



# **Newborn Indicators Technical Working Group Meeting Notes**

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Saving Newborn Lives, Washington DC



**Save the Children®**

The Newborn Indicators Technical Working Group (TWG) met on July 10-11, 2013 at the MCHIP office in Washington DC. The first day of the meeting focused on reviewing the status of newborn data collection through routine monitoring systems, establishing objectives for a sub-group to focus on routine systems, and identifying indicators to recommend within the Every Newborn report. The second day of the meeting included a wider range of participants and focused on sharing updates from sub-groups, discussing emerging measurement issues for newborns, and agreeing on a process to develop a formal terms of reference for the TWG. The agenda for each day is provided in Appendix 1 and participants are listed in Appendix 2.

## **Day 1: July 10<sup>th</sup> – Sub-group on Routine Monitoring Systems**

### **1. Welcome and introductions**

Lara Vaz gave welcoming remarks, the background on the Newborn Indicators TWG, and an overview of the objectives for the meeting. The focus of this meeting was to form a sub-group to focus on routine health system data, including developing recommended indicators, tools and guidance. Objectives included reviewing what has been done to date on inclusion of newborn-related data into routine monitoring systems; defining the scope of work, outputs, and timeline for the sub-group; agreeing on the approach to develop recommendations on newborn indicators for national HMIS and other routine systems; and identifying indicators to recommend within the Every Newborn report. Lara also reviewed status and purpose of Every Newborn, a roadmap for change at both global and country level. The Every Newborn core global team approached the TWG to recommend indicators for inclusion in the action plan, with a focus on indicators that can be collected through routine systems. More information on Every Newborn can be found on the website. ([www.globalnewbornaction.org](http://www.globalnewbornaction.org)).

### **2. Scope, methods and results of IDEAS' review of MCH related data collected through routine monitoring systems in 3 countries**

Bilal Avan from the London School of Hygiene & Tropical Medicine (LSHTM) presented on the work of the Informed Decisions for Actions in Maternal and Newborn Health project (IDEAS) (<http://ideas.lshtm.ac.uk/>) funded by the Bill and Melinda Gates Foundation (BMGF). IDEAS is a five year (2010-2015) effort to evaluate and provide technical support to implementation projects funded by Gates in three countries (Ethiopia, India – UP, and Nigeria). IDEAS tests the part of the BMGF theory of change that posits that increased quality of interactions between health workers and families will lead to higher coverage and improved outcomes.

First, Bilal presented IDEAS' work to harmonize maternal and newborn health indicators among BMGF grantees in India and Ethiopia. The process consisted of reviewing indicators, identifying gaps and variation between denominators and numerators, and then harmonizing the list of indicators with partners. The indicator list is available online at <http://ideas.lshtm.ac.uk/blog/why-harmonise-indicators>. Bilal emphasized that harmonization is an ongoing process that requires continual adaptation.

IDEAS aims to measure the strength of implementation of maternal and newborn innovations in order to investigate their impact on coverage of services and survival; this required a review of the information available through health systems and various projects. They reviewed the content and structure of all available information systems at district levels in three countries (Nigeria, Ethiopia, India), identified who the stakeholders are and explored how these systems and stakeholders interact. This review led to feasibility



studies which suggest using a "data informed platform for health" to promote use of local data for decision-making and comparisons at regional level (all three reports available at: <http://ideas.lshtm.ac.uk/resources>).

The review noted important differences between information systems in Ethiopia and India. Ethiopia has a list of 135 indicators that can be found at all levels of the system using the same definitions, while the system in India is more fractured with a multitude of data collection systems at different levels. In all systems, more data may be available at lower levels, even if it does not feed up to higher levels. There were missed opportunities for linkages. In India, there are community workers conducting surveys of their catchment populations each year, but this information does not go to the district, which instead uses projected denominators. In Ethiopia, community-based health workers were frustrated because they were collecting information on their communities, while the district was telling them what their population size was and setting targets based on those.

In addition, a number of observations were made about newborn indicators included in the HMIS, including: lack of consistency across levels of the health system, non-systematic sets of indicators across the continuum of care, extensive capture of information around antenatal care with large gaps for the postnatal period, and substantive variability in quality by district and by facility. Additionally, newborn denominators were based off of projections, despite availability of data on catchment populations collected by community workers, who may or may not be part of the health sector. Improved data at the district level requires triangulation of available data sources beyond HMIS. Cycles of data collection at district level and community level happen at different times, which make it difficult to share information. Project data, while transient, includes additional information that may not be linked to government systems and are an under-used resource.

#### Questions and discussion points:

- How long did the review process take for the feasibility studies?
  - o Studies took at least one year with a team of central and country-based staff gathering the data. A study was first conducted in Nigeria, then subsequently carried out in Ethiopia and then India. The process was quicker as the methodology became more streamlined and focused.
- Did they look at what data elements are required for each of the building blocks of health systems?
  - o The purpose of the review was to understand what is available through the system, then mapped to the building blocks.
- Were the methods for collection of the indicators also harmonized across partners?
  - o Indicator harmonization took two years, as some partners hesitated to share information and locating data collection materials for the content analysis took time. Partners did add indicators from the harmonized list if they were missing them, which happened through negotiations since it was not mandatory to use them. Harmonizing methods is even harder than harmonizing questions and analysis; methods still vary in the field.

### **3. IDEAS' study on the quality of HMIS data related to MCH**

Tanya Marchant from LSHTM presented on newborn data extracted from maternity registers in facilities across five countries through the IDEAS and Expanded Quality management Using Informed Power for maternal and newborn health (EQUIP) projects.

EQUIP is a quality management intervention trial funded by the EU working to improve quality at community, facility, and district levels by bringing people from all levels together to review synthesized data. The trial is being implemented in 4 districts in Tanzania & Uganda. Community level household survey data are collected

monthly (for 30 months), facility data are aggregated at district level every 4 months, and interviews are done with front line health workers. Data from all sources are then synthesized into report cards for use by quality management teams.

Under both IDEAS and EQUIP, data were extracted from maternity registers and recorded on PDAs at the point of extraction. These data are used to look beyond contact with health workers to assess content of care, with the aim of enhancing coverage of life-saving interventions. By linking data sources –household surveys, facility assessments, interviews and routine data – data can be used to look at effective coverage, or the number of beneficiaries that had contact with health workers and received key services.

Tanya Marchant presented data on five indicators (maternal deaths, stillbirths, low-birth weight, APGAR score, and admission to facility for newborns) extracted from facility maternity registers for about 50,000 births. These numbers were then compared to population-based data estimates from other sources:

- Maternal mortality ratio estimates were vastly different from estimates from the 2011 State of the World's Midwifery report, with gross underreporting of deaths likely in countries where more women are delivering in facilities (Uganda, Tanzania)
- Estimates of stillbirths were closer to those found through population-based data estimates.
- Low birth weight had very little missing information but was of poor quality and grossly underreported; data was often qualitative (birth weight above or below 2,500g instead of recording actual weight of newborn).
- High levels of missing data were found for 5 minute Apgar scores, with low Apgar scores not captured at all. Ethiopia was an exception with good distribution of Apgar scores. It was hard to estimate asphyxia with such levels of missing and poor quality data.
- Newborn admittance to facilities was very low, and unfortunately there were no population-based data estimates for comparison.

In general this exercise was useful for extracting raw data to examine reporting at local levels, but data were difficult to interpret and generalizations across countries were impossible. That said, where facility delivery was high, estimates from register reviews generally did not approximate population level estimates from household surveys. Data extraction will continue for about another year.

#### Questions and discussion points:

- What changes have been seen in quality of care in EQUIP areas?
  - EQUIP has a strong emphasis on decision-making and ownership of data. Facility providers are making changes in their reporting when they are not close to population data. EQUIP is trying to get people to feel ownership of data and improve the quality of data they are recording.
- To what extent is content of care being extracted in the EQUIP study or being strengthened?
  - It was clarified that content of care information for data reviews comes from household surveys due to the difficulty in interpreting facility level data. The survey tools used by EQUIP are a combination of the SPA and DHS surveys. Content indicators from the labor ward are not included in review. The project did extract data from partographs, but the quality of data was poor, interpretation was difficult and data not worth reporting.
- How good are the estimates that you are comparing to (e.g., HBB estimates very high at about 25% having Apgar <7)?
  - It is an issue. This TWG could engage with people working on these estimates to encourage improvements of estimates. As more data becomes available the quality of the estimates should improve, as they will be less reliant on modeling.
- Participants asked for more information on the EQUIP report cards

- In EQUIP, report cards were tailored towards the types of change the quality management teams had identified as areas to work on (i.e., compare readiness of facility and numbers of providers trained to numbers of newborns experiencing danger signs from household surveys). These comparisons then can be used when deciding what can be done in the district and at facilities. These report cards are not available on the EQUIP website, but Tanya M can share.
- Efforts to increase data literacy among provider teams are taking much more time than expected

#### **4. Overview of WHO's work on strengthening routine monitoring systems**

Matthews Mathai from the World Health Organization (WHO) gave a presentation on their work around strengthening routine monitoring systems to improve accountability. There is a large demand for information and accountability for many reasons, including the end of the Millennium Development Goals (MDGs) and grant-related performance-based funding and evaluation. The Commission on Information and Accountability (COIA) has laid out ten recommendations that require country and global level actions. WHO has set strategic priorities to build country capacity in M&E to meet those recommendations:

- Strengthening M&E plans: National M&E plans are often available but need to be harmonized with specific program M&E plans. Plans do not usually address capacity building. Guidance is available to help strengthen plans. The next steps include developing/finalizing/improving M&E plans and finalizing guidance on a compendium of WHO core indicators for monitoring national health plans.
- Addressing data gaps/strengthening data sources: WHO has a number of activities, including improving the quality of HMIS data by applying WHO standards on data quality (next step is to develop guidance on standard indicators and develop data quality reports), facilitating web-based systems (DHIS), monitoring inputs through SARA and other tools, and strengthening birth and death registration.
- Building analytical capacity for health in country institutions
- Strengthening analytical review of progress and performance
- Improving accessibility and transparency

#### Questions and discussion points:

- A compendium of core indicators is being developed, Matthews will investigate if newborn indicators are being included and share the compendium with the TWG.
- Is there coordination between SARA and SPA? SARA is going to include a module with some observations and is coordinated with the SPA. However, SARA does not currently have as many newborn specific indicators as in the updated SPA.
- Advocacy for vital registration (basic foundation of what we count) should be an objective of this TWG.

#### **5. Short updates from other attendees on work related to routine monitoring systems**

Allisyn Moran from USAID expanded on the development of scorecards as part of A Promise Renewed. The African Leaders Malaria Alliance (ALMA) developed a scorecard for malaria, which they have been asked to adapt to RMNCH (<http://www.alma2015.org/alma-scorecard-accountability-and-action>). Process indicators for monitoring program delivery are the focal point of the exercise; many countries are developing scorecards now. Scorecards are intended to include COIA indicators, but as they are country-specific and they may include different indicators, especially if data on COIA indicators are not routinely available.

Several lessons have emerged from the scorecard development process thus far. In Nigeria, the process of developing the scorecard raised awareness around data gaps, as they realized they did not have the data for

some of the areas they were interested in monitoring. This is a possible entry point to advocate for improving routine systems and to link to Every Newborn as the same processes and groups are involved. The consensus is that scorecards should include routine information rather than national level survey data (DHS/MICS), which are only updated every few years and already captured through COIA, Countdown, etc.

In India, data quality was highlighted as an issue, as well as engaging the private sector – especially in states where private providers are the main sources of care. IDEAS is looking at strategies to engage the private sector in India, which it can share in the future. In Ethiopia, the government has greater regulation of the private sector by requiring registration in order to operate a clinic. The private sector falls under the HMIS net, and government is able to compel private providers to report through the district, feeding into the HMIS. However, although the private sector has monthly reporting forms, the system is not fully functional. Ethiopia is also interested in linking the scorecards to other related ministries, but this will require a change of culture at the federal level. There is a similar situation in francophone Africa, where the private sector is often involved in HMIS and district level planning meetings.

Mathews Mathai showed scorecards for Ethiopia and Nigeria. Scorecards are Excel-based; there is an iPad ‘app’ so national-level policy leaders can review their data in real time (an iPad was given to each minister in Africa). The scorecard specifies a data source for each indicator and data are provided at the regional level, with a focus on process data. The data are then compared against targets using a ‘traffic light’ system. National level outcome indicators are also included at the top of the scorecard for easy reference. Frequency of updating the scorecard varies by country, but typically happens on a quarterly basis.

Six to seven priority countries have been identified to develop scorecards, with a supporting agency assigned to each. Countries, and their supporting agencies, are: Malawi (WHO), Senegal (UNICEF), Uganda (UNICEF), Tanzania (LSHTM – Joy Lawn), Liberia (USAID), Bangladesh (USAID), Nigeria (E4A).

The scorecard development process aims to be country-driven and -owned, guidance focuses on principles to allow countries latitude; there will be quite a bit of variability. The steering committee is trying to link the scorecards to a review process, such as annual reviews, to drive action. There are data gaps particularly around postnatal care; limited information is captured through routine systems, and data from surveys are infrequent but give information on breastfeeding, etc. There is a need for quality of care indicators – not just service delivery counts or ‘crude coverage’. MCHIP and WHO have made progress on the maternal side for quality of care. This TWG could become more involved to strengthen the newborn quality piece (note that Joy Lawn is part of the group).

## **6. Scope, methods and results of MCHIP’s review of MNH related data collected through routine monitoring systems**

Vikas Dwivedi of MCHIP gave a presentation on the scope, methods, and preliminary results of MCHIP’s review of MNH-related data collected through routine systems, with a focus on data reported by health facilities to district level. The purpose of this activity was to review MNH and MIP (Malaria In Pregnancy) indicators included in routine monitoring systems, identify gaps, advocate for incorporation of new indicators on content and quality of MNH services, and provide recommendations to WHO on MIP-related indicators and data collection formats. HMIS tools were reviewed from 14 countries, including 6 PMI focus countries where in-depth country interviews with providers were also conducted. The team developed a data extraction template with indicators on ANC, delivery, and immediate postnatal care and then reviewed tools from each country against this list.

For ANC indicators, a few indicators were included in facility reporting forms in nearly every country (ANCI, ANC4, TT) while others (treatment for syphilis, treatment for malaria) were captured in few countries. It should be noted that some information is not reported because it is not included in national policy – such as IPT. Capture of indicators on delivery was somewhat more mixed; while most countries included cesarean delivery, information on place of delivery and skilled birth attendance were only captured in half of the countries reviewed. Duration of labor and fetal heart rate were not captured in facility reports for any country and complete partograph included only in Mozambique. For postnatal newborn-related indicators, many were captured in just a few countries. Only stillbirths were captured by the majority of countries. Few countries capture early newborn deaths (by cause), treatment of newborn complications, type of newborn complication, or skin-to-skin contact after birth. About half of countries capture breastfeeding within one hour.

In some cases, data may be recorded at facility level, but not captured in HMIS reporting forms (ex., newborn resuscitation is recorded in Nepal, but is not part of reports submitted to the national level). The review assessed these gaps between recording and reporting, though there was not time to discuss in detail during the presentation.

In general, it was difficult to compare indicators across countries as indicator definitions varied. Often forms did not include clear instructions or job aides on how to capture and analyze HMIS data. There was little information reported on the quality and content of delivery or life-saving interventions for newborns; more information on ANC was captured.

#### Questions and discussion points:

- Participants raised the issue of what indicators should or should not be included in an HMIS. In particular, what indicators can be taken *off* the list of what is being collected? That is as important as recommending new indicators. This TWG may want to assess what is collected currently, with feedback on what is or is not useful.
- Registers should be tested before rolling out, and the content of what is recorded compared to what is supposed to be reported in HMIS as they often do not match.
- There is a need to focus on data utility, as there are few incentives among providers to invest energy in recording if the data are not used or if it is not understood how data are used. We can empower frontline providers to use basic measures instead of numbly reporting data into HMIS. Different information is important at local level. We also need to invest in increasing providers' capacity to use data at the health facility level.

## **7. Results from SNL's review of newborn data collected through HMIS**

Tanya Guenther from SNL/Save the Children presented an overview of what indicators are recommended for coverage and quality of key newborn interventions, and capture of these indicators in routine systems. Often routine systems are the only way to collect information on high impact interventions, as they cannot be reliably captured through other methods such as household surveys. Indicators related to four areas of newborn care were examined – Kangaroo Mother Care (KMC), asphyxia management, infection management, and routine postnatal care (PNC).

KMC indicators for HMIS were recommended in the KMC Implementation Guide (<http://www.mchip.net/node/975>), but are not collected in routine systems in 4 countries where a review of KMC implementation was recently completed. Instead, programs used their own registers and there was little

consistency in data collection within countries. Likewise, the Helping Babies Breathe (HBB) Implementation Guide (<http://www.helpingbabiesbreathe.org/implementationguide.html>) includes recommended indicators for asphyxia management, yet countries rolling out interventions to improve asphyxia prevention and management are not collecting these indicators through HMIS systems. Instead, separate program registers were developed in each country.

There are no recommendations on HMIS indicators or newborn infection management or routine PNC. The review found that few countries recorded data on newborn infection management within routine systems, with some exceptions. While a few countries have PNC registers, little information is captured in facility reports.

In general, there are limited recommendations on indicators to collect through routine systems on newborn related services and recommendations are not implemented when they exist. When data are collected, clear definitions for indicators are often lacking leading to variability across countries in how indicators are calculated. Further, although data on newborn services may be recorded at facility level, there are often gaps in what is aggregated and reported within the HMIS, representing a missed opportunity.

#### Questions and discussion points:

- Could KMC indicators be collected during facility assessments?
  - o Readiness to provide KMC can be – including equipment and training – but difficult to collect information on service delivery through facility assessments.
- Indicators for asphyxia should not focus only on management, but also look at prevention of asphyxia.
- What about looking at newborn admission or re-admission rates?
  - o Difficult to do because where the newborn is sent varies by facility and information on newborn care provided is scattered in different registers across the facility. MCHIP reviewed newborn admissions data in Timor – data were captured in several registers, including outpatient registers, and consequently this meant combing through the whole list of admissions to look at age to find newborns admitted.
  - o There is movement towards developing a discharge checklist that could be used as a job aid but also to record information on newborn care. There are many readmissions, and it is unclear whether mothers are counseled on how to care for newborns, so there is need for a tool to encourage counseling.
  - o Could create a problem of double counting because same child and same case of illness recorded many times.

### **8. Defining objectives for routine monitoring sub-group**

The group discussed objectives for the sub-group, based on the presentations and ongoing activities, and agreed that the needs at different levels of the health system should guide their work. The request from Every Newborn gives the group the opportunity to advocate for indicators on crude coverage of key interventions that are most useful at national level for tracking roll out of programs for advocacy purposes. The group agreed it could develop such indicators in the short-term – details on the recommendations and next steps are described in the next section. Meanwhile, the group committed to the long-term development of recommended indicators, tools, and guidance for use at local and national levels, with a focus on quality of care.

For the long-term objectives, the group discussed the need to critically list and think about all the various dimensions of quality for maternal and newborn health before deciding what should be measured. The



guidelines and tools to be developed by the group will also need to address that systems have different capacity levels and determining what is feasible to capture and use within systems will vary. Thus, guidelines will have to acknowledge how routine data systems are organized.

#### Sub-group Objectives:

1. Provide inputs to Every Newborn on a short set of indicators to include into national HMIS by mid-September
2. To identify indicators of coverage and quality for inclusion at different levels of health system
3. Review and provide guidance on documentation and data capture for different levels of health system

#### Action steps:

- Short-term action steps are listed below
- Mary Drake from MCHIP/JHPIEGO and Kathleen Hill from URC agreed to lead future work towards the sub-group's long-term objectives.

### **9. Recommendations for the Every Newborn Action Plan**

The Every Newborn core team has requested recommended indicators for routine data systems, including indicators to track scale up (i.e. crude coverage) of key interventions. The group does not want such a list to become the only recommended indicators for tracking newborn care. Within this request, there is the opportunity to include brief guidance on data use – what data are appropriate for each level of system, and how routine data systems can be used. The group also agreed that the recommended list of indicators should include what each indicator does and does not tell you. Recommendations could also suggest alternate approaches for data collection to fill in gaps in a country's routine system.

Every Newborn appears to be focused on key interventions that fall into what has been called '3x2 plus 1' – a prevention and treatment intervention for each of the 3 main causes of newborn death plus essential newborn care (ENC), which underlies all interventions. The group therefore discussed indicators for national level tracking of these interventions. ENC includes several behaviors, so we need to consider one or two tracer interventions that are key signal functions for ENC and are typically collected through routine systems, such as early breastfeeding. We also need to consider interventions that have multiple effects – e.g. drying and wrapping provides thermal care and stimulates breathing; immediate breastfeeding provides nutrition, facilitates skin-to-skin, and prevents infections. There are a number of dimensions for each of the 3x2+1 interventions, but not all can be captured without overwhelming the system, so there is need to identify which dimensions are most important.

As recommendations are developed, we need to think about what managers want and need to know, and not focus on what systems typically capture. There is also need to contribute to the standardization of definitions and instructions on filling in registers/forms to improve data quality.

Related to Every Newborn, the group will also advocate for improving newborn related indicators on country scorecards, which are used for the purposes of advocacy rather than quality improvement at local level. PNC may have been included on scorecards, but there is need for better information, including indicators for key interventions.

#### Action steps:

- Map indicators that were reviewed by MCHIP, IDEAS, SNL against the 3x2+1 model to see what information seems to be collected or not collected in countries (SNL agreed to lead)
- SNL (Lara, Deb, Lyndsey) agreed to take a lead in drafting indicators for Every Newborn. Draft will be shared with the sub-group in early August with a call to discuss in mid August.

- SNL, USAID, WHO, and MCHIP will discuss how to contribute to national scorecards.

## Day 2: July 11<sup>th</sup> – General Meeting, Newborn Indicators TWG

### 1. Welcome and introductions

Lara Vaz from SNL/Save the Children gave welcoming remarks, background on the Newborn Indicators TWG, and an overview of future directions including recommendations for routine health system data, ongoing improvements to survey questions, and development and testing of metrics for key newborn interventions.

Objectives for the meeting included: 1) reviewing progress from sub-groups since December 2012 and agreeing on next steps, 2) providing updates on measurement issues emerging from PLoS supplement, and 3) discussing a formal terms of reference for the TWG.

### 2. Overview of partners' work related to routine monitoring systems

Bilal Avan (IDEAS), Tanya Marchant (IDEAS), Matthews Mathai (WHO), and Vikas Dwivedi (MCHIP) gave condensed version of the presentations from the previous day on what work their projects/organizations have done around routine data collection systems. Summaries of these presentations can be found in the Day 1 part of this report; below is a summary of important questions and discussion points that emerged on the second day of the meeting.

Questions and discussion points:

- The group discussed issues with cause of death data. There are groups working in this area, including groups aiming to improve verbal autopsies. This TWG should stay in touch with those efforts; a meeting may be planned later this year on this issue.
- What did IDEAS observe about community data collection systems in terms of populations that are mobile and not static?
  - o Relying on community-based health workers as they conduct annual surveys to update the population figures, or other workers that update family records on an ongoing basis, is sensitive to such changes. But again, this information is not included when determining the population projections.
- The group discussed findings from IDEAS/EQUIP on poor recording of LBW, deaths, and Apgar scores
  - o Scales were generally available at facilities, so poor reporting of LBW may be due to poor capturing. LBW may be underestimated if scales are not precise and if providers round up to 2500g. Translation issues may also contribute to underestimation of prematurity (Example from India - premature translated to "9 months" when full gestation is 10 months).
  - o Facility staff may not want to record deaths or fresh stillbirths, which requires accountability for what happened
  - o Apgar scores are so inaccurate at lower levels to not be worth recording. May need to change this recording as it may not be realistic for basic level health facilities to capture.
- The group also discussed data quality and reasons for poor quality:
  - o Poor data quality is evident from IDEAS/EQUIP data, which shows that even where health facility deliveries have become the norm, estimates based on facility routine data do not approximate what we expect to see based on population estimates (estimates from facility routine data often lower than expected).
  - o EQUIP project found they had grossly overestimated data literacy. Clinical staff are often not trained or oriented to the purpose of data collection, what should be gathered, for what purpose, and how it can be interpreted. As long as this is disjointed (record clerk responsible

- for tallying and reporting), data quality will be a problem. However, data literacy varies tremendously country to country.
- Data quality can be improved by reducing the amount of data collected. Registers are already so packed and cumbersome – this is really an area of interest and yet a challenge to balance data needs (including partner/donor demands) with data quality
- Data collection needs to be tied to clinical actions. Therefore, risk factors (preterm, complications, etc) and not just interventions need to be recorded. Tying reporting to clinical actions may also improve data quality; data collectors are not motivated to collect quality data as they don't see that the data they submit are being used.
- Every Newborn, WHO compendium, and demand from countries all present opportunities to propose new indicators

### 3. Objectives and scope for sub-group on routine monitoring

Lyndsey Wilson-Williams from Save the Children shared an overview of the objectives for the sub-group on routine monitoring, as agreed upon during the first day (see Day 1, above).

The overall aim is to recommend information for different levels of the health system, based on the needs at each level. In order to reach that goal, immediate tasks include: mapping indicators that are typically collected in routine systems (from MCHIP, IDEAS reviews) to the Every Newborn 3x2+1 schematic, complete a list of recommended indicators for national level tracking to include in Every Newborn, and draft language on the larger context of data collection and uses to include with indicators in Every Newborn. Long-term tasks include: work with IDEAS to explore feasibility of recommended indicators in Ethiopia, unpacking aspects of interventions to identify what areas can be measured through routine systems, and to make recommendations for indicators for tracking at all levels of the health system that reflect different country capacity levels.

Discussion points:

- To develop indicators, we could put the 3x2+1 interventions (see explanation above) into a matrix and identify information needs at each level of the health system
- The purpose of unpacking aspects of interventions is to see if there are dimensions not typically collected, such as patient-defined quality, safety issues, etc, that should be considered.
- Again, data collection feasibility was discussed. There may be many indicators to explain specific aspects of a single intervention, so there is need to select a short list of indicators that are relevant and feasible to collect and report through the system.
- We might consider a standard, minimum set of indicators along with a menu of additional indicators that could be added. But, while country capacity varies, still want to have a minimum set to hold countries accountable, so need to identify the right minimum set.
- The group also discussed the importance of triangulating different data sources; this may be an issue to discuss with UNICEF and other interested groups in a separate meeting

### 4. Discussion of PLOS supplement on measurement and implications for newborns

Allisyn Moran of USAID gave a presentation on the CHERG-funded PLoS supplement published in May 2013 on measuring coverage in maternal, newborns, and child. The supplement contained 16 articles (10 review articles and 6 original research) that all looked at some aspect of coverage measurement from household surveys. The Newborn TWG was asked to submit a review article on newborn indicators - postnatal contacts and newborn care behaviors and practices. All articles are available online at: <http://www.ploscollections.org/article/browse/issue/info%3Adoi%2F10.1371%2Fissue.pcol.v01.i16>



Among the six research articles, a validation study on intrapartum indicators in Mozambique by MCHIP had a number of interesting findings that impact the work of this TWG. The study involved direct observation of births and one hour after birth, with follow up interviews of mothers about 9 months after, using questions similar to DHS or MICS. This recall study found women were able to accurately report drying/wrapping and skin-to-skin care, so we can be more confident in recommending these indicators for household surveys.

The Mozambique study also had interesting findings around the immediate breastfeeding indicator, which is an indicator that has long been used by different sectors including nutrition. Breastfeeding within 1 hour after birth did not meet the 2 criteria for validity - individual or population level – meaning women did not accurately report if they breastfed within 1 hour after birth. However, the follow-up survey used in this study did not ask the question in the same way as DHS and MICS (which use 2 questions to calculate the indicator - "Did you breastfeed?" , "When did you first put the baby to the breast?"), but rather asked women "Did you breastfeed within one hour?" Therefore, findings on validity of the indicator need to be interpreted with caution. There may be a problem with the indicator and there may be need to change how questions are asked, but more validation studies are needed. Population Council will do a similar validation study in Kenya and Mexico.

There is still need to refine indicators on postnatal contacts and to understand what they capture. First, is it feasible to combine indicators for the women and baby? For now, there are too many discrepancies between the number of women and babies receiving postnatal contact to combine. Second, do these contact indicators capture intrapartum or postpartum care? DHS data show women report receiving PNC care mostly within 6 hours after delivery, and only asks about the first contact. The MICS4 module did ask separate questions about care received before and after discharge, so that data will help our understanding of whether postnatal care is received after discharge. UNICEF will submit an article on postnatal contacts using MICS data at a later date.

Another review article on antibiotic coverage of children with pneumonia raised a lot of issues, including the capacity of accurately capturing illness, and is important to consider when we think about measuring newborn infections and treatment.

#### Questions and discussion points:

- What is the clinical relevance on placing the baby on mother's chest for what might be a short time?
  - o The recommendation is for skin-to-skin contact as long as possible for thermal control and stability. First hour is the most vulnerable time for hypothermia, and thermal stability can be achieved more rapidly with skin-to-skin. However, the evidence for skin-to-skin contact for longer periods of time is not well established. Time is not usually included in the indicator because women have trouble recalling time. We hope we can get new secondary data on duration of skin-to-skin from a study site in India.
- An IDEAS PhD student is also conducting a qualitative validation study on newborn behaviors and timing by applying standard survey questions (with harmonized IDEAS indicators) and cognitive interviews on the birth story. The results from these two sources do not match, and recall of outcomes are not related to education level. Stan Yoder did a study that showed similar results, and concluded timing is really difficult to estimate through recall.
- There needs to be awareness-raising about what services should be provided during visits so women know what to look for, which helps recall.
- All indicators require a certain amount of probing indicators to set the stage. Instruction manuals are included for DHS and MICS to help interviewers probe and explain the question, and can be modified to help interviewers ask the new questions on newborn care.
- Timeframe questions must be informed by when services are most effectively delivered.

- The TWG has planned to look at data on contact and content to see if they match – do women who do NOT report contact report receiving elements of care and vice versa – to better understand if contact indicators are capturing actual care. IDEAS surveys asked about content during contacts then also asked for confirmation if any actions happened at any time, and found low quality of care.
- The group also discussed questions about newborn danger signs. In other studies, reporting of omphalitis, rapid breathing, nor any single danger sign was not a predictor of sepsis (study by YJ Choi). There may be need to ask about conditions more vaguely, such as baby not looking well or not suckling.

## 5. Status of MICS

Attila Hancioglu from UNICEF reviewed the status of MICS4 and MICS5. The postnatal health checks (PNHC) module was introduced in 2011 and was included in 15 surveys (MICS4). All reports and datasets will be available before the end of 2013 at [www.childinfo.org](http://www.childinfo.org). The questionnaire module is also available online at the same website.

The PNHC module captures three main indicators: 1) length of postpartum stay in facility; 2) postnatal check for the newborn (before and after discharge); and 3) postnatal check for the mother before and after discharge. In addition, information on providers is included in the tabulation plan.

MICS5 will run until 2016 and includes the PNHC module within the core women's questionnaire (administered to mothers who have delivered in the last two years). All indicators relate to the most recent birth if a mother has had more than one live birth in the last two years. Surveys have been confirmed in a number of countries (see presentation for list) and some have already been completed (Panama, Nigeria, Montenegro, and Ghana). Data will be available to inform MDG 2015 reporting.

Regional workshops on survey design were completed in five settings and regional data processing workshops will be held in 2014. Most countries in MICS5 will have data on PNC. Data on this module are accumulating, and therefore it will be possible to compare PNC data across countries and across a large number of settings from low to high income countries.

Questions and discussion points:

- Holly Newby from UNICEF noted the MICS questionnaire makes a distinction between immediate (pre-discharge) care and post-discharge care at home or facility. It is important for this TWG to help colleagues understand the caveats with these postnatal contact indicators – especially on content of postnatal care and timing of contacts. We always want to know more that we can capture; household surveys can answer one part of our questions and identify where we need more detail and perhaps specialized studies. The issue of content of care has been discussed frequently in this TWG - four practices have been identified, but we could think how it might be reduced further. It would be difficult to include in the core questionnaire.
- As mentioned above, UNICEF plans to analyze PNC data across countries that have used the new module, and will explore data quality. The Countdown to 2015 coverage working group is taking on secondary analysis of coverage data and could help support analysis of MICS data – this is not prioritized through Countdown this year, but could be something for the TWG to help move forward in the future.
- MICS5 will add new recommended questions (on newborn care practices and PNC content) in response to country demand, but not to the standard core questionnaire. MICS wants to be country-led, not pushing questions at global level. If a country wants additional questions on newborn care, global level MICS staff will encourage them to use the standardized questions and measurements. For

that purpose, global-level staff need to give specific instructions on where these additional questions should go into the questionnaire and content for the interviewer manual. To create the demand from countries, members of the TWG can advocate within countries to MICS planning teams.

## **6. Incorporating indicators into tools, upcoming surveys and analyses: accomplishments and next steps**

Deborah Sitrin from SNL/Save the Children gave updates on the TWG's contributions to surveys.

For **household surveys**, the TWG came to consensus on 6 indicators on newborn care practices and postnatal care content – 3 are recommended for use and 3 recommended for further testing. These indicators have been disseminated through conferences, the PLoS article presented by Allisyn, and online (through [www.healthynetwork.org](http://www.healthynetwork.org)); they have also been incorporated into KPC surveys (for USAID CSHGP grantees). Several newborn indicators in the MEASURE Evaluation online indicator database--which contains definitions, data requirements, data sources, purposes, and issues for indicators in RMNCH--were updated to match the TWG latest recommendations (nothing *harmful* applied to the cord, cord cut with a clean instruction *asked for home births only*, drying and delayed bathing remain as is).

Next steps for household surveys include:

- 1) Adding reference sheets for indicators on skin-to-skin and PNC content to the MEASURE Evaluation database
- 2) Moving forward with MICS/DHS questionnaires/optional modules as well as continue country level advocacy to create demand for these indicators. Bangladesh included questions on newborn care in their 2008 DHS, which will be repeated soon. Indicators have been shared with DHS or MICS planning teams in Zambia, Nigeria and Malawi.
- 3) Share learning from grantees doing KPC surveys.
- 4) Collaborate on future validation studies.

For **facility assessments**, the TWG reached consensus on 16 recommended indicators (plus 2 optional) on facility readiness. Most of these indicators have been added to the core Service Provision Assessment (SPA) survey and have been disseminated at conferences and online (HNN website link provided above). Next steps include further collaboration with SPA on dissemination and analysis of results, along with talks with UNICEF about their District Level Quality Improvement Tool (DHSS/DIVA).

Deborah also gave a short update on the SPA on behalf of Paul Ametepi. The tabulation plan is almost finished, and includes all the delivery and newborn readiness data collected in the survey tools, with tables on medicines for delivery and newborn care, infection control, routine newborn care, and supervision. SPAs are complete or ongoing in Senegal, Haiti, and Malawi and preparations are underway for Tanzania, Ethiopia, and Bangladesh (Bangladesh is not doing a full SPA, only an inventory).

Questions and discussion points:

- TWG has agreed to develop instructions on where to insert newborn care questions into the MICS5 survey and to develop interviewer guidelines for these questions.
- Joy Fishel from DHS gave a short update. The MEASURE DHS 5 year contract that will end in September 2013, with a new contract to be awarded by October 1, 2013. This Fall would be the appropriate time to bring up new questions to be added to the core questionnaire or optional modules. The process is managed by the USAID team, and the questionnaire review process may change as USAID is reviewing past processes. No new DHS surveys are going into the field before the questionnaire review process, so there will be no missed opportunities.

- The SPA in Malawi is going to include observation of births – the TWG will contact Paul Ametepi to learn what observation data on newborn care will be collected, in order to determine if it will be possible to triangulate observation and readiness data and determine whether readiness is related to actual care given.
- SPA also has scenarios for health worker interviews—the TWG should talk to SPA about including one for newborn care.
- There was a recent paper on signal functions to measure the ability of health facilities to provide routine and emergency newborn care (by Gabrysch et al, available on HNN) – there is a need for agreement on core commodities to address these signal functions.
- The group briefly discussed WHO's SARA tool, which will include all the UN Commission on Life-Saving Commodities (has 4 for the newborn) except Chlorhexidine. Otherwise, SARA has not included as many of the TWG recommended facility readiness indicators as the SPA has.

## **7. Newborn infections: review of measurement issues and next steps for the indicators TWG**

Steve Wall from Save the Children presented measurement issues around newborn infections, including measurement of prevention interventions and of management of infections at both facility and community levels. Steve reviewed the different dimensions of various interventions and recent changes or expected changes, such as use of chlorhexidine and expected results from the simplified antibiotics trial (SATT) and AFRINEST trial.

Measurement considerations related to neonatal sepsis include:

- Cord care and chlorhexidine (CHX) - it is still unclear what practices will be endorsed in terms of how many days CHX should be applied and whether the number will differ for home versus facility births.
- An important first step for management of infection is danger sign recognition, but there is no consensus on what to capture about danger sign counseling and assessment. The group earlier discussed the problem with identifying which danger signs predict severe disease.
- Timeliness of care-seeking is extremely important, but not easy to capture. Referrals are also difficult to capture.
- Facility records are often incomplete, making it difficult to measure diagnosis, referral, and treatment
- There need to be decisions on how to define "adequacy" or completion of treatment and how to capture it through routine monitoring, keeping in mind that a newborn can be treated at different sites (community and facility) and there is a lack of name-based tracking. Perhaps mother-held treatment cards could help.
- There is a need to adapt to a rapidly changing landscape – e.g., introduction of CHX and simplified antibiotic regimens.

Questions and discussion points:

- What attention should we pay to intrapartum care?
  - o Addressing PROM (Prolonged Rupture Of Membranes) is essential.
- What is known about provider skills to recognize and diagnose signs of possible severe bacterial infection (PSBI)?
  - o We know FLHWs can be trained and supervised to perform well in some settings. But programmatic inputs to maintain skills are unclear and need follow-up research.
- As mentioned, it is difficult to know what danger signs predict severe infection. Inability to suckle was suggested as a potential tracer danger sign because it is not only an indication of illness, but is also important for management. Newborn that can suckle can be managed at home or lower levels of the health system, but newborns that cannot suckle must go directly to higher levels of care.



- There will be need to do long-term follow-up of survivors of simplified regimens. Mortality may be lower if treatment starts earlier with simplified regimens available at community level, but there could be impacts on child development. There is a role for sequelae to play in estimates of global burden of disease.
- As treatment becomes more available, there is potential that non-sepsis cases are treated – how should we look at appropriate treatment? Studies are looking at which danger signs are more predictive of sepsis. In the future, we may need to look at point-of-care diagnostics.
- The ability to track whether all newborns with sepsis get the treatment they need depends on the ability to predict the number of expected cases of sepsis. However, effective prevention also means that the number of expected cases will go down, so it becomes difficult to know how many newborns should be expected to need treatment for sepsis.

## 8. Terms of reference for the newborn indicators TWG

There was not time to review the draft TOR in detail, so it will be circulated after the meeting for review. Comments should be sent over email. The TOR includes proposed core membership – meeting participants should review and decide if they want to stay engaged at that level or just want to be kept informed.

The TWG will continue to meet twice a year, with sub-groups meeting more frequently (likely by phone). The next full meeting will be held in January 2014.

## 9. Summary of TWG activities

Deborah Sitrin from SNL/Save the Children led the group in a discussion to identify next steps and prioritize activities for the TWG. Three sub-groups have been identified: household surveys, health facility assessments and routine information systems.

Sub-group leads will need to be identified. TWG participants can be added to responsible organizations/persons if they are interested in becoming involved in activities. Contact Deborah Sitrin [dsitrin@savechildren.org](mailto:dsitrin@savechildren.org) and Lara Vaz [lvaz@savechildren.org](mailto:lvaz@savechildren.org) to be added.

Sub-group	Activities	Responsible org/person
Household surveys	Work with MICS immediately and DHS in the fall to develop guidance for incorporating the recommended questions into surveys.	SNL – draft guidance MICS/DHS – finalize USAID – share with country missions
	Update MEASURE Evaluation's Family Planning and Reproductive Health Indicator Compendium database with reference sheets for indicators on skin-to-skin care and postnatal care content. <ul style="list-style-type: none"> <li>Track who is using the database.</li> <li>Updated links within the 17 newborn core indicators in to technical resources (i.e., including Healthy Newborn Network).</li> </ul>	SNL MEASURE Evaluation
	Explore newborn data from KPC surveys and present at next TWG meeting	MCHIP
Facility	Map SPA and SARA tool against signal functions paper to see	SNL

Sub-group	Activities	Responsible org/person
assessments	<p>what is captured and identify recommendations. Follow up with SARA for updates on revisions.</p> <p>Follow up with SPA:</p> <ul style="list-style-type: none"> <li>• Explore the inclusion of clinical cases in the SPA</li> <li>• Investigate if Malawi SPA collecting newborn data during observation of births, possible data analysis</li> <li>• Multi-country analysis when data available after 2014</li> </ul> <p>Other proposed activities:</p> <ul style="list-style-type: none"> <li>• Develop process measures for district/sub-district/HF quality</li> <li>• Improve capture of sick newborns through audits of clinical records</li> </ul>	<p>WHO</p> <p>SNL SPA</p> <p>To be incorporated into routine monitoring systems subgroup</p>
Routine monitoring system	<p>Immediate tasks:</p> <ul style="list-style-type: none"> <li>• Map reviews by MCHIP, IDEAS, SNL against the 3x2+1 model to see what information currently collected in countries</li> <li>• Draft indicators and supporting information for Every Newborn.</li> <li>• Contribute to national scorecards.</li> </ul> <p>Long-term tasks:</p> <ul style="list-style-type: none"> <li>• Explore the feasibility of addressing sepsis measurement issues through the CBNC evaluation by IDEAS. Also link with the child treatment/CCM groups who will also be working on measurement issues in this area.</li> <li>• Develop indicators and guidance on collection and use for different levels of the health system, with a focus on quality of care data for use at local levels <ul style="list-style-type: none"> <li>○ Breakdown dimensions of interventions and select key/essential indicators for routine monitoring</li> <li>○ Ensure recommendations reflect current routine monitoring systems and suggest indicators for inclusion based on country capacity.</li> </ul> </li> <li>• Provide input to WHO on indicators for the compendium. Intend to finalize by the end of the year so need inputs by September/October.</li> <li>• Continue to discuss advocacy for vital registration, reach out to other agencies to ensure data collected outside HMIS is linked in to formal HMIS systems.</li> </ul>	<p>SNL</p> <p>SNL – draft IDEAS, WHO, MCHIP, URC – review SNL, USAID, WHO. MCHIP</p> <p>IDEAS, SNL</p> <p>MCHIP (Mary, Jim) and URC (Kathleen)</p> <p>WHO (Matthews) – share compendium</p> <p>TBD</p>
	Explore interest in a meeting on linking different types of data. May reach out to World Bank on their methodologies.	MCHIP, USAID, SNL - decide who to involve and next steps

## Appendix I: Agenda

### Newborn Health Indicator Technical Working Group Meeting Subgroup on Routine Monitoring Systems (HMIS)

MCHIP offices, Washington DC  
1776 Massachusetts Avenue, NW Suite 300

10 July 2013  
9:30 – 4:00

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#### Objectives of the Meeting:

1. To review what has been done to date on inclusion of newborn health into routine monitoring systems
  - a. Presentation of ongoing HMIS assessments related to newborn health: IDEAS , MCHIP, SNL
  - b. WHO activities to strengthen routine monitoring systems
  - c. Other activities
2. To define objectives for the subgroup with proposed scope of work, outputs and timelines
3. To agree on the approach to develop a short-list of newborn indicators for national HMIS or other routine systems with recommendations on standard definitions and disaggregations
4. To identify, if possible, indicators suitable for incorporation in HMIS for the Global Newborn Action Plan (Every Newborn)

Time	Session/Activity	Presenter (s)
9:00-9:30am	Breakfast	
9:30-10:00am	Welcome and Introductions Objectives of Meeting	Lara Vaz, SNL
10:00-10:30am	Scope, methods, and results of IDEAS' review of MCH related data collected through routine monitoring systems in 3 countries	Bilal Avan, IDEAS
10:30-11:00am	IDEAS' study on the quality of HMIS data related to MCH	Tanya Marchant, IDEAS
11:00-11:15am	Break	
11:15-11:30am	Overview of WHO's work on strengthening routine monitoring systems	Matthews Mathai, WHO
11:30-11:45am	Short updates from other attendees on their work related to routine monitoring systems	All
11:45am-12:30pm	Discussion of morning presentations	All
12:30-1:00pm	Lunch	
1:00-1:30pm	Scope, methods, and results of MCHIP' review of MNH related data collected through routine monitoring systems	Vikas Dwivedi, MCHIP
1:30-2:00pm	Results from SNL's review of newborn	Tanya Guenther, SNL
2:00-3:00pm	Discussion: <ol style="list-style-type: none"><li>1. Define objectives for the subgroup</li><li>2. Agree on approach to develop recommendations</li></ol>	All
3:00-3:15pm	Break	
3:15-4:00	Recommendations for the Every Newborn Action Plan <ol style="list-style-type: none"><li>1. Overview of Every Newborn Action Plan and process</li><li>2. Discussion</li></ol>	Lara Vaz, SNL All

# Newborn Health Indicator Technical Working Group Meeting

MCHIP offices, Washington DC

1776 Massachusetts Avenue, NW Suite 300 | July 2013

9:30 am – 4:00 pm

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## Meeting Objectives

1. Provide updates from subgroups/Review progress since December 2012 meeting and agree on next steps
  - a. HMIS – agree on rationale for group, scope of work, deliverables & timeline
  - b. HH Surveys and HF Assessments – status of MICS and SPA, incorporation of newborn indicators into surveys and analyses, indicator reference sheets
2. Provide updates on measurement issues emerging from:
  - a. PLoS Supplement on Measurement and implications for newborns
  - b. Newborn infections: review of measurement issues
3. Discuss and agree on need to develop a formal terms of reference (TOR) for TWG and identify next steps to finalize (with key member involvement)

Time	Session/Activity	Presenter (s)
9:00-9:30am	Breakfast	
9:30-9:45am	Welcome and Introductions Objectives of Meeting	Lara Vaz, SNL
9:45-10:15am	Overview of partners' work related to routine monitoring systems: <ul style="list-style-type: none"><li>• IDEAS</li><li>• WHO</li><li>• MCHIP/SNL</li></ul>	Tanya Marchant/Bilal Avan Matthews Mathai Vikas Dwivedi
10:15-10:30am	Objectives and scope for HMIS subgroup	Tanya Guenther, SNL
10:30-11:00am	Discussion	All
11:00-11:15am	Break	
11:15am-12:15pm	Discussion of PLoS Supplement on Measurement and implications for newborns	Allisyn Moran, USAID
12:15-12:45pm	Lunch	
12:45-1:00pm	Status of MICS	Holly Newby, UNICEF
1:00-2:00pm	Incorporating indicators into tools, upcoming surveys, and analyses: accomplishments and next steps	Deborah Sitrin, SNL
2:00-2:30pm	Newborn infections: review of measurement issues and next steps for the Indicators TWG	Steve Wall, SNL
2:30-2:45pm	Break	
2:45-3:45pm	TWG terms of reference	Lara Vaz, SNL
3:45-4:00pm	Wrap-up	Lara Vaz, SNL



## Appendix 2: Meeting Participants

### July 10<sup>th</sup>, 2013: Sub-group on routine monitoring systems

Name	Organization
Matthews Mathai	WHO
Jim Ricca	MCHIP
Vikas Dwivedi	MCHIP
Allisyn Moran	USAID
Mary Drake	MCHIP
Molly Strachan	MCHIP
Lara Vaz	SC
Tanya Guenther	SC
Deborah Sitrin	SC
Lyndsey Wilson-Williams	SC/MCHIP
Bilal Avan	LSHTM
Tanya Marchant	LSHTM
Kathleen Hill	URC

\*-via phone

## July 11<sup>th</sup>, 2013: General Newborn Indicators TWG

Name	Organization
Lyndsey Wilson-Williams	Save the Children/MCHIP
Deborah Sitrin	Save the Children
Tanya Guenther	Save the Children
Lara Vaz	Save the Children
Steve Wall	Save the Children
Nathalie Gamache	Save the Children
Mary Drake	MCHIP/JHPIEGO
Heather Rosen	MCHIP/JHSPH
Allisyn Moran	USAID
Tanya Marchant	LSHTM
Bilal Iqbal Avan	LSHTM
Indira Narayanan	MCHIP/PATH
Magdalena Serpa	MCHIP/PATH
Stella Abwao	MCHIP/Save the Children
Jim Ricca	MCHIP/JHPIEGO
Jennifer Luna	MCHIP/ICF
Naoko Kozuki	JHSPH
Molly Strachan	MCHIP/JHPIEGO
Matthews Mathai	WHO
Vikas Dwivedi	MCHIP/JSI
Kathleen Hill	URC
Bridgit Adamou	Measure Evaluation/UNC
Joy Fishel*	DHS/ICF
Attila Hancioglu*	UNICEF
Holly Newby*	UNICEF
Liliana Carvajal*	UNICEF

\*-via phone

## **Appendix 3: Presentations**

*\*See separate attachments*

A. *July 10<sup>th</sup>: Sub-group on routine monitoring systems*

B. *July 11<sup>th</sup>: General Newborn Indicators TWG*