Measurable Learning Objectives for the 1st Annual Virtual Symposium on Prenatal-onset Group B Strep Disease

At the conclusion of this presentation, participants should be able to…

**Introduction to POGBSD**

GBS as a Cause of Preterm Labor & (P)PROM

1. Explain how GBS ascends into the uterus

2. Discuss the possible results of chorioamnionitis pathogenesis

3. Discuss that the uterus is not a sterile environment

Defining Prenatal-onset Group B Strep Disease (POGBSD)

1. Recall the three distinct time periods in which GBS can infect babies

2. Discuss whether or not the term should include infections in babies born live, but likely infected prior to the mothers’ water breaking or labor starting

Prenatal-onset GBS (POGBS) Sepsis is a Distinct Cause of Stillbirth and Perinatal Mortality

1. Identify sites where GBS can commonly be isolated

2. Explain how GBS can cause intrauterine fetal death with intact membranes

Compassion Heals

1. Provide best practice care to bereaved families by providing comfort and hope.

2. Empower medical staff to feel confident, compassionate, and knowledgeable when caring with families that experience a perinatal death.

**Pathways of Infection**

*Streptococcus agalactiae* ST283 causing invasive adult human sepsis is widespread in SE Asia, and is associated with Aquaculture

1. Discuss that GBS can be foodborne

2. Explain that a specific strain, ST283, is causing widespread adult human sepsis in SE Asia

Genomic insights into a foodborne outbreak of Group B Streptococcus

1. Understand that GBS can be a foodborne disease

2. Understand current known characteristics and risk factors of foodborne GBS (ST283, associated with raw fish, associated with Southeast Asia)

Serial Clustering of Late-Onset Group B Streptococcal Infections in the Neonatal Unit: A Genomic Re-evaluation of Causality

1. Introduce learners to the use of whole genome sequencing to investigate community- and healthcare-associated infections.

2. Familiarise learners with GBS serotypes and common antimicrobial resistance patterns in neonatal GBS infections.

Ultrasound Illustration of the Functional Connectedness of the Lower and Upper Reproductive Tracts

1. Understand the pathobiology of intrauterine infections before, during, and after pregnancy

2. Describe suggested clinically important mechanisms by which cervical vaginal microbes or STI's/HIV may be transported to upper genital tract sites of potential infection

Recognition of Pathogenic Pathways to Intrauterine Infection: Keys to Identifying Testable Primary Prevention Strategies to Prevent Pregnancy-associated Group B Strep (GBS) Infections

1. Understand that the presence of abnormal “vaginal microbiota” or “vaginal immunity” may alter each of the following pathways singly or in combination

2. Describe multiple pathways to GBS intrauterine infection

Puerperal infection associated with GBS carriage during pregnancy: A logic model approach to prevention

1. Recognize the signs and symptoms of GBS puerperal infections

2. Discuss the ramifications for appropriate management of puerperal infections in regards to potentially preventing neonatal deaths

**Conventional Prevention Strategies**

What Can We Currently Do to Help Prevent Prenatal-onset Group B Strep Disease?

1. Identify the signs and symptoms of preterm labor

2. Identify signs and symptoms of infection in unborn babies

Monitoring fetal movement in the third trimester

1. Understand how to perform (or educate patients) two different methods of monitoring fetal movement

2. Know what to do (or educate patients) if they notice a decrease in fetal movement

Revisiting group B strep (GBS) symptomatic vaginitis (GBSSV)

1. Recognize the alternative nomenclature for GBS vaginitis

2. Recognize that heavy GBS colonization is associated with a significant risk of delivering a preterm infant with a low birth weight

Universal Utilization of Nurse Family Practioner (NFP)/Home Visitation (HV) Pregnancy Services to Optimize Preconception through Early Childhood and TRANSGENERATIONAL Family Outcomes

1. Discuss the benefits of NFP and HV services

2. Discuss possible benefits in regards to group B strep disease prevention in babies

**Alternative Treatments and Research**

The effectiveness of an oral probiotic to prevent prenatal Group B Strep colonization

1. Describe the mechanism of action of probiotics against pathogens such as GBS.

2. Describe potential benefits of probiotics as a GBS prevention strategy.

A Logic Model-Inspired Review/Analysis of Alternative/Complimentary Approaches to Prevent Group B Streptoccocal (GBS) Colonization/Infection in Pregnancy or at Birth

1. Identify the only proven strategy for early-onset GBS disease prevention

2. Identify alternative treatments that are reported to have caused severe adverse events

**Potential Prevention Strategies**

Delayed Acquisition of Rectovaginal GBS Colonization: A Hidden Benefit of GBS Conjugate Vaccines?

1. Relate a history of GBS conjugate vaccine development.

2. Discuss results from a clinical study to determine if an immunogenic GBS vaccine can reduce the time to first vaginal colonization by GBS.

“Reduced Discomfort” Vaccination: Pain Prevention Strategies to Encourage Readiness for a Maternal Vaccine against Group B Streptococcus

1. Identify medical means to reduce or eliminate vaccination injection fear and/ or discomfort

2. Understand the consequences of poor pain/anxiety/stress management for patients

Assessing the potential of GBS maternal immunisation in preventing maternal infection and foetal harm

1. Discuss that the incidence of maternal GBS sepsis in England was identified as 1 in 3500

2.Recall that foetal outcomes in these women were significantly poorer than background rates

Logic model-based failure analysis of intrapartum antibiotic prophylaxis (IAP) to prevent all cases of perinatal group B strep disease

1. Consider new approaches to prevent GBS disease in babies

2. Recognize that some currently termed “early-onset” cases may start before early-onset prevention strategies could be preventative

**Determining Cause/Assessing the Burden**

A prospective, observational study on causes of stillbirths in African women from South Africa.

1. Understand that informed decision making on tools to prevent stillbirths requires systematic investigation of the cases.

2. Describe foetal invasive bacterial disease as a leading cause of stillbirth in low-middle income settings, including due to GBS, E. coli and Enterococcus sp.

What Are the Best Ways to Establish Group B Strep (GBS) as a Likely Cause of Perinatal Morbidity?

1. Identify ways to establish a likely cause of perinatal morbidity

2. Discuss the psychological and social aspects of perinatal bereavement

Post-Mortem Authorisation – Parent to Parent

1. Discuss what parents want to know about the post mortem process and to involve them in provision of accessible materials which address their concerns

2. Discuss the families’ concerns about their baby’s body being treated with dignity and respect

Development of Putative Working Definitions of Prenatal-onset Group B Strep (POGBS) Invasive Disease Using “Internet Commons” GBS Parent and Provider Sources

1. Utilize the proposed basis for classifying cases in which GBS infection occurs prior to term labor and membrane rupture

2. Understand why GBS selective culture-based antibiotic chemoprophylaxis (IAP) may fail

**Respect and Autonomy**

Should Written Consent Be Required before Fetal Membrane Stripping Especially among GBS Carriers?

1. Identify reasons to not strip membranes

2. Understand why informed consent should always be obtained before invasive procedures, especially those deemed unnecessary

Advocating for the health of your baby? If not you, who?

1. List 3 examples of mothers who successfully or unsuccessfully used their intuition when advocating for their baby.

2. Speak or write down 3 examples of what to say to a medical provider to show one’s concern for the health of a baby and to seek a care strategy that may not be supported by the provider.

3. What 2-3 options do mothers have to seek/gain care for their baby when they are turned down or not heard by their medical provider.

Provider Support in Subsequent Pregnancies after a GBS+ Birth

1. Identify potential treatment options for women pregnant again after a baby born with GBS disease

2. Identify how to support maternal mental health during pregnancy after a traumatic birth or death

**Supporting Loss Families**

Making or Breaking a Marriage: Couple Communication at the time of loss and over time

1. Compare and contrast the different styles of coping (intuitive/affective vs. Logical/introspective) and describe how they might negatively and positively impact parental relationships

2. Describe three things staff, counselors or others could say to couples in the early hours and weeks that might help parents make better intentional communication choices

Perinatal grief and the social world of objects: (re)ordering the past, the present and the future

1. Describe the role objects play in perinatal bereavement

2. Restate how new objects are strongly related to meaning focused on the future

**Suggested Research**

Internet Crowdsourced Parent-Suggested Research Agenda for the Prevention of Prenatal-onset Group B Strep Disease (POGBSD)

1. Recognize that parents of GBS-infected babies are informed regarding practicable research needs to prevent GBS disease in babies.

2. Recognize that parents of GBS-infected babies may be a rich source of ideas for identifying relevant research goals to prevent GBS disease.

Primary and Secondary Prevention of Fetal Death Caused by Maternal Infection

1. Identify death mechanisms of processes

2. Identify iatrogenic modes of transmission of infection as proposed pathways to fetal death

**GBS Disease Prevention for All Babies!**

Parallel Paths Needed to Maximize Group B Strep (GBS) Disease Prevention for All Babies: A GBS Parent Organization Perspective

1. Discuss several independent paths needed to maximize GBS disease prevention for babies

2. Explain the World Health Organization’s work to universally categorize infant deaths.