

Pioneering skin sores research to improve health of children globally

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A Northern Territory-based research project investigating alternative and more practical treatments for skin sores (impetigo) is set to benefit the millions of children worldwide who suffer from this infection.

The Menzies School of Health Research (Menzies) paper, *Short-course oral co-trimoxazole versus intramuscular benzathine benzylpenicillin for impetigo in a highly endemic region*, outlines the efficacy, feasibility and benefits of a new, non-injection treatment and has recently been published in the prestigious medical journal, *The Lancet*.

Worldwide, it has been estimated that 110 million children currently have skin sores (impetigo). In Australia, 8 out of every 10 children living in remote Aboriginal communities will have skin sores at least once before their first birthday while around 50 per cent of the pre-school and school aged children in these communities will have skin sores right now. The sores are due to an infection with a bacteria called group A *Streptococcus*, which has been linked to chronic kidney and rheumatic heart disease, and which are already found at extremely high rates amongst Aboriginal and Torres Strait Islander Australians.

Over a three-year period, 508 Indigenous children with skin sores (aged three months-13 years), from communities across northern and central Australia, were randomly assigned to receive either the co-trimoxazole oral treatment or the traditional benzathine benzylpenicillin injection.

Lead author of the paper and Menzies PhD scholar, Dr Asha Bowen said the National Health and Medical Research Council (NHMRC) funded study was one of the largest clinical trials of skin-sore treatment ever conducted.

"Until recently the recommended method of treating skin sores in the NT had been by painful intramuscular injection," Dr Bowen said.

"Previous Menzies research showed that very few children who needed treatment were actually receiving it; possibly because of the associated pain of the injection."

"In our study, five children ran away when they found out they were randomised into the injection arm of the study and 30 per cent of children had pain at the injection site 48 hours afterwards."

The new research has shown that simple, short duration oral treatments, trialled either twice a day over three days or once a day over five days, worked just as well as the injection in resolving the skin sore infection within 7 days.

"This is great news for children desperately requiring treatment of their sores as the regimen is simple and pain-free," Dr Bowen said.

"We now know that the oral treatment works just as well as the injection but also that this is a palatable, pain-free, practical and easily administered alternative."

Menzies Director, Professor Alan Cass said the study highlighted the world-class quality of research being undertaken by Menzies and its key partners.

"The publication of this important paper in *The Lancet* demonstrates the reach and pedigree of research out of the Northern Territory," Prof Cass said.

"This is a perfect example of how Menzies researchers are working collaboratively to develop solutions that have the potential to greatly improve the health of Indigenous Australians and millions of others around the world."

"From a local perspective, this work has already been incorporated into treatment guidelines, both as a short course treatment in the Central Australian Rural Practitioners Association Inc (CARPA) Guidelines and the national Therapeutic Guidelines.

"Translating this research will be hugely important as part of an ongoing push to de-normalise skin sores in Indigenous populations," Prof Cass said.

Chief Investigator of the trial and current Director of Telethon Kids Institute, Professor Jonathan Carapetis, said the paper highlighted a critical body of work in continually evolving and improving treatments for infectious diseases.

A former Director of Menzies, Prof Carapetis said: "Understanding which factors are influencing poor rates of treatment uptake, and being able to develop alternative and effective treatments, will provide us the greatest chance of improving Indigenous health outcomes from an early age."

"This is particularly important in resource poor settings where factors such as overcrowding and poor hygiene are real issues and the burden of severe disease is much greater."

This work has been supported through a National Health and Medical Research Council (NHMRC) grant. NHMRC is Australia's peak body for supporting health and medical research.

The Lancet paper can be viewed here: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)60841-2/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)60841-2/abstract)

Authors for the paper, *Short-course oral co-trimoxazole versus intramuscular benzathine benzylpenicillin for impetigo in a highly endemic region: an open-label, randomised, controlled, non-inferiority trial*, are (Menzies) Dr Asha Bowen, Dr Steven Tong, Professor Ross Andrews, Irene O'Meara, Mark Chatfield, Professor Bart Currie, (Telethon) Professor Jonathan Carapetis, and (James Cook University) Associate Professor, Malcolm McDonald.

Media note:

Dr Asha Bowen is available for media interviews. Dr Bowen is a PhD scholar at the Menzies School of Health Research and previously a paediatric infectious diseases specialist at Royal Darwin Hospital.

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Menzies Background

Menzies School of Health Research is Australia's only Medical Research Institute dedicated to improving Indigenous health and wellbeing. We have a 28-year history of scientific discovery and public health achievement. Menzies works at the frontline, partnering with over 60 Indigenous communities across Northern and Central Australia. We collaborate to create resources, grow local skills and find enduring solutions to problems that matter.