

2nd International Symposium on *Streptococcus agalactiae* Disease (ISSAD)

Agenda

Program oversight:

Joy Lawn (The MARCH Centre: London School of Hygiene and Tropical Medicine)

Beate Kampmann (The Vaccine Centre: London School of Hygiene and Tropical Medicine)

DAY 1: Wednesday 3rd November 2021

Launch of GBS Value Case report results with linked papers

13:00 - 13:30: Registration and Welcome to WHO Web stream

13:30 - 13:35: Welcome and opening: Dr Kim Eva Dickson (UNICEF)

PLENARY SESSION 1: Launch of GBS Value Case report results with linked papers

Chairs: Joy Lawn/ Philipp Lambach

Time	Topic
13:30 – 13:35	Plenary 1 Launch of GBS Value Case report results with linked papers Welcome with Dr Kim Eva Dickson (UNICEF) - MC
13:35 – 13:40	Launch of WHO Full Value of Vaccines Assessment Report Dr Tedros Adhanom Ghebreyesus - Director-General of the World Health Organization
13: 40 – 13:50	The global value of GBS vaccines Time to act Dr Philipp Lambach, WHO
13:50 – 13:55	Film – Every Family, Every Country
13.55 – 14.20	GBS burden through lifecycle & around the world (talk) Prof Joy Lawn, Director of the MARCH Centre, London School of Hygiene and Tropical Medicine
14.20 – 14.25	Film – Every Family: Time to Act for Group B Strep
14.25 – 14.40	The Economic Case for a GBS Vaccine (talk) Prof Mark Jit, London School of Hygiene and Tropical Medicine
14.40 – 14.50	Q&A from audience Dr Philipp Lambach (WHO), Prof Joy Lawn, (LSHTM), Prof Mark Jit (LSHTM)
14.50 – 14.55	Chair Closing Comments TBC
14.55 – 15.00	Film - Every Country: Time to Act for Group B Strep

15:00- 15:30: Virtual Coffee Break

PLENARY SESSION 2: Implications of the evidence

Chairs: Joy Lawn/ Philipp Lambach

Time	Topic
15:30 – 15:35	Plenary 2 Implications of the evidence Welcome back with Dr Kim Eva Dickson (UNICEF)
15:35 – 16:05	Keynote: Vaccines & equity: the value case for GBS maternal vaccines Dr Kate O'Brien, Director of the Department of Immunization, Vaccines and Biological (WHO)

16:05 – 16:40	Panel Discussion Pfizer, Dr Martina Baye (Government of Cameroon), Dr Marta Tufe, Head of Policy (GAVI), Dr Kim Eva Dickson (UNICEF), Dr Ajoke Sobanjo – Ter Meulen (Bill & Melinda Gates Foundation)
16:40 – 16:55	Implications for action from launch convenors Dr Marie-Pierre Preziosi (WHO), Vinny Smith (CEO of Meningitis Research Foundation), Prof Beate Kampmann, Director of The Vaccine Centre at the London School of Hygiene and Tropical Medicine
16:55 – 17:00	Film – Every Country: Time to Act
17:00	Close of Day

DAY 2: Thursday 4th November 2021

PARALLEL SESSIONS:

Epidemiology Now + Next

Chairs: Joy Lawn / Ziyaad Dangor

Group B Streptococcal disease remains a leading cause of sepsis and meningitis in young infants. In the ISSAD Epidemiology track, renowned speakers from across the globe showcase the long-term outcome data in GBS survivors from low/middle- and high-income countries. The track includes analysing multicentre, cross-cutting high-quality data estimates of neurodevelopmental impairment and the cost implications of nursing children surviving GBS during infancy. In addition, speakers address the paucity of data on the burden of GBS-associated preterm and stillbirths and propose epidemiological constructs to overcome the data gaps, particularly in Africa, where the burden remains the highest.

Time	Topic
09:00 – 09:05	Opening Carol Baker (TBC), Ziyaad Dangor
09:05 – 09:10	Intro Joy Lawn
09:10 – 09:18	GBS long term outcomes including NDI: Danish and Dutch findings – key results and what surprised us, what next? Merijn Bijlsma
09:18 – 09:26	Low and Middle-Income Countries Cohort findings Proma Paul
09:26 – 09:36	Q&A and Voting Carol Baker, Ziyaad Dangor, Merijn Bijlsma, Proma Paul
09:36 – 09:44	GBS associated perinatal outcomes: GBS and Preterm Anna Seale
09:44 – 09:52	GBS and Stillbirths Quique Bassat
09:52 – 10:00	Maternal Outcomes Erzsébet Horváth-Puhó
10:00 – 10:05	Discussion Ziyaad Dangor, Anna Seale, Erzsébet Horváth-Puhó
10:05 – 10:10	Prematurity modifies the risk of long-term neurodevelopmental impairments after GBS infections Linde Snoek

10:10 – 10:15	Insights on GBS disease in Mozambican infants: two decades of morbidity and mortality surveillance Justina Bramugy
10:15 – 10:25	Voting and Plenary Discussion Joy Lawn, Ziyaad Dangor
10:25 – 10:30	Closing Comments

10:30- 11:00: Coffee break

Laboratory Now + Next

Chairs: Dave Aronoff / Claire Poyart

Despite how common GBS is at causing disease, there is a lot that remains to be discovered about how it colonizes hosts and causes invasive infections. Track 2 at ISSAD brings together experts from around the world to share the latest information related to microbiological, genomics, and molecular mechanisms of GBS pathogenesis. Results from the studies presented in Track 2 will likely inform strategies to better diagnose, prevent and treat GBS infections. Join us!

Time	Topic
09:00 – 09:05	Intro Margaret Ip
09:05 – 09:25	Understanding group B streptococcal colonization Shannon Manning
09:25 – 09:45	Effects of human milk oligosaccharides on GBS pathogenesis Steven Townsend
09:45 – 10:05	Perinatal hormones favor CC17 GBS intestinal translocation in neonates Asmaa Tazi
10:05 – 10:11	Genome-wide screen of Group B Streptococcal factors contributing to vaginal colonization and ascendi Lindsey Burcham
10:11 – 10:17	Neonatal susceptibility to the hypervirulent clone of Group B Streptococcus (CC17) in meningitis development Julie Guignot
10:17 – 10:30	Closing Comments Margaret Ip

10:30- 11:00: Coffee break

Parent Power

Chair: Jane Plumb

Families affected by group B Strep have been a powerful force in advancing the prevention of group B Strep infection in babies, most notably in the USA and the UK. Families sharing how GBS has affected them is vital in demonstrating the need for change. This track will present the experiences of advocacy in the US and the UK, plus looking at advocacy in low and middle income settings and the experience of families of group B Strep. We will explore how advocacy for better prevention of GBS infection is central to change, what that can look like in a range of settings and discuss some of the barriers.

Time	Topic
09:00 – 09:05	Opening Jane Plumb
09:05 – 09:25	USA & especially medical advocacy Carol Baker UK and predominantly parent advocacy Jane Plumb
09:25 – 09:45	Caregiver Experiences of Group B Streptococcus in Uganda Hannah Davies Advocacy in low- and middle-income settings Ms Sam Nye
09:45 – 10:10	Panel Discussion: How can we support the setting up of advocacy groups around the world to improve GBS prevention and treatment? Exploring different aspects of advocacy, with input on what's worked and what hasn't. Carol J Baker, Hannah Davies, Sam Nye, Jane Plumb, Plus Kallie Hess & Debbie Forwood
10:10 – 10:17	Risk of psychiatric disorders in mothers after giving birth to child with invasive GBS disease Jaya Chandna
10:17 – 10:24	Impact of late-onset group B streptococcus infection on families: an observational study Grace Raybould
10:24 – 10:30	Closing Comments Jane Plumb

10:30- 11:00: Coffee break

PLENARY SESSION 3: Bench to Bedside: Time to Act

Beate Kampmann MC

Chairs: Dave Aronoff / Claire Poyart

Chairs: Philipp Lambach / Asma Khalil

Time	Topic
11:00 – 11:30	Role of GBS virulence factors in preterm births The presentation will feature our observations on how GBS uses either the proinflammatory hemolysin or the anti-inflammatory hyaluronidase to induce preterm labour during choriodecidual infections. Lakshmi Rajagopal
11:30 – 12:00	Group B Streptococcus vaccine value proposition: Policy and implementation issues in LMICs: Policy Formulation and Service Delivery Establishing national policies, goals and targets for GBS vaccination is an important first step for its implementation in LMICs. A stakeholder survey showed a reasonably high level of awareness among paediatricians and obstetricians of GBS disease and its prevention, but low levels of awareness among public health specialists, especially in LMICs and specifically in Asia. Most LMICs have national policies for maternal vaccination, mainly for tetanus toxoid containing vaccines and increasingly for influenza. GBS vaccination in the second or third trimester of pregnancy would ideally be delivered during antenatal care visits but will

	<p>require strong collaboration between the national immunization and maternal and neonatal health programmes. Carsten Mantel</p> <p>Uptake of Vaccination and Monitoring of Coverage, Impact and Safety of Vaccination</p> <p>Many of the elements that influence acceptance and uptake are contextual and are driven by local sociocultural practices, religious beliefs, and the extent of access to and quality of health care. While systems for monitoring vaccination coverage through the collection of administrative data and through household surveys exist in almost all countries, these systems mainly monitor coverage of infant immunization. Close collaboration between national immunization and maternal and child health programmes will need to be established to collect high-quality data relevant to GBS vaccination. Few LMICs have well-functioning systems for monitoring maternal immunization safety. Case definitions and guidelines for monitoring adverse events are available to LMICs to establish or strengthen their maternal immunization safety monitoring systems in preparation for GBS vaccination. Thomas Cherian</p>
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12.30-13.30: Lunch and Posters

PARALLEL SESSIONS:

Immunity and Seroepidemiology Now + Next

Chairs: Kirsty Le Doare / Tatiana Pinto

Current state-of-art and what is next in Immunity, Seroepidemiology and Genomics applied to GBS surveillance and vaccine development.

Senior and junior researchers from all over the world come together in parallel session 3 to discuss the present and future of immunity, seroepidemiology and genomics applied to GBS surveillance and vaccine development. The first panel will deal with host immunity at the vaginal tract with Dr. Kelly Doran, and the current state-of-art in seroepidemiology and genomics at the human and multi-host perspective with Dr. Prescilla Nagao, Prof. Ruth Zadoks and Prof. Stephen Bentley. The second panel will bring what is next in the field presented by emerging early-career leaders Dr. Meryn Bijnsma, Dr. Natalia Costa and Dr. Ding Yijun.

Time	Topic
13:30 – 13:35	Intro Kirsty Le Doare / Tatitana Pinto
13:35 – 13:55	GBS host immunity at the vaginal tract Kelly Doran
13:55 – 14:20	Current state-of-art in sero-epidemiology and genomics of animal and foodborne GBS and its importance to humans Tatitana Pinto, Prescilla Nagao, Ruth Zadoks, Stephen Bentley,
14:20 – 14:45	What is next in GBS seroepidemiology and immunity research presented by emerging leaders in the field

	Kirsty Le Doare, Merijn Bijlsma, Natalia Costa, Yijun Ding
14:45 – 14:50	Epidemiology of GBS maternal and infant disease in Kampala, Uganda Hannah Davies
14:50 – 14:55	The US Centres for Disease Control and Prevention-led study to establish immunologic endpoints associated with protection against infant invasive group B streptococcal disease: methodology and updates Julia Rhodes
14:55 – 15:00	Interlaboratory comparison of an antibody-mediated opsonophagocytic killing assay measuring function Stephanie Leung

15.00-15.30: Tea break

From Development to Implementation

Chairs: Philipp Lambach / Asma Khalil

How to ensure optimal access to GBS vaccine in low resource settings:

This session will describe the current implementation of maternal immunization in low resource settings and discuss how increased integration and addressing M&E challenges of maternal vaccines can help to pave the way towards increased access to GBS vaccine for women in low resource settings. We will discuss the potential effect of existing challenges on the future introduction of the GBS vaccine and aim to identify possible solutions/pathways that could help counter challenges or build on opportunities for an effective introduction. You as the audience will be able to point a panel of experts on which challenges to maternal immunization need to be addressed as a priority, and how the value of vaccine could/should leverage future vaccine introduction.

Time	Topic
13:30 – 13:35	Intro Elizabeth Mason, Asma Khalil
13:35 – 13:45	Scene-Setting Talk Tracey Goodman
13:45 – 14:10	Panel Questions Philipp Lambach, Elizabeth Mason, Ajoke Sobanjo-Ter Meulen, Narendra Arora, Martina Lukong Baye, Stefano Malvolti, Dafrossa Lyimo,
14:10 – 14:30	Q&A & Voting Philipp Lambach, Elizabeth Mason, Ajoke Sobanjo-Ter Meulen, Narendra Arora, Martina Lukong Baye, Stefano Malvolti, Dafrossa Lyimo
14:30 – 14:35	Intro to speakers Elizabeth Mason
14:35 – 14:45	Preparing for Group B Streptococcus vaccines, health care provider perspectives from three countries Sarah Geoghegan
14:45 – 14:50	The clinical and cost-effectiveness of testing for Group B Streptococcus in pregnancy: A Cluster Ran Kate Walker
14:50 – 15:00	Closing Comments Elizabeth Mason

15.00-15.30: Tea break

Economics Now + Next

Chairs: Mark Jit

Health economic evaluations are used in order to understand how scarce healthcare resources can be deployed in the most efficient and equitable manner. In this track, we will explore the use of health economic evaluations to understand which interventions against Group B Streptococcus (GBS) offer the best value for money. We will look at the cost of GBS disease to health care systems and societies, and the health and economic benefits of interventions to reduce the burden of this disease.

Time	Topic
13:30 – 13:40	Intro Mark Jit
13:40 – 13:55	Assessing the Full value of vaccines - who for and what next? Raymond Hutubessy
13:55 – 14:05	Family and society cost of GBS: what do we know, what do we need to know? The long-term economic impact of invasive group B Streptococcus (iGBS) disease in LMICs Farah Seedat
14:05 – 14:10	Quantifying the acute costs of neonatal sepsis and meningitis in Mozambique and South Africa Shannon Leahy
14:10 – 14:20	Closing Comments Caroline Trotter

15.00-15.30: Tea break

PLENARY SESSION 4: Parents, plus Next Generation Research

Kirsty Le Doare MC

Chairs: Jane Plumb

Chairs: Katy Patras / Angela Koech

Chairs: Clare Cutland

Time	Topic
15:30 – 16:00	Parent Panel Jane Plumb, Charlotte Cleary (Parent Voice), Kallie Hess (Parent Voice), Debbie Forwood (Parent Voice)
16:00 – 16:30	Current GBS clinical characteristics and emerging therapies Angela Koech Clinical GBS characteristics and antibiotic resistance Laura Bonofiglio Preventive effect of probiotic lactobacilli on Streptococcus agalactiae vaginal colonization: Maternal Group B Streptococcus (GBS) colonization is a risk factor for infectious disease in newborns. One promising strategy is the modulation of vaginal defence to increase the host's ability to combat

	infection. Thus, the effect of probiotic human vaginal lactobacilli on GBS through in vitro and in vivo experiments was evaluated. Priscilla Romina De Gregorio Tara Randis
16:30 – 17:15	Carol Baker Honorary Lecture Shabir Madhi Carol Baker

DAY 3: Friday 5th November 2021

Networking: 9.00-10.30

Meet the experts, Young ISSAD Mixer

10:30- 11:00: Coffee break

PARALLEL SESSIONS:

Vaccines Now + Next

Chairs: Paul Heath / Clare Cutland

There is no question that effective & safe vaccines will offer the best solution for preventing GBS. We are at a really exciting point in vaccine development with several GBS vaccines now in trials involving pregnant women. What are these vaccines? How will they be licensed? What have we learned from other vaccines about how best to implement and then assess them? What impact will they have? These are among the important questions the experts in session 4 will address!

Time	Topic
11:00 – 11:05	Intro Paul Heath, Clare Cutland
11:05 – 11:20	Vaccine Science Overview Paul Heath
11:20 – 11:35	What have we learned about vaccine confidence in pregnant women? Pauline Paterson
11:35 – 11:50	What is the likely impact of an effective GBS vaccine on AMR? Ajoke Sobanjo Ter Meulen
11:50 – 11:57	Development of protein-only GBS vaccine based on N-terminal domains of the GBS Alpha-protein family Per Fischer
11:57 – 12:04	Acceptance of new maternal vaccines by women in The Gambia - a qualitative exploration Penda Johm
12:04 – 12:25	Panel Session Paul Heath, Clare Cutland, Morena Makhoana, Shabir Madhi, Pauline Paterson
12:25 – 12:30	Closing Comments Paul Heath, Clare Cutland

12.30-13.30: Lunch

'Hot Topics' Real-World Implications

Chairs: Scientific Committee

This track will present the latest research in group B streptococcus colonization, maternal and infant factors impacting GBS neonatal outcomes, and long-term implications of GBS disease from early-career investigators.

Topics include:

- 1. Impacts of geographic regions, global pandemic, and maternal metabolism on GBS colonization**
- 2. Influence of biological factors on infant outcomes following GBS disease**
- 3. Assessment of behavioural and developmental outcomes following GBS disease**

Time	Topic
11:00 – 11:05	Intro Beate Kampmann
11:05 – 11:15	Prevalence of Group B Streptococcus colonization among pregnant women in South Asia and Africa Gaurav Kwatra
11:15 – 11:20	Group B Streptococcus and Staphylococcus colonization during pregnancy pre and post-COVID-19 Natália Costa
11:20 – 11:25	Prevalence and Drug Susceptibility Pattern of Group B Streptococci (GBS) among Pregnant Women Hylemariam Mihiretie
11:25 – 11:30	Detection of Group B Streptococcus among pregnant women in Rio de Janeiro/Brazil by MALDI-TOF MS Debora da Costa Morato Nery
11:30 – 11:40	Discussion Beate Kampmann, Gaurav Kwatra, Natália Costa, Hylemariam Mihiretie, Debora da Costa Morato Nery
11:40 – 11:50	Behavioural outcomes for survivors of iGBS in infancy: school age findings from five LMIC cohorts Jaya Chandna
11:50 – 11:55	Sex differences in long-term outcomes after Group B streptococcal infections during infancy Erzsebet Horvath-Puho
11:55 – 12:00	The Association between Early-Onset Sepsis and Neonatal Encephalopathy Kathleen Car
12:00 – 12:05	Mortality and neurodevelopmental impairments after invasive GBS disease in early infancy Merel van Kassel
12:05 – 12:10	Neuro-developmental Outcomes of children after Group B Streptococcus disease in infancy Hima B John
12:10 – 12:15	Developmental profile for survivors of Group B Streptococcus invasive disease in infancy in South Africa Lois Harden
12:15 – 12:25	Discussion and Closing Comments Beate Kampmann, Jaya Chandna, Erzsebet Horvath-Puho, Kathleen Car, Merel van Kassel, Hima B John, Lois Harden

12.30-13.30: Lunch

'Hot Topics' From the Labs

Chairs: Katy Patras

This track will present the latest research in group B streptococcus pathogenesis, epidemiology, and therapeutic interventions from early-career investigators.

Topics include:

- 1. Characterization of GBS regulatory systems and novel virulence mechanisms in various host environments such as the brain, gut, vagina, and skin**

2. Molecular attributes of GBS clinical maternal and neonatal isolates

3. Impacts of antibiotic prophylaxis and probiotic treatments on GBS and the host microbiota

Time	Topic
11:00 – 11:05	Intro Katy Patras
11:05 – 11:15	TBD - GBS TCS, microbe-microbe interactions, colonization, and biofilms. Laura Cook
11:15 – 11:20	Production and composition of group B streptococcal membrane vesicles varies across diverse lineages Cole R. McCutcheon
11:20 – 11:25	A type VII secretion system in Group B Streptococcus mediates cytotoxicity and virulence Brady Spencer
11:25 – 11:30	The CovR Regulatory Network Influences GBS Persistence in the Diabetic Wound Environment Rebecca Keogh
11:30 – 11:35	Adding fuel to the fire: how gestational diabetes impacts group B Streptococcus vaginal colonization Vicki Mercado
11:35 – 11:40	Identifying genomic signatures among persistently colonizing GBS isolates after antibiotic treatment Macy Pell
11:40 – 11:45	Genetic associations in maternal to infant Group B Streptococcus transmission and infant colonisation Kay To
11:45 – 11:50	Molecular epidemiology of Group B Streptococcus in Pregnant Women and their neonates from a Sri Lanka Dulmini Nanayakkara Sapugahawatte
11:50 – 11:53	What is happening between Group B Strep and Lactobacillus? Cilicia Nascimento
11:53 – 11:56	Group B Streptococcus β -hemolysin/cytolysin Modulates Intestinal Tight Junction Gene Expression Kristen Dominguez
11:56 – 11:59	Simultaneous carriage of multiple serotypes of Streptococcus Group B: a systematic review Camille Barro
11:59 – 12:02	The effect of intrapartum antibiotic prophylaxis on the neonatal gut microbiome: a systematic review Eleanor Reid & Alexandra Sharp
12:02 – 12:05	Optimisation of methods for a human infection model for Group B Streptococcus (the TIMING study) Olwenn Daniel
12:05 – 12:15	Closing Comments Katy Patras

12.30-13.30: Lunch

PLENARY SESSION 5: What next by 2023?

Chairs: Joy Lawn/Ziyaad Dangor

Chairs: Joy Lawn/Beate Kampmann

Chairs: Joy Lawn/Beate Kampmann

Time	Topic
13:30 – 14:00	Epidemiology Now + Next Joy Lawn, Ziyaad Dangor, Prama Paul, Hannah Blencowe
14:00 – 14:30	Conclusions with all Track Leads Joy Lawn, Beate Kampmann, Claire Poyart, Kirsty Le Doare, Paul Heath, Asma Khalil, Jane Plumb, Mark Jit, Angela Koech
14:30 – 15:00	Closing Comments and Passing the baton to ISSAD 2023 Joy Lawn, Beate Kampmann

15.00-15.30: Tea break

Add-on session (Gates Foundation): Data –a gamechanger for maternal immunization uptake and coverage: 15:30 - 16:30

Session Chairs: Dr. Ajoke Sobanjo-ter Meulen

Global Head, Maternal Immunization, Bill & Melinda Gates Foundation, USA

Prof. Asma Khalil

Professor of Obstetrics and Maternal-Fetal Medicine at St George's University Hospital
University of London, UK

Session Introduction (5 min): What COVID-19 has taught us about the need to invest in data on vaccines for pregnant women

Dr. Ajoke Sobanjo-ter Meulen

Global Head, Maternal Immunization, Bill & Melinda Gates Foundation

Presentations (10 min each, 40 min total)

Presentation 1: New data on post-approval safety and effectiveness studies of the COVID-19 vaccine in pregnant women

Professor Flor Munoz-Rivas

Associate Professor, Baylor College of Medicine

Presentation 2: The power of obstetric surveillance systems – the UK's experience tracking COVID-19 during pregnancy and the impacts of variants and vaccination

Professor Marian Knight

Professor of Maternal and Child Population Health, University of Oxford, UK

Presentation 3: Data systems in LMICs – learning from South Africa's pregnancy registry

Professor Lee Fairlie

Director of Maternal and Child Health at Wits RHI, South Africa

Presentation 4: Using data to reduce vaccine hesitancy and increase coverage – the role of the ob/gyn to support maternal immunization

Professor Alisa Kachikis

Assistant Professor, Obstetrics and Gynecology, University of Washington, USA

Discussion/Respond to any audience questions (14 min)

Prof. Asma Khalil

Professor of Obstetrics and Maternal-Fetal Medicine, St George's University Hospital
University of London, UK

Dr. Ajoke Sobanjo-ter Meulen

Global Head, Maternal Immunization, Bill & Melinda Gates Foundation, USA

Closing remarks and thank you (1 minute)

Dr. Ajoke Sobanjo-ter Meulen

Global Head, Maternal Immunization, Bill & Melinda Gates Foundation, USA

Networking: 15.30-17.00

Meet the experts - Lounge

Open for your opportunities