

TUESDAY, DECEMBER 5

8:30–8:45 Opening Session

KILIMANJARO BALLROOM

Welcome Remarks and Housekeeping Items
Denise Garrett, Sabin Vaccine Institute

8:45–9:45 Global Challenges in the Fight Against Typhoid and Invasive Salmonellosis: The Urgency to Act

KILIMANJARO BALLROOM

PLENARY SESSION MODERATED BY:
Denise Garrett, Sabin Vaccine Institute & Eileen Quinn, PATH

Fighting Typhoid: The Importance of Evidence for Effective Prevention and Control Amid Urgency to Act
Anuradha Gupta, Sabin Vaccine Institute

Non-Typhoidal Salmonella Invasive Disease as a Leading Cause of Child Death in Africa – Challenges and Opportunities for Management and Control
Samuel Kariuki, Kenya Medical Research Institute

The Challenge of Sustainable Access to Effective Antibiotics for Enteric Infections
Ramanan Laxminarayan, One Health Trust

Confronting the Challenge of Data Inequity
Kathleen M. Neuzil, University of Maryland School of Medicine

Discussion

9:45–10:15 Coffee Break & Poster Viewing

FOYER

10:15–12:15 Vaccine Voyage I: Navigating the Advancements in Vaccine Research

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:
Kirsten Vannice, Bill & Melinda Gates Foundation
& Sushant Sahastrabudhe, International Vaccine Institute

Serological Response Using ELISA Anti-Vi-IgG After Single Dose of Typhoid Conjugate Vaccine Against *Salmonella* Typhi Among Children in Hyderabad, Pakistan
Farah N. Qamar, Aga Khan University

The Validity of Different Study Designs in Estimating the Protection of Typhoid Conjugate Vaccine
Xinxue Liu, Oxford Vaccine Group, Department of Paediatrics, University of Oxford, and the NIHR Oxford Biomedical Research Centre

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TyVAC Nepal: Two Dose and Extended Immunogenicity
Mila Shakya, Patan Academy of Health Sciences, Patan Hospital

Effectiveness of Typhoid Conjugate Vaccine (TCV): A Systematic Review
Amira Mahboob, World Health Organization Regional Office for the Eastern Mediterranean

Efficacy of Typhoid Conjugate Vaccine Against Culture-Confirmed *Salmonella* Typhi — A Systematic Review and Meta-Analysis
Rabab Batool, Aga Khan University

Safety of Typhoid Conjugate Vaccine Booster Vaccination in Malawian Children
Osward Nyirenda, Blantyre Malaria Project, Kamuzu University of Health Sciences

Test-Negative Design: An Efficient Method to Assess Typhoid Conjugate Vaccine Effectiveness
Matthew Laurens, University of Maryland School of Medicine

A Phase IV Clinical Study to Evaluate the Immunogenicity and Safety of Typhoid Conjugate Vaccine (Typbar TCVA®) in Elderly Population
Raches Ella, Bharat Biotech International

12:15–13:30

Lunch

SOKO RESTAURANT

13:30–15:00

Maximizing Learnings from Clinical Trials and Public Sector Use — the Full Public Health Value of Typhoid Conjugate Vaccines

KILIMANJARO BALLROOM

SYMPOSIUM SESSION CHAIRED BY:

Megan E. Carey, International AIDS Vaccine Initiative and London School of Hygiene & Tropical Medicine & Kathleen M. Neuzil, University of Maryland School of Medicine

Longer-Term Efficacy of Typhoid Conjugate Vaccine in Malawi
Priyanka Patel, Malawi Liverpool Wellcome Trust

New findings on Immunogenicity of TCV: Booster Dose in School-Aged Children and 1 Versus 2 Dose Regimens in HIV-Exposed Infants
Osward Nyirenda, Blantyre Malaria Project

Typhoid Fever Surveillance in Urban Dhaka, Bangladesh: Risk Factors and Antimicrobial Resistance Pattern
Farhana Khanam, icddr,b

Impact Assessment of National TCV Introduction in Pakistan
Tahir Yousafzai, Aga Khan University

The Impact of a TCV Mass Campaign on Typhoid Fever Cases and Antimicrobial Use in Harare, Zimbabwe
Ioana Diana Olaru, London School of Hygiene & Tropical Medicine

Measuring the Impact of Typhoid Conjugate Vaccines on Antimicrobial Usage from Pivotal Efficacy Studies
James E. Meiring, Department of Infection, Immunity and Cardiovascular Disease, University of Sheffield

15:00–15:30

Coffee Break & Poster Viewing

FOYER

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15:30–17:30

Comprehensive Exploration of iNTS: From Vaccine Trials to Global Epidemiology

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:

James Meiring, University of Sheffield
& Raphael Zellweger, International Vaccine Institute

Study Design & Initial Data from Phase 1 RCT to Evaluate the Safety, Reactogenicity & Immunogenicity of a Vaccine Against iNTS & Typhoid Fever in Healthy Adults

Yasir Shitu Isa, GSK Vaccines Institute for Global Health

Age-Specific Incidence and Associated Mortality of Invasive Non-Typhoidal *Salmonella* in Mozambican Children, 2001 – 2019

Inacio Mandomando, Centro de Investigação em Saúde de Manhiça

Severe Anaemia Increases Risk Of Invasive Non-Typhoidal *Salmonella* Bacteraemia In Kenyan Children

Kelvin Mokaya Abuga, KEMRI-Wellcome Trust Research Programme

Modelling the Global Prevalence of Antimicrobial Resistant Invasive Non-Typhoidal *Salmonella* Infections, 2000 to 2019

Frederick Fell, University of Oxford

IgG and IgA Antigen-Specific B Memory Responses in Healthy U.S. Adults Immunized with a Parenteral Trivalent *Salmonella* Conjugate Vaccine (TSCV)

Marcelo Sztein, University of Maryland School of Medicine

Antimicrobial Resistance and Intestinal Shedding of Non-Typhoidal *Salmonella* Among Children Under Five Years and Carriage in Asymptomatic Hosts in Kenya

Celestine Wairimu, Kenya Medical Research Institute

Acquisition of Immunity to Non-Typhoidal *Salmonella* in Malawian Children to Inform Vaccine-Derived Immunity; a Serological Catalytic Model

Helen Dale, University of Liverpool

The Burden of Invasive Non-Typhoidal *Salmonella* Disease in Six Sites in Africa: Results from the Severe Typhoid Fever Surveillance in Africa Program

Hyonjin Jeon, International Vaccine Institute

18:00–19:30

Evening Welcome Reception

MALAIKA GARDEN

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WEDNESDAY, DECEMBER 6

7:45–8:30

Sunrise Symposium: *Salmonella* Controlled Human Infection Models – Insights, Opportunities and Challenges

ISARO ROOM

SYMPOSIUM SESSION CHAIRED BY:
Malick Gibani, Imperial College London

Preliminary Results From an Oral Vaccine in the Paratyphoid Human Challenge Model
Naina McCann, Oxford Vaccine Group, Department of Paediatrics, University of Oxford

A Typhoid Fever Challenge Model in India? – Opportunities and Challenges
Rakesh Aggarwal, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry

Development of a Non-Typhoidal *Salmonella* Challenge Model
Christopher Smith, Department of Infectious Disease, Imperial College London

8:30–9:30

Amplifying Impact: Tools and Solutions to Accelerate Progress

KILIMANJARO BALLROOM

PLENARY SESSION MODERATED BY:
Julie Bines, University of Melbourne & Andrew J. Pollard, University of Oxford

Accelerating Impact Through Mindful Management of Innovation
Jerome Kim, International Vaccine Institute

Enhancement and Utilization of Laboratory Infrastructure to Mitigate Enteric Disease Threats
Proscovia Nalumyima, Makerere University, Walter Reed Uganda

Integrating Artificial Intelligence to Analyze Typhoid and Other Invasive Salmonellosis Data: From Zero to Hero!
Bráulio Roberto Gonçalves Marinho Couto, Biobyte Sistemas Ltda

Progress and Challenges Towards Typhoid Diagnostics
Jyotshna Sapkota, FIND

Discussion

9:30–9:45

Recognition Ceremony

KILIMANJARO BALLROOM

9:45–10:15

Coffee Break & Poster Viewing

FOYER

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10:15–12:15 Concurrent Oral Abstract Sessions

Inside Out: Genomic and Antimicrobial Resistance in *Salmonella*

ISARO ROOM

ORAL ABSTRACT SESSION MODERATED BY:
Iruka Okeke, University of Ibadan
& Christopher Parry, Liverpool School
of Tropical Medicine

Vaccine Voyage II: Navigating the Advancements in Vaccine Research

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:
Myron "Mike" Levine, University of Maryland School
of Medicine & Farah Qamar, Aga Khan University

Role of Bacteriophage Defense Systems in the Spread of Drug-Resistant *Salmonella* Typhi
Yogesh Hooda, Child Health Research Foundation

Vaccines for All: The Malawi National Integrated Typhoid Conjugate Vaccine Campaign
Latif Ndeketa, Malawi Liverpool Wellcome Programme

Genomic Analysis and Antimicrobial Resistance Profiling for the Global Collection of *Salmonella* Paratyphi B Isolates
Junaid Iqbal, Aga Khan University

Antimicrobial Susceptibility Patterns of *Salmonella* Typhi Isolates Following Mass-Targeted Typhoid Conjugate Vaccine Immunization in Harare City, Zimbabwe, 2023
Kudzai Patience Takarinda, National Microbiology Reference Laboratory Zimbabwe

Assessing the Global Risk of Typhoid Outbreaks Caused by Extensively Drug Resistant *Salmonella* Typhi
Jo Walker, Yale School of Public Health

Modeling Typhoid Vaccination in Nepal: TCV Impact and Booster Dose Strategy
Virginia Pitzer, Yale University

Recent Emergence of Cephalosporin Resistant *Salmonella* Typhi Carrying IncFIB(K) Plasmid Encoding blaCTX-M-15 Gene in India
Tharani Priya Thirumoorthy,
Christian Medical College, Vellore

Trend of anti-Vi-IgG and anti-Vi-IgA Antibody Responses Induced in Vi-TT Recipients Over the Period of Five Years Among Bangladeshi Children
Farhana Khanam, icddr,b

A 24-Year Passive Surveillance Study Reveals Trends in Antimicrobial Resistance Amongst *Salmonella* Typhi and Paratyphi A Cases in Bangladesh
Arif Mohammad Tanmoy, Child Health Research Foundation

Assessing the Medium-Term Impact of a Typhoid Conjugate Vaccine in Preventing Typhoid Infections in Bangladesh
Firdausi Qadri, icddr,b

Genetic Heterogeneity in the *Salmonella* Typhi Vi Capsule Locus: A Population Genomic Study from Fiji
Aneley Getahun Strobel, Peter Doherty Institute for Infection and Immunity, University of Melbourne

The Association Between Vaccine Coverage and Herd Protection: Exploratory Analyses of a Cluster-Randomised Trial of Vi Conjugate Vaccine
Yiyuan Zhang, Oxford Vaccine Group and National Institute for Health and Care Research Oxford Biomedical Research Centre

The Genetic Landscape of *Salmonella* Enterica Serovar Typhi in Zimbabwe Before the Introduction of Typhoid Conjugate Vaccine (TCV)
Tapfumanei Mashe, Ministry of Health and Childcare, World Health Organization

Durability of Anti-Vi IgG and IgA Responses in 15-month-old Children Vaccinated with a Typhoid Conjugate Vaccine in Burkina Faso
Alphonse Ouedraogo, Groupe de Recherche Action en Santé

Genomic Characterization of Invasive *Salmonella* Enterica Isolated in Severe Typhoid in Africa Surveillance in Ibadan, Nigeria
Oyeni Stephen Bejide, Chrisland University

Introduction of Typhoid Conjugate Vaccine – A Successful Implementation in Strengthening National Immunization Program of Nepal
Navneet Bichha, Indian Institute of Health Management Research

12:15–13:30 Lunch

SOKO RESTAURANT

13:30–15:00 **Bridging the Gap: Environmental and Sero-Surveillance for Estimating Typhoid Burden and Supporting Vaccine Introduction**

KILIMANJARO BALLROOM

SYMPOSIUM SESSION CHAIRED BY: Kristen Aiemjoy, University of California Davis & Mahidol University Faculty of Tropical Medicine, Richelle C. Charles, Massachusetts General Hospital-Harvard University & Nick Grassly, Imperial College London

Latest Advances in Seroepidemiology for Enteric Fever

Kristen Aiemjoy, University of California Davis & Mahidol University Faculty of Tropical Medicine

Quick and Informative: Schools as a Platform for Rapid Typhoid Seroepidemiological Assessments

Shiva Naga, Dhulikhel Hospital, Kathmandu University and Sira Jam Munira, Child Health Research Foundation

Mapping Typhoid Transmission: Geospatial Analysis and Seroepidemiology for TCV Prioritization

Momin Kazi, Aga Khan University

A Target Product Profile for Wastewater Surveillance of *S. Typhi*

Supriya Kumar, Bill & Melinda Gates Foundation

Seroincidence of Enteric Fever based on Targeted Serosurveillance in Blantyre, Malawi

Jonathan Mandolo, Liverpool School of Tropical Medicine

Wastewater Surveillance of *S. Typhi* in India and Comparison with Clinical and Serological Surveillance

Dilip Abraham, Christian Medical College, Vellore

Direct Sequencing of *S. Typhi* in Wastewater Samples to Determine Antimicrobial Resistance and Genotype

Catherine Troman, Imperial College London

15:00–15:30 Coffee Break & Poster Viewing

FOYER

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15:30–17:30

Eyes on Surveillance: Illuminating the Path to Effective Monitoring

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:

Adidja Amani, World Health Organization Regional Office for Africa
& Jessica Seidman, Sabin Vaccine Institute

Development of a Low-Cost Environmental Surveillance Method for Effective Typhoid Fever Control
Shuborno Islam, Child Health Research Foundation

Leveraging Paired Serology to Estimate the Incidence of Typhoidal *Salmonella* Infection in the STRATAA Study
Jo Walker, Yale School of Public Health

Estimating the Burden of Environmental *Salmonella* Typhi in the Asante Akim North District of Ghana: The Role of Novel Techniques
Michael O. Owusu, Kwame Nkrumah University of Science and Technology

The Burden and Trend of Typhoid Fever in Low- and Middle-Income Countries: An Updated Meta-Regression Approach
Harsh Vivek Harkare, Swiss Tropical and Public Health Institute and University of Basel

Blood Culture Positive Typhoid and Paratyphoid Cases in Children Presenting to Patan Hospital, Nepal, Over a 14-Year Period (2009-2022)
Shrijana Shrestha, Patan Academy of Health Sciences

The Ty-FIVE Project — Strengthening Typhoid Surveillance Around a Mass Vaccination Campaign in the Northern Division of Fiji
Alumita Vuakanisakea, Ty-FIVE Project, International Vaccine Institute

Typhoid-Associated Ileal Perforations Following the Introduction of the Typhoid Conjugate Vaccine in Pakistan: Findings from a Multi-Center Surveillance Study
Saqib Hamid Qazi, Aga Khan University

Molecular Surveillance of Non-Typhoidal *Salmonella* from Environmental Sources in Disease Endemic Informal Settlement in Nairobi, Kenya
Michael Muraya Mugo, Kenya Medical Research Institute

THURSDAY, DECEMBER 7

7:45–8:30

Sunrise Symposium: How Data Drive Decision-Making: Reflections from TCV Introductions in Pakistan and Malawi and the Role of Data Moving Forward

ISARO ROOM

SYMPOSIUM SESSION CHAIRED BY: Emmanuel Mugisha, PATH

Optimizing Surveillance and Interventions to Advance National XDR Typhoid Control: The Pakistan Experience
Nada Taqi, World Health Organization

From Decision-Making to Introduction: How Persistence, Partnership, and Planning Led to the Introduction of Typhoid Conjugate Vaccine in Malawi
Esau Mkisi, PATH

The MENA Typhoid Project: New Insights on Typhoid Burden and Antibiotic Resistance
Kristen Heitzinger, U.S. Centers for Disease Control and Prevention

8:30–10:00

Landscape, Strategy, and Progress Update for iNTS Vaccines in Clinical Development

KILIMANJARO BALLROOM

SYMPOSIUM SESSION CHAIRED BY: Melita Gordon, Malawi Liverpool Wellcome Programme & Samuel Kariuki, Kenya Medical Research Institute

Prevalence and Distribution of Non-Typhoidal *Salmonella* enterica Serogroups and Serovars Isolated from Normally Sterile Sites: A Global Systematic Review
John Crump, University of Otago

Sero-Epidemiology of iNTS in Large Field Cohorts from Malawi, Burkina Faso, Kenya and Ghana
Helen Dale, University of Liverpool

Economic Burden of iNTS and Cost-Effectiveness Analysis for a Hypothetical iNTS Vaccine in Ghana, Burkina Faso and Malawi
Jung-Seok Lee, International Vaccine Institute

The Public Health Need for iNTS Vaccines, and Preferred Vaccine Characteristics
Adwoa Bentsi-Enchill, World Health Organization

A LMIC Perspective on iNTS Vaccine Strategy, and Lessons from Recent Vaccine Introductions
Mike Chisema, Malawi Ministry of Health

Current Status of the Clinical Development of Trivalent *Salmonella* Conjugate Vaccine (TSCV)
Wilbur Chen, Center for Vaccine Development, University of Maryland School of Medicine

Development of iNTS Conjugate and Preclinical Study for a Novel Trivalent iNTS/Typhoid Vaccine
SoJung An, International Vaccine Institute

Development of GMMA-Based Vaccines Against iNTS: Current Status
Rocio Canals Alvarez, GSK Vaccines Institutes for Global Health

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10:00–10:30 Coffee Break & Poster Viewing

FOYER

10:30–12:30 **Mosaic of Insights: An Exploration of Diverse Salmonellosis Topics**

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:
Nicholas Feasey, Liverpool School of Tropical Medicine
& Calman A. MacLennan, Bill & Melinda Gates Foundation

Impact of COVID-19 Pandemic on Enteric Fever Diagnosis in Nepal: Findings From the Surveillance of Enteric Fever Asia Project Study
Dipesh Tamrakar, Dhulikel Hospital-Kathmandu University Hospital

The Application of Machine Learning with High-Content Imaging to Infer Antimicrobial Resistance Phenotypes in *Salmonella* Typhimurium
Sushmita Sridhar, Universidad Peruana Cayetano Heredia and University of New Mexico

Evaluation of a Point-of-Care Multiplex Immunochromatographic Assay (DPP Typhoid Assay) for the Diagnosis of Typhoid
Zahida Azizullah, Aga Khan University

Design and Initial Data from a Phase 1 RCT to Evaluate the Safety and Immunogenicity of a Vaccine Against *S. Typhi* and *S. Paratyphi A* in Healthy European Adults
Usman Nasir Nakakana, GSK Vaccines Institute for Global Health

From Rarity to Clarity: The Potential of Seroepidemiology for Monitoring Typhoid Vaccine Impact
Kristen Aiemjoy, University of California Davis & Mahidol University Faculty of Tropical Medicine

Role of Gallstones in *Salmonella* Typhi Stool Carriage and Shedding in an Urban Typhoid Endemic Setting in Nairobi, Kenya
Samuel Kariuki, Kenya Medical Research Institute

The Impact of Surgical Interventions for Severe Typhoid on Families and Healthcare Systems in Rural South Central Niger
Yakoubou Sanoussi, Hopital de la SIM Galmi, Niger

Safety and Immunogenicity of a Bivalent Paratyphoid A-Typhoid Conjugate Vaccine: Phase I Study
Andrew J. Pollard, University of Oxford

12:30–13:45 Lunch

SOKO RESTAURANT

13:45–15:45 **The Late-Breakers:
Unveiling the Latest in Enteric Fever
and iNTS Research**

KILIMANJARO BALLROOM

ORAL ABSTRACT SESSION MODERATED BY:

Jason Andrews, Stanford University & Anna Minta, World Health Organization

Assessing the Protective Efficacy of an Intranasal Vaccine Candidate, rCTB-T2544, Against Typhoid and Paratyphoid Infection Using Iron Overloaded Murine Model
Suparna Chakraborty, ICMR National Institute of Cholera and Enteric Diseases

Diversity and Antimicrobial Resistance of *Salmonella* Paratyphi A: A Collaborative Global Typhoid Genomics Consortium Initiative
Zoe Anne Dyson, London School of Hygiene & Tropical Medicine

Pan-genome clustering Reveals the Role of Prophage Elements in the Evolution and Adaptation of *Salmonella* Enteritidis
Jobin John Jacob, Christian Medical College, Vellore

Initial Immunogenicity and Safety Data From a First-in-Human Randomised Controlled Trial of an Invasive Non-Typhoidal *Salmonella* GMMA Vaccine: the SALVO Trial
Peter D. Skidmore, Oxford Vaccine Group, NIHR Oxford Biomedical Research Centre, Department of Paediatrics, University of Oxford

Forecasting iNTS for the Global Burden of Disease Study
Jeffrey Stanaway, The Institute for Health Metrics and Evaluation, University of Washington

Unmasking Typhoid Vaccine Hesitancy: A Study of Myths Surrounding TCV in Immunisation Programs Within Refugee Communities in Southwestern Uganda
Muhumuza Umar, Africa Centers for Disease Control

Bacterial Profile of Suspected Typhoid Intestinal Perforation Cases, Regional Hospital Centre, Maradi, Niger
Maman Laminou Sani, Regional Hospital Centre, Maradi

Impact of TCV Introduction on Ileal Perforations in Pakistan: A Comparative Analysis
Huma Syed Hussain, Aga Khan University

15:45–16:15 Coffee Break & Poster Viewing

FOYER

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16:15–17:15

Closing Plenary: Forging a Path Forward: The Roadmap to Expand Solutions and Catalyze Change

KILIMANJARO BALLROOM

PLENARY SESSION MODERATED BY:
Robert F. Breiman, Emory University
& Eunice Ubomba-Jaswa, Water Research Commission

Charting a Comprehensive and Innovative Path to Fight Typhoid and Invasive Salmonellosis: The Importance of Multi-Sectorial Collaboration, Resource Mobilization, Health Systems Strengthening and Political Will

Robert Agyarko, African Risk Capacity

From Data to Action: Leveraging Existing Primary Healthcare Systems for Solutions

Samba Sow, Center for Vaccine Development-Mali

Accelerating the Fight Against Invasive *Salmonella* Diseases: Perspectives From WHO

Adwoa Benti-Enchill, World Health Organization

Looking Ahead — What Do We Need for Successful Enteric Fever Control?

Duncan Steele, Bill & Melinda Gates Foundation

Discussion

17:15–17:30

Closing Session

KILIMANJARO BALLROOM

Closing Remarks

Meeting Adjournment

Denise Garrett, Sabin Vaccine Institute
& Anuradha Gupta, Sabin Vaccine Institute

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