Work-time analysis of ANM and ASHA: A Priority for Strengthening Health Systems

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Introduction

Maternal deaths claim the lives of thousands of women worldwide. The WHO estimates that globally 358,000 women die every year due to pregnancy related complications (WHO 2010a). Ninety-nine percent of these deaths occur in developing countries, including in Sub-Saharan Africa and South Asia (WHO 2010b). India, being the second most populous country in the world, is home to one-fourth of these maternal deaths (Singh, Remez et al. 2009; Hogan, Foreman et al. 2010; WHO 2010b). In other words over 78,000 women in India die of maternal deaths every year. India has remarkably decreased the national maternal mortality ratio (MMR) from 667 in 1980 to 254 in 2008, showing a rate of 4 percent decrease yearly (Hogan 2010). Despite these achievements, it is unlikely that India will meet the Millennium Development Goal 5 (MDG 5) target of reducing MMR to 100 by 2015 (Mavalankar, Vora et al. 2008).

Considerable variations within states in the country explain why India may not be able to meet the MDG 5 target. Southern states have far better MMR than the northern states. States like Kerala and Tamil Nadu, for example, have MMR of 110 and 134, respectively (Singh, Remez et al. 2009). Some states in North India, however, have MMR that is over twice the national average. Specifically, a group of nine northern states, including Bihar, Chhattisgarh, Jharkand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and Uttarakhal, have a MMR that is 2.5 times higher than the more developed South (438 vs. 173) (Singh, Remez et al. 2009). Out of these nine states, Uttar Pradesh has received considerable attention over the years for its slacking improvements in maternal health. Uttar Pradesh is the largest and most populous state in India. It also boasts the highest MMR with 359 per 100,000 live births in the country (NFHS 2011).
Caste and economic status are two predictors of MMR in Uttar Pradesh. Disproportionate percent of women in Uttar Pradesh belonging to lower caste including scheduled caste, scheduled tribe, and other backward caste as well as lowest wealth quintile compared to women from other caste and highest wealth quintile have safe deliveries and institutional deliveries. The percent of institutional deliveries remain low for all castes but ranges between 17.2 percent and 22.8 percent for women from lower caste compared to 37.7 percent for other caste. Only 12.7 percent of women from the lowest quintile have institutional deliveries compared to 63.8 percent of women from the highest quintile (DLHS 2010a).

Safe delivery is promoted primarily through the encouragement of all families to seek the care of skilled birth attendants for all births (USAID 2009). Seventy-two percent of women from the highest wealth quintile have safe deliveries compared to only 16.5 percent of lowest quintile women (DLHS 2010a). Only 18.2 percent of women belonging to lower castes have safe deliveries (DLHS 2010a). Additionally, disproportionate percent of women belonging to lower castes as well as lowest wealth quintile compared to women from other caste and highest wealth quintile receive treatment for complications during pregnancy and postpartum period (DLHS 2010a). These differences are more pronounced among rural women. Only 22.0 percent of rural women compared to 38.0 percent urban women have institutional deliveries (DLHS 2010a). Twenty-six percent of rural women compared to 47.1 percent of urban women have safe deliveries (DLHS 2010a).

Providing maternal health services to these women is a challenge. The Indian government launched the National Rural Health Mission (NRHM) in 2005 to provide affordable, effective, and reliable healthcare to the poor residing in rural areas. The Reproductive Child Health program, a scheme under the NRHM, has implemented several core strategies to specifically
reduce maternal mortality in India. Two reasons for high MMR is that 52 percent of women continue to deliver at homes without trained medical assistance and only between 1.7 and 6.8 percent of women get the full recommended three ANC checkups (NFHS 2006a; DLHS 2010a). In light of this, the NRHM has aimed to reduce the MMR by increasing the number of institutional deliveries as well as ANC checkups.

The NRHM created a new cadre of health workers called Accredited Social Health Activist (ASHA) to promote safe institutional deliveries as well as provide ANC for rural women. In addition to the introduction of ASHA, the NRHM revamped the roles of auxiliary nurse midwives (ANM) to specifically provide critical maternal health services and also as a possible solution to critical health worker shortage in India. These changes in frontline health worker roles reflect the WHO proposal of adopting a task shifting as a method of strengthening and expanding the health workforce to rapidly increase access for reproductive and other health services (WHO 2008a).

Accredited Social Health Activist

The ASHA program is a central component of the Janani Surkasha Yojana (JSY). JSY is a national safe motherhood intervention being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among poor pregnant women through conditional cash assistance to incentivize deliveries at health facilities. In ten high-focus states, including Uttar Pradesh, with low in-facility birth coverage, all women regardless of socioeconomic status and parity are eligible for the cash benefit. The cash incentive is higher in these states than in the other states: 1000 rupees ($22.2) in urban areas and 1400 rupees ($31.1) in rural areas (MoH 2006). While some impact has been associated with JSY
including significant effect on increasing antenatal care and in-facility births, a key finding indicates that the poorest and least educated women are less likely to receive financial assistance under JSY (Lim, Dandona et al. 2010).

JSY is being implemented through ASHA, who identify pregnant women and help them to get to a health facility. ASHAs receive payments of 200 rupees ($4.4) in urban areas and 600 rupees ($13.3) in rural areas per in-facility delivery assisted by them. ASHA is thus responsible for registering pregnant women in her community and ensure that they utilize government health facilities for ANC and deliveries as well as provide or help pregnant women to receive at least three antenatal care visits, arrange immunization of the newborn baby, do a postnatal checkup, and counsel for initiation and continuation of breastfeeding. (Lim, Dandona et al. 2010)

The NRHM envisions ASHA playing a vital role in connecting women living in villages to the rural health system and furthermore to help the community address and manage its own needs. To ensure this, ASHA should reside in the same village or community for continued service. Furthermore, ASHA should be either literate with formal education up to eight grade or have some schooling (NRHM 2005c). ASHA is not paid a salary, but her work is compensated based on tasks performed. These tasks include a range of services. ASHA is responsible for reinforcing community action for universal immunization, safe institutional delivery, other reproductive and health-related services, newborn care, prevention of water-borne and other communicable diseases, and nutrition and sanitation (NRHM 2005a).

The 2011 evaluation from the National Health Systems Resource Centre (NHSRC) emphasizes the ASHA program has been established at great scale and now serves an essential role in the public health system. ASHA’s functionality and effectiveness, however, must be further optimized. The NHSRC highlights low performance in some areas of work (e.g. newborn
care, ANC, postnatal care, nutrition) due to lack of skills and support. States are responsible for revising training curriculum but are slow to progress because of poor institutional support and lack of trained human resources to support ASHA. Many states have revised the selection norms to better meet needs. (Bajpai and Dholakia 2011)

Auxiliary Nurse Midwife

The present role of ANM in India is a multi-purpose health worker (Sharma and Mavalankar 2010). Studies have shown that today in India ANM play less of a role as a midwife due to increasing expectations to provide family planning services and other activities unrelated to midwifery (Dileep Mavalankar, Vora et al. 2009). This is also reflected in training of ANMs with the discontinuation of the two-year ANM course. It is now replaced with a 18 month Multipurpose Worker Course which has a shorter midwifery component than the previous course (Sharma and Mavalankar 2010). With the current priority given to increasing institutional deliveries, however, ANM role in maternal health is getting more attention (Varkey 2010).

Today, ANM is responsible for varied number of tasks. To briefly summarize, she is trained to provide the services in the following areas: maternal and child health, immunizations, malnutrition, referrals for early termination of pregnancies, communicable diseases, treatment of minor ailments, registration and record keeping of vital events. In addition to these activities, ANM also provides support and acts as a facilitator for ASHA (IPHS 2010a). Given that the ANM is responsible for such numerous tasks, the quality and performance of the rural health system is largely dependent on her.

There have been studies that have examined incentives, recruitment, roles and responsibilities, supervision, and training for ASHA and ANM, but very few have explored the
work burden and specific activities performed. A recent evaluation of the ASHA program from eight states found that ASHAs are not performing duties as envisioned by the NRHM and subsequently recommend that states should reiterate the roles of ASHA to be composed primarily of home visits, holding Village Health and Nutrition Day meetings, regular visits to health facility for training and/or accompanying pregnant women and sick children, and holding village level meetings (NHSRC 2011). Additionally, studies have shown effectiveness of community health workers in promoting immunization uptake, family planning and improving outcomes for illness such as acute respiratory infections and malaria but there is insufficient evidence for impact on maternal health (Lehmann and Sanders 2007).

It is against this background that an investigation into the work burden of ASHA and ANM was undertaken. The broad goal of this study is to increase the evidence base supporting advocacy for greater utilization of front-line maternal health workers in underserved areas of India. The objectives of the study were firstly to describe the distribution of daily activities conducted by ASHA and ANM and secondly to evaluate time spent on provision of maternal health services in relation to other duties. We hypothesize that ASHA and ANM spend more time in provision of other health services than maternal health services.

**Methods**

An observational cross-sectional field survey aimed at describing the work and duties of frontline workers was undertaken from November to December 2011. Two rural blocks within Lucknow district of Uttar Pradesh, a NRHM high-focus state, was selected for sampling: Mohanlalgunj and Mall. The selected blocks represent the highest and lowest health performing, respectively, in the district. They were selected in consultation with district level program
officials using criteria including health performing indicators, health infrastructure, and socio-economic status of residents including caste, class, and education levels.

**Sampling**

Only those frontline health workers, including ASHA and ANM, belonging to Mall and Mohanlalgunj blocks were included to participate in the study. Lists of ASHA and ANM from sub-centers in Mall and Mohanlalgunj were provided by block Health Education Officer (HEO) at Primary Health Centers (PHC). In consultation with the HEO, these sub-centers were stratified according to performance on various indicators including health infrastructure, health outcomes, immunization rates and family planning coverage. ANM and PNC coverage was not available for both the blocks and hence not included in the stratification. A total of 60 frontline health-workers, including 30 ASHA and 30 ANM, were randomly selected from these stratified lists. Within this, 15 ASHA and 15 ANM were selected from each of the two blocks. There was no participant attrition due to active recruitment by the HEOs of the two blocks.

**Ethical concerns**

Ethical approval for the study was obtained from Center for Health and Social Justice ethics committee. In addition, the Lucknow District Health Officer allowed us to have access to the sub-centers in Mall and Mohanlalgunj.

**Data Collection**

Data collection instruments included an observational time sheet, short survey, and an interview questionnaire. The tools were first designed in English and translated into Hindi, the local language. Pretesting of the tools was carried out in one of the selected sub-center sites in
Mohanlalgunj. The purpose of the pretest was to ensure that questions were understandable and had face validity. Some changes were made to the interview questionnaire and survey to ensure language appropriateness. The data collected from this pretest were included in the final analysis.

Data were collected by seven field researchers recruited from Lucknow University. All field researchers had a Masters in Social Work and prior experience in field research. Their knowledge of and experience with the rural health system made them ideal candidates as field researchers. They underwent three days of training before commencing data collection.

ASHA and ANM were observed during a typical work day from 10:00 am till 4:00 pm, totaling 370 minutes. Each activity performed in 10 minute intervals were recorded on a time sheet. ASHA and ANM were also interviewed face-to-face using a standardized questionnaire that consisted of both open-ended and closed questions. The questionnaire contained two sections including information on demographics and duties and responsibilities.

Classification of time

The primary unit of analysis is the observation of a health worker on a day and at time. The main outcome of the analysis is a binary variable taking value 1 if the health worker was performing an activity listed on the time sheet and taking value 0 otherwise.

The observations generated estimates of the number of minutes health workers spent on activities. Activities related specifically to maternal health services were recorded separately from other services. A total of 24 activities were observed including direct services, direct services-maternal health, community mobilization, community mobilization-maternal health, meetings, meetings-maternal health, official travel, official phone call, registration, registration-
maternal health, reporting, reporting-maternal health, other paperwork, supervision, discussion with staff, gossip, personal call, unrelated work travel, sitting idle, waiting, personal break, not present. The minutes were then classified into three categories based on activities:

(1) **Official activities** included direct services, direct services-maternal health, community mobilization, community mobilization-maternal health, meetings, meetings-maternal health, official travel, official phone call, registration, registration-maternal health, reporting, reporting-maternal health, other paperwork, supervision, discussion with staff.

(2) **Unofficial activities** included gossip, personal call, unrelated work travel, sitting idle, waiting, personal break.

(3) **Absent** included not being present for observation. Health workers who were either late in arriving (after 10:00 am) or early in leaving (before 4:00 pm) were coded value 1 for not present.

Some of the official activities (e.g. direct service, community mobilization, meeting, registration, registration, reporting) were classified into three categories to compare time spent on maternal health services and other services:

(1) **Maternal health** included official activities related to only pregnant and lactating women.

(2) **Maternal health and general** included official activities which included providing services to or activities related to pregnant and lactating women as well as others.

(3) **General** included official activities which included providing services to everyone except pregnant and lactating women.
**Statistical analysis**

Data were analyzed with SPSS statistical software version 18.0. Baseline characteristics are summarized using means, proportions, and 95% confidence intervals where applicable. Pearson’s χ2 test and t-tests were used to compare proportions between groups. Two sided P < 0.05 were considered statistically significant.

**Results**

**Table 1 Demographic Characteristics**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mall</th>
<th>Mohanlalgunj</th>
<th>p-value for χ²</th>
<th>p-value for t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean Age</strong></td>
<td>29 33.4 ±8.1</td>
<td>29 37.0 ±9.6</td>
<td>--</td>
<td>0.129</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>12 (40.0%)</td>
<td>8 (26.7%)</td>
<td>0.663</td>
<td>--</td>
</tr>
<tr>
<td>High school (9th-10th)</td>
<td>5 (16.7%)</td>
<td>8 (26.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate (11th-12th)</td>
<td>5 (16.7%)</td>
<td>6 (20.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate &amp; post-graduate</td>
<td>8 (26.7%)</td>
<td>8 (26.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Caste</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General caste</td>
<td>8 (27.6%)</td>
<td>11 (37.9%)</td>
<td>0.702</td>
<td>--</td>
</tr>
<tr>
<td>Other backward caste</td>
<td>13 (44.8%)</td>
<td>11 (37.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scheduled caste</td>
<td>8 (27.6%)</td>
<td>7 (24.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean Years of service</strong></td>
<td>30 8.8 ±17.5</td>
<td>30 11.0 ±18.5</td>
<td>--</td>
<td>0.639</td>
</tr>
<tr>
<td><strong>Mean Number of villages</strong></td>
<td>30 3.6 ±3.0</td>
<td>30 4.2 ±3.3</td>
<td>--</td>
<td>0.466</td>
</tr>
<tr>
<td><strong>Additional villages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (40.0%)</td>
<td>11 (39.3%)</td>
<td>0.956</td>
<td>--</td>
</tr>
<tr>
<td>No</td>
<td>18 (60.0%)</td>
<td>17 (60.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean Distance to work (kms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANM</td>
<td>15 13.27 ±24.4</td>
<td>15 11.6 ±10.6</td>
<td>--</td>
<td>0.811</td>
</tr>
<tr>
<td>ASHA*</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean distance is not calculated for ASHA because they reside in the same villages in which they work.*
Descriptive statistics

Table 1 presents the findings on demographic characteristics. Thirty ANMs and 30 ASHA were observed during the study. The mean age for Mall and Mohanlalgunj was 33.4 (±8.1) and 37.0 (±9.6) years, respectively. ASHA and ANMs from Mohanlalgunj are more educated than ASHA and ANM from Mall. While 40.0% from Mall compared to 26.5% have completed 8th grade, higher percent of ASHA and ANM have completed high school and intermediate school in Mohanlalgunj than in Mall (26.7% vs 16.7% and 20.0% vs. 16.7%, respectively). The mean years of service was slightly higher for Mohanlalgunj than Mall (11.0 ±18.5 vs. 8.8 ±17.5). ASHAs and ANMs in Mohanlalgunj covered more villages than ASHAs and ANM in Mall (4.2 ±3.3 vs. 3.6 vs. 3.0). Mean distance was calculated for only ANMS in both the blocks because ASHA are required to reside in the villages in which they work. This is not always the case with ANMs. The mean distance to work was slightly higher for Mall than Mohanlalgunj (11.6 ±10.6). None of the observed differences between the two blocks are significant.
Official vs. unofficial activities

Figures 1-3 show the mean time spent on official versus unofficial activities by combined health worker (ANM and ASHA), by ANM only, and ASHA only. Both ASHA and ANM spent more time on official activities in Mohanlalgunj than Mall (173 vs. 139 minutes) (Figure 1). The mean time spent on official activities by ANM only was slightly less in Mall than Mohanlalgunj (155 vs. 166 minutes) whereas the difference was greater for ASHA (112 vs. 186 minutes) (Figure 2 and 3, respectively).
ANM and ASHA spent more time on unofficial activities in Mall compared to Mohanlalgunj (30.6 vs. 20.6 minutes) (Figure 1). This difference was more among ASHA (41.3 vs. 26.6) (Figure 3). None of the observed differences between the two blocks, however, are significant.

Considerable amount of time was observed in both the blocks for ANMs and ASHAs being absent. ASHA and ANM were less absent in Mohanlalgunj than in Mall (131.6 vs. 116.6) (Figure 1). The difference for ANM only in the two blocks were small. ANM in Mohanlalgunj spent slightly less time being absent than in Mall (102.6 vs. 109.3) (Figure 2). ASHA in Mall spend considerably more time being absent that ASHA in Mohanlalgunj (154 vs. 130) (Figure 3).
Figure 3: Time spent on official vs unofficial activities by ASHA

Table 2 summarizes the mean time spent on individual official activities per day by block and by health worker. For each activity (e.g. direct service, community mobilization, meetings, registration, reporting) mean time spent on maternal health, maternal health and general, and general were similar. Below, the results are presented for ANM and ASHA separately.

Table 2: Mean time spent on official activity per day by block and by health worker
<table>
<thead>
<tr>
<th>Activities</th>
<th>Mall (n=30)</th>
<th>Mohanlalgunj (n=30)</th>
<th>p-value for t-test</th>
<th>p-value for t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ANM (n=15)</td>
<td>ASHA (n=15)</td>
<td>ANM (n=15)</td>
<td>ASHA (n=15)</td>
</tr>
<tr>
<td>Direct Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal health</td>
<td>86.0 ±93.3</td>
<td>30.0 ±53.7</td>
<td>68.6 ±59.3</td>
<td>49.3 ±38.4</td>
</tr>
<tr>
<td>Maternal health &amp; general</td>
<td>87.3 ±96.3</td>
<td>28.6 ±52.6</td>
<td>68.6 ±59.3</td>
<td>48.6 ±38.3</td>
</tr>
<tr>
<td>General</td>
<td>87.3 ±96.3</td>
<td>29.3 ±53.5</td>
<td>68.6 ±59.3</td>
<td>49.3 ±38.9</td>
</tr>
<tr>
<td>Community mobilization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal health</td>
<td>40.6 ±105.3</td>
<td>16.0 ±29.4</td>
<td>1.3 ±5.1</td>
<td>32.0 ±28.5</td>
</tr>
<tr>
<td>Maternal health &amp; general</td>
<td>40.6 ±105.3</td>
<td>16.0 ±29.4</td>
<td>1.3 ±5.1</td>
<td>32.0 ±28.5</td>
</tr>
<tr>
<td>General</td>
<td>39.3 ±100.1</td>
<td>16.7 ±31.0</td>
<td>1.3 ±5.1</td>
<td>32.6 ±28.1</td>
</tr>
<tr>
<td>Meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal health</td>
<td>41.3 ±101.2</td>
<td>16.0 ±25.5</td>
<td>6.6 ±25.8</td>
<td>24.0 ±24.7</td>
</tr>
<tr>
<td>Maternal health &amp; general</td>
<td>41.3 ±101.2</td>
<td>14.6 ±22.6</td>
<td>6.6 ±25.8</td>
<td>24.0 ±24.7</td>
</tr>
<tr>
<td>General</td>
<td>41.3 ±101.2</td>
<td>14.0 ±22.6</td>
<td>6.6 ±25.8</td>
<td>24.0 ±24.7</td>
</tr>
<tr>
<td>Registration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal health</td>
<td>54.0 ±88.6</td>
<td>4.6 ±10.6</td>
<td>27.3 ±29.6</td>
<td>9.3 ±17.5</td>
</tr>
<tr>
<td>Maternal health &amp; general</td>
<td>54.0 ±88.6</td>
<td>4.6 ±10.6</td>
<td>27.3 ±29.6</td>
<td>9.3 ±17.5</td>
</tr>
<tr>
<td>General</td>
<td>55.3 ±91.7</td>
<td>4.6 ±10.6</td>
<td>27.3 ±29.6</td>
<td>9.3 ±17.5</td>
</tr>
<tr>
<td>Reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal health</td>
<td>1.3 ±3.5</td>
<td>3.3 ±7.2</td>
<td>0.6 ±2.5</td>
<td>3.3 ±6.1</td>
</tr>
<tr>
<td>Maternal health &amp; general</td>
<td>54.6 ±103.9</td>
<td>22.6 ±52.4</td>
<td>26.0 ±62.7</td>
<td>17.3 ±28.6</td>
</tr>
<tr>
<td>General</td>
<td>54.6 ±103.9</td>
<td>22.6 ±52.4</td>
<td>26.0 ±62.7</td>
<td>18.6 ±30.4</td>
</tr>
<tr>
<td>Other paperwork</td>
<td>78.6 ±73.1</td>
<td>10.0 ±29.5</td>
<td>39.3 ±41.8</td>
<td>32.6 ±37.8</td>
</tr>
<tr>
<td>Supervision</td>
<td>26.6 ±66.5</td>
<td>6.6 ±14.4</td>
<td>6.0 ±18.4</td>
<td>8.0 ±16.5</td>
</tr>
<tr>
<td>Discussion with staff</td>
<td>51.3 ±71.5</td>
<td>17.3 ±25.7</td>
<td>48.0 ±71.5</td>
<td>49.3 ±57.2</td>
</tr>
<tr>
<td>Phone call</td>
<td>30.0 ±62.1</td>
<td>2.0 ±5.6</td>
<td>12.6 ±19.0</td>
<td>4.5 ±12.4</td>
</tr>
<tr>
<td>Travel</td>
<td>31.3 ±66.3</td>
<td>14.6 ±20.9</td>
<td>17.3 ±41.8</td>
<td>39.3 ±32.1</td>
</tr>
</tbody>
</table>

ANM—Maternal Health Activities

Overall ANM in Mohanlalgunj spent less time on all of the individual official maternal health activities than ANM from Mall. The mean time spent on maternal health direct service in Mall was 86.0 ±93.3 compared to 68.6 ±59.3 in Mohanlalgunj. The mean time spent on...
maternal health community mobilization in Mall was 40.6 ±105.3 compared to 1.3 ±5.1 in Mohanlalgunj. The mean time spent on maternal health meetings in Mall was 41.3±101.2 compared to 6.6 ±25.8 in Mohanlalgunj. The mean time spent on maternal health registration in Mall was 54.0 ±88.6 compared to 27.3 ±29.6 in Mohanlalgunj. Lastly, the mean time spent on maternal health reporting in Mall was 1.3 ±3.5 compared to 0.6 ±2.5 in Mohanlalgunj. None of the observed differences are significant.

ANM—General Activities

Overall ANM in Mohanlalgunj spent less time on all of the individual general activities than ANM from Mall. The mean time spent on general direct service in Mall was 87.3 ±96.3 compared to 68.6 ±59.3 in Mohanlalgunj. The mean time spent on general community mobilization in Mall was 39.3 ±100.1 compared to 1.3 ±5.1 in Mohanlalgunj. The mean time spent on general meetings in Mall was 41.3±101.2 compared to 6.6 ±25.8 in Mohanlalgunj. The mean time spent on general registration in Mall was 55.3 ±91.7 compared to 27.3 ±29.6 in Mohanlalgunj. Lastly, the mean time spent on maternal health reporting in Mall was 54.6 ±103.9 compared to 26.6 ±63.4 in Mohanlalgunj. None of the observed differences are significant.

ASHA—Maternal Health Services

Overall ASHA in Mohanlalgunj spent more time on all of the individual maternal health activities than ASHA from Mall. The mean time spent on maternal direct service in Mohanlalgunj was 49.3 ±38.4 compared to 30.0±53.7 in Mall. The mean time spent on maternal community mobilization in Mohanlalgunj was 32.0 ±28.5 compared to 16.0 ±29.4 in Mall. The mean time spent on maternal meetings in Mohanlalgunj was 26.0±26.4.2 compared to 16.0 ±25.5 in Mall. The mean time spent on maternal registration in Mohanlalgunj was 11.3 ±19.5
compared to 4.6 ±10.6 in Mall. Lastly, the mean time spent on maternal health reporting in Mohanlalgunj was 3.3 ±6.1 compared to 3.3 ±7.2 to in Mall. None of the observed differences are significant.

ASHA—Maternal Health Services

Overall ASHA in Mohanlalgunj spent more time on all of the individual maternal health activities than ASHA from Mall. The mean time spent on maternal direct service in Mohanlalgunj was 49.3 ±38.4 compared to 30.0±53.7 in Mall. The mean time spent on maternal community mobilization in Mohanlalgunj was 32.0 ±28.5 compared to 16.0 ±29.4 in Mall. The mean time spent on maternal meetings in Mohanlalgunj was 26.0±26.4 compared to 16.0 ±25.5 in Mall. The mean time spent on maternal registration in Mohanlalgunj was 11.3 ±19.5 compared to 4.6 ±10.6 in Mall. Lastly, the mean time spent on maternal health reporting in Mohanlalgunj was 3.3 ±6.1 compared to 3.3 ±7.2 to in Mall. None of the observed differences are significant.

ASHA—General Activities

Overall ASHA in Mohanlalgunj spent more time on all of the individual general activities than ASHA from Mall. The mean time spent on general direct service in Mohanlalgunj was 49.3 ±38.9 compared to 29.3.0±53.5 in Mall. The mean time spent on general community mobilization in Mohanlalgunj was 32.0 ±28.1 compared to 16.0 ±31.0 in Mall. The mean time spent on general meetings in Mohanlalgunj was 24.0±24.7 compared to 14.0 ±22.6 in Mall. The mean time spent on general registration in Mohanlalgunj was 9.3 ±17.5 compared to 4.6 ±10.6 in Mall. Lastly, the mean time spent on general health reporting in Mohanlalgunj was 18.6 ±30.4 compared to 22.6 ±52.4 to in Mall. None of the observed differences are significant.
Other Paperwork, Supervision, Discussion with Staff, Phone Call, Travel

ANM from Mall spent more time on other paperwork, supervision, discussion with staff, phone call, and travel compared to ANM from Mohanlalgunj. The mean time spent on other paperwork was 78.6 ±73.1 for Mall compared to 39.3 ±41.8 in Mohanlalgunj. The mean time spent on supervision was 26.6 ±66.5 in Mall compared to 6.0 ±18.4 in Mohanlalgunj. The mean time spent on discussion with staff was 51.3 ±71.5 compared to 48.0 ±71.5, respectively. The mean time spent on phone call was 30.0 ±62.1 in Mall compared to 12.6 ±19.0 in Mohanlalgunj. Lastly, the mean time spent on travel in Mall was 31.3 ±66.3 compared to 17.3 ±41.8 in Mohanlalgunj. None of the observed differences are significant.

ASHA from Mohanlalgunj spent more time on other paperwork, supervision, discussion with staff, phone call, and travel compared to ASHA from Mall. The mean time spent on other paperwork was 32.6 ±37.8 for Mohanlalgunj compared to 10.0 ±29.5 in Mall. The mean time spent on supervision was 8.0 ±16.5 in Mohanlalgunj compared to 6.6 ±14.4 in Mall. The mean time spent on discussion with staff was 49.3 ±57.2 compared to 17.3 ±25.7, respectively. The mean time spent on phone call was 4.5 ±12.4 in Mohanlalgunj compared to 2.0 ±5.6 in Mall. Lastly, the mean time spent on travel in Mohanlalgunj was 39.3 ±32.1 compared to 14.6 ±20.9 in Mall. None of the observed differences are significant.

Discussion

The results suggest that overall ASHA and ANM combined spent more time on official activities, less time on unofficial activities, and less time being absent in Mohanlalgunj compared to Mall. ANM and ASHA combined spent an average of 34.0 minutes more working in Mohanlalgunj than Mall. Subsequently ASHA and ANM combined in Mall spent 14.7 more
minutes not working (on unofficial activities) and 25.0 minutes more being absent than in Mohanlalgunj. Though overall time spent on official activities was higher in Mohanlalgunj, ANM in Mohanlalgunj spent less time on official activities than Mall, the difference being 7.0 minutes. The short survey with closed and open-ended questions revealed that ANM also perform night duty, requiring her to spend the night at the sub-center. Performing night duty permits ANM to report late or take the following day off. The time spent performing night duty was not captured in this study. Subsequently, the time accounted for as absent if ANM reported after 10 am may reflect time spent on night duty for previous day.

ANM have fixed hours of work and duties which varies during the week. ANM have clinic at sub-center on Monday and Thursday, official meetings at block level health facility on Tuesday, immunization camps on Wednesday and Saturdays, and community level health meetings on Friday. The observed differences in time spent on official activities may firstly reflect these varying tasks and duties performed, and secondly on patient load during clinic days and immunization camps. ANM may leave early if there were no patients on these days.

ASHA in Mohanlalgunj spent on average 74 more minutes on official work, suggesting that the better performance of the block is perhaps associated with the duties performed by ASHA as well as other factors such as higher level supervision and management. A state-wide study on ASHA found that 61 to 87 percent report working three to five hours per day (NHSRC 2011). The observed average time for ASHA for Mall and Mohanlalgunj (112 and 186 minutes, respectively) is considerably less than the previous study. The duration of observed time for our study was 10 am to 4 pm, but it is possible that ASHA perform official duties outside this time frame. ASHA escort pregnant women to health facilities for deliveries and other community members in cases of emergencies that require medical attention. The times in which she did this
after 4 pm were not captured in our study thus our findings under-estimate actual time of duties performed.

Within specific official activities, both ASHA and ANM spent relatively equal amounts of time on maternal and general health services with the exception of reporting. ANM from Mall on average spent more time on all specific official activities than Mohanlalgunj. The large standard deviations for each activity, however, indicate that ANM in Mall were either engaged in official activities or not at all. The large yet smaller standard deviations than Mall for ANM in Mohanlalgunj suggest that ANM were less varied in the time spent on specific official activities.

This study has numerous limitations. Firstly, given the small budget for the study, we were able to observe ANM and ASHA only between 10:00 am and 4:00 pm. The true total amount of time worked by ANM and ASHA were not captured since it is possible that she worked before and after the observed time. Secondly, for both ANM and ASHA, the nature of work includes multitasking thereby allowing for double counting of specific official activities. We have tried to minimize this effect by creating mutually exclusive variables in our analysis. Thirdly, the effects social desirability cannot be discounted. Having an observer following ANM and ASHA may have altered the performance of the health worker, including duration and quality of work. Fourthly, small sample size limits any significant observations and explains the large standard deviations. Despite the sample size, however, we have been able to somewhat capture and describe some aspects of how ASHA and ANM fulfill their duties and the time spent on work. These findings should inform future studies with larger samples to further describe and evaluate the duties performed by ANM and ASHA in order to identify gaps and improve service delivery for pregnant and lactating women.
References


