Title: Infectious Agents Associated with Stillbirths and Early Neonatal (0-2 days) Deaths in Sub-Saharan Africa and South Asia: Findings from Child Health and Mortality Prevention Surveillance (CHAMPS), 2016-2019

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Background
- In low and middle-income countries, infection is a major cause of stillbirths and neonatal deaths
- Significantly over time, the causative pathogens have changed but epidemiologic evidence is scanty

Objective
To characterize the pathogens contributing to stillbirths and neonatal deaths occurring within the first two days of life in sub-Saharan Africa and South Asia

Methods
- CHAMPS is a multi-country programme and the sites are –
  - The objective of CHAMPS is to investigate the causes of stillbirths and children under 5 years old deaths using laboratory and clinical data including verbal autopsy
  - Expert panels review the data and assign underlying, immediate and morbid causes of death (“causal chain”)
  - CHAMPS uses below methods to detect pathogens –
    1. Microbial Culture
    2. Molecular Assay using TaqMan Array Card (TAC)

Results
We examined 440 stillbirths and 433 neonatal deaths occurring in the first two days of life between December 2016 and December 2019 from all CHAMPS sites except India.

Conclusion
- Half of the pathogens examined (N=64) among the stillbirth were gram-positive bacteria (50%, 32/64), 36% (23/64) were gram-negative, and 14% (9/64) were viruses (Fig 2)
- We identified 140 pathogens in the causal chain for neonates; 68% (84/140) were gram-negative bacteria, 34% (47/140) gram-positive, and 4% (6/140) viruses (Fig 2)

Figure 1: Infection in the causal chain of death

Figure 2: Type of pathogen identified

Table 3: Etiologic agents identified in the causal chain in stillbirth, 2016-2019

Table 4: Etiologic agents identified in the causal chain in early neonatal deaths (0-2 days, 2016-2019)