How a Melbourne pharmacist is helping to save lives in developing countries

Australia continues to have one of the lowest maternal death rates in the world.

A report by the Australian Institute of Health and Welfare released in 2008 found that between the years of 2003 and 2005 only 65 maternal deaths occurred in Australia that were either directly or indirectly related to pregnancy.

When we look at the statistics for maternal death in developing countries, the risk of death is considerably higher. According to the Saving Lives at Birth program, a woman in sub-Saharan Africa is 136 times more likely to die during childbirth.

Saving Lives at Birth: A Grand Challenge for Development looks for groundbreaking and sustainable projects from around the world with the potential to reduce maternal death in developing countries.


Finalists were announced in July and Melbourne researcher Dr Michelle McIntosh from the Monash Institute of Pharmaceutical Sciences was one of the 77 finalists recognised for their revolutionary work. Oxytocin is already used to prevent postpartum haemorrhage but in developing countries there are limitations to its use. Oxytocin requires refrigeration and is currently only delivered by injection.

Michelle’s research proposes an alternative delivery system, where the drug is inhaled as a dry powder and absorbed into the blood stream through the lungs.

“This removes the need for refrigeration, syringes and trained staff” says Michelle.

“We hope that this new delivery method will dramatically reduce the number of preventable deaths amongst mothers of newborn children in developing countries. One of our biggest barriers in the future will be educating midwives and birth attendants on how to correctly administer an inhaled medicine”.

As a finalist Michelle was invited to travel to Washington to attend the Saving Lives at Birth conference, present on her research and compete for further funding. She set up an information booth at the conference which was part of a two day evaluation process. All finalists had a chance to network with other attendees and talk to the public about their research.

Each finalist was judged on a series of questions in a gruelling 12 minute interview during the event.

Michelle’s project won the Peer’s Choice Award and one of 19 Seed Grants worth up to $250 thousand.

“The peer award was very exciting because it was a stamp of recognition, by people working in these countries, that our research idea had potential for real impact.”

The USA’s Secretary of State Hillary Clinton presented the award winners at the conference and Michelle had the opportunity to talk to her in person about the work being done in Australia.

“One of the terrific spinoffs from this unusual judging process was the chance to be introduced to a completely new group of research scientists, many of whom have access to medical clinics in developing countries. Establishing these contacts and networks is critical for this type of research because good science can fail because of lack of understanding of the end user” said Michelle.

Back in Australia Michelle and her team are in the preclinical stage with the powder, having recently started animal tests. The results look promising, and they are aiming for a prototype device and formulation within 12 months.

Top: Michelle McIntosh with USA Secretary of State Hilary Clinton
Above: Michelle McIntosh speaking at the Saving Lives at Birth conference