

21

Buruli ulcer
Chagas disease
Dengue and chikungunya
Dracunculiasis
Echinococcosis
Foodborne trematodiasis
Human African trypanosomiasis
Leishmaniasis
Leprosy
Lymphatic filariasis
*Mycetoma, chromoblastomycosis
and other deep mycoses*
Onchocerciasis
Rabies
Scabies and other ectoparasitoses
Schistosomiasis
Snakebite envenoming
Soil-transmitted helminthiasis
Taeniasis and cysticercosis
Trachoma
Yaws

Ending the neglect to
attain the Sustainable
Development Goals

A framework for monitoring
and evaluating progress of
the road map for neglected
tropical diseases 2021–2030

30

Ending the neglect to attain the Sustainable Development Goals: a framework for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030

ISBN 978-92-4-002368-0 (electronic version)
ISBN 978-92-4-002369-7 (print version)

© World Health Organization 2021

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<http://www.wipo.int/amc/en/mediation/rules/>).

Suggested citation. Ending the neglect to attain the Sustainable Development Goals: a framework for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Printed in

CONTENTS

Foreword	iv
Acknowledgements	v
Glossary	vi
Executive summary	ix
1. Introduction	1
1.1 Background	2
1.2 The M&E framework: purpose, target audience and scope	4
1.3 Country ownership and role	6
2. Conceptual framework and shifts guiding monitoring and evaluation	7
2.1 A theory of change to achieve the road map goals	8
2.2 Shifts in approaches to monitoring and evaluation	10
3. Quantitative approach to monitoring of the road map	13
3.1 Defining the road map indicators	14
3.2 Including the indicators in strong country-owned monitoring and evaluation systems and national NTD plans	19
3.3 Indicator processes: from data collection to data use	20
4. Qualitative approach to monitoring of the road map	29
5. Evaluation of progress towards the road map targets	33
5.1 Global progress	36
5.2 National progress	37
6. Looking forward: the research agenda for monitoring and evaluation	39
References	43
Annex 1. Results of the gap assessment for the monitoring and evaluation dimension, 2019	45
Annex 2. WHO guidelines on monitoring and evaluating NTD programmes	49
Annex 3. Measuring the road map indicators: key metadata from the NTD indicator compendium	54
Annex 4. Linking cross-cutting targets with quantitative and qualitative assessments	82
Annex 5. Structure of the NTD indicator compendium	83
Annex 6. Typical data collection processes within countries	84

FOREWORD

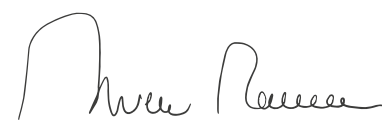
Ending the neglect to attain the Sustainable Development Goals: a framework for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030 is a companion document to the road map for neglected tropical diseases 2021–2030.

The road map was endorsed by the Seventy-third World Health Assembly in November 2020, calling on Member States to work towards the targets for 2030. The need for such a companion document had emerged during the consultative process for the new road map. Monitoring and evaluation are recognized as one of the four commonest programmatic gaps across the diseases, warranting accelerated programmatic action to reach the goals set in the road map. This companion document was also developed through an extensive consultative process under the guidance of the Strategic and Technical Advisory Group for Neglected Tropical Disease's Working Group on Monitoring, Evaluation and Research. It embodies the same shifts and principles of focus on impact, integration and country ownership in monitoring and evaluating progress against neglected tropical diseases.

This framework is a call to action to countries and implementing partners with fully defined operational impact indicators for greater accountability and action, starting at the country level. It aims to provide guidance on mainstreaming the monitoring and evaluation of neglected tropical diseases within health information systems and emphasizes that monitoring and evaluation are integral components of interventions against neglected tropical diseases. The framework highlights the importance of standardization of indicators and defines the core set and the additional indicators to ensure comparability across the different implementational levels as well as across countries.

The framework aligns with WHO's vision of strengthening national information systems and contributes to building a world health data hub at the global level. It concludes with a section on looking forward, identifying gaps and research needs for strengthening monitoring and evaluation further.

“What gets measured gets done” reiterates that for the successful implementation of interventions against neglected tropical diseases, monitoring and evaluation will remain important components. Accordingly, this framework will remain a living document to support national programmes and be updated periodically with new evidence and experience.



Dr Mwelecele Ntuli Malecela
Director
WHO Department of Control of
Neglected Tropical Diseases

ACKNOWLEDGEMENTS

The road map team – Bernadette Abela-Ridder, Gautam Biswas and Pamela Sabina Mbabazi – was assisted in the development of this framework by a drafting group comprising Junerlyn Farah Agua, Lise Grout and Alexei Mikhailov (WHO Department of Control of Neglected Tropical Diseases). The group was supported by Katie Zoerhoff (RTI International) and Patrick Lammie and Joanna Pritchard (Task Force for Global Health), who participated in the conceptual development and consolidation of inputs from consultations. Additional topical technical inputs were provided by Pedro Albajar Viñas, Kingsley Asiedu, Daniel Argaw Dagne, Jose Ramon Franco-Minguell, Amadou Garba Djirmay, Xiaoxian Huang, Saurabh Jain, Jonathan King, Antonio Montresor, Denise Mupfasoni, Gerardo Priotto, Vaidyanathan Ramakrishnan, Jose Antonio Ruiz Postigo, Dieudonné Sankara, Anthony Solomon, Afework Tekle, Raman Velayudhan and Rajpal Yadav (WHO Department of Control of Neglected Tropical Diseases), Erwin Cooreman and Rao Pemmaraju (WHO Global Leprosy Programme), Sophie Boisson (WHO Department of Environment, Climate Change and Health) and Navneet Bahl and Somnath Chatterji (WHO Division of Data, Analytics and Delivery for Impact).

The Steering Committee was chaired by Mwelecele Ntuli Malecela, Director, WHO Department of Control of Neglected Tropical Diseases, with members from the WHO regional offices for Africa (Maria Rebollo Polo and Alexandre Tiendrebeogo), the Americas (Santiago Nicholls), South-East Asia (Mohammed Jamsheed and Zaw Lin), Europe (Elkhan Gasimov), the Eastern Mediterranean (Mona Osman and Supriya Warusavithana) and the Western Pacific (Aya Yajima), who provided inputs from country perspectives and reviewed the concepts and drafts.

The Working Group on Monitoring, Evaluation and Research of the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases was chaired by Julie Jacobson (United States of America) and cochaired by Sung-Tae Hong (Republic of Korea) and Sanjay Madhav Mehendale (India). The group comprised Um Boock Alphonse (Cameroon), Edwin Ampadu (Ghana), Iwan Ariawan (Indonesia), Sanaa Botros (Egypt), Mark Bradley (United Kingdom), Meritxell Donadeu (Australia), Monique Dorkenoo (Togo), Maciej Grzybek (Poland), Juan Pablo Gutierrez (Mexico), Theresa Gyorkos (Canada), Eliane Ignotti (Brazil), Olaf Horstick (Germany), Ulrich-Dietmar Madeja (Germany), Mourad Mokni (Tunisia), Khin Mon Mon (Myanmar), Upendo John Mwingira (United Republic of Tanzania), Jordan Tappero (United States of America), Hasitha Tissera (Sri Lanka), Violetta Yevstigneyeva (United States of America) and Jing Xu (China), who provided technical guidance and reviewed all of the drafts for the final publication¹.

Peer review was conducted by Steven Ault (United States of America), Ahmed Be-Nazir (Bangladesh), Fiona Fleming (United Kingdom), Leda Hernandez (Philippines), Alain Javel (Haiti), Naresh Kumar Gill (India), Tsedeke Mathewos (Ethiopia), Mohammad Naem Habib (Afghanistan) and Fasihah Taleo (Vanuatu).

Funding was contributed by the United States Agency for International Development and the Bill & Melinda Gates Foundation.

¹ For profiles of the members of the Working Group on Monitoring, Evaluation and Research, 2020–2022, see: [https://cdn.who.int/media/docs/default-source/ntds/strategic-and-advisory-group-on-neglected-tropical-diseases-\(stag-ntds\)/members-stag-wg-mer.pdf?sfvrsn=665ccaf7_19](https://cdn.who.int/media/docs/default-source/ntds/strategic-and-advisory-group-on-neglected-tropical-diseases-(stag-ntds)/members-stag-wg-mer.pdf?sfvrsn=665ccaf7_19)

The definitions given below apply to the terms used in this document. They may have different meanings in other contexts.

Control: Reduction of disease incidence, prevalence, morbidity and/or mortality to a locally acceptable level as a result of deliberate efforts; continued interventions are required to maintain the reduction. Control may or may not be related to global targets set by WHO.

Coordination: Collaboration among adjacent sectors and programmes, within and beyond health, in the broader NTD network. Sectors such as vector control, animal health and WASH make critical contributions to progress against NTDs, and working together more effectively will accelerate and sustain progress towards elimination and control of NTDs. In the context of monitoring and evaluation, coordination refers to the organization of the different stakeholders involved in NTD-related data processes, and collaboration (e.g. data sharing and joint evaluation) among adjacent health programmes (such as mental health) or non-health sectors (such as WASH) to enable them to work together effectively.

Disability-adjusted life year (DALY): A measure of overall disease burden, expressed as the number of years lost due to ill health, disability or early death; introduced in the 1990s to compare overall health and life expectancy in different countries. DALYs for a disease or health condition are calculated as the sum of the years of life lost due to premature mortality in the population and the years lost due to disability resulting from the health condition or its consequences.

Disability: Inability to adequately or independently perform routine daily activities; the negative aspects of the interaction between a person with a health condition and his or her context (environmental and personal factors).

Effectiveness: Degree to which an intervention is successful in producing the desired public health result.

Efficiency: A measurable level of peak performance by which waste is minimized by using the least amount of inputs and harnessing synergies to attain the highest output and desired impact of neglected tropical disease programmes.

Elimination (interruption of transmission): Reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, as a result of deliberate efforts; continued action to prevent re-establishment of transmission may be required. Documentation of elimination of transmission is called verification.

Elimination as a public health problem: A term related to both infection and disease, defined by achievement of measurable targets set by WHO in relation to a specific disease. When reached, continued action is required to maintain the targets and/or to advance interruption of transmission. Documentation of elimination as a public health problem is called validation.

Equity: The absence of avoidable or remediable differences among groups of people defined socially, economically, demographically, geographically or by sex.

Eradication: Permanent reduction to zero of the worldwide incidence of infection caused by a specific pathogen, as a result of deliberate efforts, with no risk of reintroduction. Documentation of eradication is termed certification.

Evaluation: Periodic, rigorous and independent assessment of information about programme activities, processes and outcomes to make judgements about programme effectiveness and inform decisions about future programme development. It requires consideration of inter-programmatic and intersectoral engagement.

Financing: Raising adequate funds for health in ways that ensure people can use needed services and are protected from financial catastrophe or impoverishment associated with having to pay for them.

Impact indicators: A measure of the extent to which the overall objectives of the programme are being achieved in terms of health status and financial risk protection.

Implementation indicators: Indicators that measure programme inputs, processes, outputs and outcomes, rather than programme impact.

Input indicators: A measure of the resources needed to implement the intervention; they include trained personnel, finance, standards and guidelines, communication facilities, forms for surveillance, computers, medicines, diagnostics, stockpiles for emergency response and any other logistics as deemed necessary.

Integrated vector management: A rational decision-making process to optimize the use of resources for vector control.

Integration: Grouping or “packaging” of several diseases, depending on their burden in countries, to facilitate joint delivery of interventions through a common platform such as preventive chemotherapy and use of multiplex diagnostics, and integrated monitoring, evaluation and reporting for all relevant endemic NTDs.

Mainstreaming: Planning and delivery of interventions against NTDs through the national health system infrastructure to build capacity and contribute to sustainable, efficient disease prevention and control. In the context of monitoring and evaluation, the term is used more specifically as planning and implementing monitoring and evaluation activities against NTDs through the national health information system infrastructure to build capacity and contribute to sustainable, efficient monitoring and evaluation systems.

Mass drug administration: Distribution of medicines to the entire population of a given administrative setting (for instance, state, region, province, district, subdistrict or village). In this document, the terms mass drug administration and preventive chemotherapy are used interchangeably.

Monitoring: Regular collection, analysis and use of data on programme implementation (weekly, monthly, quarterly or annually) to measure progress towards programme/project objectives through tracking activities conducted, resource utilization and the outputs generated; programme outcomes and impacts may also be included.

Morbidity: Detectable, measurable clinical consequences of infection and disease that adversely affect the health of individuals. Evidence of morbidity may be overt (such as the presence of blood in the urine, anaemia, lymphoedema, blindness, chronic pain or fatigue) or subtle (such as stunted growth, impeded school or work performance or increased susceptibility to other diseases).

One Health: Recognizing the fundamental interconnectedness among human populations, animal populations and the environment, One Health represents an integrated approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes. The areas of work in which a One Health approach is particularly relevant for neglected tropical disease programmes include food safety, control of zoonoses and combatting antibiotic resistance, among others.

Outcome indicators: Indicators that measure the effect of interventions on programme-enabling factors, disease risk factors and behaviours, among others.

Output indicators: Indicators that measure whether planned NTD programme activities and operations are actually occurring as intended; these are indicative of service availability, accessibility and quality, among others.

Preventive chemotherapy: Large-scale use of medicines, either alone or in combination, in public health interventions. Mass drug administration is one form of preventive chemotherapy; other forms could be limited to specific population groups such as school-aged children and women of childbearing age. In this document, the terms preventive chemotherapy and mass drug administration are used interchangeably.

Process indicators: Indicators that measure procedural and administrative aspects of a programme that relate to the rate of implementation of planned health interventions which are critical for attaining programme goals.

Results-based monitoring and evaluation: A systematic approach to tracking programme performance based on reflective logic to inform managerial action by policy-makers and decision-makers.

Surveillance: Ongoing systematic collection, collation, analysis, interpretation and prompt dissemination of data for use in planning and implementation of public health programmes. A communicable disease surveillance system serves two key functions; early warning of potential threats to public health and programme monitoring functions which may be disease-specific or multi-disease in nature.

Theory of change: Comprehensive description, usually represented pictorially, of how intended goals are expected to be realized as a result of a programme or initiative in a particular context. It often begins with the desired impact of the programme and works backwards to identify the required outcomes, outputs, activities, inputs and assumptions and how they relate to each other causally for the intended changes to occur.

Universal health coverage: All people have access to needed health services (including prevention, promotion, treatment, rehabilitation and palliation) of sufficient quality to be effective while at the same time ensuring that the use of these services does not expose the user to financial hardship.

EXECUTIVE SUMMARY

The road map for neglected tropical diseases for 2021–2030 (“the road map”) sets global targets and milestones to control, eliminate or eradicate 20 diseases and disease groups. It also sets cross-cutting targets aligned with both WHO’s Thirteenth General Programme of Work and the Sustainable Development Goals, with strategies for achieving the targets during the next decade.

Providing a framework to track progress towards the road map targets

This framework for monitoring and evaluating progress against the road map targets (“the M&E framework”) is a companion document to the road map that aims to facilitate tracking of progress against set goals while enabling course corrections to be made where necessary. It is a call to action to provide countries with fully defined operational impact indicators so that the burden of all neglected tropical diseases (NTDs) is reported for greater accountability and action starting at the country level. The M&E framework presents a theory of change which shows how the shifts described in the road map will come about, and what needs to be done in order to reach the road map goals and targets.

The three pillars outlined in the road map – accelerating programmatic action, intensifying cross-cutting approaches, and changing operating models and culture to facilitate country ownership – represent key inputs, processes and outputs for achieving the intended long-term outcomes and impact by 2030. Echoing the strategic shifts of the road map, the M&E framework shifts the approach to monitoring and evaluation towards: (i) impact orientation, (ii) holistic, cross-cutting approaches and (iii) monitoring and information systems defined and established by the country to primarily meet the needs for evidence-based decision-making and reporting, aligned with national policies.

The set of indicators and tools to track progress towards the 2030 targets presented in the road map is described in more detail in this M&E framework: 36 core quantitative indicators (four overarching, 10 cross-cutting and 22 disease specific) and 34 additional disease-specific indicators; and a qualitative gap assessment conducted for each NTD independently and analysed in a cross-cutting manner through a heat map.

Monitoring impact

The quantitative indicators are focused primarily on assessing impact. The metadata are described in detail in the compendium of indicators for monitoring and evaluating progress of the road map (“the NTD indicator compendium”) published by WHO.

Data on the road map, and additional implementation data at country level, should be collected and stored on integrated data platforms and mainstreamed into national health information systems. WHO will provide guidance and technical support over the next decade to facilitate these processes, which will also promote the capture and use of data from other sectors.

Assessing bottlenecks

The road map targets are ambitious and will continue to require considerable work by countries and stakeholders to ensure that all programmatic inputs are in place. Scientific understanding to develop new tools and improve interventions; strategies, guidance, governance and capacity to deliver services; and enablers such as advocacy, funding and collaboration, all require the concerted actions of numerous stakeholders at all levels. Building on previous experience, with evidence generated through data science, the main hindrances to achieving the 2030 targets and the corrective actions required will be assessed periodically.

| Evaluating progress

The evaluation of progress towards the road map targets requires the structured engagement of all relevant stakeholders in an operating model that facilitates country ownership and fosters a culture of equity, putting people and communities at the centre. At country level, evaluations should encompass a set of principles that support country-owned processes from which findings should help in improving programme effectiveness and reaching targeted goals. Periodic and objective evaluation of global progress against the 2030 road map targets shall be conducted in milestone years. The reviews by the World Health Assembly in reporting years (2022, 2024, 2026 and 2029) may result in updated targets in line with changing contexts, and a final one in 2031.

| Looking forward

In the years leading up to 2030, NTD programmes and the tools used to monitor them and to measure their impact are expected to evolve. Several indicators will emerge while others still require better definition, tools and methods of how they will be measured and monitored, necessitating systematic update. Training and implementation research are required to improve collection and use of good-quality data at all levels of the health system. New intervention strategies, diagnostic tools and survey methodologies need to be translated from the research realm into routine programme use. Identification of opportunities to integrate and mainstream disease-specific activities within existing surveillance, monitoring and evaluation activities at national and subnational levels is pivotal and requires additional work.

Consequently, countries should be prepared to work to strengthen their monitoring and evaluation portfolios to accommodate changes which enable tracking of progress towards attaining their respective NTD programme goals. Investing in robust monitoring and evaluation and focusing on the integrity of such systems will pay dividends by precisely and proactively informing the health system on the interventions and status of NTDs, thereby ensuring the 2030 targets are achieved and ultimately benefit affected or at-risk communities. Such renewed efforts on NTDs will have an important overall impact on global health.

Introduction

Introduction

1.1 Background

The neglected tropical diseases (NTDs) prioritized by the World Health Organization (WHO) are a diverse set of 20 diseases and disease groups with a singular commonality: their devastating impact on impoverished communities. Interventions against NTDs contribute to achievement of the Sustainable Development Goals.

NTDs are formally recognized as targets for global action in target 3.3, which calls to “end the epidemics of ... neglected tropical diseases” by 2030, as part of Goal 3 (Ensure healthy lives and promote well-being for all at all ages). Successful interventions against NTDs also contribute to meeting the other Goals, such as alleviating poverty (Goal 1) and hunger (Goal 2), among others. Conversely, progress towards other Goals can accelerate the achievement of NTD goals.

Monitoring and evaluation are essential to ensure that the priority health actions outlined in Ending the neglect to attain the Sustainable Development Goals: a road map for neglected tropical diseases 2021–2030 (“the road map” (1)) are implemented as planned against stated objectives and desired results.

Effective monitoring and evaluation is essential for policy dialogue and evidence-based decision-making. High-quality monitoring and evaluation at the country level sets the foundation for assessing progress nationally, regionally and globally against the road map targets and milestones, as well as the health-related Sustainable Development Goals and health equity. Yet despite progress in the past decade, monitoring and evaluation remain weak for most NTD programmes and have been identified as a dimension where gaps exist and action is required to achieve the road map targets (Fig. 1). A current assessment of gaps in monitoring and evaluation and actions required for each disease are presented in more detail in Annex 1 and specify a broad range of challenges from M&E frameworks to information systems.

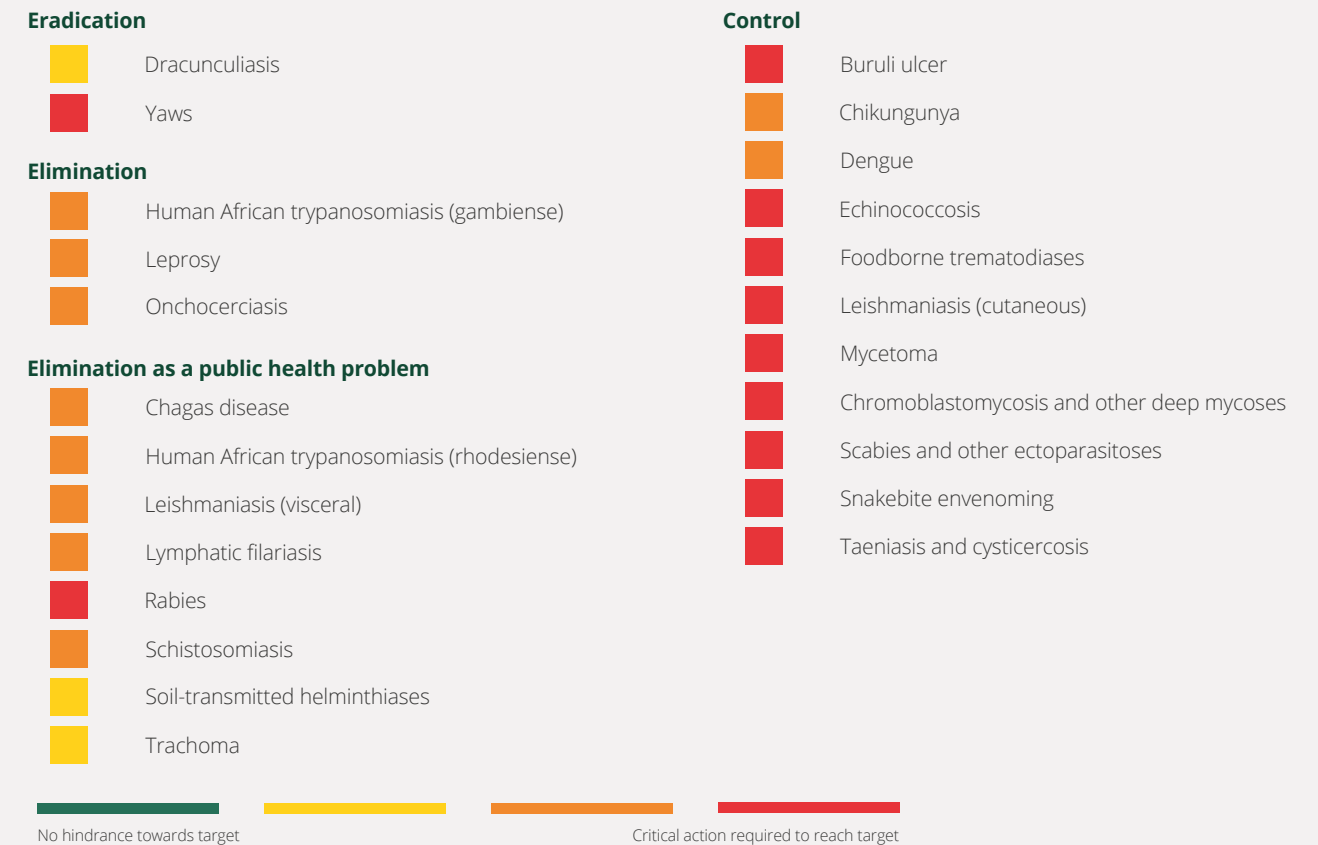
This framework for monitoring and evaluating progress of the road map (“the M&E framework”) issues a call to action to provide countries with defined indicators so that the burden of all NTDs is reported with greater accountability and responsive action starting at the country level.

Many NTD-specific information systems were established in disease-specific silos, often in parallel with one another and to existing national health information systems. Although NTD data-sharing and management practices have improved, for some disease programmes this has not been sufficient to achieve high data quality and efficient data use across all the NTDs. Importantly, notable variations existed in the use of terminology on monitoring and evaluation and on methods of evaluation across NTDs, with consequent inconsistent interpretation of data. This M&E framework aims to address these inconsistencies.

There is also a need to strengthen, integrate and mainstream monitoring and evaluation within national health information systems and strengthen coordination with all relevant sectors, both within and beyond health.

The strength of disease-specific guidance on monitoring and evaluation and its implementation varies substantially across the NTDs. Additionally, since 2017, new NTDs have been included in the expanded list of 20 NTDs for which systematized and integrated monitoring and evaluation need to be established and mainstreamed into national health information systems. Information about synergistic actions, such as for water, sanitation and hygiene (WASH) interventions, vector control interventions and One Health, is generally either under-collected or under-utilized at country level. There is limited use of qualitative methods to support structured dialogue on accessing assessments of barriers to progress and enablers for strengthening NTD programme performance.

Fig. 1. Assessment of gaps in monitoring and evaluation for each NTD



Source: Fig. 7 of the road map (1); analysis obtained through technical consultations, WHO 2019

Despite these challenges, impressive public health gains have been reliably validated, verified or certified through independent committees. Important lessons and best practices have been learned and developed, which provide an important foundation to inform future approaches to monitoring and evaluating progress against NTDs for further integration and mainstreaming into national systems.

The road map encourages all actors to evaluate the effectiveness and efficiency of their approaches. This requires an optimal M&E framework to facilitate accountability and greater collaboration within and beyond the health sector.

This M&E framework should guide activities involving the development of standards, tools and methods for generating, collecting, compiling, analysing, using and disseminating data on NTDs. Although these efforts are generally linked to disease-specific initiatives, there is also a need to track the overall performance of national NTD programmes within national health systems, and synergetic intersectoral actions, all of which are pivotal to the sustainable achievement of the overarching, cross-cutting and disease-specific

road map goals. This, in turn, will enable governments and organizations to respond to internal and external pressures and thereby to demonstrate accountability, transparency and results.

A series of technical consultations was held in 2019 with content experts to select goals for the road map that was endorsed by Member States in 2020 at the Seventy-third World Health Assembly. The recommendations from these consultations were discussed further for consensus-building with the reconstituted Working Group on Monitoring, Evaluation and Research of the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases and a steering committee with representation from all WHO regional offices, with inputs from Member States. This provided the foundational information for developing the M&E framework.

Box 1. Key components of an M&E system

The four components of a strong M&E system include:

- sound **policy and institutional environment**;
- well-functioning **data sources**;
- strong institutional **capacity for data collection, management, analysis, use and dissemination**; and
- effective country **mechanisms for review and action**.

Although guidance on strengthening monitoring and evaluation systems has been developed for several NTDs, this is the first attempt to provide a comprehensive M&E framework across all NTDs.

This M&E framework has been built in the context of general guidance published by WHO (2–4) (Box 1), disease-specific documents on monitoring and evaluating NTD programmes (Annex 2) and similar frameworks for major infectious diseases (e.g. malaria (5), tuberculosis and HIV/AIDS (6)).

The M&E framework aligns with WHO's vision of integrating data on health into a single platform to strengthen mechanisms for evidence-based decision-making.

Comprehensive, timely and reliable health and health-related metrics are fundamental for assessing the health of populations and how it is measurably impacted by interventions. WHO will build a world health data hub to serve as a single repository of health data in WHO and establish a data governance mechanism for Member States, partners and the public. Accordingly, WHO strongly encourages countries and partners to build comprehensive and mainstreamed country-owned platforms for monitoring and evaluation. Such efforts ideally bring together all related elements, including specific policy formulation and plans and national health information systems, thereby allowing monitoring of progress towards the health-related Sustainable Development Goals, with high-level political commitment and investments by countries and international partners.

1.2 The M&E framework: purpose, target audience and scope

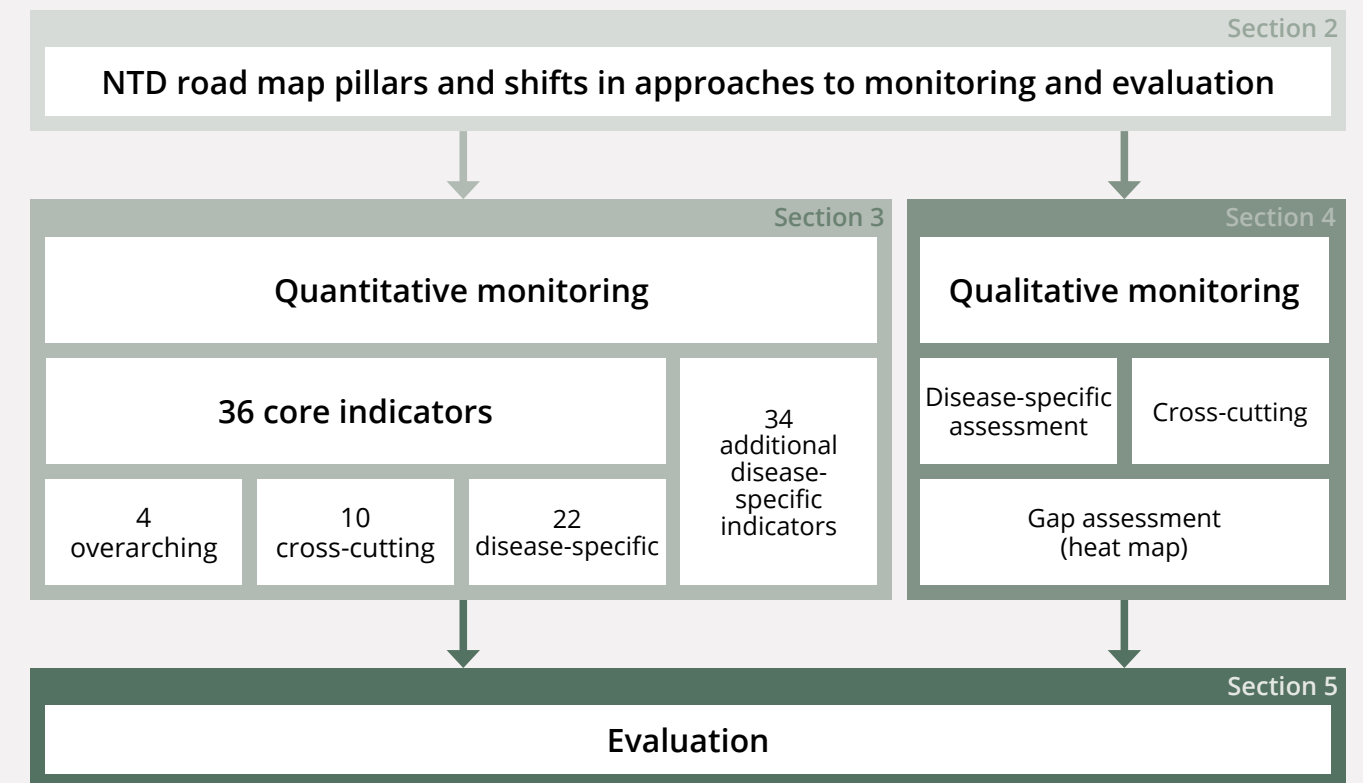
This M&E framework aims to facilitate tracking of progress against set goals while enabling course corrections to be made where necessary. This will require shifts in approaches to monitoring and evaluating progress against NTDs nationally, regionally and globally.

The M&E framework is focused on measuring impact. It moves beyond an emphasis on inputs, process and outputs to a greater focus on outcomes and impacts to inform operational and strategic decision-making and measure progress towards 2030 goals at national and global levels. This aligns with the road map's first fundamental shift in approach to tackling NTDs: increased accountability through a focus on impact indicators instead of process indicators. This M&E framework is built on the set of outcome and impact indicators presented in the road map to support strategic thinking, operational tracking, evidence-based decision-making and performance feedback mechanisms and to support advocacy and transparency in the implementation of NTD programmes.

A set of indicators and tools to track progress towards these 2030 targets and their related milestones is presented in the road map and described in more detail in this document. This M&E framework is among the companion documents to the road map.

The M&E framework presents the key components for building, maintaining and sustaining a fully comprehensive and integrated process to report on the road map targets, and is structured in five sections after this introduction (Fig. 2):

Fig. 2. Key components of the M&E framework



- section 2 describes the guiding conceptual framework and strategic shifts of the M&E framework;
- section 3 focuses on quantitative monitoring; that is, how to collect, analyse, report and use the quantitative indicators set forth in the road map;
- section 4 focuses on qualitative monitoring and presents the gap assessment tool;
- section 5 highlights the evaluation of progress towards 2030 road map targets; and
- section 6 looks forward and highlights gaps and calls for solutions.

The **36 core quantitative indicators** (four overarching, 10 cross-cutting and 22 disease-specific) and 34 additional disease-specific indicators (annexed as the disease summaries to the road map (1)) are described in more detail in **section 3**.

The primary target audience for the M&E framework is professionals working in the areas of NTD services planning, implementation, health systems and health information systems at both national and international levels.

Policy-makers, managers and researchers working within and beyond the health sector in other sectors are also among the intended key users.

The scope of this M&E framework includes key concepts, indicators, data management processes and pathways, and gaps that need to be addressed to support the attainment of the 2030 road map targets.

The M&E framework presents the linkages between existing tracking of NTD indicators, which will continue under the new road map, and tracking the new road map targets, many of which are built upon the existing indicators. It does not provide an exhaustive list of all NTD-specific indicators, as these can be found in published WHO guidelines (Annex 2). Countries will continue to monitor existing programmatic indicators at the country level. Additional country-level indicators, some of which are new, introduced by the road map and described in the compendium of indicators for monitoring and evaluating progress of the road map ("the NTD indicator compendium" (7)), support monitoring and evaluating of progress towards the road map targets globally.

1.3 Country ownership and role

A monitoring and evaluation system is a dynamic continuous work in progress. At any given time, many countries and stakeholders will be at different stages of NTD programme management practices in general, and monitoring and evaluation in particular. This M&E framework is not prescriptive. Rather, it provides elements and best practices that can be adapted in different country contexts to support processes for monitoring and evaluating progress towards the road map targets, for which commitment, effort, time and technical and financial resources are needed.

Country ownership, through leadership and provision of resources for the development and implementation of monitoring and evaluation systems, is essential in the mutuality of roles between the stakeholders and the intended beneficiaries of interventions against NTDs.

Countries and stakeholder organizations should use this conceptual framework to guide efforts in building and implementing results-based M&E frameworks to enable coherent tracking of progress and support reflective managerial action towards the attainment of the road map goals.

Country experiences are instructive and will continue to provide important lessons. Despite the concise nature of this M&E framework, it is a dynamic document requiring periodic updating in view of the lessons learned and new evidence generated. Experience generated from implementing this M&E framework in countries will be shared as illustrative examples on how it can be adapted in particular situations. This will enable countries to further learning on how best to apply key elements of this framework in their respective contexts in alignment with WHO principles for strengthening country health data and information systems.¹

Conceptual framework and shifts guiding monitoring and evaluation

¹SCORE is a technical package of five essential interventions with key elements to strengthen country health data and information systems and enable governments to track progress towards the health-related Sustainable Development Goals and national and subnational priorities (<https://www.who.int/data/data-collection-tools/score>).

Conceptual framework and shifts guiding monitoring and evaluation

Section 2 introduces the guiding principles of the M&E framework: a detailed description of the theory of change for achieving the intended impact set forth in the road map (2.1), and the strategic shifts in approaches that will be necessary to monitor, evaluate and achieve the road map targets and address some of the key challenges to monitoring and evaluation highlighted in the road map (2.2): shifting to impact orientation (2.2.1), holistic, cross-cutting approaches (2.2.2) and strengthening country-level mechanisms for country-owned decision-making (2.2.3).

2.1 A theory of change to achieve the road map goals

The theory of change defines the programmatic inputs, action and outputs needed to achieve the NTD targets by 2030. The three pillars outlined in the road map, involving accelerating programmatic action, intensifying cross-cutting approaches and changing operational models and culture to facilitate country ownership and financing, will enable achievement of the intended targets.

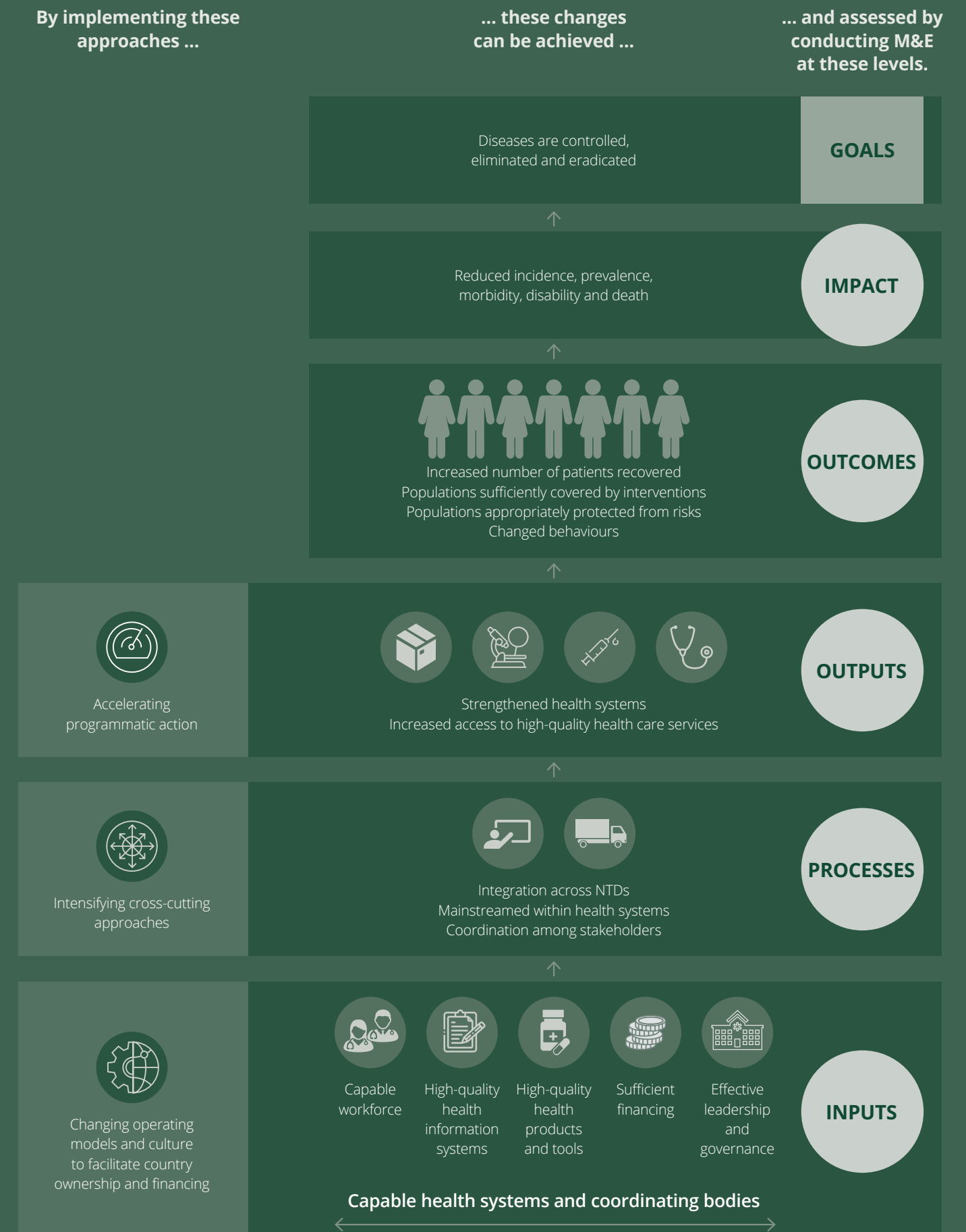
Fig. 3 depicts the linkages between the desired changes to be achieved by 2030, the key approaches outlined in the road map to facilitate those changes nationally and globally, and the key components for monitoring and evaluating progress towards the 2030 targets. This is described using a theory of change, which indicates the causal pathways for how the intended goals are to be realized. These changes must take place within all countries in which NTDs are endemic in order to achieve the road map goals.

The road map sets ambitious impact targets such as reductions in incidence, prevalence, morbidity, disability and death due to NTDs globally and within NTD-endemic countries, as well as control, elimination and eradication of disease. To achieve those goals, progress must be made towards various intermediate outcomes within countries, such as affected populations being sufficiently covered by priority services (e.g. mass drug administration, surgery, vaccination campaigns, diagnosis and treatment); populations being appropriately protected from risk factors (e.g. controlling vectors related to NTDs); patients recovering from NTDs; and behaviours changing (e.g. improved hygiene and sanitation practices).

These outcomes can be achieved through strengthened health systems and increased access to high-quality health care services. Increased access will result from accelerating programmatic action at both global and national levels, such as scientific advances, identifying and implementing new interventions and tools, and strengthening strategies and service delivery (see section 2 of the road map for more details (1)).

Integration across NTDs, mainstreaming NTDs into broader health systems and multisectoral coordination will provide synergies and address gaps that are currently limiting the achievement of outcomes. This can be realized by conducting activities using a cross-cutting approach within NTD-endemic countries, using the inputs provided within countries and globally.

Fig. 3. The Theory of change for achieving the 2030 road map targets



The provision of adequate inputs at both national and global levels is necessary for activities to be effectively conducted. This includes a sufficient number of health workers who are trained in and capable of managing NTDs, and a health information system which includes NTDs. Effective quality-assured medicines, biologicals and diagnostics to treat, prevent and diagnose NTDs must be affordable and available, and tools should be developed that reflect scientific advances and innovations towards NTD control, elimination and eradication. Funds and resources ought to be mobilized, effectively budgeted for and allocated to activities that address NTDs. Leadership and governance should be availed upon globally, regionally and nationally to identify programmatic gaps, assign priority needs and develop strategies to remedy those gaps, and create relevant guidance and policies to apply those strategies (e.g. policies to mainstream NTDs into the national health system and integrate interventions into the essential package of care). By increasing country ownership, these inputs can be made available more sustainably, fitting within national structures and policies. NTD stakeholders are encouraged to review the other companion documents to the road map, including the sustainability framework (8) and the global investment case, for additional guidance related to increasing country ownership. Member States are also encouraged to draft a tailored theory of change that incorporates the road map concepts within their country-specific context.

A strategic shift in the approach to monitoring and evaluation will be necessary to effectively assess progress towards the road map goals.

2.2 Shifts in approaches to monitoring and evaluation

Echoing the strategic shifts of the road map, the M&E framework changes the approach to monitoring and evaluation in a number of ways (Fig. 4).

2.2.1 From process to impact orientation

The road map encourages a shift from process to impact. The M&E framework emphasizes indicators for assessing impact and high-level outcomes. Concurrent tracking of implementation indicators within country-level programmes also remains key to the collective achievement of the road map impact targets.

Impact in public health programming is defined as a change in health status or financial risk protection resulting from programme interventions. The M&E framework does not describe the full spectrum of NTD indicators required by national programmes for monitoring, evaluation and action. Rather, it focuses on quantitative measurements of impact, both overarching and disease-specific, while action to augment or accelerate progress is mainly assessed through the qualitative gap assessment and several new cross-cutting indicators.

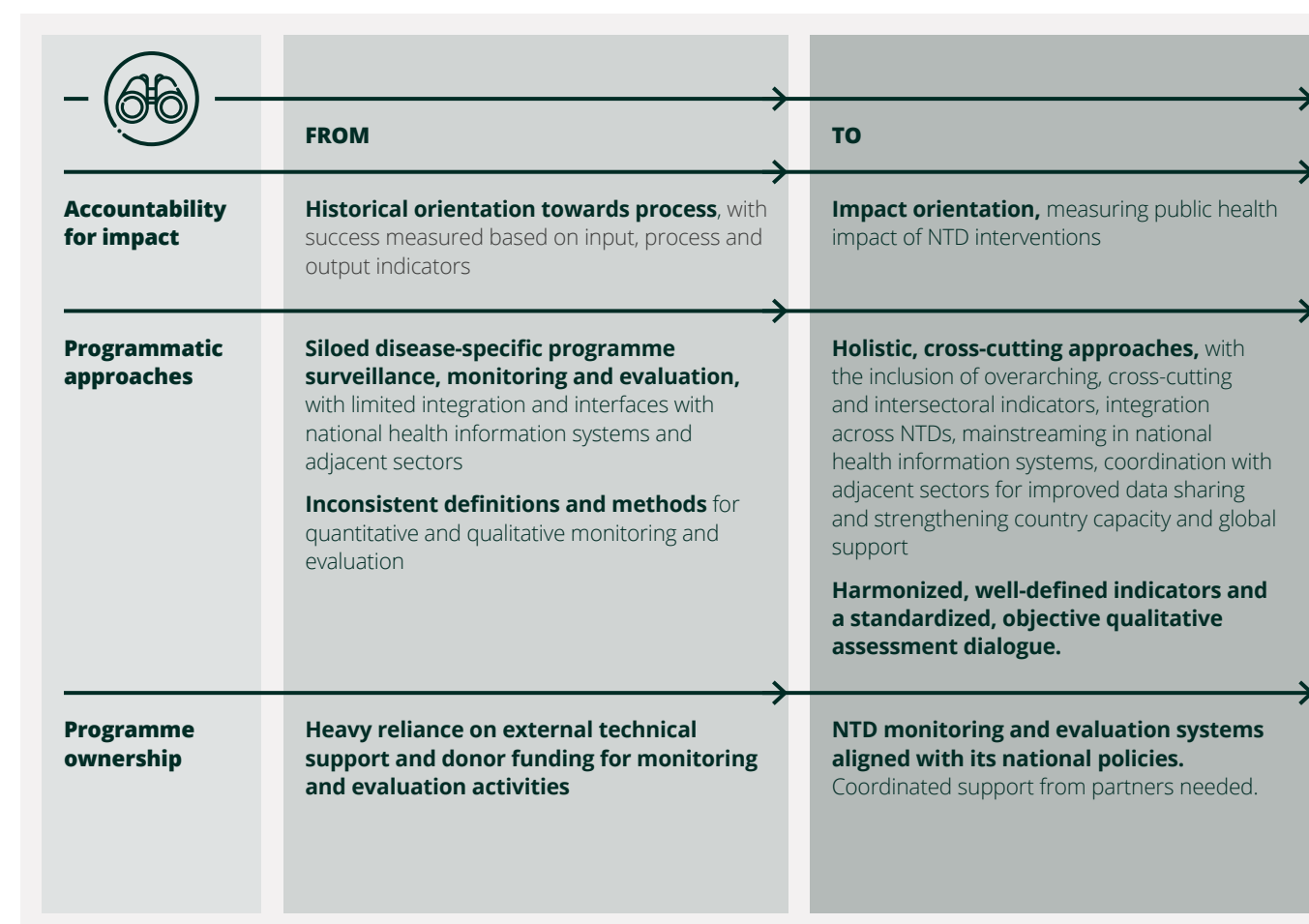
2.2.2 From siloed to holistic, cross-cutting approaches

The road map proposes a shift from siloed disease-specific programmes to holistic, cross-cutting approaches, including monitoring and evaluation. The M&E framework provides a clear description of the different tools proposed to track progress towards the 2030 targets, at all levels of the health information system, from peripheral to national, regional and global levels.

NTD data appear fragmented at every level, including national, regional and global levels. Where appropriate, monitoring and evaluation of endemic NTDs should be integrated into common platforms. For NTDs sharing similar delivery platforms (e.g. preventive chemotherapy, interventions against skin NTDs), data could be processed through common channels. Activities such as routine surveillance, active case detection, community-based surveys, health facility assessments or data supervision could similarly be conducted and integrated for the relevant endemic NTDs. Integration should be promoted for the different data processes (collection, reporting, management and storage, dissemination) and at the different levels of the health information system (from community to national, regional and global levels). This should improve the cost-effectiveness of monitoring and evaluation for all NTDs as well as streamline data use for planning and action across all 20 diseases and disease groups.

Mainstreaming NTD data into the health management information system and building capacity to manage data processes through its infrastructure are also important in contributing to sustainable and efficient monitoring and evaluation of progress against NTDs. WHO is preparing guidance documents and toolkits to facilitate integration and mainstreaming of NTD data into the health management information system; more details can be found in **section 3.2**.

Fig. 4. Shifts in approaches to monitoring and evaluating progress towards the 2030 road map targets



Source: Adapted from Fig. 4 of the road map (1)

Multisectoral coordination is also essential in the domain of monitoring and evaluation. Several NTDs require interventions from other sectors (e.g. education for school-based interventions, veterinary public health/One Health for preventive interventions such as dog vaccination, WASH and integrated vector management). Therefore, data to monitor and evaluate progress towards the road map targets may be generated by these stakeholders during the implementation of these activities. Active coordination will be needed to share high-quality data and deploy concerted actions.

The M&E framework also describes new tools proposed to increase harmonization and standardization of monitoring and evaluation across the NTDs.

The 70 quantitative indicators are presented in detail in **section 3.1** and are fully described in the NTD indicator compendium (7). Use of standardized terminology also supports harmonized classification of indicators within and across diseases, creating opportunities to strengthen the M&E frameworks of individual disease programmes.

The gap assessment tool is designed to enable countries and the NTD community to objectively investigate and analyse qualitative information on a large set of factors across 11 critical dimensions (as shown in Fig. 6 of the road map (1)), and to synthesize that information as concisely and precisely as possible, to facilitate management decisions and actions. Standardized criteria and processes will be defined to objectivize and harmonize the identification of hindrances to progress and the critical actions required. This is described in more detail in **section 4**.

2.2.3 From an externally-driven agenda to stronger country ownership and financing

Monitoring processes and information systems ought to be defined and established by the country to primarily meet the needs for evidence-based decision-making and reporting, aligned with its national policies.

Data should be used at all levels within the country, assessing progress towards road map goals and taking evidence-based decisions. While all stakeholders have a role to play in strengthening monitoring and evaluation and tracking efficiently the attainment of the road map targets, countries should coordinate the activities of the different stakeholders, by mapping them and clearly defining their roles and responsibilities. This will be essential to empower countries to lead the fight against NTDs, avoid duplicated efforts, take decisions based on evidence and align required actions.

Countries are both the drivers and the beneficiaries of progress towards the road map targets for 2030. They should therefore increasingly assume the leadership in designing and implementing adequate monitoring and evaluation in order to efficiently track progress towards the targets in their own contexts. This includes identifying health information system resources, defining indicators aligned with global targets, identifying data sources, managing data, developing information products, and disseminating, reporting and using data to inform decisions at multiple levels within the country. Local governments are key to ensuring allocation of funds and successful implementation of interventions, coordination of multisectoral action, and determining the best approach for NTD integration and mainstreaming (as described in **section 2.2.2**). As national and local governments strengthen their leadership, the role of regional and global stakeholders will primarily be one of support.

Global stakeholders are responsible for the development of norms, standards, guidance and tools for monitoring and evaluation and for overseeing technical advances. Global actors also define indicators and not only set and monitor progress towards global targets but also assist countries in developing local advocacy plans. Additionally, WHO facilitates coordination among countries and different stakeholders, conducts gap assessments and periodic reviews at the global level, and disseminates standardized information for decision-making.

Regional stakeholders occupy an important position at the interface between global and national levels, providing guidance to countries in translating global targets and in sharing best practices.

While the specific activities conducted globally, regionally and nationally will vary and will evolve as the leadership of countries increases, the roles of the three tiers are broadly consistent.

Partners play a pivotal role at all levels, but particularly in countries. As countries define their programme goals and NTD plans including monitoring and evaluation, nongovernmental organizations, donors, pharmaceutical partners, other private sector businesses, research institutions/academia and multisectoral organizations can help to fill gaps identified by countries in areas where they need additional support. Clear delineation of responsibilities among partners will ensure full geographical coverage, avoid duplication and ensure that no community is overlooked. The coordination of this extensive, diverse network will be supported by WHO, which will work with all stakeholder groups.

Quantitative approach to monitoring of the road map

Quantitative approach to monitoring of the road map

Section 3 shows how the theory of change and the shifts guiding monitoring and evaluation described in section 2 are applied in terms of the definitions and processes that will be required to collect, analyse and disseminate road map quantitative data, with a particular emphasis on how this applies to countries.

Fig. 5 summarizes the M&E framework. It includes the components of the theory of change; the domains in which indicators are needed to monitor progress; the data sources for collecting indicators of interest; the methods of data analysis and synthesis, including data quality assessment; and communication and use of data to inform decision-making at different levels. These aspects of the monitoring and evaluation system are required to generate high-quality data for evidence-based decisions.

The colour shading for each theory of change component represents the linkages across different aspects of the M&E framework. For example, the impact component in green is linked to domains such as “improved health outcomes and equity”, “social financial risk protection” and “responsiveness”. Impact data can be collected from different data sources, such as population-based surveys, health management information systems, integrated disease surveillance and response, civil registration and vital statistics or disease-specific programmes, and can be analysed and disseminated through different methods and channels.

3.1 Defining the road map indicators

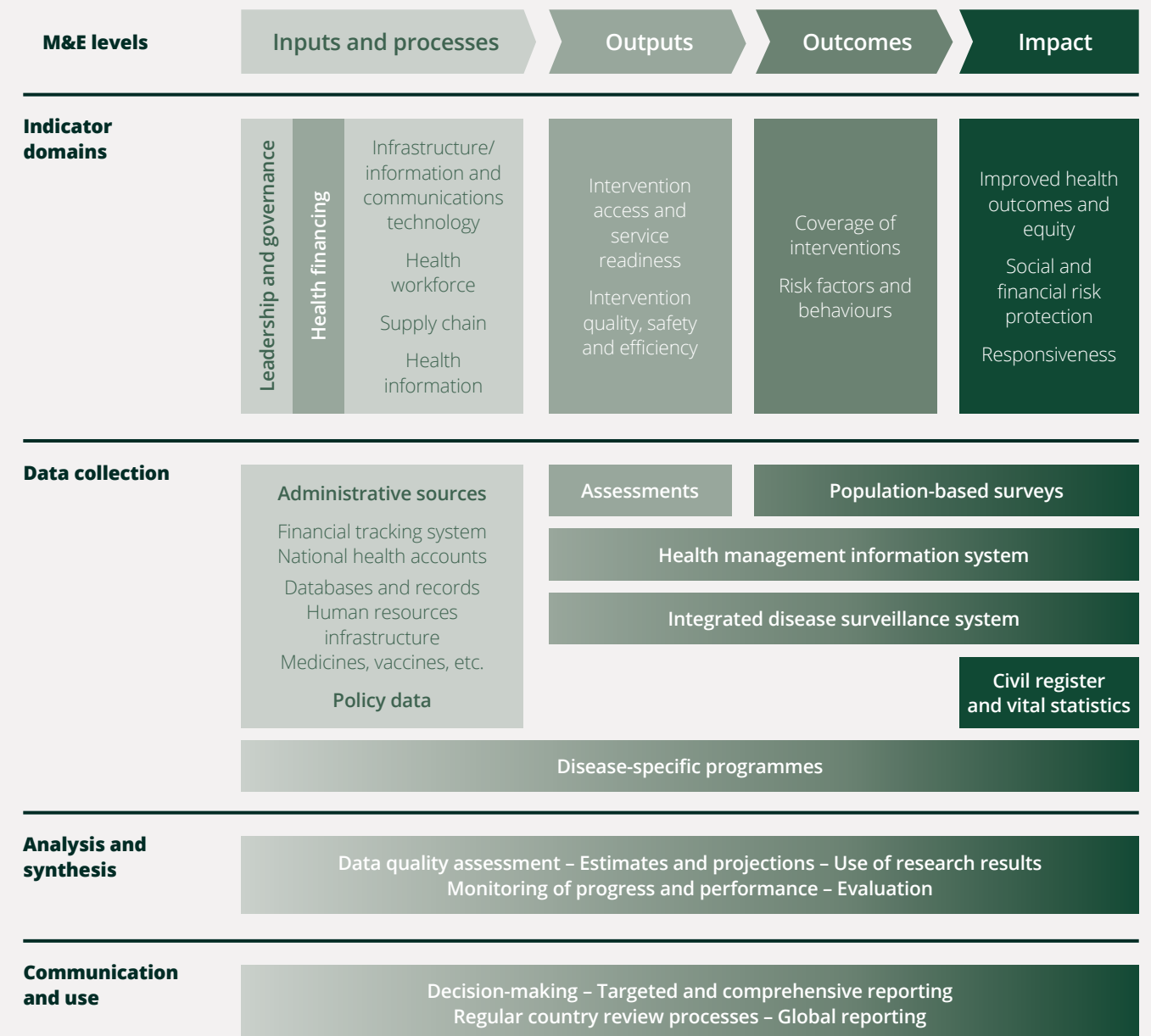
3.1.1 By level of monitoring and evaluation, domain and road map category

While distributed across the different levels, the indicators presented in the road map do not cover systematically the full spectrum of the theory of change for monitoring and evaluation and are oriented towards impact (Table 1). NTD programmes therefore should continue to monitor indicators that measure each of the components of the theory of change, including standard disease programme indicators described in other disease-specific guidance documents (Annex 2).

The overarching and disease-specific indicators included in the road map are intentionally measuring primarily high-level results such as impact or outcome. However, this varies by disease according to the maturity of the programme as of the launch of the road map (January 2021): less mature disease programmes (e.g. mycetoma, chromoblastomycosis and other deep mycoses) will monitor inputs, whereas more advanced disease programmes (e.g. dracunculiasis, lymphatic filariasis) will monitor outcomes and/or impact at the global level. In other words, not all diseases have indicators in all areas, but all diseases have an indicator in at least one of the areas. As disease programmes advance, road map indicators may be added and/or revised.

The overarching and disease-specific indicators are mainly related to “health status”, “service coverage” and “risk factors” domains. Conversely, cross-cutting indicators are mainly relevant to inputs and processes and related to the “health system” domain.

Fig. 5. The M&E framework for NTD programmes



Source: Adapted from Fig. 1 of Monitoring, evaluation and review of national health strategies: a country-led platform for information and accountability. Geneva: World Health Organization; 2011 (https://www.who.int/healthinfo/country_monitoring_evaluation/documentation/en/).

The four major indicator domains – health status, health systems, service coverage, and risk factors (3) – can be further divided into sub-domains whereby:

- health status pertains to improving health outcomes (mortality, health-related quality of life, equity);
- health system includes the health systems building blocks (leadership and governance, financing

- including financial protection, health workforce, health information, medical products, vaccines and technologies, service delivery including readiness, utilization and access to services and intervention), health security and health responsiveness;
- service coverage is a synonym for coverage of interventions; and
- risk includes risk factors and behavioural change.

Table 1. Global road map indicators by monitoring and evaluation levels

INPUT/PROCESS	OUTPUT	OUTCOME	IMPACT
<p>Health financing</p> <ul style="list-style-type: none"> Share of countries including neglected tropical disease interventions in their package of essential services and budgeting for them <p>Health information</p> <ul style="list-style-type: none"> Share of countries reporting on all relevant endemic neglected tropical diseases Share of countries collecting and reporting data on neglected tropical diseases disaggregated by gender <p>Lymphatic filariasis</p> <ul style="list-style-type: none"> Number of countries implementing post-MDA or post-validation surveillance <p>Dengue</p> <ul style="list-style-type: none"> Number of countries able to detect and respond to dengue outbreaks <p>Leadership and governance</p> <ul style="list-style-type: none"> Number of countries that adopt and implement integrated skin NTD strategies Share of countries with neglected tropical diseases integrated in national health strategies/plans Share of countries with guidelines for management of neglected tropical disease-related disabilities within national health systems <p>Chikungunya</p> <ul style="list-style-type: none"> Develop optimized and prioritized integrated strategies for case management and estimate the potential public health benefits by 2025 <p>Mycetoma, chromoblastomycosis and other deep mycoses</p> <ul style="list-style-type: none"> Number of countries in which mycetoma, chromoblastomycosis, sporotrichosis and/or paracoccidioidomycosis are included in national control programmes and surveillance systems <p>Snakebite envenoming</p> <ul style="list-style-type: none"> Minimum number of WHO-recommended poly-specific antivenom products in each region <p>Medical products, vaccines and technologies</p> <p>Chikungunya</p> <ul style="list-style-type: none"> Vaccine development for one or more vaccine candidates <p>Snakebite envenoming</p> <ul style="list-style-type: none"> Percentage of new antivenom producers joining market by 2030 	<p>Intervention service readiness and access</p> <ul style="list-style-type: none"> Buruli ulcer <ul style="list-style-type: none"> Proportion of laboratory-confirmed cases <p>Health security</p> <ul style="list-style-type: none"> Chikungunya <ul style="list-style-type: none"> Number of endemic countries identified and mapped for chikungunya 	<p>Coverage of interventions</p> <ul style="list-style-type: none"> Integrated treatment coverage index for preventive chemotherapy <p>Buruli ulcer</p> <ul style="list-style-type: none"> Proportion of confirmed cases who have completed a full course of antibiotic treatment <p>Foodborne trematodiasis</p> <ul style="list-style-type: none"> Number of countries with intensified control in hyperendemic areas <p>Leishmaniasis (cutaneous)</p> <ul style="list-style-type: none"> Number of countries in which: 85% of all cases are detected and reported, and 95% of reported cases are treated <p>Leishmaniasis (visceral)</p> <ul style="list-style-type: none"> In SEAR, PKDL cases detected (VL post-treatment follow-up 3 years) and treated <p>Lymphatic filariasis</p> <ul style="list-style-type: none"> Population requiring MDA <p>Taeniasis and cysticercosis</p> <ul style="list-style-type: none"> Number of countries with intensified control in hyperendemic areas <p>Echinococcosis (alveolar and cystic)</p> <ul style="list-style-type: none"> Number of countries with intensified control for cystic echinococcosis in hyperendemic areas <p>Onchocerciasis</p> <ul style="list-style-type: none"> Number of countries that have stopped MDA in at least one focus Number of countries that have stopped MDA for 50% of the population requiring PC for onchocerciasis Number of countries that have stopped MDA for 100% of the population requiring PC for onchocerciasis <p>Trachoma</p> <ul style="list-style-type: none"> Number of people at risk requiring A, F and E of SAFE for trachoma elimination purposes Number of people requiring management of trachomatous trichiasis; S of SAFE <p>Risk factors and behaviour</p> <ul style="list-style-type: none"> Access to at least basic water supply, sanitation and hygiene in areas endemic for neglected tropical diseases – to achieve targets 6.1 and 6.2 of Sustainable Development Goal 6 <p>Buruli ulcer</p> <ul style="list-style-type: none"> Proportion of cases in category III (late stage) at diagnosis <p>Rabies</p> <ul style="list-style-type: none"> Number of countries having reached 70% vaccination coverage of dogs in high-risk areas 	<p>Improved health outcomes</p> <ul style="list-style-type: none"> Number of countries having eliminated at least one neglected tropical disease Percentage reduction in disability-adjusted life years related to neglected tropical diseases Number of neglected tropical diseases eradicated Percentage reduction in people requiring interventions against neglected tropical diseases <p>Percentage reduction in number of deaths from vector-borne neglected tropical diseases (relative to 2016) – to achieve WHO's global vector control response goal</p> <p>Chagas disease</p> <ul style="list-style-type: none"> Number of countries achieving interruption of transmission through the four transmission routes: vectoral (domiciliary), transfusional (infected blood/blood products), transplantation (organ/tissue) and congenital (mother-to-child), with 75% antiparasitic treatment coverage of the eligible population Number of countries achieving verification of interruption of domiciliary vectoral transmission Number of countries achieving verification of interruption of transfusional transmission Number of countries achieving verification of interruption of transplantation transmission Number of countries achieving verification of interruption of congenital transmission <p>Dengue</p> <ul style="list-style-type: none"> Case-fatality rate due to dengue To reduce the burden of the disease and its incidence by 25% (2010–2020 as baseline) <p>Dracunculiasis</p> <ul style="list-style-type: none"> Number of countries certified free of transmission <p>Lymphatic filariasis</p> <ul style="list-style-type: none"> Number of countries validated for elimination as a public health problem <p>Human African trypanosomiasis (gambiense)</p> <ul style="list-style-type: none"> Number of countries verified for interruption of transmission Number of new reported cases <p>Human African trypanosomiasis (rhodesiense)</p> <ul style="list-style-type: none"> Number of countries validated for elimination as a public health problem Area with ≥ 1 HAT case per 10 000 people per year (average of 5 years) <p>Leishmaniasis (visceral)</p> <ul style="list-style-type: none"> Number of countries validated for elimination as a public health problem Number of countries in SEAR validated for elimination as a public health problem <p>Leprosy</p> <ul style="list-style-type: none"> Number of countries with zero new autochthonous leprosy cases Annual number of new leprosy cases detected Rate (per million population) of new cases with grade 2 disability Rate (per million population) of new paediatric cases with leprosy <p>Onchocerciasis</p> <ul style="list-style-type: none"> Number of countries verified for interruption of transmission <p>Rabies</p> <ul style="list-style-type: none"> Number of countries having achieved zero human deaths from rabies Number of countries having reduced mortality due to dog-transmitted human rabies by 50% Schistosomiasis Number of countries validated for elimination as a public health problem Number of countries where absence of infection in humans has been validated <p>Snakebite envenoming</p> <ul style="list-style-type: none"> Number of countries having achieved reduction of mortality by 50% <p>Soil-transmitted helminthiasis</p> <ul style="list-style-type: none"> Number of countries validated for elimination as a public health problem <p>Trachoma</p> <ul style="list-style-type: none"> Number of countries validated for elimination as a public health problem <p>Yaws</p> <ul style="list-style-type: none"> Number of countries certified free of transmission <p>Financial risk protection</p> <ul style="list-style-type: none"> Share of the population at risk protected against catastrophic out-of-pocket health expenditure due to neglected tropical diseases – to achieve target 3.8 of Sustainable Development Goal 3

MDA: mass drug administration; PC: preventive chemotherapy; SAFE: Surgery for individuals with trichiasis, MDA with antibiotics to reduce the reservoir of ocular chlamydial infection, and Facial cleanliness and Environmental improvement; SEAR: WHO South-East Asia Region; VL: visceral leishmaniasis

Indicators in **BOLD** are core road map indicators

Colour legend:

- Cross-cutting indicator
- Disease-specific indicator
- Overarching indicator
- Domains/Sub-domains

3.1.2 Tracking the indicators at national and global levels

The 36 core indicators identified in the road map monitor global progress. However, progress towards these global and national targets will depend on regular monitoring at national and subnational levels.

WHO will collect data from countries to report on the disease-specific road map targets and will aggregate disease-specific information to report against the overarching targets. This is illustrated in Fig. 6, in which subnational data on several indicators may need to be reported to the national level in order to report country-level data which contribute towards a disease-specific core road map indicator. Data across countries are then aggregated to measure the core disease-specific road map indicators disease-specific data are aggregated to generate data on the overarching road map indicator.

The table presented in Annex 3 provides key metadata for each core road map indicator, describing in more detail how they will be collected and calculated (numerator, denominator and preferred data source and level of data collection), as well as how Member States should collect and report the data that feed into the global road map indicators.

The four overarching indicators are quantitative measurements of the combined impact on population health of all global NTD programmes. These indicators will be calculated by the WHO secretariat, but country-level, disease-specific data are the building blocks on which they are based. Country-level data on each disease may be aggregated at the global level, and then aggregated across all NTDs (e.g. “Number of people requiring interventions against NTDs”). The “Number of countries having eliminated at least one NTD” or “Number of NTDs eradicated” will be generated by the WHO secretariat based on dossiers submitted by countries to apply for certification, verification or validation of disease eradication, elimination or elimination as a public health problem. Dossiers for some NTDs still need to be designed, and all should be revised and standardized in the context of the forthcoming multi-disease elimination framework to be published by WHO. Finally, the calculation of DALYs (disability-adjusted life years) is performed at the level of the WHO secretariat, but relies on high-quality epidemiological and morbidity data. The data on DALYs related to NTDs are already publicly available on the WHO website, but require additional work in order to include the NTDs which have not been previously included and to exclude those diseases which are not NTDs.

For **cross-cutting indicators**, some of the data will be collected from NTD programmes (through existing channels or via a global survey), while others will generally be collected by other sectors using well-established processes (e.g. WASH indicators). Attaining and maintaining progress towards the road map cross-cutting targets will provide an indication of the sustainability of national NTD programmes. Annex 4 shows the linkages between the 10 cross-cutting indicators and the road map cross-cutting approaches, the level of country ownership and the extent of sustainability. At the time of drafting this M&E framework, however, many cross-cutting indicators at both the global and national levels had yet to be fully defined; as a living document, the M&E framework and associated materials will be updated periodically to reflect this evolution.

For many NTDs, **disease-specific indicators** are already well-defined with established data processes. Data flow from peripheral to central level will then be reported and compiled at the global level. However, for some of the NTDs, additional work is necessary to clearly define the indicators and processes at both global and national levels. The M&E framework and associated materials will be updated as disease-specific guidance advances.

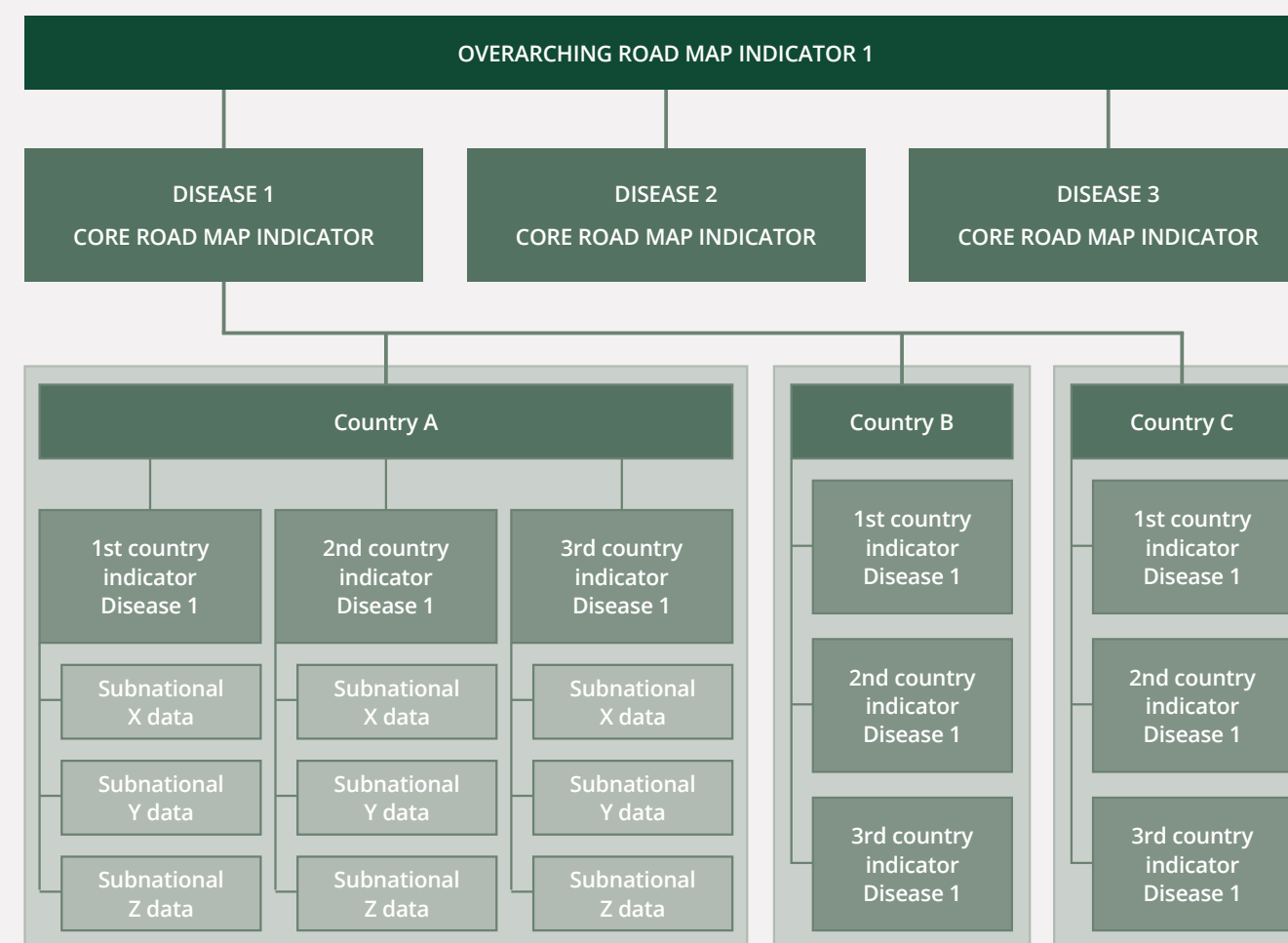
3.1.3 Description in the NTD indicator compendium

The NTD indicator compendium (7) provides a comprehensive and standardized listing of all the recommended NTD indicators, notably the road map indicators, and strives to achieve uniformity in defining indicators to allow comparisons over time and space.

It contains detailed metadata for each of these indicators, allowing for more standardized collection, measurement, analysis and use of data to track progress towards the global road map targets. It aims to:

- guide the monitoring of health results at national and global levels;
- provide standardized M&E terminology across indicators and NTD programmes;
- encourage consistent use of indicators to monitor and evaluate programmes; and
- serve as a resource for the different components of the monitoring and evaluation process, including guidance for the development of comprehensive evaluation plans, design of data collection tools and selection of indicators to measure progress.

Fig. 6. Linking national and global data to feed the road map indicators



The NTD indicator compendium draws on numerous previously established WHO guidelines and disease expert groups (Annex 2). A description of the metadata available therein is provided in Annex 5. It will be regularly updated based on feedback and recommendations by relevant advisory groups and will be accessible online on WHO’s website.

3.2 Including the indicators in strong country-owned monitoring and evaluation systems and national NTD plans

In order to be efficiently monitored, the road map indicators need to be incorporated into strong country-owned monitoring and evaluation systems and national NTD plans.

National NTD plans should include a strong monitoring and evaluation component, with optimal budgetary support, which will outline how the country will collect, analyse and report data, including those necessary for assessing progress towards the road map indicators. Additionally, the plan should include data quality assessments, analytical outputs, and plans for communication and dissemination of results.

The plan should also outline ways to address institutional capacity-building in data collection, analysis and dissemination. **Fig. 7** provides an example of how a country can strengthen the monitoring and evaluation component of its NTD plan, taking the road map indicators into consideration. Similarly, it can also be used to strengthen the incorporation of NTDs in national monitoring and evaluation systems and NTD plans.

Countries should create and use their own theory of change to design their approach to monitoring and evaluation for tracking progress towards their NTD goals and targets, guided by and aligned with the road map.

The road map indicators are not the only indicators to be monitored by countries. Similar to **Fig. 3**, the country should start by setting its goals and objectives based on the global goals and the local context, to define the impact, short-term, mid-term and long-term outcome benefits or changes the programme plans to achieve within the country to meet those targets, in alignment with the road map. Adapting the road map indicators, countries should define their own milestones and targets for NTDs present in their country.

Additionally, each Member State should identify the inputs, activities and outputs required to achieve the targeted outcomes and impact, assigning indicators for each, guided by disease-specific M&E frameworks and cross-cutting road map indicators where applicable. Not all of these indicators will be reported to WHO for global monitoring of the road map but are essential for in-country management of NTD programmes and should be regularly reviewed to inform decisions and corrective actions.

3.3 Indicator processes: from data collection to data use

The majority of the data for tracking progress against the road map targets will flow through national data/information systems where they will be validated, compiled, analysed and used for decision-making at each supervisory level. Countries will also share their data on disease-specific and cross-cutting indicators with the WHO as per the recommended format for global analysis and reporting.

Fig. 8 depicts the systems, levels and processes through which data on the road map indicators will be managed. For effective programme ownership and management, the data processes should be present to some extent at all levels, although certain processes will be more prominent at some levels than others.

The majority of the road map data will first be collected at peripheral levels within countries using existing sources and health information systems.

NTD data will primarily be collected at different levels, notably at community (e.g. households, villages and schools) and health facilities (e.g. for cases detected and treated) level (**Fig. 8**).

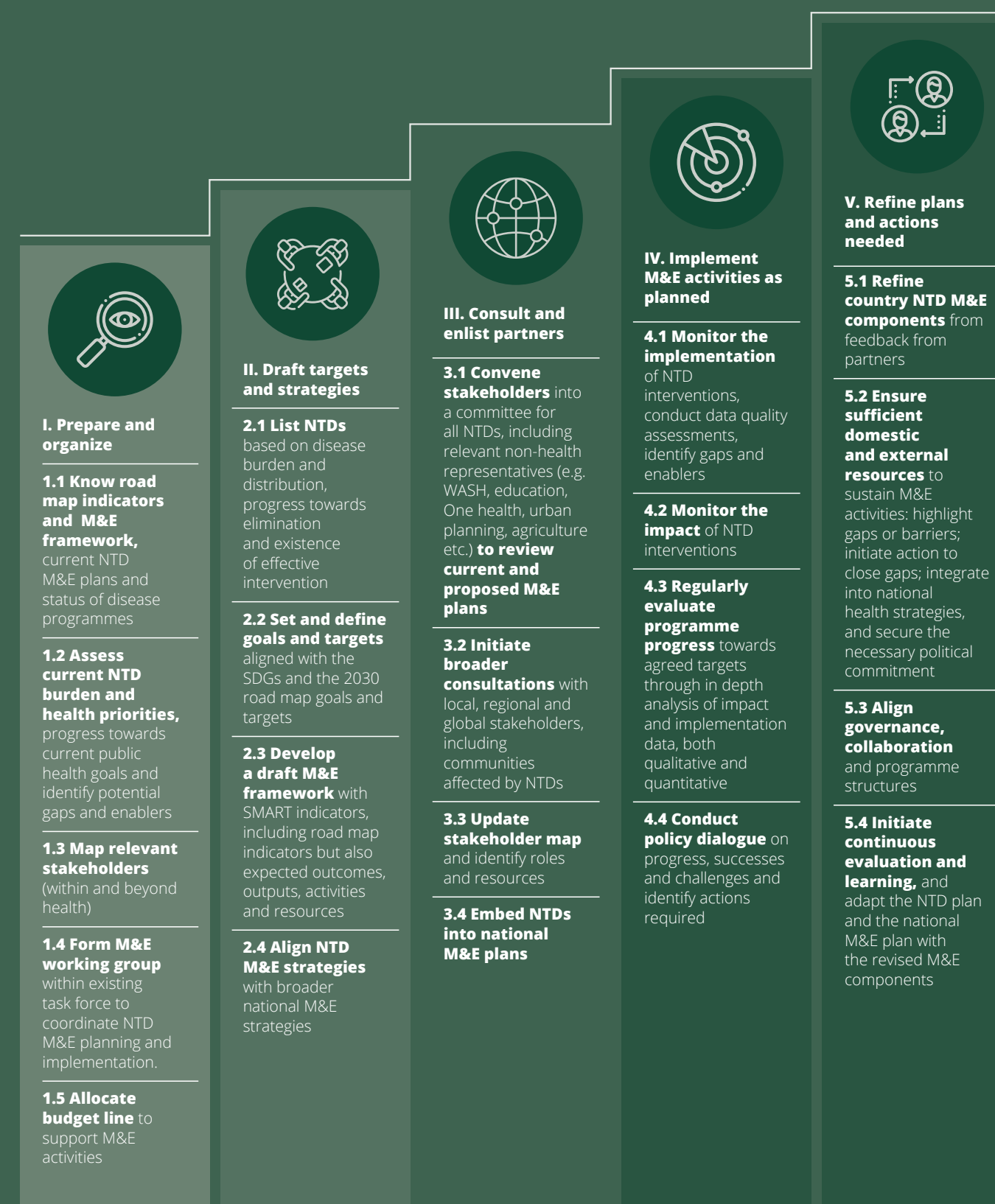
Various sources will generate data, including (but not exclusive to) death certificates and mortality data, with underlying cause of death in civil registration and vital statistics; demographic health surveys, multi-indicator cluster surveys or other population-based surveys; individual patients' records or facility-based registration systems in routine health information systems, also known as the health management information system; service delivery forms used for community and primary health care interventions against NTDs; and various surveillance systems.

These data flow through established channels throughout the different levels of the health system within countries, as shown in **Fig. 8** and summarized in **Annex 6**.

Mainstreaming NTD data management into national health information systems is a key recommendation of the road map.

Ideally, most NTD data within endemic countries should be managed and stored within the appropriate national health information systems – including the health management information system, national integrated surveillance systems, vital statistics and logistics management information systems – in order to facilitate monitoring, reporting and decision-making at all levels. However, this is likely to vary by country,

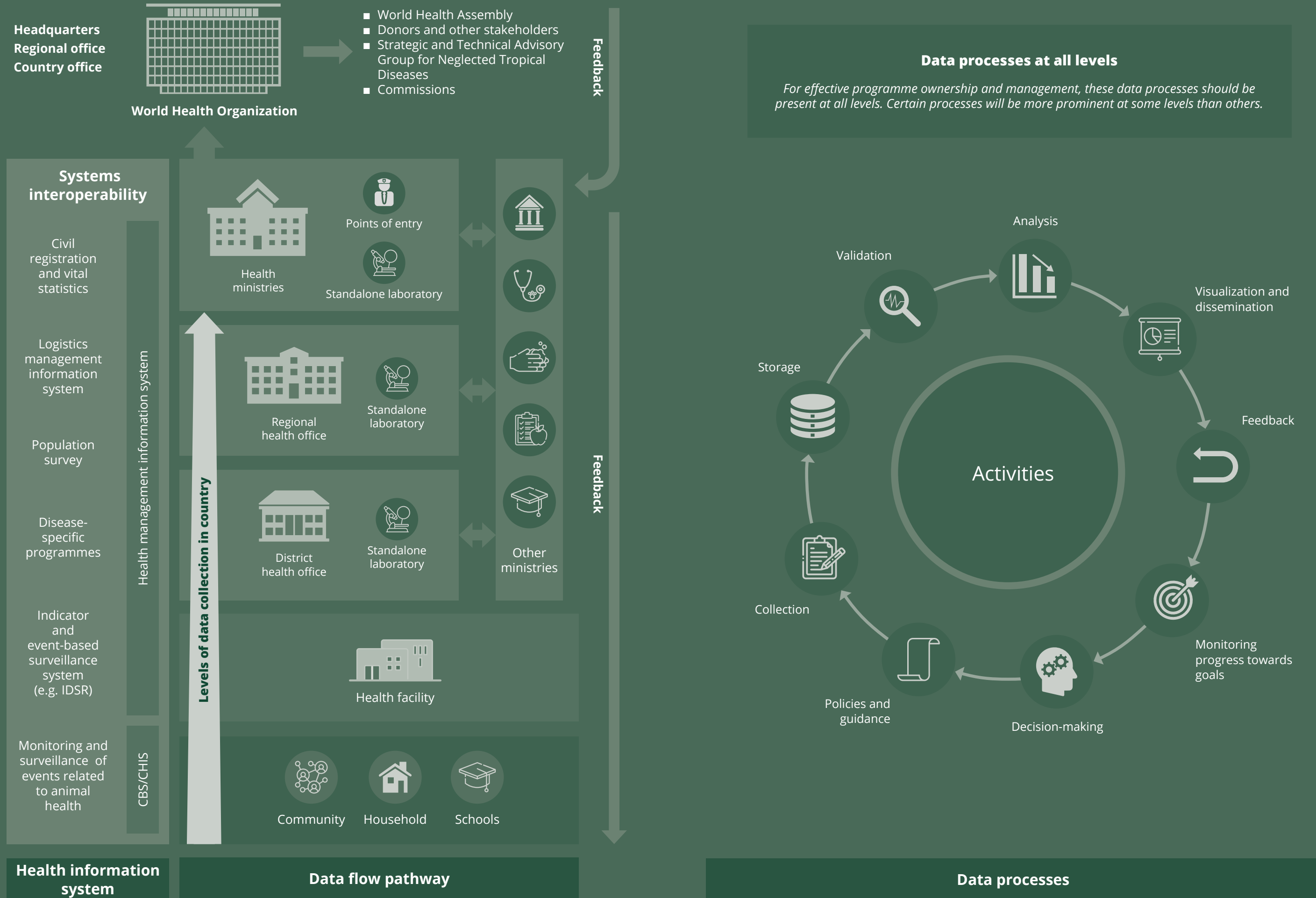
Fig. 7. Strengthening M&E components in a national NTD plan



← Countries can adapt this process given their current M&E plans for NTDs and status of disease programmes →

SDG = Sustainable Development Goal; SMART = specific, measurable, appropriate, realistic and timed

Fig. 8. Overview of flow and processes of NTD data for road map indicators



CBS: community-based surveillance; CHIS: community health information system; IDSR: integrated disease surveillance and response

depending on the health information systems in place, the disease burden and the programmatic phase. NTD-specific databases may be necessary to supplement the storage of NTD data collected by national NTD programmes, depending on the limitations of the health management information system; ideally, any national NTD-specific systems would interface with this system and other platforms. Considerations for balancing disease-specific and integrated approaches are more fully explored in the road map (1).

Community-based surveillance systems (9,10).

Communities are assigned to health facility catchment areas which are responsible for supervising the community-based surveillance focal points including community health workers, community-based surveillance volunteers, community leaders, traditional healers, birth attendants, teachers and health workers who conduct outreach activities (e.g. mass drug administration). This is the first level of data collection for many NTDs, such as dracunculiasis, leprosy and the skin NTDs and associated morbidities including lymphoedema and hydrocele, and for interventions such as preventive chemotherapy. A module for NTDs is now incorporated into a forthcoming guidance document on community health information systems (CHIS) (11) by the United Nations Children's Fund in collaboration with the Health Data Collaborative to help health authorities and community health workers to effectively collect the relevant NTD data as part of their responsibilities.

Health management information systems (12). WHO is collaborating with multiple global partners to develop toolkits to strengthen analysis and use of routine health facility data, including an NTD module. The NTD toolkit will include both integrated as well as disease-specific guidance and resources: core indicators to be collected and monitored by NTD programmes and decision-makers at all levels of the health system, analysis guides, dashboards, exercise books, and machine-readable configuration packages that address both integrated and disease-specific needs. Core indicators presented in the toolkit will be aligned with the road map indicators, to ensure streamlined data collection and reporting within countries and to regional and global levels.

Integrated disease surveillance and response (13). It is desirable to ensure that all relevant NTDs are included in national integrated disease surveillance; only some of the 20 NTDs are currently included. Priority diseases for surveillance are categorized into epidemic-prone diseases, including dengue and chikungunya; diseases targeted for eradication and elimination, including dracunculiasis, human African trypanosomiasis, leprosy, onchocerciasis and yaws; and other major diseases of public health importance including leishmaniasis, lymphatic filariasis, rabies,

schistosomiasis, soil-transmitted helminthiasis and trachoma. Any information related to epidemic-prone diseases and diseases targeted for eradication should be reported immediately to the national integrated disease surveillance and the relevant disease-specific programme for immediate response.

Disease-specific programmes. Countries may wish to consider creating or maintaining a disease-specific information system with dedicated resources for surveillance and reporting for any disease(s) which cannot be effectively included in the health management information system. This may include diseases with a disproportionately high burden, diseases on the verge of elimination, diseases with interventions requiring highly skilled health care workers, and/or diseases with interventions requiring high levels of effort and resources. This applies to vertical NTD programmes (e.g. Dracunculiasis Eradication Programme, National Leprosy Control Programme) that are conducting active surveillance and data collection in endemic areas.

Guidance documents and toolkits to facilitate mainstreaming of NTD data into national health information systems are being made available. As a living document, this M&E framework will be periodically updated to reflect progress towards developing resources that facilitate NTD data mainstreaming, including the health facility data toolkit and community health information system guidance, and that strengthen data collection and use within those data management systems. Once these resources are available, national NTD programmes should advocate for incorporation of NTD materials into the health management information system and community health information system to facilitate mainstreamed management and use of NTD data.

Data quality assurance, validation, review and feedback loops should be conducted at multiple levels to maximize data quality.

Data quality assurance mechanisms should be created or strengthened to increase the quality of data collected. These mechanisms should mitigate risks to data quality at the point of data collection and entry, as well as post-data collection during review, reporting and analysis. At each level within countries, data that feed into the health management information system or the designated information system should be validated and reviewed in a timely way to maximize their quality. Feedback should be provided to various levels on a regular basis on both data quality as well as programme performance. This data validation, review and feedback should occur during routine supportive supervision visits, as well as through periodic assessments.

A data quality review toolkit has been developed by WHO to provide a multi-pronged approach that ensures a comprehensive and holistic review of the quality of health facility data (14). WHO has also developed a field manual to guide national NTD programmes in using tools to improve data quality and information, through coverage evaluation surveys, data quality assessments and a supervisors' coverage tool (15).

Multisectoral collaboration is essential for compiling cross-sectoral data to track progress against NTD road map targets.

While the majority of the country indicators that will feed into the NTD road map indicators will be generated through national health systems, some will require data from other sectors, including WASH, veterinary public health (One Health) or universal health coverage. NTD programmes are not expected to conduct primary data collection on these indicators, but rather should coordinate with these other sectors to compile and report these data.

The monitoring of progress towards the achievement of the road map targets will be an ongoing process over the next 10 years. Regular analysis and review of the data is paramount for evidence-based decisions and corrective actions.

At national and subnational levels, tracking progress towards the 2030 road map goals will require building on existing data processes to collect, clean, analyse and use data typically provided on a monthly basis from health facilities, on a regular basis from community-based interventions and on an ad-hoc basis from community-based surveys.

Data should be frequently analysed and used to make decisions at multiple levels of the country. This can occur during various programme activities such as assessing burden, NTD service delivery, and measuring outcome and impact, as well as when transitioning between these programme stages. At subnational and national levels, decision-makers may use data to answer key questions, such as: "Are NTD programmes on track to reach subnational/national targets/NTD road map targets?", "Considering progress to reaching targets, do targets need to be revised?", "Does the strategy/approach need to be revised?", "Has the target been reached subnationally/nationally, what is the adapted strategy and how do we monitor progress for that?". Decision-makers can then use data-driven answers to guide adaptations to the strategy, targets and/or activities.

Standard practices regarding data processes and data management are most probably already known in the context of the NTD programmes; however, they appear not to be sufficiently implemented and hence best practices are summarized in **Box 2**.

Country indicators relevant to the road map indicators will be reported to WHO through existing reporting processes and channels.

A major challenge in the current reporting process is that different collection forms and formats are used for reporting NTD data. As part of the global architecture for NTD data, country NTD data that feed into the road map indicators should be reported by Member States to WHO in a timely manner using standard existing reporting tools (**Annex 3**). WHO plans to develop and periodically conduct global surveys which Member States will complete to report road map data that are not currently routinely collected. As of the writing of this M&E framework, WHO is still collaborating with Member States and other experts to define the reporting pathways for some of the cross-cutting indicators that are collected within countries by other, non-NTD actors such as One Health; this framework will be updated as those processes are determined.

WHO intends to solve challenges of data fragmentation and data siloes faced at multiple levels of the global data architecture by consolidating WHO's data repositories, portals and datasets and reducing the burden of data collection on countries. It is envisioned that Member States will ultimately report NTD data, including road map data, to WHO through a forthcoming country portal in the world health data hub. This platform will facilitate collection, verification, validation, curation and visualization of country data. WHO will thus be able to monitor the completeness and timeliness of reports submitted through the country portal, as well as provide feedback to the data provider.

Reporting frequency will vary by road map indicator. Additional details about tools and frequency of reporting to WHO can be found in the NTD indicator compendium (7) (see **section 3.1**).

Box 2. Best practices in NTD data processes

Data collection	<ul style="list-style-type: none"> • Integrated and standardized disease-specific and cross-cutting indicators and data collection tools • Mainstreamed into health management information system/integrated disease surveillance and response • Disaggregated by age, gender and location • Recorded and reviewed on the same day that collected • Reported to the next level in a timely manner • Supervised collection of data • Digital health platform used for collection
Data storage and aggregation	<ul style="list-style-type: none"> • Mainstreamed into health management information system/integrated disease surveillance and response • Secured with defined users and access • Updated at regular intervals
Data validation	<ul style="list-style-type: none"> • Validated at multiple levels with feedback on data quality • Triangulated from various sources • Checked for internal and external consistency • Routine (e.g. during supportive supervision) and periodic exercises (e.g. coverage evaluation surveys, data quality audits) conducted
Data analysis	<ul style="list-style-type: none"> • Viewed through the lens of person, time, place to answer 4/5 Ws: “what, where, when, why and how?” • Analysed at multiple levels (community, health facility, district, national, regional, global) • Advanced analyses used to fill public health data gaps
Monitoring progress towards targets	<ul style="list-style-type: none"> • Progress measured with attention to geographical areas, population groups and trends over time • Progress analysed as to how and why targets are being achieved or not achieved to inform decisions

The data collected from the country and from other sources including demographic data, One Health or WASH data and donated medicines will be pulled and stored in a single central data repository or “data lake”.

For example, the cross-cutting indicator “Access to at least basic water supply, sanitation and hygiene in areas endemic for neglected tropical diseases – to achieve targets 6.1 and 6.2 of Sustainable Development Goal 6” will not have to be reported by national NTD programmes but will be pulled from data collected by the Joint Monitoring Programme for Water Supply, Sanitation and Hygiene of WHO and UNICEF and extracted from the global database available online.

Data dissemination, the process of communicating information through defined channels and media in order to reach various target groups, is an essential component of effective monitoring and evaluation systems.

Target groups can include national policy-makers, communities, researchers, health professionals, donors, implementing partners and the general population. Effective data dissemination should not only share new information or insights about NTD programmes but also result in actions that justify, promote and sustain programme activities.

The primary agency responsible for dissemination of NTD data is health ministries. WHO will further analyse and amplify the dissemination of the global and regional road map information through different channels, including an NTD annual progress report and interactive online NTD dashboards.

WHO published four reports between 2012 and 2017. From 2021, NTD reports will be published annually in order to reflect progress towards the road map milestones and targets. The annual reports will incorporate information on trends of quantitative road map indicators and results of periodic gap assessments, and will also highlight key areas of monitoring and evaluation required to sustain or accelerate programme gains. These annual reports will be available electronically on the WHO website and as a mobile application to browse through more quickly and efficiently.

The one-stop-portal, WHO portal, will be made available to the public including partners, academia and other United Nations agencies for data discovery, including NTD data, indicators and analytics. Dynamic and interactive NTD dashboards, which will be included in the forthcoming world health data hub, will be made available throughout the next decade in order to jointly track progress towards the achievement of the road map and as a basis of regular reviews. The dashboards will be available in web and mobile applications. Through this set of dashboards, all stakeholders are able to track:

- high-level progress of the road map indicators, at global level via a road map tracker;
- high-level progress of the different indicators, for a specific country via country profiles;
- detailed progress for a specific disease via disease profiles; and
- high-level progress towards access to medicines and products.

04

**Qualitative approach
to monitoring of
the road map**

Qualitative approach to monitoring of the road map

The road map targets are ambitious and will continue to require considerable work by countries and stakeholders to ensure that all programmatic inputs are in place.

Concerted, strategic actions at global and national levels are required to ensure that the inputs and processes required by NTD programmes are in place. Scientific understanding to develop new tools and improve interventions; strategies, guidance, governance and capacity to deliver services; and enablers such as advocacy, funding and collaboration, all require the effort of numerous stakeholders at both national and global levels. Although overall strengthening of health systems is the long-term goal, strengthening in specific technical areas will be needed to accelerate progress for specific diseases and across all diseases and disease groups. Ongoing research and innovation are essential to fill gaps and take mitigating action against evolving risks such as antimicrobial resistance, climate change, complex emergencies, local epidemics or pandemics and political instability. Strong health systems and a global enabling environment are essential to achieve and sustain the targets for NTDs.

These broad drivers of success in NTD programmes are often more readily assessed using qualitative methods. This section describes a new qualitative tool being developed to measure global progress in these areas more systematically. Qualitative methods will also be important for road map monitoring at the country level, and this qualitative tool can be adapted for country use. In the coming years, further guidance on adapting the gap assessment tool for implementation and use at country level will be provided.

At the global level, the critical gaps and actions required will be reassessed regularly throughout the next decade through the qualitative gap assessment tool, building on previous experience.

A qualitative assessment of NTD programmes formed a key part of the global consultation to develop the road map and was used to generate a set of disease-specific profiles and a multi-disease heat map. These outputs highlighted the gaps and hindrances to progress across the diseases, and identified specific areas for critical action, both at the disease level and across all NTDs. The four areas prioritized through this process were diagnostics, monitoring and evaluation (outputs of which are summarized in **Annex 1**), access and logistics, and advocacy and funding.

The M&E framework builds on this qualitative assessment of NTD programmes to create a new gap assessment tool for NTDs to improve qualitative monitoring of programme implementation and to identify focused actions for course correction as needed throughout the next decade. The tool will be fully described in a separate document. A few differences between the method used for the 2019 qualitative assessment of NTD programmes and the new gap assessment tool include greater standardization across diseases, more objectivity in the assessment rubric and more engagement with country programmes, while minimizing any additional reporting burden on countries.

In addition, the assessment rubric for the new gap assessment tool will more explicitly support and reinforce the content of the road map strategy and accompanying documents that were not developed at the time of the road map consultation.

The gap assessment will be repeated every two years at global level during the decade to 2030. In the milestone years of 2023, 2025 and 2029, a full assessment will be conducted, while in the other years (2021, 2027), the assessment will focus on critical areas which have been identified in the previous exercise. In 2021, the gap assessment will focus on the four priority areas identified through the 2019 consultation: diagnostics, monitoring and evaluation, access and logistics, and advocacy and funding.

The process will start with disease-specific gap assessments.

Programmatic action will be assessed for each NTD along the three components and 11 dimensions which have been used and described in the road map (see Fig. 6 of the road map (1)). In addition to the attributes defined in the road map for each dimension, the gap assessment tool will use assessment criteria defined by subject matter experts in order to standardize and determine the colour ranking of each dimension for each disease.

The assessment begins with disease-specific stakeholder consultations to generate colour rankings based on standard criteria and discuss status summaries and prioritized actions for each NTD (**Fig. 9**). The output will be a disease profile including a colour ranking and narrative statements for each dimension and commentary on the process.

Once all the disease-specific assessments have been conducted and agreed upon with the NTD community, a “heat map” showing common challenges and areas for focused cross-cutting action and course correction will be generated (see Fig. 7 of the road map (1)).



Leveraging the disease-specific gap assessment will enable identification of key disease-specific bottlenecks and actions as well as assessment of cross-cutting approaches such as integration, coordination or mainstreaming, along with country ownership and sustainability.





For the cross-cutting component, WHO will compile the disease-specific assessment outputs to create an updated heat map of colour rankings and narratives as a first draft of the gap assessment product. WHO will convene a stakeholder consultation to review the outputs, jointly with progress data on road map indicators, to provide further commentary on the disease-specific outputs, to report progress on cross-cutting priorities since the last assessment, and to define critical cross-cutting actions to be implemented. The consultation process will support country ownership of programmes through a special focus on country input and culminate in a report to be reviewed by the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases for finalizing the gap assessment product.

Several dimensions of the gap assessment are useful to assess qualitatively the different cross-cutting approaches, along with country ownership.

Dimensions from “strategy and service delivery” and “enablers” components will enable the assessment of integration, mainstreaming, coordination, strengthening of health systems, country ownership and sustainability.

Fig. 9. Template for assessing gaps along the 11 dimensions, through objective criteria

Year	Assessment	Status and progress since last assessment	Actions required
2019		Text from 2019 disease profile	Text from 2019 disease profile
2021		Updated text on progress since last assessment	Updated text on actions required

Standardized colour assessment criteria for questionnaire			
	✓ Criterion 1 met ✓ Criterion 2 met ✓ Criterion 3 met		✓ Criterion 1 met ✓ Criterion 2 met
	✓ Criterion 1 met		No criteria met



**Evaluation of progress
towards the road map
targets**



Evaluation of progress towards the road map targets

Evaluation plays a pivotal role in improving performance, promoting learning and increasing accountability for results.

Evaluation drives the accountability for impact that is foundational to the road map. In this M&E framework, evaluation is defined as the periodic, systematic assessment of expected and achieved progress towards established goals, analysing data on health status as well as programme implementation to determine if the programme is on track, and if not, what actions may be needed for course correction. It is essential for effective programme management. Evaluation relies on the set of indicators defined for monitoring, as those are reflecting the expected change described in the theory of change.

Evaluations should examine the relevance, effectiveness, efficiency and sustainability of the interventions, the contributions of stakeholders at both national, regional and global levels and provide evidence that is reliable, useful and timely for decision-making and management. Evaluation is an integral part of the strategic planning and programming cycle and should not be conducted only as an end-of-programme activity.

A comprehensive evaluative approach that relies on a theory of change, i.e. focused on understanding the mechanisms that produce change in a specific context, aims not only to discern if the intervention achieved its goal or not but also to explain the success or the failure. It is important to evaluate the design of the national NTD plan or programme in order to validate its potential to achieve its proposed goals based on the specific interventions and assumptions that comprise it. In addition, it is necessary to identify the operational challenges and how those could affect the interventions and how those could be addressed. In terms of estimating the impact or effectiveness of the plan or programme, it is relevant not only to assess if the causal pathway and mechanism to produce change proposed in the theory of change were appropriate but also to identify potential heterogeneities in the results as well as understanding how the context affected NTD interventions.

The evaluation of progress towards the road map targets requires the structured engagement of all relevant stakeholders in an operating model that facilitates country ownership and fosters a culture of equity, putting people and communities at the centre. It should include the perspectives, voices, preferences and decisions of the least powerful and most affected programme beneficiaries and share evaluation results with the same.

Given the multifactorial aspect of evaluation, it is important that the evaluation of NTD programmes is guided by core principles of impartiality, independence, quality and transparency. This may in turn require considerable resources. It is therefore important to use methodological approaches that allow evaluation teams to balance accountability and learning among stakeholders. Key risks that should be avoided include formulating evaluation questions that are not answerable, producing sometimes technically sophisticated evaluation indicators and gathering excessive quantities of data that make little contribution to practice or policy.

Evaluation incorporates data on both impact and implementation for an in-depth analysis and policy dialogue to inform action.

Evaluation brings together data on programme impact with data on programme implementation to support a dialogue on progress, success and challenges. It should include both quantitative and qualitative data to create a comprehensive evidence base from which to build policy and action. Institutional mechanisms and policy dialogues should link evaluations to coordinated action on prioritization, resource allocation and course correction (Fig. 10).

Periodic evaluation drives the essential cycle of monitoring, evaluation and action that is essential for successful programme management and the achievement of programme goals. The key national and global components of this cycle are illustrated in Fig. 11.

Fig. 10. Evaluation to support policy dialogue and programmatic action

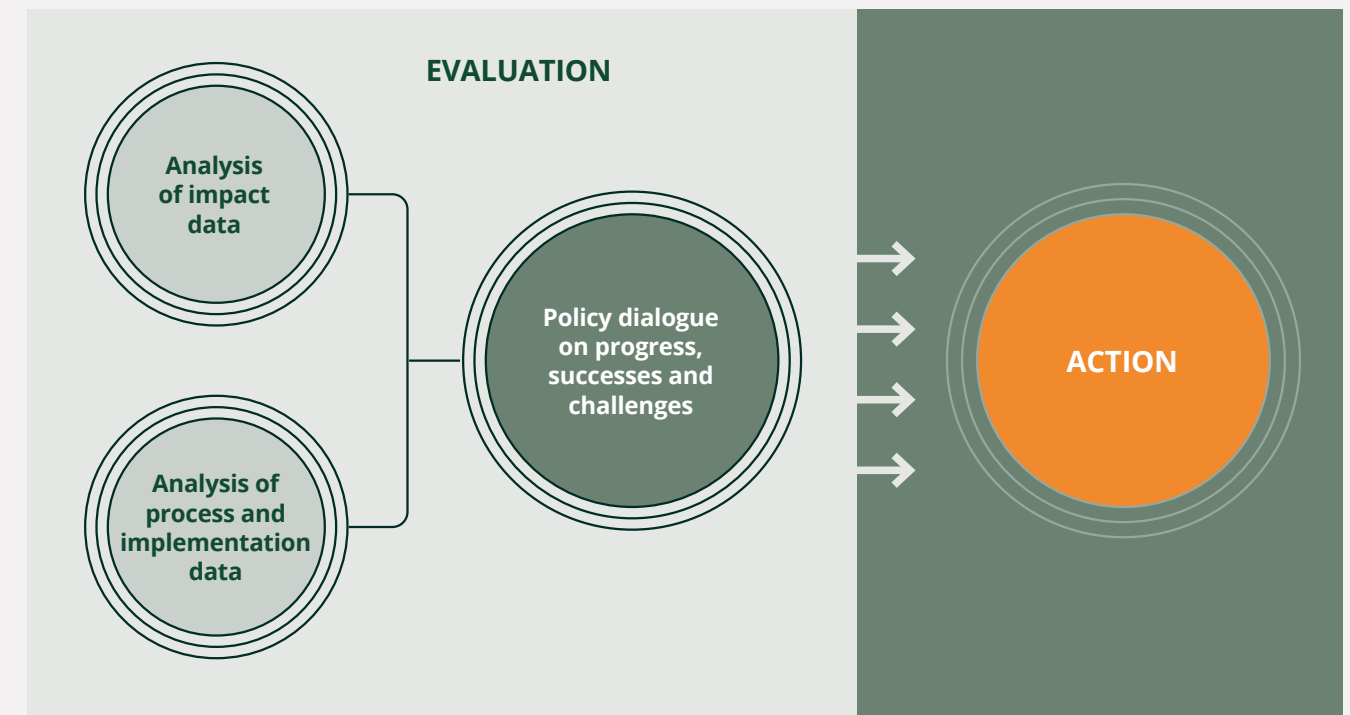
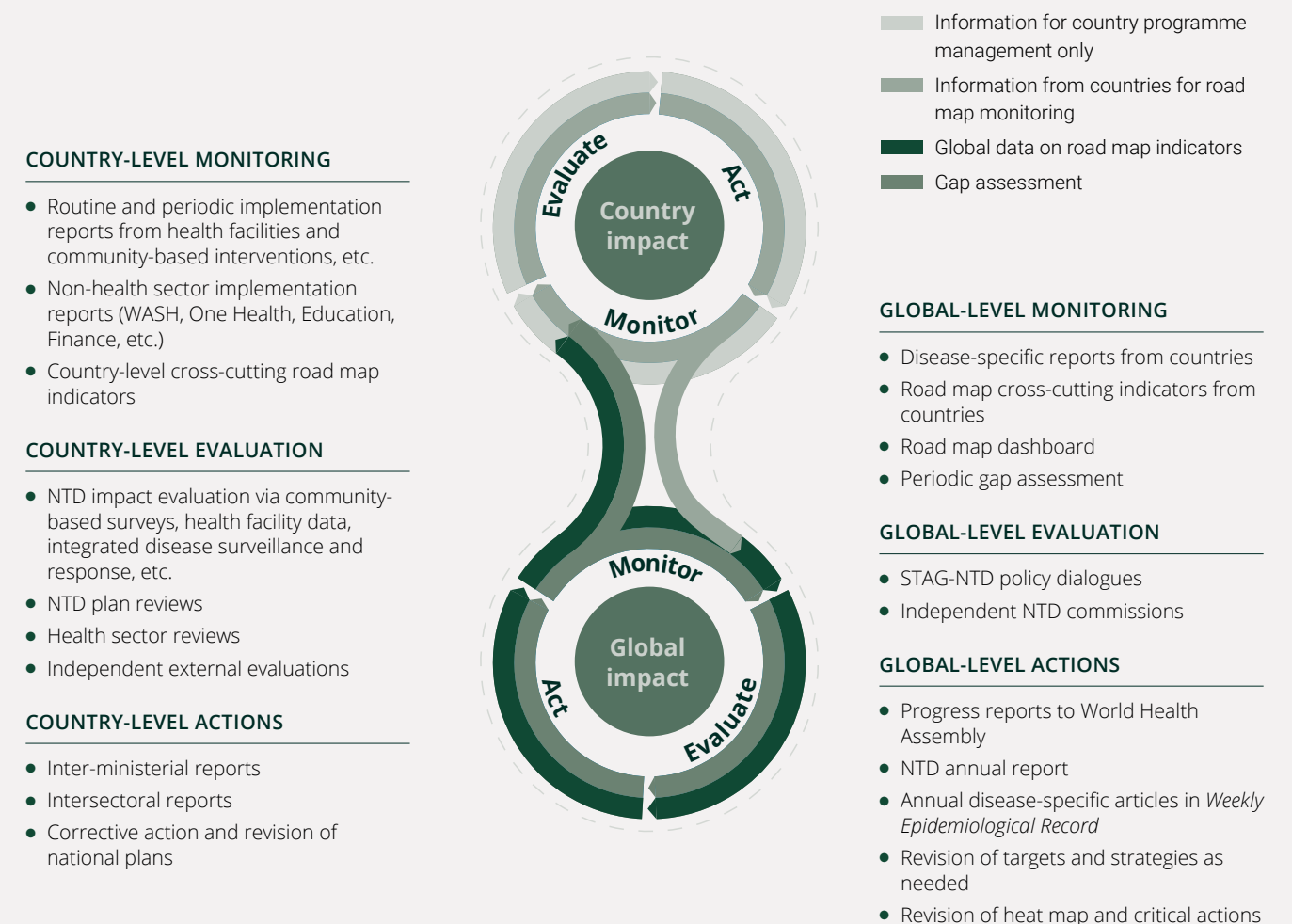


Fig. 11. Evaluation for impact and accountability



5.1 Global progress

The main mechanisms for monitoring and evaluation in support of country programme management are listed on the left in **Fig. 11** and represented in the upper circle. Some information is used only for country programme management (lightest green), while other information is also reported to the global level (medium green) to support monitoring and evaluation of the road map. The key mechanisms for monitoring and evaluation in support of global programme management are listed on the right and represented in the lower circle. The information from across all endemic countries (dark green) is combined with the information from the global gap assessment, to support effective global programme management for global impact. This information flows back to countries as both reports to Member States and global level actions to strengthen country programmes (e.g. new tools, improved interventions, strategies, guidance, governance, funding and collaboration).

The effectiveness of these cycles of monitoring, evaluation and action at national and global levels should also be periodically reviewed and action taken to improve them, if needed.

Substantive evaluation of progress against the 2030 NTD targets shall be conducted in 2022, 2024, 2026 and 2031, as well as in 2029, the year after the conclusion of WHO's Fourteenth General Programme of Work. WHO will provide to the World Health Assembly a comprehensive report of periodic evaluation based on reports from countries and stakeholders, and outcomes of national or external evaluations. This report will objectively analyse progress towards the set road map targets, overcoming the bottlenecks identified in the road map (heat map) and any new hindrances to progress and propose corrective measures. The reviews by the World Health Assembly in reporting years (2022, 2024, 2026 and 2029) may result in updated targets in line with changing contexts (**Fig. 12**).

5.2 National progress

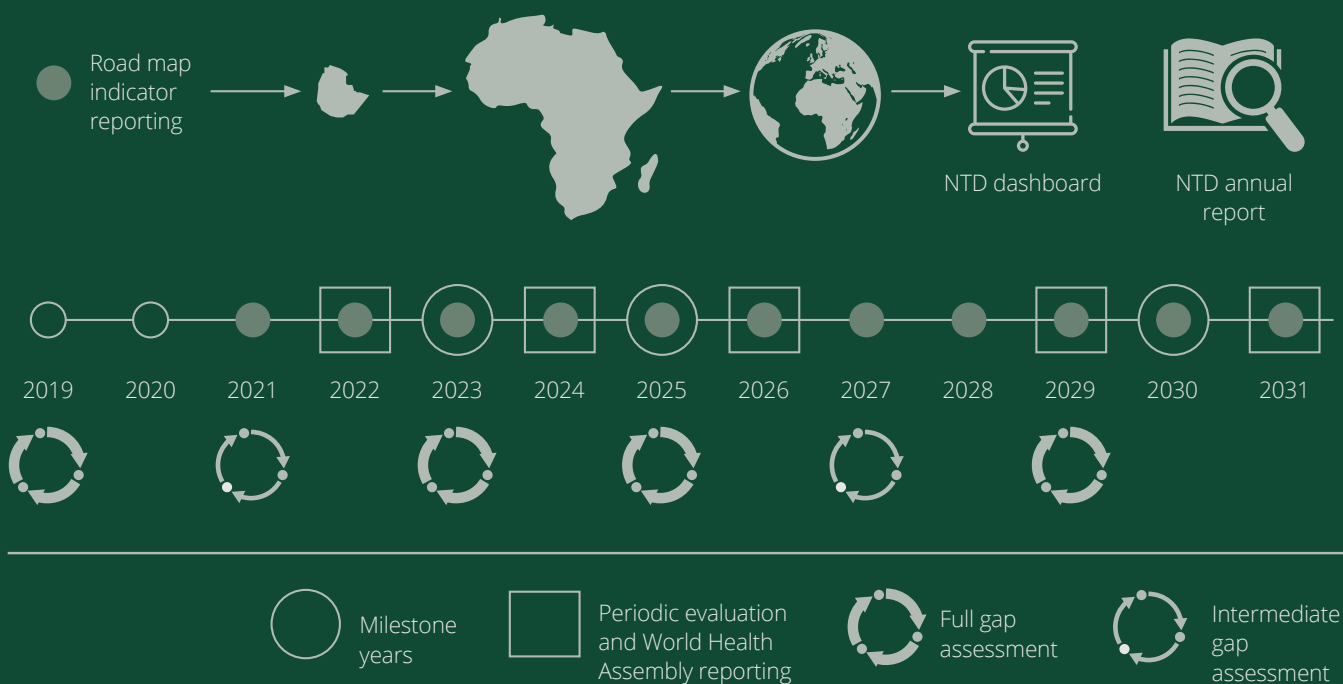
At country level, evaluations should encompass a set of principles (**Box 3**) that support country-owned processes from which findings shall be obtained to complement reports to the World Health Assembly on progress towards road map goals.

Countries should create their own theory of change guided by, and aligned with, the road map goals for use in evaluation.

The essential attributes that the evaluation should focus upon and incorporate in a related theory of change can be grouped into strategic areas for analytical focus that examine the extent of actualization of the shifts in approaches highlighted in the road map, as follows.

- **NTD programme management support system:** by assessing the functionality of thematic areas such as policies, guidelines, processes and tools; human resources for health, planning, coordination, partnerships and stewardship, financing and resources mobilization, procurement and supply management; and surveillance and operational research.
- **Epidemiological trends and outcome/impact analyses:** by assessing progress towards attaining the road map targets by categories indicated, namely overarching, cross-cutting and disease-specific indicators.
- **Sustainability:** by assessing the extent of inclusion of NTD programmes in national expenditure frameworks, development plans, poverty reduction strategic plans, and coordination in support of NTD programmes from other health programmes and non-health sectors, e.g. environment, local government, tourism, education and housing.

Fig. 12. Timeline for monitoring and evaluating progress towards the 2030 road map targets



Box 3. Guiding principles of a country-owned platform for conducting evaluations of NTD programmes

1. Country-demand driven and country-owned
2. Build on existing in-country processes and experience, including mid-term expenditure review frameworks
3. Draw from a variety of available evidence within and beyond the NTD programme
4. Have an independent element by involving people external to the NTD programme in the evaluation team
5. Inclusive by involving community voices and other stakeholders in the health sector and other non-health sectors (such as education, WASH, gender, human rights, One Health)
6. Fit for purpose and use-driven to ensure results inform decision-making in support of the road map
7. Health system-focused or able to assess the contributions of NTD programmes towards health systems strengthening with measurable contribution to universal health coverage and Sustainable Development Goal targets (notably 3.3, 3.8, 6.1, 6.2)
8. Support evaluation of integration and mainstreaming aspects of the NTD programme
9. Enabling, non-punitive and transparent in conduct and follow-up actions
10. Affordable and feasible in terms of human, financial and time resources

- **Community and beneficiary engagement:**

by assessing the level of awareness of NTDs by communities, perceptions of risk modification and satisfaction of recipients of NTD services, involvement of communities and community resources in the planning and implementation of programme activities, assessment of issues related to equity, human rights, gender, stigmatization and other vulnerabilities associated with NTDs in accordance with the pledge of the Agenda for Sustainable Development to “leave no one behind”.

Programme evaluation protocols, when elaborated further, should encompass the four strategic areas of analyses mentioned above, which are rooted in the health systems building blocks and can be used for the evaluation of different types of NTD strategic health plans. Key findings and lessons learned from the evaluation of the NTD programmes should therefore be widely discussed, disseminated and used to guide decisions and corrective actions, adjust road map targets as needed and adapt strategic actions among all relevant stakeholders (1).

Looking forward: the research agenda for monitoring and evaluation

Looking forward: the research agenda for monitoring and evaluation

The new 2030 road map serves as an important policy and advocacy document that draws attention to the key challenges facing NTD programmes and encourages continued commitment from the global community of partners to support this bold agenda. The development of stronger M&E frameworks and better diagnostic tools was identified as a critical priority action needed to support the 2030 targets. This section provides a forward-looking view of the work and research needed to fully support the road map's emphasis on measuring programme outcomes and impact. The broader research agenda needed to fully support the 2030 targets will be identified in another companion document to the road map: a research and development blueprint for NTDs for 2021–2030.

An inspection of the heat map developed for the road map (Fig. 15 of the road map (1)) demonstrates that at least half of the 20 diseases and disease groups for which road map targets have been established require critical advances in monitoring and evaluation in order to fill gaps and meet targets. In some cases, these gaps are substantial, including a need to add disease-specific impact indicators to the existing NTD indicator compendium; in others, countries need support on the use of new indicators to measure cross-cutting approaches (integrating, mainstreaming, coordinating and strengthening country health systems) or the use of new qualitative methods such as the gap assessment tool. A rapidly expanding programmatic focus on morbidity management and disability prevention will also necessitate the development of indicators to monitor stigmatization and equity as part of M&E frameworks.

Summarized in **Table 2** are specific gaps and challenges identified in previous sections which must be addressed in order to develop and harmonize disease-specific frameworks and strengthen monitoring and evaluation at the country level. Additional disease-specific needs identified in the development of the road map are summarized in **Annex 1**. Also, further training and implementation research are required to improve use of data at the lowest levels of the health system. Management of the work required to strengthen disease-specific M&E

frameworks will be monitored by WHO's Working Group on Monitoring, Evaluation and Research.

NTD programmes are continuously evolving as new intervention strategies, diagnostic tools and survey methodologies are translated from the research realm into routine programme use. The rapid pace of technological innovation holds a great deal of promise for NTD programmes in terms of addressing specific research needs for diagnostics, use of spatial data and predictive models, surveillance and new data management tools. Although these topics are considered as separate research needs, all are, in fact, essential and interdependent needs for innovation in research in monitoring and evaluation.

Appropriate, reliable, easily available and affordable diagnostic tools are an essential requirement for NTD programmes, and the absence of suitable diagnostic tools has been identified repeatedly as a critical challenge for NTD programmes.

Significant diagnostic gaps were identified for nearly all of the NTDs included in the road map. To achieve the road map targets, appropriate and reliable diagnostic tools are vital drivers of programme monitoring and evaluation and are critical in demonstrating a strong evidence base from which to document elimination of disease. WHO's new Diagnostic and Technical Advisory Group will work with the scientific community and the Working Group on Monitoring, Evaluation and Research to align the development of new diagnostic tools with programme needs.

A specific diagnostic need for many NTDs is a diagnostic tool that could be used to support surveillance, particularly post-elimination surveillance. Maintaining disease-specific surveillance can be costly and difficult to justify when health systems face many competing priorities; these challenges will only intensify following the COVID-19 pandemic. WHO has identified the development of multiplex-based diagnostic platforms and coordination across sectors for surveillance as priorities in the road map.

Table 2. Monitoring and evaluation gaps and needs for NTD programmes

M&E topic	Identified gaps and needs
M&E framework for NTD programmes	<ul style="list-style-type: none"> • M&E highlighted in the road map as a critical area which may prevent the attainment of road map targets • Lack of integrated M&E framework for NTD programme • Some NTDs lack established M&E frameworks to track outcomes and impact • Robust criteria are needed to define disease elimination consistently across all NTDs • New tools and strategies are required to support disease-specific and integrated surveillance • Integrating and mainstreaming NTDs into national health information systems are key to strengthen in-country M&E activities
Disease-specific indicators	<ul style="list-style-type: none"> • Some NTDs lack outcome and impact indicators • As new diagnostic tools are developed, these may require development of new indicators or adaptation of existing indicators
Cross-cutting indicators	<ul style="list-style-type: none"> • Some cross-cutting indicators require additional work to refine definition, methods of measurement and data source • Clearer guidance is needed to enable countries to measure and monitor cross-cutting approaches (integrating, mainstreaming, coordinating and strengthening) • Some NTDs lack measurement methods for inclusion in the overarching and cross-cutting indicators
Qualitative assessments	<ul style="list-style-type: none"> • Efforts required to standardize the process, methods, tools and timing for the gap assessment • Objectivity of criteria to score each dimension for each disease needs further refinement • Development of criteria to enable assessment of implementation of cross-cutting approaches (integration, mainstreaming, coordination and health system strengthening), changing operation models, country ownership and sustainability • Research is needed on how to adapt the gap assessment for country-level use
Data management	<ul style="list-style-type: none"> • Robust systems are needed to support collection of data that are complete, timely, systematic, accurate and disaggregated by age, gender and location • Data systems should be centralized in the health ministry, and data stored in a standard format on integrated platforms
Data analytics and use	<ul style="list-style-type: none"> • Additional training and implementation research is required to maximize the utility of these systems and, particularly, to improve data use at the lowest levels of the health system • Digital health tools for data collection, analysis and interpretation are needed to enable informed decision-making • New approaches to use spatial data are necessary to obtain a granular view of disease epidemiology to guide targeted interventions and surveillance

In this context, identifying opportunities to integrate disease-specific with existing surveillance activities at national and subnational levels is needed.

Integrated surveillance is essential to ensuring that programme gains are sustained. Beyond using existing tools more effectively, it may require development of diagnostics with better specificity and sensitivity as well as new technologies to make multiplex-based surveillance more accessible to national programmes. New approaches to integrated surveillance will require technological innovation, in the realms of both diagnostics and data management, the latter being a key part of the data analytics effort.

The ability to collect, manage and use public health data is central to successful public health programmes.

A further need for NTD programmes, and especially those with elimination goals, is to improve the effectiveness of collection and use of data generated by community-based surveys to support programme decision-making as well as surveillance. As disease elimination programmes evolve, a higher proportion of financial support will be focused on collection of surveillance data. Where NTD programmes conduct repeated population-based cluster surveys, these often are conducted independently and do not incorporate the data generated by previous surveys. This is inefficient because the programme is not able to leverage historical information (e.g. sites where prevalence is known to be elevated) to guide where to sample in later surveys.

Recent advancements in Bayesian and geospatial statistics can be leveraged to develop more efficient (e.g. fewer clusters and smaller sample sizes) and more effective (e.g. higher negative and positive predictive values) surveillance strategies.

Geospatial statistics have the potential to greatly improve the efficiency of post-elimination surveillance. They can also be used to incorporate other epidemiological factors (e.g. baseline prevalence, elevation, ecology) associated with transmission and guide sampling to areas of greatest risk. Remote-sensing and satellite imaging are possible tools for identifying environmental risk factors, especially for vector-borne diseases, to accurately and efficiently deploy control measures. Together, all of these tools can improve the quality, precision and cost-effectiveness of public health decision-making.

Ensuring high-quality data is a cornerstone for appropriate and timely decision-making. The NTD community should leverage recent advances globally in compiling sophisticated, high-quality data.

The potential use of artificial intelligence to validate and improve data quality should be explored. In addition, the use of “big data” and machine learning algorithms to exploit enhanced surveillance data will help to target populations at risk of NTDs and improve outbreak prediction and response.

Finally, translation of innovation into programme practice cannot succeed without commensurate focus on capacity-building not only for data management but also for laboratory capacity and data use.

M&E frameworks are dynamic and will require periodic assessment to strengthen them and to maintain their utility and relevance.

In the years leading up to 2030, NTD programmes and the tools used to monitor them and to measure their impact are expected to evolve. Consequently, as described in greater detail in **section 3**, countries should be prepared to work to strengthen their monitoring and evaluation portfolios to accommodate these changes. Key steps in this effort include: (i) assessing the key attributes of the monitoring and evaluation system to identify gaps and weaknesses; (ii) reviewing and updating key indicators; (iii) developing a comprehensive M&E component in the NTD plan; (iv) developing a costing plan to meet monitoring and evaluation needs; and (v) repeating this process as needed. Investing in robust monitoring and evaluation and focusing on the integrity of such systems will pay dividends by providing accurate information on programme status and ensuring that the 2030 targets are achieved and ultimately benefiting the affected or at-risk communities.

References

1. Ending the neglect to attain the Sustainable Development Goals: a road map for neglected tropical diseases 2021–2030. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/338565>).
2. Framework and standards for country health information systems – 2nd edition. Geneva: World Health Organization; 2012 (<https://apps.who.int/iris/handle/10665/43872>).
3. Global reference list of 100 core health indicators (plus health-related SDGs), second edition. Geneva: World Health Organization; 2018 (<https://www.who.int/healthinfo/indicators/2018/en/>).
4. Chapter 9: Monitoring and evaluation and review of national health policies, strategies and plans. In: O'Neill K, Viswanathan K, Celades E, Boerma T. Strategizing national health in the 21st century: a handbook. Geneva: World Health Organization; 2016 (<https://www.who.int/publications/i/item/strategizing-national-health-in-the-21st-century-a-handbook>).
5. Malaria surveillance, monitoring & evaluation: a reference manual. Geneva: World Health Organization; 2018 (<https://www.who.int/malaria/publications/atoz/9789241565578/en/>).
6. Monitoring and evaluation toolkit: HIV/AIDS, tuberculosis and malaria. Geneva: World Health Organization; 2004 (https://www.who.int/hiv/pub/me/me_toolkit2004/en/).
7. A compendium of indicators for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030. Geneva: World Health Organization; 2021 [in press].
8. Ending the neglect to attain the Sustainable Development Goals: a sustainability framework for action against neglected tropical diseases 2021–2030 (<https://apps.who.int/iris/handle/10665/338886>).
9. Integrated disease surveillance and response in the African Region: a guide for establishing community-based surveillance. Brazzaville: World Health Organization Regional Office for Africa; 2014 (https://www.afro.who.int/sites/default/files/2017-06/a-guide-for-establishing-community-based-surveillance-102014_0.pdf, accessed 21 March 2021).
10. Integrated disease surveillance and response in the African Region: community-based surveillance (CBS) training manual. Brazzaville: World Health Organization Regional Office for Africa; 2015 (https://www.afro.who.int/sites/default/files/2017-06/community-based-surveillance_idsr_training-manual.pdf, accessed 21 March 2021).
11. United Nations Children's Fund, World Health Organization, Global Fund to Fight AIDS, Tuberculosis and Malaria, United Nations Entity for Gender Equality and the Empowerment of Women, and Gavi, the Vaccine Alliance. Guidance for community health worker strategic information and service monitoring. New York (NY): United Nations Children's Fund; 2021 (https://www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/Working_Groups/Community_Data/210305_UNICEF_CHW_Guidance_EN.pdf).
12. Analysis and use of health facility data. In: Health statistics and information systems [website]. Geneva: World Health Organization (https://www.who.int/healthinfo/tools_data_analysis_routine_facility/en/).
13. Technical guidelines for integrated disease surveillance and response, third edition [booklet one: introduction section]. Brazzaville: WHO Regional Office for Africa; 2019 (<https://www.afro.who.int/publications/technical-guidelines-integrated-disease-surveillance-and-response-african-region-third>).
14. Data quality review. Module 1: Framework and metrics (<https://apps.who.int/iris/handle/10665/259224>); module 2: Desk review of data quality (<https://apps.who.int/iris/handle/10665/259225>); Module 3: Data verification and system assessment (<http://apps.who.int/iris/handle/10665/259226>). Geneva: World Health Organization; 2013.
15. Preventive chemotherapy: tools for improving the quality of reported data and information. A field manual for implementation. Geneva: World Health Organization; 2019 (https://www.who.int/neglected_diseases/resources/9789241516464/en/).

Annex 1. Results of the gap assessment for the monitoring and evaluation dimension, 2019¹

Disease	Current assessment	Current status	Actions required
Buruli ulcer	■	<ul style="list-style-type: none"> • 11 out of 33 known endemic countries reported data in 2019 • Standard reporting forms BU 01 and BU 02 are used in all countries 	<ul style="list-style-type: none"> • Encourage reporting of data on Buruli ulcer in all endemic countries • Enhance surveillance of Buruli ulcer in countries that are not reporting cases through integrated skin NTD reporting system • Initiate micro-mapping of Buruli ulcer to identify overlaps with other NTDs and integrate approaches • Monitor resistance to antibiotics phenotypically and through genetic markers
Chagas disease	■	<ul style="list-style-type: none"> • Four transmission routes of Chagas disease can be eliminated 	<ul style="list-style-type: none"> • Implement updated protocols on surveillance and verification of transmission interruption • Target active screening of high-risk population groups • Strengthen compulsory reporting of acute and chronic cases
Chikungunya	■	<ul style="list-style-type: none"> • Outbreaks have been reported in a PAHO region formerly free of chikungunya • State of surveillance and M&E systems varies by country 	<ul style="list-style-type: none"> • Develop surveillance and M&E systems in high-risk countries • Monitor resistance of vectors against insecticides • Monitor presence and activity of mosquitoes in areas of potential risk
Chromoblastomycosis and other deep mycoses	■	<ul style="list-style-type: none"> • No surveillance protocols, surveillance systems or standard indicators • No M&E system • A reporting system for sporotrichosis in cats exists in Brazil 	<ul style="list-style-type: none"> • Develop a surveillance guide with standard indicators • Establish surveillance system for active case detection • Establish M&E system or integrate with national health information system
Dengue	■	<ul style="list-style-type: none"> • Current M&E system is weak resulting in common underreporting • Insecticide resistance is emerging 	<ul style="list-style-type: none"> • Develop surveillance and rapid response systems • Ensure monitoring and reporting systems are established in all endemic countries • Regularly monitor the presence and activity of mosquitoes at sentinel sites using traps • Monitor insecticide resistance
Dracunculiasis	■	<ul style="list-style-type: none"> • Improvement of programme coverage in areas that are not known to be endemic but are at risk is needed • National programmes monitor operational indicators but better ways of measuring effectiveness of vector control intervention are needed • Need for improved indicators for monitoring temephos application 	<ul style="list-style-type: none"> • Ensure that monitoring systems are functional in non-endemic and formerly endemic areas that have not reported cases for a long time (e.g. particularly sensitive are the Central African Republic, Cameroon and other at-risk countries bordering endemic countries) • Improve indicators for monitoring application of temephos • Monitor the quality of temephos application and resistance of cyclops to temephos regularly

¹ Source: Disease summaries (annex) to the road map (7); analysis obtained through technical consultations, WHO 2019.

Disease	Current assessment	Current status	Actions required
Echinococcosis	■	<ul style="list-style-type: none"> • Surveillance in humans and animals is weak in most countries 	<ul style="list-style-type: none"> • Develop a high-throughput tool to collect baseline data, fully understand the scope of the challenge and evaluate control programmes in resource-limited settings • Set up surveillance systems for humans and animals in highly endemic countries including meat inspections for cystic echinococcosis
Foodborne trematodiasis	■	<ul style="list-style-type: none"> • Disease burden not well understood in humans and animals • Evaluation of the number of individuals at risk in each endemic country is not available 	<ul style="list-style-type: none"> • Estimate the number of individuals at risk by country • Develop accurate surveillance and mapping methods, particularly layered with information on the environmental factors involved in infection • Report changes in incidence of liver cancers associated with control of these diseases • Establish link between cancer register and hyperendemic areas
Human African trypanosomiasis (gambiense)	■	<ul style="list-style-type: none"> • HAT Atlas is a helpful tool for planning and monitoring control and elimination activities • Global indicators and methods for validation of HAT elimination as a public health problem are available 	<ul style="list-style-type: none"> • Use distribution data and case mapping tools to improve targeting of case-finding activities • Better understand the coverage of the population screened to help focus on the population at risk (e.g. develop assessment methodology, transfer the process to country surveillance programmes) • Secure financial and technical support for validation and verification • Develop high-throughput test to assess elimination and post-elimination surveillance on samples in a reference laboratory • Reinforce surveillance through setting up sentinel surveillance sites with trained staff and equipment
Human African trypanosomiasis (rhodesiense)	■	<ul style="list-style-type: none"> • Global indicators and methods for validation of HAT elimination as a public health problem are available • Under-detection remains a concern 	<ul style="list-style-type: none"> • Use distribution data and case mapping tools to improve targeted case-finding • Reinforce human case detection activities • Secure technical support for validation process • Reinforce surveillance through setting up sentinel surveillance sites with trained staff and equipment
Leishmaniasis (cutaneous)	■	<ul style="list-style-type: none"> • Most countries use aggregate data that does not allow for in-depth analysis or they struggle to report accurately • Most countries lack comprehensive databases including disease and vector surveillance and control interventions data 	<ul style="list-style-type: none"> • Develop or integrate electronic national databases with patient data for analysis, including data on vector surveillance and control interventions • Ensure CL is made a notifiable disease and decouple roles dedicated to managing cases and reporting • Develop active surveillance systems and decision tools to allow for adaptive interventions • Collect data on mental health impact especially on women and children

Disease	Current assessment	Current status	Actions required
Leishmaniasis (visceral)	■	<ul style="list-style-type: none"> Lack of a standardized, integrated national and regional information system for all components to be used for patient follow-up, pharmacovigilance and to direct vector control Entomological surveillance needs additional attention in operationalization and implementation 	<ul style="list-style-type: none"> Create a standardized integrated national, regional and global information system for all components (disease, pharmacovigilance, vector and animal reservoir) Conduct periodic independent external reviews; incentives in place to improve implementation and monitoring Implement independent M&E of indoor residual spraying to ensure quality and measure impact
Leprosy	■	<ul style="list-style-type: none"> Roll-out digitalized case-based data management system is ongoing Mapping of cases is being introduced Integrated programme reviews are occurring, with focus on reviewing progress in reaching the leprosy programme targets Periodic monitoring for reactions is weak 	<ul style="list-style-type: none"> Utilize mapping tools and strong surveillance system to ensure detection of sporadic and hidden cases and to monitor progress; improve notification systems Develop mechanisms to monitor adverse events Expand monitoring of antimicrobial resistance
Lymphatic filariasis	■	<ul style="list-style-type: none"> Lack of resources for M&E implementation Identification of focal, residual infection can be challenging Limited areas where endemicity was not determined when programmes started Risk of perverse incentives for health workers and/or programme managers at different levels to report inflated coverage figures or lower prevalence 	<ul style="list-style-type: none"> Map areas with uncertain occurrence of infection to determine need for MDA Identify epidemiological settings where current thresholds for stopping MDA may not be sufficient, define new thresholds and develop survey method Develop alternative M&E strategy for new MDA regimens (i.e. IDA) Develop new guidance on the standard of surveillance and interventions to be sustained post-MDA and post-validation Integrate surveillance with NTDs, malaria or others where feasible
Mycetoma	■	<ul style="list-style-type: none"> No surveillance protocol or system, no standard indicators for M&E 	<ul style="list-style-type: none"> Integrate data collection with national health information system Assess burden of mycetoma through integrated surveillance of skin NTDs
Onchocerciasis	■	<ul style="list-style-type: none"> Mapping of hypoendemic areas in Africa is incomplete M&E strategies are being updated for current tools Strategy for post-elimination surveillance needs to be developed 	<ul style="list-style-type: none"> Design operationally feasible elimination mapping; complete onchocerciasis elimination mapping Develop and disseminate protocols for standardization of mapping and stopping evaluations to ensure consistency of data Improve mapping and sampling in Loa loa co-endemic areas to allow for granular treatment approaches Close data gaps in hypoendemic areas through development of more easy-to-use tools Update M&E guidance as new tools are developed and threshold revised

Disease	Current assessment	Current status	Actions required
Rabies	■	<ul style="list-style-type: none"> WIDP module on rabies has been finalized OIE World Animal Health Information System (WAHIS) for animal rabies reporting is in place 	<ul style="list-style-type: none"> Improve data availability and quality nationally and subnationally to ensure compliance with reporting Strengthen surveillance e.g. introduce indicator of suspicious death after bite, develop process for collecting samples
Scabies and other ectoparasitoses	■	<ul style="list-style-type: none"> Burden of the disease and its prevalence are poorly understood 	<ul style="list-style-type: none"> Design operationally feasible mapping strategies Develop and disseminate protocols for standardization of mapping to ensure consistency of data Develop system for tracking scabies outbreaks; monitor particularly where lymphatic filariasis or onchocerciasis elimination programmes are closing Consider integrating M&E strategies with other skin diseases
Schistosomiasis	■	<ul style="list-style-type: none"> Epidemiology of the disease currently not well understood Working group established to provide new guidance for M&E, granular mapping and impact assessment 	<ul style="list-style-type: none"> Improve data quality and mapping to support target and track progress at the lowest level; implement granular mapping (harnessing new technologies) to support targeted MDA and other interventions at lower administrative or community levels Collect M&E data from pre-SAC, SAC and adults to inform optimal treatment strategy Implement impact assessments for potential strategy adjustment Use endemicity data to target WASH investment and track progress to elimination Improve reporting on distribution, leveraging new tools Implement monitoring for efficacy of and drug resistance to praziquantel Develop economic impact indicators to assess disease burden and programmatic progress
Soil-transmitted helminthiasis including strongyloidiasis	■	<ul style="list-style-type: none"> M&E done principally on report from implementers Currently limited scope of additional M&E activities due to lack of resources Guidance exists on continuing surveillance after preventive chemotherapy has been suspended Currently, there is no reported drug resistance; however, the risk is high 	<ul style="list-style-type: none"> Utilize new technologies (drone mapping, environmental DNA, etc.) to decrease the costs of surveillance and mapping Develop a surveillance guide with standard indicators Establish an M&E system or integrate M&E with the national health information system Simplify impact assessment survey Monitor the efficacy of medicines and of drug resistance
Snakebite envenoming	■	<ul style="list-style-type: none"> Baseline epidemiological and burden of disease data are deficient, fragmented or incomplete 	<ul style="list-style-type: none"> Implement mandatory reporting to improve data on disease burden Improve quality and extent of epidemiological surveillance (with clear common definitions of parameters) for accurate disease burden measurement and resource planning Develop and implement a framework to measure outcomes and outputs

Disease	Current assessment	Current status	Actions required
Taeniasis and cysticercosis	■	<ul style="list-style-type: none"> Minimum list of indicators defined M&E systems do not exist in most endemic countries 	<ul style="list-style-type: none"> Develop comprehensive screening programmes to fully understand the scope of the challenge and map endemic areas Devise a high-throughput diagnostic tool for evaluation of control programmes for taeniasis and asymptomatic neurocysticercosis in resource limited settings
Trachoma	■	<ul style="list-style-type: none"> The Global Trachoma Mapping Project was successfully completed with limited areas remaining unmapped by 2016 WHO Global Health Observatory and the GET2020 database provide a global data repository 	<ul style="list-style-type: none"> Complete remaining limited mapping Develop systems to track surgeries and outcomes Devise methods for improved and sustainable surveillance and post-validation surveillance to limit recrudescence of infection Design joint monitoring and indicators as appropriate Develop a better indicator of trachomatous trichiasis (TT) to determine elimination as a public health problem and a better way to estimate the backlog of TT cases
Yaws	■	<ul style="list-style-type: none"> PCR is used to monitor antimicrobial resistance Surveillance systems are working well in some endemic countries 	<ul style="list-style-type: none"> Establish active integrated surveillance and response in all endemic and formerly endemic countries (status unknown) and increase the frequency of reporting Assess 76 formerly endemic countries to confirm the current yaws status

CL: cutaneous leishmaniasis; HAT: human African trypanosomiasis; IDA: ivermectin–diethylcarbamazine–albendazole; M&E: monitoring and evaluation; OIE: World Organisation for Animal Health; PAHO: Pan-American Health Organization; PCR: polymerase chain reaction; pre-SAC: preschool-aged children; SAC: school-aged children; WIDP: WHO Integrated data platform.

No hindrance towards target Critical action required to reach target

Annex 2. WHO guidelines on monitoring and evaluating NTD programmes

General guidelines

Joint request for selected preventive chemotherapy medicines and joint reporting form: a user guide. Geneva: World Health Organization; 2013 (<https://apps.who.int/iris/handle/10665/83962>).

Monitoring drug coverage for preventive chemotherapy. Geneva: World Health Organization; 2010 (<https://www.who.int/trachoma/resources/9241546905/en/>).

Preventive chemotherapy. Tools for improving the quality of reported data and information: a field manual for implementation. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/bitstream/handle/10665/329376/9789241516464-eng.pdf>).

Towards universal coverage for preventive chemotherapy for neglected tropical diseases: guidance for assessing “who is being left behind and why”. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/bitstream/handle/10665/259487/WHO-FWC-17.3-eng.pdf>).

Disease-specific guidelines (or key publications)

Eradication

Dracunculiasis

- Eradicating guinea worm disease. Geneva: World Health Organization; 1998 (https://apps.who.int/iris/bitstream/handle/10665/64506/WHO_CTD_DRA_98.11.pdf).
- Implementing dracunculiasis surveillance and control (<https://www.who.int/activities/implementing-dracunculiasis-surveillance-and-control>)

Yaws

- Eradication of yaws: a guide for programme managers. Geneva: World Health Organization; 2018 (<http://apps.who.int/iris/bitstream/10665/259902/1/9789241512695-eng.pdf>).
- Report of a global meeting on yaws eradication surveillance, monitoring and evaluation. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/bitstream/handle/10665/276314/WHO-CDS-NTD-IDM-2018.08-eng.pdf>).

Elimination (interruption of transmission)

Human African trypanosomiasis (gambiense)

- Control and surveillance of human African trypanosomiasis. Geneva: World Health Organization; 2014 (https://apps.who.int/iris/bitstream/handle/10665/95732/9789241209847_eng.pdf).
- Key indicators for the monitoring and evaluation of control programmes of human African trypanosomiasis due to *Trypanosoma brucei gambiense*. Trop Med Int Health. 1998;3(6):474–81 (<https://onlinelibrary.wiley.com/doi/pdfdirect/10.1046/j.1365-3156.1997.00258>).

Leprosy

- Global Leprosy Strategy 2016–2020. Accelerating towards a leprosy-free world. Monitoring and evaluation guide. New Delhi: WHO Regional Office for South-East Asia; 2017 (<http://apps.who.int/iris/bitstream/10665/254907/1/9789290225492-eng.pdf>).
- Guidelines for the diagnosis, treatment and prevention of leprosy. New Delhi: WHO Regional Office for South-East Asia; 2018 (<https://apps.who.int/iris/bitstream/handle/10665/274127/9789290226383-eng.pdf>).
- Leprosy/Hansen disease: Contact tracing and post-exposure prophylaxis. Technical guidance. ISBN: 978-92-9022-807-3 World Health Organization 2020 (<https://www.who.int/publications/i/item/9789290228073>).
- Leprosy/Hansen Disease: Management of reactions and prevention of disabilities. Technical guidance ISBN: 978-92-9022-759-5 World Health Organization 2020 (<https://www.who.int/publications/i/item/9789290227595>).
- Towards Zero Leprosy. Global Leprosy (Hansen’s Disease) Strategy 2021–2030. ISBN:978-92-9022-839-4. World Health Organization 2021(<https://apps.who.int/iris/handle/10665/340774>)

Onchocerciasis

- Conceptual and operational framework of onchocerciasis elimination with ivermectin treatment. Geneva: World Health Organization; 2010 (https://www.who.int/apoc/oncho_elimination_report_english.pdf).
- Guidelines for stopping mass drug administration and verifying elimination of human onchocerciasis: criteria and procedures. Geneva: World Health Organization; 2016 (http://apps.who.int/iris/bitstream/10665/204180/1/9789241510011_eng.pdf).

Elimination as a public health problem

Chagas disease	<ul style="list-style-type: none"> Guidelines for the diagnosis and treatment of Chagas disease. Washington (DC): Pan American Health Organization; 2019 (https://iris.paho.org/bitstream/handle/10665.2/49653/9789275120439_eng.pdf).
Human African trypanosomiasis (rhodesiense)	<ul style="list-style-type: none"> Control and surveillance of human African trypanosomiasis. Geneva: World Health Organization; 2014 (https://apps.who.int/iris/bitstream/handle/10665/95732/9789241209847_eng.pdf).
Leishmaniasis (visceral) (case-fatality rate in Africa, Asia and Europe; incidence rate in South-East Asia)	<ul style="list-style-type: none"> Indicators for monitoring and evaluation of the kala-azar elimination programme: kala-azar elimination in Bangladesh, India and Nepal. New Delhi: WHO Regional Office for South-East Asia on behalf of the Special Programme for Research and Training in Neglected Diseases; 2010 (https://www.who.int/tdr/publications/documents/kala_azar_indicators.pdf) Control of the leishmaniasis: report of a meeting of the WHO Expert Committee on the control of leishmaniasis, Geneva, 22–26 March 2010. Geneva: World Health Organization; 2010 (WHO Technical Report Series, No. 949; https://apps.who.int/iris/rest/bitstreams/52863/retrieve). Process of validation of elimination of kala-azar as a public health problem in South-East Asia. New Delhi: WHO Regional Office for South-East Asia; 2016 (https://www.who.int/leishmaniasis/resources/Process_of_validation_of_VL_elimination_SEA_CD_321.pdf)
Lymphatic filariasis	<ul style="list-style-type: none"> Monitoring and epidemiological assessment of mass drug administration in the global programme to eliminate lymphatic filariasis: a manual for national elimination programmes. Geneva: World Health Organization; 2011 (http://apps.who.int/iris/bitstream/10665/44580/1/9789241501484_eng.pdf).
Rabies	<ul style="list-style-type: none"> WHO expert consultation on rabies, third report. Geneva: World Health Organization; 2018 (WHO Technical Report Series, No. 1012 (http://apps.who.int/iris/bitstream/handle/10665/272364/9789241210218-eng.pdf)). Global elimination of dog-mediated human rabies. Report of the rabies global conference, 10–11 December 2015. Geneva: World Health Organization and Paris: World Organisation for Animal Health; 2016 (https://www.oie.int/fileadmin/Home/eng/Media_Center/docs/pdf/Rabies_portal/EN_RabiesConfReport.pdf). Strategic framework for elimination of human rabies transmitted by dogs in the South-East Asia Region. New Delhi: WHO Regional Office for South-East Asia; 2012 (https://www.who.int/docs/default-source/searo/india/health-topic-pdf/zoonoses-sfehrt-d-sear.pdf).
Schistosomiasis	<ul style="list-style-type: none"> Helminth control in school-age children: a guide for managers of control programmes, second edition. Geneva: World Health Organization; 2011 (http://apps.who.int/iris/bitstream/10665/44671/1/9789241548267_eng.pdf). Montresor A, Crompton DWT, Hall A, Bundy DAP, Savioli L. Guidelines for the evaluation of soil-transmitted helminthiasis and schistosomiasis at community level. Geneva: World Health Organization; 1998 (https://apps.who.int/iris/bitstream/handle/10665/63821/WHO_CTD_SIP_98.1.pdf).
Soil-transmitted helminthiasis	<ul style="list-style-type: none"> 2030 targets for soil-transmitted helminthiasis control programmes. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/330611). Helminth control in school-age children: a guide for managers of control programmes, second edition. Geneva: World Health Organization; 2011. (https://apps.who.int/iris/bitstream/handle/10665/44671/9789241548267_eng.pdf). Guideline: preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/bitstream/handle/10665/258983/9789241550116-eng.pdf). Tools for monitoring the coverage of integrated public health interventions. Vaccination and deworming of soil-transmitted helminthiasis. Washington (DC): Pan American Health Organization; 2017 (https://www.paho.org/en/documents/tools-monitoring-coverage-integrated-public-health-interventions-vaccination-and).

Elimination as a public health problem

Trachoma	<ul style="list-style-type: none"> Validation of elimination of trachoma as a public health problem. Geneva: World Health Organization; 2016 (https://apps.who.int/iris/bitstream/handle/10665/208901/WHO-HTM-NTD-2016.8-eng.pdf). Trachoma control: a guide for programme managers. Geneva: World Health Organization; 2006 (http://apps.who.int/iris/bitstream/10665/43405/1/9241546905_eng.pdf). Design parameters for population-based trachoma prevalence survey. Geneva: World Health Organization; 2018 (https://www.who.int/trachoma/resources/who_htm_ntd_pct_2018.07/en/). Design and validation of a trachomatous trichiasis-only survey. Geneva: World Health Organization; 2017 (https://www.who.int/trachoma/resources/who_htm_ntd_pct_2017.08/en/).
Control	
Buruli ulcer	<ul style="list-style-type: none"> Asiedu K, Scherpbier R, Raviglione M. Buruli ulcer: <i>Mycobacterium ulcerans</i> infection. Geneva: World Health Organization; 2000 (https://apps.who.int/iris/bitstream/handle/10665/66164/WHO_CDS_CPE_GBUI_2000.1.pdf)
Dengue	<ul style="list-style-type: none"> Monitoring and evaluation indicators for integrated vector management. Geneva: World Health Organization; 2012 (https://apps.who.int/iris/bitstream/handle/10665/76504/9789241504027_eng.pdf) Dengue guidelines, for diagnosis, treatment, prevention and control. Geneva: World Health Organization; 2009 (http://apps.who.int/iris/bitstream/10665/44188/1/9789241547871_eng.pdf). Global strategy for dengue prevention and control 2012–2020. Geneva: World Health Organization; 2013 (https://www.who.int/immunization/sage/meetings/2013/april/5_Dengue_SAGE_Apr2013_Global_Strategy.pdf). Global vector control response 2017–2030. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/bitstream/handle/10665/259205/9789241512978-eng.pdf). Global vector control response: progress in planning and implementation. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240007987).
Echinococcosis	<ul style="list-style-type: none"> Reporting: Meeting of the WHO Informal Working Group on Echinococcosis (WHO-IWGE), Geneva, 15–16 December 2016. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/rest/bitstreams/1081982/retrieve).
Foodborne trematodiasis	<ul style="list-style-type: none"> Expert consultation to accelerate control of foodborne trematode infections, taeniasis and cysticercosis, Seoul, Republic of Korea, 17–19 May 2017, Geneva. (https://apps.who.int/iris/rest/bitstreams/1157183/retrieve)

Control

Leishmaniasis (cutaneous, and incidence rate of visceral outside the South-East Asia Region)

- Gradoni L, López-Vélez, Mokni M. Manual on case management and surveillance of the leishmaniasis in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2017 (https://www.euro.who.int/_data/assets/pdf_file/0006/341970/MANUAL-ON-CASE-MANAGEMENT_FINAL_with-cover-and-ISBN.pdf).
- Manual for case management of cutaneous leishmaniasis in the WHO Eastern Mediterranean Region. Cairo: WHO Regional Office for the Eastern Mediterranean; 2014 (<https://www.who.int/publications/i/item/9789290219453>).
- Manual de procedimientos para vigilancia y control de las leishmaniasis en las Américas. [Manual of procedures for surveillance and control of leishmaniasis in the Americas]. Washington (DC): Pan American Health Organization; 2019 (in Spanish; <https://www.who.int/publications/i/item/9789275320631>).
- Control of the leishmaniasis: report of a meeting of the WHO Expert Committee on the Control of Leishmaniasis, Geneva, 22–26 March 2010. Geneva: World Health Organization; 2010 (WHO Technical Report Series, No. 949; <https://apps.who.int/iris/rest/bitstreams/52863/retrieve>).
- Ejov M, Dagne D. Strategic framework for leishmaniasis control in the WHO European Region 2014–2020. Copenhagen: WHO Regional Office for Europe; 2014 (https://www.euro.who.int/_data/assets/pdf_file/0017/245330/Strategic-framework-for-leishmaniasis-control-in-the-WHO-European-Region-20142020.pdf).
- Framework for action on cutaneous leishmaniasis in the Eastern Mediterranean Region 2014–2018. Cairo: WHO Regional Office for the Eastern Mediterranean; 2014 (<https://www.who.int/publications/i/item/9789290219439>).
- Plan of action to strengthen the surveillance and control of leishmaniasis in the Americas 2017–2022. Washington (DC): Pan American Health Organization; 2017 (<https://iris.paho.org/bitstream/handle/10665.2/34147/PlanactionLeish20172022-eng.pdf>).
- Ruiz Postigo J. Post-kala-azar dermal leishmaniasis: a manual for case management and control. Geneva: World Health Organization; 2013 (<https://www.who.int/publications/i/item/9789241505215>).

Mycetoma, chromo-blastomycosis and other deep mycoses

- Hay R, Denning DW, Bonifaz A, Queiroz-Telles, Beer K, Bustamante B, et al. The diagnosis of fungal neglected tropical diseases (fungal NTDs) and the role of investigation and laboratory tests: an expert consensus report. *Trop Med Infect Dis.* 2019;4(4):122. doi:10.3390/tropicalmed4040122
- WHO website: https://www.who.int/neglected_diseases/diseases/mycetoma/en/

Scabies and other ectoparasitoses

- Ectoparasitic diseases in the Region of the Americas: developing a roadmap to determine the regional epidemiological situation and identify actions to reduce the impact. Washington (DC): Pan American Health Organization; 2020 (https://iris.paho.org/bitstream/handle/10665.2/52428/PAHOCDEVT200032_eng.pdf).
- WHO website: https://www.who.int/neglected_diseases/diseases/scabies-and-other-ectoparasites/en/

Snakebite envenoming

- Williams DJ, Faiz MA, Abela-Ridder B, Ainsworth S, Bulfone TC, Nickerson AD, et al. Strategy for a globally coordinated response to a priority neglected tropical disease: snakebite envenoming. *PLoS Negl Trop Dis.* 2019;13(2):e0007059 (<https://storage.googleapis.com/plos-corpus-prod/10.1371/journal.pntd.0007059/1/pntd.0007059.pdf>).
- WHO website: <https://www.who.int/news-room/fact-sheets/detail/snakebite-envenoming>

Taeniasis and cysticercosis

- Lightowlers MW, Garcia HH, Gauci CG, Donadeu M, Abela-Ridder B. Monitoring the outcomes of interventions against *Taenia solium*: options and suggestions. *Parasit Immunol.* 2016;38:158-69. doi:10.1111/pim.12291 (<https://onlinelibrary.wiley.com/doi/pdf/10.1111/pim.12291>).
- Pautas operativas para las actividades de control de la teniasis y la cisticercosis causadas por *Taenia solium*. Contribución al control de *Taenia solium* en América Latina y el Caribe. [Operational guidelines for the control activities of taeniasis and cysticercosis caused by *Taenia solium*. Contribution to the control of *Taenia solium* in Latin America and the Caribbean]. Washington (DC): Pan American Health Organization; 2019 (in Spanish; <https://iris.paho.org/handle/10665.2/51660>).

Annex 3. Measuring the road map indicators: key metadata from the NTD indicator compendium

Overarching indicators

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
All neglected tropical diseases	Percentage reduction in people requiring interventions against neglected tropical diseases	90%	Countries report annually on the number of people requiring interventions against NTDs. This indicator is calculated as 'numerator/denominator x 100'. The baseline year is 2010.	Number of people requiring interventions against NTDs (2010)-Number of people requiring interventions against NTDs (year)	Number of people requiring interventions against NTDs (2010)
All neglected tropical diseases	Percentage reduction in disability-adjusted life years related to neglected tropical diseases	75%	Calculation from DALY estimates published by WHO in the Global Health Estimates. The baseline year is 2016, which is the most recently available at the time of launching 2020.	DALYs related to NTDs (baseline)-DALYs related to NTDs (current year)	DALYs related to NTD (baseline)
Neglected tropical diseases targeted for elimination or eradication ^a	Number of countries having eliminated at least one neglected tropical disease	100	Countries undergo certification, verification and/or validation by WHO. Any country for which WHO has certified/verified/validated the eradication/elimination/elimination as public health problem of at least one NTD is counted in the numerator, regardless of the number of NTDs eliminated.	Number of countries which have eliminated at least one NTD	N/A
Neglected tropical diseases targeted for eradication (dracunculiasis, yaws)	Number of neglected tropical diseases eradicated	2	Two NTDs are targeted for eradication (dracunculiasis and yaws). After all countries certified free of disease transmission, a resolution will be sent to WHA to declare eradication of that disease.	Number of neglected tropical diseases eradicated	N/A

		Data reported by country				
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Percent	Already defined and calculated	Number of people requiring interventions against neglected tropical diseases in the reporting year	Household/ Community/ School / Health facility	CRVS, Population-based surveys	Annual Joint Application Package, Trachoma Elimination Monitoring Form, various annual reports	Annual
Percent	Already defined and calculated; needs to be revised to incorporate all NTDs	None	N/A	N/A	N/A	N/A
Number	Already defined and calculated	Data required in the Dossiers	Varies by indicator in dossier	Varies by indicator in dossier	Dossiers	Ad hoc
Number	Already defined and calculated	Data required in the Dossiers	Varies by indicator in dossier	Varies by indicator in dossier	Dossiers	Ad hoc

^a Neglected tropical diseases targeted for elimination or eradication: Chagas disease, dracunculiasis, human African trypanosomiasis, leprosy, lymphatic filariasis, onchocerciasis, rabies, schistosomiasis, soil-transmitted helminthiases, trachoma, visceral leishmaniasis, yaws

Cross-cutting indicators - Integrated approaches

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Neglected tropical diseases requiring preventive chemotherapy (currently limited to lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiases, trachoma)	Integrated treatment coverage index for preventive chemotherapy	75%	NTD service coverage index based on the geometric mean of coverage rates for individual NTD services with regularly reported preventive chemotherapy data		
Integrated skin neglected tropical disease strategies ^b	Number of countries that adopt and implement integrated skin neglected tropical disease strategies	40	Surveys including global NTD survey	Number of countries that adopt and implement integrated skin NTD strategies	N/A
Vector-borne neglected tropical diseases (currently limited to chikungunya, dengue and leishmaniasis)	Percentage reduction in number of deaths from vector-borne neglected tropical diseases (relative to 2016) – to achieve WHO's global vector control response goal	75%	Sum of deaths attributable to dengue or leishmaniasis, based on HMIS data reported to health ministry and WHO. The baseline year is 2016.	Number of deaths from vector-borne neglected tropical diseases (baseline)- Number of deaths from vector-borne neglected tropical diseases (current year)	Number of deaths from vector-borne neglected tropical diseases (baseline)

^b Skin neglected tropical diseases: Buruli ulcer, leishmaniasis, leprosy, lymphatic filariasis, onchocerciasis, mycetoma, chromoblastomycosis and other deep mycoses, scabies and other ectoparasitoses and yaws

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	Already defined and calculated; needs to be revised to incorporate all NTDs requiring preventive chemotherapy	Number of people treated against individual disease in the reporting year Number requiring treatment for that disease in the reporting year.	Household/ community/school	HMIS/CHIS/ Disease-specific programmes	PC Joint Application Package and Trachoma Elimination Monitoring Form	Annual
Number	New	Status change reported when country adopts integrated skin neglected tropical diseases strategy for implementation	Country	To be defined	Global NTD survey	Annual or at occurrence of event
Percent	Already defined and calculated; needs to be revised to incorporate all vector-borne NTDs	Number of deaths from vector-borne neglected tropical diseases	Health facility	CRVS, HMIS	Reporting tools for dengue and visceral leishmaniasis; needs to expand for reporting deaths for schistosomiasis and other locally occurring vector borne deaths emanating from CRVS, HMIS	Annual

Cross-cutting indicators – Multisectoral coordination

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
All neglected tropical diseases	Access to at least basic water supply, sanitation and hygiene in areas endemic for neglected tropical diseases – to achieve targets 6.1 and 6.2 of Sustainable Development Goal 6	100%	WHO/UNICEF Joint monitoring programme on WASH. Report collected in coordination with WASH for SDG 6.1.1, 6.2.1a and 6.2.1b	Population using at least basic drinking water services (6.1.1); population using safely managed sanitation services (6.2.1a); population with handwashing facilities with soap and water at home	Total population in NTD endemic countries
All neglected tropical diseases	Share of the population at risk protected against catastrophic out-of-pocket health expenditure due to neglected tropical diseases – to achieve target 3.8 of Sustainable Development Goal 3	90%	At global level, the share of population not bearing the catastrophic health expenditure due to NTDs in total population having health expenditure due to NTD	Total population at risk of NTDs protected against catastrophic out-of-pocket health expenditure	Total population at risk of NTDs
All neglected tropical diseases	Share of countries with neglected tropical diseases integrated in national health strategies/plans	90%	NTD-endemic countries which have included NTD services/programmes into national health strategies/plans (UHC). Ministry of Health: National Health Plan Ministry of Finance	Number of Endemic countries which have included NTD services/programmes into national health strategies/plans (UHC)	Total number of endemic countries with at least one NTD

		Data reported by country				
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Percent	Already defined and calculated	Population using safely managed drinking water services (6.1.1); Population using safely managed sanitation services (6.2.1a); Population with handwashing facilities with soap and water at home	Country	WASH information system	N/A, NTD programmes are not expected to report to WHO on this indicator	Annual
Percent	To be defined	Share of households had encountered catastrophic health expenditure due to NTDs.	To be defined	To be defined	Global NTD survey	Annual
Percent	To be defined	To be defined	Country	To be defined	Global NTD survey	Annual

Cross-cutting indicators - Universal health coverage

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
All neglected tropical diseases	Share of countries including neglected tropical disease interventions in their package of essential services and budgeting for them	90%	National Accounts Records/ Country Reports on number of NTD interventions included in package of essential services (UHC) and budgeting for them.	Number of countries including neglected tropical disease interventions in their package of essential services and budgeting for them	Total number of endemic countries
All neglected tropical diseases	Share of countries with guidelines for management of neglected tropical disease-related disabilities within national health systems	90%	Analysis conducted by WHO of data collected through Global NTD Survey and Health Facility Assessment surveys.	Number of endemic countries with national guidelines for management of NTD-related disabilities within national health systems	Total number of countries endemic for NTDs causing disability

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Percent	To be defined	To be defined	To be defined	To be defined	Global NTD survey and/or National Health Accounts	Annual
Percent	To be defined	To be defined	To be defined	To be defined	Global NTD survey	Annual

Cross-cutting indicators - Country ownership

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
All neglected tropical diseases	Share of countries reporting on all relevant endemic neglected tropical diseases	90%	Member States will be requested to report on a minimum dataset on NTDs every year. WHO will assess the completeness of this reporting for all relevant NTDs.	Number of endemic countries reporting on all relevant endemic NTDs	Total number of endemic countries expected to report to WHO
All neglected tropical diseases	Share of countries collecting and reporting data on neglected tropical diseases disaggregated by gender	90%	Member States will be requested to report on a minimum dataset on NTDs every year, some of these data being requested as disaggregated by gender. WHO will assess the completeness of this reporting for all data disaggregated by gender.	Number of endemic countries reporting gender disaggregated data on relevant endemic NTDs	Total number of endemic countries expected to report to WHO

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Percent	Minimum dataset to be strictly defined	Minimum dataset to be reported to WHO as part of standard reporting, no additional specific data required	Varies by indicator	Varies by indicator	WHO reporting systems	Annual
Percent	Minimum dataset to be strictly defined	Minimum dataset to be reported to WHO as part of standard reporting, no additional specific data required	Varies by indicator	Varies by indicator	WHO reporting systems	Annual

Disease-specific indicators - Targeted for eradication

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Dracunculiasis	Number of countries certified free of transmission	194 (100%)	International Commission for the Certification of Dracunculiasis Eradication reviews declaration and dossier submitted by country and recommends to WHO	Number of countries certified free of transmission	N/A
Yaws	Number of countries certified free of transmission	194 (100%)	Declaration and/or dossier reviewed by an entity to be established, and recommends to WHO	Number of countries certified free of transmission	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	Already defined and calculated	Epidemiological surveillance data and other data required in the dossier	Health facility / Community Varies by indicator in the dossier	HMIS Varies by indicator in the dossier	MOH Country Report Dossier	Monthly Ad hoc
Number	Already defined and calculated	Number of new confirmed yaws cases and other data required in the dossier	Health facility / Community Varies by indicator in the dossier	HMIS Varies by indicator in the dossier	WHO Integrated data platform (WIDP) Dossier	Ad hoc

Disease-specific indicators - Targeted for elimination of transmission

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Human African trypanosomiasis (gambiense)	Number of countries verified for interruption of transmission	15 (62%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries verified for interruption of transmission	N/A
	Number of gHAT cases reported	0	gHAT cases are detected and confirmed by microscopy either during active screening in endemic villages or through passive surveillance in sentinel health facilities, and reported to WHO through Annual reports	Number of new reported cases of human African trypanosomiasis	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	New	Number of new reported cases of human African trypanosomiasis and other data required in the dossier	Community, health facility Varies by indicator in the dossier	HMIS, National surveillance systems Varies by indicator in the dossier	Annual report sent to WHO Dossier	Annual Ad hoc
Number	Already defined and calculated	Number of new reported cases of human African trypanosomiasis	Community, health facility	HMIS, National surveillance systems	Annual report sent to WHO	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Leprosy	Number of countries with zero new autochthonous leprosy cases	120 (62%)	Countries/national programmes report number of new autochthonous cases annually. The reports are compiled and list of countries reporting 'zero new autochthonous cases' are enlisted and enumerated.	Number of countries with zero new autochthonous leprosy cases	N/A
	Annual number of new leprosy cases detected	62 500	The number of new cases reported by countries/national programmes are compiled, tabulated and totals are calculated to derive number of new cases detected globally every year	Number of individuals detected with leprosy	N/A
	Rate (per million population) of new leprosy cases with grade 2 disability	0.12	The sum of new leprosy cases with visible deformities or grade 2 disabilities' (G2D) reported by countries (during the reporting year) is used as numerator / global mid-year population estimate X million to calculate new G2D case rate per million population	Number of new cases detected with G2D in a year	Mid-year population
	Rate (per million children) of new paediatric cases with leprosy	0.77	The sum of new paediatric leprosy cases reported by countries (during the reporting year) is used as numerator for calculation of rate of new paediatric cases per million child population (mid year estimate population is used as denominator)	Number of new paediatric cases detected in a year	Mid-year population of children aged 1 to 14 years
Onchocerciasis	Number of countries verified for interruption of transmission	12 (31%)	Collective reviews of standardized country dossiers submitted to WHO (criteria and process to be defined).	Number of countries verified for interruption of transmission	N/A
	Number of countries that stopped MDA for ≥1 focus	34	National Onchocerciasis Task Force assessment reports	Number of countries that stopped MDA for ≥ 1 focus	N/A
	Number of countries that stopped MDA for ≥50% of population	>16	Number of countries where population requiring MDA decreased by 50% from baseline	Number of countries that stopped MDA for ≥50% of population	N/A
	Number of countries that stopped MDA for 100% of population	>12	Number of countries where population requiring MDA decreased by 100% from baseline	Number of countries that stopped MDA for 100% of population	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	Already defined and calculated	Number of new autochthonous leprosy cases detected	Health facility	HMIS, National surveillance systems	WHO Integrated Data Platform (WIDP)	Annual
Number	Already defined and calculated	Number of new leprosy cases detected	Health facility	HMIS, National surveillance systems	WHO Integrated Data Platform (WIDP)	Annual
Rate	Already defined and calculated	Rate of new leprosy cases with G2D per one million population	Health facility	HMIS, National surveillance systems	WHO Integrated Data Platform (WIDP)	Annual
Rate	Already defined and calculated	Rate of new paediatric cases with leprosy per one million population	Health facility	HMIS, National surveillance systems	WHO Integrated Data Platform (WIDP)	Annual
Number	Already defined and calculated	Data required in the dossier for MDA coverage, OV-16 ELISA and black fly PCR pool analysis results and other data required in the dossier	Varies by indicator in the dossier	Varies by indicator in the dossier	Dossier	Ad hoc
Number	New	Number of foci which have stopped MDA	National programme		Ad hoc	Ad hoc
Number	Already defined and calculated	Number of people requiring MDA for onchocerciasis	Community		Joint application package (JAP)	Annual
Number	Already defined and calculated	Number of people requiring MDA for onchocerciasis	Community		Joint application package (JAP)	Annual

Disease-specific indicators - Targeted for elimination as a public health problem

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Chagas disease	Number of countries achieving interruption of transmission through the four transmission routes: vectorial, transfusion, transplantation and congenital, with 75% antiparasitic treatment coverage of the eligible population	15/41 (37%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries achieving interruption of transmission through the four transmission routes (vectorial, transfusional, transplantation and congenital), with 75% antiparasitic treatment coverage of eligible cases	N/A
	Number of countries achieving verification of interruption of domiciliary vectorial transmission	18/21 (86%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries achieving verification of interruption of domiciliary vectorial transmission from domiciles	N/A
	Number of countries achieving verification of interruption of transfusional transmission	41/41 (100%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries with verified interruption of transfusional transmission	N/A
	Number of countries achieving verification of interruption of transplantation transmission	41/41 (100%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries achieving verification of interruption of transplantation transmission of T. cruzi	N/A
	Number of countries achieving verification of interruption of congenital transmission	15/41 (37%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries achieving verification of interruption of congenital transmission of T. cruzi	N/A
Human African trypanosomiasis (rhodesiense)	Number of countries validated for elimination as a public health problem (defined as <1 case/10 000 people/year, in each health district of the country averaged over the previous five-year period)	8 (61%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries validated for elimination as a public health problem	N/A
	Areas with ≥1 HAT case per 10 000 people per year (average of 5 years)	0 km²	a) number of new confirmed HAT cases captured and reported either by mobile teams or by health care workers in sentinel sites b) Spatial smoothing of distribution of cases and population raster	Areas with ≥ 1 HAT case per 10 000 people per year (average of 5 years)	N/A

		Data reported by country				
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	To be defined	Data required in the dossier	Varies by indicator	Varies by indicator	Dossier	Ad hoc
Number	Already defined and calculated	Data required in the dossier	Varies by indicator	Varies by indicator	Dossier	Ad hoc
Number	Already defined and calculated	Data required in the dossier	Varies by indicator	Varies by indicator	Dossier	Ad hoc
Number	New	Data required in the dossier	Varies by indicator	Varies by indicator	Dossier	Ad hoc
Number	New	Data required in the dossier	Varies by indicator	Varies by indicator	Dossier	Ad hoc
Number	Already defined and calculated	Number of new reported cases of human African trypanosomiasis and other data required in the dossier	Community, health facility Varies by indicator	HMIS, national surveillance systems Varies by indicator	Annual report Dossier	Annual Ad hoc
Number	Already defined and calculated	Number of new reported cases of human African trypanosomiasis	Community, health facility	HMIS, National surveillance systems	Annual report sent to WHO	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Leishmaniasis (visceral)	Number of countries validated for elimination as a public health problem (defined as <1% case-fatality rate due to primary visceral leishmaniasis)	64/75 (85%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries validated for elimination as a public health problem	N/A
	Number of countries in SEAR validated for elimination as a public health problem (defined as <1 case (new and relapses) per 10 000 population at subnational level)	3/3 (100%)	Collective reviews of standardized country dossiers submitted to WHO/SEAR	Number of countries validated for elimination of visceral leishmaniasis as a public health problem (defined as <1 case (new and relapses) per 10 000 population at subnational level)	N/A
	In SEAR, PKDL cases detected (VL post-treatment follow-up 3 years) and treated	100%	Calculating this indicator requires longitudinal follow-up of VL cases and PKDL cases detected. This indicator results of the multiplication of two sub-indicators, based on data reported by health facilities in charge of VL case management: > VL case follow-up rate = Number of VL case successfully follow-up for 3 years post-treatment in the cohort / Number of VL case detected in the cohort x 100 > PKDL treatment coverage = Number of PKDL cases who completed treatment in the cohort / Number of PKDL cases detected in the cohort x 100.	(VL case follow-up-rate) x (PKDL coverage rate)	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	New	Case-fatality rate attributable to visceral leishmaniasis	Health facility	National surveillance system/HMIS	WHO Integrated Data Platform (WIDP)	Annual
		and other data required in the dossier	Varies by indicator		Dossier	Ad hoc
Number	Already defined and calculated	Incidence of visceral leishmaniasis (new and relapses) per 10 000 population at subnational level	Implementation unit	National surveillance system/HMIS	WHO Integrated Data Platform (WIDP)	Annual
					Dossier	Ad hoc
Percent	New	Proportion of VL cases followed-up for 3 years Number of PKDL cases detected Proportion of PKDL cases treated	Health facility	National surveillance system/HMIS	To be defined	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Lymphatic filariasis	Number of countries validated for elimination as a public health problem (defined as infection sustained below transmission assessment survey thresholds for at least four years after stopping mass drug administration; availability of essential package of care in all areas of known patients)	58/72 (81%)	Collective reviews of standardized country dossiers submitted to WHO.	Number of countries validated for elimination as a public health problem	N/A
	Number of countries implementing post-MDA or post-validation surveillance	72 (100%)	To be defined	Number of countries implementing post-MDA or post-validation surveillance	N/A
	Population requiring MDA	0	Projections based on prevalence thresholds and population census data.	Total population living in all the districts identified as requiring PC for LF	N/A
Rabies	Number of countries having achieved zero human deaths from rabies	155/169 (92%)	Country reports to WHO. Implementation of procedures for validation of elimination as a public health problem as outlines in Technical Report Series (TRS 1012).	Number of countries having achieved zero human deaths from rabies	N/A
	Number of countries having reduced mortality due to dog-transmitted human rabies by 50%	169/169 (100%)	The percentage reduction is calculated as the number of deaths from dog-transmitted rabies during the reporting year, compared to baseline number of human deaths from dog-transmitted rabies reported on 2012.	Number of countries having reduced mortality due to dog-transmitted human rabies by 50%	N/A
	Number of countries having reached 70% vaccination coverage of dogs in high-risk areas	154/169 (91%)	Vaccination coverage of dogs (both unowned and owned) in high-risk areas is measured through community-based surveys by veterinary public health services. The Ministry of health should make sure to monitor and report these data to WHO on annual basis.	Number of dogs vaccinated	Dog population in high-risk areas

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	Already defined and calculated	Infection sustained below transmission assessment survey thresholds for at least four years after stopping mass drug administration; availability of essential package of care in all areas of known patients and other data required in the dossier	Varies by indicator in the dossier	Varies by indicator in the dossier	Dossier	Ad hoc
Number	Already defined and calculated; need to revise as update PVS guidelines	TAS2 & TAS3 results; results from any passive surveillance activities	Household/Community/School, health facility	National surveillance systems, Population-based surveys	PC Joint Application Package	Annual
Number	Already defined and calculated	Total population living in all the districts identified as requiring PC for LF	Household/Community/School	CRVS, HMIS, Population-based surveys	PC Joint Application Package	Annual
Number	Already defined and calculated	Number of human deaths attributable to dog-transmitted rabies	Household/community/school, health facility	National surveillance systems, CRVS	WHO Integrated Data Platform (WIDP)	Annual
Number	Already defined and calculated	Mortality attributable to dog-transmitted rabies	Household/community/school, health facility	National surveillance systems, CRVS	WHO Integrated Data Platform (WIDP)	Annual
Number	Already defined and calculated	Vaccination coverage of dogs against rabies in high-risk areas	Community	Information systems used by other sectors (animal health/One health)	To be defined	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Schistosomiasis	Number of countries validated for elimination of schistosomiasis as a public health problem (currently defined as prevalence of <1% of heavy intensity schistosomiasis infections)	78/78 (100%)	Collective reviews of standardized country dossiers submitted to WHO. The country dossier is still to be defined.	Number of countries validated for elimination of schistosomiasis as a public health problem	N/A
	Number of countries where absence of infection in humans has been validated	25/78 (32%)	Community-based surveys. Details will be provided in the new schistosomiasis guideline.	Number of countries where absence of infection in humans has been validated	N/A
Soil-transmitted helminthiasis	Number of countries validated for elimination as a public health problem (defined as <2% proportion of soil-transmitted helminth infections of moderate and heavy intensity due to <i>Ascaris lumbricoides</i> , <i>Trichuris trichuria</i> , <i>Necator americanus</i> and <i>Ancylostoma duodenale</i>)	96/101 (96%)	Collective reviews of standardized country dossiers submitted to WHO, including data from impact assessment surveys conducted at least every 5 years from the start of STH control activities.	Number of countries validated for elimination as a public health problem	N/A
	Number of countries including ivermectin in preventive chemotherapy in all areas endemic for <i>S. stercoralis</i>	96/101 (96%)	a) Country reports to WHO (in JRF) for the number people receiving preventive chemotherapy for strongyloidiasis b) Mathematical/economic models predicting the progressive start of strongyloidiasis control in endemic countries	Number of countries including ivermectin in preventive chemotherapy in all areas endemic for <i>S. stercoralis</i>	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	To be defined	Proportion of heavy intensity schistosomiasis infections and potentially other data to be defined	Household/ community/school	Population-based surveys; may also vary by other data which is to be defined	To be defined	Ad hoc
Number	To be defined	Prevalence of infection of schistosomiasis in humans	Household/ Community	Population-based surveys; may also vary by other data which is to be defined	To be defined	Annual
Number	To be defined	Proportion of soil transmitted helminth infections of moderate and heavy intensity and potentially other data to be defined	Household/ community/school	Population-based surveys; may also vary by other data which is to be defined	Reporting Form (EPIRF)	Ad hoc
Number	New	Number of people receiving preventive chemotherapy for strongyloidiasis	Household/ community/school	HMIS, Disease-specific programmes	Joint Reporting Form (JRF)	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Trachoma	Number of countries validated for elimination as a public health problem (defined as (i) a prevalence of trachomatous trichiasis “unknown to the health system” of <0.2% in ≥15-year-olds in each formerly endemic district; (ii) a prevalence of trachomatous inflammation—follicular in children aged 1–9 years of <5% in each formerly endemic district; and (iii) written evidence that the health system is able to identify and manage incident cases of trachomatous trichiasis, using defined strategies, with evidence of appropriate financial resources to implement those strategies)	66/66 (100%)	Review of standardized country dossiers submitted to WHO	Number of countries validated for elimination as a public health problem	N/A

		Data reported by country				
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	Already defined and calculated	Prevalence of trachomatous trichiasis “unknown to the health system” in ≥15-year-olds in each formerly endemic district; prevalence of trachomatous inflammation—follicular in children aged 1–9 years in each formerly endemic district; written evidence that the health system is able to identify and manage incident cases of trachomatous trichiasis, using defined strategies, with evidence of appropriate financial resources to implement those strategies and other data required in the dossier	Varies by indicator in the dossier	Varies by indicator in the dossier	Dossier	Ad hoc

Disease-specific indicators - Targeted for control

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Buruli ulcer	Proportion of cases in category III (late stage) at diagnosis	<10%	Cases are recorded and reported on standardized forms BU 01 and BU 02 in health facilities in charge of Buruli ulcer cases diagnosis and management.	Number of new Buruli ulcer suspected cases diagnosed in category III	Number of new Buruli ulcer suspected cases reported
	Proportion of laboratory-confirmed cases	>95%	Cases are recorded and reported on standardized forms BU 01 and BU 02 in health facilities in charge of Buruli ulcer cases diagnosis and management.	Number of new Buruli ulcer cases confirmed by a WHO-recommended method	Number of new suspected Buruli ulcer cases reported
	Proportion of confirmed cases who have completed a full course of antibiotic treatment	>98%	Cases are recorded and reported on standardized forms BU 01 and BU 02 in health facilities in charge of Buruli ulcer cases diagnosis and management.	Number of new confirmed Buruli ulcer cases who have completed a full course of antibiotic treatment	Number of new confirmed Buruli ulcer cases reported
Chikungunya	Vaccine development for one or more vaccine candidates	Licensed vaccine	Scoping studies on progress in vaccine development	Status of vaccine development for one or more vaccine candidates	N/A
	Number of endemic countries identified and mapped for chikungunya	100% by 2025	Medical records using ICD10 and laboratory reports through HMIS	Number of endemic countries identified and mapped for chikungunya	N/A
	Develop optimized and prioritized integrated strategies for case management and estimate the potential public health benefits by 2025	40 by 2025	Review of medical records using ICD10 and laboratory reports	Status of development of optimized and prioritized integrated strategies for case management and estimate the potential public health benefits by 2025	N/A
Dengue	Case-fatality rate due to dengue	0%	Death registries or death certificates and medical records registries using ICD10	Number of deaths attributable to dengue	Total number of suspected and confirmed dengue deaths
	Number of countries able to detect and respond to dengue outbreaks	96/128 (75%)	Country reports through IHR focal points of dengue outbreaks detection and response.	Number of countries able to detect and respond to dengue outbreaks	N/A
	To reduce the burden of the disease and its incidence by 25% (2010–2020 as baseline)	2.35 million	1) Reports from DALYs to calculate the burden of disease, and 2) Population-based surveys.		

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Percent	Already defined and calculated	Proportion of cases in Category III (late stage) at diagnosis	Health facility	HMIS	WHO Integrated Data Platform (WIDP)	Annual
Percent	Already defined and calculated	Proportion of laboratory-confirmed cases	Health facility	HMIS	WHO Integrated Data Platform (WIDP)	Annual
Percent	Already defined and calculated	Proportion of confirmed cases who have completed a full course of antibiotic treatment	Health facility	HMIS	WHO Integrated Data Platform (WIDP)	Annual
Categorical	New	To be defined	To be defined	To be defined	WHO	to be defined
Number	New	To be defined	To be defined	To be defined	MOH	to be defined
Categorical	New	To be defined	To be defined	To be defined	WHO	to be defined
Percent	Already defined and calculated	Case-fatality rate due to dengue	Health facility	Global vector control response (GVCR), HMIS		Annual
Number	New	Number of dengue cases and deaths	Health facility	HMIS	MOH	Annual
	Already defined and calculated	-		GVCR	Indicators from other sources, including modelling	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Echinococcosis (alveolar and cystic)	Number of countries with intensified control for cystic echinococcosis in hyperendemic areas	17	Country reports with data reported by national programmes	Number of countries with intensified control for cystic echinococcosis in hyperendemic areas	N/A
Foodborne trematodiasis	Number of countries with intensified control in hyperendemic areas	11/92 (12%)	Country reports with data reported by national programmes	Number of countries with intensified control in hyperendemic areas	N/A
Leishmaniasis (cutaneous)	Number of countries in which: 85% of all cases are detected and reported, and 95% of reported cases are treated	87/87 (100%)	Composite indicator of 3 sub-indicators, related to case detection rate, reporting rate and treatment coverage. These indicators will be measured either through community-based survey, or through data reported by health facilities.	Number of cutaneous endemic countries having reached: 85% of all cases detected and reported and 95% of the reported cases are treated	N/A
Mycetoma, chromoblastomycosis and other deep mycoses	Number of countries in which mycetoma, chromoblastomycosis, sporotrichosis and/or paracoccidiodomycosis are included in national control programmes and surveillance systems	15/30 (50%)	A global survey conducted by WHO for mycetoma, chromoblastomycosis and other deep mycoses in order to monitor health systems indicators and number of cases reported	Number of countries where CBM, PCM and/or ST are included in national control programmes and surveillance systems	N/A
Scabies and other ectoparasitoses	Number of countries having incorporated scabies management in the universal health coverage package of care	194 (100%)	To be defined	Number of countries having incorporated scabies management in the universal health coverage package of care	N/A
	Number of countries using MDA intervention in all endemic districts	25	To be defined	Number of countries using MDA intervention in all endemic districts	N/A

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	To be defined	Periodic deworming of dogs, vaccination coverage of sheep, access to ultrasound diagnosis in the area	Community, health facility	Various sources, including other sectors (One Health)	To be defined	Annual
Number	To be defined	MDA administered according to recommended schedule to both humans and animals, safe fecal waste management, regular community education	Community	Various sources, including other sectors (One Health, WASH)	To be defined	Annual
Number	New	Case detection rate, case reporting rate, treatment coverage	Community, health facility	Community based-survey, health facility assessment, HMIS	To be defined	Annual
Number	To be defined	To be defined	Country	National programme	Global NTD survey	Annual
Number	To be defined	To be defined	To be defined	To be defined	Global NTD survey	Annual
Number	New	Population coverage of MDA against scabies Geographical coverage of MDA against scabies	Community	Disease-specific programme	To be defined	Annual

Road map indicator					
Topic or disease	Road map indicator description	Global target	Methods of measurement and/or estimation for global road map indicators	Numerator	Denominator
Snakebite envenoming	Number of countries having achieved reduction of mortality by 50%	132 (100%)	Analysis of reports and confirmed by surveys/audits	Estimated burden at future time (e.g. 2030)	Estimated burden in 2019
	Percentage of new antivenom producers joining market by 2030	25%	Analysis of reports and confirmed by surveys/audits	Number of manufacturers at future time (e.g.: 2030)	Number of manufacturers in 2019
	Number of effective treatments for snakebite envenoming available worldwide	3 million	Analysis of reports and confirmed by surveys/audits	Number of treatments at future time (e.g.: 2030)	Estimated number of available treatments in 2019
	Minimum number of WHO-recommended poly-specific antivenom products in each region	6	Analysis of reports and confirmed by surveys/audits	Number of WHO-recommended poly-specific antivenom products in each region	N/A
Taeniasis and cysticercosis	Number of countries with intensified control in hyperendemic areas	17 (27%)	Analysis of data reported by national programmes	Number of countries with intensified control for T. solium in hyperendemic areas	N/A

CHIS: community health information system; CRVS: civil registration and vital statistics; HMIS: health management information system; MDA: mass drug administration; N/A: not applicable; NTD: neglected tropical disease; PC: preventive chemotherapy; PCR: polymerase chain reaction; WIDP: WHO Integrated Data Platform; PKDL: post-kala-azar dermal leishmaniasis; PVS: post-validation surveillance; SAFE: surgery, antibiotics, facial cleanliness, environmental improvement; WHO: World Health Organization

Data reported by country						
Data type	Current status of processes	Data reported by country	Primary level of data collection	Preferred data source/system	Preferred data reporting tool to WHO	Reporting frequency to WHO
Number	New	Number of deaths attributable to snakebites	Community, health facility	CHIS, CRVS, HMIS	WHO Integrated Data Platform (WIDP)	Annual
Percent	New	None	N/A	N/A	N/A	N/A
Percent	New	Number of effective treatments for snakebite envenoming available in the country	Health facility	HMIS; LMIS	WHO Integrated Data Platform (WIDP)	Annual
Number	New	Number of WHO-recommended poly-specific antivenom products available in the country (or in each region)	Health facility	HMIS; LMIS	WHO Integrated Data Platform (WIDP)	Annual
Number	To be defined	To be defined	To be defined	To be defined	To be defined	Annual

Annex 4. Quantitative road map cross-cutting indicators and their link with cross-cutting approaches, country ownership and sustainability framework

The table shows how the cross-cutting targets correlate directly with the ecological model for the sustainability framework (8). Attaining and maintaining progress towards the road map cross-cutting targets will provide an indication of the sustainability of national NTD programmes.

Cross-cutting indicator	M&E level	Target	Road map cross-cutting approaches				Changing operating model	Sustainability
			Integrating	Mainstreaming	Coordinating	Strengthening health systems		
Integrated treatment coverage index for preventive chemotherapy	Outcome	75%	✓				Service delivery	
Number of countries that adopt and implement integrated skin neglected tropical diseases strategies	Output	40	✓			✓	Leadership and governance Service delivery	
Percentage reduction in number of deaths from vector-borne neglected tropical diseases	Impact	75%	✓		✓		Access to essential medicines and supplies	
Access to at least basic water supply, sanitation and hygiene in endemic areas to achieve 6.1 and 6.2 of Sustainable Development Goal 6	Outcome	100%			✓		Service delivery	
Share of the population at risk protected against catastrophic out-of-pocket health expenditure due to neglected tropical diseases	Outcome	90%		✓	✓		Health financing	
Share of countries with neglected tropical diseases integrated in national health strategies/plans	Input	90%	✓	✓		✓	Leadership and governance	
Share of countries including neglected tropical disease interventions in their package of essential services and budgeting for them	Output	90%	✓	✓	✓	✓	Health financing Service delivery	
Share of countries with guidelines for management of neglected tropical diseases-related disabilities within national health systems	Input	90%		✓	✓		Service delivery Health workforce	
Share of countries reporting on all relevant endemic neglected tropical diseases	Process	90%	x ✓	✓	✓	✓	Health information system	
Share of countries collecting and reporting neglected tropical diseases disaggregated by gender	Process	90%			✓	✓	Health information system	

Some of the dimensions of the **gap assessment** relate to cross-cutting approaches and the change in operating models.

Annex 5. Structure of the NTD indicator compendium

1 Indicates the domain the indicator belongs to: health system, service coverage, risk or health status

2 Indicates the name of the indicator

3 Indicates the unique ID for the indicator

4 Indicates the results chain typical of logic models: input includes those items that the programme invests in (e.g. human resource, staffing); process/activity refers to the planning, implementation and coordination of NTD activities; output refers to what was delivered/produced from conducting activities (e.g. number of posters distributed); outcome refers to changes in behaviour after the programme implemented activities (e.g. number of people using NTD services or aware of disease, and voluntary reporting to the health facility); impact refers to impact on health status of population (e.g. number of people in need of treatment or DALYs averted).

5 Provides detailed definitions of the words included in the name or the content of the indicator.

6 Indicates the reason why the indicator is important and the justification for measuring it.

7 Indicates the number of the population or unit meeting the criteria for inclusion in the numerator of the indicators

8 Indicates the total number of the population or unit meeting the criteria for inclusion in the denominator of the indicators

9 Indicates how the data are disaggregated or the breakdown of the data (e.g. age, gender, WHO region).

10 Provides guidance on how the indicator should be measured, including how the data are collected, compiled and analysed, and the data sources. This field specifies the methodology of data collection such as baseline and follow up surveys, routine and specific monitoring; guidance on sampling methodology and data collection tools, information systems and methods of calculation. Precise definitions of the numerator and the denominator are provided for indicators that are expressed as percentages or ratios.

11 In situations where primary data collection is not available, this field provides guidance on how the indicator is estimated, including the institution responsible for estimates, methodology, data source and statistical model used, and how the analysis is made.

12 Indicates the frequency of measuring the indicator (e.g. ad hoc, annual, biannual).

13 This field indicates the data sources, which could be

NTD INDICATOR COMPENDIUM

Disease specific Indicator

1 Dracunculiasis

2 Health Status

3 Dracunculiasis

4 Number of countries certified free of transmission

AlternativeIndicatorName

Indicator ID **3** NTDDRA0000132

ME Framework

Definition **4** Certification or elimination of transmission: Confirmed absence of the emergence of adult female worms (defined as compatible with the interruption of transmission of *Dracunculus medinensis*) in humans and animals for 3 consecutive years or longer at the country level.

Unit Measurement

Rationale **5** WHA 39.21; WHA 42.29; WHA 44.5; WHA50.35; WHA 57.9; WHA 64.16

Numerator **7** Number of countries certified free

Denominator **8**

Disaggregation **9** Country

Method of measurement **10** Country submitted: a declaration and filled questionnaire of dracunculiasis-free status, and for formerly endemic country a country report. Survey: An International Certification Team (ICT) will conduct field visit to assess and verify the veracity of the claim included in country report. The surveillance system and documentation at all levels will be assessed on its readiness to detect and respond appropriately to any rumours or suspected case of guinea worm disease. This assessment includes but not limited to surveys at household, village, market, schools, health facility levels to assess the awareness of the population about the guinea worm disease, its prevention, reward system and to determine the source of drinking water. The ICT will report to ICCDE. ICCDE will take decision and recommends to WHO if the country will be certified free of dracunculiasis transmission. An ICT report is then submitted to International Certification for Dracunculiasis Eradication for review and then ICCDE recommends to WHO if the country met the criteria for certification. WHO certifies the country that has interrupted transmission.

Method of estimation **11**

Measurement Frequency **12** Adhoc

Preferred data source **13** World Health Organization

Other data sources

14 Primary level of data collection Member State

Timing of primary data collection Adhoc

Further information and related links [https://www.who.int/en/news-room/fact-sheets/detail/dracunculiasis-\(guinea-worm-disease\)](https://www.who.int/en/news-room/fact-sheets/detail/dracunculiasis-(guinea-worm-disease))

High level indicator UHC indicator GHO Indicator Roadmap 2020

SDG indicator GPW13 indicator Roadmap 2030

Related country indicator

Number of new cases	NTDDRA0000006
Number of new infected animal	NTDDRA0000007
Case containment rate (%)	NTDDRA0000009
Number of rumours reported	NTDDRA0000010

15

Page 1 of 2

Source: A compendium of indicators for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030. Geneva: World Health Organization; 2021 [in press].

Annex 6. Typical data collection processes within countries

Health information system	Primary level of data collection	Data sources	Responsible for data collection	Frequency of reporting within countries
Civil registration and vital statistics	Health facility	Death report with underlying causes of deaths using International Classification of Diseases, aggregated by age and gender; mortality data from mortuary, verbal autopsy reports	National: National Statistics Office	Monthly
Health management information system	Health facility	Individual record system, electronic health records, facility-based registry systems, community recording systems	National: Health management information system manager or data manager District: District health statistics officer Health facility: Facility-in charge or data manager	Monthly or after service delivery for periodic interventions
Logistics management information systems	Health facility	Medicine outlet including health facilities, pharmacies	National: Logistics management information systems manager or data manager District: District officer Health facility: Facility-in charge or data manager	Monthly
Integrated disease surveillance and response	Reporting site	Community reports, national hotlines, websites; reports from community organizations; records from standalone laboratories and points of entry; reports from health facilities (public, private, quasi-governmental, faith-based)	National: Surveillance officer or data manager Region: Surveillance officer District: Surveillance officer Health facility: Facility-in-charge or data manager Community: Health care worker, community-based surveillance volunteer, focal points from quasi-governmental faith based, laboratory managers	Immediate for diseases targeted for eradication and outbreak-prone diseases Weekly and monthly
Disease-specific surveillance/programmes	Community/ health facility	Individual case records, registry, intervention, population-based surveys, service delivery forms (e.g. preventive chemotherapy treatment registers and tally sheets)	National: NTD programme manager or data manager Region: NTD Regional focal point District: NTD district focal point Community: Supervisors, community volunteers, teachers	Immediate and monthly

Health information system	Primary level of data collection	Data sources	Responsible for data collection	Frequency of reporting within countries
Population-based surveys	Individual, household, community, school	Census, disease mapping, baseline surveys, mid-term surveys, impact surveys, surveillance surveys, demographic health survey, multi-indicator cluster survey, demographic surveillance, readiness assessment surveys, external evaluations	Survey teams	Periodic
Community-based surveillance or community health information system	Household/ community	Community-based surveillance booklet and registers, service delivery forms (e.g. preventive chemotherapy treatment registers and tally sheets)	Community: health worker, health extension workers or community-based surveillance volunteers or other representatives from the community	Monthly
Assessments	All levels	Health facility assessment, logistic system assessment,	National: Health ministry	Periodic
Information systems used by other sectors (e.g. WASH)	Various	Data exchange with specific information system used by other sectors (animal health, vector control, education)		Monthly if possible, or at least annually
National pharmacovigilance system	Health facilities	National medicines controller	National	Immediate reporting of event with annual aggregates



Ending the neglect to attain the Sustainable Development Goals: a framework for monitoring and evaluating progress of the road map for neglected tropical diseases 2021–2030 is a companion document to the road map for neglected tropical diseases 2021–2030.

This framework is a call to action to countries and implementing partners with fully defined operational impact indicators for greater accountability and action, starting at the country level. It aims to provide guidance on mainstreaming the monitoring and evaluation of neglected tropical diseases within health information systems and emphasizes that monitoring and evaluation are integral components of interventions against neglected tropical diseases. The framework highlights the importance of standardization of indicators and defines the core set and the additional indicators to ensure comparability across the different implementational levels as well as across countries.