Maternal Syphilis Monitoring and Evaluation Strategy

Zambia and Cameroon

Background

Monitoring and evaluation (M&E) is an essential component of Evidence Action's maternal syphilis program. In particular, we seek to: (a) strengthen existing government data collection systems which will allow for more robust, continuous, and sustained program monitoring and iteration, and (b) implement independent surveying to assess coverage of syphilis screening and treatment among pregnant women seeking antenatal care. We anticipate that much of the M&E frameworks for Zambia and Cameroon will mirror that of Liberia. Thus, in this document, we provide a high level overview of our Liberian monitoring and evaluation plan and highlight the ways in which the approach may differ in Zambia and Cameroon. Further development and refinement of country-specific M&E strategies will take place once activities in each country begin.

Objectives

In each country, the proposed objectives of our M&E activities are:

1. Estimate the fraction (and number) of ANC-going pregnant women who are tested for syphilis and the fraction (and number) of ANC-going, syphilis-positive pregnant women who receive appropriate treatment;
    - Understand (and quantify where possible) the impact of supply availability, provider knowledge, and provider and patient behavior on coverage of syphilis screening and treatment;
2. Assess the quality of health provider training, mentorship, supply chain management, and data recording and reporting to identify gaps in these program areas and inform subsequent activities;
3. Review process indicators to determine if the dual test and maternal syphilis screening and treatment are integrated into ANC and HIV counseling and testing services writ large.

Achieving the M&E Objectives

Our general approach to achieving each M&E objective is outlined below and is likely to be very similar among the countries in which the program is being implemented. Throughout, we make reference to three core sources of data:

A. National data systems for service delivery and commodity consumption.[1] In each country, the MoH has its routine mechanisms for monitoring the number and types of services provided by health facilities and how much facilities are consuming key commodities. These are often in the form of monthly, bimonthly, or quarterly reports generated by health facilities and entered into online databases like the dhis2 and/or a logistics management information system platform.

B. Routine program reporting via master trainers during supportive supervision. During supportive supervision visits to health facilities, master trainers often fill out and submit reporting forms which detail some of the successes and challenges faced at the facility-level. In addition, the master trainers often provide qualitative feedback on how facilities are doing which can be useful in identifying gaps.

C. Comprehensive Facility Survey.[2] This is a survey we intend to implement via independent enumerators every 12-24 months of the program (roughly three times during the estimated 5-6 year length of the technical assistance support). The survey has multiple modules, including a commodity stock assessment, review of facility-level data tools, qualitative interviews, and knowledge and skills assessments of healthcare providers.

M&E Objective 1: Estimate the fraction (and number) of ANC-going pregnant women who are tested for syphilis and the fraction (and number) of ANC-going syphilis-positive pregnant women who receive appropriate treatment

Our theory of change is that screening and treatment coverage (the output of Objective 1) is a function of several factors:

1. Supply availability: Without tests and benzathine penicillin available at the facility, no pregnant women can be screened and/or treated.
2. Provider adherence: When products are present, providers must still elect to follow the clinical guidelines related to screening and treatment. Provider adherence is influenced by two components:
    a. Provider knowledge: Providers are unlikely to administer the dual test or to give benzathine penicillin when a patient's test comes back positive if they are not aware that these are the recommended courses of action.
    b. Provider and patient behavior: Once knowledgeable, providers must choose to deliver the appropriate services. Patient consent is also required for any testing or treatment to take place.

[1] As we did in Liberia, we will be seeking user credentials in each country to be able to access these systems and view the data.

[2] In each country, we plan to pilot the survey tools at selected health facilities ahead of implementing the survey. Based on the findings of the survey pilot, we would amend the tools to focus on the evaluation strategy we assess to be most feasible and most likely to produce a reliable estimate of coverage. For example, in Liberia, we attempted capturing patient level data from the ANC register and from the HIV counseling and testing register and comparing the two by medical registration number to assess whether each ANC client was tested for syphilis, patient-by-patient. We learned this approach would not work due to inconsistency in medical registration numbers and difficult-to-read handwriting and so have opted to exclude this from the final survey.

Supply availability will be estimated via data collected in the course of the Comprehensive Facility Survey. The supply availability module will include a mix of quantitative and qualitative data, including inventory counting of non-expired syphilis tests, dual tests, and benzathine penicillin injections available at the facility, review of the facility's supply requests and delivery receipts, review of dispensing logs, and interviews with pharmacists to assess challenges in supply management. We may also be able to assess real-time supply availability via the national data systems, depending on the frequency of reporting and which indicators related to stock consumption are included on the platform.

Provider knowledge will be primarily assessed via the Comprehensive Facility Survey, through a mix of clinical vignettes and quiz-like questions. More informally, we will be able to look at how well providers retain key training concepts via the training post-tests and through the knowledge gaps surfaced by master trainers during supportive supervision visits.

Provider and patient behavior will be estimated via a triangulation of key data sources at the facility level, as it is more challenging and cost intensive to measure behavior directly. The triangulation method itself will be developed once more learning takes place in-country on the quality and availability of all potential data components.[3] However, it is likely we will rely on a combination of the following data components:

- Facility-level data tools, which will largely be assessed in the course of the Comprehensive Facility Survey, such as:
    - Daily dispensing registers
    - Commodity requisition and distribution records
    - HIV counseling and testing registers
    - ANC registers
    - Patient charts
- Qualitative interviews with healthcare providers (and potentially exit interviews with patients) implemented during the Comprehensive Facility Survey
- National data systems such as a health management information system / dhis and a logistics management information system.

Should the triangulation approach prove infeasible or provider/patient behavior is found to be a large contributor to low coverage, we will explore an alternative approach of direct clinical observation.

<u>M&E Objective 2: Assess the quality of health provider training, mentorship, supply chain management, and data recording and reporting to identify gaps in these areas and inform subsequent programmatic activities</u>

Month-to-month, we will be assessing the quality of each of these program streams through the data available on the national data systems and via the feedback provided by master trainers and government program staff during training and supportive supervision activities. For instance,

[3] In each country, we intend to pilot the Comprehensive Facility Survey which will provide an initial gauge of the quality of various data sources and which triangulation approaches are most feasible.

we would assess whether our efforts to improve data recording and reporting are successful by monitoring the data captured in the dhis database and identifying facilities which are not reporting or whose reported syphilis screening and treatment may indicate a data issue (such as having many more women treated than the number who were found positive, etc.). As another example, we may review the quantities of dual tests and benzathine penicillin requisitioned by health facilities to evaluate whether they are consuming stock as expected and whether they are managing their supply effectively to reduce the risk of stock outs.

In addition to this more routine monitoring, many of the core program areas will be evaluated through the modules of the Comprehensive Facility Survey. For example, in the qualitative interviews with healthcare providers, we may ask whether the provider was present during a master trainer's supportive supervision visit and what their opinion was of the quality of the coaching (what it covered, how it helped, etc.).

M&E Objective 3: Review process indicators to determine if the dual test and maternal syphilis screening and treatment are integrated into ANC and HIV counseling and testing services writ large

Integration of the dual test and maternal syphilis screening and treatment into the broader ANC and HIV counseling and testing programs is one of the main goals of Evidence Action's support in each country, as that allows the impact we achieve to sustain beyond the time we are providing direct technical assistance. Some key markers of program integration are:

1. Government financial commitment to procurement of HIV/syphilis dual test kits and benzathine penicillin, including inclusion in donor proposals (e.g. Global Fund, PEPFAR);
2. Updated national HIV testing guidelines that recommend the dual test when screening pregnant women for HIV;
3. Inclusion of maternal syphilis in regularly occurring national coordination and planning meetings focused on HIV, PMTCT, and/or ANC with government and non-government stakeholders; and,
4. Nationally validated curriculum, job aids, and facility registers which comprehensively cover maternal syphilis screening and treatment.

Most of these indicators of adoption can be monitored through review of government records, guidelines, national training curricula, etc.

Key Differences in Zambia and Cameroon

Differences in the M&E strategies among the syphilis programs in Zambia, Cameroon, and Nigeria will largely be driven by variability in the types, design, and quality of facility-level data tools. These are outlined in more detail in the respective scoping reports of Zambia and Cameroon. Here, we offer a conceptual discussion of how our M&E strategies may differ among these geographies and identify key risks in each country.

Zambia

Zambia is likely to have the richest data available compared to the other countries where we are implementing a program on maternal syphilis. There are patient-level electronic medical record databases, an ANC register which includes syphilis screening *and* treatment, a daily dispensing register for HIV and syphilis tests, a dhis database that includes the key indicators[4] we would be seeking to monitor over time, and monthly commodity requisitioning. In visiting the health facilities, the majority of these data tools were routinely filled out. Because of both the variety and anticipated quality of data sources in Zambia, we posit that we will be able to implement a more rigorous approach to triangulating the number of pregnant women who attend their first ANC visit, the number who are tested for syphilis, the number who are found positive, and the number who are treated at both the facility level and nationally.

There are two key risks to our monitoring and evaluation strategy in Zambia. First, we may not be able to obtain user credentials to access the dhis and/or the logistics management information system. This risk is highest for the logistics management information system as the national M&E team noted that they may need to develop an organization-specific API for us to see the key indicators we are interested in. Second, many facilities are migrating to an electronic data system or are implementing a hybrid paper-electronic system. This level of flux in data recording norms may result in some gaps in data capture at health facilities or gaps in the data amid the digital data systems we would have access to.

Cameroon

The facility-level data tools and practices of data recording in Cameroon are not as robust as those of Zambia but they are stronger than in Liberia. One key advantage we will have is that the ANC register includes syphilis screening, which will allow us to directly track, patient-by-patient, whether a pregnant woman who comes for ANC is tested for syphilis and whether she is positive. Unfortunately, this register does not yet include a space to record syphilis treatment but we are optimistic this indicator can be added when these registers are next revised. In addition, the HIV testing quality assurance register in Cameroon doubles as a daily dispensing register. Although it is specific to HIV rapid tests, it's likely this tool will be amended to include the dual test amid roll out of the program.

Beyond the current data tools and likely anticipated updates to these, a direct observation approach in which syphilis screening and treatment coverage can be measured in real time is a more feasible option in Cameroon. The country has a larger cohort of pregnant women and higher prevalence of syphilis, so there may be key facilities we can identify in which we can implement a direct observation study and utilize the findings to inform our assessment of courage in all countries. Although direct observation is more feasible in Cameroon than in Liberia, we would still only consider this approach in the event that triangulation fails to yield a reliable estimate, we assess that it would not introduce bias, and we attain the necessary government and IRB approvals.

[4] We are yet to confirm that the dhis includes an indicator on syphilis treatment but believe it is very likely based on feedback the MoH has provided.

In Cameroon, one risk in our M&E strategy is that we are unsuccessful in attaining the changes to key data tools (adding syphilis treatment treatment to the ANC register and including dual tests in the HIV testing quality assurance register) or that the changes are delayed and not in place before the program rolls out. In the event these changes don't take place or are delayed, we would look at similar triangulation approaches that we have considered in Liberia such as reviewing patient charts to assess treatment for those patients who are found syphilis-positive. The other key risk in Cameroon is that the country does not have a national electronic logistics management system, which will make it challenging to compare service delivery to supply consumption centrally. Given this situation, we'll be exploring other low cost approaches to attaining routine supply data such as instituting a system for calling facilities to request key supply indicators and/or leveraging the supply data collected by HIV implementing partners and reported to Chemonics.