

CMAM Avancé: Population-Based Coverage Surveys for Acute Malnutrition Treatment

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CONTEXT

The three-year GiveWell-funded malnutrition project supports SAM treatment in targeted health districts and/or catchment areas of five countries (Burkina Faso, Chad, the DRC, Niger, and Somalia), and MAM treatment in Somalia. The project will measure changes in coverage over time, with comparisons of baseline to endline coverage, and intermittent end of year surveys in selected catchment areas (15 total). The baseline surveys measure the coverage of malnutrition treatment in the program areas before the start of the project using a population-based survey method. Similar approaches using active and adaptive case finding were demonstrated to provide reliable measures of coverage in comparison with a SQUEAC survey (Isanaka et al., 2018) and to establish baseline IRC operational research in Nara District, Mali.

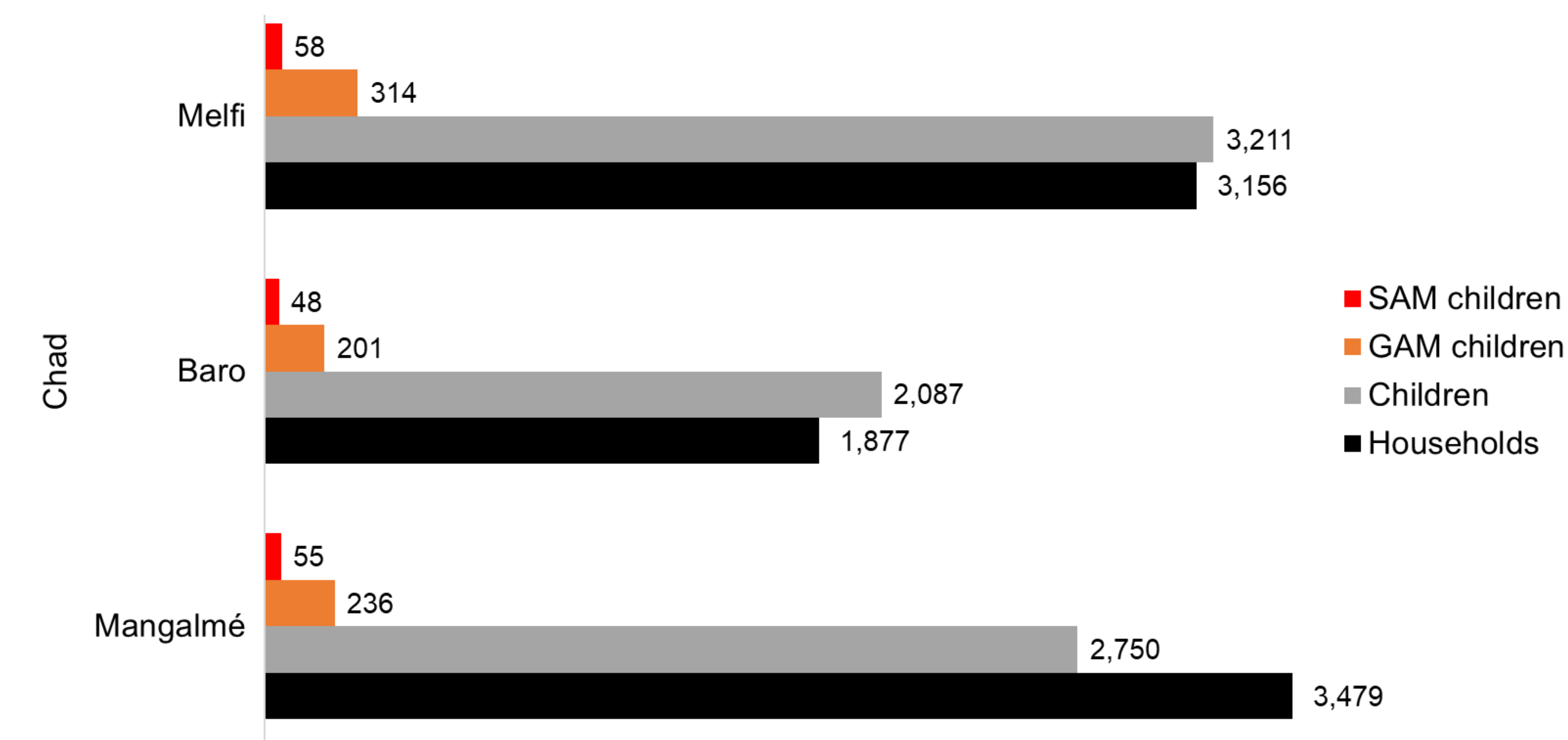
METHODOLOGY

For this project, we developed a methodology rigorously representative of each catchment area, replicable over time and across contexts with minimal bias, and able to leverage existing IRC infrastructure and staff. Sample size was determined by expected coverage at baseline, prevalence of SAM, and desired precision. Clusters were selected based on the accepted sampling framework for SMART, DHS, etc. in each country and exhaustively sampling all children 6-59 months within each cluster. Children were screened by MUAC and edema only. Separate qualitative research regarding perceptions of malnutrition and primary barriers was conducted after the quantitative baseline surveys.

Population-representative methods and SQUEAC accomplish different objectives with different case-finding criteria.

	SQUEAC	This methodology
Objective	<ul style="list-style-type: none"> Estimate overall program coverage 	<ul style="list-style-type: none"> Estimate overall program coverage Estimate malnutrition prevalence by MUAC + edema
Method	<ul style="list-style-type: none"> Small studies & surveys to test hypotheses about coverage generated by analysis of routine program data and qualitative data Active and adaptive case finding 	<ul style="list-style-type: none"> Population-representative All children are screened Qualitative research conducted as independent research

Logistic burden is dependant on the SAM prevalence and population distribution.



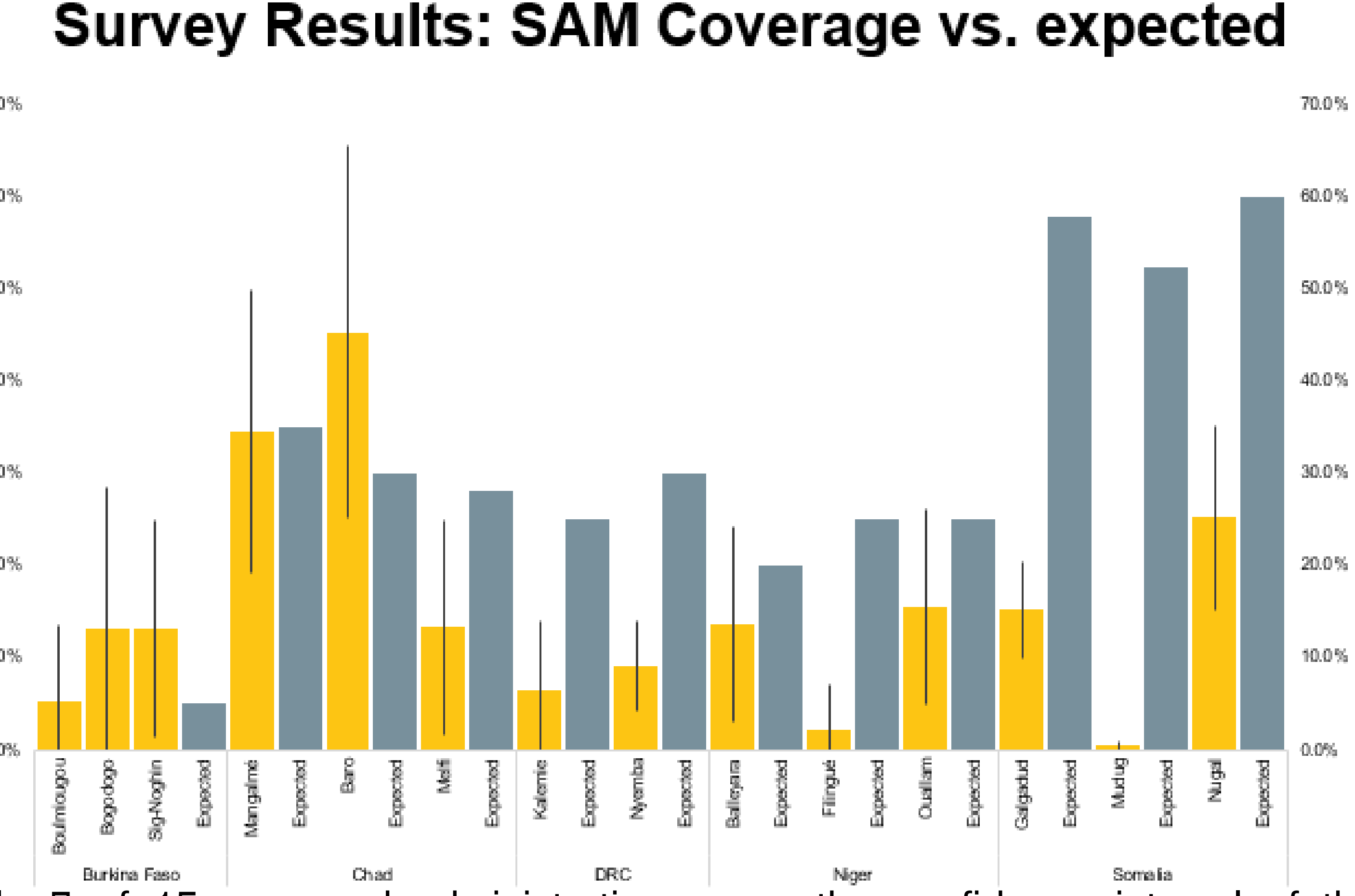
The minimum sample size of SAM children requires more total households in districts with a lower SAM prevalence and/or percentage of children 6-59 months. For example, in Chad, 1,877 households were visited in Baro, to reach the minimum sample size. In Melfi and Mangalme, where the measured SAM prevalence was lower or the number of children per household was fewer, over 3,000 households were visited for the minimum sample size.



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RESULTS

Fewer than 1 in 5 eligible SAM children were enrolled in treatment in 11 of 15 catchment areas. MAM coverage was less than 15% in 8 of 9 assessed catchment areas. Coverage for SAM and MAM were well below SPHERE standards in every context.



In 7 of 15 assessed administrative areas, the confidence interval of the measured coverage included the expected coverage estimate formulated by staff a priori. In the other administrative areas, the upper confidence limit of the measured coverage was lower than the expected coverage. Coverage could not be measured in the fourth catchment area of Somalia due to insufficient sample size of SAM children.

Prevalence of Severe Acute Malnutrition (SAM) by MUAC and edema ranged from 0.6-1.2% in Burkina Faso, 1.6-2.5% in Chad, 1.3-2.7% in DRC, 1.5-2.5% in Niger, and 0.3-3.4% in Somalia. Prevalence results were similar to the most recently available for the nearest administrative area.

Measured SAM coverage did not correlate with measured SAM prevalence (Rho -0.085; p-value 0.657) nor expected coverage estimated a priori (Rho -0.130; p-value 0.212).

LESSONS LEARNED

We present this methodology as an alternative to existing primary methods and a compliment to coverage estimates from routine program and population data.

- Key learnings from this experience include:**
- Coverage appears to be even worse than we would have thought, based on either expert opinion or available coverage estimates using the SQUEAC/ SLEAC methodologies.
 - In comparison, when using available administrative data (including treatment trends and population figures), our findings suggest that in some contexts, coverage estimates derived using administrative data are useful, while in others, they are not – and that the accuracy can vary by month and year. These findings are being summarized in a publication for peer-review.
 - SAM coverage was unrelated to SAM prevalence. This is an interesting finding that warrants more localized investigation. Despite their effectiveness, CMAM programs are regularly underfunded. Where resources are limited, we would assume areas with higher prevalence might be prioritized for services. However, this was not observed in our study.

A population-representative methodology to simultaneously assess coverage and prevalence allows us to track changes in both over time. This approach demonstrates that using a gold-standard population-based approach is feasible at comparable costs; however, the demand on existing organizational infrastructure (staff, vehicles) is high, especially in lower prevalence settings.