PROJECT REPORT

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ACRONYMES:

- MoPH  Ministry of Public Health
- EPHI  Afghanistan Public Health Institute
- IMCI  Integrated Management of Childhood Illnesses
- BASICS Basic Support for Institutionalizing Child survival
- SM  Strengthening Mechanism
- REMT Regional EPI Management Team
- PEMT Provincial EPI management Team
- BPHS Basic Package of Health Services
- EPHS Essential Package of Hospital Services
- NGO  Non Governmental Organization
- USAID United States Agency for International Development
- CSO  Central Statistics Office
- GAVI  Global Alliance for Vaccine and Immunization
- cMYP Comprehensive Multi Year Plan
- BHC  Basic Health Center
- CHC  Comprehensive Health Center
- MCH  Mother & Child Health
- DH  District Hospital
- WHO  World Health Organization
- UNICEF United Nations Children’s Fund
- CHA  Coordination of Humanitarian Assistance
- LSHTM London School of Hygiene & Tropical Medicine
- LAM  Local Area Monitoring
- IEC  Information Education communication
- CBAW Child Bearing Age Women
- GAG  Global Advisory Group
- KAP  Knowledge Attitude Practice
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ABSTRACT:

Background: Afghanistan is one of the least developing countries with under five and infant mortality rate of 191 and 129 per 1000 live births. High prevalence of vaccine preventable diseases is one of the underlying causes of high child mortality while overall percentage of fully immunized children in Afghanistan is around 27%. It will not be possible to reduce child mortality unless the national programs address the underlying causes including low immunization coverage and missed opportunity.

Method: This study is an attempt to identify potential risks for incomplete vaccination. The study used exit interview, observation of service delivery, interview with health staff and household surveys to assess the immunization status of children aged 0-23 months and level of missed opportunity.

Result: The study shows 22% of children aged 0-23 months and 28% of women of child bearing age who visiting Aqtash CHC leaving the facility without receiving required doses of vaccines. The figures for Khulm DH are 12% and 33% respectively. The household survey showed 42% and 25% of children with incomplete immunization in surrounding villages of Khulm DH and Aqtash CHC while 10% and 37% of the children found with incomplete immunization in outreach sites of the mentioned facilities respectively.

Conclusion: This study shows that a high percentage of missed opportunity at the facility and outreach sites is one of the contributing factors prevent the country from achieving the set target of at least 90% coverage of DTP-HepB-Hib-3 in 80% districts of Afghanistan by the end of the year 2013. The study identified different causes of low immunization coverage and high percentage of missed opportunities; low awareness, communication gaps between clients and service providers, family permission issues, poor screening and referral, poor functioning surveillance system for AEFI, poor recording and registration and defaulter tracing. Based on the findings of the study, immediate and long term corrective actions have been proposed.

BACKGROUND AND RATIONALE FOR STUDY:

Afghanistan is one of the least developed countries in the world, with the worst human indicators in Asia after being affected by three decades of war. In 2006 under five mortality is 191/1000 live births and infant mortality rate is 129/1000 birth (1). It is also one of the 14 countries in the world that have maternal mortality of more than 1000/100000 live births (2). Health care in Afghanistan is provided based on primary health care principles and through a
basic package of health services (BPHS) that is mainly contracted out to NGOs. The overall health financing is dependent on foreign resources and sustainability of program achievements is a big concern for the country. The main donors are USAID, the World Bank and the European Commission.

The country has 34 provinces, 398 districts and Approximately 40,000 villages. The estimated population figures range from 24 million (3) to 29 million (4). The BPHS and Essential Package of Hospital Services (EPHS) are currently delivered in part through contracts for Non-Governmental Organizations (NGOs) under MoPH stewardship. Around 27 NGOs are directly involved in service delivery under contracting out scheme (5). The MoPH, is providing BPHS in 3 provinces called Strengthening Mechanisms provinces (SM) and EPHS in 20 provincial hospitals, particularly focuses on providing leadership and governance for the health sector as well as monitoring, evaluation and coordination of the delivery of BPHS by NGOs and donors inputs (6). MoPH is directly implementing BPHS in these provinces to build capacity of its staff for direct management of allocated grant and implementation of BPHS as a pilot. The World Bank, the European Commission, USAID and GAVI are the main funding agencies for implementation of BPHS including EPI.

An expanded program on immunization in Afghanistan was started in 1978. From 1994-1996, the provision of services initially was through series of multi antigen campaigns (7). Since then, the program operation was supported through establishing provincial and regional management teams and the country developed its first comprehensive multiyear plan (cMYP) for EPI in 2001 covering for the years 2001-2005 followed be subsequent five year plans. As per MoPH policy, there is a vaccination team in each Basic Health Centre (BHC), Comprehensive Health Centre (CHC) and District Hospital (DH). Immunization service is being provided through fixed, outreach and mobile sessions. All health facilities provide fixed immunization services. The vaccinators from these fixed centres/health facilities conduct outreach sessions by travelling to the villages that are not within walking distance from a health facility to bring the services closer to the people. Remote villages are covered through mobile sessions where the vaccinators travel to remote villages and stay overnight in some of these remote villages (3-5 times a year).

The EPI program is managed through Regional EPI Management Teams (REMT) and Provincial EPI management Teams (PEMT) and a core group of EPI supervisors. The central EPI department is responsible for overall management of EPI program with focusing on
providing policy and strategic directions and funds and logistics managements. REMTs are supporting PEMTS for vaccine and logistics and data processing and submission to MoPH.

The EPI program includes eight vaccines against eight diseases: BCG vaccine (Tuberculosis), OPV vaccine (Poliomyelitis), MCV (Measles) and DTP-HepB-Hib (Diphtheria, Pertusis, Tetanus, Hepatitis B and Hemophylous Influenza type b). The vaccination schedule has to be completed before the child is under one year of age; one dose of BCG at birth or first contact with the health system, OPV zero at birth or within 14 days after birth, three doses of DTP-HepB-Hib and OPV from 6 weeks onward with 4 weeks interval in between, one dose of measles vaccine at 9 months along with OPV-4. A second dose of measles vaccine will be offered at the age of 18 months. For more details, please refer to the table 1 & 2 (8).

**Table-1:** Child immunization schedule

<table>
<thead>
<tr>
<th>Age</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth (0-11 Months)</td>
<td>BCG</td>
</tr>
<tr>
<td>Birth (as soon as possible within 14 days of life)</td>
<td>OPV0</td>
</tr>
<tr>
<td>6 weeks</td>
<td>DPT-HepB-Hib1, OPV1</td>
</tr>
<tr>
<td>10 weeks</td>
<td>DPT-HepB-Hib2, OPV2</td>
</tr>
<tr>
<td>14 weeks</td>
<td>DPT-HepB-Hib3, OPV3</td>
</tr>
<tr>
<td>9 months</td>
<td>Measles, OPV4</td>
</tr>
<tr>
<td>18 Months</td>
<td>Measles (booster dose)</td>
</tr>
</tbody>
</table>

**Table-2:** Standard TT Immunization Schedule

<table>
<thead>
<tr>
<th>Dose</th>
<th>When to give</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT1</td>
<td>At first contact with woman of childbearing age (15-45 years old); Or as early as possible in pregnancy.</td>
</tr>
<tr>
<td>TT2</td>
<td>At least 4 weeks after TT1.</td>
</tr>
<tr>
<td>TT3</td>
<td>At least 6 months after TT2.</td>
</tr>
<tr>
<td>TT4</td>
<td>At least 1 year after TT3.</td>
</tr>
<tr>
<td>TT5</td>
<td>At least 1 year after TT4.</td>
</tr>
</tbody>
</table>

A child is considered fully immunized when s/he gets all vaccines according to the endorsed timetable. “An opportunity for immunization is missed when a person who is eligible for immunization and who has no contraindication to immunization, visit health service and does not receive all the needed vaccine. Missed opportunity for immunization occurs in two major
settings; during visits for immunization and other preventive services; during visits for curative services. In both settings, eliminating missed opportunities has the potential to raise overall immunization coverage in a population, particularly when the availability and use of health services is high. When the availability and use of health services is low, immunizing at every health contact is extremely important because the risk for vaccine preventable disease is likely to be high in these areas” (9). The strategy of immunization at every opportunity has been recommended by the EPI Global Advisory Group (GAG) since 1983 (10, 11). Based on these recommendations, EPI developed required tools for assessing missed opportunities in 1984 and 1988 (12, 13).

Review of Afghanistan’s national immunization coverage for the year 1980-2008 by the WHO & UNICEF shows that the coverage trend of routine vaccination is improving annually. This progress is more obvious in urban settings compare to rural areas (14). The overall percentage of fully immunized children in Afghanistan is around 27% and the dropout rate is between DTP-Hep B 1 and DTP-Hep B 3 is around 14% (15). The level of drop out in administration reported figures for 2008 is not consistent and sometimes goes to minus 40 which brings the accuracy and reliability of the reported figures in to question. The MoPH aim is to achieve at least 90% coverage of DTP-3 in 80% districts of the country by the end of the year 2013. The country is facing tremendous challenges to achieve the goal. Significant challenges include: poor managerial capacity at various levels, access problems, poor utilization of available services, lack of knowledge, skills and motivation among staff, problems with vaccine and supply management and challenges in encouraging communities with sensitive Afghani cultural beliefs to support the strategy and its respective interventions. Incomplete vaccination and significant level of missed opportunities are among all those factors that could be tackled if the main reasons are identified and proper corrective actions are taken.

It seems that the problem is persistent over the years and the EPI program could not overcome the problems due to lack of clear evidence on reasons for such phenomena. EPI program could mitigate the risks involved in incomplete vaccination and reduce missed-opportunities if thorough investigation of the issues is conducted. Fewer efforts have been made to find out the reasons for such missed opportunities. Some studies conducted in the past covered issues of coverage, security and some aspects of socioeconomic factors on coverage of EPI program in Afghanistan (16, 17), but limited evidence is available on reasons of missed opportunities.
This study was an attempt to identify the risks for incomplete vaccination in rural setting in Afghanistan to find out potential missed opportunities for incomplete vaccination so that to recommend necessary actions for completion of vaccination against vaccine preventable diseases in due time and before the first birth day of the child. The study covered two provinces, one contracted out to NGO and one province under the direct implementation of MoPH called Strengthening Mechanism (SM) to assess the situation and meanwhile gave us opportunity for comparison of the findings in both setting.

AIM AND OBJECTIVES:

Aim of the research:
To identify potential risk factors of incomplete vaccination and missed opportunities for vaccination program in rural Afghanistan.

Objectives:
- To identify risk factors that reduce utilization of vaccination services in rural settings
- To determine the level of missed opportunities in current routine vaccination practices
- To assess perception of rural communities about vaccination
- To identify technically sound approaches for increasing vaccination coverage and reducing missed opportunities

METHODOLOGY:
The study was done in two provinces; Khulm District Hospital in Balkh Province in Northern Region which is contracted out to local NGO called CHA (Coordination of Humanitarian Assistance) and Aqtash Comprehensive Health Centre in Parwan province in central region which is under the direct implementation of MoPH called Strengthening Mechanism (SM) to give us opportunity for comparison of the findings. Primary data was collected from women of child bearing age and parents/caretakers of children under two years of age (boys and girls) through exit interviews in health facilities and household surveys in the catchment area of the health facility. The household surveys covered 75 households around each health facility and 75 household in one of the outreach sites of mentioned facilities visited by the outreach team recently. Meetings were held with MoPH officials and EPI stakeholders in order to obtain their opinion on risk of missed opportunities in EPI program. The following methods were used for data collection:
Observation of immunization service provision:
Selected health facilities were visited to observe the overall settings of the clinic and
position of vaccination services, and to observe the behavior of health staff during
immunization sessions using a short observation and interview tool. The first part of the
tool focused on vaccinator performance in terms of communication with caretakers and
parents and delivery of EPI essential messages. The second part of the tool assessed
level of knowledge of the vaccinators with regards to missed opportunities, when they
happen and what could be the possible reasons (appendix 1).

Exit interviews with women of child bearing age and caretakers of children:
Exit interview tools for CBAWs and children were developed separately (appendix 2 and
3) that applied to parents/care takers on behalf of children under two years of age and to
women of child bearing age who attend the clinic or accompany the children. Their
purpose was to see if any missed opportunities happened during their visit. The
vaccination status and due time for sub-sequent doses were assessed by observation of
their vaccination card. If a vaccination card was not present, then they were asked
verbally if any dose is missed on the day of interview (re-call). The interview
questionnaire used was standard WHO tool for exit interviews taken from the Missed
Opportunities in Immunization Manual which has been used in EPI for years and easy to
apply.

Conducting household surveys:
One or two villages were randomly selected from the list of villages in the catchment area
of the health facility. A child was considered fully immunized if s/he received all vaccines
according to EPI schedule. An opportunity was considered missed if the child was over
due for one or more doses of vaccines on the visit day. During the household survey, the
reasons for incomplete vaccination were recorded along with children’s vaccination status
to give some insight on local perceptions of EPI services (appendix 4).

Discussion and brain storming sessions with MoPH staff and stakeholders:
The MoPH vaccination mangers and key stakeholders at central, provincial and district
level were interviewed using random questions to get their insights about missed
opportunities, what has been done so far and what future steps are planned for
addressing the problem. Further discussions with program mangers of SM and non-SM
study sites were conducted to find out their perception on the subject and to see to what extent the issue of missed opportunities is taken up by the management. Level of coordination and common understanding at various levels and among EPI staff was observed to explore flow of communication among supervisors and supervisees.

The study tools were field tested in a rural village of the Paghman district of Kabul after which necessary modifications were made. Filed testing and translation of the tools in to local language helped the study to fulfil the needs and requirement of the study and standardized data collection. A group of 5-6 MoPH staff at each site were trained to help with data collection.

**Sample size:**
Due to scale, financial limitations, and time constraints, the study was designed to follow convenient sampling strategy. The site selection of SM (Parwan) and Non-SM (Balkh) was done intentionally to collect context specific data that provided an opportunity for comparison of findings. Primary data was collected from women of child bearing age and parents/caretakers of children under two years of age through 112 exit interviews in both health facilities (54 in Aqtash, 58 in Khulm) and conducting 75 household surveys (150 household in each location). Total 300 households were visited in both locations and data was collected for 356 children under the age of 2 years.

**Ethical consideration:**
The supporting staff from Ministry of Health were oriented on the principles of confidentiality to prevent use of the project information for other purposes. The original copies of the questionnaires were kept in a secure place to ensure information confidentiality. The questionnaires were anonymous and were tracked solely by an interview number. In each health facility, around 20-40 adult subjects were interviewed to minimize the risk of identifying the interviewees from a small number in each subgroup. The results were also analyzed in sub groups, not based on individual responses. Consent from health staff was obtained prior to individual interviews. Informed consent was also obtained during exit interviews. Due to the sensitivity of written consent in an Afghani context, signatures or finger prints were not required. The study used a verbal consent process but verbal consent obtained was tracked on paper by researchers (already mentioned in CARE form). The questionnaires, information sheets and
consent form were all translated into the local language. Approval from Institutional Review Board’s within the Ministry of Public Health was obtained prior the start of the study (appendix 5).

FINDINGS/RESULTS:

Extent of missed opportunity at the health facilities (fixed sites):
To find out the extent of missed opportunities, during the exit interviews with women and care-takers, we screened the immunization status of 54 women of child bearing age (15-45 years) and children aged 0-23 months in Aqtash CHC of Parwan province using immunization cards or immunization history. A similar survey was conducted in Khulm District Hospital of Balkh province. The number of women and children covered by exit interview in Khulm district hospital was 58.

This exercise revealed that 22% of children aged 0-23 months and 28% of women of child bearing age who are coming to the Aqtash CHC because of different reasons leaving the facility without receiving one or more doses of vaccines they are eligible for. Missed opportunities among children and women in Khulm DH is 12% and 33% respectively (for details please see Table-3).

Table-3: Summary of exit interview findings in Aqtash CHC (Parwan Province) and Khulm District Hospital (Balkh Province)

<table>
<thead>
<tr>
<th></th>
<th>Total eligible’s screened</th>
<th>Immunizations up-to-date</th>
<th>Eligible’s with contraindication</th>
<th>Declined immunization today</th>
<th>Missed opportunity for immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children</td>
<td>Women</td>
<td>Children</td>
<td>Women</td>
<td>Children</td>
</tr>
<tr>
<td>Aqtash CHC</td>
<td>18</td>
<td>36</td>
<td>14</td>
<td>78</td>
<td>26</td>
</tr>
<tr>
<td>Khulm DH</td>
<td>16</td>
<td>42</td>
<td>14</td>
<td>88</td>
<td>28</td>
</tr>
</tbody>
</table>

As the Table-3 shows, the extent of missed opportunities for receiving immunization in Aqtash CHC of Parwan province for CBA women is higher 10/36 (28%) compared to the figure for
children under the age of two years 4/18 (22%). In Khulm District Hospital the figure of missed opportunities for immunization of women and children is 14/42 (33%) and 2/16 (12%) respectively. However, after applying statistical test, this difference was not statistically significant. All the interviewed women and caretakers in both locations whom themselves or their children were eligible for the first dose of vaccines (12 CBAWs and 0 Children) stated that they were not aware of the importance of the immunization. Meanwhile, while 12 CBAWs and caretakers of 6 children who had already contacted immunization services and were eligible for the subsequent dose/does of the vaccine in the day of exit interview stated, they were not aware of the date for their next immunization visit.

At the same time observation of the service delivery points (MCH with female staff and general OPD with male doctors) and interviews with the vaccinators and concerned health workers revealed that screening of immunization status of the clients is not strong enough to identify all eligible clients for immunization in order to refer them to the vaccination points. Although screening of immunization is part of registration procedures, it seems it is not happening as a routine procedure. Therefore, the primary reason for missing opportunities in both facilities is poor screening of immunization status of CBAWs and children by the vaccinators/health workers. It is also the weakest ring in the patient flow chain because of poor screening by the registrars who are the first contact for all clients entering the health facilities.

For a further explanation of the above findings, we conducted observation of immunization session and interview with vaccinators/health workers in the mentioned facilities. Following is the summary finding of the mentioned exercise:

- During observation of immunization sessions, the vaccinator explained the type of the vaccine to the client in only 50% of the 18 observed cases.
- In 60% of cases, the vaccinator did not explain the side reactions of vaccination and how to manage these possible reactions
- The importance of full immunization for the new comers and re-enforcement of this message and date of subsequent visits is crucial. During exit interviews, most of the respondents stated that they were not aware of the date of the next visit for vaccination. The vaccinators communicated the importance of the completion of the immunization schedule and date for the next visit in only 43% of observed cases.
• The most important observation was poor communication and feedback during immunization session. There were no skills to make sure that the clients have understood the incomplete information provided to them.

• The knowledge of the vaccinators/health workers was tested for identifying when missed opportunities happen. Although, the health staff knew some reasons for missed opportunities (i.e. shortage of vaccine/supplies, fear of vaccine wastage, misbehavior of staff), there was difficulty in explaining when they happen (during vaccination services and other services). It is this missing knowledge that can guide the staff towards having a screening mentality.

• The health staff were found to be familiar with vaccination schedules, but there were no posters or other IEC materials on EPI (especially on vaccination schedule) that can remind health staff to screen immunization status and refer eligible clients. This can be also used to educate the clients on the importance of full immunization and completion of a vaccination schedule.

• In the course of the exit interviews in Aqtash health facility, only 8 out of 54 eligible CBAWs and children presented their immunization cards to the interviewers. In Khulm district hospital, 15 out of 58 cards were presented for the same category of clients. It means that, for various reasons, only 15% of eligible clients of Aqtash CHC and 26% of eligible clients in Khulm DH are bringing their immunization cards with them when visiting the health facilities. Observation of immunization sessions reveals that in 50% of the observed cases, the vaccinators did not communicate the importance of vaccination card retention to the mothers/caretakers. Therefore, emphasizing retention and presentation of the card while visiting the facilities is equally important and could be used as a tool for follow-up of the vaccination schedule and avoiding missed opportunities. This should be clearly communicated with mothers and caretakers.

To have better understanding of the extent of the problem; we also surveyed 75 households around each health facilities (Khulm and Aqtash) in Parwan and Balkh provinces. In the course of this exercise, we screened immunization status of 64 children aged 0-23 months in Aqtash EPI centre (fixed) catchment and 96 children in Khulm EPI centre catchment area. Analysis of the collected data shows 48 % of children aged 0-23 months in areas surrounding Aqtash health facility presented them with up to date immunization status. The figure for Khulm DH is 56 % (for more details, please refer to the Table-4).
Table-4: 75 households surveyed in Aqtash and Khulm DH health centre catchment area:

<table>
<thead>
<tr>
<th>Total screened</th>
<th>Aqtash CHC</th>
<th>Khulm DH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=64</td>
<td>N=96</td>
</tr>
<tr>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Up to date immunization</td>
<td>48</td>
<td>75</td>
</tr>
<tr>
<td>Incomplete immunization</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>One or more Reasons sated for incomplete immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaware of need for immunization</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Unaware of need to return for subsequent doses (schedule)</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Place and time of immunization is unknown</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Fear for side reactions</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Family did not allow (refusal)</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Rumours about immunization</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No faith in immunization</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Postpone until another time</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Child ill- not taken to HC</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Family problems including illness of mother</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Mother too busy</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Place of immunization is too far</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Time of immunization is inconvenient</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vaccinator absent</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vaccine not available</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Long waiting time</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ill child taken to HC, but not vaccinated by vaccinator</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Misbehaviour of health staff</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total number of answers for incomplete vaccination</td>
<td>37</td>
<td>100 %</td>
</tr>
</tbody>
</table>

As Table-4 shows, 42% of children aged 0-23 months were found with incomplete immunization in Khulm DH catchment area (just around the health facility) and 25% in Aqtash CHC surrounding villages. The obvious reasons stated by the respondents for having incomplete vaccination status in Aqtash and Khulm was mainly lack of awareness, no knowledge of the
need for subsequent doses (overall around 27%), family permission issues, fear of side reaction (22% in Khulm) and no faith in immunization (16% in Aqtash). Most of the above issues are closely connected to proper and effective communication with clients and communities and strengthening of feedback systems. Although fear for side reactions and rumours about immunization stated by a low percentage of the respondents as reasons for not completing the immunization schedule in Khulm (22% and 4% respectively) but is a clear indication of the urgent need for having a functional surveillance system of Adverse Event Following immunization (AEFI).

Extent of missed opportunities in outreach sites:

In the context of Afghanistan, outreach activities are considered to cover 39% of population in 47% of villages (18). To find out level of coverage & utilization of services in the outreach sites the study also conducted household surveys in one out reach site of the each selected health facilities which had been recently visited by the vaccination teams. In the course of this exercise, the team visited 75 household and checked the vaccination status of children and assessed the reasons for incomplete vaccination. The following table shows summary of findings:

Table-5: Uptake of vaccination and stated reasons for incomplete vaccination in the outreach sites of Aqtash and Khulm health facilities:

<table>
<thead>
<tr>
<th>Aqtash CHC</th>
<th>Khulm DH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total screened</strong></td>
<td><strong>N=96</strong></td>
</tr>
<tr>
<td>Up to date immunization</td>
<td>60</td>
</tr>
<tr>
<td>Incomplete immunization</td>
<td>36</td>
</tr>
<tr>
<td><strong>One or more Reasons sated for incomplete immunization</strong></td>
<td></td>
</tr>
<tr>
<td>Unaware of need for immunization</td>
<td>11</td>
</tr>
<tr>
<td>Unaware of need to return for subsequent doses (schedule)</td>
<td>13</td>
</tr>
<tr>
<td>Place and time of immunization is unknown</td>
<td>0</td>
</tr>
<tr>
<td>Fear for side reactions</td>
<td>2</td>
</tr>
<tr>
<td>Family did not allow (refusal)</td>
<td>7</td>
</tr>
<tr>
<td>Rumours about immunization</td>
<td>2</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>No faith in immunization</td>
<td>4</td>
</tr>
<tr>
<td>Postpone until another time</td>
<td>0</td>
</tr>
<tr>
<td>Child ill- not taken to HC</td>
<td>0</td>
</tr>
<tr>
<td>Family problems including illness of mother</td>
<td>0</td>
</tr>
<tr>
<td>Mother too busy</td>
<td>2</td>
</tr>
<tr>
<td>Place of immunization is too far</td>
<td>2</td>
</tr>
<tr>
<td>Time of immunization is inconvenient</td>
<td>0</td>
</tr>
<tr>
<td>Vaccinator absent</td>
<td>0</td>
</tr>
<tr>
<td>Vaccine not available</td>
<td>1</td>
</tr>
<tr>
<td>Long waiting time</td>
<td>0</td>
</tr>
<tr>
<td>Ill child taken to HC, but not vaccinated by vaccinator</td>
<td>0</td>
</tr>
<tr>
<td>Misbehaviour of health staff</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total number of answers for incomplete vaccination</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>

The household survey conducted in outreach sites recently visited by vaccination teams in both locations revealed communication gap between health staff and communities. In the outreach site of Aqtash CHC in Parwan province (Jal Nawroz village), 37% of children were found to have incomplete vaccination status. In the outreach site of Khulm district (Mula Sultan & Mula Sadi villages) only 10% of the children did not have an up to date vaccination status. The obvious reasons for such phenomena stated by the caretakers was lack of awareness of vaccination (25% Aqtash, 31% Khulm), unawareness of the need for a subsequent dose (30% Aqtash, 15% Khulm), fear of side reactions (5% Aqtash, 15% Khulm), faith in immunization and rumours about immunization. The figures reveal that permission of the family is as important as being aware on the benefit of vaccination. Around 15% of female caretakers stated that the reason for missing doses of vaccination for their children was lack of permission from the family to attend the immunization session which brings up the need to work with male members of the family on importance of immunization for women and children.
From interaction with health staff and local communities, it was observed that the vaccination teams have outreach plans, but the local communities are not fully aware of the timing of outreach and the contact person, and that community health workers help the vaccination team only once the team arrives in the villages.

**DISCUSSION AND RECOMMENDATIONS:**

The finding in both locations shows higher levels of missed opportunities for TT among women compare to children that is 28 vs. 22 % for Parwan and 33 vs. 12 % in Balkh province. The findings are not very different than the studies conducted in India, Mozambique and Bangladesh that level of missed opportunities range between 15-25% (19, 20, 21). However, the consequences of such missed opportunities are great in Afghanistan where the coverage of immunization services is already low (22). Any attempt to increase coverage should take in to account the reasons for incomplete vaccination as a key for success (23). Perhaps, there is need for in depth assessment of health seeking behaviour of women (KAP survey) to come up with better conclusions (24).

Patient flow is one of the important mechanisms that could be organized in such a way to mitigate the risk of missed opportunities in health facilities. Perhaps introduction of clients to the health services through classic approach of presenting vaccination card could be effective way for both screening and referral of eligible clients. The registration process and initial refer and screening could have positive results in reduction of missed opportunities at health facility level, if followed properly. Every effort to be made by health workers to respect the vaccination schedule and provide on time vaccination based on the recommended vaccination intervals (25).

At each visit, mothers should be reminded to bring their child’s and their own cards.

Although in the observed facilities in this study, the location of the vaccination centre was close to OPD and MCH services, screening and referral system was not functioning due to lack of proper orientation of staff, follow up by both health staff and relevant supervisors. Any corrective action in these areas would significantly reduce level of missed opportunities in vaccination services. Promotion of one point services delivery with active screening systems will be a crucial step for reduction of missed opportunities.

The presence of visual posters and other IEC materials presenting the importance of vaccination and demonstrating the vaccination schedule in MCH and OPD sections will help
clients learn about the vaccination schedule and the number of doses required as well as reminding MCH and other section staff of their responsibility of screening eligible clients for vaccination and making time referrals to vaccination services. Health staff should have easy references and be able to respond directly to the client’s questions (26).

Family permission seems to play a crucial role in reaching eligible clients for vaccination in both fixed and outreach settings. The issue needs extensive behaviour change communication using various channels. The focus of such behaviour change communication should not only be limited to women, it should also focus on men and influential community figures as family decision and permission has community dimensions that should be consideration.

The fear of wasting BCG and Measles pushes the staff to make these antigens available twice a week and creates opportunities for missed opportunities. This contradicts the EPI policy that states no child should leave the health facility without receiving the services. Afghanistan’s EPI program administers a combination vaccine that gives a unique opportunity for the provision of more antigens in one go and reduces the number of necessary injections. (27) But, schedules for BCG/Measles create windows of missed opportunities for these vaccines since they are being provided once compared to the DPT or OPV vaccines (28, 29, 30). This issue needs to be re-visited by MoPH and relevant stakeholders and clearly communicated to the health workers so that any child who comes in to contact with health services receives what s/he needs.

The old system of vaccination registration is one main obstacle in finding defaulters. The registration is based on “first comes first registered” (name wise registration) system rather than dividing the clients registration based on their living location/villages. Village wise registration will help the vaccinators to find the children’s vaccination status more easily if they attend the clinic without card. This will also help the health workers to review village wise coverage and find monthly defaulters at the end of each month and take action to mobilize existing community based networks especially Community Health workers (CHWs) for support. This measure will be effective if supported by close supportive supervision until this system becomes part of routine practice. CHWs could play a big role in the follow up of such defaulters. The registration process of eligible clients to be bottom up process that should start from village and end at facility level target setting. Moreover, through CHW network, parents and health workers could be notified about the need to assess immunization at each visit that could reduce missed opportunities significantly (31).
The responses on fear of vaccination side reaction indicates that side reactions are occurring and proper communication and follow up on next visits are not taking place. This creates also room for rumours. A proper communication strategy through building interpersonal communication skills of health workers, provision of enough information to the clients and follow up of side reaction during sub-sequent visits would fill the communication gap, increases individual’s understanding and acceptance of risks (32) and avoid spreading of rumours against vaccination. This will also contributes to enhanced immunization coverage (33).

Local Area Monitoring systems need to be strengthened. Regular review meetings with active participation of relevant vaccinators are the main step in this regard. The monthly EPI review meetings should be encouraged at each facility level on a routine basis along with assessing progress of other services for better integration and understanding among staff in order to reduce missed opportunities and strengthen the screening system and active referral of eligible clients for immunization services. Active participation of vaccinators in such exercises increases their sense of ownership of the program and enhances staff moral.

Poor supportive supervision systems are obvious in both locations and the frequency and quality of the supervisory visits are main areas of concern. Frequent supportive supervision through the use of a simple and practical checklist with proper feedback, documentation of findings and recommendation of corrective actions will help the program managers and health staff to keep track of the progress made and bring about desired changes in the course of their activities. Orientation of staff could be facilitated since EPI is rich in having specific modules that could be used by health workers and supervisors (34). The possibility of introduction of health centre supervisory log books for recording and follow up of supervisory findings should be explored by the EPI program.

Traditionally, “an opportunity for immunization is missed when a person who is eligible for immunization and who has no contraindication to immunization, visit health facilities and does not receive all the needed vaccine”. Perhaps this would be the time to change this concept and expand its focus to those opportunities missed during outreach session while team is visiting the villages, but eligible children and women do not use the opportunity. This new concept may create more sense of accountability among health staff, CHWs, contact persons for better mobilization to reduce missed opportunities during out reach sessions as well.
LIMITATIONS:
This project covered limited number of health facilities and geographic locations. The project could not be scaled up to cover more facilities and have bigger sample size due to time limitation and budget constraint. The findings are not generalizable but they do give us a general idea of the situation and a direction for larger scale research.

REPORTING AND DISSEMINATION:
The study was conducted as part of the requirement for MSc degree of PHDC course of London School of Hygiene and Tropical Medicine (LSHTM). The topic for study was selected in consultation with General Directorate of Preventive Medicine of MoPH to make the findings and results useful for improving the immunization program in Afghanistan. The final report is submitted to LSHTM and a copy of final report will be submitted to MoPH research department in fulfilment of primary conditions for any study in the country. The possibility of making a presentation to discuss the findings for building consensus among local partners will be explored after the assessment project by the LSHTM.

PERSONS MET:
- Dr. Noormal, General Director of Afghanistan Public Health Institute (APHI)
- Dr. Lais Mustaf Head of Research Department, APHI
- Dr. Farzana member of Research Department, APHI
- Mr. Fahim member of Research Department, APHI
- Dr. Taufiq Mashal Director General of Preventive Medicine
- Dr. Ghulam Farooq Mojadidi Deputy Team Leader, BASICS (Basic Support for Institutionalizing Child Survival)
- Dr. Qadir Head of Strengthening Mechanism Department, central MoPH
- Dr. Ayub Azmon, Technical Officer SM
- Dr. Alawi Head of MoPH IMCI Department
- Dr. Rahmani, Master trainer of IMCI Department
- Parwan Public Health Directorate and PEMT staff
  (Dr. M Qaseem Saeedi Parwan Public Health Director, Dr. Faridullah Haidai Parwan Technical Health Adviser, Dr. Rahmatulla Sadid Parwan (CBHC) Community Based Health Care Coordinator)
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- Balkh Public Health Directorate and Balkh REMT
  Dr. Merwais Rabi Balkh Public Health Director, Dr. Basir Afzali REMT Manager, Mr. Mohammad Sadiq Cold Chain Manager, Mr. Merwais Balkh REMT supervisor, Mr. Abdul Bashir Cold Chain Technician, Abdul Ahad Cold Chain Technician, Ms. Farida EPI trainer, Mr. Ahmad Poheen EPI trainer, Dr. Haidary in charge of Khulm District Hospital, Dr. Ghafar, in charge of Malaria Department of Balkh Province (ex REMT manger for Balkh),

- Dr. Saboor Bahrami, Immunization Specialist, UNICEF Afghanistan
- Dr. Shokoor, National Professional Officer (TNP), WHO Afghanistan
- Dr. Abdul Wahid Wahidi, Health & Nutrition Specialist, UNICEF Afghanistan
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9. World Health Organization, Missed opportunities for immunization, WHO/EPI/GEN/92.8


15. Ministry of Public Health, Afghanistan Health Survey 2006 (estimates of priority health indicators for rural Afghanistan); the Johns Hopkins University- Bloomberg School of Public Health, Indian Institute of Health Management Research


17. Shafiqullah Hemat, Takehito Takano, Masashi Kizuki, Taufiq Mashal (2009), “Health care provision factors associated with child immunization coverage in a city centre and rural area of Kabul, Afghanistan”

APPENDIXES:

Appendix 1: Checklist for observation of vaccination session/Interview with health workers

Province Name: _________________________          District Name:_______________________________________
Name of Health Facility:__________________          Date of interview: _______/_____/_________

1. Observe the immunization session:
   1.1 Communication of main messages to the client (please insert √ for positive observation and X for negative observation)

<table>
<thead>
<tr>
<th></th>
<th>Obs-1</th>
<th>Obs-2</th>
<th>Obs-3</th>
<th>Obs-4</th>
<th>Obs-5</th>
<th>Obs-6</th>
<th>Obs-7</th>
<th>Obs-8</th>
<th>Obs-9</th>
<th>Obs-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does vaccinator explain types of vaccines administered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does s/he explain disease that the vaccine is preventing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information about possible reactions of the administered vaccine and its management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does s/he indicate date of next vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>About importance of vaccination card retention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If first contact, does the vaccinators explain the importance of completing all vaccination doses for full immunization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the vaccinators make sure that the mother understood the messages (getting feedback response)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2 Others

<table>
<thead>
<tr>
<th></th>
<th>Obs-1</th>
<th>Obs-2</th>
<th>Obs-3</th>
<th>Obs-4</th>
<th>Obs-5</th>
<th>Obs-6</th>
<th>Obs-7</th>
<th>Obs-8</th>
<th>Obs-9</th>
<th>Obs-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>If a child is eligible for more than one type of vaccine, does the vaccinator administer different vaccines in this visit?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the child accompanied by a women/mother, does the vaccinator screen the mother’s vaccination status?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Questions for health workers (after observation):

2.1 Did you hear about missed opportunity in EPI: YES ( ), NO ( ), If yes, when it may happen (tick the correct/incorrect answer)?
   - During visits for immunization services
   - During visits for curative or other preventive services
   - Other comments: _______________________________________________________________________

2.2 What are the reasons for missed opportunity? (Please insert ✓ for correct answer and X for incorrect answer)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to administer vaccines simultaneously</td>
<td>Logistical problems (shortage of supplies/vaccines)</td>
<td></td>
</tr>
<tr>
<td>False contraindication to immunization</td>
<td>Fear of wastage (scheduled BCG &amp; Measles)</td>
<td></td>
</tr>
<tr>
<td>Negative attitude towards clients</td>
<td>Client or family refusal</td>
<td></td>
</tr>
</tbody>
</table>

Other reasons: _______________________________________________________________________

3. Other observations:

3.1 Is EPI team located close to OPD/MCH sessions? (observe and note)

____________________________________________________________________________________

3.2 Do the MCH staff screen eligible children and women for vaccination? (Observe and note)

____________________________________________________________________________________

3.3 Is there follow up mechanism in place to make sure that the referred client gets the vaccine? (Ask & observe/note)

____________________________________________________________________________________

3.4 Are the MCH staff familiar with immunization schedule? (Ask the staff if they can explain the schedule)

____________________________________________________________________________________
Appendix 2: Women’s questionnaire

Today’s date: ______________________

<table>
<thead>
<tr>
<th>Health facility</th>
<th>Interviewer Name</th>
<th>Interview #</th>
</tr>
</thead>
</table>

### 1. What is your age?
- Age: ______ years
  - If the woman is between 15 - 44 years, go to question 2.
  - If the woman is NOT between 15 – 44 years end the interview and thank her.

### 2. Do you have your own immunization card?
- YES ____
- NO ____
  - If YES go to question 4
  - If NO, go to question 3

### 3. Are your immunizations recorded on your child’s card?
- YES ____
- NO ____
  - If yes, go to question 4
  - If NO, go to question 5.

### 4. May I see the card please? (Copy from card dates immunizations received in space below.)

### 5. How many times have you received a tetanus immunization? When did you receive each dose?
(Tick each dose woman reports received and record approximate date below.)

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>If card available, record:</th>
<th>If card not available, record each dose and approximate date</th>
<th>Recommended minimum interval</th>
<th>Doses missed today</th>
</tr>
</thead>
<tbody>
<tr>
<td>TT1</td>
<td>Day</td>
<td>Month</td>
<td>Year</td>
<td></td>
</tr>
<tr>
<td>TT2</td>
<td>4</td>
<td>weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TT3</td>
<td>6</td>
<td>months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TT4</td>
<td>12</td>
<td>months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TT5</td>
<td>12</td>
<td>months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6. Decide: Did this woman receive the dose of TT for which she was eligible today?
- YES ____
- NO ____
  - If YES, go to question 9, and Mark NO missed opportunity.
  - If NO, go to question 7.

### 7. Did the health worker offer you TT immunization today?
- YES ____
- NO ____
  - If YES, go to question 8.
  - If NO, go to question 9 and mark YES missed opportunity.

  Record any comment the women makes about why immunization not offered.

  COMMENT: ____________________________________________________________

### 8. Did you decline TT immunization when it was offered?
- YES ____
- NO ____
  - If YES, go to question 8, and mark NO missed opportunity.
  - If NO, go to question 8, and mark Yes missed opportunity.

### 9. Was there a missed opportunity?
- YES ____
- NO ____

If YES, ask the woman to go back to the health worker to receive the immunization.

THANK HER FOR HER COOPERATION.
Appendix 3: Child’s questionnaire

<table>
<thead>
<tr>
<th>Health facility</th>
<th>Interviewer Name</th>
<th>Interview #</th>
<th>Today’s date</th>
</tr>
</thead>
</table>

1. What is your child's age or date of birth?  
   If the child is **more than 2 years old**, go to the women's questioner  
   If the child is **less than 2 years old**, go to question 2

   **Age:**  
   **Date of birth:**

<table>
<thead>
<tr>
<th>Months</th>
<th>weeks</th>
<th>day</th>
<th>month</th>
<th>year</th>
</tr>
</thead>
</table>

2. Does the child have an immunization card? **YES** ____ **NO** ____  
   If YES, go to question 3  
   If NO, go to question 5

3. Have you brought the card with you today? **YES** ____ **NO** ____  
   If YES, go to question 4  
   If NO, go to question 5

4. May I see the card please? (Copy from card dates immunization received in space below.)

5. Which immunizations has your child received? (Tick each dose mother says child received and record approximate date below.)

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>If card available, record:</th>
<th>If card not available, record each reported dose and approximate date</th>
<th>Doses missed today</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Day</td>
<td>Month</td>
<td>Year</td>
</tr>
<tr>
<td>BCG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPV Zero</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPV 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPV 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPV 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP-HepB-Hib1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP-HepB-Hib 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTP-HepB-Hib 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Decide: Did the child receive all the Immunizations for which he or she was eligible today? **YES** ____ **NO** ____  
   If YES, go to question 8 and mark NO missed opportunity,  
   If NO, go to question 7.

7. Your child was eligible to receive an immunization today. Do you know any reason why your child did not receive immunization?  
   Listen to the mothers reply.  
   If her answer is listed in the first column, mark it,  
   If she reports any other reason; write it down in the second column

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child has clinical AIDS</td>
<td>OTHER REASONS:</td>
</tr>
<tr>
<td>Child had severe reaction to previous dose of DPT</td>
<td></td>
</tr>
<tr>
<td>Child is being admitted to hospital</td>
<td></td>
</tr>
<tr>
<td>Mother declined immunization which was offered</td>
<td></td>
</tr>
<tr>
<td>because:</td>
<td></td>
</tr>
</tbody>
</table>

   If any answers are marked here, go to Q-8 and mark NO missed opportunity

8. Was there a missed opportunity? **YES** ____ **NO** ____  
   If YES, ask the mother/woman to go back to the health worker to receive the immunization.

   If NO, go to women’s questionnaire, if any women accompanied this child.

**ANSWER ANY QUESTIONS THE RESPONDENT MAY HAVE ABOUT IMMUNIZATION. THANK HER FOR HER COOPERATION**
## Appendix 4: Household survey form

### Household Survey Form

(Vaccination status among children 0-23 months)

**Name of Health Facility:**

**Name of Village:**

**Date of Assessment:**

---

### Vaccination status

<table>
<thead>
<tr>
<th>Vaccination status</th>
<th>0-11 months old (based on card or re-call)</th>
<th>12-23 months old (based on card or re-call)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Incomplete</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Complete</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Reasons for incomplete vaccination

<table>
<thead>
<tr>
<th>Reason for incomplete vaccination</th>
<th>Please tally here (it is possible to have more than one reason for incomplete vaccination)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaware of need for immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaware of need to return for subsequent doses (schedule)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place and time of immunization is unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear for side reactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family did not allow (refusal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rumours about immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No faith in immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postpone until another time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child ill- not taken to HC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family problems including illness of mother</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother too busy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of immunization is too far</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of immunization is inconvenient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccinator absent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccine not available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long waiting time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ill child taken to HC, but not vaccinated by vaccinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misbehaviour of health staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Any other reason not listed above:**

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Number of HHs interviewed: ( )  
Name & signature of data collector:

Number of individuals in the study: ( )
Appendix 5: IRB approval of MoPH, Afghanistan

To:
Abdul Haq Waheed, MD
Candidate for MSc Public Health in Developing Countries,
LSHTM

Subject: Approval for proposal entitled, “Risk factors for incomplete vaccination and missed opportunities for immunization of children under two years of age in rural Afghanistan”.

Dear Sir,

Institutional Review Board, Ministry of Public Health has examined and reviewed your proposal entitled, “Risk factors for incomplete vaccination and missed opportunities for immunization of children under two years of age in rural Afghanistan.”

We are pleased to note satisfactory response to our comments therefore, your study is approved. However, we reserve to the rights to monitor and audit your study and any violation of ethical norms during the course of study shall lead to withdrawal of given approval.

You are bound to share the result of your study with MOPH prior any dissemination plan.

Best regards,

Dr Mir Lais Mustafa
Secretary
Institutional Review Board
Afghan Public Health Institute
Ministry of Public Health