A Primary Evaluation of Service Delivery under the National Rural Health Mission (NRHM): Findings from a Study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan

Kaveri Gill

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Abstract

This paper seeks to evaluate *quantity* and *quality* of *service delivery* in rural public health facilities under NRHM. On appropriate and feasible *measures*, the former is assessed on the static and dynamic condition of physical infrastructure; by the numbers of paramedical, technician and medical staff employed, as well as figures for attendance and gender breakdown; by the supply, quality and range of drugs; by availability and usage of decentralised untied and maintenance funding of centres; and by actual availability of laboratory, diagnostic and service facilities. Quality is defined in relation to the condition of the above tangibles, as also supplemented by subjective data on intangibles, such as patient satisfaction, gathered from the exit interviews.

The micro-findings across four states, which have resulted in rankings in individual sections of the study, suggest disparate situations at various levels of centres and on different components, reflecting context-specific underlying driving factors, some complex by nature. Based on these findings, one could easily rank the states on 'overall performance of service delivery under NRHM', but to do so would be irresponsible, meaningless and defeat the very purpose of this evaluation, which was to highlight the micro-components of features that are important to this Mission's capacity to deliver services, how states are faring on implementing these various strands, and what factors might be causing problems where implementation is less than desirable.

The NRHM has put rural public health care firmly on the agenda, and is on the right track with the institutional changes it has wrought within the health system. True, there are problems in implementation, so that delivery is far from what it ought to be. On physical infrastructure, medicines and funding, processual problems might be more easily scaled with time (in some instances, they already appear to have been overcome), whereas on human resources, and to the extent these impact actual availability of services, structural issues of some complexity need careful resolving with a definite long term investment in the training and education of paramedical and medical staff, especially women, and close monitoring of attendance. However, the parameters of the question this study seeks to answer are very much within the ambit of how to better performance under the NRHM, and not whether the Mission ought to have been undertaken in the first place, of which there can be no doubt.

Contents

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List of Important Abbreviations

A&E	Accidents and Emergencies
Anaes.	Anaesthetist
ANM	Auxiliary Nurse and Midwife
ASHA	Accredited Social Health Activist
AWW	Angadwadi Worker
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BAMS	Bachelor of Ayurvedic Medicine and Surgery
BHMS	Bachelor of Homeopathic Medicine and Surgery
BPL	Below Poverty Line
CDA	Combined District Average
CDS	Central Drug Store
CEMONC	Comprehensive Emergency Maternal and Obstetric Neonatal Care centre
CHC	Community Health Centre
CMHO	Chief Medical Health Officer
DK	Don't Know
DLHS-3	District Level Household and Facility Survey, 2007-08
DMHO	District Medical Health Office
EAG	Empowered Action Group
Et	Employment
FRU	First Referral Unit
GDP	Gross Domestic Product
GNM	General Nurse and Midwife
GOI	Government of India
HDS	Hospital Development Society
IFA	Iron Folic Acid
IMR	Infant Mortality Rate
IPD	In Patient Department
IPHS	Indian Public Health Standards
JSY	Janani Suraksha Yojana

LHV	Lady Health Visitor
MBBS	Bachelor of Medicine and Bachelor of Surgery
MMR	Maternal Mortality Rate
MO	Medical Officer
MPHW	Multi Purpose Health Worker
MoHFW	Ministry of Health and Family Welfare
MOIC	Medical Officer In Charge
MoU	Memorandum of Understanding
NFHS-3	National Family Health Survey, 2005-06
NRHM	National Rural Health Mission
OBC	Other Backward Caste
Obst.	Obstetrician
OPD	Out Patient Department
p.a.	Per Annum
PA problem	Principal Agent problem
PCM	Paracetemol
PHC	Primary Health Centre
PHF	Public Health Facility (shorthand for CHC / PHC / SC)
PI	Principal Investigator
PPP	Public Private Partnership
PRI	Panchayati Raj Institution
RCH	Reproductive and Child Health
RKS	Rogi Kalyan Samiti
RTI / STI	Reproductive Tract Infection / Sexually Transmitted Infection
SC	Sub Centre
SC / ST	Scheduled Caste / Tribe
SRS	Sample Registration System, Register General of India, 2007
TFR	Total Fertility Rate
TNMSC	Tamil Nadu Medical Services Corporation
UPA	United Progressive Alliance
VHSC	Village Health and Sanitation Committee

List of Tables

1. Introductory Analysis of NRHM – Based On Secondary Data

2. Study Findings – Based on Facility Survey Data

1. Introduction

Much of the recent literature favouring a multidimensional view of poverty stems from Sen's critique of a narrow utility-based approach to assessing welfare in economics, in which he questions the solitary focus on income levels and consumption choices as markers of broader well-being (Sen 1985, 1987). Rather, his pioneering approach judges individual advantage in terms of 'capabilities', defined as the freedom and potential to actually achieve or enhance certain valuable 'functionings' (Sen 1999). Poverty is conversely conceptualised as the inability of individuals to acquire the necessary capabilities, prominent amongst which is the capability 'to be healthy' (Nussbaum and Sen (eds.) 1993).

Without going into the varied and bi-directional causality between poverty and health status, the following evidence-based facts appear non-controversial in the Indian case. Category I 'communicable diseases, maternal and child health conditions', such as tuberculosis, HIV/AIDS, diarrhoeal diseases, malaria and other vector-borne conditions, leprosy, childhood diseases, maternal and perinatal conditions, accounted for nearly half of India's disease burden in 1998, with the poor bearing a disproportionate load of maternal, perinatal and childhood conditions, that explain a significant percentage of the disease burden in the first place (National Commission on Macroeconomics and Health, MoHFW 2005). Moreover, contrary to prior beliefs about being restricted to the rich, a large number of 'lifestyle diseases', i.e., non-communicable conditions, such as cancers, diabetes, cardiovascular disease, arthritis and so on, are seen to be affecting the poor and increasingly so (ibid.).

The Commission on Macroeconomics and Health of the World Health Organization (2001) argues that 'health is a creator and pre-requisite of development', with an extension in the coverage of health services and improved health care the key not only to better health outcomes and reductions in poverty, but also increased productivity, and hence growth, in poorer countries. While the instrumental value of health might appeal to economists and be taken as a ground for action on its own (Bloom and

Canning 2008), the intrinsic value of health for health's sake cannot be ignored. Health inequity i.e. unfair, unjust and avoidable causes of ill health, resulting in inequalities in the health functioning of individuals, social groups, and national populations, raises fundamental social justice questions (Sen 2002). The moral motivation and social contract obligation to direct health policy in a certain equitable way thus becomes paramount under the rights-based approach, particularly in poorer countries seeking to decide on the most appropriate distribution of limited resources (Venkatapuram and Marmot 2009)[1]. Regardless of whether one is moved by the efficiency or the equity argument, the desirability of the goal of achieving better population health status is undisputed.

What of the role of the state in the actual delivery of health care? As long recognised by welfare economists, this sector is characterised by certain peculiarities – uncertainty on numerous dimensions, asymmetric information and externalities (Arrow 1963) – all of which features tend to government involvement in actual provision and / or regulation of the health care industry, to greater or lesser extent, the world over. In developing countries, the principal agent (PA) problem is more extreme as transactions costs to do with information asymmetries are higher, and the negative externalities of infectious and communicable disease burden much larger, so government involvement in the delivery of health care assumes greater significance. If health equity and social justice is increasingly on the policy anvil at a global scale, as it currently appears to be, the natural focus within national public health systems is reform – towards universal coverage and locally responsive service delivery - at the primary health care level (The World Health Report 2008). Rural areas are a top priority in developing countries, as

[1] The recent findings of the Commission on the Social Determinants of Health of the World Health Organization (2008) have wide ranging implications for public policy, putting much of the burden of addressing health inequities beyond the health sector alone. For example, they recommend an improvement in daily living conditions, including providing adequate shelter, clean water, sanitation, and electricity for all. More radically, they recommend tackling underlying structural drivers of health inequity at global, national and local levels. A discussion of this perspective lies beyond the purview of the present paper, save to reiterate that while the Commission believes the health sector alone cannot reduce health inequities, health systems in general, and universal coverage and an equitable primary health care system in particular, are seen to play a central role in doing so.

they account for the bulk of the population and a higher incidence of poverty, including more extreme maternal and child health conditions.

2. India's National Rural Health Mission (NRHM)

As a part of its socially progressive Common Minimum Programme, the UPA Government launched the National Rural Health Mission (NRHM) in 2005. Almost by the currently prescribed policy book described above, it aimed to undertake an 'architectural correction' of the public health system to enable it to effectively absorb increased expenditure to provide accessible, affordable and accountable primary health care services to poor households in remote parts of rural India. A regional equity component required the increase in central government plan outlay (See Appendix, Table 1.1) be channeled through a weighting system towards the development of health systems in eighteen 'focus' states with relatively poor health indicators, mostly the Empowered Action Group (EAG) states of the central north Indian belt and the northeast region of the country (for more detail on financial aspects of NRHM, see Section 4 of the report). NRHM is the largest primary health care programme being run in any single country.

Major objectives of NRHM include the following: to raise public spending on health, with improvements in community financing and risk pooling; to provide access to primary healthcare services for the rural poor, with universal access for women and children; to see a concomitant reduction in IMR / MMR / TFR; to prevent and control communicable and non-communicable diseases; and to revitalize local health traditions. In essence, these do not differ from health plan goals adopted by India over the last sixty years. The Mission's uniqueness lies primarily in the institutional instruments used to achieve these goals, foremost amongst which are attempts at structurally reconfiguring the public health system to facilitate decentralisation and communitisation, widely accepted as beneficial trends in the development sphere today. In recognition of the multidimensional causality of disease, to further promote inter-sectoral convergence in services which co-determine decent health outcomes, such as the provision of adequate

food and nutrition, water, sanitation and hygiene; and to integrate previously segregated vertical disease-specific programmes at the national, state, district and block levels.

Visible manifestations of this 'architectural correction' include the provision of a flexible financial pool for innovative and need-based decentralised utilisation of funds at the state level, along side provisos for planning and management at the district level. Furthermore, the creation of female health activists (ASHAs) and PRIs, such as village health and sanitation committees (VHSCs), as a means of fostering a true partnership between the community and peripheral health staff in achieving desired outcomes. The key forward-thinking developmental agenda of the scheme, in common with other social sector initiatives introduced by the UPA (such as the Sarva Shiksha Abhiyan in education), thus lies in promoting a well-functioning devolved public delivery system through the provision of flexible grants to improve infrastructure, human resources and capacity, in addition to structural change in the direction of a bottom-up institutional framework of governance and accountability. The latter has been externally imposed at this stage, in the hope that local communities will eventually actively participate in shaping the public health system to better serve their varied needs.

What's actually new under NRHM (Core and Supplementary Strategies)?

Creation and upgradation (on infrastructure / human resource / managerial fronts using untied funding) of SCs, PHCs, CHCs; Revitalising and mainstreaming AYUSH; Mission Flexible Pool untied funding; Janani Suraksha Yojana (JSY); Accredited Social Health Activists (ASHAs); Involvement of community at decentralised levels through Hospital Development Societies (HDS) or Rogi Kalyan Samitis (RKS) / Village Health and Sanitation Committees (VHSCs); Converging health, nutrition, water, sanitation and hygiene activities through District Health Plans; Integration of vertical health and family welfare programmes at national, state, district and block levels; Fostering public-private partnerships while regulating the private sector; Instituting Indian Public Health Standards.

3. Evaluating Service Delivery at the District Level under NRHM – Methodology, Fieldsite Selection / Descriptive Characteristics and Research Design

Strategies and guidelines for NRHM were finalised during the course of 2005-06, with an implementation framework approved by the Cabinet in July 2006. A separate budget

head for NRHM was introduced only during the fiscal year 2006-07. In many ways, it is too early *and* too late for certain kinds of impact evaluation of the NRHM. Too early because improvement in health outcome indicators (IMR, MMR, TFR etc.), which may confidently be ascribed to the mission's efforts, will only become apparent after a significant time-lag. Too late because evaluation was not built into project design, hence baseline figures and consistent state-level data, especially in relation to targets, is lacking, thus hampering a yardstick assessment on how the mission is faring in various regions (See Appendix, Table 1.2). Moreover, a randomised evaluation is unfeasible at this stage because NRHM has already been introduced across rural areas, therefore a control area where the mission has been withheld – a political problem with government sponsored schemes in any case - is missing.

Consequently, an evaluation of service delivery in public primary health care at the decentralised district level is the singular focus here. A recent internal Planning Commission review of NRHM based on secondary data from the Ministry of Health and Family Welfare, as well as independent institutional sources (Gill 2008), confirmed the paucity of evidence-based material and systematic analysis of the delivery of health care in rural India found by other academics (Banerjee, Deaton and Duflo 2004). A group presciently engaged on research in this area at the state level, albeit overview studies rather than detailed analysis based on field data gathering initiatives, is that lead by Prof. Jeffrey Sachs of the Earth Institute at Columbia University (*inter alia*, Bajpai and Goyal 2004, Bajpai, Dholakia and Sachs 2005).

As befits complex social development projects, the evaluation challenge is addressed in the present study through small n analysis, expanding the range of data to include subjective data i.e. a mixed qual-quant approach (Whiteside and Woolcock 2004). In terms of coverage, an emphasis on decentralisation in service delivery is reflected in a focus on public health facilities (PHFs) operating at the lowest levels to serve geographically dispersed rural communities i.e. community health centres (CHCs) serving a population of 80,000-120,000; primary health centres (PHCs) catering to a population of 30,000 / only 20,000 in hilly, tribal and backward areas; and sub-centres

(SCs), looking after the needs of a population of 5,000 / only 3,000 in hilly, tribal and backward areas. A tailor-made health facility survey (Lindelow and Wagstaff 2001), containing both an observation checklist and questions posed to the MOIC / person standing-in, forms the study's cornerstone. Additionally, the review is based on survey-based exit interviews with patients, to assess the client perspective on delivery of services under NRHM[2].

On appropriate and feasible *measures to assess quantity and quality of primary health care*, the former is assessed on the static and dynamic condition of physical infrastructure; by the numbers of paramedical, technician and medical staff employed, as well as figures for attendance and gender (relevant to RCH interventions); by the supply, quality and range of drugs; by availability and usage of decentralised untied and maintenance funding of centres; and by actual availability of laboratory, diagnostic and service facilities. On *quality of health care delivery*, vignettes as a measure of process quality might be ideal but structural quality i.e. quality defined in relation to the condition of the above tangibles, have had to do for pragmatic reasons (Das and Leonard 2006). This is supplemented by subjective data on intangibles, such as patient satisfaction, gathered from the exit interviews.

The evaluation study specifically chose to cover the states of Uttar Pradesh, Bihar, Rajasthan, and Andhra Pradesh. The first three are amongst the most densely populated and poorest 'focus' states for NRHM, with appalling records on select key health indicators, especially in rural areas, while the fourth is a 'non-focus' control state with a relatively better performance, even as compared to figures for India as a whole (See Appendix, Table 1.3). An especially constructed composite poverty index using DLHS-3 2007-2008 data illustrates the poverty ranking of these states (See Appendix,

[2] The study also collected a sizable amount of data from frontline public health providers, such as ASHAs, ANMs, AWWs, as well as from PRI-representatives, such as sarpanches heading VHSCs, in order to assess the 'communitisation' aspect of NRHM. However, the PI has had no time to enter, analyse and write up these findings, so that they remain for a follow up publication.

Table 1.4), which turns out to be as *a priori* expected[3]. Andhra Pradesh, both rural areas and as a whole, is far more developed than Rajasthan, which in turn is trailed by a significant margin by poverty-ridden Uttar Pradesh and Bihar.

The logistical time and team travel constraints dictated the selection of two districts in close proximity to the state capital. In each state, the districts chosen are very similar to each other as regards development and poverty levels, shown here by close scores on the composite poverty index and true whether one looks at the score for rural areas specifically, or for the state total (See Appendix, Table 1.4)[4]. This justifies clubbing together the data for both in the present study on the grounds of small sample size (for comparator purposes, I shall consequently be listing combined district averages (CDA) of relevant DLHS-3 district fact sheet indicators / calculated indicators to achieve equivalence with those used in the present study). Indeed, empirical reasons justify combining district data in each state, prime amongst which is that no significant differences were found as regards NRHM implementation, which may be explained by them being administratively quite similar. On the other hand, inter-state differences were found to be more significant, which reflect widely differing development and poverty levels, as well as rather marked departures – for both good and bad – in the administrative sphere[5].

As for whether the combined district data, on average, may be taken as an accurate representation of the statewide picture, the following maybe deduced on comparing the

[3] Despite veracity issues, such as the mismatch between NFHS-3 and DLHS-3 data, I specifically use DLHS-3 data here to calculate the poverty ranking because the District Level Household and Facility Survey - one of the largest ever demographic and health surveys carried out in India - is the only survey providing information related specifically to programmes of NRHM, especially indicators relevant to delivery of services. This secondary data, limited thought it is, will be given for comparator purposes (either directly, where indicators in DLHS-3 are completely compatible with indicators used here, or by specific calculations manipulating their data to produce indicators equivalent to those used here) further along in this study.

[4] Districts also score quite closely on DLHS-3 facility survey indicators specific to NRHM, to give just one example, on percentages of sub-centres located in government buildings, the scores for Pratapgarh and Rae Bareilly in UP are 50% and 55.8%, respectively; and for Vishali and Nalanda in Bihar are 20.5% and 27.8%.

[5] I benefited from discussing these issues with Anuradha De of CORD.

composite poverty index scores – either rural or total will do (See Appendix, Table 1.4). Since the two fit so closely for Andhra Pradesh, the study results may be taken to broadly represent the picture in the entire state. The district average for Uttar Pradesh suggests study areas are marginally more deprived than the state as a whole, so that the statewide picture might be slightly better than is portrayed by this study. It is conversely true of Bihar and Rajasthan, wherein the district averages suggest the study areas in both states are marginally better off, hence the statewide picture can only be bleaker than what is presented here.

Data collection took place in the months of September, November, December 2008 and January 2009. A team composed of one principal investigator (PI) and three data collectors from the Planning Commission spent at least a week in each state, with roughly equal amounts of time spent in each district selected for the study. Armed with a district map locating public health centres of every level, the team randomly selected centres to visit, trying to reach outlying areas with marginal populations – tribals and Naxalite areas in Andhra Pradesh, minority-dominated areas in Rajasthan and Uttar Pradesh and so on - and covering up to four centres everyday (See Appendix, Table 1.5, for sample details). The element of surprise to the visit was a strong suit of the study, for despite carrying along a guide from the district health department, it was strictly adhered to, to the extent of the PI deciding on which direction to travel in at the last possible minute, and getting the guide to switch off his or her mobile so no advance warning could be conveyed.

4. Financial Aspects of NRHM

The present study is restricted to a primary evaluation of service delivery at the district level and below, therefore strictly speaking financial issues pertaining to NRHM at the macro level lie beyond its purview. Given the importance of funding to the performance of the scheme at every level, whether real or perceived, I make an exception to analyse and discuss secondary data on financial aspects of the Mission before proceeding to a discussion of study results. After all, I do not want to disappoint the reader who will

wonder how an economist can evaluate an entire scheme without highlighting how much money was involved, how it was distributed and how it was spent, if it was spent at all!

Referring the reader back to Appendix, Table 1.1 to see the picture at the national level, an assessment of central plan expenditure on the health sector during each fiscal year of the 10th Plan, and for the on-going fiscal year up to 31 December, 2008 reveals an increase in absolute terms throughout, with a greater rate of increase for important programmes subsumed under NRHM from 2005-06 onwards. A closer look at central plan expenditure on the Mission (See Appendix, Table 1.6) raises the concern of a drop in increased total approved outlay for NRHM for 2008-09 over previous years, in fact the lowest amount recorded since the scheme was launched. On the plus side, it highlights an increase in actual overall expenditure with each successive year of the scheme and especially so over the last year, which indicates some improvement in state capacity to utilize the funds provided by the central government, on which more in the context of particular study states below.

As defined by the Constitution, health is predominantly a state subject, although NRHM is a centrally-sponsored scheme. In order to get a real sense at an all India level of the amount of increased spending on health - including NRHM - we therefore need to look at both centre and state, plan and non-plan expenditure data prior to and post 2005-06 (See Appendix, Table 1.7). Clearly, centre plan expenditure increased at a faster rate to meet the requirements of NRHM, although as to be expected it remained significantly eclipsed by state non plan and plan expenditure on health, which also climbed during these years. As to whether NRHM has met its objective of raising public spending on health to 2-3% of GDP, the answer is negative[6].

Rather, as the table shows, combined *centre* plan and non plan expenditure climbed significantly from the range of .12% to .14% of GDP p.a. (1999-2005) to .19% p.a.

[6] During the presentation of this paper at the Planning Commission (1 May 2009), it was suggested that the current convention on measuring public spending on health is to include expenditure on co-determinants, such as the provision of clean drinking water and sanitation, in which case figures might well exceed the 2-3 % of GDP benchmark.

(2005-06) to .21% to .22% p.a. (2006-08). This increase covered the decline in combined *state* plan and non plan expenditure over the period to 2006, from the range of .73%-.74% of GDP p.a. (1999-01), to .66%-.69% p.a. (2001-03), to a low of .60%-.62% p.a. (2003-06). State expenditure climbed to .69% in 2006-07, again dropping to .67% in 2007-08. With rising centre expenditure under NRHM shoring up flagging state expenditure, the decline in overall health expenditure from roughly .82% to.85% p.a. (1999-02) to .74% to.78% p.a. (2002-05) was arrested and reversed with the Mission, which pushed up totals to the range of .81% to .89% p.a. (2005-08). The pertinent question now is whether individual states will start pulling their weight under NRHM, as they are increasingly meant to over successive years of the Mission (MoUs require a state contribution of 10% p.a. to commence from the fiscal year 2007-08).

We turn next to the absolute figures and actual financial management picture under NRHM for the study states in particular, using the State Data Sheets as on 31.12.2008 produced by the MoHFW, and starting with allocation (see Appendix, Table 1.8). With the exception of Bihar, for which figures are unavailable and hence nothing maybe deduced, and the exception of Rajasthan, wherein state allocation dips markedly in 2008-09, allocation in respective state budgets for the Health and Family Welfare Department has increased with every successive year since 2005. Of course, these amounts do not tell us what state allocation for NRHM in particular has been, but since the latter figures are unavailable, these will have to approximate as a rough indicator of financial support for the scheme forthcoming from the state itself.

In accordance with rules for centrally-sponsored schemes, such as NRHM, the Mission allocates centre plan funds to individual states according to a weighting system dependent on the population and category of state (i.e. population multiplied by a factor of 1.3 for non-northeast focus states, a factor of 3.2 for northeast focus states, to a factor of 1 for non-focus states and union territories). Accordingly, since 2005, of a total allocation of

Rs. 14435.34 crores by GOI at an all India level 'under items subsumed within NRHM'[7], allocation to Andhra Pradesh has been to the tune of Rs. 1893 crores; Rs. 4829 crores for Uttar Pradesh; Rs. 2373 crores for Bihar and Rs. 1756 for Rajasthan. Since 2005, allocation to individual states as a percentage of the national total is thus estimated to be 13% to Andhra Pradesh; 33.5% to Uttar Pradesh; 16.4% to Bihar and 12.2% to Rajasthan since 2005, which very closely approximates the per annum allocation percentage for each state, which lies within a single percentage point difference over each year of the scheme (see Table 1.8).

Looking next at actual utilisation figures of individual states since 2005, by relating the amount released by GOI under items subsumed within NRHM, to the amount of expenditure (See Appendix, Table 1.9), the following picture emerges. Andhra Pradesh has received between approximately Rs. 365 crore and 631 crore, with the biggest amount received in 2007-08; Uttar Pradesh has received between Rs. 930 crore and Rs. 1532 crore annually, with the highest amount received in 2007-08; Bihar has been given between Rs. 316 crore and Rs. 490 crore, with the biggest cheque received in 2006-07; and Rajasthan has received between approximately Rs. 325 crore and Rs. 692 crore, with the largest receipt in 2007-08. Of these amounts, annual expenditure has only been in the range of Rs. 202 crore and Rs. 507 crore for Andhra Pradesh; Rs. 315 crore and 1086 crore for Uttar Pradesh; Rs. 115 crore and Rs. 447 crore for Bihar; and Rs. 190 crore and Rs. 589 crore for Rajasthan.

Estimating the annual unspent remainder as a percentage of the total amount released by the GOI under items subsumed within NRHM for the years 2005-06, 2006-07 and 2007-08 (as 2008-09 is still underway and it is misleading to calculate unspent percentages at this stage) (See Table 1.9), it emerges that the non-focus state of Andhra Pradesh can boast of the lowest unspent figures (21.5% in 2005-06; 20.8% in 2006-07; and 19.7% in 2007-08). The focus states all have very high unspent amounts for 2005-06 and 2006-07 (38.4% and 39% for Uttar Pradesh; 35.1% and 40.7% for Bihar; and 41.6% and 34.9%

[7] To enlighten the reader on the numerous budget heads falling under this heading, they include: RCH, with sub-heads of Immunisation; JSY and RCH Flexipool; Pulse Polio; NRHM Flexipool; Infrastructure Maintenance; plus separate budget heads for all the national disease control programmes.

for Rajasthan). The percentage of the total which remains unspent drops sharply in 2007-08 (29.1% in Uttar Pradesh; 7.4% in Bihar and 14.9% in Rajasthan), obviously a year in which the largest percentage wise expenditure takes place in each of these states.

As indicated right at the start of this section, there has been an increase at the countrywide level in actual overall expenditure with each successive year of the scheme and especially so over the last year, which is routinely attributed to an improvement in individual state capacities to actually utilize the funds provided by the central government. While there is some truth to this neutral structural explanation, the political economy of centre state relations in a federal system where different political parties might form the government in either place, cannot be ruled out as a factor influencing spending (or a deliberate lack of spending) on development schemes, even though this sphere ought to be immune to such factors. For example, Uttar Pradesh is being allocated 33.5% of the total NRHM allocation by the Government of India, of which 41.7% remains unspent (this figure marginally overestimates unspent amounts as there is still a quarter remaining of the fiscal year 2008-09, in which the state might redeem their expenditure figures)[8]. Such lack of spending, no matter what the cause, has very serious implications for the performance of the scheme in general, over and above its performance in the state of Uttar Pradesh alone.

Entirely separate to the funding category 'under items subsumed within NRHM' lie the accounts for 'NRHM Additionalities', with numerous separate budget heads falling under it[9]. Of the many items on this listing, some are extremely relevant to this evaluation and having detailed financial data on these items at the state level would certainly have facilitated this study (see Appendix, Table 1.10). However, as can be

[8] Feedback from the MoHFW during the presentation of this paper at the Planning Commission (1 May 2009) suggests these figures maybe overstated because of a lag in receipt of statements of expenditure and utilisation certificates from states. Not having access to up-to-date data to confirm or deny this explanation, I concede that this could well be the case.

[9] These include: Funds released for selection and training of ASHAs; Untied Grants for CHCs, PHCs and SCs; Upgradation of CHCS; IDHAP; Drug Procurement; Health Mela; Annual Maintenance Grant for CHCs and PHCs; RKS Corpus Fund and VHSC Untied Grants. NRHM budget heads are notoriously complicated and excessive in number, a feature which induces pity for the staff in health centres having to account for and maintain registers on every last penny falling under every different financial head.

seen in the table on amounts released since 2005, available information is patchy with holes indicated by the many cells of 'undetermined' data i.e. 'not available' or noted by a simple '0'. Moreover, data for what has been spent and remains unspent is missing from the State Data Sheets of the MoHFW altogether. The surprising lack of financial data at the state level inhibits any kind of detailed assessment relating finance to performance under NRHM in variously developed regions of the country.

5. Discussion of Study Results from Facility Surveys

As elucidated above, baseline figures and consistent state-level data on NRHM initiatives, especially in relation to time-bound numerical targets, is unavailable from the MoHFW (*cf.*, Table 1.2), although they do provide measurable general goals across all states in a few instances, for example staffing requirements of 2 ANMs / per SC; 3 staff nurses / per PHC and 7 specialists and 9 staff nurses per CHC, which shall be utilised here. DLHS-3 has limited information on indicators relevant to the delivery of services, and this secondary data will be presented here, in the form of combined district averages, for comparator purposes where possible, but this is hardly sufficient for evaluating and ranking performance of states. Finally, relevant financial data at the state level is also patchy or altogether unavailable. Consequently, the main method used by this study is to undertake a yardstick assessment of the focus states vis-à-vis the control state of Andhra Pradesh and in relation to each other, and to rank them on implementation and performance using simple descriptive statistics and specifically designed indicators – ordered by issue - based on sample data internal to this study.

5.1 Physical Infrastructure

I begin with an overview of the physical infrastructure of public health facilities (See Appendix, Table 2.1)[10]. To the question of whether PHFs actually exist, as it says they do so on district documents, the answer is completely affirmative at all levels and all states,

[10] Public health facilities (PHFs) are shorthand for CHCs, PHCs and SCs combined.

save for SCs in Andhra Pradesh, wherein 80% exist; and Additional PHCs and SCs in Bihar, wherein only 50% and 80% exist, respectively. This may be attributed to the Naxalite / tribal catchment area chosen in AP. In Bihar, while Additional PHCs continue to exist on paper, many centres are derelict and abandoned sites, while others stand mined of all human resources that have been diverted to 'upgraded PHCs' performing the function equivalent to CHCs in other states, and still others have been contracted out on a public-private partnership (PPP) basis[11]. Similarly, 20% of SCs in Bihar were found to be functioning on an ad hoc basis out of a primary school building or a room in a construction site, with the ANM operating out of here only on immunisation days.

The existence figures dovetail neatly with those for contractual status of the PHFs (*cf.* Table 2.1) [12], where in all states and at all levels, they are predominantly run out of government-owned property, the exception being 20% of SCs in AP; 17% of CHCs in UP; and 100% of Additional PHCs and SCs in Bihar, which operate out of rented properties. As for whether physical infrastructure 'strengthening' of PHFs through on-going construction or maintenance efforts is happening as recommended by NRHM directives, the latter is negligible perhaps because the former is more pressing in all states (*cf.* Table 2.1). Moreover, much of the construction work is happening at the higher levels of CHCs (in Andhra Pradesh, Uttar Pradesh and Bihar) and PHCs (Uttar Pradesh, Rajasthan), with none at the SC-level. Rajasthan has the least amount of on-going construction in PHFs.

Moving on to the static picture of amenities provided in PHFs, including those of provision for drinking water, electricity, toilets, waste disposal pits, emergency vehicles and total number of beds (See Appendix, Table 2.2), as well as the dynamic picture, i.e., actual availability or operationality of amenity during spot check at time of random visit

[11] Forthwith, it is assumed the reader is aware that in the context of Bihar, a general discussion of 'CHC' results in the Appendix of Tables is really referring to 'upgraded PHCs', while 'PHC' results refer to 'Additional PHCs'.

[12] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, only available for this particular indicator at the SC-level. Please note relative sample sizes and findings.

(See Appendix, Table 2.3)[13]. In general, electricity supply is reported as being a big problem in Uttar Pradesh, existing mostly from 10am-4pm and then from 10pm-4am. To a lesser extent, it is also an issue in Bihar, and in both cases, it is overcome through the liberal purchase and use of generators and inverters by PHFs. Water supply, in terms of both quantity and quality, is again very problematic throughout Rajasthan, and to a certain extent, in Bihar, too, with a consequent negative impact on PHF activities.

Despite NRHM directives especially encouraging the building of toilets and waste disposal pits in PHFs, implementation has been slow and usage of constructed facilities low. Bihar is taking the initiative of contracting in the management of medical waste to a private company, while facilities in Rajasthan are remarkably clean, with many CHCs and PHCs showing off brand new plastic dustbins. As seen in Table 2.4, across all states, there is no dearth of cleaning staff employed at CHC and PHC levels, which would warrant that PHFs in general be cleaner and better maintained than they are, especially in Uttar Pradesh and Bihar (see below). Perhaps this laxity is explained by the fact that awarding regular or contractual cleaning jobs is one of the few patronage tools used by small-time decentralised functionaries, such as Hospital Development Society (HDS) members, to get known people employed and on the pay roll[14].

As for emergency vehicles, Andhra Pradesh and Bihar have entered into PPP arrangements of various kinds. The former has formally contracted out the operation of the 108-system, where PHFs in a coverage area of a twenty kilometer radius can call out the vehicle for emergencies, to a for-profit private company i.e. Satyam. The system in

[13] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, for the indicators: CHC having 24-hours or PHC / SC having regular water supply; CHC having ambulance on road. Please note relative sample sizes and findings.

[14] Known variously across states as a 'Hospital Development Society (HDS)' or 'Rogi Kalyan Samiti (RKS)' – which literally means patient welfare committee – or 'Medical Relief Society (MRS)', each of these terms refer to a singular type of community-based Panchayati Raj Institution (PRI) fostering the autonomy of a PHF, be it a district hospital or CHC or a PHC, through decentralised management and independent funding. While its composition at particular levels of PHFs will be discussed in detail in the funding sub-section, it is clarified at this point that the term 'Hospital Development Society (HDS)' will be uniformly used throughout the remainder of the report to avoid confusion, regardless of whether it is known as such in a particular state or at any particular level of PHF.

Bihar is not so organised, with local MLA-donated Maruti Omni vehicles used as emergency vehicles only at the CHC level. Uttar Pradesh and Rajasthan have not entered into PPP emergency vehicle provision tie-ups so far, although it is on the anvil. Instead, the state government provides a few ambulances at CHC and PHC level in Uttar Pradesh, while it provides some at CHC level but none at PHC level in Rajasthan, where private hires of jeeps, cars, taxis, predominates as a system in times of emergencies. As a point of interest, on efficiency, note from Appendix, Table 2.3, that there is no a priori reason to assume PPPs perform better than the state acting alone, especially where stringent regulatory requirements go unmet[15]. Comparing Andhra Pradesh and Bihar, we see the system works much better in the former than the latter in terms of operational availability of vehicle, and is less efficient in Bihar than state services provided at similar-CHC levels in Uttar Pradesh and Rajasthan[16].

In terms of impact on the ability to deliver a certain quantity and quality of health services at PHFs, for obvious reasons a comprehensive combination of the static and dynamic picture of all the amenities discussed matters. To capture and assess this actual ability to deliver in terms of physical infrastructure, I have constructed a composite index for static amenities (all facilities a PHF is equipped with), and another one for dynamic amenities (all facilities a PHF can bank on at any given moment), as also a combined composite index of both which sums up ability to deliver at a randomly chosen moment (See Appendix, Table 2.5). Scores on the combined composite index show, as to be expected, that across states centres higher up in the chain fare better than those lower down i.e. CHCs do better than PHCs, which in turn eclipse SCs. In terms of ranking, Andhra Pradesh fares the best, followed by Rajasthan, and then Uttar Pradesh. Bihar

[15] For a comprehensive and up-to-date account of public-private partnerships in health care in India, drawing on case studies from various states, see Venkat Raman and Björkman 2009.

[16] The picture on mobile medical units in all states exactly mirrors that of emergency vehicle provision, where Andhra Pradesh and Bihar have entered into contracting PPPs. While the former has satisfactorily done so, with the state funding and Satyam operating and managing Fixed Day Health Services (FDHS) through more than 75 health vans, the latter has not managed to do so. In fact, the Bihar state health society admitted mobile medical units were a particular sore point for them, since purchased vehicles lay in their PHFs with no team to run them. Uttar Pradesh and Rajasthan so far have no system in place at all, though it is in the planning stages.

trails by some margin, since while its CHCs do as well as those in Uttar Pradesh, its Additional PHCs and SCs appear to lack any deliverable physical capacity at all.

Finally, team visits to each PHF provided too good an opportunity to miss out on a subjective ranking of centres based on observation of their overall condition, i.e., good, average or poor. Reporting these results (See Appendix, Table 2.5), what stands out is that for Andhra Pradesh, and to a lesser extent Rajasthan, at every level of centre – CHC, PHC and SC – the majority fall into the good and average category, with only a minority falling into the poor category. In Uttar Pradesh, the majority at every level fall in the average and poor category, while none fall in the good category. In Bihar, at CHC level, the majority fall in the average and poor category, with a minority in the good category. At Additional PHC and SC levels, however, they fall entirely in the poor category, with none even in the average category.

5.2 Human Resources

Human resources issues in the rural public health system i.e. quantity, gender breakdown, structural supply problems and motivation linked to relative remuneration in the public versus the private sector, limits to the substitutability of allopathic practice with alternative traditions and absenteeism have been identified as multiple strands of a single underlying thread accounting for poor service delivery performance across numerous components and at multiple levels of NRHM[17]. Some dimensions of these complex problems will be under the microscope in the present section of this paper, while others will be addressed in later sections.

Before starting, however, it is worth reiterating the complexity and pervasiveness of human resource problems in public health systems across countries at various levels of development, for if Lord Bevan struggled with similar constraints in setting up the National Health Service (NHS) in post-World War rural England, one can only imagine

[17] Another important strand under NRHM is the efficacy of incentive-based payments for select frontline providers, which shall be explored in a follow on study.

the scale of problems to be surmounted in the context of rural India, a much larger and less developed canvas[18]. The distinguished Mary Robinson, currently heading the Ethical Globalization Initiative in New York, whose mandate is to place human rights standards at the heart of global governance and policy-making, spoke recently in Delhi of the acute problem in health staffing the world over, particularly highlighting the issue of a drain of trained paramedical and medical staff from developing countries to developed ones, lured by the relatively higher remuneration and standards of living afforded by such professions in more developed regions of the world (7 April 2009, Habitat Centre, PHFI Public Health Lecture Series).

Back to our study and turning first to the quantity and employment status of paramedical staff in PHFs, as against the backdrop of an acute shortage of medical doctors and specialists, they form the backbone of the rural public health system (See Appendix, Table 2.6). In terms of numbers employed at CHC level, at 10.7 and 9.8 paramedical persons employed on average per centre, Andhra Pradesh and Rajasthan take the lead, followed by 5.8 persons in Uttar Pradesh and trailed at 4.2 persons in Bihar. At PHC level, Rajasthan takes the lead with 4.9 paramedical persons employed on average per centre, followed by Uttar Pradesh at 3.6, Andhra Pradesh at 2.3 and Bihar at zero paramedical persons employed on average per Additional PHC. At SC level, all states have achieved the target of one ANM per SC, with none having made an inroad into the target of a minimum of two ANMs per SC, although some SCs in Rajasthan have use of a GNM. Commensurately, vacancies against a standard target of a minimum of 9 staff nurses per CHC; 3 staff nurses per PHC and 2 ANMs per SC across all states (See Table 1.2) are highest at every level for Bihar, followed by Uttar Pradesh, then Andhra Pradesh and the least for Rajasthan. As for percentages employed on a regular basis, across states they are highest at the SC level, followed by the CHC level and trailed by the PHC level.

[18] For an insightful account of the many dimensions of the lives of disparate health providers in India, see Sheikh and George (eds.) 2009 forthcoming volume.

Proceeding to the quantity and employment status of technician staff, here defined to include both laboratory technicians and pharmacists in PHFs (See Appendix, Table 2.6)[19]. In terms of numbers employed at CHC level, at 4.1 technician persons employed on average per centre, Uttar Pradesh takes the lead, followed by 2.7 persons in Andhra Pradesh, 2 persons in Rajasthan and trailed at 0.9 persons in Bihar. At PHC level, Uttar Pradesh again takes the lead with 2.8 technician persons employed on average per centre, followed by Andhra Pradesh at 1.8, then Rajasthan at 0.8 and Bihar at the bottom of the league, with zero technician persons employed on average per Additional PHC. Accordingly, vacancies against a standard requirement target of 1 laboratory technician and 1 pharmacist per CHC across all states (See Table 1.2), and as stated per individual PHCs during fieldwork, they are highest at every level for Bihar, followed by Andhra Pradesh, then Rajasthan and the least for Uttar Pradesh. Moreover, pharmacists' posts rarely exist in Rajasthan. As for percentages employed on a regular basis, at both CHC and PHC levels, they are highest in Uttar Pradesh, followed by Andhra Pradesh and closely matched by Uttar Pradesh, with Bihar trailing far behind.

Focusing next on the more serious problem of quantity and employment status of medical staff in PHFs, emerging from a desperate shortfall of adequately trained doctors and specialists who are willing to work in the public sector, with gaps sought to be filled by paramedical staff or alternative AYUSH practitioners (See Appendix, Table 2.7). The supply constraint emerges from three interacting factors: (1) Medical colleges, including state-run, centrally-assisted and private ones, are adequate in number to produce the requisite numbers of medical staff in some states (i.e. 33 in Andhra Pradesh), just about sufficient in others (i.e. 14 in Uttar Pradesh) and woefully inadequate in some (i.e. 8 in Rajasthan and Bihar, respectively) (2) In order to compel sufficient numbers of MBBS graduates to work in the rural public sector, state governments have tried incentives and / or regulation, with minor variations around the theme of those spending 2-3 years stationed in a rural outpost gaining assured entry into heavily seat-constrained PG specialist courses (3) An MBBS degree takes four and half

[19] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, for the indicator: PHC having a laboratory technician. Please note relative sample sizes and findings.

years (plus one year of internship), with a Medical Doctor degree taking a further three years, at which point a public-private practice salary differential of four to five times, along with the requirement to reside in rural areas in modest family accommodation and with considerations of schooling for children etc., discourages many from applying or staying in government service.

To begin with Medical Officers (MOs) holding at the least a MBBS degree, in terms of numbers employed at CHC level, at 4.7 MOs employed on average per centre, Bihar takes the lead, followed by 3.3 MOs in Rajasthan, 2.3 in Andhra Pradesh and 1.3 in Uttar Pradesh. This makes sense when seen in light of MOs employed on average at PHC level, when Andhra Pradesh takes the lead with 2, followed by Uttar Pradesh at 1.6, Rajasthan at 1.1 and Bihar at 1. In other words, in Bihar nearly all MOs have been formally or informally diverted, as in posted or deputed, to smaller numbers of 'upgraded PHCs', with the PHC level holding the bare minimum of 1 post. On average, combined CHC and PHCs boast of higher numbers of MOs in Andhra Pradesh (4.3, evenly distributed between both levels at 2.3 and 2 respectively), and Rajasthan (4.4, less evenly spread between levels at 3.3 and 1.1 respectively). On average, combined CHC and PHCs in Uttar Pradesh employ the least number of MOs (2.9, with 1.3 in CHCs and 1.6 in PHCs).

Vacancies, against a standard target of a minimum of 1 MO per CHC and PHC across all states as per NRHM guidelines, are highest in Bihar, followed at a safe distance by Rajasthan. None exist in Andhra Pradesh and Uttar Pradesh. As for percentages employed on a regular basis in CHCs and PHCs, they are hundred percent for Uttar Pradesh and Rajasthan, 83% and 88% respectively in Andhra Pradesh, and 58% and 100% in Bihar. This was explained in part by the fact that, especially in Bihar, "say 70 MO posts are advertised, we get a maximum of 30 applications, of which upto 50% withdraw their applications when they hear of which rural outpost they will be stationed in for the first two years" (pers. comm., Bihar state health official). In such a supply shortage scenario, contractual employment is preferred by applicants as through maneuverings of the state health society, it can perversely pay more than being in

regular employment. And although it is termed a very piecemeal and unsatisfactory solution, the state is forced to such short-termist measures to bridge the supply gap.

We turn next to the quantity and employment status of anesthetists and obstetricians / gynaecologists in PHFs, crucial for assisted deliveries under Janani Suraksha Yojana (JSY) and in light of the emphasis on reproductive health interventions in general under NRHM (See Appendix, Table 2.7)[20]. It is fair to say that save for the rare instance, there are no anesthetists employed at the PHC level. Indeed, even at the CHC level, none are employed in Bihar and Rajasthan, and on average, only 0.7 and 0.6 anesthetists are employed, all on a regular basis, in Andhra Pradesh and Uttar Pradesh, respectively. As for obstetricians / gynaecologists, the picture is again quite bleak at the PHC level, where save for the odd exception, none are employed. At the CHC level, while none are employed in Bihar, on average, 1.0, 0.8 and 0.5 obstetricians / gynaecologists are employed in Andhra Pradesh, Uttar Pradesh, and Rajasthan, respectively. While in the latter two, they are all employed on a regular basis, in Andhra Pradesh 25% are employed on a contractual basis. To stem this significant gap in the supply of trained and willing anesthetists and obstetricians / gynaecologists, states like Rajasthan are making MOs undergo four and a half month specialist training in these subjects so as to be able to stand in for these unavailable specialists, and enable the conversion of a CHC into a First Referral Unit (FRU) / Comprehensive Emergency Maternal and Obstetric Neonatal Care (CEMONC) centre[21].

A quick digression is in order at this point on the gender breakdown of paramedical, medical and obstetrician / gynaecologist staff, since in traditional rural communities,

[20] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, for the indicator: CHC having an obstetrician / gynaecologist. Please note relative sample sizes and findings.

[21] In the non-focus state of Gujarat, Chiranjeevi Yojana is a PPP arrangement introduced across five tribal-dominated districts, wherein private gynaecologists are empanelled to conduct free institutional deliveries, especially assisted cases, of BPL women. Each doctor is paid an advance of Rs.15,000 as well as Rs. 1,795 per delivery in their clinics or Rs. 659 per delivery in a government facility. For how the scheme is in general viewed as a success story specific to the context of Gujarat, even while appearing to have attracted private practitioners primarily for its honorarium, and their consequent dissatisfaction with the case fee being too low for caesarean deliveries and other problems, see Venkat Raman and Björkman 2009.

patients exhibit a strong preference for female care, in particular, for maternal and reproductive interventions (See Appendix, Table 2.8)[22]. It is at the paramedical level, in both CHCs and PHCs and across all states, that one sees the greatest percentage by far of female employment, although it is at its lowest comparative level in Rajasthan. This fits the general expectation, wherein the middling skill level requirements of nursing make it a predominantly female profession the world over, only more so in developing countries. Figures illustrate that at both CHC and PHC levels, female Medical Officers are not found that easily across the board but are a particular rarity in Uttar Pradesh. Finally, female obstetricians and gynaecologists comprise all or at least half of the entire profession in both CHCs and PHCs, but in light of the dismal numbers employed in PHFs altogether (see paragraph above), setting much store by their gender alone is useless. Putting these three facts together, it would appear that in cases where the patient demands a female birth attendant in a PHF, it is most probable across all states that a skilled or unskilled paramedical staff member is performing the needful function.

As for the quantity and employment status of other specialist medical staff i.e. surgeons, ophthalmologists, dentists, pediatricians etcetera in PHFs, the picture is as follows. Uttar Pradesh is the only state to have employed 0.3 specialists, on average, at the level of PHCs, with fifty percent of these employed on a regular basis. At the CHC level, Rajasthan leads with 2.3 specialists on average, followed by 1.8 for Uttar Pradesh, all employed on a regular basis. Next on the list is Andhra Pradesh, with 1.3 specialists employed on average, fifty percent of whom are employed on a contractual basis. Finally, we have Bihar, employing 0.8 specialists per CHC on average, with all hired on a PPP revenue-generation model basis (i.e. the CHC sublets space to private practitioners, such as dentists, who bring their own equipment and who charge the patient a user fee at rates subscribed by the state health society, sometimes sharing a certain proportion of the fee with the CHC).

[22] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, for the indicator: PHC having a Lady Medical Officer. Please note relative sample sizes and findings.

Analysing the total numbers of medical staff employed in PHFs i.e. medical officers, anesthetists, obstetricians / gynaecologists and specialists (See Appendix, Table 2.7), the situation at the CHC level is as follows. Rajasthan is in the lead, with on average 6.1 medical staff employed per centre, all on a regular basis. Bihar and Andhra Pradesh rank next with on average 5.5 and 5.3 medical staff employed per centre, with all the specialists in Bihar on a PPP contractual basis and 75% of all medical staff on regular employment in Andhra Pradesh. Uttar Pradesh lags behind, with on average 4.5 medical staff per centre, all employed on a regular basis. As against a standard minimum employment requirement of total medical staff at CHCs as per NRHM guidelines, vacancies are highest in Uttar Pradesh standing at an average of 3.8 per centre, followed by 2.9 in Bihar; 2.7 in Andhra Pradesh and 2 in Rajasthan.

Looking next at total numbers of medical staff i.e. medical officers, anesthetists, obstetricians / gynaecologists and specialists employed at the PHC level (See Appendix, Table 2.7), Uttar Pradesh and Andhra Pradesh lead with on average 2.1 and 2 medical staff employed, 88% and 83% of whom respectively are employed on a regular basis. Rajasthan and Bihar rank next with, on average, 1.1 and 1 medical staff employed per centre, with all the non-specialist staff in Bihar and all the medical staff in Rajasthan employed on a regular basis. Judging by stated vacancies of total medical staff at PHCs during fieldwork, at an average of 1 per centre, vacancies are highest in Bihar; followed by 0.4 in Andhra Pradesh; 0.2 in Rajasthan and 0.1 in Uttar Pradesh.

Examining the quantity and employment status of alternative Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH) practitioners in PHFs (See Appendix, Table 2.7), we can see that actual numbers already in place are low across the board of all states. At the CHC level, on average, 0.5 and 0.2 per centre are employed in Uttar Pradesh and Bihar respectively, with all the former hired on a contractual basis and all the latter on a regular basis. None are employed so far in Andhra Pradesh and Rajasthan. At the PHC level, on average, 0.4 AYUSH per centre are in place in Rajasthan, 0.2 per centre in Andhra Pradesh and 0.1 per centre in Uttar Pradesh, with the first lot all hired on a contractual basis, the second lot all employed on a regular basis and

the third lot again all operating on a contractual basis. Thus far, none are in place in Bihar. The sample AYUSH drew predominantly from the schools of Ayurveda (holding a Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree), and to a lesser extent, Homeopathy (holding a Bachelor of Homeopathic Medicine and Surgery (BHMS) degree). The serious question confronting the public health system is that given the shortage of allopathic medical staff in rural PHFs, and failing adequate cover by paramedical staff, what is the extent and limits to which they may be substituted for by alternative AYUSH practitioners, which is imperfect at best in the cases of surgery and extreme life-threatening conditions, but perfectly acceptable in minor and certain kinds of chronic ailments, such as skin and digestion-related illness.

The final human resource problem to discuss in detail here is that of absenteeism, rife at all levels and across all categories of staff in PHFs, a particularly grave situation in light of the low numbers employed in the first place (See Appendix, Table 2.9)[23]. Examining first the attendance figures for paramedical staff at CHC, PHC and SC levels, Andhra Pradesh has the best record with 67%, 70% and 100% of those employed in respective PHFs present at the time of our random visit. Rajasthan follows at some distance, with 55%, 60% and 75% of paramedical staff in attendance at these levels, respectively. Bihar has a decent record for CHC paramedical attendance, with 60% present at the time of our visit, but the Additional PHC level is a missing paramedical layer in the tier altogether, and SC attendance is low at 50%. Uttar Pradesh has dismal CHC and PHC paramedical attendance records, with only 48% and 39% present, respectively, while its SCs fare better with 67% of ANMs in station.

While for Andhra Pradesh and Rajasthan, attendance is better at the PHC level than the CHC level, it is conversely true for Bihar and Uttar Pradesh. Overall, with the exception of Bihar, it is best at the SC level in every state, which is surprising given that the sole

[23] Feedback from the MoHFW at the presentation of this paper in the Planning Commission (1 May 2009) was that absenteeism figures are overstated in this study because they do not take into account the shift system of paramedical and medical staff. Be that as it may, it is also true that triangulating our facility survey findings with patient feedback from exit interviews presented in Section 6 of this study, it would appear there is much water in our figures, and our argument of the importance of this feature in negatively impacting human resources in the rural public health system in general.

ANM has nobody to monitor her presence. The phenomenon may only be ascribed to greater accountability to the smaller community she more closely serves in terms of physical proximity and in a known capacity. That is to say, direct community observation through proximity minimizes information asymmetry principal agent problems, with social collateral further averting moral hazard in the form of absenteeism on the part of the frontline health provider or agent, in this instance the ANM (more on overcoming varying degrees of PA problems below).

Proceeding to the attendance figures for Medical Officers at CHC and PHC levels (See Appendix, Table 2.9), they are consistently lower at both levels in all states than attendance figures for paramedical staff. Indeed, this fact alone explains the latter phenomenon to a large degree, since if the Medical Officer in Charge (MOIC) is not present to monitor the attendance of those operating under him / her in PHFs (including not just paramedical staff but also technicians and pharmacists etcetera), it makes it more likely they will abscond from their duties altogether. With the exception of Rajasthan, at 31% versus 36%, MO attendance is significantly higher at the CHC level than the PHC level, standing at 58% versus 33% in Andhra Pradesh; 44% versus 36% in Uttar Pradesh; and 40% versus 0% in Bihar. The absolute numbers suggest the situation overall for MO presence in PHFs, albeit measured at a single random moment in time, is a dismal one. Without going into the figures, a look at Table 2.9 shows that anesthetist, obstetrician and other specialist attendance numbers are more pessimistic still, which in view of the abysmal few employed in the first place, point to a de facto missing class of public health workers in rural PHFs.

As for the complex set of factors leading to this condition, the first is the significant information asymmetry and principal agent affliction in implementing the order requiring medical staff to live in rural outposts, as is mandatory and despite providing incentives in terms of housing etcetera. Instead, moral hazard is writ large, with significant numbers of them actually to be found living in district headquarters. Alternatively, many have been ‘deputed’ to serve in another PHF, even though they are on the payroll of a certain centre. To the question of whether any medical staff, whether officer or specialist, was reported

to live elsewhere, the percentages of CHCs and PHCs giving an affirmative answer in each state was as follows: 0% and 46% in Andhra Pradesh; 83% and 43% in Uttar Pradesh; 89% and 100% in Bihar; and 75% and 69% in Rajasthan, respectively. On whether any medical staff has been deputed to serve in another station, the percentages of CHCs and PHCs confirming it was so was as follows: 33% and 62% in Andhra Pradesh; 100% and 29% in Uttar Pradesh; 67% and 100% in Bihar; and 75% and 38% in Rajasthan, respectively. This sort of longer term absenteeism is reinforced on a daily basis by the skewed incentives of a significant disparity in remuneration between the public and private spheres, to give just one example, an obstetrician in a PHF in Patna can expect to earn roughly Rs.35,000 per month as compared to Rs. 1 lakh per day in the private sector. Consequently, large numbers of medical staff ostensibly serving in the public health system are really devoting significant tracts of their time and energy to informally serving the private system, more or less openly, and at times even using government facilities to see patients on a private basis and charge accordingly.

While policy recommendations will follow later on in the report, at this point it is worth clarifying that this evaluation is in no way endorsing the idea that relative pay scales in the public / private health sector justify absenteeism in the former. In fact, given the cost of living, in real terms paramedical and medical staff in rural India (especially post the revised salary scales of the Sixth Pay Commission) arguably fare quite well. Moreover, the disparity in the public / private pay packages apply to all spheres and in countries at all levels of development, so it can hardly be proffered as an excuse for failing to perform on the job. Instead, I would be inclined to blame complacency arising from the assured nature of regular lifetime employment in the government sector, along with a complete lack of monitoring by the state health hierarchy and hence non-existent fear of reprisals, in the form of firings or transfers, for under performance. Medical staff are scarcely accountable to the rural community they supposedly serve either, since the power dynamic is so unequal between them and the poorer segment coming in to use PHFs. This is only exacerbated by the principal agent problem afflicting the relationship between the provider and the patient in the health sector, which is acutely felt by the poorer and often illiterate category of patient, and which inhibits any kind of protest – key informants

actually articulated that the doctor might give them the wrong medicines if they complained too much!

5.3 Medicines

Service delivery is dependent on a regular supply of a comprehensive range of quality-controlled medicines, falling under various generic categories included in the 'essential drug list' drawn up for different levels of PHFs (See Appendix, Table 2.10). The idea is to provide medical aid of a basic level (SC) and intermediate level (PHC, CHC) at decentralised centres in order to cater to commonplace health needs of physically dispersed rural communities. The latter two act as gatekeepers for serious or complicated cases, which may then be referred to the sub-divisional or district hospital. Apart from administrative fee of Rs. 2 charge for the prescription, PHFs are supposed to dispense medicines free of cost to BPL families and other deprived patients. Issues of drug affordability aside, very few or no private allopathic chemists of reputed reliability are actually to be found in the vicinity of villages and blocks set amidst desolate expanses.

A random spot check of the medicine storeroom in PHFs was undertaken at the time of our facility survey to ascertain whether a full compliment of essential drugs was held in stock (See Appendix, Table 2.11). With 100% of CHCs and 85% of PHCs holding a comprehensive range of medicines, Andhra Pradesh far outstrips the other states as far as drug supplies are concerned. It is trailed by Uttar Pradesh (only 33% of CHCs and 29% of PHCs have an adequate stock of drugs), then Rajasthan (25% of CHCs and 14% of PHCs) and finally Bihar (only 11% of 'CHCs' and 0% of Additional PHCs have sufficient medicines). Again, Andhra Pradesh does best at the SC level, too, although only 20% of them are able to lay claim to a healthy drug stock, which may be attributed to the sample being biased at this level towards tribal and Naxal strongholds. Still, considering none of the SCs in any of the other states could boast of a comprehensive holding of medicines, arguably this is one component on which the inter-state disparity in performance is widest i.e. Andhra Pradesh is almost like a developed country in terms of rural PHF drug supply, and the others are clearly not. Indeed, the only worry in Andhra

Pradesh was that human resource failures would result in a situation where available medicines are not prescribed and distributed according to pressing need, to be used within the expiry dates, resulting in sheer wastage of the drug stock.

To give the reader a real sense of what this evaluation study is referring to when it says a PHF does not hold an adequate stock of medicine, here is a descriptive account of actual availability and lack in their storerooms during the random visit. At the SC level, it means that it only held the contents of Drug Kit 'A' (see Appendix, Table 2.10), that too selectively and in limited supply, of Oral Hydration Salts, IFA tablets, Vitamin A solution and Cotrimoxazole. It does not have any supply of Drug Kit 'B', which citing the example of Gagwana PHC in Ajmer, remains held up at the PHC itself rather than being distributed to the attached SCs. Therefore, it does not hold any Paracetemol or 'PCM', Iodine, Mebendazole or Dicyclomine. Hardly any of the 'Additional Drugs' are available, such as oral antibiotics or injections and contraceptives, along with a selective supply of national disease control programme medicines and vaccines, for example, no Choloroquine for malaria and immunisation limited to Pulse Polio for the last three months because of "a lack of funds for courier agencies to deliver to ANMs" (PHC Silao, Nalanda district in Bihar).

At the PHC and CHC level, taking the example of the CHC-equivalent PHCs of Bihar i.e. Balsar PHC in Vaishali district and Chandi PHC in Nalanda district, a centre with less than a comprehensive range of medicines in stock holds some combination of medicines from Drug Kit 'A', 'B' and 'Additional Drugs' required to be held at the SC level i.e. Oral Hydration Salts, IFA tablets, Cotrimoxazole, Paracetemol, Iodine ointment, cotton, oral and injectible antibiotics (limited supply), contraceptives (large stock), disease control programme medicines (Choloroquine for malaria and DOTS for TB rather than MDT for leprosy and DEC for filarial) and vaccines (Pulse Polio but maybe no DPT, TT, Hep B etc.). From the list of 'essential drugs' required to be held at PHC and CHC level (see Table 2.10), a select few are available, that too in small quantities. Oxygen cylinders are empty, although IV fluid and latex gloves are available. Emergency anti-rabies and anti-venom shots are not to hand. Vitamins are freely obtainable, but medicines for all

sorts of short-term conditions, from cough syrup to anti-diarrhea tablets and broad spectrum adult antibiotics, are lacking. Allopathic medicines for chronic disease are almost certainly not available.

A quick digression on the positive side, to cite an example from Rajasthan of one of the few PHCs holding a significant stock of AYUSH medicines, in this case ayurvedic preparations, that of Dantra PHC in Ajmer district, in order to describe what a PHF may hold in the way of these kind of drugs. Its medicine storeroom contained a large stock of Churna, Ras, Vatti, Bhasma, Rasayana and Tail types of formulations for various purposes. Elsewhere, almost without exception across states, the few AYUSH practitioners already in place in PHFs complained of being unable to obtain medicine stocks appropriate to their practice, be it homeopathy or ayurveda or unani, through the normal channels of government supply.

Returning to allopathic medicines, the static picture of the drug stocks in CHCs and PHCs can certainly not be uniformly attributed to the irregularity in the flow of medicine supplies, since it can be seen from Table 2.11 that the large majority of these categories of PHFs claim to have last received a consignment of drugs in the preceding month, if not more recently i.e. adding together percentages of CHCs / PHCs reporting that they have received a medicine supply in the preceding two weeks or the preceding month, we get figures of 67% and 100% respectively for Andhra Pradesh; 83% and 100% respectively for Uttar Pradesh; 89% and 0% (for Additional PHCs, which is explained by their de facto non-existent status) for Bihar; and 100% and 35% respectively for Rajasthan. For SCs, on the other hand, across states the majority claim to have received their last drug supply more than three months prior to our visit, or at least only once in every quarter (the exception was Bihar, where all SCs reported getting supplies only two weeks prior to our visit, but since these were restricted to pulse polio, it is not counted as a drugs consignment).

To the extent drug supply at the district level is determined by the funds released specifically for drug procurement, a budget head which fall under the NRHM

Additionalities category, I refer the reader to an overview of 2005-2009 figures from the NRHM State Data Sheets produced by the MoHFW (see Appendix, Table 1.10). Listed figures for release as given in Rs. Crore are as follows: for Andhra Pradesh (17.58 for 2005-06, missing for other years); for Uttar Pradesh (38.49 for 2005-06, missing for 2006-08, and 1.19 for 2008-09); for Bihar (18.43 for 2005-06, missing for 2006-07, 10 for 2007-08 and missing for 2008-09); and for Rajasthan (26.64 for 2005-06, 18.39 for 2006-07, missing for 2007-09). Since data for so many intervening years is unavailable, it hardly makes sense to add up the figures to ascertain the total amounts released per state under this budget head since 2005 (doing so results in figures of Rs. 17.58 crore in Andhra Pradesh; 39.68 in Uttar Pradesh; 28.43 in Bihar; and 45.03 crore in Rajasthan). Moreover, there is no data on expenditure and unspent amounts. Consequently, a lack of data at this level does not allow for much analysis of how drug supply at the decentralised district level is influenced by flow of funds from higher levels, although it obviously is in a significant, and perhaps perverted, way (if it is true that Rajasthan has received the highest amount of funding for drug procurement, its dismal performance on quality of drug supply can hardly be attributed to financial shortfall).

The process whereby PHFs order drugs is as follows. There is a quarterly budget for drugs (taking the example of Andhra Pradesh, roughly Rs. 160,000 for a CHC, Rs.69,000 for a PHC and on an allotment basis for attached SCs), although in emergencies or yet greater need, PHFs are allowed to use HDS funds for purchasing medicines on the open market. Based on usage, need and shortfall - calculated on average demand in most cases, but varied in the case of a sudden epidemic, such as the gastroenteritis outbreak occurring in the tribal areas of Andhra Pradesh during the team visit - medical staff prepares a requisition list. This goes to the pharmacist, who is based at the centre itself in the case of CHCs and PHCs, and refers to the PHC pharmacist in the case of attached SCs[24]. The pharmacist gets clearance from the Medical Officer in Charge (MOIC), and sends the indent to the Block Chief Medical Health Officer (Block CMHO), or directly to the headquarter Central Drug Store (CDS) run by the District Medical Health Office

[24] As noted in the previous section, pharmacists' posts rarely exist in Rajasthan, where his or her function is performed by another member of the paramedical or medical staff of the PHF.

(DMHO). The District Chief Medical Health Officer (District CMHO) is responsible for supplying CHCs and PHCs with drugs (Additional District CMHO in case of supplies for sterilisation or *nasbandhi* camps organised at regular intervals in PHCs), which can take anything from a few days to more than three months. ANMs are supposed to pick up their promised supply of immunisation drugs, SC kits and medicines at the time of their weekly meeting at the local PHC.

Apart from drug supply, a pertinent question is that of the quality of drugs available in rural PHFs. Expiry dates, as directly observable measures of quality, were noted during the random visit to the storerooms (see Appendix, Table 2.11). In Andhra Pradesh and Uttar Pradesh, medicines were well within their expiry dates, which fell more than a year away in the case of all PHFs. The sole exception was at the SC level in Andhra Pradesh, where 80% of SCs held drugs beyond their expiry date – in the tribal-dominated Inole SC and Naxal-disturbed Amrabad SC north of Achempet in Mahbubnagar, medicines expiring in 2001 and before were stocked! In Bihar, at CHC level, all held medicines within expiry dates, which fell more than a year away; at PHC level, none carried drugs within the expiry date; and at SC level, 50% of them carried drugs well within expiry dates and the remainder did not. Rajasthan displayed the peculiar situation where at any level of PHF, very few carried medicines within the expiry date of one year (0% of CHCs; 14% pf PHCs and 33% of SCs). The majority of centres carried drugs 'nearing expiry' i.e. medicines only two or three months away from being out of date (75% of CHCs; 64% of PHCs and 50% of SCs), while the remained carried expired medicines (25% of CHCs; 22% of PHCs and 17% of SCs). The ANM at Dhaatol SC, attached to Tantoti PHC in Ajmer, confessed that a year or two ago, they had had a real problem with the quality of medicines supplied, to the extent that she did not accept the consignment.

Now, drug supply and quality at the district level is heavily influenced by the procurement practices in place at the state wide level, an evaluation of which is beyond the remit of this study. In every study state, however, the Tamil Nadu Medical Services Corporation (TNMSC) was held up as the role model for procurement, storage and distribution of drugs and equipment for the public health system. In fact, TNMSC

accepted and completed consultancy work in this area for the Health and Family Welfare Department, Government of Andhra Pradesh and Rajasthan. The Government of Bihar is in the process of negotiating with TNMSC to actually subcontract drug and equipment procurement for a period of six months to a year, until it has managed to set up a similar system "with a good work culture" in the state (interview with official, State Health Society, Bihar)[25].

Triangulating facility survey data with exit interview data, it emerges that drug supply and quality of stock at PHFs has only a tangential bearing on the question of free drug availability to patients frequenting these centres in the focus states. To the question of whether a patient received free medicine from the PHF (aside from the Rs. 2 administrative charge), 88% replied in the affirmative in Andhra Pradesh, while only 24%, 15% and 18% replied in the affirmative in Uttar Pradesh, Bihar and Rajasthan respectively (See Appendix, Table 3.2). A majority of patients in focus states receive only a prescription and incur out of pocket expenditure for drugs, even when their availability and quality in centres is not a problem. Why is this so?

Partly, this maybe ascribed to the disparate patient profile of those seeking health care from the public system in different states (See Appendix, Table 3.1). In Andhra Pradesh, 87% of patients belong to the BPL category, and 57% have an entitlement card issued to them. Should the staff of a PHF demand to see proof of their BPL identity before doling out free medicine, a discretionary practice in some states, many more would still qualify as deserving than would be the case in the focus states. In Uttar Pradesh and Bihar, 52% and 64% of patients belong to the BPL category, and only 49% of the total own entitlement cards in either states. Curiously, in Rajasthan, 86% of patients at PHFs fall in

[25] Briefly, the TNMSC procures drugs and equipment from reputed manufacturers on the basis of a transparent, open tender system. Quality control is assured through a procedure whereby random samples from batches of drugs are tested at empanelled laboratories. Distribution takes place through passbooks issued to all PHFs, and against which they draw allotted stock from the respective warehouses to which they are attached, while the latter maintain a three month ground stock in order to assure uninterrupted supply. As an institution, TNMSC is probably representative of the overall excellence of the public health system in the state, by secondary accounts the most superior in the country and akin to developed country systems on numerous dimensions (see, for example, fieldnotes from Reetika Khera's visits to PHFs in Villupuram, Cuddalore and Pondicherry, Tamil Nadu, 6-12 December 2008).

the category of non-BPLs, and only 7% of the total professed to entitlement card ownership, so that very few would qualify for free medicine from a PHF if its provision was dependent on producing visible evidence of BPL status[26].

The remainder of the unexplained gap between availability of medicines and their free provision appears to lie in varying governance and accountability levels between the non-focus state and the focus states. Our team witnessed instances in Bihar and Uttar Pradesh where the Medical Officer's quarter was being used as a de facto clinic within the premises of the PHF, set up with a complete stock of medicines which could have originated and been replenished from the main storeroom, as alleged by waiting clients. We were repeatedly told by patients that medical staff should stop requesting them to come around the corner after hours to their 'clinic', where they are made to pay for prescriptions and drugs. Moreover, patients are often asked to purchase medicines on the open market, which refers in the case of Bihar and Rajasthan to government-sanctioned 'generic' drug stores operating within the premises of the PHF and selling cheaper versions of branded medicines (for example, Rajgir PHC/FRU in Nalanda district of Bihar and Meratacity CHC in Nagaur district of Rajasthan). Obviously, team members had no means of verifying the safety or fakeness of these generics. Since their usage is directly endorsed and promoted by the government, however, the onus for strict regulation of their source and quality lies squarely with them, yet it was not immediately apparent to the team that this function was being carried out.

5.4 Untied and Maintenance Funding

A key reform under the 'architectural correction' of the health system bought about by NRHM was to provide flexible financial resources for need-based decentralised utilisation at the local level, as determined by a community-based Panchayati Raj

[26] In Rajasthan, the team was struck predominantly by the low absolute numbers of those seeking health care in the public system. The predominant usage by non-BPL category was put down to the supposed migratory status of the BPL in the study areas, many of whose work took them away into the interior and brought them back only in the rainy season. The more plausible explanation is misidentification of BPL / non-BPL by official counting criteria, as well as large numbers of those just above the poverty line but officially 'non-poor' being dependent on the public health system.

Institution (PRI), such as the Hospital Development Society (HDS). It is important for an evaluation of service delivery under the Mission to study the workings of such financial arrangements in some detail, to which end I chose to gather and analyse micro-level data (on knowledge, maintenance of records, amounts received, institutional process of determining expenditure items and amounts) from the sample PHFs on untied and maintenance funding. As we saw in the financial section, the budget heads for untied and annual maintenance grants fall under the 'NRHM Additionalities' category, for which at the state level only release figures since 2005 are available, that too with many missing entries.

Beginning with knowledge about financial grants given to the centre, medical officers in charge (MOIC) or the person standing in for him or her at PHFs across study states appeared to have a fair awareness, if only very general, of untied and maintenance amounts received by the centre (See Appendix, Table 2.12). The sole exception was at the levels of Additional PHCs and SCs in Bihar, where they professed complete unawareness about these grants. In passing, it is worth pointing out to the reader that the topic of funding and money at PHFs raised the most consternation in informants during the course of this study, to the extent that an ANM in Uttar Pradesh began crying when she could not locate her passbook. The PI did all she could to assuage these fears, but the situation of an official team suddenly turning up was disconcerting enough, without having to answer sensitive questions on financial receipts and disbursements.

On the ability to produce a decently maintained financial record register, with details of untied and maintenance funds received and spent, Andhra Pradesh fared the best of all states, with 67% of CHCs, 54% of PHCs and 60% of SCs able to do so (See Appendix, Table 2.12)[27]. Rajasthan's performance across all levels of PHFs came second, with 50% at every level being able to produce a record register on request. Uttar Pradesh and Bihar performed equally dismally on this front – only 29% of PHCs and 33% of SCs in the former, and 44% of PHCs in the latter could produce any records at all. If it was not so

[27] As mentioned earlier, I profess sympathy with those having to meticulously maintain these 'information heavy' financial registers, with numerous and complicated NRHM budget heads.

serious, the flap induced by the very polite request itself of producing the financial record register would be amusing – without fail, the informant reacted by biding time and misconstruing the request (i.e. producing patient records or the medicine requisition register), would then angrily send off underlings to immediately find and produce the correct one, would berate missing persons who had walked off with the key to the room in which accounts were locked, and when all fell flat, would apologetically explain it had just the day before been sent off for verification purposes to the district headquarters.

To the detailed question of whether or not the PHF had received grants during the fiscal years April 1 2006- March 31 2008 (see Appendix, Table 2.13), affirmative responses dominate in Andhra Pradesh, Uttar Pradesh and Rajasthan, while the 'Don't Know' response dominates in Bihar, across all level of PHF. To the detailed question of whether or not the PHF had received grants during the fiscal year April 1 2008- March 31 2009 (see Appendix, Table 2.13), affirmative responses still dominate in Andhra Pradesh, Uttar Pradesh and Rajasthan at all levels of PHF, followed by a 'Don't Know' response in Andhra Pradesh; an almost equally matched 'Don't Know' and negative response in Uttar Pradesh; and a negative response in Rajasthan. As before, the 'Don't Know' response dominates in Bihar across all levels of PHF, followed at a significant distance by an affirmative response and then a negative response.

On the specific amounts received at any one level of PHF, presented as an average at that level in Table 2.13, and comparing variable receipts of individual centres similar in type, in Andhra Pradesh there is negligible spread between payments to similar centre-types of all kinds in both 2006-08 and 2008-09 i.e. uniformity in amounts received, more or less, at CHC, PHC, SC levels. In Uttar Pradesh, there is low spread between payments to CHCs and PHCs in 2006-08, which are completely uniform by 2008-09. There is uniformity in payments received by SCs all along, i.e., in both 2006-08 and 2008-09. In Bihar, there is a high spread between payments to PHCs in 2006-08, reduced to negligible spread in 2008-09. Since 'Don't Know' was the sole response to payments made to Addl. PHCS and SCs, for both 2006-08 and 2008-09, nothing maybe deduced about differences in amounts of payments received by similar types of health centres at

these levels in this state. Finally, in Rajasthan, there is a medium spread between payments to PHCs in 2006-08, which remains so in 2008-09. There is a negligible spread between amounts disbursed to CHCs and SCs in 2006-08, which are completely uniform by 2008-09. In other words, with the exception of Bihar, there appears to be institutional learning with time so that any kind of administrative and implementation hiccups disrupting uniform flow of grants to PHFs in the early years is overcome by 2008-09.

On the ramifications of the broader question of whether, having established three tiers of governance i.e. the centre, state and panchayat, the next Thirteenth Finance Commission ought not to explore the idea of the centre giving funds directly to the panchayat level, thus bypassing the state level altogether. Administratively, we were repeatedly told during fieldwork that payments to individual health centres are very often held up at the state and district levels, on which grounds a legitimate case could be made for direct disbursement of funds from the centre to the panchayat. However, the Constitution defines health as primarily a state subject and the political economy of a democratic federal system would suggest that such a move would be highly problematic. Individual states are keen to gain more autonomy from the centre but they are reluctant to devolve power to the decentralised panchayat level, as such institutional financial reform would necessarily warrant.

Now, who manages and determines the usage of untied and maintenance funds at the PHF level? A community-based Panchayati Raj Institution (PRI), here referred to as a Hospital Development Society (HDS), is responsible for doing so[28]. Depending on the level of the PHF, signatories on the accounts are some combination of either the local Member of the Legislative Assembly, Zilla Parishad /Mandal / Block President, Gram Panchayat Pradhan, or Village Sarpanch, who holds the post of 'Chairman' and supposedly represents the interests of the community, alongside either the Medical Superintendent, Medical Officer or Auxiliary Nurse Midwife (ANM), who holds the post of 'Secretary' and acts on behalf of the medical fraternity. Members include

[28] *Cf.* Section 5.1 for the various names and acronyms such a society goes by in different states and at different levels of PHF.

representatives from the wider community and PRIs, including ‘prominent persons’, ‘respected elders’, social workers, Zilla Parishad / Mandal / Block / Gram Panchayat members, tehsildars, municipal officials and so on, as well as further representatives from the medical establishment, such as other staff members from the relevant PHF.

Usage of both the untied and maintenance financial grants given to PHFs is determined through regular meetings of the society, held every six months or at shorter intervals. Once usage is decided on, a smaller subset of the society, known as the ‘purchase committee’, is responsible for the actual procurement of the required object or service through a bidding process involving local vendors. According to the record books trawled through on our visits, usage fell primarily into the following illustrative categories: purchase of electricals (fans, fridges, water coolers); fittings (taps, plumbing); furniture (beds, chairs); equipment (surgical tools, rubber sheets); emergency drugs; construction (borewells, toilets); repairs (ambulance); cleaning (bleaching powder, drains, water tanks) and beautification (hedges, painting). We actually witnessed some of the building and upgradation works, all of which point to the fact that these initial deposits of discretionary decentralised monies are being used, albeit tentatively, towards fulfilling certain basic physical and infrastructural necessities which were hitherto lacking in PHFs.

As to whether there is corruption at this level, findings suggest that there is no or little actual siphoning of funds. Perhaps the actual bidding process is faulty, for example, we were told at many PHFs that they had purchased water aquifers just a few months before, which had stopped functioning quite soon after and since the company they had bought from no longer existed, they could do nothing to recoup money. This would support the suspicion that the purchase committee may have granted the contract on the basis of personal ties or patronage links, a distinct possibility even on the small monetary amounts of individual transactions. However, when queried about usage, respondents hastily quoted the NRHM directives almost verbatim, which pointed to nervousness about actually exercising their newly granted liberty to determine how the money is used, as they are required to under the decentralisation drive, rather than evidence of outright corruption in making off with funds.

The latter view is supported by findings on unspent financial grants, wherein it turns out that save for the SC level in Andhra Pradesh, of the total number of centres that report having received financial grants during the fiscal years 2006-08 at any one level of PHF, a certain percentage holds unspent funds in every state (See Appendix, Table 2.13). At the CHC level, Rajasthan boasts of the largest numbers of CHCs holding unspent amounts (75%), Bihar comes next (67%), Andhra Pradesh comes third (50%), with Uttar Pradesh reporting the least number of CHCs with unspent amounts (17%). At the PHC level, Andhra Pradesh leads by way of centres with unspent balances for the fiscal years 2006-08 (89%), Rajasthan comes next (71%), with Uttar Pradesh reporting the least numbers of PHCs with unspent balances (29%) (the team was unable to gather meaningful data on unspent amounts for Additional PHCs in Bihar). At the SC level, the situation is reversed with Uttar Pradesh boasting the greatest numbers of centres holding unspent funds (67%) and Rajasthan trailing (33%). A hundred percent of SCs show complete usage of grants in Andhra Pradesh, with the team again unable to gather meaningful data for SCs in Bihar.

As for the actual amounts of unspent financial grants, although it proved impossible to gather complete systematic data across various levels of PHFs, from the material gathered on absolute figures from as many centres as possible, the following may be deduced. Unlike in other states, in Bihar unspent grants, both maintenance and untied, amount to nearly a hundred percent of received funds i.e. a negligible amount of the monies have been spent. This is true of both financial periods of 2006-08 and 2008-09. In other states, although many centres report holding unspent amounts (as discussed in the paragraph above), actual figures for these amounts are low in absolute terms. Only 2008-09 grants so far remain largely unspent, although in many instances meetings to decide how to spend this money are reported to have taken place.

5.5 Availability of Services

Under NRHM, the provision of certain services is deemed desirable, if not always mandatory, at different levels of PHF, i.e., SCs, PHCs and CHCs (See Appendix, Table 2.14). Effective delivery of individual services is variously dependent on some combination of available physical facilities and equipment (for example, diagnostic machines and freezers for blood storage alongside reliable electricity supply), skilled personnel (for example, an ANM able to dispense injections or a laboratory technician able to use TB detection kits or an obstetrician familiar with conducting caesarean deliveries), and drug supply (for example, stock of vaccines for immunisation or contraceptives for family planning). To a lesser extent, it is also dependent on decentralised funding (for example, emergency purchase of medicines in the case of a local epidemic). Conversely, provision of services is compromised in varying degrees by a lack of physical infrastructure and equipment, human resource shortages, irregularities in drug supply and secondarily, insufficient funding. Consequently, based on primary data gathered from a checklist administered during the facility survey, it is fitting at this stage to assess findings on the actual availability of important services at different levels of PHF.

Beginning with the SC level (See Appendix, Table 2.15), across states it emerges that immunisation is the most widely available service at this level of PHF, with qualitative data suggesting it is skewed particularly towards the pulse polio initiative. Indeed, if it was not for drug shortage – for example, the break in DPT vaccine supply in Bihar due to 'administrative reasons' or the paucity of immunisation vaccines in general in the financial year beginning 31 March 2008 in Rajasthan, reportedly caused by wastage on child health day due to a discrepancy between the numbers of open vaccines and the children that actually show up in the angadwadi centre – availability of this service would be even better. Judging from findings of previous sections, the constrained availability of the other two services assessed at this level of centre, i.e., the relatively more widely available ante / post natal services for pregnant women and newborns, plus the relatively less available minor ailments and first aid treatment, maybe ascribed

to unsatisfactory physical infrastructure and shortfalls in an adequate quantity and quality of drugs rather than human resource problems, wherein across states, ANMs are found to be employed on a regular basis and exhibit relatively conscientious attendance behaviour. Moreover, the relative availability of all three services at the SC level would suggest that perhaps ASHAs privilege functions which come with monetary incentives (for example, registering pregnant mothers and immunisation) over those which do not (minor ailments and first aid)[29].

Turning next to the PHC and CHC level (See Appendix, Table 2.16)[30], to assess availability of important services that are supposed to be common to both levels of PHF i.e. normal and assisted deliveries, sterilisation, A&E, basic laboratory and microscopy services and treatment of RTIs / STIs and leaving aside the case of Additional PHCs in Bihar on the grounds that they have none or little effective delivery of any kind of service. Across states, as to be expected, these services are more widely available at the CHC level than the PHC level, although what is surprising is the extent of the gap in provision. Ranking the availability of different services, across states is appears basic laboratory and microscopy services are the most consistently widely available services (ranked first or second in each state), along with A&E services for Andhra Pradesh, and along with sterilisation services for Uttar Pradesh, Rajasthan and Bihar (the ranking of the last two services is inverted for Andhra Pradesh versus the focus states and comes lower down the ranking in both, which is to say sterilisation comes after 24-hour normal deliveries for Andhra Pradesh, and A&E comes after 24-hour normal deliveries for the focus states).

[29] For more detail, the reader shall have to refer to a separate forthcoming publication, assessing primary data collected during this study from frontline health providers on a wide ranging set of issues pertinent to NRHM.

[30] For comparator purposes, the reader is referred to the DLHS-3 combined district average (CDA) figures, for the indicators: CHC having 24-hour normal delivery services; CHC having blood storage facilities. Please note relative sample sizes and findings.

A service that maybe equivalently ranked as most widely available for some levels of PHFs in some states, and ranked in second place for others, is 24-hour normal delivery. It maybe ranked first, alongside other services above, at the levels of CHCs in Andhra Pradesh, PHCs and CHCs in Uttar Pradesh, and CHCs in Rajasthan, whereas it maybe ranked second place for PHCs in Andhra Pradesh and Rajasthan, as well as CHCs in Bihar. Following next in the ranking of availability across states is 24-hour assisted deliveries, which with the exception of the CHC level in Andhra Pradesh, shows quite dismal availability across the board, and is really quite a scarce service in PHFs in Rajasthan and Bihar. Trailing far behind at the bottom of the pile in the ranking of available services is the treatment of RTIs / STIs, the least available service across states. Putting together the findings of previous sections on human resources and drug availability, alongside the monetary incentive payments for institutional deliveries and sterilisation under NRHM, the conclusions above come as no surprise.

Looking finally at the CHC level (See Appendix, Table 2.16), to assess availability of important services whose provision is supposed to be unique to this level of PHF i.e. surgery and obstetric emergencies, diagnostic services and blood storage. Across all states, a ranking would place diagnostic services as the most widely available, although a look at the absolute percentages suggest the service is not actually easily available in Bihar and Rajasthan. Following in second and third place is obstetric emergencies, followed by surgery emergencies in Andhra Pradesh and Uttar Pradesh, with inverted ranking on these two emergency services in Bihar. Sample findings suggest Rajasthan is unable to provide either service at all at the CHC level. Trailing at the bottom of the list across all states is blood storage, which is only available in the sample CHCs in Andhra and is unavailable in the sample CHCs in Uttar Pradesh, Bihar and Rajasthan (note almost identical DLHS-3 sample findings on this indicator to those of the present study). Again, in light of the findings of previous sections on the condition of physical infrastructure and of human resources, especially those of specialists (i.e. surgeons) and obstetricians, in study state CHCs under NRHM, the conclusions above are not startling in any way.

I end this section with data on a snapshot dynamic picture of usage, on both janani suraksha yojana (JSY) and in-patient department (IPD), as perceived by the Planning Commission team during our random visits to PHFs. I considered measuring usage of PHFs on the indicators of absolute numbers of deliveries and in-patients, as recorded in registers maintained by the centres, or as reported by the MOIC. However, there appeared to be a wide discrepancy between these numbers and what we witnessed firsthand during our trips to the centres on account of both indicators. Consequently, I am choosing to report on the latter, in full recognition of the fact that these indicators have their own limitations in the sense of being based on a random visit at a single point in time, with no intertemporal dimension (See Appendix, Table 2.17). With this proviso in mind and taking CHCs and PHCs together, on JSY, we witnessed the most ongoing deliveries in Uttar Pradesh and Andhra Pradesh, and far fewer ongoing deliveries in Rajasthan and Bihar (absolute percentages are quite low throughout, particularly dismal for Rajasthan and Bihar). Similarly, we saw more in-patients in Andhra Pradesh and Uttar Pradesh and far less in Rajasthan and Bihar. Peculiarly, the one feature that struck the entire team was that far fewer patients, be they waiting or out patient and in patient, were to be found at PHFs in Rajasthan compared to any of the other study states (to the extent that the team was hard pressed to find enough patients to administer the exit interviews to, findings from which part of the study we turn to next).

6. Discussion of Study Results from Exit Interviews with Patients

In Section 3 of the paper, it was proposed that *quality* of health care delivery would be assessed on both structural quality i.e. quality defined in relation to tangibles (Das and Leonard 2006), here defined to include physical infrastructure, human resources, medicines, decentralised funding and availability of services, as has already been undertaken in the previous section, as well as subjective data on intangibles, such a patient satisfaction, gathered from exit interviews with patients. It is to this second endeavour that we turn now, seeking to link ‘client perspective’ gleaned from exit interviews with patient respondents in PHFs, to actual quality of health care services

delivered by the latter under NRHM. This alternative source of data also allows us to triangulate the findings laid out in the previous section.

Before commencing, the curious reader is introduced to the socio-economic profile of patients seeking health care in rural public health facilities (See Appendix, Table 3.1). With the exception of Rajasthan (where cultural factors no doubt explain the anomaly), it turns out that significantly more women than men turn to the public health system for medical care in every study state. Total figures across states reflect this gender finding (57% of female patients versus 43% of male patients), which would fit with NRHM's focus on maternal and child health interventions through monetary and other incentives.

In terms of age, the 21-40 year age group dominates by a wide margin, accounting for 40% of all patients across states. It is followed by the 7-20 year age group (19%) and the 41-60 year old age group (18%), which are almost equivalent. The very young (11%) and the above 60 years of age (12%), again almost equivalent, make up the rest of patients seeking health care in rural public facilities. Again, the JSY intervention of NRHM would explain the first two figures, while the lower percentages of very young does not necessarily contradict the immunisation figures, which would be reflected in patient numbers exclusively frequenting SCs rather than combined PHFs analysed here.

On literacy levels of patients across states, it is mostly those who have studied to less than Class 5 levels (46%) and those who are completely illiterate (26%) that seek medical care in the rural public health system. Patients who have studied more than Class 9 levels form only roughly 12% of the total respondent sample. On social categories of those who frequent the public health system in rural areas, across states SCs / STs / OBCs together account for a 73% of the total, with the Minority Community accounting for a further 9% and 'Others' account for roughly only 19% of the total.

Finally, the economic background of patients frequenting the public health system – as reported – is perplexing. The BPL category forms a clear majority in Andhra Pradesh (82%) and to a lesser extent, in Bihar (64%) and Uttar Pradesh (52%). Conversely in

Rajasthan, it is the non-BPL category that clearly dominates the sample of respondents, with 86% claiming non-BPL status. These curious figures may point to misidentification of who 'the poor' are by conventional BPL criteria, so that those above the formal poverty line but informally 'poor' are still forced to rely on the public health system. Putting together these figures with those for entitlement card ownership, we see that those claiming to be card holders form a slim majority in Andhra Pradesh (57%), while patients who report ownership and those who do not are split pretty evenly in Uttar Pradesh and Bihar (they respectively account for 49% and 51% of the total in both states). In Rajasthan, we again have the unexpected situation of the vast majority of patients claiming not to own entitlement cards (93%), with only 7% of patients admitting to ownership. As divulged and analysed earlier (*cf.* Section 5.3), these findings could have implications for the free availability of medicines in instances where the patient is asked for visible proof of BPL status, a discretionary practice adopted in some states under NRHM.

Assessing quality of health care delivery based on the current health visit service details of the patient respondent, in particular, distance traveled to the centre; length of wait; attended to by which member of the medical staff; and the availability of free medicine (see Appendix, Table 3.2), the following picture emerges. Patients in Rajasthan traveled the furthest distances to get to the PHF, on average 6.3 kilometres; patients in Uttar Pradesh came next, covering on average 5.9 kilometres; they are followed by patients in Bihar, who covered 4.7 kilometres on average; and patients in Andhra Pradesh traveled the smallest distances to get to the PHF, on average only 3.8 kilometres. Now, the reason for this travel cannot be determined with any surety, whether it stemmed from an absence of other public health facilities in closer proximity, or because the particular service sought was only provided at this level of PHF, which was the closest in the vicinity, or because of the reputation effect or any other reason. Regardless, I thought this was an important marker of quality of service provision and an interesting statistic for the reader.

As for the length of the wait at the PHF (on the day of the exit interview for out patients and one the day they were admitted for in patients), patients in Bihar had the longest wait,

on average 138 minutes before they are seen by someone; followed by patients in Uttar Pradesh, on average facing a wait of 97 minutes; next in the ranking are patients in Andhra Pradesh, on average having to wait 85 minutes. Patients in Rajasthan do the best, having to wait only 21 minutes on average before they are administered to by some member of staff. However, triangulating this statistic with previous findings of the study, this maybe ascribed to the low numbers of patients seeking medical care in public health facilities in Rajasthan the first place, as opposed to particularly prompt responses by the paramedical and medical staff at the centres.

To the extent that quality of health care delivered to the patient is also influenced by which member of staff attends to them, i.e., paramedical (ANM, staff nurse) or medical staff (MO or specialist), if they are attended to at all, this indicator was assessed during the exit interviews. It turns out that across states, between 58% and 75% of patients were tended to by paramedical staff (highest in Rajasthan at 75%; followed by Bihar at 67%; Andhra Pradesh at 62% and lowest in Uttar Pradesh at 58%), while between 14% and 32% were administered to by medical staff (highest in Andhra Pradesh at 32%; followed by Uttar Pradesh at 24%; Bihar at 15% and Rajasthan at 14%). The remainder is made up by patients who had not been seen by anyone at all (highest in Uttar Pradesh and Bihar at 18% of the total in both states; followed by Rajasthan at 11%; and with Andhra Pradesh boasting the least numbers of unseen patients at 7%).

Lastly, we turn to an important indicator of quality of healthcare delivered by PHFs, albeit a highly subjective one, and that is patient *perception* of the service they have received. I tried to introduce a longitudinal dimension to this indicator by posing a question about a previous visit to the centre, and the quality of service delivered on that visit, alongside questions about patient satisfaction with the current visit (See Appendix, Table 3.3). Also, in seeking to elicit a perceptional dimension to the response as to why they had a previous negative experience, or why they were satisfied or dissatisfied with their current visit, the patient had the option of naming more than one factor – which the person administering the exit interview would just tick off, so that a density of responses

to a particular factor just means that it looms large in the minds of the patient as a factor influencing their view of the quality of healthcare delivered by the public health system.

Starting with a previous negative experience at the PHF, the highest percentage of patients in Bihar reported one (61% of the total did so, ascribing the failure in descending order to a lack of medicines, staff absenteeism, and a long wait); Uttar Pradesh comes next (43% of the total did so, citing in descending order staff absenteeism, no medicines and a long wait as the cause for their negative experience); Rajasthan follows (35% of the total patients have had a previous negative experience at the PHF, put down in descending order to no medicines and staff absenteeism); and Andhra Pradesh contains the least number of patients reporting a previous negative experience at the PHF (32% of the total, ascribed in descending order to staff absenteeism, no medicines and long wait). As a point of interest, note the relatively small percentage of patients citing an 'other – corruption' factor as causing a previous negative experience at the PHF (See Appendix, Table 3.3), wherein patients reported that they were unhappy with staff calling patients around to the back of the centre to charge them a consultation fee and make them pay for medicines.

As for patient satisfaction / dissatisfaction with the current health visit at the PHF, the highest numbers expressed satisfaction in Andhra Pradesh (75%), followed by Uttar Pradesh (49%), followed by Rajasthan (39%) and the least in Bihar (only 23% of the total). The most mentioned cause of *satisfaction*, in descending order, is free medicines, followed by staff and facilities, in Andhra Pradesh. Again, a quick digression on the relatively small percentage of patients citing an 'other – delivery' factor as the cause of satisfaction (See Appendix, Table 3.3), wherein patients reported that the centre was good for institutional deliveries. The most mentioned cause of *dissatisfaction*, in descending order, is no medicines followed by staff absenteeism and long waits, in Bihar, Rajasthan and Uttar Pradesh. Again, as a point of interest, note the relatively small percentage of patients citing an 'other – pay for diagnostics / postnatal' factor as causing dissatisfaction with the current visit (See Appendix, Table 3.3), wherein patients reported that they were unhappy with having to pay for diagnostics (in Andhra Pradesh) and with

the lack of ‘diet’, i.e., food and longer time to stay in centre post-delivery (Bihar, Rajasthan, Uttar Pradesh).

The exit interviews were designed with questions on out of pocket expenditure by patients, as well as ones probing what drives patient choice between a government and a private or hakim / bhopa health facility, but the data collected was inconsistent and not very meaningful in the end. Also, the exit interviews contained a whole section on patient interaction with frontline health providers, such as ASHAs, under NRHM. However, this data will be analysed alongside that emanating from the third leg of the stool in terms of research design of this particular study, i.e. data collected from frontline health providers, alongside PRI representations, such as sarpanches of VHSCs (where they have been formed), to comment on communitisation under the Mission in a follow on publication.

7. Conclusion

This paper seeks to evaluate quantity and quality of service delivery in rural public health facilities under NRHM, looking to assess and measure the condition of physical infrastructure, both static and dynamic; the state of human resources, including numbers of paramedical, technician, medical and AYUSH staff employed, their contractual status, absenteeism and gender breakdown; the supply, quality and range of drugs; usage of decentralised untied and maintenance financial grants; and by actual availability of services in these centres. Quality is defined in relation to the condition of the above tangibles, as also supplemented by subjective data on intangibles, such as patient satisfaction, gathered from the exit interviews.

The micro-findings across four states, which have resulted in rankings in individual sections of the study, suggest disparate situations at various levels of centres and on different components, reflecting context-specific underlying driving factors, some complex by nature. Based on the findings and the arguments of Section 3, I could easily rank the states on ‘overall performance of service delivery under NRHM’, and perhaps a reader already has a sense of this ranking. However, I feel that to do so would be

irresponsible, meaningless and defeat the very purpose of this evaluation, which was to highlight the micro-components of features that are important to this Mission's capacity to deliver services, how states are faring on implementing these various strands, and what factors might be causing problems where implementation is less than desirable. Encouragingly, we find that despite obstacles, even the focus states of Uttar Pradesh, Bihar and Rajasthan are making inroads on some fronts, so that they are seen to do better or match the non-focus state of Andhra Pradesh in at least a few areas, and certainly are not seen to lag behind it on every dimension, as might be expected[31].

So to the question of whether the NRHM delivers on health care services for the poor, the findings outlined here begin to give the nuanced answer that through the NRHM, the UPA government has put rural public health care firmly on the agenda, and is on the right track with the institutional changes towards decentralisation (and communitisation) it has introduced within the health system. True, there are many problems in implementation, so that delivery is far from what is ought to be. On physical infrastructure, medicines and funding, processual problems might be more easily scaled with time (in some instances, they already appear to have been overcome), whereas on human resources, and to the extent these impact actual availability of services, structural issues of some complexity need careful resolving with a definite long term investment in the training and education of paramedical and medical staff, especially women, and close monitoring of attendance. However, the parameters of the question this study seeks to answer are very much within the ambit of how to better performance under the NRHM, and not whether the Mission ought to have been undertaken in the first place, of which there can be no doubt.

[31] I contest the general point about evaluation made at the presentation of this paper at the Planning Commission (1 May 2009), where it was argued that the starting point for the focus states, such as Bihar, was so different to those of other states, such as Andhra Pradesh, that it was a futile exercise to attempt comparison 'between apples and oranges'. Rather, an evaluation of NRHM should involve some kind of in-depth case study of each individual state, which takes into account its history and so on and so forth. As an economist, I feel some sort of yardstick assessment must be undertaken, and since a lack of baseline figures and state target data render that impossible for individual study states, I have attempted to create that through a comparison of the focus states vis-à-vis each other and vis-à-vis the control non-focus state of Andhra Pradesh. Findings are to be taken in this spirit.

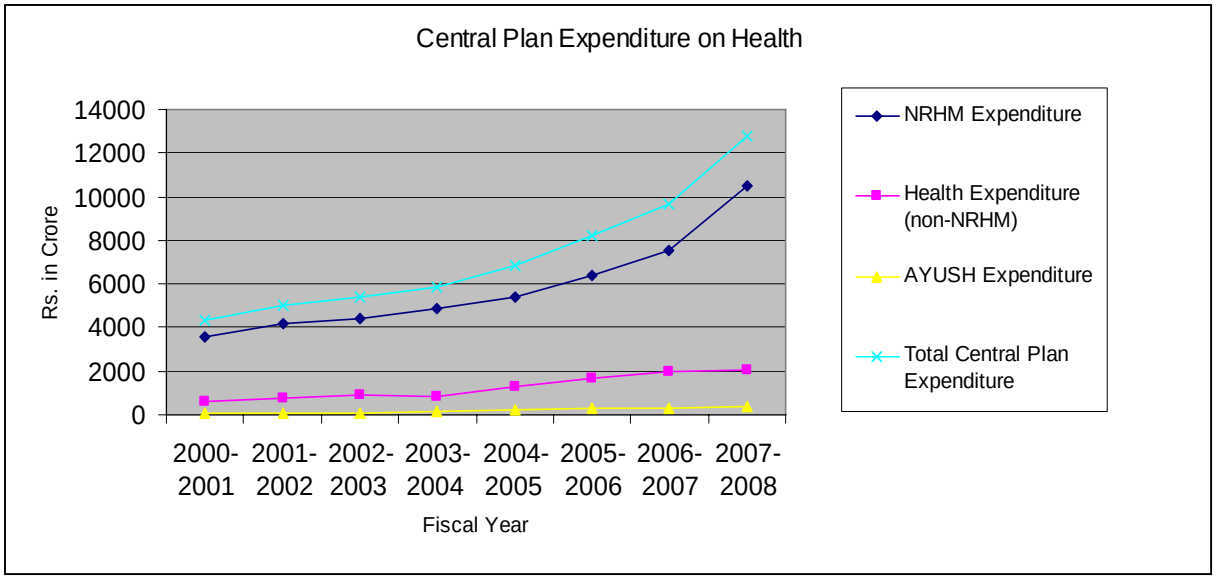
In terms of what the reader ought to take away from this study, evaluation studies are not meant to be prescriptive and so I shall refrain from making suggestions. In a sense, the very specific remit of this study, constrained further by time and manpower resources, and resulting in a small sample size lacking an intertemporal dimension, make the actual findings less important than the fact that it begs the question of why other independent evaluations of NRHM have so far not taken place (indeed, this study only happened at the sheer insistence of the highest levels of the Planning Commission, convinced of the need for independent evaluation of development schemes in general). After all, a large amount of public money has gone into the Mission and it befits various groups to try and assess how well it has been spent, resulting in better performance in the future. Indeed, the very threat of independent evaluation will enforce greater accountability in the system. Moreover, this study presents an important blueprint, if just one of many ways, by which an in-depth evaluation of service delivery under NRHM and the scheme itself could be made, so I urge other individuals and groups to undertake the challenge in different ways and on a much larger scale. Finally, it would be nice to see a greater transparency and free availability of reliable secondary data on NRHM collected by the MoHFW and other sources, as well as DLHS-3 expanding the range of data they collect on service indicators relevant to NRHM.

The author returned from Cambridge University to work as a Consultant with the Planning Commission of India, joining the organisation in January 2008. She would value feedback and comments on the paper and maybe contacted at:
k.gill@nic.in (official)
gill.kaveri@gmail.com (permanent)

Appendix of Tables

1. INTRODUCTORY ANALYSIS OF NRHM – BASED ON SECONDARY DATA

Table 1.1: Central Plan Expenditure on Health (based on MoHFW data)



Note: Prior to the launch of NRHM, equivalent H&FW scheme figures are included in NRHM Expenditure, although the AYUSH component is excluded from this figure throughout. AYUSH Expenditure includes the NRHM component.

Table 1.2: National Targets by Year for Some Major Activities under NRHM (Based on MoHFW data)

Activity	Phased Timeline
SCs (per 5,000 population in plains / 3,000 in hilly, tribal and backward areas) strengthened / established with 2 ANMs to provide service guarantees as per IPHS, in 1,75000 places	30% by 2007 60% by 2009 100% by 2010
PHCs (per 30,000 population/ 20,000 in hilly, tribal and backward areas)) strengthened / established with 3 Staff Nurses to provide service guarantees as per IPHS, in 30,000 places	30% by 2007 60% by 2009 100% by 2010
CHCs or upgraded PHCs (per 80,000-120,000 population) strengthened / established with 7 Specialists and 9 Staff Nurses to provide service guarantees as per IPHS, in 6,500 places	30% by 2007 50% by 2009 100% by 2012
Mobile Medical Units provided to each district of the country	30% by 2007 60% by 2008 100% by 2009
District Health Plan reflects the convergence with wider determinants of health, such as literacy, education, drinking water, sanitation, and so on	30% by 2007 60% by 2008 100% by 2009
Procurement and logistics streamlined to ensure availability of drugs and medicines at SCs / PHCs / CHCs	50% by 2007 100% by 2008
Untied grants provided to each VHSC, SC, PHC, CHC to promote local health action	50% by 2007 100% by 2008
Annual maintenance grant provided to every SC, PHC, CHC, District Hospitals	50% by 2007 100% by 2008
SCs / PHCs / CHCs / Sub Divisional Hospitals / District Hospitals fully equipped to develop intra health sector integration, coordination and service guarantees for family welfare, vector borne disease programmes, TB, HIV/AIDS, etc.	50% by 2008 70% by 2009 100% by 2012
ASHA (per 1000 population / large isolated habitations), fully-trained over 23 days and in 5 modules	50% by 2007 100% by 2008
VHSCs constituted in over 6 lakh villages	30% by 2007 100% by 2008
RKS or Hospital Development Committee established in all PHCs, CHCs, District Hospitals	50% by 2007 100% by 2009

Note: Curiously, mechanisms to judge individual state performance against targets are not in place. In other words, timeline targets for individual states are not included in the implementation framework, with the MoHFW arguing that "NRHM has refrained from statistical straitjacketing of the reform agenda while apprising the Annual Programme Implementation Plans of the States". MoHFW is thus able to provide annual state-wise data on achievements in some of the above activities, but in the absence of targets as a yardstick, these absolute numbers are meaningless for the purpose of deconstructing regional performance.

Table 1.3: Status on Selected Health Indicators for Uttar Pradesh, Bihar, Rajasthan, Andhra Pradesh and India (based on SRS-2007 and NFHS-3 2005-06 data)

	Uttar Pradesh	Bihar	Rajasthar	Andhra Pradesh	India
Birth Rate (per 1000 population): SRS-2007					
Rural	30.5	30.2	29.2	19.5	24.7
Total	29.5	29.4	27.9	18.7	23.1
Death Rate (per 1000 population): SRS-2007					
Rural	9.0	7.6	7.0	8.0	8.0
Total	8.5	7.5	6.8	7.4	7.4
Infant Mortality Rate (deaths per 1,000 live births): SRS-2007					
Rural	72	59	72	60	61
Total	69	58	65	54	55
*Maternal Mortality Rate (per 100,000 live births): SRS-2003**					
Rural	NA	NA	NA	NA	NA
Total	517	371	445	195	301
Total Fertility Rate (child per woman): NFHS-3					
Rural	4.1	4.2	3.6	1.8	3.0
Total	3.8	4.0	3.2	1.8	2.7
Children's (% Under 5 years) Nutritional Status: NFHS-3					
Stunting (low height for age)	57%	56%	44%	43%	50%
Wasting (low weight for height)	15%	27%	20%	12%	20%
Underweight (low weight for age) – takes into account chronic and acute undernutrition	42%	56%	40%	33%	43%
Anaemia (% of female population):					
Prevalence of anaemia amongst female population	50%	67%	53%	63%	55%
Tuberculosis (persons per 100,000): NFHS-3					
Prevalence of tuberculosis	425	735	359	409	418

Note: The latest MMR figures are perplexingly available only up until SRS-2003.

Table 1.4: Composite Rural (and Total) Poverty Index for Selected States and Districts
(Specially constructed here using indicators from DLHS-3 2007-2008 State and District Fact Sheets)

Sample Outcome, DLHS-3, 2007-08	State Indicator - Andhra Pradesh	District Indicator - Mahbubnagar	District Indicator - Nalgonda	State Indicator - Uttar Pradesh	District Indicator – Pratapgarh	District Indicator – Rae Bareilly	State Indicator - Bihar	District Indicator - Vaishali	District Indicator - Nalanda	State Indicator - Rajasthan	District Indicator – Ajmer	District Indicator - Nagaur
Literate population - age 7+ years (%)												
Rural	56.6	46.1	57.8	62.4	63.5	60.9	56.9	66.1	59.6	56.8	56.4	56.6
Total	60.8	49.6	60.7	64.4	64.6	62.2	58.7	66.3	62.7	61.0	68.6	59.7
Households that have electricity (%)												
Rural	86.8	80.0	89.3	29.3	23.3	18.4	17.1	23.0	25.5	53.9	61.7	58.6
Total	89.6	90.0	90.4	37.9	26.8	23.1	21.7	24.4	34.3	61.7	75.6	65.4
Households that have access to toilet facility (%)												
Rural	22.6	14.3	22.8	15.4	6.2	6.0	12.3	18.5	21.7	12.9	8.0	26.9
Total	38.4	21.6	29.1	26.3	10.0	12.0	16.9	20.5	30.2	25.1	36.8	36.7
Households that use piped drinking water (%)												
Rural	56.8	78.1	62.9	2.1	0.4	6.3	0.6	0.7	0.4	23.6	20.8	36.0
Total	63.9	79.0	67.2	7.8	2.6	9.1	1.7	2.6	7.7	34.6	47.6	40.7
*Composite Index Score (%)**												
Rural	55.7	54.6	58.2	27.3	23.4	22.9	21.7	27.1	26.8	36.8	36.7	44.5
Total	63.2	60.1	61.9	34.1	26	26.6	24.8	28.5	33.7	45.6	57.2	50.6
State vs. Combined District Average												
Rural	55.7	56.4		27.3	23.2		21.7	27		36.8	40.6	
Total	63.2	61.0		34.1	26.3		24.8	31.1		45.6	53.9	

Note: The composite poverty index is here constructed using four indicators, known to impact poverty levels, from DLHS-3 2007-08 state and district fact sheets: Literate population, and households with electricity, toilet facility and piped drinking water, each as a percentage of total population. Equal weighting is given to each component, so that the composite index score is a simple average of the scores on the four individual indicators.

Table 1.5: Sample for the Evaluation Study

States	Districts	Public Health Facilities Covered	No. of Facility Surveys	No. of Exit (Survey-Based) Interviews
Andhra Pradesh	Mahbubnagar; Nalgonda	CHCs / FRU	3	
		PHCs / FRU	13	
		SCs	5	
(Andhra Pradesh Total)			(21)	*76*
Uttar Pradesh	Pratapgarh; Rae Bareilly	CHCs	6	
		PHCs	7	
		SCs	3	*114*
(Uttar Pradesh Total)			(16)	
Bihar	Vaishali; Nalanda	CHCs ('Upgraded PHCs')	9	
		Additional PHCs	2	
		SCs	2	
(Bihar Total)			(13)	*136*
Rajasthan	Ajmer; Nagaur	CHCs	4	
		PHCs	14	
		SCs	6	
(Rajasthan Total)			(24)	*57*
(Study Total)			(74)	*383*

Table 1.6: Approved Central Plan Outlay and Expenditure on NRHM (based on MoHFW data)

	2002-03*	2003-04*	2004-05*	2005-06	2006-07	2007-08	2008-09
Approved outlay (Rs. In Crore)	5469.00	5469.82	6437.02	7234.20	9065.00	11010.00	12050.00
% increase in outlay over previous year	NA	00.01	17.68	12.38	25.31	21.46	09.45
Expenditure (Rs. in Crore)	4390.60	4886.73	5406.35	6371.91	7517.82	10509.03 (7510.05 upto 31.12.2007)	7937.82 (upto 31.12.2008)
% increase in expenditure over previous year	NA	11.30	10.63	17.86	17.98	37.19	5.70 (calc. upto calendar year end)
Expenditure as % of outlay	80.28	89.34	83.99	88.08	82.93	93.67	65.87 (upto 31.12.2008)

Note: Prior to the launch of NRHM, equivalent H&FW and AYUSH scheme figures are included.

Table 1.7: Total Centre and State, Plan and Non Plan Health Expenditure, % to GDP
(Based on Finance Accounts of the Union Government)

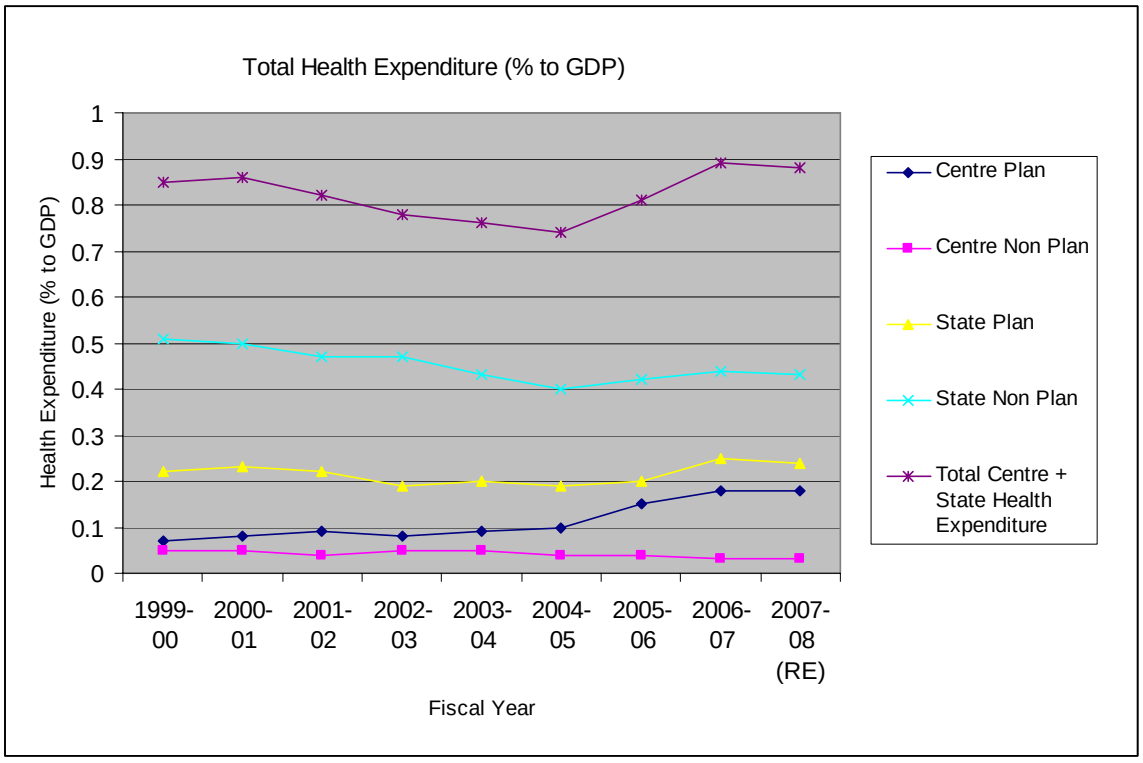


Table 1.8: State Allocation for HFW Dept. and Centre Allocation under Items Subsumed within NRHM in Rs. Crore (Based on State Data Sheets as on 31.12.2008, MoHFW)

	2005-06	2006-07	2007-08	2008-09	Total since 2005
India					
Total Allocation by GOI under Items Subsumed within NRHM (Not Including NRHM Additionalities etc.)	2309.60	3448.45	4304.62	4372.67	14435.34
Andhra Pradesh					
Allocation in State Budget for HFW Dept.	1824.48	2113.23	2726.11	3368.95	10032.77
Total Allocation by GOI under Items Subsumed within NRHM	277.60	420.06	597.84	597.43	1892.93
Allocation to State as a % of Total all-India Allocation by GOI under Items Subsumed within NRHM	12%	12.2%	13.9%	13.7%	13%
Uttar Pradesh					
Allocation in State Budget for HFW Dept.	2987.10	3579.10	4276.28	4788.69	15631.17
Total Allocation by GOI under Items Subsumed within NRHM	746.69	1142.70	1459.42	1480.37	4829.19
Allocation to State as a % of Total all-India Allocation by GOI under Items Subsumed within NRHM	32.3%	33.1%	33.9%	33.9%	33.5%
Bihar					
Allocation in State Budget for HFW Dept.	NA	NA	NA	NA	NA
Total Allocation by GOI under Items Subsumed within NRHM	398.22	599.21	680.70	695.26	2373.39
Allocation to State as a % of Total all-India Allocation by GOI under Items Subsumed within NRHM	17.2%	17.4%	15.8%	15.9%	16.4%
Rajasthan					
Allocation in State Budget for HFW Dept.	784.45	828.45	1002.68	285.00	2900.58
Total Allocation by GOI under Items Subsumed within NRHM	264.27	407.91	548.18	535.33	1755.69
Allocation to State as a % of Total all-India Allocation by GOI under Items Subsumed within NRHM	11.4%	11.8%	12.7%	12.2%	12.2%

Key: 'NA' refers to fact that data is not available on State Data Sheets of the MoHFW.
NC refers to 'Not Calculated' as a quarter still remains of the fiscal year 2008-09.

Table 1.9: Centre Release, Expenditure and Unspent Amounts in Study States under Items Subsumed within NRHM in Rs. Crore (Based on State Data Sheets as on 31.12.2008, MoHFW)

	2005-06	2006-07	2007-08	2008-09	Total since 2005
Andhra Pradesh					
Total Amount Released by GOI under Items Subsumed within NRHM	365.39	423.28	631.24	586.56	2006.48
Total Amount of NRHM Expenditure by State	286.91	335.22	506.87	201.66	1330.65
Total Amount of Unspent Amounts Available with State Out of Funds Released by GOI under Items Subsumed within NRHM	78.49	88.07	124.38	384.90	675.83
Unspent Amount of Total Amount Released by GOI in %	21.5%	20.8%	19.7%	NC	33.7%
Uttar Pradesh					
Total Amount Released by GOI under Items Subsumed within NRHM	930.00	1180.24	1531.50	983.52	4625.26
Total Amount of NRHM Expenditure by State	573.30	720.47	1086.43	314.05	2694.25
Total Amount of Unspent Amounts Available with State Out of Funds Released by GOI under Items Subsumed within NRHM	356.70	459.77	445.06	669.48	1931.01
Unspent Amount of Total Amount Released by GOI in %	38.4%	39%	29.1%	NC	41.7%
Bihar					
Total Amount Released by GOI under Items Subsumed within NRHM	315.88	490.12	482.10	477.23	1765.34
Total Amount of NRHM Expenditure by State	205.15	290.61	446.64	115.13	1057.53
Total Amount of Unspent Amounts Available with State Out of Funds Released by GOI under Items Subsumed within NRHM	110.73	199.51	35.46	362.10	707.80
Unspent Amount of Total Amount Released by GOI in %	35.1%	40.7%	7.4%	NC	40.1%
Rajasthan					
Total Amount Released by GOI under Items Subsumed within NRHM	325.22	459.91	692.35	567.39	2044.87
Total Amount of NRHM Expenditure by State	189.96	299.56	589.21	275.09	1353.83
Total Amount of Unspent Amounts Available with State Out of Funds Released by GOI under Items Subsumed within NRHM	135.25	160.35	103.14	292.30	691.04
Unspent Amount of Total Amount Released by GOI in %	41.6%	34.9%	14.9%	NC	33.8%

Key: 'NA' refers to fact that data is not available on State Data Sheets of the MoHFW.
'NC' refers to 'Not Calculated' as a quarter still remains of the fiscal year 2008-09.

Table 1.10: Released Funds on Selective NRHM Additionalities in Rs. Crore – Undetermined Data Cells Contain 'NA' or a '0' (Based on State Data Sheets as on 31.12.2008, MoHFW)

	2005-06	2006-07	2007-08	2008-09	Total since 2005
Andhra Pradesh					
Funds released for selection / training of ASHAs	Not Envisaged	Not Envisaged	NA	NA	0
Untied Grant - SC	12.52	11.27	12.52	12.52	48.83
- CHC	No Rel	No Rel	0.84	0.84	1.67
- PHC	NA	3.93	3.93	4.12	11.97
Upgradation of CHCs	13.80	19.00	NA	9.20	42.00
Drug Procurement	17.58	0	NA	NA	17.58
Annual Maintenance Grant - CHC	No Rel	No Rel	NA	NA	0
- PHC	0	7.85	7.85	28.73	44.43
RKS Corpus Funds	No Rel	0.30	18.52	20.76	39.58
Village Health and Sanitation Committees	No Rel	No Rel	21.92	21.92	43.83
Uttar Pradesh					
Funds released for selection / training of ASHAs	16.46	0	28.78	116.11	161.35
Untied Grant - SC	18.58	3.81	20.52	0	42.91
- CHC	No Rel	No Rel	95.81	0	95.81
- PHC	No Rel	9.15	18.20	0	27.35
Upgradation of CHCs	56	21.20	0	24.25	101.45
Drug Procurement	38.49	0	0	1.19	39.68
Annual Maintenance Grant - CHC	No Rel	No Rel	32.16	NA	32.16
- PHC	No Rel	18.30	32.16	0	50.46
RKS Corpus Funds	No Rel	0	NA	34.39	34.39
Village Health and Sanitation Committees	No Rel	No Rel	NA	0.70	0.70
Bihar					
Funds released for selection / training of ASHAs	6.90	NA	24.99	17.15	49.04
Untied Grant - SC	10.34	0	8.85	9.30	28.49
- CHC	No Rel	No Rel	NA	NA	0
- PHC	No Rel	4.12	NA	1.33	5.45
Upgradation of CHCs	30.80	0	0	80.40	111.20
Drug Procurement	18.43	0	10	NA	28.43
Annual Maintenance Grant - CHC	No Rel	No Rel	2.63	0	2.63
- PHC	No Rel	8.24	2.63	NA	10.87
RKS Corpus Funds	No Rel	0	7.89	6.93	14.82
Village Health and Sanitation Committees	No Rel	No Rel	20	10	30
Rajasthan					
Funds released for selection / training of ASHAs	6.33	NA	19.10	12.23	37.66
Untied Grant - SC	9.93	11.10	10.61	NA	31.64
- CHC	No Rel	No Rel	NA	NA	0
- PHC	No Rel	4.28	3.75	NA	8.03
Upgradation of CHCs	25.60	39.60	50	NA	115.20
Drug Procurement	26.64	18.39	0	NA	45.03
Annual Maintenance Grant - CHC	No Rel	No Rel	NA	NA	0
- PHC	No Rel	8.57	7.02	0	15.59
RKS Corpus Funds	No Rel	0	NA	NA	0
Village Health and Sanitation Committees	No Rel	No Rel	0	41.35	41.35

Key: 'NA' refers to fact that cell is blank and data is 'not available' on State Data Sheets of the MoHFW.
'No Rel' refers to 'no releases' under that budget head during that year.
A '0' is exactly as the figure is recorded on the State Data Sheets of the MoHFW.
'Not Envisaged' means not taken up in the state.

Table 2.1: Overview of PHF Buildings – Existence, Contractual Status, Ongoing Construction and Repairs / Maintenance

	Does the centre exist? (affirmative response, % of total)	Contractual Status (Government owned – as opposed to rented - % of total)	Ongoing Construction? (affirmative response, % of total)	Ongoing Repairs / Maintenance? (affirmative response, % of total)
Andhra Pradesh				
CHCs (n=3)	100%	100%	67%	0%
PHCs (n=13)	100%	100%	0%	54%
SCs (n=5)	80%	80% ((n=5); present study) 32.6% ((n=92); DLHS-3 CDA)^	0%	0%
Uttar Pradesh				
CHCs (n=6)	100%	83%	17%	0%
PHCs (n=7)	100%	100%	29%	0%
SCs (n=3)	100%	100% ((n=3); present study) 52.9% ((n=87); DLHS-3 CDA)^	0%	0%
Bihar				
CHCs (n=9)	100%	100%	22%	0%
Addl. PHCs (n=2)	50%	0%	0%	0%
SCs (n=2)	80%	0% ((n=2); present study) 24% ((n=75); DLHS-3 CDA)^	0%	0%
Rajasthan				
CHCs (n=4)	100%	100%	0%	0%
PHCs (n=14)	100%	100%	7%	0%
SCs (n=6)	100%	100% ((n=6); present study) 73.7% ((n=57); DLHS-3 CDA)^	0%	0%

Note: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: sub-centre located in government building. Their sample finds far fewer SCs in government owned buildings in Andhra Pradesh, Uttar Pradesh and Rajasthan than this study, while the reverse is true for Bihar.

Table 2.2: Static Picture of Amenities – Provided for in PHFs

	Drinking water? (affirmative response, % of total)*	Electricity? (affirmative response, % of total)	Toilet? (affirmative response, % of total)	Waste disposal pit? (affirmative response, % of total)	Emergency vehicle? (affirmative response, % of total)	Total number of beds (on avg.)
Andhra Pradesh						
CHCs (n=3)	100%	100%	100%	100%	100%	30
PHCs (n=13)	75%	100%	85%	62%	69%	6.5
SCs (n=5)	60%	80%	40%	40%	0%	0
Uttar Pradesh						
CHCs (n=6)	67%	50%	67%	33%	50%	24.7
PHCs (n=7)	57%	43%	57%	43%	43%	4
SCs (n=3)	33%	0%	0%	33%	0%	0
Bihar						
CHCs (n=9)	44%	67%	44%	33%	56%	7.6
Addl. PHCs (n=2)	0%	0%	0%	0%	0%	0
SCs (n=2)	0%	0%	0%	0%	0%	0
Rajasthan						
CHCs (n=4)	50%	75%	75%	75%	50%	27.8
PHCs (n=14)	43%	79%	57%	57%	0%	3.5
SCs (n=6)	33%	50%	33%	33%	0%	0.8

Table 2.3: Dynamic Picture of Amenities – Spot Check in PHFs at Time of Random Visit

	Water in sinks / toilets? (affirmative response, % of total)	Electricity supply? (affirmative response, % of total)	Toilet operational? (affirmative response, % of total)	Waste disposal pit operational? (affirmative response, % of total)	Emergency vehicle operational? (affirmative response, on avg., in %)*
Andhra Pradesh					
CHCs (n=3)	100% ((n=3); present study); 93.3% ((n=15); DLHS-3 CDA)^	100%	100%	67%	67% ((n=3); present study); 53.3% ((n=15); DLHS-3 CDA)^^
PHCs (n=13)	69% ((n=13); present study); 90% ((n=70); DLHS-3 CDA)^	76%	69%	54%	62%
SCs (n=5)	40% ((n=5) present study); 54.3% ((n=92); DLHS-3 CDA)^	80%	40%	40%	0%
Uttar Pradesh					
CHCs (n=6)	50% ((n=6); present study); 79.5% ((n=39); DLHS-3 CDA)^	17%	33%	17%	33% ((n=6); present study); 46.2% ((n=39); DLHS-3 CDA)^^
PHCs (n=7)	43% ((n=7); present study); 77.1% ((n=35); DLHS-3 CDA)^	14%	29%	14%	29%
SCs (n=3)	33% ((n=3); present study); 87.4% ((n=87); DLHS-3 CDA)^	0%	0%	33%	0%
					Contd.

Bihar					
CHCs (n=9)	33% ((n=9); present study); 100% ((n=4); DLHS-3 CDA)^	56%	33%	22%	22% ((n=9); present study); 25% ((n=4); DLHS-3 CDA)^^
Addl. PHCs (n=2)	0% ((n=2); present study); 66.7% ((n=33); DLHS - CDA)^	0%	0%	0%	0%
SCs (n=2)	0% ((n=2); present study); 57.3% ((n=75); DLHS-3 CDA)^	0%	0%	0%	0%
Rajasthan					
CHCs (n=4)	50% ((n=4); present study); 90.3% ((n=31);(DLHS-3 CDA)^	75%	75%	75%	25% ((n=4); present study); 54.8% ((n=31);DLHS-3 CDA)^^
PHCs (n=14)	29% ((n=14); present study); 66.7% ((n=51);(DLHS-3 CDA)^	71%	50%	50%	0%
SCs (n=6)	17% ((n=6); present study); 50.9%((n=57); (DLHS-3 CDA)^	33%	17%	33%	0%

Notes: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: centre having 24 hours (CHC) or regular (PHCs / SCs) water supply, which is slightly different to the indicator calculated in this study i.e. centre has *drinking* water available. Still, comparing the figures, their sample shows far greater regular water supply figures at all levels in Uttar Pradesh, Bihar, Rajasthan, and at the PHC level in Andhra Pradesh, with the converse at the CHC and SC levels in Andhra Pradesh, compared to the drinking water availability figures calculated by this study.

^^ DLHS-3 CDA refers to secondary combined district average data for the indicator: centre having ambulance on the road, which I have interpreted to mean an operational emergency vehicle. Their sample shows more CHCs in Uttar Pradesh, Bihar and Rajasthan have operational ambulances than the present study, although only marginally so in Bihar, with the converse true of Andhra Pradesh.

Table 2.4: Cleaning Staff Employment Status at PHFs

	CHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)	PHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)
Andhra Pradesh	(n=3)			(n=13)		
Cleaning Staff		4	71%		2.2	8%
Uttar Pradesh	(n=6)			(n=7)		
Cleaning Staff		1.8	58%		1.3	86%
Bihar	(n=9)			(n=2)		
Cleaning Staff		2.2	39%		0	NR
Rajasthan	(n=4)			(n=14)		
Cleaning Staff		2.3	75%		1.4	89%

Table 2.5: Composite Indices to Reflect Overall Static and Dynamic Picture of Amenities at PHFs

	Composite Index – Static Amenities* (on avg.)	Composite Index – Dynamic Amenities** (on avg.)	Composite Index – Combined Static and Dynamic Amenities*** (on avg.)	Condition on Observation (good/average/poor responses, % of total)
Andhra Pradesh				
CHCs (n=3)	5	4.3	9.3	Good = 67%; Average = 33%; Poor = 0%
PHCs (n=13)	3.9	3.3	7.2	Good = 39%; Average = 46%; Poor = 15%
SCs (n=5)	2.2	2	4.2	Good = 40%; Average = 40%; Poor = 20%
Uttar Pradesh				
CHCs (n=6)	2.7	1.5	4.2	Good = 0%; Average = 50%; Poor = 50%
PHCs (n=7)	2.4	1.3	3.7	Good = 0%; Average= 43%; Poor = 57%
SCs (n=3)	0.7	0.7	1.3	Good = 0%; Average = 67%; Poor = 33%
Bihar				
CHCs (n=9)	2.4	1.8	4.2	Good = 11%; Average =33%; Poor = 56%
Addl. PHCs (n=2)	0	0	0	Good = 0%; Average = 0%; Poor = 100%
SCs (n=2)	0	0	0	Good = 0%; Average = 0%; Poor = 100%
Rajasthan				
CHCs (n=4)	3.3	3	6.3	Good = 50%; Average = 25%; Poor = 25%
PHCs (n=14)	2.4	2	4.4	Good = 43%; Average = 43%; Poor = 14%
SCs (n=6)	1.5	1	2.5	Good = 33%; Average = 50%; Poor = 17%

Note: *Composite index - static amenities: 1 point each for facilities of water; electricity; toilet; waste disposal pit and emergency vehicle. Maximum of 5 points, Minimum of 0 points.
**Composite index - dynamic amenities: 1 point each for actual availability of water; electricity; toilet; waste disposal pit and emergency vehicle. Maximum of 5 points, Minimum of 0 points.
***Composite index – combined amenities: 1 point each for facilities and actual availability of water; electricity; toilet; waste disposal; and emergency vehicle. Maximum of 10 points, Minimum of 0 points.

Table 2.6: Paramedical and Technician Staff Employment Status at PHFs

Paramedical and Technicians	CHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)	Number of Vacancies (on avg.)	PHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)	Number of Vacancies (on avg.)	SCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)
Andhra Pradesh	(n=3)				(n=13)				(n=5)		
ANM		2.7	78%	0		0.8	100%	0.2		1	100%
Staff Nurse/ MPHW/ LHV/GNM		8	88%	2.7		1.5	68%	1.4		NR	NR
(Total)		10.7	83%	2.7*		2.3	84%	1.5*		1	100%
Laboratory Technician		2	83%	-	92.3% ((n=13); present study) 72.9% ((n=70); DLHS-3 CDA)^	1	79%	-		NR	NR
Pharmacist		0.7	50%	-		0.8	73%	-		NR	NR
(Total)		2.7	67%	0.7**		1.8	76%	0.4**		NR	NR
Uttar Pradesh	(n=6)				(n=7)				(n=3)		
ANM		1.8	100%	0		1.7	100%	0		1	100%
Staff Nurse/ MPHW/ LHV/GNM		4	76%	5.5		1.9	20%	1.1		NR	NR
(Total)		5.8	88%	5.5*		3.6	60%	1.1*		1	100%
Laboratory Technician		2	93%	-	100% ((n=7); present study) 14.3% ((n=35); DLHS-3 CDA)^	1.7	88%	-		NR	NR
Pharmacist		2.1	93%	-		1.1	100%	-		NR	NR
(Total)		4.1	93%	0.4**		2.8	94%	0**		NR	NR
Bihar	(n=9)				(n=2)				(n=2)		
ANM		0.7	100%	0.7		0	NR	1		1	100%
Staff Nurse/ MPHW/ LHV/GNM		3.5	82%	4.9		0	NR	4		NR	NR
(Total)		4.2	91%	5.6*		0	NR	5*		1	100%
Laboratory Technician		0	NR	-	0% ((n=2); present study) 42.4% ((n=33); DLHS-3 CDA)^	0	NR	-		NR	NR
Pharmacist		0.9	45%	-		0	NR	-		NR	NR
(Total)		0.9	45%	0.9**		0	NR	2**		NR	NR
											Contd.

Rajasthan	(n=4)				(n=14)				(n=6)		
ANM		1.8	100%	.3		1.1	79%	0.2		1	100%
Staff Nurse/ MPHW/ LHV/GNM		8	57%	1.3		3.8	34%	0.7		NR	NR
(Total)		9.8	79%	1.6*		4.9	57%	0.9*		1	100%
Laboratory Technician		2	67%	-	78.6% ((n=14); present study) 62.7% ((n=51); DLHS-3 CDA)^	0.8	64%	-		NR	NR
Pharmacist		0	NR	-		0	NR	-		NR	NR
(Total)		2	67%	0.3**		0.8	64%	0.2**		NR	NR

Key: '–' means data not collected; 'NR' means non-relevant.

Note: * As against a standard of minimum 9 staff nurses per CHC; 3 staff nurses per PHC; 2 ANM per SC.
** As against a standard of 1 Laboratory Technician and 1 Pharmacist per CHC, as stated during fieldwork for others.
Paramedical staff refers to: Auxiliary Nurse and Midwife (ANM); Lady Health Visitor (LHV) i.e. a promoted ANM; Staff Nurse and General Nurse and Midwife (GNM), a contract nurse under NRHM, and a post peculiar to Rajasthan) and Multi-Purpose Health Worker (MPHW). Technician staff refers to: laboratory technician and pharmacist.

Note: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: PHC having a laboratory technician. Their sample shows fewer PHCs in Andhra Pradesh, Uttar Pradesh (significantly so) and Rajasthan with laboratory technicians than this study, with the converse true of Bihar.

Table 2.7: Medical Doctors, Specialist and AYUSH Staff Employment Status at PHFs

Medical Doctors and Specialists	CHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)	Number of Vacancies (on avg.)	PHCs	Numbers Employed (on avg.)	Employed on Regular Basis (% of total Et, on avg.)	Number of Vacancies (on avg.)
Andhra Pradesh	(n=3)				(n=13)			
Medical Officer		2.3	83%	0*		2	88%	0*
Anaesthetist		0.7	100%	-		0	NR	-
Obstetrician / Gynaecologist	66.7% ((n=3); present study) !120%! ((n=15); DLHS-3 CDA)^	1	75%	-		0	NR	-
(Total: Anaes.+ Obst.)		1.7	88%	0.7**		0	NR	0**
Other Specialists		1.3	50%	-		0	NR	-
(Total: Med. Docs + Splists)		5.3	74%	2.7***		2	88%	0.4***
AYUSH		0	NR	-		0.2	100%	-
Uttar Pradesh	(n=6)				(n=7)			
Medical Officer		1.3	100%	0*		1.6	100%	0*
Anaesthetist		0.6	100%	-		0.1	100%	-
Obstetrician / Gynaecologist	66.7% ((n=6); present study) 17.9% ((n=39); DLHS-3 CDA)^	0.8	100%	-		0.1	100%	-
(Total: Anaes.+ Obst.)		1.4	100%	1**		0.2	100%	0**
Other Specialists		1.8	100%	-		0.3	50%	-
(Total: Med. Docs + Splists)		4.5	100%	3.8***		2.1	83%	0.1***
AYUSH		0.5	0%	-		0.1	0%	-
Bihar	(n=9)				(n=2)			
Medical Officer		4.7	58%	1.9*		1	100%	1*
Anaesthetist		0	NR	-		0	NR	-
Obstetrician / Gynaecologist	0% ((n=9); present study) 25% ((n=4); DLHS-3 CDA)^	0	NR	-		0	NR	-
(Total: Anaes.+ Obst.)		0	NR	1.3**		0	NR	0**
Other Specialists		0.8	All PPP	-		0	NR	-
(Total: Med. Docs + Splists)		5.5	-	2.9***		1	100%	1***
AYUSH		0.2	100%	-		0	NR	-
								Contd.

Rajasthan	(n=4)				(n=14)			
Medical Officer		3.3	100%	0.3*		1.1	100%	0.2
Anaesthetist		0	NR	-		0	NR	-
Obstetrician / Gynaecologist		0.5	100%	-		0	NR	-
(Total: Anaes.+ Obst.)	50% ((n=4); present study) 35.5% ((n=31); DLHS-3 CDA)^	0.5	100%	1.5**		0	NR	0***
Other Specialists		2.3	100%	-		0	NR	-
(Total: Med. Docs + Splists)		6.1	100%	2***		1.1	100%	0.2
AYUSH		0	NR	-		0.4	0%	-

Key: * As against standard of minimum 1 Medical Officer per CHC and PHC, as stated during fieldwork for some.
** As against standard of minimum 1 anaesthetist and 1 gynaecologist per CHC, as stated during fieldwork for others.
*** As against standard of minimum 7 specialists per CHC, as stated during fieldwork for others.

Notes: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: CHC having an obstetrician / gynaecologist. Their sample shows fewer CHCs in UP and Rajasthan with obstetricians / gynaecologists than this study, with the converse true of Bihar and Andhra Pradesh. In the latter state, they have an error in tabulation of data for Nalgonda District (10 CHCs shown as having obstetricians when n=7), so that the CDA for Nalgonda and Mahbubnagar shows 120% of CHCs have obstetricians and gynaecologists!

Table 2.8: Gender of Paramedical, Medical and Obstetric / Gynaecologist Staff at PHFs

Staff	CHCs	Females (% of total Et, on avg.)	PHCs	Females (% of total Et, on avg.)
Andhra Pradesh	(n=3)		(n=13)	
Paramedical		100%		74%
Medical Officers		25%	54% ((n=13); present study) 50% ((n=70); DLHS-3 CDA)^	32%
Obst./Gynae.		100%		NR (ONE)
AYUSH		NR (ONE)		33%
Uttar Pradesh	(n=6)		(n=7)	
Paramedical		96%		100%
Medical Officers		6%	0% ((n=7); present study) 2.9% ((n=35); DLHS-3 CDA)^	0%
Obst./Gynae.		100%		100%
AYUSH		100%		0%
Bihar	(n=9)		(n=2)	
Paramedical		84%		NR (MNE)
Medical Officers		30%	0% ((n=2); present study) 36.4% ((n=33); DLHS-3 CDA)^	NR (MNE)
Obst./Gynae.		NR (ONE)		NR (ONE)
AYUSH		0%		NR (ONE)
Rajasthan	(n=4)		(n=14)	
Paramedical		55%		47%
Medical Officers		33%	21% ((n=14); present study) 3.9% ((n=51); DLHS-3 CDA)^	23%
Obst./Gynae.		50%		NR (ONE)
AYUSH		NR (ONE)		40%

Key: Female gender of SC staff not assessed since ANMs always female, without exception. NR means not relevant. Mandatory-None-Employed (MNE) refers to the fact that Additional PHCs in Bihar do not employ any of these categories of staff, even though at that level of health centre, they are supposed to. Optional-None-Employed (ONE) refers to the fact that a certain level of health centre in a particular state does not employ any of that category staff, which is optional and not mandatory at that level of health centre.

Note: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: PHCs having a Lady Medical Officer. Their sample shows almost equivalent percentages of PHCs with Lady Medical Officers as the present study for Andhra Pradesh and Uttar Pradesh; far more than the present study for Bihar; and far less than the present study for Rajasthan.

Table 2.9: Paramedical, Technician, Medical and Specialist Staff Absenteeism - Spot Check in PHFs at Time of Random Visit

Staff	CHCs	Present at time of visit (% of total Et, on avg.)	PHCs	Present at time of visit (% of total Et, on avg.)	SCs	Present at time of visit (% of total Et, on avg.)
Andhra Pradesh	(n=3)		(n=13)		(n=5)	
Paramedical		67%		70%		100%
Technicians		44%		33%		NR
(Total Paramed.+Techni.)		56%		52%		NR
Medical Officers		58%		33%		NR
Anaesthetists + Obst./Gynae.		100%		ONE		NR
Other Specialists		25%		ONE		NR
(Total Medical Docs+Splists)		61%		33%		NR
AYUSH		ONE		67%		NR
Uttar Pradesh	(n=6)		(n=7)		(n=3)	
Paramedical		48%		39%		67%
Technicians		43%		40%		NR
(Total Paramed.+Techni.)		46%		40%		NR
Medical Officers		44%		36%		NR
Anaesthetists + Obst./Gynae.		33%		0%		NR
Other Specialists		31%		0%		NR
(Total Medical Docs+Splists)		36%		12%		NR
AYUSH		33%		0%		NR
Bihar	(n=9)		(n=2)		(n=2)	
Paramedical		60%		MNE		50%
Technicians		50%		MNE		NR
(Total Paramed.+Techni.)		55%		0%		NR
Medical Officers		40%		0%		NR
Anaesthetists + Obst./Gynae.		MNE		ONE		NR
Other Specialists	PPP	12%		ONE		NR
(Total Medical Docs+Splists)		26%		0%		NR
AYUSH		0%		ONE		NR
Rajasthan	(n=4)		(n=14)		(n=6)	
Paramedical		55%		60%		75%
Technicians		25%		36%		NR
(Total Paramed.+Techni.)		40%		48%		NR
Medical Officers		31%		36%		NR
Anaesthetists + Obst./Gynae.		0%		ONE		NR
Other Specialists		50%		ONE		NR
(Total Medical Docs+Splists)		27%		36%		NR
AYUSH		ONE		60%		NR

Key: 'NR' means 'not relevant'. 'MNE' refers to 'Mandatory-None-Employed', alluding to the fact that sample Additional PHCs in Bihar do not employ any of these categories of staff, even though at that level of health centre, they are supposed to. 'ONE' means 'Optional-None-Employed', i.e., the fact that a particular category of health centre in a particular state does not employ any of that optional category staff.

Table 2.10: A Selective Sample from the Suggested List of Drugs / Categories of Drugs as per Indian Public Health Standards (IPHS)) for various PHFs

	Drugs / Categories of Drugs for Certain Ailments
SCs (list runs across two pages	Drug Kit 'A': Oral Rehydration Salt; IFA tabs; Vitamin A soln; Cotrimoxazole tabs Drug Kit 'B': Paracetemol tabs; Mebendazole tabs; Dicyclomine tabs; Iodine oint; cotton bandage; cotton Additional drugs: Gentamycin, Oxytocin inj.; Ampicillin tabs; Vaccines of all kinds (BCG; DPT; OPV; Measles; DT; TT; Hep B etc.); Medicines for various national disease control programmes, including Chloroquine tabs and rapid diagnostic kits for malaria, DOTS for TB, MDT for leprosy, and DEC for filarial; Contraceptives, including Nirodh, Oral pills, Copper–T and emergency contraception tabs.
PHCs and CHCs (list runs across five pages and double figure pages, respectively)	As above. Also, naming sample drugs on the list in each category, Oxygen cylinders; local anaesthetic and pre-operative medication and sedatives; Analgesics and Anti-inflammatory i.e. Ibuprofen tabs and Paracetemol inj; Anti-allergics and Anaphylaxis use i.e. Ampicillin tabs, Ciprofloxacin tabs; Antidotes and Anti-poisoning i.e. snake venom and dog bite vaccine; Anti-convulsants and Anti-epileptics i.e. Phenytoin Sodium tabs; Anti-infectives i.e. Albendazole tabs; Anti-protozoal i.e. Metronidazole tabs; Anti-fungal i.e. Cotrimazole pessaries, Nystatin tabs.; Anti-bacterial i.e. Amoxicillin powder for suspension; Dermatological i.e. Povidone Iodine soln and oint, Neomycin and Bacitracin oint; Electrolyte and Acid-Disturbance i.e. Saline inj, Glucose inj; Opthamological preparations i.e. Gentamicin tabs; Anxiety and sleep disorders i.e. Diazepam tabs. Vitamins i.e. Ascorbic Acid, Folates and Iron tabs, Calcium, Vit D, Vit A. Etcetera. Chronic condition drugs, including Cardiovascular disease and Anti-Hypertensive medicines i.e. Amlodipine tabs, Atenolol tabs; Hormonal and Endocrine Medicines i.e. Thyroxine tabs; Anti-Diabetics and Hyperglycaemics drugs i.e. Insulin inj. Etcetera.

Note: IPHS guidelines for PHFs also include lists of suggested medical equipment, including for the labour room, operation theatre, laboratory and diagnostic centres.

Table 2.11: Status of Medicine Supply (Static and Dynamic) and Quality (Measured by Directly Observable Expiry Dates) in PHFs - Spot Check of Drug Store Room at Time of Random Visit

	Static Picture: Full complement of essential drugs in stock? (affirmative response, % of total)	Dynamic Flow: Last drugs consignment received how long ago? (A: Last 2 weeks; B: Last month; C: Last quarter; D: > 3 months ago, % of total)	Drug stock largely within expiry date? (affirmative, Nearing Expiry (NE), negative response, % of total)
Andhra Pradesh			
CHCs (n=3)	100%	A: 67%; B: 0%; C: 33%; D: 0%	Yes: 100%
PHCs (n=13)	85%	A: 85% ; B: 15% ; C: 0%; D: 0%	Yes: 100%
SCs (n=5)	20%	A: 0%; B: 20%; C: 20%; D: 60%	Yes: 20% No: 80%
Uttar Pradesh			
CHCs (n=6)	33%	A: 50%; B: 33%; C: 17%; D: 0%	Yes: 100%
PHCs (n=7)	29%	A: 86%; B: 14%; C: 0%; D: 0%	Yes: 100%
SCs (n=3)	0%	A: 0%; B: 0%; C: 0%; D: 100%	Yes: 100%
Bihar			
CHCs (n=9)	Yes: 11%	A: 33%; B: 56%; C: 11%; D: 0%	Yes: 100%
Addl. PHCs (n=2)	Yes: 0%	A: 0%; B: 0%; C: 0%; D: 100%	Yes: 0% No: 100%
SCs (n=2)	Yes: 0%	A: 100% ; B: 0%; C: 0%; D: 0%	Yes: 50% No: 50%
Rajasthan			
CHCs (n=4)	Yes: 25%	A: 50%; B: 50%; C: 0%; D: 25%	Yes: 0% NE: 75% No: 25%
PHCs (n=14)	Yes: 14%	A: 7%; B: 28%; C: 29%; D: 36%	Yes: 14% NE: 64% No: 22%
SCs (n=6)	Yes: 0%	A: 17%; B: 33%; C: 33%; D: 17%	Yes: 33% NE: 50% No: 17%

Key: 'NE' means 'Nearing Expiry', i.e., 2-3 months away from expiry, unlike general situation where drugs over a year away from expiry date.

Note: DLHS-3 calculates the number of SCs reporting IFA tablets / Vitamin A / ORS out of stock for more than 10 days in the previous month.

Table 2.12: Knowledge About (Untied / Maintenance) Financial Grants Given to Health Centres and Availability of Financial Record Registers - Spot Check at Time of Random Facility Survey Visit

	Does MOIC / person standing-in have knowledge about (untied and maintenance) financial grants given to health centre? (affirmative response, % of total)	Is financial record register available, produce it if so? (affirmative response, % of total)
Andhra Pradesh		
CHCs (n=3)	67%	67%
PHCs (n=13)	69%	54%
SCs (n=5)	80%	60%
Uttar Pradesh		
CHCs (n=6)	67%	0%
PHCs (n=7)	57%	29%
SCs (n=3)	67%	33%
Bihar		
CHCs (n=9)	67%	44%
Addl. PHCs (n=2)	0%	0%
SCs (n=2)	0%	0%
Rajasthan		
CHCs (n=4)	75%	50%
PHCs (n=14)	64%	50%
SCs (n=6)	67%	50%

% rounded off to whole

Table 2.13: Status of (Untied / Maintenance) Financial Grants Received by Health Centres from Financial Years (April 1-March 31) 2006-08 & 2008-09

	Received in 2006-08? (affirmative, don't know (DK), negative response, % of total)	Amount received? (avg. across centre-type)	Unused funds? (affirmative response, % of total who claim to have received funds in 2006-08)	Received in 2008-09? (affirmative, don't know (DK), negative response, % of total)	Amount received? (avg. across centre-type)
Andhra Pradesh					
CHCs (n=3)	Yes – 67% DK – 33% No – 0%	1,60,000	Yes – 50%	Yes - 100%	1,39,000
PHCs (n=13)	Yes – 69% DK – 31% No – 0%	1,83,000	Yes – 89%	Yes – 62% DK – 38% No – 0%	1,72,500
SCs (n=5)	Yes – 80% DK – 20% No – 0%	20,500	Yes – 0%	Yes – 60% DK – 20% No – 20%	28,000
Uttar Pradesh					
CHCs (n=6)	Yes – 50% DK – 33% No – 17%	1,13,000	Yes – 17%	Yes – 33% DK – 33% No – 44%	1,70,000
PHCs (n=7)	Yes – 71% DK – 29% No – 0%	80,000	Yes – 29%	Yes – 43% DK – 29% No – 28%	1,00,000
SCs (n=3)	Yes – 100%	10,000	Yes – 67%	Yes – 100%	10,000
Bihar					
CHCs (n=9)	Yes – 56% DK – 22% No – 22%	1,28,000	Yes – 67%	Yes – 44% DK – 22% No – 34%	1,56,000
Addl. PHCs (n=2)	DK – 100%	DK	NR	DK – 100%	DK
SCs (n=2)	DK – 100%	DK	NR	DK – 100%	DK
Rajasthan					
CHCs (n=4)	Yes – 100%	1,80,000	Yes – 75%	Yes – 75% DK – 0% No – 25%	1,00,000
PHCs (n=14)	Yes – 79% DK – 21% No – 0%	61,300	Yes – 71%	Yes – 50% DK – 21% No – 29%	35,000
SCs (n=6)	Yes – 67% DK – 33% No – 0%	11,000	Yes – 33%	Yes – 50% DK – 33% No – 17%	10,000

Note: In Bihar, out of a total of 9 PHCs, 2 converted to this status from Addl. PHCs only on 1 April 2008, prior to which date, they did not receive any maintenance or untied funds. DLHS-3 calculates the number of PHCs / SCs that received untied funding in the previous year, i.e., 2006-07.

Table 2.14: Services supposed to be available at various levels of PHF under NRHM

SCs
Registration and ante / post natal services for pregnant women – check ups, general examination, injections, minimum laboratory investigation, newborn care
Full immunisation of all infants and children
Treatment of minor ailments
First aid in accidents and emergencies
Family planning and contraception – copper t, contraceptive pills, condoms
Referral – for (high risk) pregnancies, accidents and emergencies
PHCs (as above, additionally also)
IPD alongside OPD
24-hour delivery services, both normal and assisted
Sterilisation
Accidents and Emergencies
Treatment of RTIs / STIs
Basic laboratory / microscopy services – TLC / DLC, Urine, TB, Malaria etc.
CHCs (as above, additionally also)
Surgery emergency
Obstetric emergency
Diagnostic services – ECG, X-ray, Ultrasound etc.
Blood storage facility
All national health programmes – HIV / AIDs, Leprosy, Blindness etc.

Table 2.15: Actual Availability of Important Services in SCs

	Registration and ante / post natal services for pregnant women, newborns (affirmative response, % of total)	Immunisation of all infants and children (affirmative response, % of total)	Minor ailments and first aid (affirmative response, % of total)
Andhra Pradesh			
SCs (n=5)	60%	80%	60%
Uttar Pradesh			
SCs (n=3)	67%	67%	33%
Bihar			
SCs (n=2)	50%	50%	0%
Rajasthan			
SCs (n=6)	67%	83%	50%

Note: DLHS-3 calculates the number of infants and children immunised at SCs, calculated as average per SC.

Table 2.16: Actually Availability of Important Services in CHCs and PHCs (including Reproductive Health Services)

	24-hour (normal) delivery services (affirmative response, % of total)	24-hour (assisted) delivery cases (affirmative response, % of total)	Sterilisation (affirmative response, % of total)	Accidents and Emergencies (affirmative response, % of total)	Treatment of RTI / STIs (affirmative response, % of total)	Basic Laboratory / Microscopy Services (affirmative response, % of total)	Surgery Emergency (affirmative response, % of total)	Obstetric Emergency (affirmative response, % of total)	Diagnostic Services (affirmative response, % of total)	Blood Storage (affirmative response, % of total)
Andhra Pradesh										
CHCs (n=3)	100% ((n=3); present study) 100% ((n=15; DLHS-3 CDA)^	67%	67%	100%	33%	100%	33%	67%	100%	33% ((n=3); present study) 26.7% ((n=15); DLHS-3 CDA)^^
PHCs (n=13)	69%	31%	54%	77%	31%	85%	NR	NR	NR	NR
Uttar Pradesh										
CHCs (n=6)	67% ((n=6); present study) 87.2% ((n=39; DLHS-3 CDA)^	50%	100%	50%	17%	67%	33%	50%	67%	0% ((n=6); present study) 0% ((n=39); DLHS-3 CDA)^^
PHCs (n=7)	57%	14%	43%	14%	0%	43%	NR	NR	NR	NR
Bihar										
CHCs (n=9)	44% ((n=9); present study) 75% ((n=4; DLHS-3 CDA)^	11%	78%	33%	0%	56%	22%	11%	33%	0% ((n=9); present study) 0% ((n=4); DLHS-3 CDA)^^
Addl. PHCs (n=2)	0%	0%	0%	0%	0%	0%	NR	NR	NR	NR
										Contd.

Rajasthan										
CHCs (n=4)	75% ((n=4); present study) 100% ((n=31; DLHS-3 CDA)^	25%	75%	25%	0%	50%	0%	0%	25%	0% ((n=4); present study) 12.9% ((n=31); DLHS-3 CDA)^^
PHCs (n=14)	14%	0%	43%	7%	0%	36%	NR	NR	NR	NR

Key: 'NR' means 'not relevant' to that level of centre
Bihar – Laboratory and Diagnostic services mostly under PPP arrangement

Note: ^ DLHS-3 CDA refers to secondary combined district average data for the indicator: CHCs having 24-hours normal delivery services. Their sample shows an identical percentage of CHCs having such services in Andhra Pradesh as compared to the present study, and significantly more CHCs having 24-hour delivery services in Uttar Pradesh, Bihar and Rajasthan than the present study sample.

Note: ^^ DLHS-3 CDA refers to secondary combined district average data for the indicator: CHCs having blood storage facilities. Their sample shows a marginally smaller percentage of CHCs having such services in Andhra Pradesh as compared to the present study, identical findings for Uttar Pradesh and Bihar as the present study, and a larger percentage of CHCs with blood storage capacity than the study sample.

Table 2.17: Dynamic Picture of Usage (JSY / IPD) of PHFs - Spot Check at Time of Random Facility Survey Visit

	See ongoing institutional deliveries? (affirmative response, % of total)	See any in-patients? (affirmative response, % of total)
Andhra Pradesh		
CHCs (n=3)	33%	100%
PHCs (n=13)	23%	38%
Uttar Pradesh		
CHCs (n=6)	50%	67%
PHCs (n=7)	43%	29%
Bihar		
CHCs (n=9)	11%	67%
PHCs (n=2)	0%	0%
Rajasthan		
CHCs (n=4)	25%	75%
PHCs (n=14)	0%	0%

Table 3.1: Socio-Economic Profile of Patients Seeking Health Care in Rural PHFs

Gender	*Male (%)*	*Female (%)*				
Andhra Pradesh (76)	35.5%	64.5%				
Uttar Pradesh (114)	43.0%	57.0%				
Bihar (136)	40.4%	59.6%				
Rajasthan (57)	54.4%	45.6%				
Total (383)	43.3%	56.7%				
Age in Years	*< 2 (%)*	*3-6 (%)*	*7-20 (%)*	*21-40 (%)*	*41-60 (%)*	*> 60 (%)*
Andhra Pradesh (76)	0%	0%	17.1%	36.8%	30.3%	15.8%
Uttar Pradesh (114)	2.6%	4.4%	22.8%	44.7%	14.0%	11.4%
Bihar (136)	8.8%	8.8%	23.5%	39.7%	8.1%	11.0%
Rajasthan (57)	12.3%	8.8%	12.3%	40.4%	17.5%	8.8%
Total (383)	5.9%	5.5%	18.9%	40.4%	17.5%	11.8%
Education	*Illiterate*	*< Class 5*	*Class 5-7*	*Class 8*	*Class 9-10*	*> Class 10*
Andhra Pradesh (76)	61.8%	19.7%	2.6%	0%	9.2%	6.6%
Uttar Pradesh (114)	38.6%	22.8%	14.0%	14.9%	1.8%	7.9%
Bihar (136)	59.5%	10.3%	9.6%	5.9%	11%	3.7%
Rajasthan (57)	26.3%	45.6%	8.8%	7%	8.8%	3.5%
Total (383)	26.3%	45.6%	8.8%	7%	8.8%	3.5%
Social Category	*SC*	*ST*	*OBC*	*Minority Community*	*Other*	
Andhra Pradesh (76)	29.8%	9.6%	55.3%	1.3%	3.9%	
Uttar Pradesh (114)	28.1%	0.9%	28.1%	14.9%	28.1%	
Bihar (136)	20.6%	0%	55.9%	5.9%	17.6%	
Rajasthan (57)	19.3%	1.6%	42.1%	12.3%	24.6%	
Total (383)	24.5%	3.0%	45.4%	8.6%	18.6%	
Economic Background	*BPL*	*Non-BPL*		*Entitlement Card Owned*	*Yes*	*No*
Andhra Pradesh (76)	81.6%	18.4%		Andhra Pradesh (76)	56.6%	43.4%
Uttar Pradesh (114)	51.8%	48.2%		Uttar Pradesh (114)	49%	51%
Bihar (136)	64%	36%		Bihar (136)	49.3%	50.7%
Rajasthan (57)	14%	86%		Rajasthan (57)	7%	93%
Total (383)	52.9%	47.1%		Total (383)	40.5%	59.5%

Note: Percent rounded off to one decimal point.

Table 3.2: Current Health Visit Service Details of Patient Respondents in PHFs

Distance traveled to PHF	*Kilometres, on average*			
Andhra Pradesh (76)	3.8			
Uttar Pradesh (114)	5.9			
Bihar (136)	4.7			
Rajasthan (57)	6.3			
Length of wait at PHF(today or before being admitted)	*Minutes, on average*			
Andhra Pradesh (76)	85.3			
Uttar Pradesh (114)	96.9			
Bihar (136)	138.4			
Rajasthan (57)	20.8			
Attended to by which member of the paramedical or medical staff?	*ANM, % of total*	*Staff Nurse, % of total*	*Medical Officer, % of total*	*Not yet seen by anyone, % of total*
Andhra Pradesh (76)	11.8%	50%	31.6%	6.6%
Uttar Pradesh (114)	6.1%	51.8%	23.7%	18.4%
Bihar (136)	14.7%	52.2%	15.4%	17.6%
Rajasthan (57)	19.3%	56.1%	14.0%	10.5%
Received free medicine or prescription only?	*Free medicine, % of total*	*Prescription only, % of total*		
Andhra Pradesh (76)	88%	12%		
Uttar Pradesh (114)	24%	76%		
Bihar (136)	15%	85%		
Rajasthan (57)	18%	82%		

Table 3.3: Patient Perception of Quality of Service Delivery Offered at PHFs

Have you come here for a medical problem before and not received treatment?	*No, % of Total*	*Yes, % of total (If so, why? See columns to right - % of total who mention specific reason/s)*	*Staff absent*	*Centre shut*	*No medicines*	*No facilities*	*Long wait*	*Other-Corruption**
Andhra Pradesh (76)	67.1%	32%	22.4%	5.3%	11.8%	2.6%	10.5%	1.3%
Uttar Pradesh (114)	57%	43%	37.7%	5.3%	26.3%	1.8%	17.5%	6.1%
Bihar (136)	39%	61%	49.3%	0.7%	55.9%	1.5%	24.3%	8.8%
Rajasthan (57)	64.9%	35.1%	26.3%	1.8%	35.1%	0%	0%	3.5%
Are you satisfied with your visit today?	*No, % of total (if so, why? See columns to right- % of total who mention specific reason/s for dissatisfaction)*		*Staff absent*	*Centre shut*	*No medicines*	*No facilities*	*Long wait*	*Other-Pay for Diagnostics / Post Natal*
Andhra Pradesh (76)	25%		5.3%	0%	11.8%	1.3%	14.5%	2.6%
Uttar Pradesh (114)	50.9%		26.3%	0%	43%	3.5%	9.6%	0.9%
Bihar (136)	77.2%		24.3%	0%	74.3%	4.4%	35.3%	0.7%
Rajasthan (57)	61.4%		12.3%	0%	57.9%	7.0%	1.8%	1.8%
Are you satisfied with your visit today?	*Yes, % of total (if so, why? See columns to right- % of total who mention specific reason/s for satisfaction)*		*Staff present*	*Centre timings good / 24 hours*	*Free medicines*	*Good facilities*	*No wait*	*Other-Delivery*
Andhra Pradesh (76)	75%		23.7%	0%	71.1%	11.8%	3.9%	0%
Uttar Pradesh (114)	49.1%		14.9%	2.6%	18.4%	5.3%	0.9%	13.2%
Bihar (136)	22.8%		0%	0%	10.3%	0%	0.7%	13.2%
Rajasthan (57)	38.6%		12.3%	0%	5.3%	7.0%	10.5%	10.5%

* 'Other-Corruption' refers to reasons like staff calling patients around back of PHF to charge them for consultation and medicines.
'Other-Pay for Diagnostics / Post Natal' refers to having to pay for diagnostics (AP) and demand for 'diet' i.e. food and longer time in centre post-delivery (UP, Bihar, Rajasthan).
'Other-Delivery' refers to good for institutional delivery.

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