the

Institutional Review Board at the Public Health Foundation of India and the World Health Organization. All interviews with health workers and patients were conducted, in a private setting, after taking written consent. Respondents were asked to report for the interview by government order and received no prior information about the content or process of the interview.

5.4 Results

5.4.1 Characteristics of Respondents

The final sample size achieved was 146 PHCs run by 35 Medical Officers, 37 AYUSH officers, 39 RMAs and 35 paramedical staff (Table 5.2). Majority of respondents (81%) were males and lived (77%) in the same village/town as the PHC that they worked in. More than half (64%) were married and had children (51%) though only a third had children who lived with them in their current place of residence. On average, respondents had spent four years working at his or her current PHC at the time of the survey. However, the RMA group consisted of more younger, unmarried respondents who had been positioned, on average, for a year only. It also included the highest proportion of females.

Less than half (47%) were regular government employees while the rest had been recruited on a short-term contractual basis. While Medical Officers and Paramedical staff were regular staff, AYUSH Officers and RMAs had contractual employment. On

average, only 31% reported to participate in in-service training for malaria, diarrhea and tuberculosis, though there were wide variations across the four groups. In each group, around 75% reported to receive supervision from a higher authority in the month prior to the survey. Facility assessment could not be conducted in two facilities but for the remaining, a mean score of 41% for infrastructure index was calculated. Facilities in the Medical Officer and RMA groups were found to have better infrastructure than those in AYUSH and Paramedical groups. The frequency of missing observations was less than 2%.

5.4.2 Domains of Job Satisfaction

Table 5.3 shows the descriptive statistics for all items on the job satisfaction scale. Overall, a majority (84%) of health workers were satisfied with their job with a mean (SD) score of 3.03 (0.65) out of four. About 80% were satisfied with their workload, support received from co-workers and supervisors, ability to use their skills and meet needs of the community. Almost all (98%) reported to be satisfied with the trust their community placed in them. However, a majority (75%) was dissatisfied with the amount of salary and opportunities for promotion. Similarly, more than half were dissatisfied with availability of staff, drugs and supplies, opportunities for training, job security and condition of health facility and housing.

The exploratory factor analysis identified three domains of job satisfaction – "family life", "working abilities" and "extrinsic incentives & autonomy" (Table 5.4). A cross loading was found for one item "support your co-workers give you in your work" which was subsequently assigned to the corresponding domain based on its primary nature. The domain pertaining to family life included items such as condition of housing, including security, amount of annual leave and time spent with family. The second domain included items on conditions at work as well as individual ability to perform at work and hence was broadly termed as "working abilities". It comprised of items on relationships with co-workers and supervisors, availability of drugs and supplies, management of facility and ability to use skills and meet needs of the community. The third domain was related to extrinsic incentives (such as salary and opportunities for training and promotion) coupled with dimensions of autonomy (administrative power and job security).

Factor loadings for three items were found to be less than 0.4 and hence were not included in calculating domain scores. The three domains together explained about 41% of total variance. Cronbach's alpha was found to be adequate (greater than 0.7) for each domain [58]. Correlation between rating on overall job satisfaction item on the scale and scale score obtained from factor analysis was 0.37. Mean scores for the domains were moderate ranging from 2.54 (family life), 2.88 (working abilities) and 2.21 (extrinsic incentives & autonomy) out of a total score of four.

Although seven domains were found with an eigenvalue greater than 1, scree plot (Figure 5.1) indicated that three domains were clearly "above the elbow" of the graph while a fourth factor was just at the edge. An analysis with four domains was also conducted to verify the factor structure. This analysis found a fourth domain with three items; however, one of the items had a high cross loading with another domain. Moreover, remaining two items "the condition of the house you live in" and "the amount of political interference at work" did not appear to be linked as such. In addition, the items within each of the remaining domains did not have better congruence than with the analysis with three domains. Finally, internal consistency of the scale with four factors was poorer than with three. Hence, the initial analysis with three factors was retained.

5.4.3 Predictors of Job Satisfaction

Table 5.5 displays factors associated with standardized domain scores of job satisfaction. Most demographic characteristics were not significantly associated with domain scores with the exception of married health workers having a positive association with satisfaction from family domain. Similarly, male health workers had a higher significant relation with satisfaction from working conditions. Although the association was not significant, living near the PHC was negatively related to satisfaction with family life and working abilities.

Cadre of health worker and employment type (regular versus contractual) could not be used in the same regression equation due to high multicollinearity – AYUSH Officers and RMAs were contractual while Medical Officers and Paramedical staff were regular employees. Nonetheless, these findings show that contractual health workers were less satisfied with all domains as compared to their regular colleagues though the coefficient for working abilities was not significant. Figure 5.2 shows differences in overall and domain scores for job satisfaction between four cadres of health workers. There was substantial variation in the scores for 'family life' and 'extrinsic benefits' domains across all four cadres while those for 'working abilities' were generally higher with a shorter range. Mean scores for paramedics were highest for each domain while those for RMAs were lowest.

Among organizational characteristics, receiving supervision from higher authorities was positively linked with all domains though the relationship was statistically significant only for "working abilities" and "extrinsic incentives and autonomy". Satisfaction with working abilities and extrinsic benefits was higher among those who had received in-service training though the association was not significant. Similarly, having better infrastructure in the facility did not have a significant effect on job satisfaction among the respondents. Residual diagnostic tests confirmed that assumptions of normality and homoscedasticity were valid.

5.4.4 Intention to Leave

Findings from the survey show that about 23% of health workers intended to leave their current position immediately, 30% within the next one or two years while 47% did not plan to leave at all. Among those wanting to leave, most prominent reason given was being far from family (35%) and not having good schooling options for children (30%). Conversely, among those not intending to leave at all, interesting work (62%), satisfying community's needs (66%), receiving respect from community (54%) and being near family (46%) were cited as some of the main reasons.

Among contractual staff, 56% of respondents intended to leave within two years while 51% of regular employees reported the same. However, this difference was not statistically significant. Within each group, 57% of AYUSH Officers intended to leave within two years followed by RMAs (56%), Medical Officers (51%) and Paramedical staff (49%).

In order to measure the association between job satisfaction and intention to leave, the latter was converted to a binary variable: intention to leave within two years versus no intention to leave at all. Bivariate analysis showed a statistically significant negative association between health workers' job satisfaction and intention to leave (Table 5.6). For example, with a unit increase in the standardized score for 'family life' domain of job satisfaction, odds of intention to leave reduced by almost 50%. Similarly, increase in the

other two domains and overall job satisfaction also resulted in lower odds of intention to leave. However, after adjusting for demographic and other organizational characteristics, only the association between family life and intention to leave remained statistically significant. The model was found to have an adequate fit according to the Hosmer-Lemeshow test of goodness of fit.

5.5 Discussion

This study aimed to identify factors of satisfaction with job attributes among primary healthcare providers in the state of Chhattisgarh in India using a contextually adapted Job Description Index scale. Findings suggest that aspects of the job supporting family life, ability to provide services (in terms of both individual capability combined with working environment) and extrinsic incentives including autonomy constituted domains of job satisfaction. While no major differences in satisfaction were found between demographic characteristics of health workers, job satisfaction was found to be associated with several organizational characteristics such as receiving supervision and regular employment. In particular, satisfaction was found to be significantly lower for AYUSH Officers and RMAs compared to Medical Officers and Paramedical Staff. Moreover, this study is also the first to show high correlation between job satisfaction and health workers' intention to leave their current position in the Indian context.

A majority of respondents reported to have low levels of satisfaction with amount of salary, promotion and training opportunities, condition of working environment including staff strength while they were highly satisfied with their competency to provide services as well as relations with co-workers and supervisors. These ratings of individual items on the job satisfaction scale were similar to those found in other LMICs. As cited in the literature review above, most studies focusing on job satisfaction and motivation have found health workers to be dissatisfied with low salary structures [13, 14, 17-25], poor working conditions [14, 17, 19, 20, 22, 24] and inadequate opportunities for professional growth [18, 21-23, 26-30]. Similarly, a few studies have shown high levels of satisfaction with working relationships within the health facility [13, 14, 17, 19, 31] while others have documented the role of self-efficacy [14, 17].

Job satisfaction domains pertaining to extrinsic incentives and working environment found using factor analysis in this study also corroborate with existing literature from developing countries [13, 16, 17, 23]. Items in the "extrinsic incentives" domain range from salary, promotion, training opportunities, job security and administrative power. Prior studies conducted in India have highlighted the importance of job security in motivating health workers. For example, a study conducted amongst physicians working in government hospitals across three states found job security to be the most important factor of job satisfaction and motivation [15]. Another study conducted in Chhattisgarh reported that doctors considered a regular government job to be highly prestigious [59].

Given about half of respondents were not regular employees; the level of dissatisfaction attributed to job security found in this study was relatively high (60%).

"Family life" domain pertained to extrinsic benefits of the job supporting family and personal lives of respondents such as time spent with family, condition and security of homes, and opportunities for leisure time. In addition, this domain was found to be highly associated with health workers' intention to leave current position. A few qualitative studies conducted in India have also found some of these benefits to play a crucial role in preferences of health workers, particularly for recruitment and retention in rural postings. For example, studies among in-service personnel and graduating medical and nursing students reported good living conditions including decent housing with availability of water and electricity to be important for shaping their employment preferences for rural areas [60, 61]. Providing housing has been found to have motivating effects in other low and middle-income countries (LMIC) as well [28, 62, 63]. While the scale item on availability of good schools for children was excluded from factor analysis due to high missing values, a qualitative study conducted in Chhattisgarh, concurrent to this survey, found it to be a major factor favoring health workers to stay on in their current rural posts [59].

Results from this study show that having received monthly supervision was positively related to all three domains of job satisfaction though the association was significant only for "working abilities" and "extrinsic incentives" domains. While a few qualitative

studies from LMIC have documented this relationship [14, 24], there have been limited efforts to quantify it. This is a significant finding from a policy and programmatic perspective confirming that regular supervision could indeed result in improved job satisfaction. A majority (75%) of health workers in this study reported to have received monthly supervision from a higher authority in the month prior to the survey. However, in addition to frequency, further research is warranted to understand the nature of supervision including who provided it and what it consisted of. For example, a study conducted in Malawi, Tanzania and Mozambique showed that "formal pre-arranged" supervision at regular intervals provided to mid-level providers was positively associated with job satisfaction while absent or "negative feedback only" supervision contributed to low levels of satisfaction [64].

Another important finding of this study pertains to the differences in job satisfaction domains between regular and contractual employees – with scores being significantly higher for former as compared to the latter. The literature suggests mixed findings for this relationship though there are significant contextual factors at play making the generalizability of these findings difficult. For example, a study conducted amongst public health specialists in Pakistan [21] did not find any significant differences between regular and contractual staff while a similar study in Turkey found contractual physicians to be less satisfied [65]. In India, regular employment is typically connected with the public sector while private sector hires on a contractual basis. However, the introduction of NRHM in 2005 permitted contractual recruiting in the public sector particularly for an

additional allopathic or ayurvedic doctor in a PHC [66]. Although, these contractual employees were given equivalent salaries they did not have additional benefits (pension, leave) and security of a permanent job as compared to their regular colleagues [67]. Thus, a combination of poorer incentives, adverse working conditions and no job security could explain lower levels of satisfaction amongst contractual health workers.

This is also of crucial significance as all contractual health workers included in the study were either AYUSH Officers or RMAs. This is the first documentation of factors of job satisfaction for this group of alternate or non-physician clinicians in India. Other studies have shown RMAs, a unique innovation in Chhattisgarh, to be as competent as medical officers in the quality of services provided by them [47, 68]. Hence, these findings are even more vital for RMAs as other parts of the country are in the process of replicating this cadre [66]. This study shows that RMAs had significantly lower scores for each domain of job satisfaction and greater intention to leave their current position within two years. In addition, RMAs were least satisfied with individual job satisfaction items pertaining to salary, amount of annual leave, opportunities for training and promotions, availability of staff and supplies, management of the health facility, ability to use skills and amount of administrative power as compared to the other three cadres. A case study examining the political economy of creation of RMA sheds light on some of the institutional weaknesses, such as opposition from the Indian Medical Association regarding the legal stature of the cadre and lack of a clear career path, which could also result in low satisfaction [43]. More in-depth analysis of the organizational culture is

required particularly to reexamine and subsequently change the incentive structures and supportive environment provided to RMAs. Greater emphasis needs to be attached to shifting of administrative power to RMAs particularly in areas where they are working without any medical doctors.

There are two interesting findings pertaining to the factor structure which must be noted. Although the original scale, based on job description index, had items grouped under four domains "job content and work environment", "extrinsic benefits", "autonomy and security" and "intrinsic abilities", results from factor analysis resulted in three domains. Items pertaining to job benefits supporting family life, initially under the extrinsic benefits domain, emerged to be a separate domain altogether. Similarly, items under autonomy and security merged with those under extrinsic benefits and those under intrinsic abilities with work environment. These findings suggest that factor structure of latent variables like job satisfaction is context specific and hence should not be solely based on existing theories and empirical evidence.

Secondly, the mean of the global job satisfaction item "Your overall satisfaction with your job" was found to be relatively higher than the mean scores for each domain and almost all individual items of the scale. While the global item is not the most valid measure of a latent construct, this could indicate that the internal structure of the scale may be missing a few relevant items or the domains should be weighted while calculating

an overall score. It could also suggest that respondents have a different interpretation of job satisfaction when asked directly about it as opposed to its distinctive components.

This study was designed to be exploratory in nature to identify factors of job satisfaction among primary health workers in Chhattisgarh. Although items included in the scale to measure domains of job satisfaction were based on an existing theoretical framework, extensive literature review and discussions with experts, more rigorous measures to check for face and content validity, particularly using qualitative methods, were not used. However, results were found to be consistent with those from similar settings and particularly with a qualitative study on health workers' preferences for rural postings in Chhattisgarh conducted simultaneously [59]. Further testing of psychometric properties of the scale, particularly with a larger cadre-specific sample size, would be recommended. Since health workers were only asked to rate satisfaction with current and not ideal job aspects the study was not able to determine if there was any social desirability bias in responses [52]. In addition, the question pertaining to intention to leave asked a combination of things – the intention to leave current position or seek a transfer. Hence, making it difficult to interpret whether respondents intended to leave current job completely or move to another posting while still remaining in the service.

Although, the sample size of respondents was small, especially for sub-group analysis, statistically significant differences were found between cadres and other characteristics of health workers. The parent study excluded Medical Officers employed on a contractual

basis as it aimed to identify differences in competence of different cadres and not employment type. Given that this study found AYUSH Officers and RMA, employed on a contractual basis, to have significantly lower job satisfaction scores it would be of interest to measure job satisfaction among contractual Medical Officers as well to have a clearer understanding of interactions between professional training and type of contract.

While this study was able to establish a strong association between job satisfaction and intention to leave, given its cross-sectional design, it was unable to measure the causal effect of job satisfaction on actual turnover of health workers. As established in the literature, job satisfaction could also be a determinant of performance. In developed countries, this association has been widely studied, particularly among nurses, and satisfaction with different job attributes has been adversely linked to intention to leave, burn out, absenteeism, deteriorating motivation, stress and under-performance of health workers [3-8]. Studies have found that dissatisfied health providers tend to be less polite and communicative with their patients often resulting in poor explanation of illness and its treatment [69, 70]. A recent study conducted in Ghana found a positive association between staff satisfaction levels with working conditions and efforts towards quality improvement and patient safety [23]. Thus, this relationship should be studied further, in this context as well, particularly to inform policy makers and managers to devise strategies to improve performance in resource-constrained settings.

5.6 Conclusion

This study contributes to the evidence base for understanding factors influencing job satisfaction in developing countries, focusing particularly on primary health centers rather than hospitals as well as on alternative cadres of frontline health providers. The findings suggest that policy makers, planners and managers in Chhattisgarh and to a large extent India as a whole should critically examine the importance of providing additional extrinsic benefits, apart from salary, particularly focused on supporting family life such as decent housing, educational prospects for children and adequate leisure time for improving job satisfaction among health workers. In addition, other non-financial incentives such as training and promotion opportunities along with regular pre-arranged supervision are also likely to result in greater job satisfaction. While regularizing contractual staff may not be feasible in the short-term, policy makers should at least consider providing some of these additional benefits to them, particularly to those serving in extremely remote areas. Finally, in order to engage and retain RMAs it is crucial to provide them with a more supportive environment, including greater autonomy, along with better professional development opportunities.

5.7 References for Chapter 5

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5.8 Tables and References for Chapter 5

Table 5.1 Variables for Regression Model

	Variable Description	Variable Type
Dependent Variable[#]		
Y	Job Satisfaction domain	Continuous (z-score)
Independent Variables		
Sex	Male/female	Binary
Age	Age in years	Continuous
Marital	Married/Not married	Binary
Res	Residence in same village/not in same	Binary
Cadre	Medical/ AYUSH/ RMA/ Paramedic	Categorical
Emp	Regular/contractual employment	Binary
Train	Received in-service training in malaria, tuberculosis & diarrhea/did not receive	Binary
Supv	Received monthly supervision/did not receive	Binary
Infra	PHC Infrastructure index	Continuous (z-score)

Separate analyses were conducted for different domains

Table 5.2 Characteristics of Health Workers

Characteristic	Total	By Cadre			
		Medical Officer	AYUSH Officer	RMA	Paramedical Staff
N	146	35	37	39	35
Male (%)	81	83	95	64	83
Age (mean (SD))	34 (9)	42 (8)	35 (6)	26 (2)	33 (11)
Married (%)	64	91	92	21	57
Residence near PHC (%)	77	71	84	80	71
Average time in current post (in years)	4	7	3	1	5
Regular employees (%)	47	97	0	0	100
In-service training for Malaria, Diarrhea, TB (%)	31	49	46	23	6
Received supervision (%)	75	74	76	74	74
Infrastructure index (mean (SD)) out of 100	41 (2)	51 (27)	35 (22)	42 (29)	35 (25)

Table 5.3 Descriptive Statistics of Satisfaction with Job Attributes

Items	% Very unsatisfied	% Unsatisfied	% Satisfied	% Very Satisfied	Mean	SD	N
Family life							
The condition of the house where you live	20	32	39	9	2.37	0.9	146
Amount of annual leave	10	33	51	5	2.52	0.75	146
Amount of time spent with your family	12	29	47	12	2.58	0.85	146
Ability to take leave when you want it	8	29	56	6	2.6	0.73	146
The security environment in the health facility	12	29	55	5	2.53	0.76	146
The security environment of your home	12	23	58	8	2.62	0.8	146
Working abilities							
Support your co-workers give you in your work	4	15	70	11	2.88	0.64	146
Support your supervisor gives you in your work	4	16	69	10	2.86	0.64	146
Availability of drugs, supplies and equipment	11	40	45	4	2.42	0.74	146
The amount of work you have to do	5	12	72	11	2.89	0.64	146
The management of the health facility	6	26	60	8	2.7	0.71	146
Your ability to use your skills well	2	19	64	15	2.92	0.65	146
The trust the community where you work has in you	1	1	69	29	3.25	0.54	146
Your ability to meet the health needs of the community	1	10	68	21	3.09	0.57	146
Extrinsic benefits							
The amount of your salary	28	45	21	5	2.04	0.85	146
Opportunities for training	12	41	45	2	2.36	0.72	146
Opportunities for promotion	33	42	23	1	1.93	0.78	146
Job security	31	29	33	7	2.16	0.94	146
The amount of administrative power you have	13	24	58	5	2.55	0.78	146
The number of staff available at your health facility	24	42	29	5	2.14	0.84	146
The condition of the health facility building	27	38	27	8	2.16	0.92	146
The amount of political interference in your job	10	27	55	8	2.62	0.77	146
Your overall satisfaction with your job	1	15	62	21	3.03	0.65	146

Table 5.4 Exploratory Factor Analysis of Satisfaction with Job Attributes

Item	Domain 1 Family life	Domain 2 Working abilities	Domain 3 Extrinsic incentives	Uniqueness
The condition of the house where you live	**0.6693**	0.1398	-0.0542	0.5295
Amount of annual leave	**0.6150**	-0.0503	0.3419	0.5023
Amount of time spent with your family	**0.7444**	0.1059	-0.01	0.4346
Ability to take leave when you want it	**0.6747**	-0.066	0.2465	0.4797
The security environment in the health facility	**0.4591**	0.3723	0.3168	0.5503
The security environment of your home	**0.6365**	0.1708	0.1087	0.5539
Support your co-workers give you in your work	0.0193	**0.4731**	0.4756	0.5496
Support your supervisor gives you in your work	-0.147	**0.5044**	0.366	0.59
Availability of drugs, supplies and equipment	0.0866	**0.5759**	0.3337	0.5495
The amount of work you have to do	0.1264	**0.6080**	0.0324	0.6133
The management of the health facility	0.1909	**0.6639**	0.1814	0.4899
Your ability to use your skills well	0.0625	**0.5034**	0.2419	0.6842
The trust the community where you work has in you	0.0069	**0.5517**	-0.119	0.6814
Your ability to meet the health needs of the community	0.0894	**0.6427**	-0.2842	0.4981
The amount of your salary	0.2478	0.0116	**0.6312**	0.5401
Opportunities for training	0.1388	0.0265	**0.5790**	0.6448
Opportunities for promotion	0.2906	-0.0395	**0.6154**	0.5353
Job security	0.4736	0.1278	**0.506**	0.5033
The amount of administrative power you have	-0.0335	0.1998	**0.646**	0.5416
The number of staff available at your health facility	0.1919	0.2994	0.0749	0.8679
The condition of the health facility building	0.2492	0.2687	0.0667	0.8613
The amount of political interference in your job	0.1825	0.0996	-0.0063	0.9567
Eigenvalue	3.07	3.03	2.75	
% Variance explained	13.95	13.76	12.49	
Cronbach's alpha	0.76	0.75	0.71	
Mean domain score (1-4)	2.54	2.88	2.21	
SD	0.54	0.39	0.56	

Notes:
Extraction method: principal component factor
Rotation: Varimax with Kaiser normalization

Table 5.5 Factors Associated with Domains of Job Satisfaction

	Family Concerns Coef. (95% CI)	Working Abilities Coef. (95% CI)	Extrinsic Incentives Coef. (95% CI)
Male	0.11 (-0.30; 0,52)	**0.55 (0.13; 0.96)****	0.02 (-0.32; 0.37)
Age	0.01 (-0.01; 0.04)	-0.01 (-0.03; 0.02)	0.01 (-0.01; 0.03)
Married	**-0.55 (-0.99; -0.11)***	0.18 (-0.25; 0.62)	0.02 (-0.35; 0.39)
Lived near PHC	-0.04 (-0.43; 0.35)	-0.25 (-0.63; 0.14)	0.07 (-0.26; 0.39)
Regular vs. Contractual Employment^	**0.61 (0.25; 0.96)****	0.28 (-0.8; 0.63)	**1.09 (0.79; 1.38)****
Monthly supervision received	0.29 (-0.08; 0.66)	**0.51 (0.13; 0.88)****	**0.46 (0.14; 0.77)****
In-service training received	-0.10 (-0.46; 0.26)	0.21 (-0.15; 0.58)	0.06 (-0.25; 0.36)
PHC infrastructure score	0.00 (-0.16; 0.16)	-0.01 (-0.17; 0.15)	-0.13 (-0.26; 0.01)
Constant	-0.58 (-1.34; 0.18)	-0.76 (-1.53; 0.01)	-1.33 (-1.97; -0.69)**
N	144	144	144
R-square	0.15	0.15	0.44

Notes:
*$p < 0.05$, **$p < 0.001$
Variance inflation factor = 1.31
^Reference category= contractual employment

Table 5.6 Association between Job Satisfaction and Intention to Leave^

	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
Job satisfaction: Family life	**0.52 (0.35; 0.76)****	**0.55 (0.35; 0.88)***
Job satisfaction: Working abilities	**0.65 (0.46; 0.93)***	0.76 (0.51; 1.15)
Job satisfaction: Extrinsic incentives & autonomy	**0.70 (0.50; .99)***	0.85 (0.50; 1.43)
Overall job satisfaction	**0.52 (0.34; 0.76)****	
Male		1.15 (0.44; 2.99)
Age		1.01 (0.96; 1.07)
Married		0.73 (0.26; 2.01)
Lived near PHC		1.26 (0.53; 3.01)
Regular vs. Contractual employment		1.44 (0.57; 3.62)
Monthly supervision received		1.45 (0.60; 3.50)
In-service training received		0.75 (0.33; 1.68)
PHC infrastructure score		0.81 (0.56; 1.17)
N		144

^Intention to leave current position within two-years =1; No intention to leave at all =0

*$p < 0.05$, **$p < 0.001$

Figure 5.1 Scree Plot of Eigenvalues

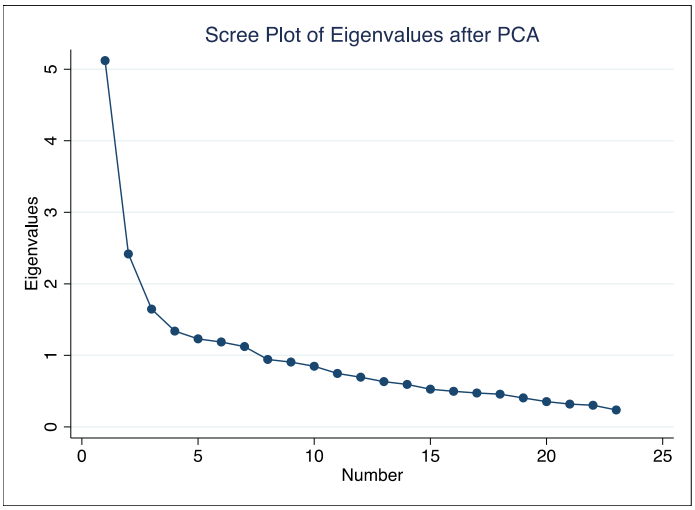
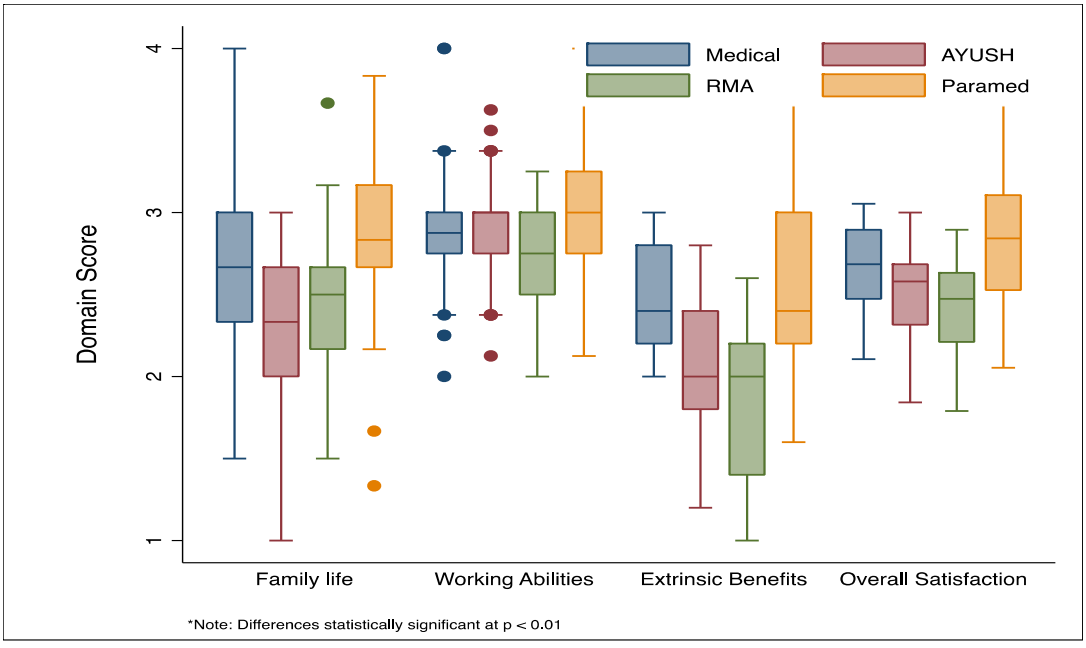


Figure 5.2 Job Satisfaction by Health Worker Cadre



Chapter 6: Conclusion

The objective of this dissertation was to identify determinants of motivation and job satisfaction among primary health workers in Nigeria and India. The first study explored the determinants of motivation among community health officers and extension workers in two diverse states, Nasarawa and Ondo, in Nigeria, including motivating factors in the work environment and experiences with supervision practices and leadership received from officer in-charges and district management authorities. The second study evaluated qualitatively perceived changes in motivation due to a performance-based financing (PBF) scheme in a pilot district in Nigeria, providing a unique assessment of how and why such changes took place. Finally, the third study aimed at identifying the domains and predictors of job satisfaction among primary health workers, including newly created alternate non-physician providers, in the state of Chhattisgarh in India.

This chapter summarizes results obtained from each of the three papers, analyzes common findings and limitations, as well as documents policy implications for each setting and broader recommendations for future research.

6.1 Summary of Findings

Findings from paper 1 show that primary health workers (doctors, nurses/midwives, community health officer cadres) in selected LGAs in Nasarawa and Ondo states in Nigeria identified several intrinsic (altruism, vocation, self-efficacy, religion) and

organizational determinants of motivation in their working environment (financial and non-financial incentives, availability of drugs and equipment, supervision, recognition). Health workers described being dissatisfied by the poor working conditions at their facilities, particularly the dearth of drugs, resulting in low utilization of their services. Junior health workers reported benefiting more from supervision by their officer in-charge as compared to that from district health managers. They looked up to their officer in-charge as a role model and were encouraged by his/her support and mentoring both in their professional and personal lives.

No major differences were observed in responses regarding motivation between types of workers. However, nurses and midwives, particularly those working in the general hospital, were disgruntled by the fact that despite being at the same grade level their salaries were lower than those of their counterparts in tertiary hospitals and other states. Health workers in Ondo state appeared to have better working environments due to additional government schemes for maternal and child health services. Moreover, the presence of a medical doctor at the district level in Ondo was also reassuring for nurses, CHOs and CHEWs giving them the confidence that they could perform more advanced medical procedures.

Findings from paper 2 suggest that the PBF scheme introduced in selected PHCs in Wamba district, Nasarawa state in Nigeria tremendously changed the working environments of health workers participating in it. They described having additional

resources for bringing about crucial structural changes in their facilities, empowering them to provide more services at lower costs and hence boosting utilization and community trust. They were also encouraged by the frequent and exhaustive nature of supervision received from higher authorities. They considered that the scheme brought them closer to their co-workers, making them a more cohesive unit working towards increasing the revenue earned by the facility as a whole and consequently their own share of the bonus. The individual performance bonus received by them enabled them to meet immediate needs of their families. It reportedly provided them with a greater incentive to report on duty diligently, put in longer hours, and carry out more outreach activities. They talked about being more proud of their facilities as well as their own abilities to provide better services.

However, health workers were discontented with the delays in receiving payment, as well as a reduction in the prices at which their services were being bought mid-way through the program. They also complained about an excessive workload due to longer hours that they were mandated to put in for ensuring service provision at the facility for 24 hours/day, as well as for the additional record keeping. They attributed this problem mostly to a lack of adequate skilled staff due to an embargo on recruitment in the state. Health workers in non-PBF facilities also bore the brunt of this embargo and considered there to be a severe shortage of skilled staff. Additionally, they reported to be dissatisfied with the poor working conditions at their respective facilities.

Findings from Paper 3 show that aspects of the job supporting family life, ability to provide services (individual capability and enabling environment) and extrinsic incentives including autonomy formed the main domains of job satisfaction among four cadres of primary health workers – Medical Officers, AYUSH Officers, RMAs and paramedics – in the state of Chhattisgarh, India. No significant differences were found in these domains between individual characteristics of health workers. However, job satisfaction was found to be associated with organizational characteristics such as receiving supervision and form of employment. Health workers who reported to have received supervision from a higher authority had significantly higher job satisfaction as compared to those who had not. Health workers hired on a contractual basis (AYUSH and RMA) were found to be significantly less satisfied as compared to regular government employees (Medical Officers and Paramedics). In particular, average score for each job satisfaction domain was found to be significantly lowest for RMAs. Finally, this study indicated high correlation between job satisfaction and health workers' intention to leave their current position.

Although the three dissertation papers are from different settings and examined responses from different kinds of health workers, there were several common themes across their findings. For example, in each paper the significance of assorted non-financial incentives as factors of motivation and job satisfaction were highlighted, albeit the research design did not seek to compare the relative importance of non-financial versus financial. In papers 1 and 2, health workers described the influence of recognition received from

members of their community, as well as their supervisors, as motivating influences on their work. Health workers interviewed for papers 2 and 3 highly valued autonomy and increased responsibility in their respective settings. In all three papers, respondents indicated their desire for additional opportunities for professional development such as advanced training.

Similarly, in each setting the importance of having a good structural working environment coupled with strong interpersonal relationships among staff also appeared to contribute towards improved motivation and job satisfaction. In-depth interviews enabled to understand how health workers coped and related to one another while working under resource-constrained settings. On the other hand, results from factor analysis in the third paper suggested attributes of the working environment which formed the job satisfaction domain of "working abilities". The studies conducted in Nigeria also provided an insight into reasons why primary health workers joined the health profession and their motivation to stay in it despite lack of a supportive working environment. Most believed that they were fulfilling "their calling" and were motivated to improve health of their communities. Many also considered their duty to serve humanity as a means of abiding to their religion.

In addition, the role of supervision in motivating health workers also emerged from each study. In paper 1, health workers described their experiences with supervision received from their officer in-charge as well as district level authorities, identifying strengths and

weaknesses of each for motivating them. In the second paper, respondents talked about perceived changes in their motivation and performance due to more intensified supervision as well as the fact that their performance bonuses were partly contingent upon it. Finally, in the third paper, receiving supervision was found to be significantly associated with higher job satisfaction among primary health workers. Thus, while the qualitative studies were able to identify nature of supervision most prudent for motivating health workers, the quantitative study was able to measure the strength of the association between supervision and job satisfaction.

Thus to conclude, in line with the conceptual framework guiding this dissertation, these studies have contributed towards strengthening the literature on determinants of motivation and job satisfaction for their respective settings. While findings corroborate to a large extent with existing literature, each study provides a more nuanced understanding of some organizational determinants. Paper 1 is the first study of its kind exploring primary health care workers' perceptions of motivation, supervision and leadership in Nigeria, documenting the importance of working environments, alongside the motivating role of officer in-charges with good leadership traits and supervisory skills. Similarly, paper 2 provides an in-depth understanding of changes brought about with introduction of a PBF scheme, highlighting that while financial incentives are important, their synergies with non-financial incentives are crucial. Finally, paper 3 sheds lights on the critical importance of reexamining and restructuring incentive packages for health workers hired on a contractual basis especially newly created cadres for the purpose of task shifting.

6.2 Policy implications

While these findings corroborate with those from other LMICs, it may not be prudent to generalize them widely. However, health planners, policy makers and donor agencies can use results from each context for designing strategies to further motivate the health workforce in their respective settings, as a means of improving health systems performance. This section describes a set of separate policy implications for Nigeria and India respectively.

6.2.1 Nigerian Context

Findings from both studies conducted in Nigeria are indicative of the importance of financial, as well as non-financial extrinsic factors in motivating health workers. Health workers placed high value on having a conducive working environment, particularly having an adequate supply of essential drugs, such that they could provide treatment to patients rather than just consult with them. It is no surprise that even with the advent of PBF in their facilities they considered improvement in their structural working conditions to be the most significant change. Thus, policy makers and donor agencies should work towards setting up, at the very least, a functional and sustainable drug revolving fund at the PHC level and put in place systems to continuously upgrade essential equipment. The introduction of PBF has already kick started some of these processes in selected PHCs.

In addition to monetary incentives, health workers were also motivated by changes in intensity and nature of supervision, as well as staff dynamics. However, they were disgruntled by delays in payment, reductions in the amount of bonus payments and also complained of excessive workload due to perceived staff shortages. Although the study was conducted during a pilot phase, as PBF scales-up to other parts of Nigeria, policy makers should be consistent about its design and timely implementation in order to prevent changes in incentive amounts and delays in their disbursement. They should also be conscious of the relative contribution of a PBF bonus payment in light of increases in salary gradients of health workers especially to prevent 'gaming' in the future. More importantly, such programs need to be aligned with broader human resource reforms, including timely recruitment and appropriate distribution of health workers in order to prevent burn out and attrition.

Finally, conclusions of both studies also point towards improving leadership and managerial capacity of officer in-charges (OICs) of health facilities. OICs with such enhanced skills are likely to motivate health workers by providing better supervision, as well as creating a more conducive and supportive environment. This is even more crucial in the context of PBF as OICs require additional managerial skills to optimize earnings of the PHC, as well as to spend them wisely on operational costs. In addition, OICs need to impart training on PBF mechanisms and processes to their subordinates and hence should be adequately and routinely skilled to do so.

6.2.2 Indian Context

Findings on domains of job satisfaction among health workers in Chhattisgarh could be generalized to other similar states in India. In this context as well, policy makers, planners and managers should critically examine the importance of providing additional extrinsic benefits, apart from salary, particularly focused on supporting family life such as decent housing, educational prospects for children and adequate leisure time for improving job satisfaction among health workers. In addition, other non-financial incentives such as training and promotion opportunities along with regular pre-arranged supervision are also likely to result in greater job satisfaction.

The creation of RMAs in Chhattisgarh, as a cadre to assist medical doctors, is unique in India with only one other state currently experimenting with it. However, it is a critical step towards addressing the problem of shortages of skilled providers at the primary health level. Thus, in order to engage and retain RMAs it is crucial to provide them with a more supportive environment, one that offers opportunities to progress on a secure career path, with greater acceptance from regulatory authorities. While it may not be fiscally prudent for policy makers to regularize contractual staff or it may not be feasible in the short-term, additional benefits to health workers, particularly to those serving in extremely remote areas, to compensate for having no or little job security should be prioritized.

6.3 Strengths and Limitations

This dissertation combines three unique studies on determinants, focusing particularly on those at the organizational level, of motivation and job satisfaction among primary health workers from distinct settings in Nigeria and India. It addresses a critical gap in the literature pertaining to primary health workers, particularly facility-based 'community health officers', in the context of Nigeria, and very little is known about 'alternate non-physician providers' in India. In addition, the thesis also contributes towards building the evidence base on effects of financial incentives, in this case through results-based financing approaches, documenting how and why they lead to changes in health worker behavior. Each study is based on a solid conceptual framework, drawn from existing theories on motivation and job satisfaction, and uses rigorous methodology, both quantitative and qualitative, to address the research inquiry. Moreover, results from these studies can contribute towards further research. For example, findings from the first paper were used to design a quantitative scale to measure organizational determinants of motivation which has been embedded in the impact evaluation of the parent project.

However, this dissertation has a few shortcomings. In addition to limitations mentioned for each paper, on the whole it provides a "snap shot" of the picture rather than that of a holistic and dynamic relationship between motivation, job satisfaction and performance including feedback loops that rise from one to another. Moreover, it deals with many latent variables, including motivation, job satisfaction, leadership, which are difficult to

measure and should be assessed using methods in addition to self-reported behavior such as direct observations. While it is based on a conceptual framework that draws from existing theories of motivation in organizational psychology, it is limited in its scope to validate any or a combination of these theories. Similarly, though it is able to identify various determinants of motivation and job satisfaction, it is unable to describe, in detail, their relative importance.

6.4 Further Research

Despite these limitations this dissertation provides a foundation to understand determinants of motivation and job satisfaction particularly those at the organizational level. It also raises further questions and points towards policy recommendations, both of which require additional research. For example:

Nature of supervision and leadership styles: While the three studies clearly point towards the importance of supervision in motivating health workers, further research could enable policy makers and planners to design and implement appropriate supervision models. Research is required to assess what type of supervision practices are efficient and cost-effective at the primary health level in each of these contexts, particularly in the absence of adequate financial resources available to supervisors. The PBF case study showed that supervision visits validated quality of services provided and consequently affected bonuses, which reportedly motivated health workers to "stay in check". It would be

useful to understand whether and how supervision provided using structured checklists without monetary incentives would influence behavior and performance as well. Additionally, as leaders of frontline health workers, officer in-charges and district-level managers require additional training particularly in a resource-constrained environment, to strengthen their capacities to innovate, plan, direct, supervise and motivate their staff. Further research on the effects of different styles of leadership on motivation could also influence designing such training programs for managers.

Deeper exploration of role of organizational justice: Although each study highlights the role of equity (unequal salary structure among same grade of health workers in paper 1, fairness in sharing of PBF bonus in paper 2, relatively low autonomy perceived among RMAs in paper 3), neither is adequate to validate motivation theories on equity or organizational justice. Thus, the hypothesis that unfair distributive and procedural justice results in low levels of motivation and job satisfaction needs to be tested more rigorously. In the background of scaling-up PBF in Nigeria, this would be important from the point of view of re-examining the formula to divide bonus between members of the same health facility. On the other hand, in the context of replicating creation of RMAs in other parts of India, it would be crucial to understand how to influence the broader organizational culture such that RMAs are effectively integrated in the health system.

Strategies to improve motivation resulting from vocation and value systems, including religion: Given many health workers in Nigeria talked about joining the profession to

save lives and as a service to God, further research is required to strategize how policy makers could better cater to these intrinsic desires of health workers. In particular, researchers need to identify whether teaching institutions, faith-based organizations and government recruiting agencies can play a role in internalizing and strengthening these values among health workers.

Effects of motivation and job satisfaction on performance: As mentioned before, in addition to understanding determinants of motivation and job satisfaction, it is important to also measure their effects on performance of health workers. In Nigeria, especially with the roll-out of a PBF scheme, it would be crucial to understand the direct influences of bonus payments on performance as well as its mediating effects through motivation. Similarly, strong correlation found between job satisfaction and intention to leave in Chhattisgarh also forms the basis for more rigorous analyses of effects on other indicators of performance. In addition, further research is also required to understand the relative importance of various determinants of motivation and job satisfaction on performance of health workers.

6.5 Conclusion

Results from this dissertation suggest that motivation and job satisfaction of primary health workers from distinct settings in Nigeria and India are, on the whole, influenced by certain individual characteristics (vocation, self-efficacy, religion), financial and non-

financial extrinsic incentives, and several organizational structures and processes including supervision, leadership, fairness in distribution of resources and responsibility, staff dynamics and team cohesion. In addition, in each case study the broader socio-political climate also plays a dominant role, either directly or indirectly, in affecting health worker behavior. Thus, in conclusion, motivation and job satisfaction are complex constructs, influenced by different types of factors at different levels along with synergies between them that can be positive as well as negative. Although latent phenomena, understanding motivation and job satisfaction can generate research leading to programmatic recommendations that strengthen health systems performance

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Appendices

Appendix 1: Detailed Respondent Selection for Paper 1

Location	In-Depth Interviews									Key Informant Interviews	GRAND TOTAL
	General Hospital		Comprehensive PHC		Basic PHC		Basic PHC		Total		
	OIC	HW	OIC	HW	OIC	HW	OIC	HW			
Ondo											
State MOH										1	1
Poor performing LGA	1	2	1	1	1	1	1	0	8	1	9
Better performing LGA	0	0	1	2	1	1	1	2	8	1	9
Nasarawa											
State MOH										2	2
Poor performing LGA	0	0	1	1	0	2	1	0	5	1	6
Better performing LGA	1	2	0	1	1	1	0	2	8	1	9
Federal level										2	2
Total	**2**	**4**	**3**	**5**	**3**	**5**	**3**	**4**	**29**	**9**	**38**

Appendix 2: In-depth Interview Guide for Paper 1

1.	**Background: educational, professional and social**
	Could you please tell me a little bit about yourself? • What is your position at this health facility? • How long have you been here? • Where did you work before this? • What is your educational background? • Where did you receive your training? • Are you a resident of this area? • Do you belong to this area/community originally? • Where does your family live?
2	**Current job description**
	• Who has employed you for this position? • What is your grade level? • What other forms of compensation do you receive?
	• How many days of the week do you work? • What are your daily duties and responsibilities? • What kind of clinical and non-clinical services do you provide? What kind of services does this facility provide? • How many patients do you normally see every day? What kind of patients do you typically see at this facility?
	• Can you provide a brief description of some of the main working arrangements at this facility (remuneration, supply of drugs and equipment, supervisory visits etc)
3.	**Perception of organizational goals**
	• Do you think this facility has an organizational goal? OR What is the final outcome that this facility is trying to achieve? • According to you, what is this goal? • Do you think the LGA, state and federal ministries also share this goal?
4.	**Professional goals and ambitions**
	• What made you decide to become a doctor/nurse/CHEW? • What are your professional goals or what do you aspire to achieve from this job? • What are your expectations from this job? • What are the expectations from you for this job? From your supervisor? Your community?

5.	**Experiences of working in their present location**
	• What do you consider has been your biggest accomplishment in this job? • What experiences in this job till now have made you feel that you are achieving your professional goal? Ask to describe in detail. • What experiences in this job have made you feel that you are not able to fully achieve what you had expected from this job? Ask to describe in detail.
6.	**Experiences of working arrangements**
	• Tell me your experience with the financial and administrative arrangements at this facility and LGA. (Probe on whether they think these arrangements work well? What do they consider can be done to improve them and make them more efficient?)
7.	**Experiences of remuneration arrangements**
	• Tell me your experience with the remuneration arrangements at this facility and LGA. (Probe on whether they are satisfied with their compensation/salary package and benefits? Have there been delays in receiving these benefits?)
8.	**Interactions with co-workers**
	• Describe your interactions with your co-workers. (Probe on what kind of a rapport do they have with their co-workers? What is the working environment like? Who resolves disputes? How has this interaction helped their ability to perform better?)
9.	**Interactions with supervisors and/or mangers**
	• Describe your interactions with your supervisors and/or managers. (Probe on how often they are supervised, whether they get adequate feedback, does the supervisor encourage them to perform better, does the supervisor provide any incentives) • How do you think the supervision provided to you can be improved?
10.	**Experiences of opportunities for personal development / capacity-building**
	• What kind of opportunities do you think you need to enhance your capabilities and personal development?
11.	**Perceptions of leadership and its effectiveness**
	• Who do you consider your leader? (Probe to understand the difference between leader, manager and supervisor and leadership at different levels) • Describe your experiences or a few situations that made you think he/she acted like a good leader. • Describe your experiences or a few situations that made you think he/she DID NOT act like a good leader. • (Probe on shared vision, creating a change, creating an organizational culture, creating a structure which empowers them)
12.	**Perceptions of motivation (sum-up question)**
	• According to you, what does motivation to work mean? What do you think makes you motivated to work here?

Appendix 3: Final List of Codes for Paper 1

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
1. PERSONAL BACKGROUND		
1.1 EMP/CADRE/ED	Position at the health facility/ cadre of health worker/educational history	Use this code for information on the participants' educational history and level, professional history, prior jobs held and job experiences
1.2 RES/SOC	Area of facility and residence/family/ social history/background	Use this code for information on the participants' social history, family background, area of current residence and place of work
1.3 PROF	Professional history, goals and aspirations	Use this code for information on participants' professional goals and aspirations, reasons given for joining their profession
2. EXPERIENCE OF WORKING AT THE HEALTH FACILITY		
2.1 GOAL	Goal or targets for the facility	Use this information for the participants' description of the goal of the facility and of the person/agency who set the goal
2.2 POS EXP	Positive experiences of working at the health facility/helped to achieve personal and organizational goals/ Positive factors affecting their performance and motivation	Code based on sub-codes 2.21-2.25
2.21 PS_HELP	The ability to help the community/humanity	Use this code if the participant describes his ability to help patients/community, bring about a change in health service utilization at the facility, home visits etc as a positive experience

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
2.22 PS_RECOG	Receiving recognition from the community/staff/in-charge	Use this code if the participant describes being recognized by the community/staff or in-charge of the health facility for his/her good work or for being able to provide health services to them as a positive experience
2.23 PS_ENVIRON	Positive working environment/culture at the health facility	Use this code if the participant mentions positive aspects in the working environment or culture prevalent at their health facility such as good working relation between staff, a good in-charge, well equipped facility
2.24 PS_SALARY	Happy with salary and compensation received	Use this code if the participant explicitly talks about being happy with the compensation he/she is receiving both in terms of salary and other monetary allowances
2.25 PS_OTHER	Any other positive experience described or mentioned	Use this code for information provided by the participant on any other positive experience that he/she has enjoyed while working at the health facility, not covered under codes 2.21-2.24
2.3 CHALLENGES	Challenges faced while working at the health facility and their environment/ Negative factors affecting their performance and motivation	Code based on sub-codes 2.31-2.38
2.31 CL_DRUGS	Shortage of drugs	Use this code for a participant's description of lack of drugs and reasons for the same as a major challenge to their work
2.32 CL_EQUIP	Shortage of essential equipment	Use this code for a participant's description of lack of essential equipment, including equipment required for deliveries and transport/ambulance for referral and reasons for the same as a major obstacle to their ability to provide good services

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
2.33 CL_ELEC/WATER	Lack of electricity and water	Use this code if the participant states lack of electricity/generator/fuel for generator as well as water both for drinking and for any medical procedure as a challenge to their work
2.33 CL_HWSHORT	Shortage of manpower	Use this code if the participant describes the shortage of manpower, both technical and non-technical, as a factor affecting his/her ability to work well
2.34 CL_ACCESS/SEC	Concerns about access and security at the facility	Use this code if the participant expresses concerns about their own security/lack of guards at the health facility and grievances about poor access, both in terms of bad roads and lack of transport options, to the facility for them
2.35 CL_PATRON	Lack of patronage/low levels of utilization	Use this code if the participant describes low levels of utilization or lack of patronage for the health services provided at the health facility from the surrounding community as a de-motivating factor
2.36 CL_SALARY	Inadequate or delayed salary/compensation and no additional incentives	Use this code if the participant discusses issues pertaining to his/her salary including its adequacy, comparisons with other cadres and facilities, delays in receiving it, allowances and monetary incentives
2.37 CL_SUP/LEAD	Inadequate supervision and/or leadership	Use this code if the participant talks about unsatisfactory experiences with his/her supervisor and leader or lack of adequate feedback and training received
2.38 CL_OTHER	Any other challenges mentioned	Use this code for information on other challenges faced by participants while working in their respective health facilities not included in 2.31-2.37
2.4 COWORK	Experiences with co-workers	Use this code for any information provided by the

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
		participant on his/her interactions and relations with co-workers and other member so the staff including any conflicts or problems as well as how they are resolved
2.5 AUTHORITY	Experiences with higher authority	Use this code for any information provided by the participant on his/her experiences with higher authority like members of the local and state government on issues pertaining to salary, training, drugs and equipment, supervision etc
3. PERCEPTIONS OF AND EXPERIENCES WITH EFFECTIVE SUPERVISION PRACTICES		
3.12 SUP_QUAL	Qualities of a good supervisor	Use this code for a participant's description of the qualities they think a good supervisor should have and exhibit
3.2 SUP_EXP	Experiences with supervisors/supervision and their effects on performance and motivation	Use this code for information provided by the participant about the supervision provided to him/her by persons from different organizations/levels of government, the kind of supervision and feedback received, frequency of visits Use this code for information provided by the participant about his/her personal experiences with a supervisor and how that has affected his/her ability to perform better and achieve personal and professional goals
3.21 SUP_EXP_IMPROVE	Improvements in supervision required	Use this code for any improvements in supervision suggested by the participant including supervision for improving quality of care as well as for motivating health

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
		workers
4. PERCEPTIONS OF AND EXPERIENCES WITH EFFECTIVE LEADERSHIP STYLES		
4.1 LEAD_ROLE	Who provides leadership/who do the health workers consider to be their leader	Use this code for information provided by the participant regarding who they consider leader. This could include anyone and not necessarily in the work environment
4.2 LEAD_QUAL	Perceptions of qualities of a good leader	Use this code for qualities of a good leader described by the participant
4.3 LEAD_EXP	Experiences with leaders and their effects on performance and motivation	Use this code for information provided by the participant about his/her personal experiences with their leader and how that has influenced his/her performance and motivation
4.31 LEAD_EXP_IMPROVE	Improvements in leadership required	Use this code for any improvements required in leadership that the participant considers important for his/her performance
5. EXPERIENCE OF IN-CHARGE OF HEALTH FACILITY AS A MANAGER/LEADER (Note: the participant for the following codes must be the in-charge of the health facility)		
5.1 SUP_ROLE	Experience of providing supervision to other members of the staff	Use this code for the description of experiences by the participant on how he/she provides supervision to other members of the staff including how often, feedback provided etc.
5.2 SUP_ROLE_QUAL	Experience of ensuring quality assurance in services rendered	Use this code for description of experiences by the participant on how he/she ensured that other members of the staff were providing good quality of care to the patients
5.3 LEAD_MOTIVATE	Experience of motivating members of the staff	Use this code for description of experiences by the

Mnemonic or numeric "brief" code	Full description of code	When to use and when not use the code
		participant on how he/she motivates members of the staff
5.3 LEAD_CHANGES	Experience of envisioning and bringing about changes	Use this code for description of experiences by the participant on how he/she sets a vision and makes plan to achieve it
5.4 MANAGE	Experiences of managing the facility	Use this code for information provided by the participant on experiences of managing the health facility including drug supply, equipment, staff roster, records, patient visits and outreach campaigns, working with the Ward Development Committee
5.41 MANAGE_CHALLENGE	Challenges faced in the management of the facility	Use this code for description of the challenges faced by the participant in managing the facility including shortage of staff/drugs, low utilization, conflict between staff members etc. and how he/she attempts to solve them
5.5 MANAGE_AUTH	Experiences of interactions with higher authority over managerial issues	Use this code for description of interactions and relations the participant has with persons from the local and state government regarding management, supervision and leadership
6. PERCEPTIONS OF MOTIVATING FACTORS		
6.1 MOTIV_DEF	Definition of motivation	Use this code to for respondents' description of what they understand motivation to mean
6.2 MOTIV_FAC	Factors of motivation	Use this code when respondents directly mention factors that they consider to be motivating

Appendix 4: Detailed Respondent Selection for Paper 2

Table 7.2: Detailed Respondent Selection for Paper 2

LGA/State	Health Facility/ Health Department	PBF or Non-PBF	Respondents		
			Officer in-charge	Clinical health worker	LGA/PBF manager
Nasarawa Eggon	Health Facility 1	Non-PBF	1	1	
	Health Facility 2	Non-PBF	1		
	Health Facility 3	Non-PBF	1	1	
	Health Facility 4	Non-PBF	1	1	
	Health Facility 5	Non-PBF		1	
	Health Facility 6	Non-PBF		1	
	Health Facility 7	Non-PBF		2	
	Health Facility 8	Non-PBF	1		
	LGA Health Department	Non-PBF			1
Wamba	Health Facility 1	PBF	1	1	
	Health Facility 2	PBF	1	1	
	Health Facility 3	PBF	1	1	
	Health Facility 4	PBF	1	1	
	Health Facility 5	PBF	1	1	
	Health Facility 6	PBF	1	1	
	Health Facility 7	PBF	1	1	
	Health Facility 8	PBF	1	1	
	Health Facility 9	PBF	1	1	
	Health Facility 10	PBF	1	1	
	Health Facility 11	PBF		2	
	LGA Health Department	PBF			2
State Ministry		PBF			2
TOTAL			**15**	**19**	**5**
GRAND TOTAL					**39**

Appendix 5: In-Depth Interview Guides for Paper 2

I. Semi-structured Questionnaire for PBF Health Facilities

1.	**Background: educational, professional and social**
1.	Could you please tell me a little bit about yourself? • Where are you from? • How old are you? • What are your educational qualifications? • Where did you study? • Where did you work before? • How long have you been working here? • Do you also live here? Where is your family?
2.	Why did you decide to join this profession? *Probe: what are some of your professional goal*s
2	**Current job description**
1.	What do you like the most about your job? *Probe:* o *What are some of the accomplishments you have achieved here?* o *What are you proud about your work here?* o *What makes you happy to work here?*
2.	What do you not like about your job? *Probe:* o *What are some of the challenges you face here?* o *What are the reasons you don't enjoy your work here?*
3.	What are your relationships with other members of this facility as well as the LGA PHC department like? *Probe:* o *What are your experiences of working together as a team?* o *What are the challenges of working with colleagues?* o *What is the nature of supervision received from officer in-charge and LGA PHC department?*
3.	**Introduction of the PBF program**
1.	Can you tell me about the PBF program your facility is a part of?

	Probe: ○ *How long has it been in operation?* ○ *What does it include?* ○ *Who is implementing it?*
2.	What kind of preparations did you have to do *before* the program started in your facility? *Probe:* ○ *Were you consulted before the program started?* ○ *Did you receive any training? What was that like?*
4.	**Changes experienced due to the PBF program**
1.	What changes have you experienced at this facility ever since the PBF program began? *Probe: Overall changes in* ○ *Facility structures and inputs?* ○ *Patient volume?* ○ *Work load?* ○ *Staff relations?* ○ *Supervision?* ○ *Monetary incentives?* Can you please rank the three most important changes in your opinion?
2.	Can you please tell me how the PBF program has changed the way you work as a team at this health facility?
3.	How would you describe the support you are receiving from the LGA and the state for implementing this project? *Probe:* ○ *How often do they meet or hear from you?* ○ *What happens during these meetings?* ○ *How useful do you think this is for your work?*
4.	How does the community perceive this program? What are your thoughts on the effects of this program on the community?
5.	**Motivation**
1.	What do you understand by the word ‘motivation’?

2.	What factors motivate you to work hard? OR achieve the goals you have set out for yourself? Improve the work you are doing?
3.	How has this PBF program affected your motivation?
4.	Can you describe some of the changes you have noticed in your **own manner** of working ever since the program started? (Probe: o How would you describe your level of excitement for coming to work? o How would you describe your pride for working at this facility? o What do you feel about the contributions you are making to the success of the program? o What do you feel about the amount of work you are putting in these days? o How would you describe your commitment to this facility now?
5.	Can you tell me how this program is affecting your colleagues? o How would you describe their level of excitement for coming to work? o How would you describe their pride for working at this facility? o What do you feel about the amount of work they are putting in these days? o How would you describe their commitment to this facility now?
6.	What are your thoughts on the additional monetary incentives tied to performance that you are receiving?
7.	What changes in the PBF program will help you more?

II. Semi-structured Questionnaire for non-PBF Health Facilities: English and Hausa

1.	**Background: educational, professional and social**
1.	Could you please tell me a little bit about yourself? • Where are you from? • How old are you? • What are your educational qualifications? • Where did you study? • Where did you work before? • How long have you been working here? • Do you also live here? Where is your family?
2.	Why did you decide to join this profession? *Probe: what are some of your professional goal*s
2	**Current job description**
1.	What do you like the most about your job? *Probe:* o *What are some of the accomplishments you have achieved here?* o *What are you proud about your work here?* o *What makes you happy to work here?*
2.	What do you not like about your job? *Probe:* o *What are some of the challenges you face here?* o *What are the reasons you don't enjoy your work here?*
3.	What are your relationships with other members of this facility? *Probe:* o *What are your experiences of working together as a team?* o *What are the challenges of working with colleagues?* o *What is the nature of supervision received from officer in-charge?*

4.	Can you describe your experiences with the supervision that you are receiving at this facility? Probe: ○ *Who provides you supervision?* ○ *How frequent is it?* ○ *What is the nature of supervision?*
3.	**Motivation**
1.	What do you understand by the word 'motivation'?
2.	What factors motivate you to work hard?
3.	Can you describe your **own manner** of working at this facility? *Ask each of the below*: • How would you describe your level of excitement for coming to work? • How would you describe your pride for working at this facility? • What do you feel about the contributions you are making to the success of the facility? • What do you feel about the amount of work you are putting in these days? • How would you describe your commitment to this facility?
4.	According to you, what are some of the factors that motivate your colleagues at this facility?
5.	Can you describe your **colleagues' manner** of working at this facility? *Ask each of the below*: • How would you describe their level of excitement for coming to work? • How would you describe their pride for working at this facility? • What do you feel about their contributions you are making to the success of the facility? • What do you feel about the amount of work they are putting in these days? • How would you describe their commitment to this facility?
5.	What are your thoughts about receiving additional monetary incentives tied to your performance?
6.	What changes in the working environment will help you to be more motivated?

4.	Introduction of the PBF program
1.	Have you heard about the PBF program that is being implemented in Wamba LGA? What do you know about it? *Probe:* ○ *How long has it been in operation?* ○ *What does it include?* ○ *Who is implementing it?*
2.	Do you personally know any of the health workers who are a part of this program? What have they told you about it?
3.	Would you consider this to be program that should be adopted by other LGAs and states? Why or why not?

III. Semi-structured Questionnaire for PBF Supervisors from the LGA

1.	**Background: educational, professional and social**
1.	Could you please tell me a little bit about yourself? • Where are you from? • How old are you? • What are your educational qualifications? • Where did you study? • Where did you work before? • How long have you been working here? • Do you also live here? Where is your family?
2.	**Introduction of the PBF program**
1.	Can you tell me about the PBF program that has been initiated in Wamba LGA? *Probe:* o *How long has it been in operation?* o *What does it include?* o *Who is implementing it?* o *Why was Wamba selected?*
2.	What kind of preparations did you have to do *before* the program started in your LGA? *Probe:* o *Were you consulted before the program started?* o *Did you receive any training?*
3.	What role do you play in this program? Can you describe some of your roles and responsibilities?
3A	Can you describe your staff at the department of PHC? What are the relationships between you and staff like? *Probe*: o *Get names and designations of each member* o *What are their roles in DPHC and the PBF project in particular?* o *Were they trained in PBF? By whom?*
4.	What do you like the most about your role in the PBF program?
5.	Can you describe some of the challenges you face while managing the project?

6.	Who provides you and your staff supervision on the PBF project? What has your experience been like with the supervision?
3.	**Changes experienced due to the PBF program**
1.	What changes have you experienced in the LGA as a whole ever since the PBF program began? *Probe*: o *Changes at the facilities? Community? Department of PHC, LGA?* o *What changes have taken place in the supervision provided to health facilities by them?*
2.	Can you describe which facilities are doing the best/worst as per key projector indicators? Based on your experience, can you explain the variation in performance? *Probe*: o *Can you please rank the ten PHCs according to their performance?* o *In your opinion, what is the reason for this relative performance?*
3.	What can you say about changes in individual health workers' motivation and performance? Why do you think this is so? *Probe*: o *Can you please give some examples of changed behaviors among health workers?* o *How do you think health workers are dealing with the additional workload?* o *Why are the health workers complaining of shortage of staff especially when the patient load is still 3-4 on an average day in the facility?*
3A	Can you describe the process through which bonus payments for individual health workers are determined? How does the indice tool work? Who evaluates the health workers, particularly OIC? *Probe*: o *Does voluntary staff also get bonus payments?* o *In your opinion, are these bonus payments adequate for health workers for the amount of extra work they are putting in?* o *What are the health workers using the other 50% of payments for?* o *Are they giving any of their PBF payments to the community?*
3B	What are you and your staff using the bonus that you are receiving for?
4.	In your own words, please describe teamwork and relationships between health workers in facilities? Has this been affected by PBF? How and why? *Probe*: o *Is teamwork a direct criterion used for determining PBF payments to the health facilities?*
5.	Do you feel health workers in better performing health facilities seem to be more motivated? How and why? Please can you give me some examples? Why do you think this is the case? Do you think this could happen because of some other factors or at any other health facilities?

	Probe: ○ *Can you rank health facilities according to level of motivation of health workers?*
6.	Recommendations for improvement? *Probe*: ○ *For the project as a whole?* ○ *For motivation and performance of health workers?*

IV. Semi-structured Questionnaire for PBF Managers from the State

1.	**Background: educational, professional and social**
1.	Could you please tell me a little bit about yourself? • Where are you from? • How old are you? • What are your educational qualifications? • Where did you study? • Where did you work before? • How long have you been working here? Do you also live here? Where is your family?
2.	**Introduction of the PBF program**
1.	Can you tell me about the PBF program that has been initiated in Wamba LGA? *Probe:* ○ *How long has it been in operation?* ○ *What does it include?* ○ *Who is implementing it?* ○ *Why was Wamba selected?*
2.	What kind of preparations did you have to do *before* the program started? *Probe:* ○ *Were you consulted before the program started?* ○ *Did you receive any training?*
3.	What role do you play in this program? Can you describe some of your roles and responsibilities?
3A	Can you describe others in the state that provide supervision and management to Wamba LGA?
4.	What do you like the most about your role in the PBF program?

5.	Can you describe some of the challenges you face while managing the project?
6.	Who provides you and your staff supervision on the PBF project? What has your experience been like with the supervision?
3.	**Changes experienced due to the PBF program**
1.	What changes have you experienced in the LGA as a whole ever since the PBF program began? *Probe*: o *Changes at the facilities? Community? Department of PHC, LGA?* o *What changes have taken place in the supervision provided to health facilities by them?*
2.	Can you describe which facilities are doing the best/worst as per key projector indicators? Based on your experience, can you explain the variation in performance? *Probe*: o *Can you please rank the ten PHCs according to their performance?* o *In your opinion, what is the reason for this relative performance?*
3.	What can you say about changes in individual health workers' motivation and performance? Why do you think this is so? *Probe*: o *Can you please give some examples of changed behaviors among health workers?* o *How do you think health workers are dealing with the additional workload?* o *Why are the health workers complaining of shortage of staff especially when the patient load is still 3-4 on an average day in the facility?*
3A	Can you describe the process through which bonus payments for individual health workers are determined? How does the indice tool work? Who evaluates the health workers, particularly OIC? *Probe*: o *Does voluntary staff also get bonus payments?* o *In your opinion, are these bonus payments adequate for health workers for the amount of extra work they are putting in?* o *What are the health workers using the other 50% of payments for?* o *Are they giving any of their PBF payments to the community?*
3B	What are you and your staff using the bonus that you are receiving for?

4.	In your own words, please describe teamwork and relationships between health workers in facilities? Has this been affected by PBF? How and why? *Probe*: o *Is teamwork a direct criterion used for determining PBF payments to the health facilities?*
5.	Do you feel health workers in better performing health facilities seem to be more motivated? How and why? Please can you give me some examples? Why do you think this is the case? Do you think this could happen because of some other factors or at any other health facilities? *Probe*: o *Can you rank health facilities according to level of motivation of health workers?*
6.	Recommendations for improvement? *Probe*: o *For the project as a whole?* o *For motivation and performance of health workers?*

Appendix 6: Final List of Codes for Paper 2

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
1. PERSONAL BACKGROUND		
1.1 EMP/CADRE/ED	Position at the health facility/ cadre of health worker/educational history	Use this code for information on the participants' educational history and level, professional history, prior jobs held and job experiences
1.2 RES/SOC	Area of facility and residence/family/ social history/background	Use this code for information on the participants' social history, family background, area of current residence and place of work
1.3 PROF	Professional history, goals and aspirations	Use this code for information on participants' professional goals and aspirations, reasons given for joining their profession
1.31 PROF_HELP	The ability to help the community/humanity	Use this code if the respondent talks about joining the medical profession to help people, his/her community or states his/her goal to prevent or cure people of disease, reduce mortality and morbidity of his/her community
1.32 PROF_GOD	Helping community as a service to God or religious beliefs	Use this code if the respondent talks about joining the medical profession to serve God or for religious beliefs
1.33 PROF_FAM	Influenced by family members	Use this code if the respondent mentions joining the medical profession due to influence of a family member (parents encouraged/forced, parents/family members health workers themselves)
1.34 PROF_OTH	Any other reason given for joining the medical profession	Use this code for other reasons stated for joining the medical profession or professional aspirations
2. EXPERIENCE OF WORKING AT THE HEALTH FACILITY		
2.1 GOAL	Goal or targets for the facility	Use this information for the participants' description of the goal of the

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
		facility and of the person/agency who set the goal
2.2 POS EXP	Positive experiences of working at the health facility/what they enjoy about their job/help them to accomplish their goals	Code based on sub-codes 2.21-2.25
2.21 PS_HELP	The ability to help the community/humanity	Use this code if the participant describes his ability to help patients/community, bring about a change in health service utilization at the facility, home visits etc as a positive experience
2.22 PS_RECOG	Receiving recognition from the community/staff/in-charge	Use this code if the participant describes being recognized by the community/staff or in-charge of the health facility for his/her good work or for being able to provide health services to them as a positive experience
2.23 PS_ENVIRON	Positive working environment/culture at the health facility	Use this code if the participant mentions positive aspects in the working environment or culture prevalent at their health facility such as good working relation between staff, a good in-charge, well equipped facility etc
2.24 PS_SALARY	Happy with salary and compensation received	Use this code if the participant explicitly talks about being happy with the compensation he/she is receiving both in terms of salary and other monetary allowances
2.25 PS_PRIDE	Pride at what the facility or their individual job stands for	Use this code if the respondent states pride of being able to help the community or providing amenities to them or using medical knowledge to improve health outcomes as a reason for being happy in current position
2.25 PS_OTHER	Any other positive experience described or mentioned	Use this code for information provided by the participant on any other positive experience that he/she has enjoyed while working at the health facility, not covered under codes 2.21-2.24

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
2.3 CHALLENGES	Challenges faced while working at the health facility and working environment	Code based on sub-codes 2.31-2.38
2.31 CL_DRU	Shortage of drugs	Use this code for a participant's description of lack of drugs and reasons for the same as a major challenge to their work
2.32 CL_EQUIP	Shortage of essential equipment or infrastructure	Use this code for a participant's description of lack of essential equipment, including equipment required for deliveries and transport/ambulance for referral and reasons for the same as a major obstacle to their ability to provide good services.
2.33 CL_ELEC/WATER	Lack of electricity and water	Use this code if the participant states lack of electricity/generator/fuel for generator as well as water both for drinking and for any medical procedure as a challenge to their work
2.33 CL_HWSHORT	Shortage of manpower	Use this code if the participant describes the shortage of manpower, both technical and non-technical, as a factor affecting his/her ability to work well
2.34 CL_ACCESS/SEC	Concerns about access and security at the facility	Use this code if the participant expresses concerns about their own security/lack of guards at the health facility and grievances about poor access, both in terms of bad roads and lack of transport options, to the facility for them
2.35 CL_PATRON	Lack of patronage/low levels of utilization	Use this code if the participant describes low levels of utilization or lack of patronage for the health services provided at the health facility from the surrounding community as a de-motivating factor. Also use this code for any other negative perception of the community towards the facility and/or its staff.
2.36 CL_SALARY	Inadequate or delayed salary/compensation and no additional incentives	Use this code if the participant discusses issues pertaining to his/her salary including its adequacy, comparisons with other cadres and

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
		facilities, delays in receiving it, allowances and monetary incentives
2.37 CL_SUP/LEAD	Inadequate supervision and/or leadership	Use this code if the participant talks about unsatisfactory experiences with his/her supervisor and leader or lack of adequate feedback and training received
2.38 CL_OTHER	Any other challenges mentioned	Use this code for information on other challenges faced by participants while working in their respective health facilities not included in 2.31-2.37
2.4 COWORK	Experiences with co-workers	Use this code for any information provided by the participant on his/her interactions and relations with co-workers and other member of the staff including experiences of working together as a team, conflicts or problems as well as how they were resolved. Possible overlap with PS_ENVIR
2.5 SUPERVISION	Experiences with supervisors, both internal (OIC) and external (LGA PHC department, state MOH, others)	Use this code for information provided by the participant about the supervision provided to him/her by persons from different organizations/levels of government, the kind of supervision and feedback received, frequency of visits. For project LGA, it is likely that there would be overlap between this code and dPBF_SUPERVISION. Use both when its difficult to make a distinction.
3. INTRODUCTION TO PBF		
3.1 PBF_INTRO	How, why and when was PBF introduced	Use this code when respondents describe the initiation process for PBF in their respective facilities: when and why did the program start, what were the preparations that needed to be made including trainings etc
3.2 PBF_ DES	Description of PBF program	Use when respondents describe the PBF program, its components, key stakeholders and how it is implemented in their facilities
3.3 PBF_INFO	Information known about PBF program	For CONTROL LGA only: use when respondents mention what they know about the PBF project in the adjoining LGA

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
4. CHANGES EXPERIENCED DUE TO INTRODUCTION OF PBF (Not Applicable for Control LGA)		
4.1 dPBF	Changes since the introduction of PBF in the facility/LGA	See sub-codes below
4.11 dPBF_DRUGS	Changes in availability of drugs at the facility	Use when respondents describe changes in supply and availability of drugs as well as related issues in drugs management including stock-outs, drug revolving funds.
4.12 dPBF_EQUIP	Changes in availability of equipment and infrastructure at the facility	Use when respondents describe any changes in the availability of equipment at the facility AND changes in infrastructure and any other physical structures
4.13 dPBF_VOLUME	Changes in patient volume	Use when respondents talk about changes in patient volume since the beginning of PBF project
4.14 dPBF_LOAD	Changes in work load experienced by the health facility staff	Use when respondents describe changes in their own work load since the initiation of the program including working longer hours, seeing more patients, conducting outreach, maintaining records etc. *Possible overlap with 5.44*.
4.15 dPBF_RECORDS	Changes in maintaining of records and other patient information	Use when respondents describe changes in the health information systems at work in the facility. This would include any changes in patient registers, recording of meeting minutes, and other patient and staff forms that are maintained at the facility and then sent to higher authorities.
4.16 dPBF_LOAD_RECORD	Changes in work load experienced by staff due to record keeping alone	Use this code when respondents describe changes in work load experienced due to additional record keeping. *Possible overlap with 4.14, use both codes.*
4.16 dPBF_STAFF	Changes in working relations among staff in the facility	Use this code when respondents talk about changes in staff dynamics since the initiation of the PBF program. This would include changes in how members of the health facility staff work as a team, interpersonal

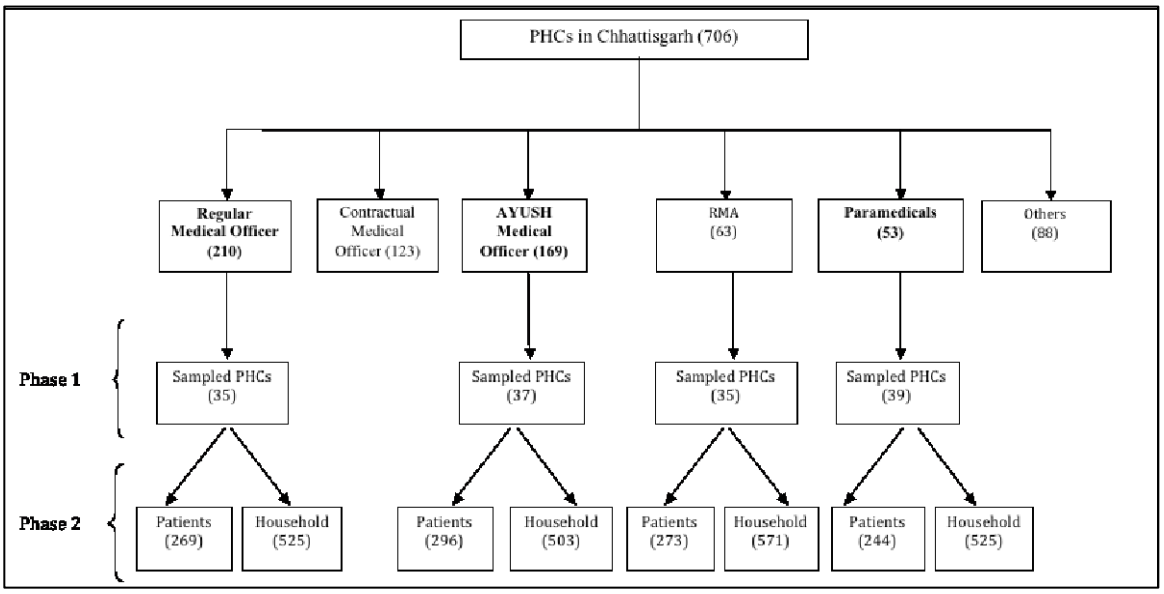
Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
		relationships between them and in particular between the OIC and his/her subordinates.
4.17 dPBF_SUPERVISION	Changes in supervision practices	Use this code for description of change in supervision practices including frequency of supervisory visits, nature of supervision as well as the agency by whom it is provided. Also use this code for description of internal supervision, i.e. supervision provided by the OIC to other members of the health facility staff. *Possible overlap with code 4.16.*
4.18 dPBF_MONETARY	Changes in monetary incentives received by staff	Use this code when respondents talk about changes in monetary incentives received with the advent of PBF in their facilities. This would include any discussion on the bonus payments received by them and their colleagues including their opinions about its amount, nature and frequency.
4.19 dPBF_RANK	Rank the changes in order of priority as mentioned by the respondents	Use this code for the ranks assigned by respondents to the three most significant changes brought about by the PBF project.
4.20 dPBF_AUTO	Changes in autonomy felt by the staff	Use this code when respondents mention any changes in autonomy felt by them in terms of making decisions for operating the health facility
4.21 dPBF_OTHER	Any other changes	Use this code for any other changes due to introduction of PBF
4.2 PBF_LGA/ST	Support received from LGA and the state MOH	Use this code when respondents talk about the support they receive from higher authorities, including the LGA and State MOH. This code **is not only for supervision** provided by higher authorities but also help in setting up and implementing PBF, addressing challenges etc. *Possible overlap with 4.17*
4.3 PBF_COMMU	Perceptions of community about the PBF program	Use this code for any mention of how the community responds and perceives the PBF project including description of patient feedback and experiences of interacting with the community during outreach campaigns. Also use the code for respondents' own assessment of the

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
		effect of the PBF program on the community
5. MOTIVATION: DEFINITION, FACTORS AND INFLUENCE OF PBF		
5.1 MOTIV_DEF	Definition and description of motivation	Use this code to describe the definition of motivation as described by the respondents
5.2 MOTIV_FACTOR	Factors affecting motivation	Use this code for all factors that respondents consider to motivate them to work harder
5.3 MOTIV_PBF	Effect of PBF on motivation	Use this code for description of how the PBF project has changed respondents' perceived levels of motivation. *NA for control LGAs*.
5.4 LEVEL	Assessing perceived levels of motivation (For project LGA: changes noticed in own behavior since PBF started)	Use sub-codes 5.41-5.45
5.41 LEVEL_EXCITE	Level of excitement at coming to work	Use this code when respondents describe (changes in) their level of excitement and happiness about coming to work (since PBF started in project LGA)
5.42 LEVEL__PRIDE	Level of pride in work	Use this code when respondents describe (changes in) the level of pride in their own work AND their facility (since PBF started in project LGA)
5.43 LEVEL__CONTR	Contributions made to the facility	Use this code when respondents describe (changes in) their own contributions to the facility, their patients and work in general (since PBF started in project LGA)
5.44 LEVEL__EFFORT	Effort and amount of work since PBF started.	Use this code when respondents describe (changes in) the amount of effort they are putting in and their work load since (since PBF started in project LGA). *Possible overlap with 4.14*
5.45 LEVEL__COMMI	Level of commitment to health facility since PBF started	Use this code when respondents describe (changes in) their commitment to the facility and their work in general (since PBF started in project LGA)

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
5.5 MOTIV_FACTOR_COLL	Factors affecting motivation of colleagues	Use this code when respondents describe factors that they perceive to be affecting motivation of their colleagues
5.5 LEVEL_COLL	Assessing perceived levels of motivation among colleagues (For project LGA: changes noticed in colleagues' behavior since PBF started)	Use sub-codes 5.51-5.55
5.51 LEVEL_COLL_EXCITE	Colleagues' level of excitement at coming to work	Use this code when respondents describe (changes in) their colleagues' level of excitement and happiness about coming to work (since PBF started in project LGA)
5.52 LEVEL_COLL_PRIDE	Colleagues' pride in work	Use this code when respondents talk about (changes in) their colleagues' pride in work AND the facility (since PBF started in project LGA)
5.53 LEVEL_COLL_CONTR	Colleagues' contributions to the facility	Use this code when respondents describe (changes in) their colleagues' contributions to the facility, their patients and work in general (since PBF started in project LGA)
5.54 LEVEL_COLL_EFFORT	Colleagues' effort and work load	Use this code when respondents describe (changes in) the amount of effort their colleagues' are putting in (since PBF started in project LGA). *Possible overlap with 4.14*
5.55 LEVEL_COLL_COMMI	Colleagues' commitment to the facility	Use this code when respondents describe (changes in) their colleagues' commitment to the facility and work in general (since PBF started in project LGA)
5.6 INCENTIVES	Opinions on new scheme of providing monetary incentives	Use this code for respondents' opinions on the new incentive schemes of providing financial incentives linked to performance
5.7 CHANGE_ENVIR	Further changes to working environment (and PBF project) for improving motivation	Use this code for suggestions received from respondents from control (project) LGAs respectively for further changes to their working environment (design of the PBF project) for improvements in their own levels of motivation as well as the overall performance of the facility.

Mnemonic or numeric "brief" code	Full description of code	When to use and when not to use the code
5.71 CHANGE_ENVIR_HW	Further changes to working environment (and PBF project) specifically pertaining to HRH reforms	Use this code for any comments on further changes in either working conditions or project design especially targeting towards changes in health worker reforms and policies including additional recruitment, changes in staffing patterns, trainings and transfers.
6. MISCELLANEOUS		
6.1 BIAS	Any social desirability bias suspected or identified	Use this code **only to make a side note** of comments or descriptions where you suspect the respondents were only saying positive things to appease the interviewer
6.2 CONFLICT	For conflicting responses	Use this code **only to make a side note** if you observe any conflicting responses in their opinions. For example, if they talk about how supervision received is good but then later in the interview mention that they are unhappy with the supervisors for not solving their problems.
6.3 NOCL	Not clear	Use this code if respondent's comments or arguments are not clear or coherent. Can use this code in addition to other codes.

Appendix 7: Sampling Plan for Paper 3



Appendix 8: Health Worker Assessment Questionnaire for Paper 3

BACKGROUND *(To be filled in by interviewer)*			
100	Interviewer code |___|___|___|___|	Date (day/month/year): / /**2009**	
101	Interviewer name:_____	Facility ID code: |___|___|___|___|	
102	Type of health facility PHC..... 1 Block PHC ..... 2 Other ..... 3 (_____) Specify	Location Facility name:_____ District _____ Village_____ Town _____	

A. HEALTH WORKER INFORMATION			
A01	Sex	Male ..... 1 Female 2	
A02	Age	|___|___|___| YEARS	
A03	How long does it take you to travel from your residence to the PHC where you work? *If you live in the PHC complex please enter 0*	|___|___| Hrs |___|___| Minute	
A04	Where do you currently live?	Village where PHC is located..... 1 Other village ..... 2 Town where PHC is located ..... 3 Other town ..... 4 City 5	
A05	How far is your residence from the PHC where you work? *If you live in the PHC complex please enter 0*	|____|____| Kms	
A06	Are you currently married?	Yes ..... 1 No 2	**If 2 goto A11**
A07	Does your spouse live with you?	Yes ..... 1 No 2	
A08	Do you have any children?	Yes ..... 1 No 2	**If 2 goto A11**
A09	Do your children live with you?	Yes ..... 1 No 2	
A10	Do any of your children go to school?	Yes ..... 1 No 2	

A11	What is your official designation? *Mark or tick only one*	Medical officer in-charge ..... 1 Second Medical officer ..... 2 AYUSH doctor ..... 3 Rural Medical Assistant (RMA) ..... 4 Nurse ..... 5 Pharmacist ..... 6 LHV ..... 7 ANM ..... 8 Other ..... 9 (_____) Specify	
A12	What is your employment status?	Regular staff ..... 1 Contractual staff 2	
A13	How long have you been working at the PHC level? *Enter months if less than one year*	|____|____| years / |____|____| months	
A14	How long have you worked in the PHC where you are currently posted? *Enter months if less than one year*	|____|____| years |____|____| months	
A15	Please indicate the level of your professional education. *Circle only one*	MBBS ..... 1 Post Graduate/diploma/DMV ..... 2 BAMS (ayurveda) ..... 3 Post graduate in Ayurveda ..... 4 BUMS (unnani) ..... 5 Postgraduate in Unnani ..... 6 BSMS (siddha) ..... 7 Postgraduate in Siddha ..... 8 BHMS (homeopathy) ..... 9 Postgraduate in homeopathy ..... 10 Diploma in modern and holistic medicine ..... 11 GNM ..... 12 BSc (nursing) ..... 13 Post-basic BSc (nursing) ..... 14 Bachelors of Pharmacy ..... 15 Diploma in Pharmacy ..... 16 Other ..... 17 (_____) specify	

A16	Have you received in-service training to manage the following conditions and indicate if you can manage each case with confidence? *Please mark with X where appropriate*		**Training Received**		**Indicate if you are confident to manage this case**			
			Yes	No	Confident	Somewhat confidently	Not Confident	
		Diarrhea						
		High fever						
		Cough						
		Skin Disease						
		Japanese Encephalitis						
		ARI						
		Malaria						
		TB						
		HIV/AIDS						
		IMCI						
		Breast cancer						
		Leprosy						
		Hypertension						
		Malnutrition in children						
		Anemia in women						
		Injury /Accident						
		Snake/Scorpion bite						
		Dog bite						
		Diabetes						
		Myocardial Infraction						
		Small pox						
		Antenatal care						
		Normal delivery						
		Complicated delivery						
		Post natal care						
		Reproductive tract infections						
		Tubectomy						
		Vasectomy						
		IUD insertion						

A17	Where did you live during your schooling years (till 12th standard)? *If you lived in multiple locations, please circle the one where you spent the most time*	Village ..... 1 Town ..... 2 City 3	
A18	How far is the place where you lived during your schooling years (till 12th standard) from the PHC where you are currently working?	Very far from the PHC .....1 Somewhat far from the PHC.....2 Not far from the PHC 3	
A19	After how much time would you like a transfer from / leave the PHC where you are currently working? *Read all options and circle only one*	Don't want a transfer at all .....1 Would like a transfer after two more years.....2 Would like a transfer after one year.....3 Would like a transfer as soon as possible 4	**If 1,2 then goto A21**
A20	In the previous question you indicated that you would not like to transfer from /leave the PHC where you are currently working in the near future. Please indicate all the reasons for this. If you find none of the responses in the list reflect what you want to say, please circle 13 and specify in the space below. *Please circle all those responses which apply.*	I am near my family.....1 My spouse has a job in the same area/nearby.....2 I am near my native place / the area where I grew up ..3 Good schooling available nearby for my children.....4 PHC where I work is near a town .....5 Good housing available .....6 Electricity, drinking water is available .....7 PHC has good infrastructure, drugs, equipment.....8 Community where I work respects me very much .....9 Community where I work needs my services.....10 Security is good at the PHC where I work .....11 Work at the PHC is interesting .....12 Other .....13 (_____) Specify	**Goto Sec B**

A21	In the previous question (A19) you indicated that you would like to transfer from /leave the PHC where you are currently working in the near future. Please indicate all the reasons for this. If you find none of the responses in the list reflect what you want to say, please circle 10 and specify in the space below *Please circle all those responses which apply.*	I am far from my family ..... 1 My spouse has a job in the same area/nearby ..... 2 I am far from my native place/where I grew up..... 3 Good schooling not available for my children..... 4 PHC where I work is far from a town/city..... 5 Good housing is not available ..... 6 Electricity, drinking water is not available ..... 7 PHC has poor infrastructure, drugs, equipment..... 8 Community where I work does not respect me ..... 9 Community where I work does not need my services 10 Security is not good at the PHC where I work ..... 11 Work at the PHC is interesting ..... 12 Other ..... 13 (_____) Specify	
A22	Please indicate which of the following staff are currently present at the PHC where you are working? *Circle all which apply*	Medical officer in-charge ..... 1 Second Medical officer ..... 2 AYUSH doctor ..... 3 Rural Medical Assistant (RMA)..... 4 Nurse..... 5 Pharmacist ..... 6 LHV ..... 7 ANM..... 8 Other ..... 9 (_____) Specify	

B. SERVICES

The questions below ask about the services you provide at the health center.

B01	Which of the following services have you provided within the past 3 months? ***Read each service*** *and circle those that the respondent has provided at least once within the past three months. Mark X to all that apply.*		**YES**	**NO**	
		Supervise sub-center			
		Supervise ASHA/mithanin/CHW			
		Supervise PHC staff			
		Administrative work			
		HMIS reports			
		Vaccinations			
		Consultation for children			
		Consultation for adults			
		Consultation for pregnant women			
		Family planning			

		Deliveries			
		Nutrition education			
		Community health education			
		ASHA/mithanin training			
		ANM training			
B02	Which system of medicine do you use to treat patients?	Only allopathic/western medicine ..... 1 Only AYUSH system of medicine ..... 2 Combination of allopathic and AYUSH 3			
B03	When was the most recent time your senior officer visited your PHCs? *Circle the appropriate number for the response given*	Within the past 30 days..... 1 Within the past 31-90 days ..... 2 Within the past 3-6 months..... 3 More than 6 months ..... 4 Never 5			
B04	In the past month have you treated the following cases? *Please mark with X where appropriate*		**Yes**	**No**	
		Diarrhea			
		High fever			
		Cough			
		Skin Disease			
		Filaria			
		Measles			
		Acute Respiratory Infection			
		Malaria			
		TB			
		Leprosy			
		Hypertension			
		Severe malnutrition in children			
		Anemia in women			
		Injury /Accident			
		Snake/Scorpion bite			
		Dog bite			
		Small pox			
		Antenatal care			
		Normal delivery			
		Complicated delivery			
		Post natal care			
		Urinary tract infection			
		Reproductive tract infections			

B05	In the past 3 months which of the following procedures have you performed?		**Yes**	**No**	
		Drained an abscess			
		Stabilized a fracture case			
		Given IV to a patient			
		Given an injection			
		Inserted an IUD			
		Conducted a vasectomy			
		Conducted a tubectomy			
		Taken blood pressure			
		Checked temperature with a thermometer			
		Drawn blood from a patient			
		Used a stethoscope to conduct physical examination			
		Sutured a wound			
		Applied tourniquet in case of severe bleeding			

C. HEALTH WORKER SATISFACTION

In this part of the questionnaire we would like to ask you some questions regarding your satisfaction with your current job. Each statement below asks about your ***level of satisfaction*** *with various aspects of your current job. If you are* ***completely satisfied*** *with that aspect of your job, then out of 4, give it 4. If you are* ***completely unsatisfied*** *with it, then out of 4, give 1. You can also give 3 or 2,* ***depending on your level of satisfaction or dissatisfaction with the factor reflected in the statement.***

No.	How would you rate the following aspects of your work?	1 Very unsatisfied	2 Unsatisfied	3 Satisfied	4 Very satisfied
C01	The amount of your salary	1	2	3	4
C02	The condition of the house where you live	1	2	3	4
C03	The school your children go to	1	2	3	4
C04	The number of staff available at your health facility	1	2	3	4
C05	Amount of annual leave	1	2	3	4
C06	Support your co-workers give you in your work	1	2	3	4
C07	Support your supervisor gives you in your work	1	2	3	4
C08	Amount of time spent with your family	1	2	3	4
C09	Ability to take leave when you want it	1	2	3	4
C10	Opportunities for training	1	2	3	4
C11	Opportunities for promotion	1	2	3	4
C12	Job security	1	2	3	4
C13	Availability of drugs, supplies and equipment	1	2	3	4
C14	The amount of work you have to do	1	2	3	4
C15	The condition of the health facility building	1	2	3	4
C16	The management of the health facility	1	2	3	4
C17	Your ability to use your skills well	1	2	3	4
C18	The trust the community where you work has in you	1	2	3	4
C19	Your ability to meet the health needs of the community	1	2	3	4
C20	The amount of political interference in your job	1	2	3	4
C21	The amount of administrative power you have	1	2	3	4
C22	The security environment in the health facility	1	2	3	4
C23	The security environment of your home	1	2	3	4
C24	Your overall satisfaction with your job	1	2	3	4

Appendix 9: Health Facility Assessment Questionnaire for Paper 3

A. BACKGROUND ***To be filled up by the interviewer***				
A02	Facility ID code: |___|___|___|___|___|	Date (day/month/year): / /**2009**		
A03	Surveyor team code: |___|___|___|			
A03	Type of Facility Block PHC……..1 Sector PHC…….2 PHC……3	Location District _____ Taluka/Tehsil/Block _____ Village _____		
B. LOCATION OF PHC ***Fill with help of PHC staff***				
B01	Type of population covered by PHC	Tribal..... 1 Non tribal ..... 2 Mixed 3		
B02	Distance from the nearest town	_____**Km**		
B03	Distance from the nearest pucca road	_____**Km**		
B04	Number of households in catchment area			
B05	Total Population in catchment area			
	Is the following is present in the village where the PHC is located	**Yes**	**No**	
B09	Primary school	1	2	
B10	Secondary School	1	2	
B11	High school/Sr. Secondary school	1	2	

B12	Regular electricity (8hrs/day)	1	2	
B13	Piped water	1	2	
B14	Tube wells	1	2	
B15	Daily bus service	1	2	
B16	Mobile connectivity	1	2	

C. PHC INFORMATION

To be filled by supervisor with help of PHC staff

	Is the following available in the PHC:	**Yes**	**No**
C01	24 hours electricity supply	1	2
C02	24 hours water supply	1	2
C03	Generator present	1	2
C04	Telephone	1	2
C05	Mobile health unit	1	2
C06	Toilet for patients	1	2
C07	Living quarters for doctors in PHC compound	1	2
C08	Registration/reception room	1	2
C09	Delivery room	1	2
C10	Separate room for the doctor to examine patients?	1	2
C11	Is there a separate room for drug storage	1	2
C12	Are there medicines present in storage?	1	2
C13	Is there a separate room for the laboratory	1	2
C14	Is the laboratory functional (working microscope and reagents present)?	1	2
C15	Is there a separate room for cold chain?	1	2
Condition of PHC building		**No repairs required**	**Many repairs needed**
C16	Windows and doors	1	2

C17	Interior walls condition	1	2	
C18	Interior walls paint	1	2	
C19	Floor	1	2	
C20	Condition of outside wall of building	1	2	
C21	Condition of outside wall paint	1	2	
Cleanliness of PHC	Clean	Not clean	Not present	
C22	Reception room	1	2	
C23	Doctor consultation room	1	2	
C24	Toilets	1	2	
C25	Area surrounding PHC building	1	2	
Staff at PHC		**Yes**	**No**	**Number**
C26	General doctor (allopathic)	1	2	
C27	AYUSH doctor	1	2	
C28	RMA	1	2	
C29	Staff nurse	1	2	
C30	ANM	1	2	
C31	Lab Technician	1	2	
C32	Pharmacist	1	2	
C33	Health educator	1	2	
Service availability				
C34	Any drug stockouts in past year?	Yes ..... 1 No..... 2		If No goto C36
C35	Number of times drug stock outs in past year?			
C36	How many months of drug stock is usually kept?			
C37	Is there a separate room for storing vaccines?	Yes ..... 1 No..... 2		

C38	Any cold chain or fridge present for vaccine storage?	Yes ..... 1 No..... 2	If No goto C41
C39	Any vaccine stockouts in past year?	Yes ..... 1 No..... 2	
C40	Number of times vaccine stockouts in past year?		
C41	In the past year, for how many months has this PHC been without any medical officer/doctor?		
C42	In the past year, for how many months has this PHC been without any staff nurse?		
C43	In the past year, for how many months has this PHC been without any laboratory technician?		
C44	In the past year, for how many months has this PHC been without any pharmacist?		

Service Provision

Please collect the data for past 3 months i.e. from April 2009 till June 2009

		April	May	June	
C45	Number of new OPD cases				
C46	OPD cases (Total)				
C47	OPD cases (Males)				
C48	OPD cases (Females)				
C49	OPD cases (under 5 years of age)				
C50	Total number of deliveries				

Case Mix

Check if the following types of cases were seen at the PHC in the month of June 2009

	Complaint	Yes	No	
C51	Fever			
C52	Cough			
C53	Cold			
C54	Injury/accident			

C55	TB			
C56	Ante-natal care			
C57	Pain (general)			
C58	Chest pain			
C59	Headache			
C60	Stomach pain			
C61	Pain in hands/legs			
C62	Eye, ear, throat pain			
C63	Diarrhea			
C64	Animal/snake/scorpion bite			
C65	Piles			
C66	Other_____			
C67	Other_____			
C68	Other_____			

D. COMMUNITY SURVEY IDENTIFICATION (fill with help of PHC staff)

D01	Number of *'para's'* in village PHC is located				
D02	Number of *'para's'* within 30 minutes walking distance of PHC				
D03	Please list the *'para's'* with 30 minutes walking distance. *Circle the 'para' selected for sampling*				
			Name	**No. of households**	**Population**
		1			
		2			
		3			
		4			
		5			
		6			

		7			
		8			
		9			
		10			

Curriculum Vitae

AARUSHI BHATNAGAR

Address: 15 W 29th St, Baltimore MD 21218 **Email:** abhatna4@jhmi.edu **Phone:** +1-443-863-9897

EDUCATION

2009-2014	**Johns Hopkins Bloomberg School of Public Health, Baltimore, USA** PhD Health Systems, Department of International Health *Determinants of Motivation and Job Satisfaction among Primary Health Workers – Case Studies from Nigeria and India*
2005-2007	**University of Cambridge, Cambridge, UK** M.A. Economics
2002-2005	**University of Delhi, New Delhi, India** B.A. (Honors) Economics

PROFESSIONAL AND RESEARCH EXPERIENCE

CONSULTANT (Impact Evaluation), The World Bank, Nigeria Country Office: August 2011- June 2014

Results-Based Financing (RBF) Project for Health in Nigeria

- Provided technical assistance for designing, implementing and coordinating impact evaluation activities
- Delivered technical support to Nigerian National Population Council and National Bureau of Statistics for designing and implementing large-scale household and health facility surveys
- Provided technical assistance for designing and testing integrated supervision checklist for measuring quality of services
- Assisted in preparatory activities including training of health workers in performance-based financing principles

Universal Health Coverage Challenge

- Prepared a case study on strategies for providing universal health coverage in Ondo State, Nigeria

RESEARCH ASSISTANT, Johns Hopkins School of Public Health, Baltimore: January 2011-April 2014

- Assessed levels of job satisfaction and motivation among community health workers in Morogoro Region, Tanzania using data from a cross-sectional survey (February-April 2014)
- Conducted a systematic literature review on availability and effectiveness of district health management information systems in low and middle income countries (July-August 2012)
- Provided technical assistance to Federal Ministry of Health, Nigeria and the World Bank for monitoring and evaluation strategies for the National Strategic Health Development Plan in Nigeria (January-June 2011)

CONSULTANT, CORE and World Vision, USA: September-December 2010

- Assessed the association between community-based interventions for polio eradication and increase in uptake of polio vaccination rates in Ethiopia, Angola and Uttar Pradesh, India

CONSULTANT, The World Bank, Washington DC: June-August 2010

- Analysed statistically valid examples of variability in health care service delivery performance using evidence from national data sources, facility surveys, and World Bank health system analyses.

RESEARCH ASSOCIATE, Public Health Foundation of India, New Delhi: September 2007- August 2009

Assessment of Primary Health Services in Chhattisgarh, India

- Co-investigator on study aimed at assessing and comparing quality of care provided by different cadres of primary health care providers – including alternate or non-physician clinicians – in Chhattisgarh, India

Human Resources for Health (HRH) in India

- Estimated size, composition and distribution of the health workforce in India using different sources of data
- Conducted a qualitative study on the career preferences of graduating medical and nursing students in Uttar Pradesh, especially regarding employment in rural areas

Maximizing Positive Synergies between Global Health Initiatives and Local Health Systems

- Examined the effects of GFATM funded vertical health programs for HIV and TB on local health systems in Andhra Pradesh, Manipur and Uttarakhand using quantitative and qualitative methods

INTERN, United Nations Children's Fund, New Delhi: August-September 2006

- Assessed cost effectiveness of Integrated Management of Neonatal and Childhood Illnesses (IMNCI) in Orissa, India

INTERN, World Health Organization, Geneva: June-August 2006

- Conducted a systematic literature review on early cessation of breastfeeding amongst HIV-positive women in preparation for a WHO background paper on HIV and infant feeding

TEACHING EXPERIENCE

TEACHING ASSISTANT, Johns Hopkins School of Public Health, Baltimore: October 2010 – December 2011

- Case studies in Primary Health Care in the Department of International Health

TEACHING ASSISTANT, Indian Institute of Public Health, New Delhi: January 2009

- Microeconomics and statistical methods, Post-Graduate Diploma in Health Economics and Policy

PUBLICATIONS

Peer-reviewed publications

- Rao, K.D., E. Stierman, **A. Bhatnagar**, G. Gupta, A. Gaffar. *As good as physicians: patient perceptions of physicians and non-physician clinicians in rural primary health centers in India*. Global Health: Science and Practice. October 2013

- Rao, K.D., T. Sundararaman, **A. Bhatnagar**, G. Gupta, K Jain, P. Koko, *Which Doctor for Primary Health Care? Quality of Care and Non-Physician Clinicians in India*. Soc Sci Med. 2013 May; 84:30-4.

- Rao, K.D., **A. Bhatnagar**, and P. Berman, *So many, yet few: Human resources for health in India*. Hum Resour Health, 2012. 10(1): p. 19

- Rao, K.D., **A. Bhatnagar**, and A. Murphy, *Socio-economic inequalities in the financing of cardiovascular & diabetes inpatient treatment in India*. Indian J Med Res, 2011. 133: p. 57-63

- Dandona, L., MZ Raban, AK Guggilla, **A Bhatnagar**, R Dandona, *Trends of public health research output from India during 2001-2008*. BMC Med, 2009. 7: p. 59.

Other publications

- Atim, C and **A. Bhatnagar**. *Toward Synergy and Collaboration to Expand the Supply of and Strengthen Primary Health Care in Nigeria's Federal Context, with Special Reference to Ondo State*. Universal Health Coverage Studies Series No 3. The World Bank, Washington DC, January 2013

- Nigenda, G., JA Ruiz, **A Bhatnagar**, KD Rao, S Raha, I Saran. "*Analysis and Synthesis of Information on Human Resources for Health from Multiple Sources: Selected Case Studies*". In *Handbook on Monitoring and Evaluation of Human Resources for Health with Special Applications for Low and Middle Income Countries*. 2009. World Health Organization, Geneva.

- Rao K D, MS George, **A Bhatnagar**, B Rajkumari, M Chokshi, P Kumar, I Hazarika. "*Exploring How Disease Specific Programs in TB and HIV/AIDS Interact with Health Systems in India"*. In *Interactions between Global Health Initiatives and Health Systems: Evidence from Countries*. The Maximizing Positive Synergies Academic Consortium. June 2009

- Raha S, P Berman, **A Bhatnagar**, *Some Priority Challenges in the Nursing Sector in India.* India Health Beat: Supporting Evidence-based Policies and Implementation. World Bank and Public Health Foundation of India. Volume 1 Number 5.

- Raha S, P Berman, **A Bhatnagar**. Career Preferences of Graduating Medical and Nursing Students in Uttar Pradesh. India Health Beat: Supporting Evidence-based Policies and Implementation. World Bank and Public Health Foundation of India. Volume 1 Number 6. 2009

AWARDS

- **2009:** Academic Scholarship for PhD in Health Systems, Pt Kanahya Lal Dayawanti Punj Foundation, New Delhi
- **2005:** Rajiv Gandhi Bursary for MA in Economics at Cambridge University, Cambridge Commonwealth Trust

OTHER INFORMATION

- **Reviewer:** Journal of Human Resources for Health, Health Policy and Planning
- **Languages:** English, Hindi
- **Software:** Microsoft Office, Stata, TreeAge, Atlas.ti