

Public Notice

WHO guidelines for tuberculosis and undernutrition

Biographies of experts proposed for the Guideline Development Group

June 2024

Background

Undernutrition is a global public health problem and a key risk factor that drives the tuberculosis (TB) epidemic. People with undernutrition have a higher risk of developing TB disease (RR 3.2; 95% UI 3.1–3.3), and in 2022, undernourishment accounted for an estimated 2.2 million (95% uncertainty interval [UI]: 2.0–2.4 million) of the 10.6 million TB episodes globally. Many high TB burden countries have high rates of food insecurity and undernourishment. People with undernutrition and TB disease often have more severe disease, delayed sputum culture conversion and an elevated risk of death and loss to follow-up, compared to those who do not have undernutrition. Undernutrition is also a common consequence of TB disease, due to TB-related changes in macro- and micronutrient status. Therefore, the clinical management of TB and undernutrition requires careful attention to achieve adequate nutritional status and to optimise TB treatment outcomes.

Integrated patient-centred care and prevention for TB and comorbidities such as undernutrition sits at the heart of the End TB Strategy. In September 2023, the Political Declaration of the United Nations High Level Meeting (UN HLM) on the fight against tuberculosis reaffirmed the commitment to ending the TB epidemic globally by 2030. In the declaration, Member States committed to strengthening comprehensive care and integrating within primary health care the systematic screening, prevention, treatment and care of tuberculosis and for related health conditions such as undernutrition.

In 2013, WHO published the guidelines on Nutritional care and support for patients with tuberculosis. These guidelines include recommendations on nutritional assessment and counselling, management of moderate and severe acute malnutrition, and micronutrient supplementation for people with TB disease. They also contain guidance on providing nutritional assessment and support for household contacts of people with TB disease. Since 2013, there has been new evidence on the relationship between TB and undernutrition, and on macro-, and micronutrient supplementation for people with TB disease. To this end, the WHO Global Tuberculosis Programme will update the guidelines and develop an accompanying operational handbook on the management of TB and undernutrition. The new guidelines will include the latest WHO recommendations on TB and undernutrition based on updated evidence.

Disclaimer and rationale

Experts convened by WHO in a Guideline Development Group provide technical and normative advice to WHO. The views expressed by a WHO Guideline Development Group do not necessarily represent the position, decisions or policy of WHO. As part of the process to manage potential conflict of interest and in order to increase public trust and transparency in its normative documents, WHO makes public the names and biographies of individuals considered for participation in its Guideline Development Groups. The information is provided by the experts themselves, and they are solely responsible for its accuracy and completeness. Furthermore, in no event will WHO be responsible or liable for damages in relation to the use of, and reliance upon, this information. The public is invited to comment on the information.

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The list of experts participating in the development of the guidelines, a summary of relevant interests disclosed by these experts, and any appropriate mitigation measures taken by WHO relating to the management of potential conflict of interests, will be reported as part of the published guidelines.

To comment on the experts mentioned in this document please email gtpprogramme@who.int

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Surname, first name(s) and initial: **CEGIELSKI, Peter**

Institutional affiliation(s): Emory University

Academic degrees: MD, MPH

City and country of primary residence: Atlanta, GA, USA

Biography:

Dr Peter Cegielski was educated at Harvard University, University of California, and University of North Carolina. He received his post-graduate training in internal medicine and in infectious diseases/international health at Duke University. He worked at Muhimbili Medical Center (Tanzania), Duke, University of Texas, Johns Hopkins University's HIV/AIDS research unit at Chiang Mai University (Thailand), the US Centers for Disease Control and Prevention (Atlanta). Currently, he works at Emory University. Dr Cegielski was a founding member of the StopTB Green Light Committee. In that capacity he led the "PETTS" study, the first and still largest multinational, prospective epidemiological study of MDR-TB treatment, demonstrating the GLC's effectiveness in preventing acquired second-line drug resistance. He was the first person to recognize the global emergence of XDR-TB, coining that terminology, and leading the team that first described the global emergence of XDR-TB. He was a member of the writing committee for WHO's Guidelines for Programmatic Management of MDR-TB in 2000 and 2006. His work focuses on diagnostic strategies for DR-TB, prevention of acquired drug resistance, and nutritional risk factors for TB. He also has expertise in Covid-19, HIV infection, nutrition, infection control, and tropical/parasitic diseases and has written a number of seminal papers on TB and undernutrition.

Surname, first name(s) and initial: **HEWISON, Cathy**

Institutional affiliation(s): Médecins Sans Frontières

Academic degrees: City and country of primary residence: Paris, France

Biography:

Dr Cathy Hewison is a medical doctor, working with Médecins Sans Frontières (MSF) since 1997, and since 2005 as a tuberculosis advisor in the MSF Medical Department (Operational Centre Paris), supporting MSF projects worldwide on different aspects of tuberculosis diagnosis, management and associated research. She is the leader of the MSF TB working group since 2020, representing MSF internationally and coordinating MSF TB activities. She has a particular interest in new drugs for drug resistant tuberculosis treatment and is involved in the endTB project. She is also the leader for the multicounty project TACTiC (Test Avoid Cure TB in Children), and chairperson of the endTB Medical Committee of DR-TB experts.

Surname, first name(s) and initial: **JAYATISSA, Renuka**

Institutional affiliation(s): Faculty of Food and Nutrition, International Institute of Health Sciences (IIHS) Multiversity, Sri Lanka;

Academic degrees: MBBS, MSc, MD

City and country of primary residence: Colombo, Sri Lanka

Biography:

Dr Jayatissa worked 32 years in the Sri Lankan ministry of health in the fields of clinical medicine, paediatrics, gynaecology and obstetrics, intensive care and public health. She first ventured into the domain of nutrition when she joined the Department of Nutrition of the Medical Research Institute (MRI) in 1997. She trained in public health nutrition and clinical nutrition at the London School of Hygiene and Tropical Medicine, and at the Royal London

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hospital in the UK. She pioneered and established a clinical nutrition programme for medical officers and tuberculosis which included research and guideline development. She has spearheaded many national level nutrition, micronutrient and food security surveys and has published in many journals. These surveys catalysed public policy change resulting in the acceleration and uptake of the many nutrition interventions. She joined UNICEF as the Nutrition Specialist for 5 years. Upon her return to the ministry of health, she worked as Head of Department of Nutrition until 2023. She is currently President of the South Asian Association for Regional Cooperation Food Data Systems (SAARCFOOD) of Sri Lanka, and South Asia Regional Coordinator of Iodine Global Network. She has served on many national nutrition committees, nutrition guideline committees and WHO guideline committees. She is a clinician, a researcher and public health professional.

Surname, first name(s) and initial: **KATHURE, Immaculate**

Institutional affiliation(s): Division of Tuberculosis and Lung Health, Ministry of Health, Kenya

Academic degrees: MD, MSc PH

City and country of primary residence: Nairobi, Kenya

Biography:

Dr Immaculate Kathure is a medical doctor with specialization in Public Health and 18 years' experience. She is skilled in strategic planning, budgeting, policy development, monitoring, evaluation, project design and impact assessment. Currently as head of the National TB Program, Kenya Dr. Immaculate is responsible for leadership and coordination of TB control activities including strategic planning, policy development and dissemination, resource mobilization, monitoring, evaluation and stakeholder coordination. She previously worked with USAID as Project Management Specialist Deputy Team Leader overseeing the planning and implementation of PMTCT and Paediatric HIV activities, and as a National TB Program officer where she oversaw TB care and treatment activities.

Surname, first name(s) and initial: **KHOWAJA, Saira**

Institutional affiliation(s): IRD Global

Academic degrees: BA Chemistry and Psychology, MSc in Social Development and Planning

City and country of primary residence: Karachi, Pakistan

Biography:

Ms Khawaja has an MSc in Social Administration and Planning from Columbia University School of Social Work. Over the last 17 years, she has gained experience in working with teams at IRD and with partners in the piloting and scaling of an integrated disease primary care network, and communicable and non-communicable disease programs. She has led surveillance implementation and piloting of new diagnostic technologies and therapeutics for TB, COVID, and other diseases across the IRD network countries.

Ms Khawaja launched WellCheck an initiative of IRD Global that caters to the individual's holistic health needs across educational institutions, health facilities, and communities.

Saira has worked closely with multiple national stakeholders to help develop the USD 173 million budget for the Global Fund Round 9 application for scaling up MDR-TB control in Pakistan. During her work in TB, she has gained experience in integrating other interventions (nutrition, mental health, diabetes/hypertension etc.) and understands the challenges and

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barriers to integration and implementation of these interventions in the Global South. She has previously been a core group member of the Global Drug Resistance TB Initiative under the Stop TB Partnership. She was a private sector participant from Pakistan in the Leadership for Universal Health Coverage (L4UHC) course – Asia Cycle.

Surname, first name(s) and initial: **LUNGU, Saili Patrick**

Institutional affiliation(s): East, Central, and Southern Africa Health Community

Academic degrees: MBChB, MSc, PhD

City and country of primary residence: Arusha, Tanzania

Biography:

Dr Lungu currently serves as Manager responsible for the Health System and Capacity Development at East, Central, and Southern Africa Health Community (ECSA-HC) Project coordinator for TB in the Mines, in Arusha, Tanzania. Prior to this assignment he served as Senior TB Control Specialist at ECSA-HC and National TB Programme Manager for Zambia. He has extensive experience in Internal Medicine, Public health, Research, and policy formulation. He holds a Bachelor of Human Biology (BSc HB), a Bachelor of Surgery and Medicine (MBChB), a Master's degree in Internal Medicine, and completed a Ph.D. in Immunology. Dr Lungu co-chairs the Global TB Contact Investigation Advisory Group. He has supported multiple initiatives that scaled up TB preventive Therapy and pioneered the national TB situation room in Zambia which catalyzed TB control efforts. He superintended a successful decentralization of drug resistant TB services and the introduction of new and shorter treatment regimens in Zambia. Dr Lungu contributed significantly to the positive transformation of the TB program in Zambia. He supported the rapid adoption of the WHO recommendation for both DS TB and DR TB. He actively supports WHO initiatives, he is a member of the Child and Adolescent TB working group under the WHO, and has served as a consultant for the Regional Green Light Committee.

Surname, first name(s) and initial: **LÖNNROTH, Knut**

Institutional affiliation(s): Karolinska Institutet, Sweden

Academic degrees: MD, MSc, PhD

City and country of primary residence: Stockholm, Sweden

Biography:

Knut Lönnroth is a medical doctor specialised in social medicine. He has a PhD in public health and a master's degree in clinical epidemiology and biostatistics. Lönnroth worked for WHO's Global Tuberculosis Programme during the years 2003-2017 and was responsible for coordinating several policy documents and guidelines, including the 2013 guideline on Nutritional care and support for patients with tuberculosis. He currently combines three part-time positions; professor of social medicine at Karolinska Institutet, specialist in social medicine for Stockholm region and Chief Medical Officer for the Government of Åland. His academic career has mainly focused on TB from a social medicine perspective, including social determinants and consequences of TB, aspects of screening and early diagnosis and health systems and social protection policy for improved TB care. Apart from policy work for WHO, Lönnroth has extensive experience of policy development and implementation on local, subnational, and national level, as well as of adaptation of international recommendations to local context. Among other things, he was responsible for coordinating the COVID-19 response for the semi-autonomous region of Åland during the recent pandemic.

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Surname, first name(s) and initial: **MARAIS, Ben**

Institutional affiliation(s): University of Sydney, Australia; Westmead Children's Hospital, Sydney, Australia

Academic degrees: MBChB, PhD, MRCP, FCP, MMed, FRACP (Paed), PGDip Infect Dis

City and country of primary residence: Sydney, Australia

Biography:

Professor Ben Marais is a Paediatric Infectious Diseases specialist at the Westmead Children's Hospital in Sydney, Australia. He is Director of the Sydney Infectious Diseases Institute (Sydney ID) at the University of Sydney (www.sydney.edu.au/infectious-diseases-institute), where he helped to establish the WHO Collaborating Centre in Tuberculosis and the National Health and Medical Research Council Centre for Research Excellence in Tuberculosis (www.tbcre.org.au). As a paediatrician his research focuses primarily on how children are affected by the global tuberculosis epidemic and tuberculosis transmission within communities. He serves on the Australian National TB Advisory Group and the core group of the WHO/Stop-TB Partnership Child and Adolescent TB working group (deputy-Chair 2016-2023).

Surname, first name(s) and initial: **MATTOO, Sanjay K**

Institutional affiliation(s): National TB Elimination Program, India

Academic degrees: MD, Diploma in Tuberculosis and Chest Diseases (DTCD)

City and country of primary residence: Delhi, India

Biography:

Dr Sanjay K Mattoo, MD, DTCD, Designation as Joint Commissioner and Addl. Deputy Director General, at the Central TB Division, in the National TB Elimination Program of the Ministry of Health and Family Welfare, of the Government of India Delhi, 28 years' experience as a senior Public Health Professional, TB program manager, nodal officer for management of Drug Susceptible and Drug Resistant TB, pediatric TB, Extra-Pulmonary TB, Digital & AI approach under the program, TB & co-morbidities, Clinical Research/ Public Health Research/ Operation Research under the TB Program, Gender Responsive approach in the Program, and Supply chain management. His professional experience also includes working in Emergency Medicine for 10 years in Lok Nayak Hospital associated with Maulana Azad Medical College and International Health Regulation for 6 years in India.

Surname, first name(s) and initial: **MBENDERA, Kuzani**

Institutional affiliation(s): National Tuberculosis and Leprosy Elimination Program, Malawi

Academic degrees: MBBS

City and country of primary residence: Lilongwe, Malawi

Biography:

Is a medical doctor by training and currently the Deputy Program Manager of the National Tuberculosis and Leprosy Elimination Program. Dr Mbendera has particular interest in tuberculosis screening approaches; active case finding, diagnostic performance and placement in a health system. Prior to his time in the Tuberculosis and Leprosy elimination program he was the district medical officer for Mzimba and Lilongwe districts in Malawi.

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Surname, first name(s) and initial: **MBENGA, Mansa**

Institutional affiliation(s): KNCV

Academic degrees: MD, DTM&H

City and country of primary residence: Moscow, Russian Federation

Biography:

Dr Mansa Mbenga is a Senior PMDT consultant and Team lead at KNCV Tuberculosis Foundation. He graduated as Medical Doctor from the People's Friendship University of Russia, pursued a postgraduate degree in Phthisiology from the same University and obtained Diploma in Tropical Medicine and Hygiene from Royal College of Physicians. Dr. Mansa had more than 14 years' experience on clinical and programmatic management of TB with clinical trial experience. He successfully supported the implementation of TB-PRACTECAL Clinical Trial with Medecins Sans Frontieres (MSF) in Uzbekistan, Belarus, and South Africa. Dr Mansa is member of the WHO European Regional Green Light committee, member of the Virtual Medical Consilium and a member of the Child and Adolescents TB working group. Dr Mansa is supporting the introduction of the shorter treatment regimen in KNCV Tuberculosis Foundation supported countries and the use of innovative digital technologies to improve TB care.

Surname, first name(s) and initial: **MURRAY, Megan**

Institutional affiliation(s): Department of Global Health and Social Medicine, Harvard Medical School; Department of Epidemiology, Harvard Chan School of Public Health Boston, MA, USA

Academic degrees: MD, MPH, ScD

City and country of primary residence: Boston, USA

Biography:

Megan Murray is an epidemiologist and an infectious disease physician, with over 25 years of experience studying tuberculosis and other infectious diseases. She received her MD from Harvard Medical School in 1990 and completed her residency in internal medicine and a fellowship in Infectious Disease at Massachusetts General Hospital. She received her Science Doctorate in Epidemiology from the Harvard School of Public Health in 2000. She currently serves as the Ronda Stryker and William Johnston Professor of Global Health and Social Medicine at Harvard Medical School and as a Professor of Epidemiology at the Harvard Chan School of Public Health.

Dr Murray's research focuses on social, host and pathogen specific determinants of TB infection, disease and treatment outcomes. She studies nutritional risk factors for TB infection and disease, including macronutrients status and the role of Vitamins A, E and D. She uses bacterial and human genetic and genomic tools to identify variants of interest and their role in TB.

Dr Murray also serves as an associate editor for PLoS Medicine and for the European Journal of Epidemiology, and in the past, has served as an associate editor for the Journal of the International Union Against TB and Lung Disease.

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Surname, first name(s) and initial: **SCHOEMAN, Ingrid, I**

Institutional affiliation(s): TB Proof

Academic degrees: MSc Dietetics

City and country of primary residence: South Africa

Biography:

Ingrid Schoeman is the Director of Advocacy and Strategy at TB Proof in South Africa. TB Proof's mission is to combine stories and science to work towards a shared goal of a world free of TB. Ingrid contracted tuberculosis (TB) in 2012 while working as a dietitian in the Eastern Cape province of South Africa. Her experience of having extensively drug-resistant TB (XDR-TB) changed her life. Today, she is a TB advocate passionate about high-quality TB care for all, free from stigma and discrimination.

Surname, first name(s) and initial: **SUTHEPMANY, Sakhone**

Institutional affiliation(s): National Tuberculosis Control Centre, Lao People's Democratic Republic

Academic degrees: MD, MSc

City and country of primary residence: Vientiane, Lao PDR

Biography:

Dr Sakhone Suthepmany is the Deputy Director of the National Tuberculosis Control Centre in Lao PDR. He trained as a medical doctor at the University of Health Sciences in Vientiane, Lao PDR, and holds a master's degree in Technology and Information from Indraprastha University, New Delhi, India. Prior to his current role, he served as head of M&E Surveillance at the National Tuberculosis Control Centre.

Surname, first name(s) and initial: **TREHAN, Indi**

Institutional affiliation(s): Departments of Pediatrics, Global Health, and Epidemiology
University of Washington

Academic degrees: MD, MPH, DTM&H

City and country of primary residence: Seattle, USA

Biography:

Indi Trehan is a pediatrician with advanced certification in infectious diseases, emergency medicine, and tropical medicine. He remains an active clinician, researcher, educator, and advocate in his current role as an Associate Professor at the University of Washington. He has been actively engaged in clinical trials and translational studies of acute and chronic malnutrition in children and pregnant women for more than 15 years, with a particular interest in the infection-inflammation-malnutrition axis. He has served on numerous WHO committees related to malnutrition and also Ebola, and currently serves as the co-chair of the UNICEF/WHO Technical Advisory Group on Wasting and Nutritional Oedema. His clinical work has taken him to numerous settings with a heavy burden of pediatric and adult TB in addition to severe macronutrient and micronutrient deficiency. He works extensively with UNICEF and Action Against Hunger to study, expand, and optimize care for malnourished children in Africa and Asia.