Implementation of Maternal and Child Health Outcome Surveys Using LQAS

LESSONS LEARNED FROM KENYA AND LIBERIA

Lot Quality Assurance Sampling (LQAS) is a sampling and analysis methodology for rapid population-based surveys. It requires a small sample size and provides information on whether sub-areas or "lots" are performing at an "acceptable" or "not acceptable" level according to pre-determined targets. Samples from each lot can be aggregated to provide coverage estimates for the entire study area. LQAS can thus be a useful monitoring tool to assess service coverage and health outcomes and behaviors at the district and sub-district level.

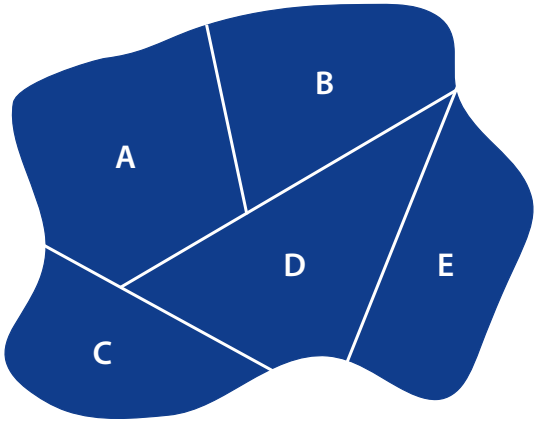
Though LQAS is touted as a rapid and inexpensive data collection tool, this does not necessarily translate into implementations that are "quick" and "cheap", especially when technical assistance is provided by an outside organization. From 2010–2012 MEASURE Evaluation supported three rounds of maternal and child health outcome monitoring surveys in Kenya and two rounds in Liberia. Below are some considerations based on these implementations of LQAS.

Geographic Scope

The determination of "lots" and "catchment areas" can vary according to information needs. MEASURE Evaluation surveys using LQAS have been large-scale: in Kenya, districts were used as lots, and in Liberia, health districts were used as lots. Furthermore, more than one study was conducted simultaneously, thus producing results in as many as six provinces in Kenya in 2011 and seven counties in Liberia in 2012. The consequence of relatively large lots and multiple simultaneous implementations are increases in data collection time, human resource needs, and cost.

How does LQAS work?

Assume a program has 5 sub-areas: A, B, C, D, and E. Nineteen households are randomly selected from each sub-area, for a total of 95 interviews. Based on targets for program performance, each sub-area is either flagged "acceptable" or "not acceptable" and a point estimate is determined for the entire program area.



Thematic Scope

MEASURE Evaluation surveys using LQAS are designed to assess a variety of health outcomes at the sub-national level. As a consequence, the surveys are complex and reflect an integrated service delivery approach. The Kenya and Liberia surveys assessed outcomes related to water, sanitation, and hygiene; breastfeeding, nutrition and food security; antenatal and postnatal care; vaccination and immunization; treatment of common childhood illnesses; malaria control; and others. Complex surveys take longer to develop, administer, and analyze. The reverse can be true for less complicated surveys.

USAID FROM THE AMERICAN PEOPLE

MEASURE Evaluation

MEASURE Evaluation is funded by the U.S. Agency for International Development (USAID) under terms of Cooperative Agreement GHA-A-00-08-00003-00 and implemented by the Carolina Population Center, University of North Carolina at Chapel Hill in partnership with Futures Group, ICF International, John Snow, Inc., Management Sciences for Health, and Tulane University. The views expressed in this publication do not necessarily reflect the views of USAID or the United States government. FS-12-73 (01/08 /13).

Strengthening Local Capacity

The capacity to collect, analyze and interpret data needs to be strengthened at the sub-national level. MEASURE Evaluation surveys using LQAS have therefore included an element of capacity building, either at the district or provincial/county level, as well as at the national level. The extent to which this is built into the survey process will have an impact on cost, human resource commitment, as well as the likelihood that the outcome monitoring process is understood and valued. Additionally, the level of basic survey skills affects the degree to which knowledge can easily be transferred.

Lot Definition

How lots are defined will have consequences for who uses the data. Simply dividing a program area into five sub-areas will not produce useable information unless the sub-areas are the same as what is used by the health programmers. The determination of lots should be both practical and reflective of management information needs.

In Kenya, five contiguous districts in which USAID-supported projects were operating were selected as lots for each province. Conversely, in the first round of the Liberia implementation, lots were not defined by official boundaries, but rather aggregated facility catchment areas differentiated by donor (USAID, Pool Fund, and European Union) and implementing partner. In the second round, lots were defined by health districts or groupings of health districts. As a consequence, lot performance cannot be compared between the two rounds, though it is anticipated that future rounds will continue to use the health districts designation.

Target Setting

How targets are defined will impact the performance of the lots. In other words, setting targets that are too high will ensure that most lots do not "pass". Likewise, setting targets that are too low will ensure that most lots do "pass". And of course, setting targets that are not linked to strategic planning processes will increase the potential that results are not used.

Rather than using preset targets in Kenya and the first round in Liberia, LQAS lot performance on each indicator was compared against the average for the catchment area in order to set baselines. As a result, lot performance of "acceptable" and "unacceptable" could not be compared across the provinces/counties and analysis had to consider cases in which lot performance was deemed acceptable even when the average coverage itself was too low. Between the first and second rounds in Liberia, work with County Health Teams led to the setting of annual targets based on Health Management Information System (HMIS) data, 2011 LQAS estimates where applicable, or other appropriate data. Catchment area averages were used for any newly-added survey indicator for which a target was not readily available.

Data Use at a Sub-national Level

LQAS methodology is a useful tool for monitoring health outcomes at the sub-national level. The small sample sizes used to determine coverage estimates for the catchment areas result in large confidence intervals (in our applications, +/-10%), meaning that this tool may be less attractive for monitoring trends than it is for other monitoring needs, such as programming, priority setting, and resource allocation. Because of this, surveys using LQAS are best implemented by or with the data user, usually at the program management level, where use of resources is decided.

A USAID-funded project in Western Province, Kenya, used LQAS results to re-prioritize water and sanitation issues, particularly in two districts. This led to additional training of community health workers, increased attention to community outreach on hygiene and safe water initiatives, and the provision of more safe water tablets, among other interventions. The findings were also used to assist the preparation of the Annual Operation Plan. In Liberia, each participating county was taken through a data use exercise, the outputs of which could have been used in their bi-annual operational planning process.