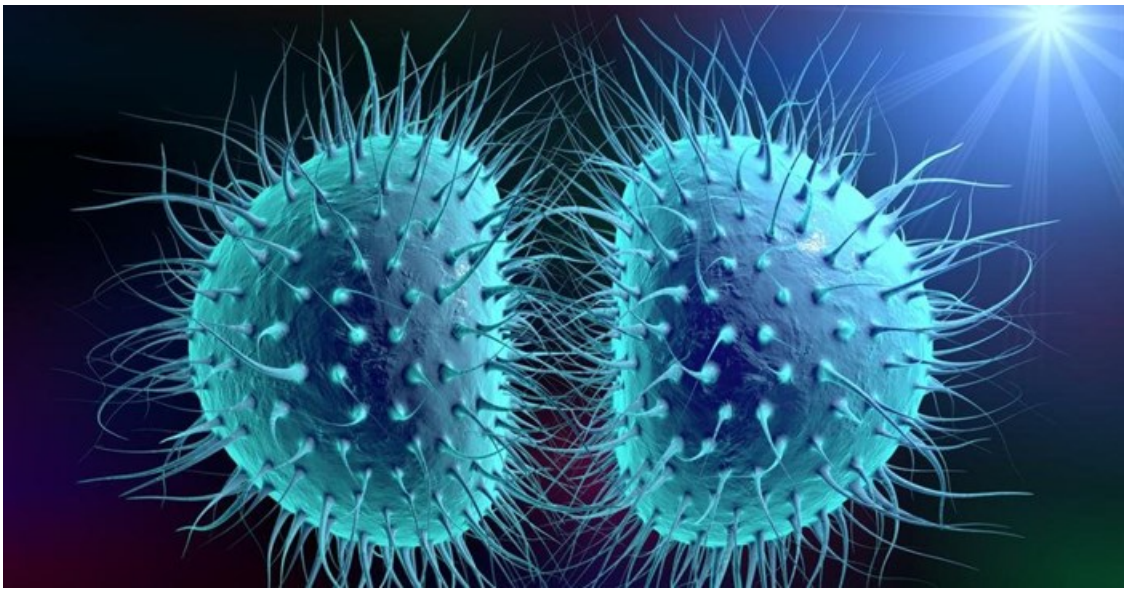
GBS rapid test improves maternal health in the developing world

Maternal health is a huge issue in developing countries where 99% of all maternal and neonatal deaths occur. The neonatal mortality rate is also much higher in Africa, at four times the rate than that of developed regions. Women and babies die as a result of complications during, and following, pregnancy and childbirth, including infection.



Meningitis virus

Around 25% of pregnant women are colonised with the bacterium Group B Streptococcus (GBS). The majority of pregnant women who carry this bacterium will never be aware they have it. However, it can be fatal in instances when it is passed to babies during childbirth.

Although this is extremely rare in the developed world, in developing countries where there are many risk factors including inadequate services, distance and poverty, the prevalence of serious GBS infection to new-borns is much higher.

GBS can be difficult to detect as the mother who carries the bacteria often shows no symptoms. In many developed countries, testing for GBS in pregnancy is carried out two to four weeks before delivery, to enable GBS positive women to be given antibiotics to prevent transmission of the infection to the baby during childbirth. The turnaround for current tests is 48 hours, which means testing during labour is not feasible.

In the developing world, testing that requires a laboratory can be prohibitively expensive and very difficult to access in

practical terms, particularly in rural settings. In reality, conventional testing for GBS is not available in most developing countries, meaning proven strategies to prevent GBS transmission cannot be used.

A grant from the McClay Foundation will enable Queen's University Belfast researchers to work with clinicians to offer fast diagnostic testing to prevent meningitis and sepsis in maternity wards for the first time in Malawi.

The HiberGene test uses Lamp (loop-mediated isothermal AMPlification) technology, which can identify GBS with very high accuracy within one hour, so it can be used during labour – a strategy called intrapartum testing. Intrapartum is considered the most accurate time to test as it prevents unnecessary antibiotic use or missed GBS infections. The test is also simple enough to use as a "near patient" test, in a small lab or room next to a ward, without the need for extensive laboratory training.

These tests could have a huge positive impact on the health of mothers and their babies. GBS-positive women can be identified and given antibiotics to prevent transmission of the bacterium during delivery that could lead to serious infections including meningitis, sepsis and death."