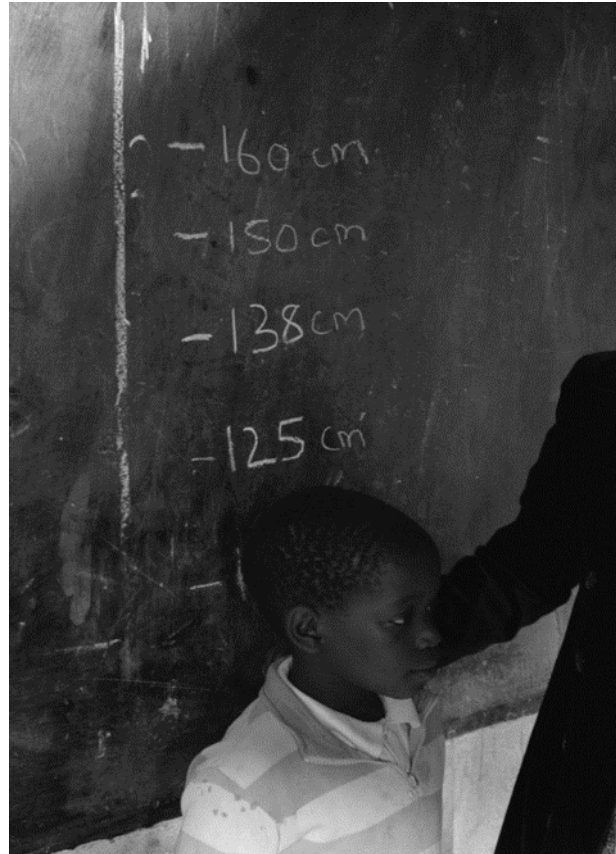


Malawi Coverage Survey 2017 Recommendations Report



1 Programmatic Recommendations

This report reviews the coverage validation survey which was conducted in 7 districts, in Malawi, in November 2017 following at least five rounds of mass preventive chemotherapy (PC) for schistosomiasis (SCH) and soil-transmitted helminths (STH) in all districts. The prior PC campaign took place in July 2017. The following programmatic recommendations are:

Table 1: Observations and programmatic actions to help maintain and improve the high coverage in Malawi.

Finding or observation	Interpretation	Programmatic action
For praziquantel (PZQ), reported coverage in school aged children (SAC) was above 75% in all districts except Chitipa, for which reported coverage was not available.	A good reporting system is in place. Communities and drug distributors are motivated.	Ministry of health (MoH) to sustain programme momentum for the next year to maintain coverage levels.
Survey coverage was above 75% for SAC in all surveyed districts.	All elements of the Mass Drug Administration (MDA) programme are established and functional.	
For albendazole (ALB), survey coverage in SAC was above 75% in all districts. Reported coverage was also above 75% in 5 of the 7 districts surveyed. In Chitipa district, reported coverage was not available.	A good reporting system is in place in these districts. Communities and drug distributors are motivated. All elements of the MDA programme are established and functional.	MoH to sustain programme momentum for the next year to maintain coverage levels.
Reported coverage data was not available for Chitipa district, as details of registered/eligible population was not reported to the national level.	Sub-district or district level reports not returned on time for inclusion in national level reporting. The reporting system in this district may be weak.	MoH to undertake Data Quality Assessment (DQA) in Chitipa district to assess issues with the reporting system and understand why treatment registration information was not reported to national level. MoH and Schistosomiasis Control Initiative (SCI) to place greater emphasis on the reporting process during training and supervision.

Finding or observation	Interpretation	Programmatic action
<p>For PZQ, survey coverage in adults was much lower than reported coverage in all districts except Chitipa (for which reported coverage were not available).</p>	<p>Figures on total population and eligible population (i.e. the denominator) are incorrect or outdated.</p> <p>The reporting system for adults is less reliable than for SAC.</p> <p>Adults are only targeted for treatment in hotspot areas, classified based on local knowledge. As adults are not treated in all villages in a district, calculating adult coverage of the whole district is not accurately representative of the national treatment strategy.</p>	<p>MoH to provide additional support to this district during mass drug administration (MDA) supervision and subsequent report writing days.</p> <p>MoH to confirm most appropriate denominator to be used for reported coverage calculation, with support from SCI.</p> <p>MoH to update and correct population data if more accurate population data exists.</p> <p>MoH to review training guide for adult treatment to ensure districts know where to treat adults and how to report adult treatment.</p>
<p>Survey coverage for adults was much lower than for SAC.</p>	<p>Adults did not receive treatment at the same scale as SAC.</p>	<p>MoH to review training guide for adult treatment, ensure districts know where to treat adults so it is accurately reported, and review training on how to report adult treatment.</p>
<p>Children who attended school had higher coverage than those who did not. This difference was significant in all districts except for Salima.</p>	<p>There may be poor communication of MDA in the communities.</p> <p>Sensitisation in the community may not be clear that treatment is for non-attending SAC, in addition to, adults.</p>	<p>MoH to investigate and identify strategies to improve coverage in non-attending SAC, with support from SCI.</p> <p>MoH and supervisors to reinforce during training that <u>all</u> SAC are eligible for treatment, not just those attending school. Distributors should ensure villagers are aware that children can receive treatment with health surveillance assistant (HSA) in the community if they do not have access to school-based MDA.</p>

Finding or observation	Interpretation	Programmatic action
		<p>MoH to emphasise during training that sensitisation activities should take place earlier, and for longer than just one or two days prior to treatment, to maximise reach. The programme should evaluate the use of mobile information sources to improve the reach of sensitisation campaigns.</p> <p>MoH to investigate feasibility of increasing the number of days of distribution in the communities.</p>
Communication channels were under-utilised.	Main method of sensitisation is through teachers for children and through health workers and village meetings for adults. Other methods were less effective or under-utilised.	<p>MoH to review the use of posters and other methods of sensitisation.</p> <p>MoH to reinforce the importance of sensitisation messages during training of distributors, trainers and supervisors at all levels of distribution.</p>
The mass media radio campaign pilot had no significant effect on coverage for children. The difference in coverage for adults was significant in three districts, where those who heard a radio clip had higher coverage than those who did not.	Radio may be an effective communication channel to reach adults in some areas.	MoH to consider ongoing use of radio for sensitisation of treatment for adults.
There were no significant differences in PZQ coverage between boys and girls.	Both boys and girls are being reached equally through MDA.	MoH to sustain programme momentum for the next year to maintain coverage levels and ensure continued gender equity in treatment.

Finding or observation	Interpretation	Programmatic action
<p>There were some differences in PZQ coverage between adult men and women, however the differences were only significant in three districts. In Chitipa and Rumphi, men were more likely to have received treatment than women, and in Dedza women were more likely to have received treatment than men.</p>	<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 explore reasons for these differences and ensure community sensitisation is aimed at both men and women.</p> <p>MoH to consider adjusting schedule and timing of community-based MDA to reach men and women equally. As part of this, national and district neglected tropical diseases (NTD) staff should examine how MDA activities fit into seasonal labour demands to identify any potential clashes that limit participation.</p> <p>During training, the programme should emphasise that sensitisation activities should take place earlier, and for longer than just one or two days prior treatment so as to maximise reach. The content of sensitisation campaigns should be revised based on recommendations from the 2017 social survey.</p>
<p>Not all tablets were taken together.</p>	<p>This may be due to multiple tablets of PZQ not being taken at once or PZQ and ALB not being administered together.</p>	<p>MoH to investigate reasons why tablets weren't taken together</p> <p>MoH to conduct refresher training prior to drug distribution to ensure PZQ and ALB dosages are taken at the same time.</p>

2 Methods

All methods described in associated protocol: https://imperiallondon.sharepoint.com/:w:/r/sites/fom/schisto/_layouts/15/Doc.aspx?sourcedoc=%7BD585D4D6-13E2-43EB-9358-7A4A7F729478%7D&file=MWI_Coverage_Survey_Protocol_2017_EN.docx&action=default&mobileredirect=true

2.1 Field methods

- Household selection was done by either household list method or modified 'random walk' procedure apart from Chipingasa village, which only had 16 households in the entire village.
- Due to recent changes in village names, 'Mwazolokele 2' was renamed 'Wanyanya' and referred to by that name in that district. This caused confusion leading to 'Mwazolokele 1' being interviewed under the name 'Mwazolokele 2'.
- Supervision was done by SCI in the first week of the survey. Data quality checks were done on a daily basis, with issues being flagged up to teams directly.

2.2 Deviations from protocol

- In Chitipa two reserve sites were required. In Dedza, Mchinji and Rumphi one reserve site was required per district. The survey took place during the rainy season, so due to heavy rain making the roads to the villages unsafe to use, reserve villages were used. The enumerator teams consulted with SCI prior to use of reserve sites.
- The sample size calculation as described in the protocol indicated that 15 households should be interviewed per village. In practice the mean number of households selected per village was 20. The minimum number of households sampled was 15. As the household selection was performed per the randomization process described in the protocol this will not have negative consequences for the results of the survey.
- The protocol called for all school aged children and two adults to be interviewed per household. There was no evidence of deviation from protocol for SAC interviews however in 24 out of 2448 households more than two adults were interviewed. This should not negatively impact the results of the survey.

2.3 Ethical approval

Ethical approval was granted by Imperial College Research Committee ICREC_8_2_2.

In Malawi, the National Health Sciences Research Committee advised that this activity was exempt from ethical review under 45 CFR 46.101(b). Associated correspondence is located here: https://imperiallondon.sharepoint.com/:w:/r/sites/fom/schisto/_layouts/15/Doc.aspx?sourcedoc=%7B15B856EB-9199-4538-9878-5CF9296F8B0C%7D&file=MWI_Ethical_Approval_Coverage_2017.docx&action=default&mobileredirect=true

3 Survey Recommendations

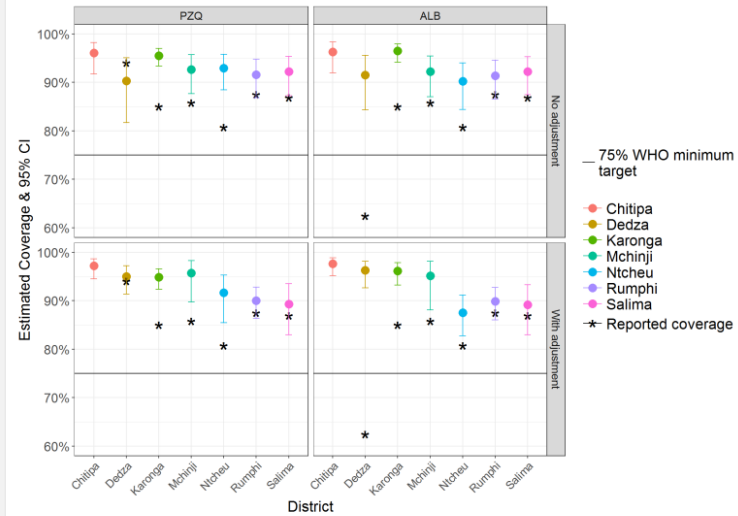
Table 2: Observations and corrective measures for the survey process itself

Finding or observation	What to look for	Corrective action
Incorrect number of adults interviewed	Per the protocol, up to two eligible adults should have been interviewed per household. In a small number of cases (<1% of households surveyed) more than two adults were interviewed.	Ensure protocol is adequately understood by enumerators during training. Introduce prompts and constraints on the mobile devices, restricting enumerators to interview the required number of eligible adults/individuals per household.
Low survey coverage in adults. In Malawi all communities are not targeted for adult treatment, but the analysis does not take this into account.	Survey coverage for adults being much lower than reported coverage for districts.	Obtain a list of communities where adults are targeted for treatment during MDA. This can they ben taken into consideration during analysis.

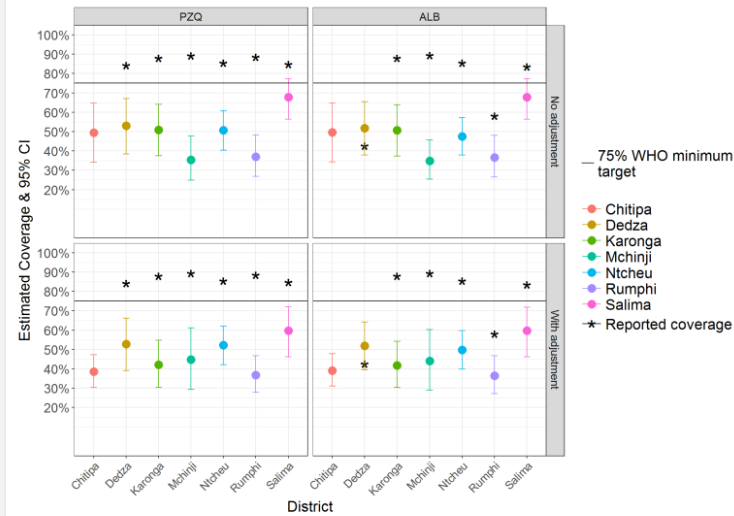
4 Results

4.1 Dashboard

Validated coverage in children by district, with and without adjustment for population size



Validated coverage in adults by district, with and without adjustment for population size



Comments

Coverage in adults

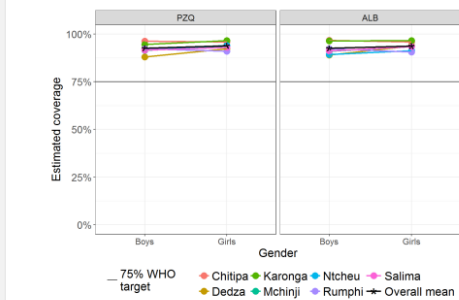
District	Reported coverage PZQ	Survey coverage PZQ (adj for pop)	Reported coverage ALB	Survey coverage ALB (adj for pop)
Chitipa	NA	39%	NA	39%
Dedza	84%	53%	43%	52%
Karonga	88%	42%	88%	42%
Mchinji	89%	45%	89%	44%
Ntcheu	86%	52%	86%	50%
Rumphhi	88%	37%	58%	36%
Salima	85%	60%	84%	60%

Coverage in children

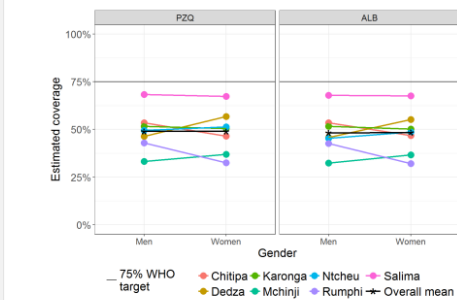
District	Reported coverage PZQ	Survey coverage PZQ (adj for pop)	Reported coverage ALB	Survey coverage ALB (adj for pop)
Chitipa	NA	97%	NA	98%
Dedza	94%	95%	62%	96%
Karonga	85%	95%	85%	96%
Mchinji	86%	96%	86%	95%
Ntcheu	81%	92%	81%	88%
Rumphhi	87%	90%	87%	90%
Salima	87%	89%	87%	89%

NB Reported coverage was not available for Chipita.

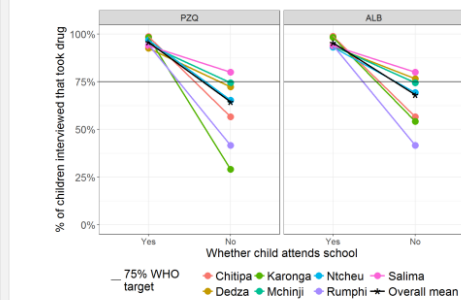
Coverage in children split by gender (overall mean in black)



Coverage in adults split by gender (overall mean in black)



Coverage in children split by school attendance (overall mean in black)

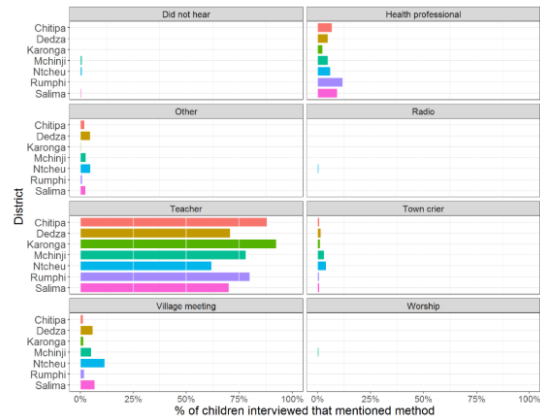


Comments

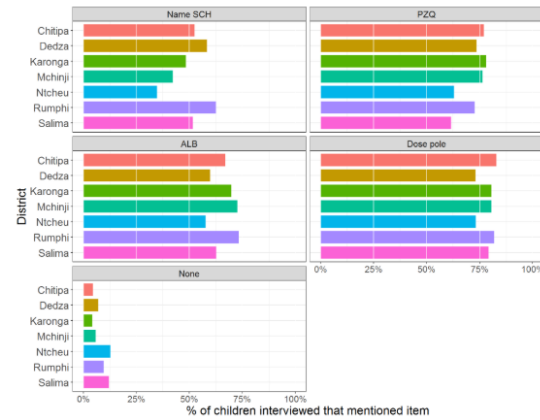
District	Non-attendance	Girls surveyed	Women surveyed
Chitipa	6%	50%	58%
Dedza	11%	54%	64%
Karonga	4%	48%	63%
Mchinji	8%	53%	59%
Ntcheu	12%	46%	66%
Rumphhi	5%	51%	57%
Salima	11%	49%	62%

Children who attended school had higher coverage than those who did not. This difference was significant in all districts except for Salima ($p = 0.24$).

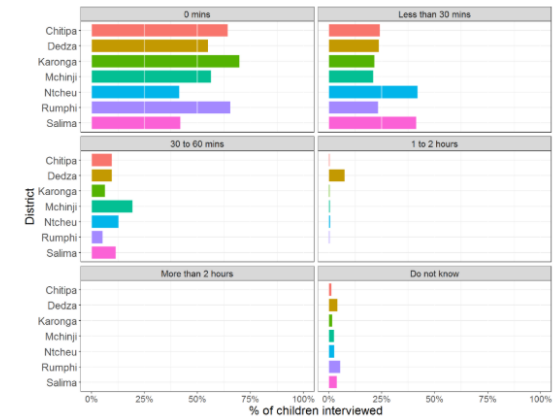
Methods of sensitization



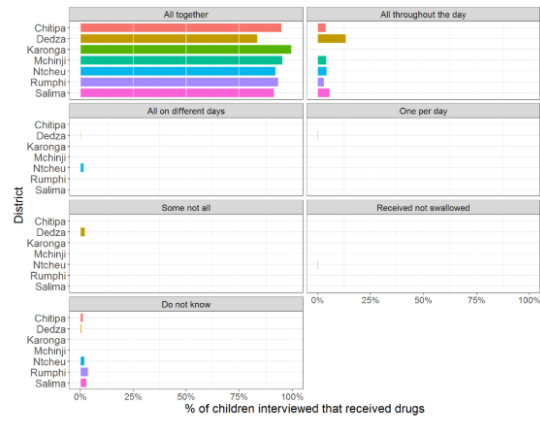
Recognition of words and items



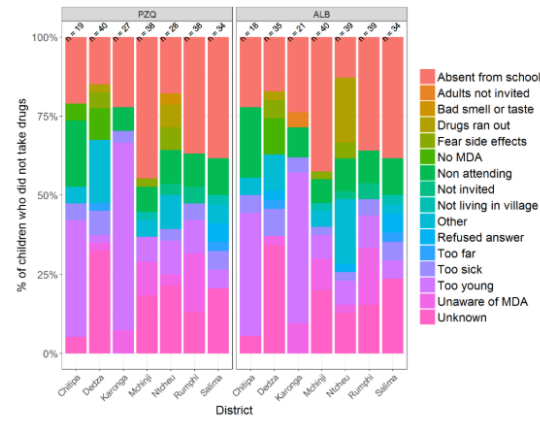
Distance from distribution point



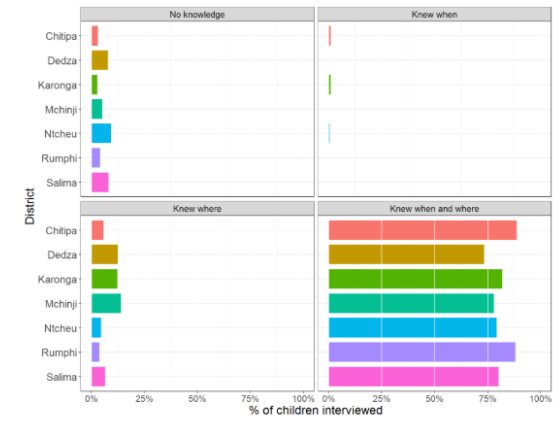
How children took the drugs



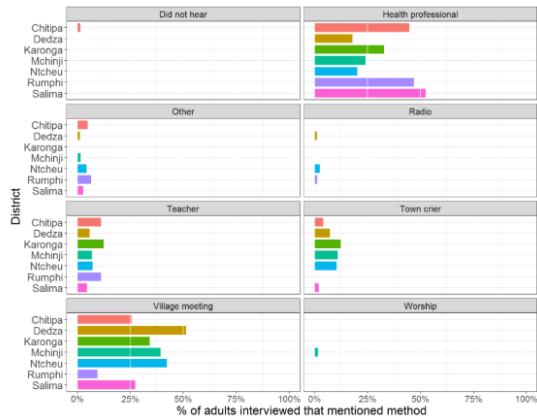
Reasons for not taking drugs



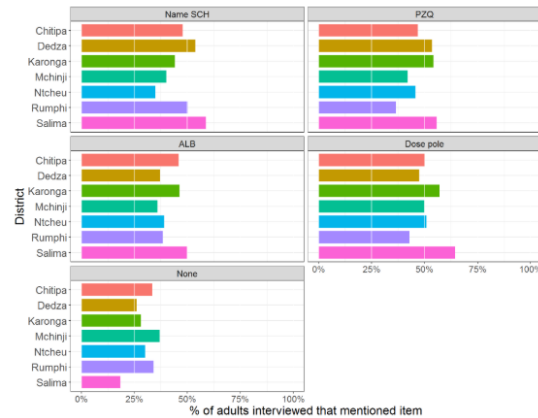
Prior knowledge of MDA details



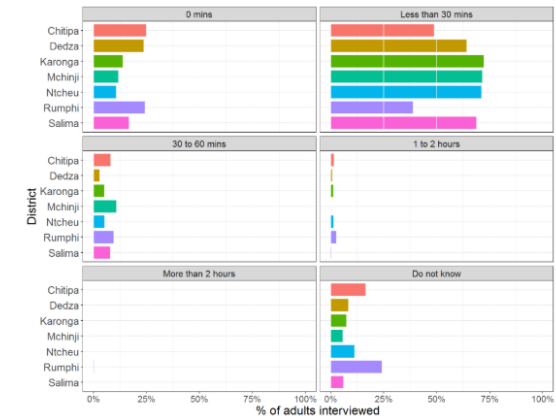
Methods of sensitization



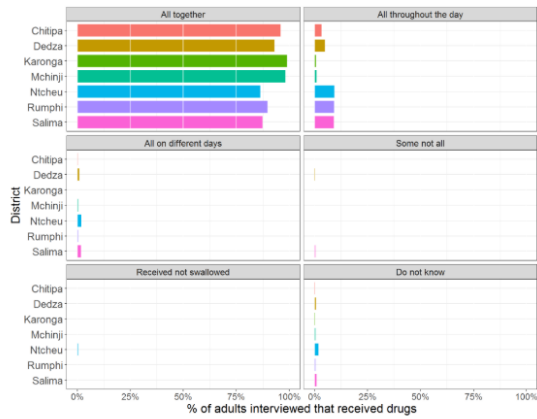
Recognition of words and items



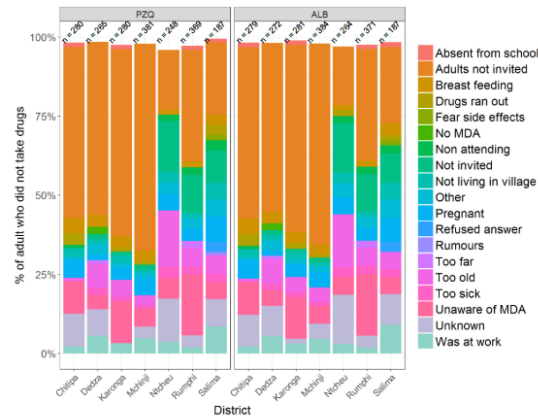
Distance from distribution point



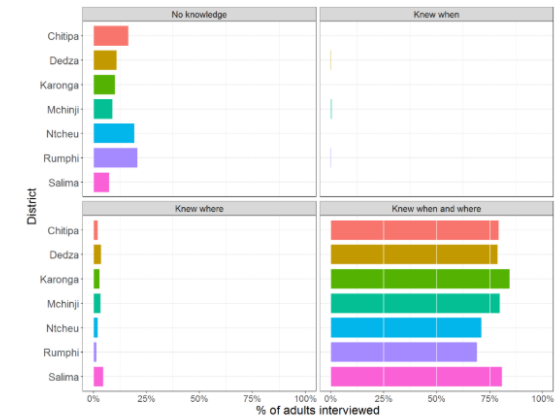
How children took the drugs



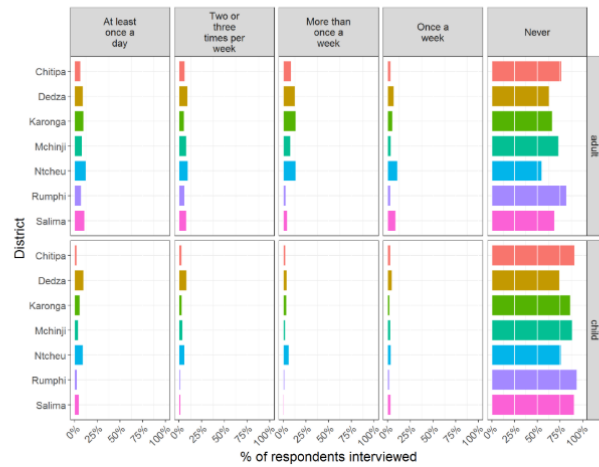
Reasons for not taking drugs



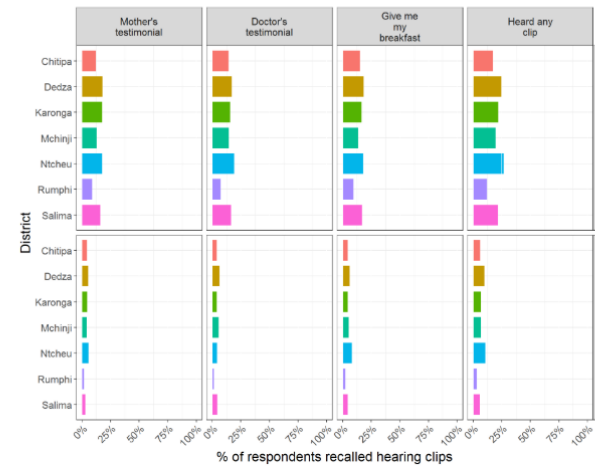
Prior knowledge of MDA details



How often do you listen to the radio



DMI radio clips



Comments - Radio listenership/DMI

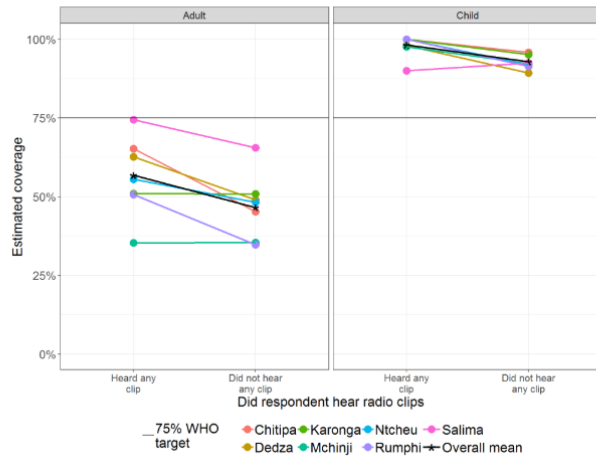
District	% adults heard clips	p-value adults	% children heard clips	p-value children
Chitipa	17%	0.001	6%	0.67
Dedza	25%	0.020	10%	0.53
Karonga	22%	0.240	7%	0.99
Mchinji	20%	0.490	7%	0.53
Ntcheu	27%	0.097	11%	0.99
Rumphhi	12%	0.089	3%	0.25
Salima	22%	0.010	6%	0.24

The proportion of households that own radios ranged between 22.7% in Rumphhi to 35.4% in Ntcheu.

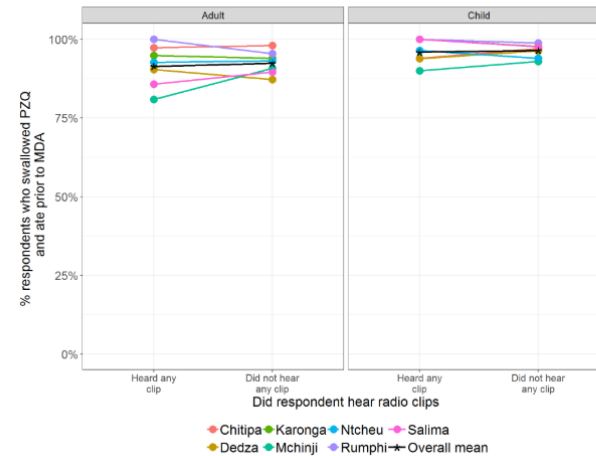
GLMM models were used to test the effect of hearing any of the radio clips on coverage. There was no significant effect on coverage for SAC. The difference in coverage for adults was significant in Chitipa, Dedza and Salima - those who heard a radio clip had higher coverage than those who did not.

On average 21% of adults and 7% of SAC reported hearing at least one of the radio clips and

Coverage by district split by whether respondents heard radio clips or not



Did respondents who participated in MDA eat prior to receiving drugs



Coverage comments

Differences between boys and girls

There were no significant differences in PZQ coverage between boys and girls ($p > 0.5$ for all districts).

Differences between men and women

There were some differences in PZQ coverage between men and women, however the differences were only significant in three districts. In Chitipa and Rumphhi men were more likely to have received treatment than women ($p = 0.03$ and 0.004 respectively). In Dedza women were more likely to have received treatment than men ($p = 0.004$).

4.2 Results table: children

Table 3. Coverage survey results overall and by district

Indicators	Overall	Chitipa	Dedza	Karonga	Mchinji	Ntcheu	Rumphi	Salima
N villages	126	18	18	18	18	18	18	18
N children interviewed	3313	488	413	603	516	399	454	440
PZQ coverage: not adjusted for population size (95% CI)	n/a	96.1% (91.7%, 98.2%)	90.3% (81.7%, 95.1%)	95.5% (93.4%, 97%)	92.6% (87.7%, 95.7%)	93.0% (88.5%, 95.8%)	91.6% (86.9%, 94.8%)	92.3% (87.3%, 95.4%)
ALB coverage: not adjusted for population size (95% CI)		96.3% (92%, 98.4%)	91.5% (84.4%, 95.6%)	96.5% (94.2%, 97.9%)	92.3% (87.1%, 95.5%)	90.2% (84.4%, 94%)	91.4% (86.6%, 94.6%)	92.3% (87.5%, 95.3%)
PZQ coverage: adjusted for population size (95% CI)		97.2% (94.5%, 98.6%)	95% (91.4%, 97.2%)	94.9% (92.4%, 96.6%)	95.7% (89.8%, 98.3%)	91.6% (85.5%, 95.3%)	90% (86.3%, 92.8%)	89.3% (83%, 93.5%)
ALB coverage: adjusted for population size (95% CI)		97.6% (95.2%, 98.8%)	96.3% (92.6%, 98.1%)	96.2% (93.2%, 97.9%)	95.2% (88.1%, 98.1%)	87.5% (82.7%, 91.1%)	89.9% (86%, 92.7%)	89.2% (83%, 93.3%)
% of children attend school	91.6%	93.9%	88.6%	96.0%	91.7%	87.7%	94.7%	88.6%
PZQ coverage in attending SAC	n/a	98.7%	92.6%	98.3%	94.3%	96.9%	94.4%	93.8%
PZQ coverage in non-attending SAC		56.7%	72.3%	29.2%	74.4%	65.3%	41.7%	80.0%
PZQ p-value of difference between attendance		<0.001	0.024	<0.001	0.007	<0.001	<0.001	0.243
ALB coverage in attending SAC		98.9%	93.4%	98.3%	93.9%	93.1%	94.2%	93.8%
ALB coverage in non-attending SAC		56.7%	76.6%	54.2%	74.4%	69.4%	41.7%	80.0%
ALB p-value of difference between attendance		0.041	0.012	<0.001	0.006	0.002	<0.001	0.254
Percentage girls	50.1%	49.6%	53.5%	48.1%	52.9%	46.2%	51.1%	49.0%
PZQ coverage in girls	n/a	95.9%	92.3%	96.6%	93.8%	94.1%	90.9%	93.0%
PZQ coverage in boys		96.3%	88.0%	94.6%	91.4%	92.1%	92.3%	91.6%
PZQ p-value of difference between sexes		0.938	0.706	0.236	0.984	0.785	0.571	0.509
ALB coverage in girls		95.9%	93.7%	96.6%	93.4%	91.4%	90.5%	93.5%
ALB coverage in boys		96.7%	89.1%	96.5%	90.9%	89.3%	92.3%	91.1%
ALB p-value of difference between sexes		0.588	0.915	0.905	0.606	0.576	0.251	0.256

4.3 Results table: adults

Table 4. Coverage survey results overall and by district

Indicators	Overall	Chitipa	Dedza	Karonga	Mchinji	Ntcheu	Rumphi	Salima
N villages	126	18	18	18	18	18	18	18
N adults interviewed	3944	553	564	570	590	503	585	579
PZQ coverage: not adjusted for population size (95% CI)	n/a	49.4% (34.1%, 64.7%)	53% (38.4%, 67.2%)	50.9% (37.5%, 64.1%)	35.4% (24.8%, 47.7%)	50.7% (40.4%, 60.9%)	36.9% (26.9%, 48.2%)	67.7% (56.5%, 77.2%)
ALB coverage: not adjusted for population size (95% CI)		49.6% (34.3%, 64.8%)	51.8% (37.9%, 65.4%)	50.7% (37.4%, 63.9%)	34.9% (25.5%, 45.7%)	47.5% (37.9%, 57.3%)	36.6% (26.5%, 48%)	67.7% (56.4%, 77.3%)
PZQ coverage: adjusted for population size (95% CI)		38.5% (30.5%, 47.2%)	52.8% (39.1%, 66.2%)	42.1% (30.4%, 54.7%)	44.8% (29.4%, 61.2%)	52.2% (42.2%, 62.1%)	36.8% (27.8%, 46.7%)	59.8% (46.3%, 72%)
ALB coverage: adjusted for population size (95% CI)		39.1% (31%, 47.8%)	51.9% (39.5%, 64.2%)	41.9% (30.4%, 54.3%)	44% (29%, 60.3%)	49.8% (39.9%, 59.8%)	36.4% (27.1%, 46.8%)	59.7% (46.2%, 71.9%)
Percentage women	61.2%	58.4%	64.0%	63.4%	58.6%	65.5%	57.4%	61.7%
PZQ coverage in women	n/a	46.4%	56.8%	50.4%	37.0%	51.4%	32.4%	67.3%
PZQ coverage in men		53.5%	46.3%	51.7%	33.2%	49.4%	43.0%	68.3%
PZQ p-value of difference between sexes		0.029	0.003	0.785	0.335	0.978	0.004	0.654
ALB coverage in women		46.7%	55.1%	50.1%	36.7%	48.6%	32.1%	67.6%
ALB coverage in men		53.5%	45.8%	51.7%	32.4%	45.3%	42.6%	67.9%
ALB p-value of difference between sexes		0.035	0.016	0.688	0.307	0.775	0.004	0.820

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



MWI_coverage2017
_dashboard.pdf