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Schistosomiasis

Treatments, guidance on M and E, review of the number of people requiring PC and research need

Global distribution of schistosomiasis and 2022 treatment report

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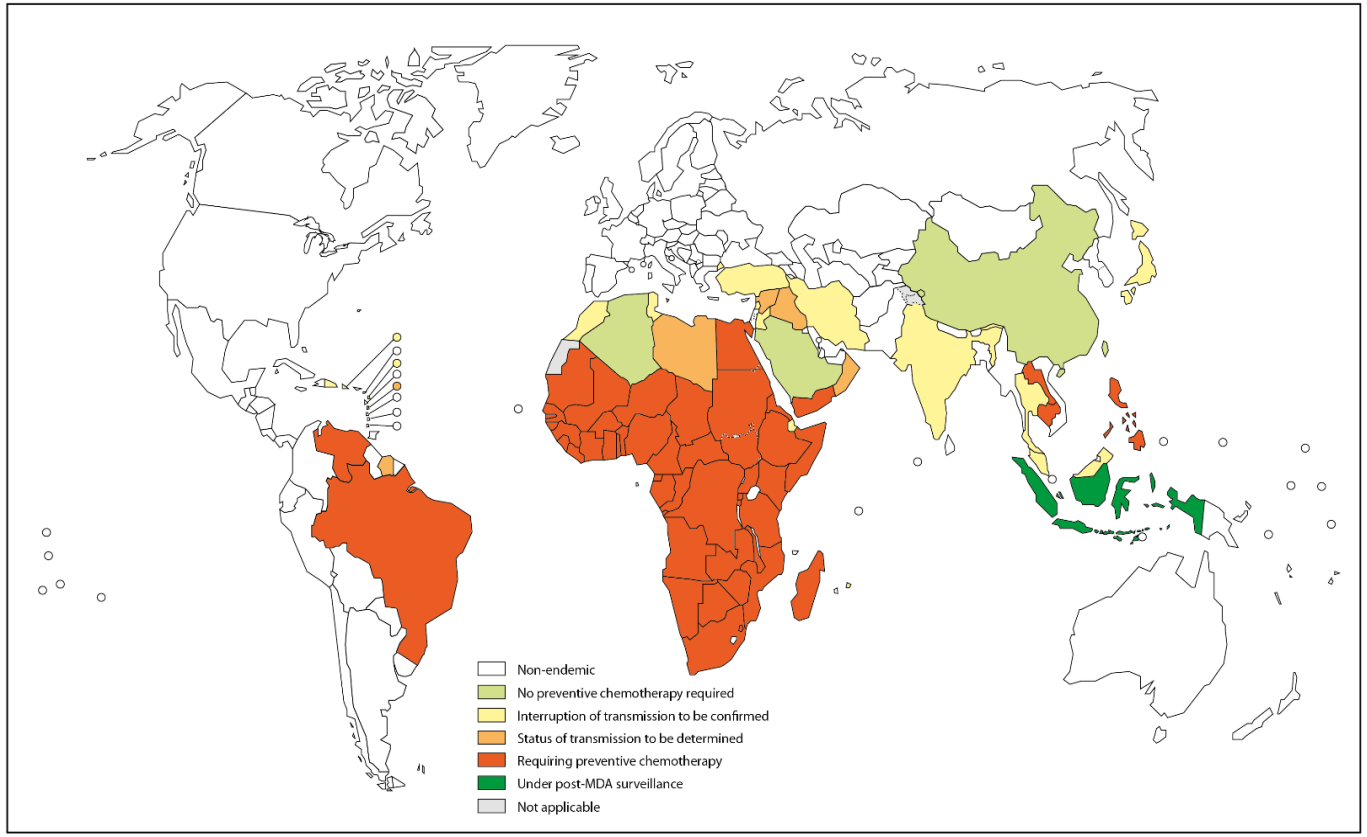
Global distribution of schistosomiasis

- 78 Countries and territories are endemic
- 50 countries in need of preventive chemotherapy (PC)
- **264.7 million people requiring PC** in 2022 (**91%** in Africa)
- Publications and reports on transmission of schistosomiases in Nepal, Myanmar, Ecuador, and India

Status of schistosomiasis endemic countries, 2022



Data Source: World Health Organization
Map Production: Control of Neglected Tropical Diseases (NTD)
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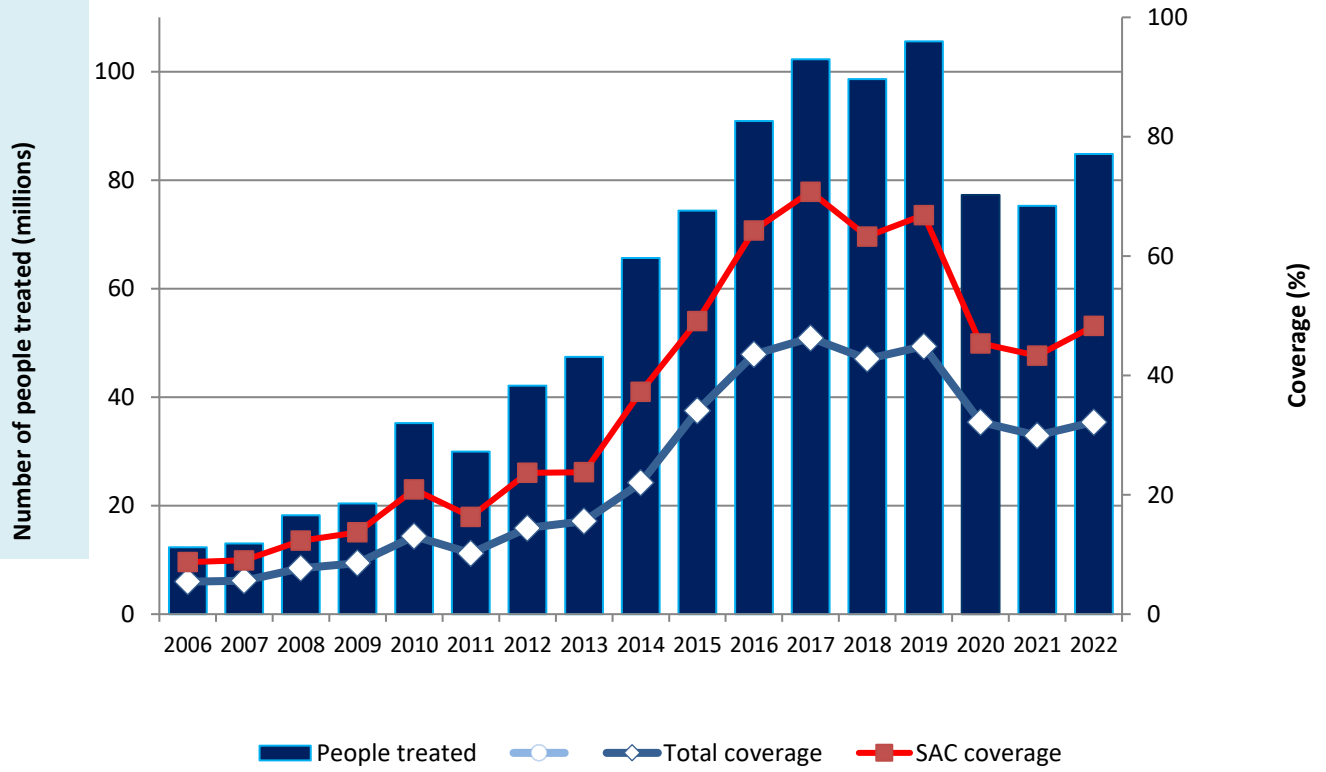
2022 Global schistosomiasis treatments

- 90.5% of all treatment delivered globally was in the African Region
- 52.9% coverage for SAC in the African Region

Treatments

Requiring PC: 264.7 million *(135 million SAC and 129.7 million adults)*

- Total **93.0** million (32.2% coverage)
- SAC 70.1 million (51.9% coverage)
- Adults 22.9 million (17.6% coverage)
- Nb. of reports 35 (70.0%)



2019: 105.5 M treated, SAC coverage=67.2%
2020: 77.2 M treated, SAC coverage=45%,
2021: 80.6 M treated, SAC coverage=46.9%
2022: 93.0 M treated, SAC coverage=51.9%

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WHO manual for Monitoring and Evaluation of schistosomiasis and STH

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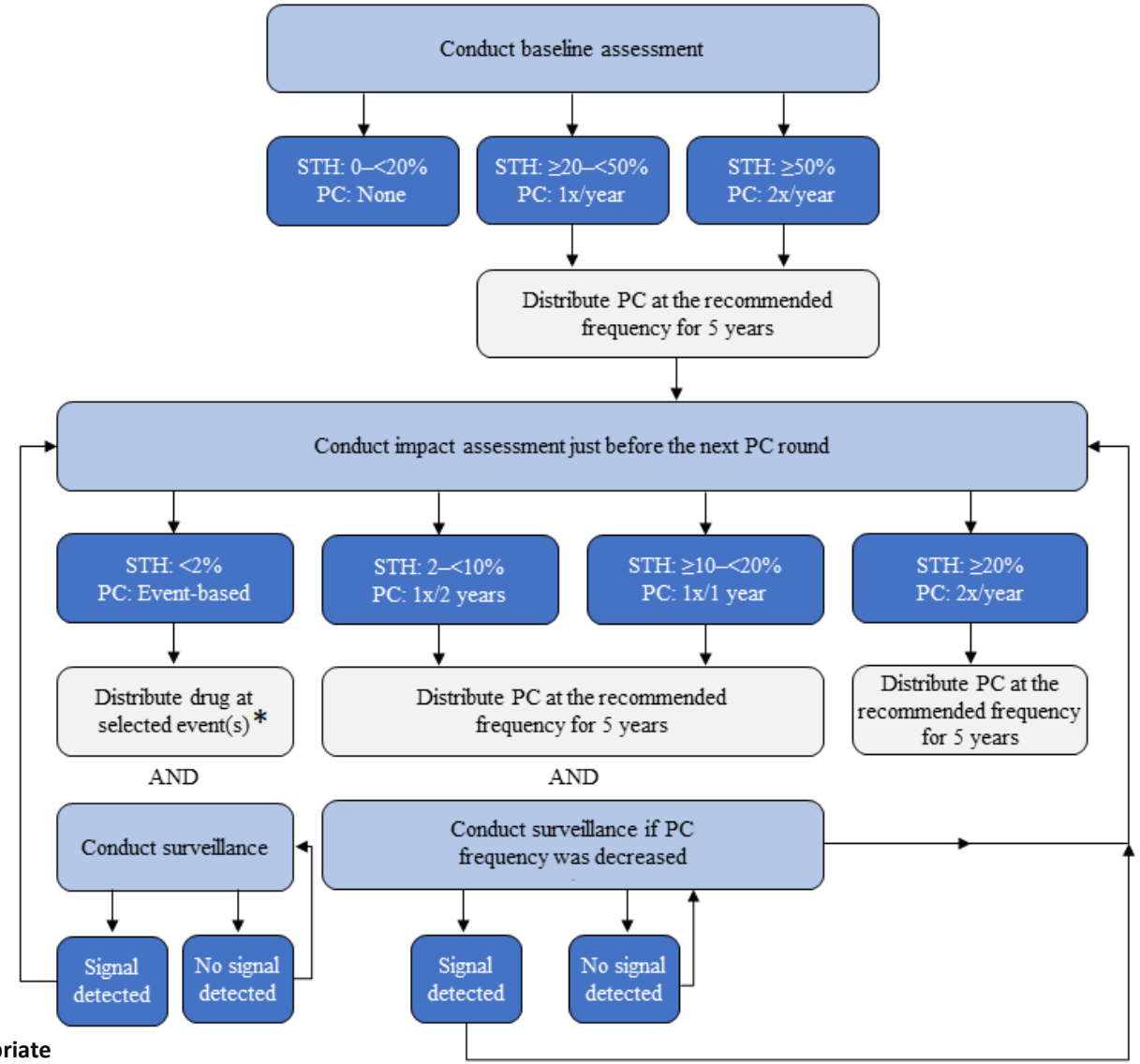
Manual development process

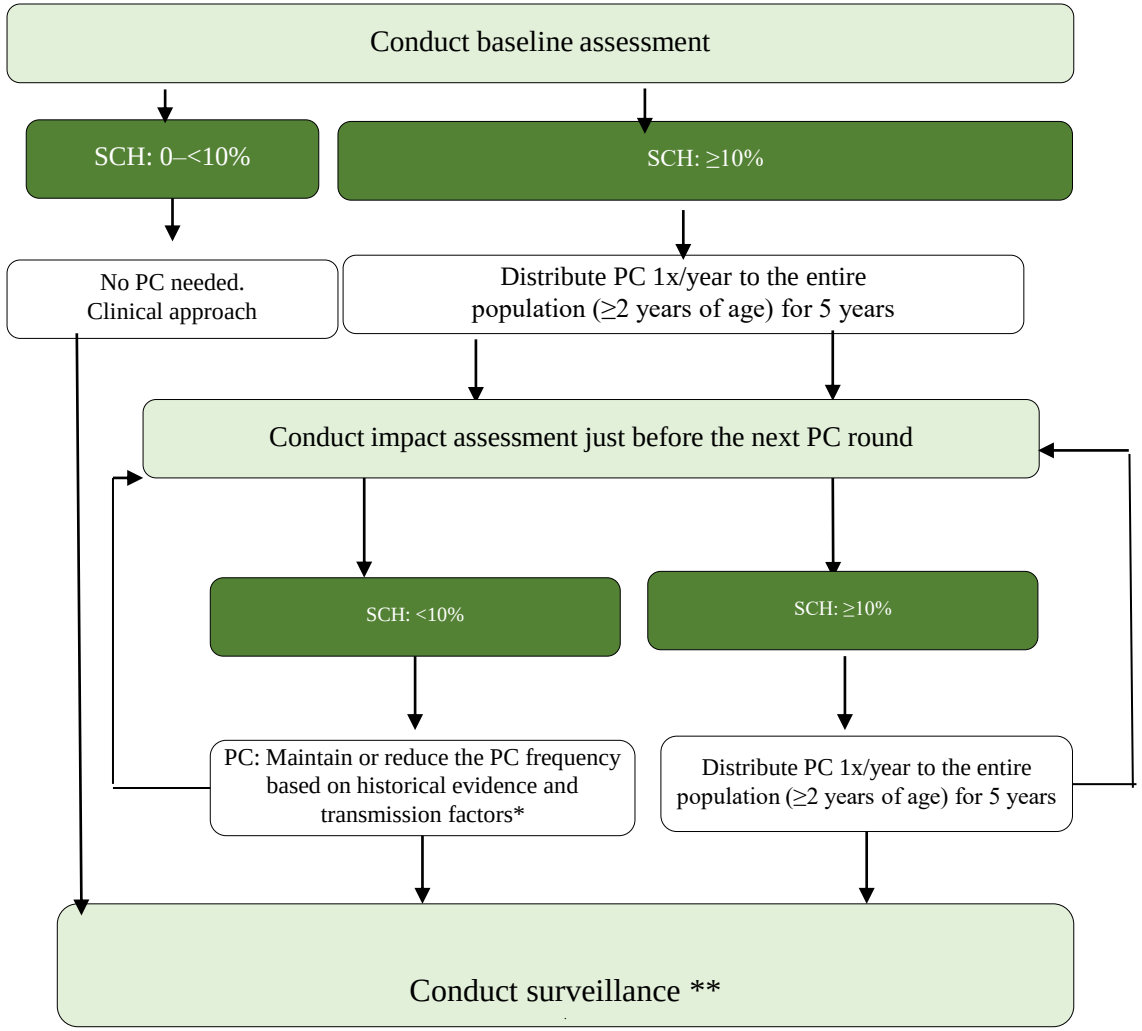
- M and E manual as Global Public Health Good
- Establishment of a technical advisory group for schistosomiasis and STH (TAGSS) and sub-working groups
- Meetings of the working groups and review of the drafts of the document
- Meeting of programme managers to discuss the prefinal draft
- Meeting of the technical advisory group for validation of the final draft
- Presentation of the draft at meetings to get the feedback of end users
- Integration of the endusers comments
- Submission of the final draft for peer review (3 experts)
- Integration of the comments of the peer reviewers
- TAGSS final check and approval
- Editing and publication (Current)

Decision tree for frequency of PC distribution for STH and assessments

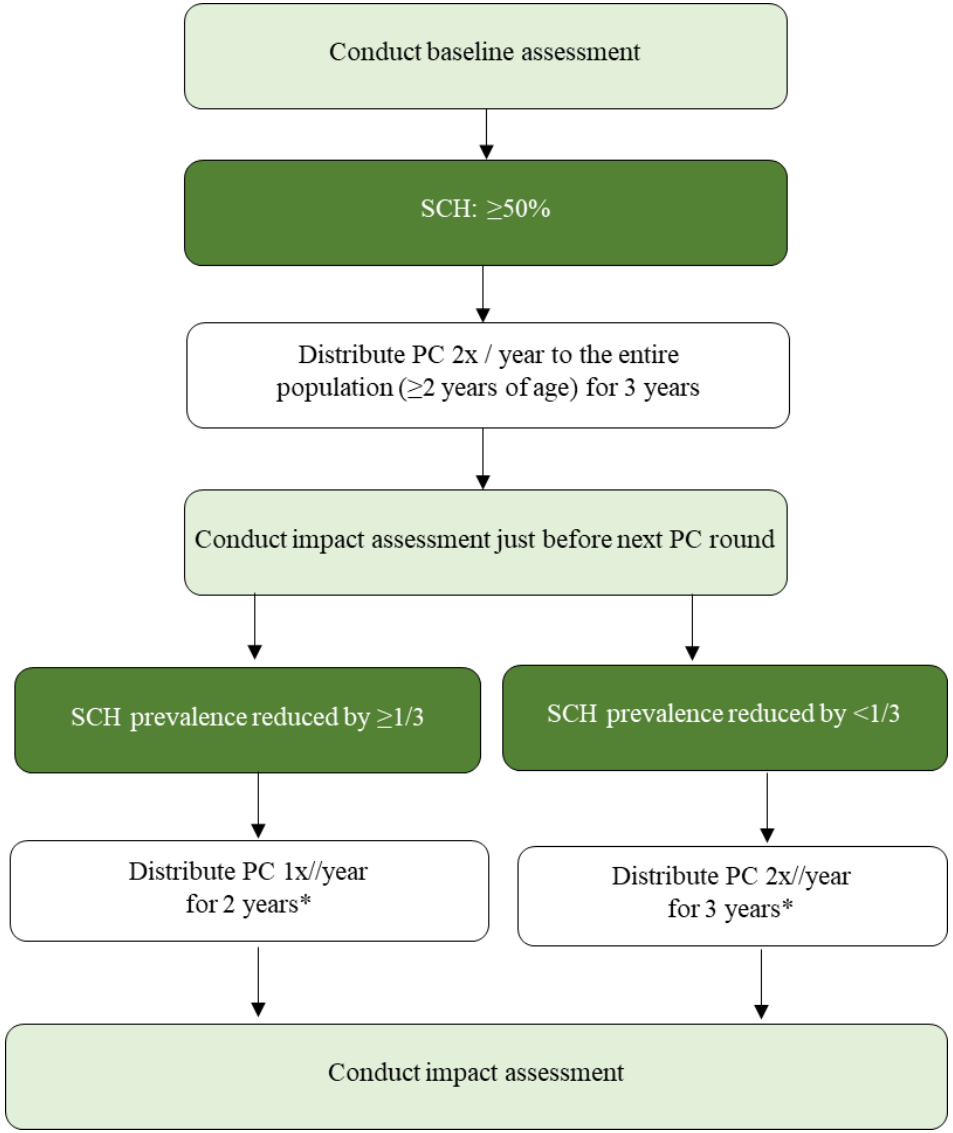


*** PC targeting entire age groups may be suspended, but distribution may continue in appropriate settings (e.g., selected child-health visits, selected school years, or at antenatal care visits)**

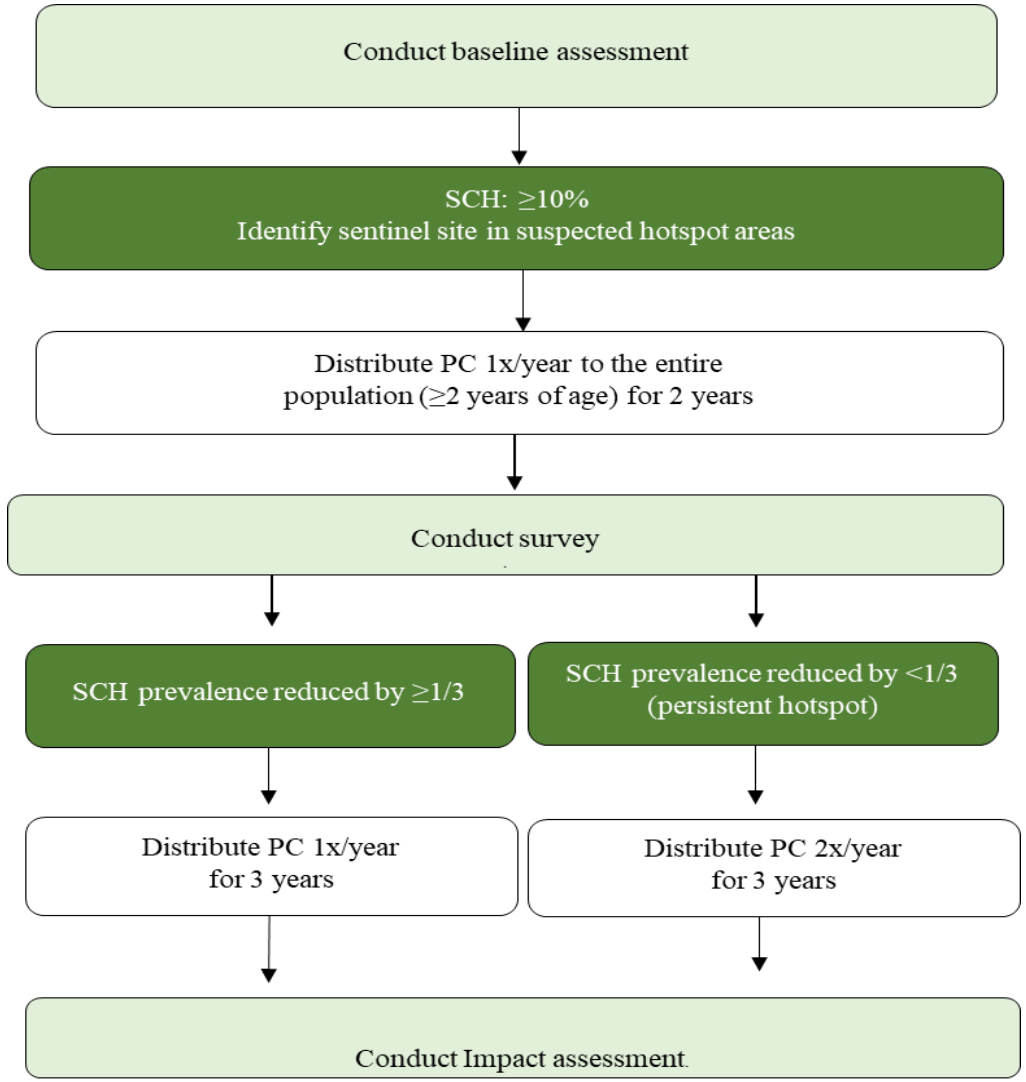
Standard approach for SCH



SCH Special case 1. High prevalence areas (P≥50%)



SCH Special case 2. Hot spots



Review of the number of people requiring PC for schistosomiasis

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Review of the number of people requiring PC for schistosomiasis

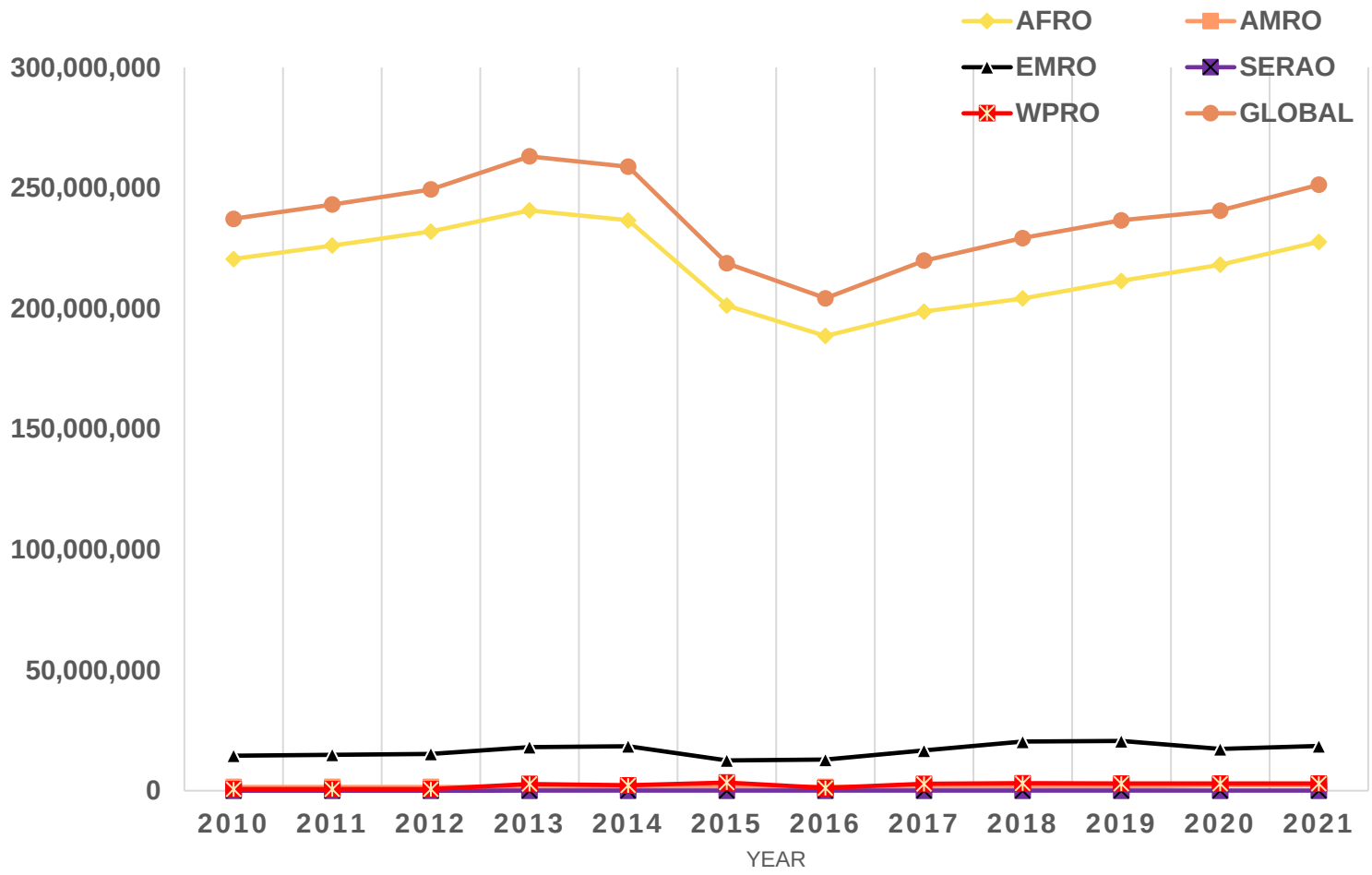
Objective

The objective is to revise the estimate of the number of people requiring preventive chemotherapy for schistosomiasis by reflecting the impact achieved and the new schistosomiasis guideline, in order to have an accurate estimate for monitoring the progress of the NTD road map and for more efficient management of the donation of praziquantel.

Rationale

- The number of people requiring PC for schistosomiasis keeps increasing despite the impact of PC (251 M in 2021, 264.7 M in 2022)
- More than 2 Billion tablets of praziquantel have been distributed in the African region 2012 to 2022
- A systematic review on the effect of preventive chemotherapy for schistosomiasis during the past 20 years has shown a reduction of 60% of the prevalence in SAC
- The same review has shown that the number of people requiring PC in the Africa region would be 111 M, if the treatment is targeted
- Schistosomiasis is a focal disease and treatment should be focused on communities at risk

Number of people requiring PC for schistosomiasis 2010-2021 per region



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Methodology

- An update of the ESPEN country **schistosomiasis workbooks** (of subdistrict data) with the most recent M and E and impact assessment data (currently ongoing)
- HQ - ESPEN group work to set criteria (urban, urban area, availability of mapping /impact data for the subdistrict etc.) and review in details each country workbook according to the criteria set
- Country validation of the revised workbook
- Call and meetings with countries having issues in the validation
- Publication of the results of the review both on the WHO website and in a peer review journal

Outcomes

- Estimate of the number of people requiring PC for schistosomiasis, by country and by IUs (community or subdistrict)
- Revised country schistosomiasis workbook based on target treatment of schistosomiasis (community/subdistrict) and the new guideline
- Updated estimate and forecast of the need of praziquantel by age group (pre-school age children, school age children and adults)
- Sub-district mapping and impact assessment need

Criteria

- Classification of sub-district as urban or rural
- Exclusion of urban population: for district populations greater than 100,000 people, an urban-rural ratio, obtained from the World Bank, was applied to the population.
- Availability of data at subdistrict level
- Year of Baseline survey
- Year of impact surveys (Impact 1, 2, 3 etc.)
- Number of rounds of preventive chemotherapy
- Diagnostic techniques mentioned
- Use of the guideline recommendation and M and E framework for the estimates of medicine need
- Reduction of PC frequency after year 5 of MDA
- Utilization of 2 tablets of PZQ for SAC for medicine calculation and 3 tablets per adult
- Population growth: Bank W. Population growth (annual %): The World Bank; 2012. Available from: http://data.worldbank.org/indicator/SP.POP.GROW.

Number and proportion of subdistricts with epidemiological data gaps (preliminary)

Communities	Number	%
Total number of subdistricts	77,183	100%
Number of subdistricts with baseline prevalence	17,958	23%
Number of subdistricts without baseline prevalence	58,990	76%
Number of subdistricts without baseline prevalence but having had an impact assessment	7,361	10%
Number of subdistrictsdue for mapping	37,468	49%
Number of subdistricts due for Impact assessment	16,084	21%

Number of districts in need of impact assessment- Espen

Country	Forecasted for 2022	Forecasted for 2023	SCH Surveys reported JRSM 2023
Angola	10	9	0
Benin	15	19	10
Burkina Faso	20	0	17
Cameroon	17	7	0
CAR	6	0	0
Chad	16	13	0
Congo	1	0	52
Cote d'Ivoire	45	37	0
DRC	80	42	0
Eritrea	11	3	0
Eswatini	4	0	59
Ethiopia	79	45	324
Gabon	31	0	0
Gambia	2	0	0
Ghana	48	38	0
Guinea	2	5	0
Guinea-Bissau	18	2	0
Kenya	6	8	0
Liberia	1	1	13
Madagascar	8	11	57

Country	Forecasted for 2022	Forecasted for 2023	SCH Surveys reported JRSM 2023
Malawi	2	1	28
Mali	18	12	8
Mauritania	4	1	9
Mozambique	7	56	0
Niger	11	25	0
Nigeria	224	83	11
Rwanda	0	4	0
Senegal	17	16	22
Sierra Leone	4	1	0
South Sudan	2	0	0
Tanzania (Mainlan	44	50	0
Togo	11	2	13
Uganda	24	8	7
Zambia	4	0	0
Zimbabwe	17	10	0
	809	**509**	**630**

R&D Blueprint for NTDs

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Proposed methodology

The Blueprint will be drawn up through a broad-based consensus-building process led by NTD-endemic countries, using the CHNRI methodology. It will dovetail with the costed NTD Global Implementation Plan, which will be developed in parallel.

Following primary publication in 2024, twice-yearly re-assessment of the identified R&D priorities and their progress against agreed metrics and data will be undertaken.

This approach to development, publication, dissemination and review is intended to drive progressively greater consensus on the R&D questions of highest priority and thereby influence the actions of governments, researchers, research funders and policymakers.

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Steps of the development of the R&D document

- WHO steering committee
- Steering group meeting to set values (Gender, and particular groups such as children WRA, migrants, etc)
- Division into themes (21 NTD and 7 cross-cutting :WASH, Disability and rehabilitation, Mental health, stigma and inclusion, Integration and mainstreaming, Vector control, One Health)
- Rapid review, for each theme, of: (a) previous and ongoing R&D priority-setting work, and (b) the current R&D landscape
- Invitation of stakeholders to participate
- Development of priorities for each theme (Stakeholders submit potential R&D questions, consolidation of questions centrally, check, rationalize, prioritization/score)

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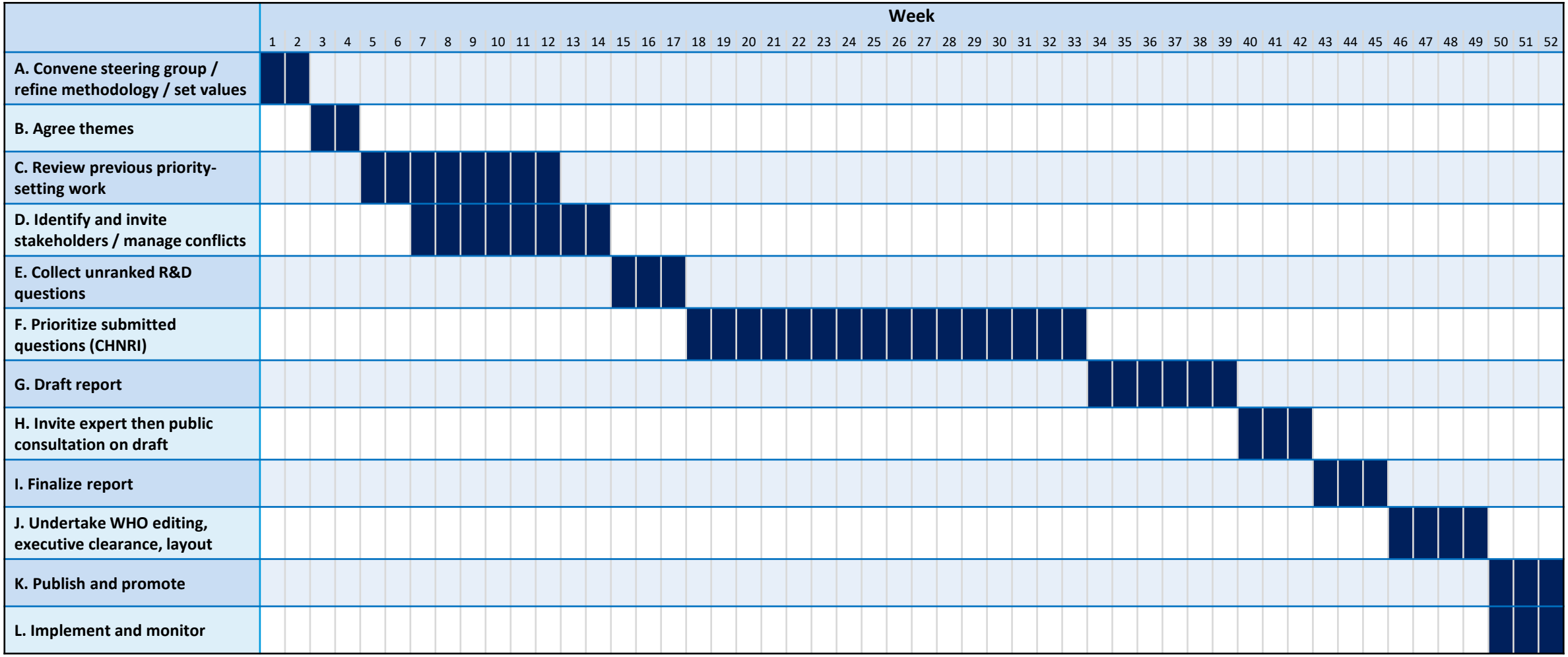
Proposed timeline



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Schistosomiasis research priority areas

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Delivery strategies

- Study the effectiveness of selective treatment/test and treat for elimination of schistosomiasis in low transmission settings and for sustaining EPHP
- Determine causes and strategies to prevent resurgence and to sustain elimination as a public health problem once achieved
- Integration of schistosomiasis into primary health care (reach PSAC, pregnant and lactating women through maternal and child health services)
- Social science studies on reasons of non integration of pregnant and lactating women in PC for schistosomiasis
- Co-morbidity of cerebral schistosomiasis and neurocysticercosis and treatment strategy
- Health financing research to estimate the cost-effectiveness of transmission interruption of schistosomiasis
- Integration of multidisciplinary and multisectoral approaches (eg. WASH, vector, education, animal) for schistosomiasis elimination
- Development of a vaccine for humans and animals to prevent reinfection and reduce transmission

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Medicines

- Development of new, alternative medicines to complement praziquantel in case of resistance
- Development of protocols for monitoring reduced drug efficacy (optimum sample sizes, sampling approaches, diagnostic tests and timing of survey etc.)
- Development of test for resistance to praziquantel
- Studies on optimal drug regimens (e.g. dose, dosing regimen) for the treatment of different schistosome species (and hybrids), in PreSAC, for FGS etc.
- Studies on efficacy of PZQ in genital schistosomiasis
- Safety and tolerability of co-administration of NTD medicines in the view of integrated MDA
- Study on compliance of individuals taking praziquantel in areas where transmission has been reduced

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Diagnostics

- Diagnostic tests in low transmission areas and for verification of interruption of transmission
- Diagnostic tests for different prevalence settings and all schistosomiasis species for monitoring and evaluation
- Monitoring and evaluation for the performance and the quality of the diagnostic tests

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Morbidity

- Studies on the burden of Genital manifestations of schistosomiasis
- Studies on the mortality due to FGS
- Studies on effectiveness of praziquantel in treatment and prevention of female and male genital schistosomiasis;

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Snail control

- Development and evaluation of new and environmentally friendly molluscicides
- Development of safe, cost-effective and sustainable snail control technology considering the environment and socioeconomic value

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Zoonotic transmission

- Standardization and refinement of diagnostics for monitoring infection in animal reservoirs (sensitivity, quality control)
- Contribution of animal reservoirs to transmission of schistosomiasis
- Contribution of hybrid schistosomes to transmission and diagnosis;
- Efficacy of PZQ in animal treatment
- Development of animal treatment protocols (dose, frequency)
- Impact of animal treatment on the interruption of the transmission of schistosomiasis
- Study on alternative methods for reducing burden of zoonotic schistosomiasis? Stall feeding or prevent grazing in contaminated grassland (sentinel surveillance in snails?) etc.

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Impact of environment and climate change

- Studies on schistosomiasis snails and parasites adaptation to climate changes (water temperature, snail population density and dynamic..)
- Studies on effect of population movements on schistosomiasis transmission
- Studies on impact of climate change and environmental changes (e.g. dam) in snail distribution and ecology
- Predict environmental changes and their effects on snail habitats and Schistosoma parasite lifecycle

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Modelling

- Mathematical modelling to identify optimal integrated approach (e.g. PC prevalence threshold, the required sanitation coverage for interruption of transmission)
- Development and validation of models to predict stopping MDA
- Optimal follow up time for measuring responses to treatment and does this differ between schistosomiasis
- Studies on the optimum treatment coverage in age groups for morbidity control according to transmission archetypes

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Surveillance

- Development of sampling methods for verification of interruption of transmission surveys
- Develop criteria/protocols for stopping MDA according to the transmission archetype
- Operational research on persistent hot spots identification and control response
- Development of protocols for mapping and surveillance of intermediate snail hosts

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Tools development and publications

- Finalise and publish the M&E framework (within 2 months)
- Finalise and publish the validation manuals
- Finalise and publish the health facility data toolkit for schistosomiasis
- Dissemination of the tools (regional meetings, partner's meetings)
- Publish strongyloidiasis control guideline
- Development of Toolkit for STH M&E in health facilities
- Development of SCH-STH implementation handbook
- Development of R&D blueprint for NTDs

Thank you

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