

Liberia Coverage Survey 2018 Recommendations Report



1. Programmatic Recommendations

This report reviews the coverage evaluation survey which was conducted in three counties (Bong, Lofa and Nimba), Liberia, in 2018 following four rounds of mass preventive chemotherapy (PC) for schistosomiasis (SCH). PC took place over two parts in FY2017/18, the first in December 2017 and for the three counties within this survey, in June 2018. This survey was implemented in September 2018. The following programmatic recommendations are:

Table 1: Observations and programmatic actions to help maintain and improve coverage in Liberia.

Finding or observation	Interpretation	Programmatic action
Reported and survey coverage of praziquantel (PZQ) for school age children (SAC) and adults was above the 75% World Health Organisation (WHO) coverage target in two of the three surveyed counties (Bong and Lofa).	All elements of the mass drug administration (MDA) programme are well in place and functional in these counties. A good reporting system is in place.	National programme to sustain momentum for the next year to maintain coverage levels in these counties.
Reported and survey coverage of PZQ for SAC and adults was below the 75% WHO coverage target in Nimba county.	Programme reach in Nimba is lower than in other counties. MDA programme may not be well publicised in Nimba. There may have been issues with community acceptance or availability at the time of treatment. Alternatively, the low coverage could have been related to supply chain issues such as the quantity of drugs available within the county.	Ministry of Health (MoH) to review training package, sensitisation messages delivered, and timing of social mobilisation in relation to last mass drug administration (MDA) in Nimba. MoH to arrange debrief discussions with the county health team and a selection of community drug distributors in Nimba to understand potential reasons for low coverage and identify strategies to improve this in future rounds of MDA. MoH to support sharing of best practices and lessons learned between counties, potentially at annual review meetings.

Finding or observation	Interpretation	Programmatic action
Overall, coverage for SAC was higher among those attending school than those not attending school.	<p>Despite shift to community-based model, non-attending SAC are not being reached to the same levels as those SAC attending school.</p> <p>There may be poor communication or sensitisation at community level.</p>	MoH to investigate reasons for this difference and identify strategies to improve coverage in non-attending SAC, with support from SCI.
For both SAC and adults, coverage by gender was higher on average for men than for women, though these differences were not statistically significant and the averages mask significant variability (in some villages coverage was higher for women than men).	<p>In some areas, community sensitisation may not reach men and women equally.</p> <p>The timing of MDA may have conflicted with other commitments in some areas.</p>	<p>MoH to investigate reasons for these differences and ensure future community sensitisation is aimed at both men and women.</p> <p>Key informant interviews and focus group discussions to investigate poor coverage among particular groups.</p> <p>MoH to consider adjusting schedule and timing of MDA to reach men and women equally.</p>
Communication channels, such as town criers, poster and radios, were under-utilised.	Children mostly heard about the MDA from a teacher or a health professional. For adults, sensitisation was done through health professionals or village mechanisms such as meetings or town criers. Other methods, such as radios and posters, were less effective or under-utilised.	<p>MoH and SCI to review cashbooks to identify whether radio, town crier and posters were utilised as planned. If identified that they did, MoH to review sensitisation and social mobilisation methods, tools, and messages, along with training on these areas.</p> <p>Noting disparity in coverage between counties, MoH to explore possibility of standardising social mobilisation tools and messages across the country.</p> <p>MoH to reinforce the importance of sensitisation messages during training. Consider revisiting timing and frequency of broadcasted messages.</p>

Finding or observation	Interpretation	Programmatic action
Reported coverage was not disaggregated for SAC and adults.	MoH treatment reports show overall coverage only, which may mask differences in coverage between the two groups.	Moving forward, MoH to report disaggregated coverage for SAC and adults in order to allow more precise comparison between reported and validated coverage.
Reported coverage calculated using county population estimates, rather than census estimates used for planning at central level.	Population estimates used to calculate eligible population for planning and reporting are not consistent. Figures on total and eligible population (i.e. the denominator) may be incorrect or outdated.	MoH to liaise with the national statistics office to determine most accurate source of population data and ensure consistent use for both planning and reporting.

2. Methods

All methods described in associated protocol:

https://imperiallondon.sharepoint.com/:w:/r/sites/fom/schisto/mer/2_Country_M%26E/LBR/Coverage/FY_1718/1_Protocol_%26_pre-survey/LBR_2018_Coverage_Survey_Protocol_EN.docx?d=w161f2b14bf8b45a98795ef788b39d8eb&csf=1&e=vd9WWP

1.1 Field methods

- The modified random walk procedure was used to select households for interview during data collection.
- The Schistosomiasis Control Initiative (SCI) Programme Advisor supported in-country supervision during the initial days of the survey. Ongoing supervision was provided by the University of Liberia Pacific Institute for Research and Evaluation (UL-PIRE) Survey Coordinator.
- The SCI Field Operations Advisor undertook daily data checks during data collection. Data cleaning was undertaken by the SCI Monitoring, Evaluation and Research (MER) team, with the field team providing clarifications and responses to queries where required.

1.2 Deviations from protocol

- Three villages (Kalidu in Foya, City View in Voinjama, and Airfield in Sanniquellie) stated in the village questionnaire that no MDA took place. This agreed with the enumerator notes on the households as most of them claim that the people either did not receive PZQ (household (HH) claimed there was no distribution) or that an individual took the PZQ only because they were in another town. In accordance with standard SCI practice, the answers stating that taking PZQ is "unknown" to the respondent were treated as a "no". However, if a person took the PZQ, even in another town, it is still counted as having received the treatment.

- There was either a misunderstanding or inattention by the enumerators when completing the village questionnaire. On one occasion 15 households were interviewed even though the village questionnaire states that the village contains in total only 8 households. Such a discrepancy should have immediately been identified by supervisors, either correcting the mistake and noting it or informing SCI of potential errors in the data.
- The Equity question on the type of floor in the household was incorrectly coded on SurveyCTO. There should only be two options: "earth/sand/dung" or "other". However, the option "wood" was included (from another question) and selected in 44 household questionnaires. A logistic regression on the other equity questions was run on the cases that did not check the wrong answer. This model was used to predict the answer for the 44 wrong cases. The model had a correct prediction rate of 90% on the data it was based on.
- 5 replacements were made, one in Lofa county and four in the Fuamah district of Bong county. The latter four are villages close to Gbarpolu, North West of the St. Paul River, which rises significantly during the rainy season. This area is indeed hard to reach and was difficult to reach during the MDA. Hence, there is the risk of biasing results by only choosing areas that are easy to access.
- Enumerator Alvin Janda always interviewed exactly 4 people in all the households he surveyed. Upon probing it was found that he was not randomly selecting members of the household but only from those that were available to him in those households, therefore in breach of the protocol. There was no evidence that the available HH members should have different coverage from the others, hence the data was used despite this issue.
- The number of interviewed children (651) children was approximately 60% of adults interviewed (1023). If it is assumed that only 80% of households have two or more people available (child or adult) and 10% of individuals refuse to complete the survey, then 1020 individuals should be interviewed. This is in line with the values for adults but the number for children is significantly lower.

1.3 Ethical approval

Ethical approval was granted by the UL-PIRE Institution Review Board for the previous coverage survey in May 2017 (Protocol #: 16-09-017). For this survey, the earlier approval was extended by UL-PIRE to midnight on August 20, 2019, located here:

https://imperiallondon.sharepoint.com/sites/fom/schisto/mer/2_Country_M&E/LBR/Coverage/FY_1718/1_Protocol_&_pre-survey/LBR_IRB_Ethics_Approval_Coverage_Survey_2018.pdf?csf=1&e=AgzNW2.

Ethical approval was also granted by Imperial College Research Committee ICREC_8_2_2.

3. Survey Recommendations

Table 2: Observations and corrective measures for the survey process itself

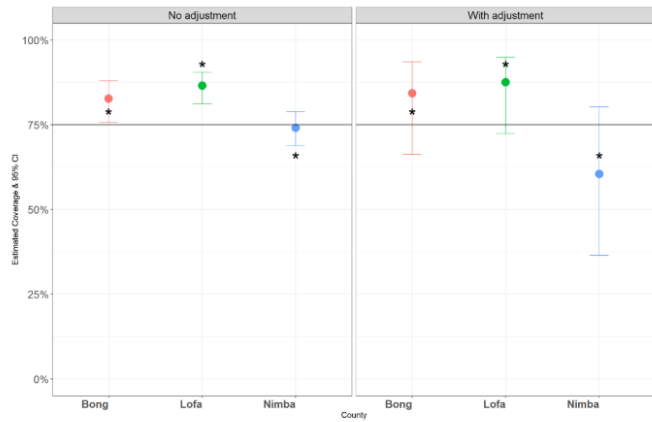
Finding or observation	What to look for	Corrective action
Number of children interviewed was lower than expected	Comparison between number of adults and children.	MoH, with support from SCI, to compare household distribution information (i.e. number of children and adults per household) to that of the national statistics office. If this doesn't correlate, then review the coverage survey training content including identifying why enumerators may not interview children and propose solutions (i.e. following up in schools, time expected to wait for children to return from school/fields/farms).
Incorrect entry of village information: In some cases, responses in village questionnaire did not correlate with verbally reported information or data entered in the household questionnaires	<p>For some villages, the listed number of households in the village was lower than the number of households interviewed.</p> <p>The number of households in a village is used to adjust the data for population size. If this information is grossly under- or over-reported it can bias the results significantly.</p>	<p>Village questionnaire to be covered in greater detail in future training, with emphasis on accurate recording of information. Monitoring, evaluation and Research (MER) team to include checking for disparity between village and household questionnaire information in daily data checks. MER team to review possible constraints to minimise data entry mistakes.</p> <p>SCI to consider engaging an alternative partner for implementation of future coverage surveys, and to ensure more intensified in-country supervision during data collection.</p>
Problems with protocol adherence in the field.	Protocol for random selection of individuals to interview in each household not followed by all enumerators.	SCI and survey partner to ensure greater emphasis on protocol adherence during training through supervised scenario practices and pilot survey prior to data collection. Ensure that supervisors are present in the field during the first few days of data collection.
Some sites inaccessible due to survey taking place during the rainy season.	Use of reserve sites requested by survey teams in some areas.	MoH and SCI to consider season when planning future surveys, avoiding rainy season where possible.

4. Results

4.1 Dashboard

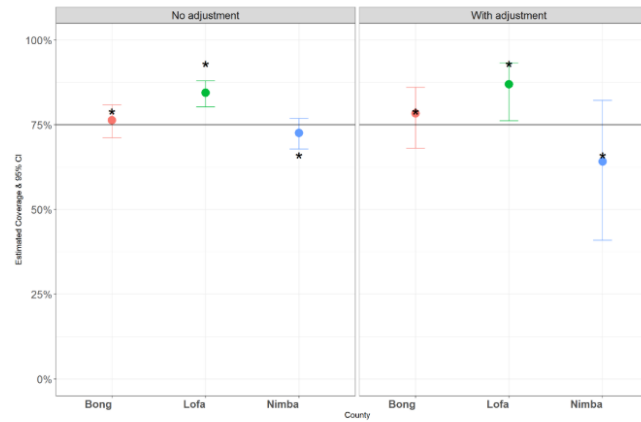
PZQ County Coverage & 95% CI for Children

Split by whether adjusted for population size (* reported coverage)



PZQ County Coverage & 95% CI for Adults

Split by whether adjusted for population size (* reported coverage)



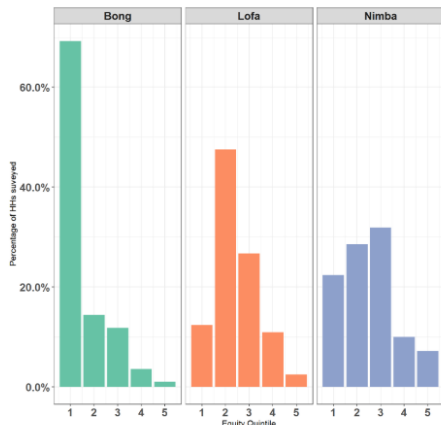
Comments

Coverage for both SAC and adults is above the 75% WHO target for Bong and Lofa. Survey coverage is in line with reported coverage in Bong, below reported values in Lofa.

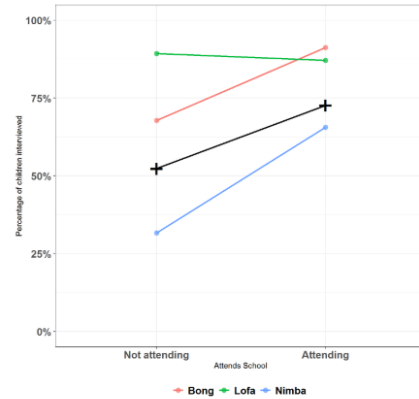
In Nimba the survey coverage not adjusted for population and adjusted for population are quite different (74.1% compared to 60.5%). This is because two communities, Bololewee and Boe, had low coverage (60% and 17% respectively) but also the largest populations, approximately six times as many households than the average for villages in the survey. Therefore, when adjusting the survey coverage estimate for population size of sampled villages, these two communities have a higher weighting for the average than smaller communities.

The validity of the estimate of HHS per village was called into question and flagged with the national team.

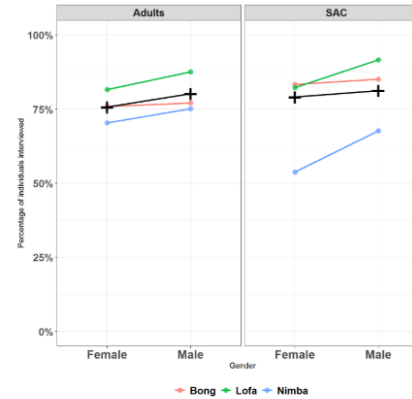
Distribution of interviewees by wealth quintile and county



PZQ coverage of children in each county split by school attendance (Overall mean in black)



PZQ coverage in each county split by gender and target population (Overall mean in black)



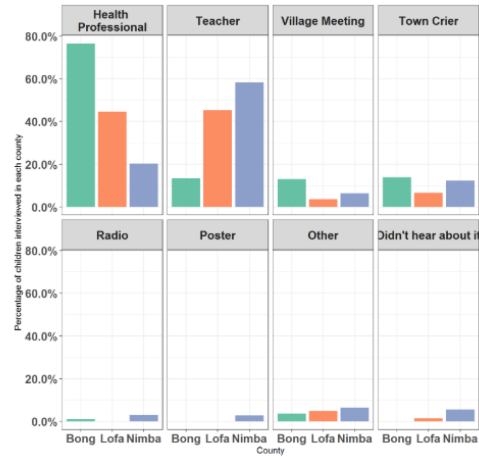
Comments

More than 50 percent of interviewees come from the poorest two quintiles of Liberia as measured by the Equity Tool. In Bong over 60 percent of interviewees come from the poorest quintile alone.

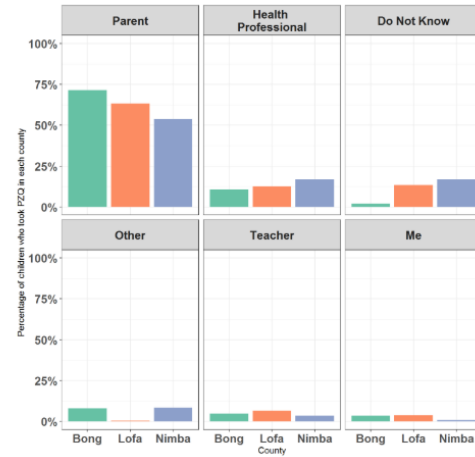
Splitting PZQ coverage by school attendance (only for SAC) shows that overall coverage is higher for children attending school than for non-attending ones. This is not true in Lofa where coverage is slightly worse for attending than non-attending children.

Coverage by gender is higher on average for males than for females among both adults and SAC. This difference is not significant nor consistent. The average masks the fact that the difference is the other way around (coverage higher among females) in many villages.

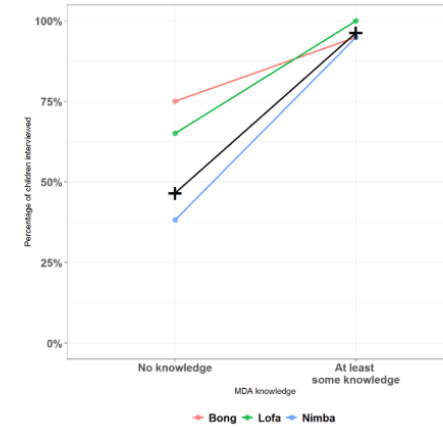
Child sensitization: How did you hear about MDA?



Children - Person deciding whether to take drugs



Children - PZQ coverage with and without prior knowledge of the MDA (Overall mean in black)

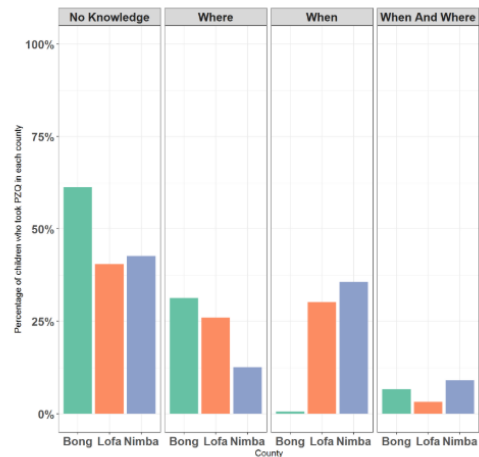


Comments

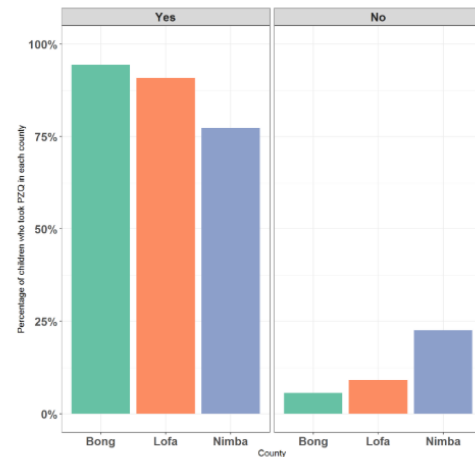
Children mostly heard about the MDA either from a teacher or a health professional. These two groups also, along with the children's parents, are the main decision makers for ingesting PZQ.

Having some knowledge about the MDA (knew at least when it was to take place or where, if not both) is positively correlated with higher coverage. This may coincide with children who attend school as sensitization often happened at schools.

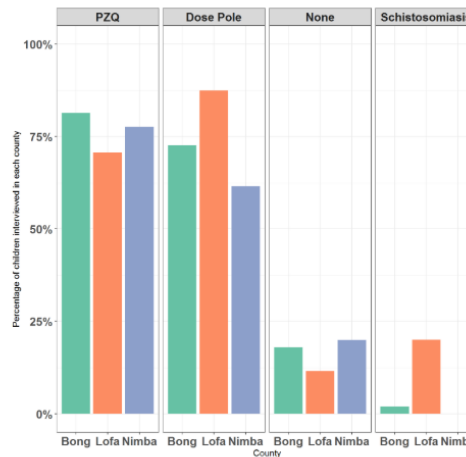
Children - Knowledge about the MDA



Children - Food eaten prior to taking PZQ



Children - MDA items recognition



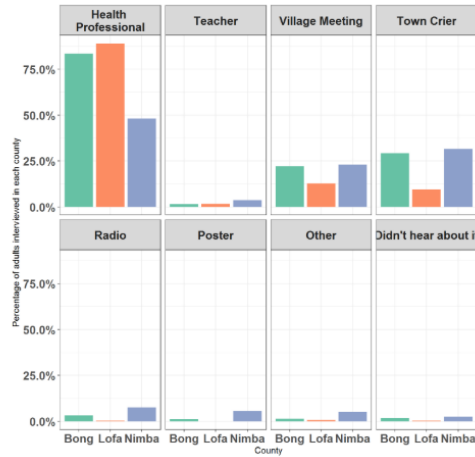
Comments

The first graph shows responses to questions about knowledge about the MDA. Knowledge about the MDA was lower in Bong.

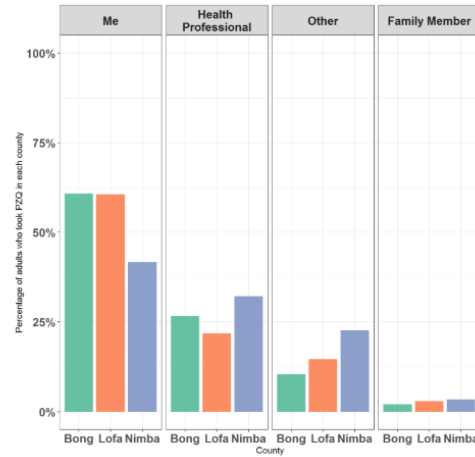
Despite little knowledge about the MDA, the vast majority of children reported having eaten before taking PZQ.

Children recognised the Dose Pole and the PZQ pill, but recognition of the disease (understanding what it is by having it described) is low.

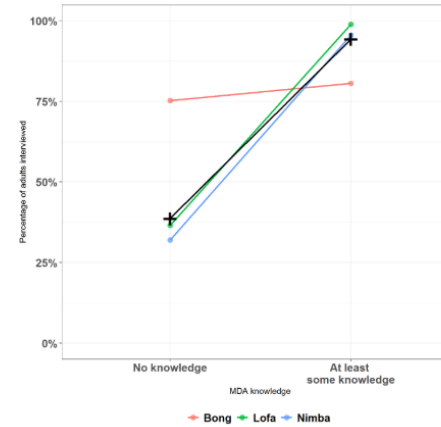
Adult sensitization: How did you hear about MDA?



Adults - Person deciding whether to take drugs



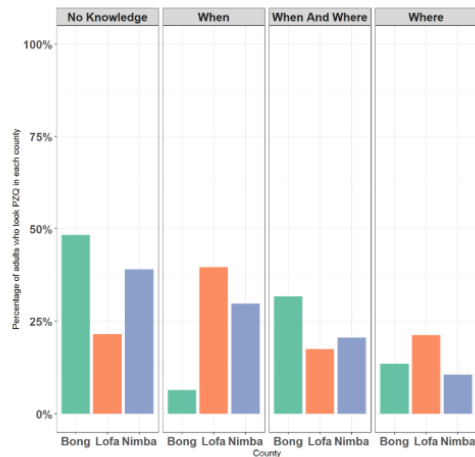
Adults - PZQ coverage with and without prior knowledge of the MDA (Overall mean in black)



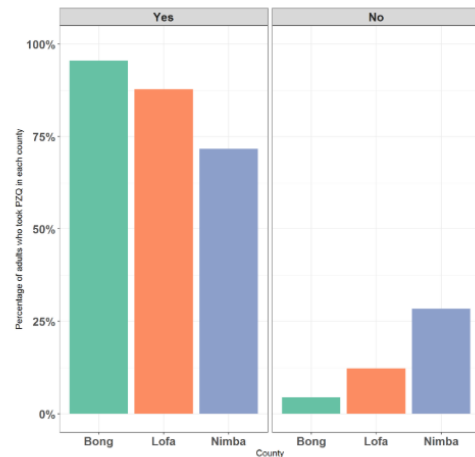
Comments

For adults sensitization was done either through health professionals or village mechanisms like meetings or criers'. The individuals themselves are the main deciders whether to take the drugs or not with a small yet substantial role played by health professionals. Lastly, individuals with some knowledge of the MDA, on average, showed higher coverage rates. The effect is similar as with children.

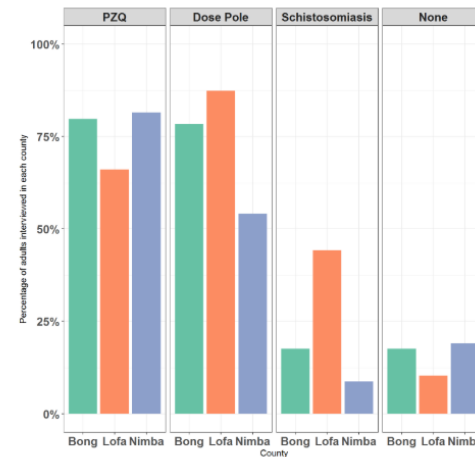
Adults - Knowledge about the MDA



Adults - Food eaten prior to taking PZQ



Adults - MDA items recognition



Comments

Among adults, knowledge about the MDA was higher, yet still approximately 25% to 50% of individuals surveyed did not know of the MDA. Just as among children, the majority of adults ate before taking PZQ. The proportion of adults who had eaten prior to taking PZQ is lowest in Nimba. Recognition of the PZQ pill and Dose Pole are similar to that of children. Adults seem to have a better understanding of schistosomiasis, even though overall, recognition levels are low.

4.2 Results table: Children

Table 3. Coverage survey results for SAC; overall and by district

Indicators	Overall	Bong	Lofa	Nimba
N villages	42	14	14	14
N children interviewed	651	150	215	286
PZQ coverage: not adjusted for population size (95% CI)	80.2% (76.9% – 83.1%)	82.7% (75.7% – 88.0%)	86.5% (81.2% – 90.5%)	74.1% (68.7% – 78.9%)
PZQ coverage: adjusted for population size (95% CI)	69.0% (51.6% – 82.3%)	84.2% (66.2% – 93.6%)	87.5% (72.4% – 94.9%)	60.5% (36.5% - 80.3%)
Percentage of children attend school	79.7%	64.0%	80.5%	87.4%
PZQ coverage in attending SAC	84.6%	90.6%	89.0%	79.2%
PZQ coverage in non-attending SAC	62.9%	68.5%	76.2%	38.9%
PZQ p-value of difference between attendance	<0.01	0.27	0.06	0.21
Percentage girls	49.2%	48.7%	45.6%	52.1%
PZQ coverage in girls	79.1%	84.9%	84.7%	72.5%
PZQ coverage in boys	81.3%	80.5%	88.0%	75.9%
PZQ p-value of difference between sexes	0.57	*	0.23	0.87

* - Model did not converge

4.3 Results table: Adults

Table 3. Coverage survey results for adults; overall and by district

Indicators	Overall	Bong	Lofa	Nimba
N villages	42	14	14	14
N adults interviewed	1023	296	348	379
PZQ coverage: not adjusted for population size (95% CI)	77.7% (75.1% – 80.2%)	76.4% (71.2% – 80.9%)	84.5% (80.3% – 87.9%)	72.6% (67.8% – 76.8%)
PZQ coverage: adjusted for population size (95% CI)	70.6% (55.7% – 82.1%)	78.4% (68.1% – 86.0%)	87.0% (76.2% – 93.3%)	64.1% (40.9% – 82.2%)
Percentage women	54.6%	58.8%	51.4%	54.4%
PZQ coverage in women	75.7%	75.9%	81.6%	70.4%
PZQ coverage in men	80.2%	77.0%	87.6%	75.1%
PZQ p-value of difference between sexes	0.16	0.92	0.17	0.31

Calculation of 95% confidence intervals of coverage, and p-value of differences between subgroups incorporated clustering at the village and household level. Statistical methodology is available from SCI on request.

4.4 Pdf of dashboard



LBR_Coverage_Aug
_2018_Dashboard.pdf