



## Antibiotic Resistance in the Indigenous Australian Population: Combating the Problem through Trans-disciplinary Research

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### Abstract

There are well-documented health inequalities between Indigenous and non-Indigenous Australians, with the aboriginal population suffering significantly higher incidence of disease and morbidity, as well as lower life expectancy. Similar issues challenge Indigenous communities in other parts of the world. Unsurprisingly, the Indigenous population also experiences higher rates of bacterial infections than the wider community. The world's highest recorded rates of chronic suppurative lung disease including bronchiectasis unrelated to cystic fibrosis have been reported in Indigenous Australian children, and the first reports of community-associated methicillin resistant *Staphylococcus aureus* were observed in Aboriginal communities in remote Western Australia in the early 1990s. Factors within the Indigenous population that contribute to these alarming statistics include domestic crowding, poor hygiene, poor diet and inappropriate antibiotic use. Strong political leadership is required to address this unacceptable situation. Here medical research can play a key role in formulating evidence driven policy.

### The Australian Society for Medical Research (ASMR)

ASMR is the peak professional body representing Australia's health and medical research (HMR) sector. In addition to more than 1700 direct members [1], the ASMR represents the sector through 57 affiliated professional societies and medical colleges representing an additional 18,000 people actively involved in HMR [2-4]. Our corporate and disease related foundation memberships bring a further 100,000 people into association with ASMR [5,6]. Our mission is to foster excellence in Australian HMR and to promote community understanding and support of the sector through public [7], political and scientific advocacy.

ASMR has a demonstrable knowledge and understanding of the HMR community as a result of it being closely connected to its members and actively involved in research concerning the sector's productivity [8-11], workforce conditions and planning [12,13] and plans for alleviating current and future health challenges facing our nation [14]. One of the most unacceptable health issues in Australia is the disproportionate level of poor health and disease amongst Australian aboriginal and Torres Strait Islander people.

### Indigenous engagement

ASMR strongly supports new initiatives in health and medical research that have the capacity to improve the health of Indigenous Australians. During the 50th anniversary year of ASMR in 2011, our Society chose the theme 'Indigenous Health: Action on Prevention' to highlight the importance of research for improving the long-term health outcomes of Indigenous Australians [15]. One of the key messages to come from this meeting was the importance of involving Indigenous Australians in all aspects of research, from initial project design through to developing policy stemming from the findings from the research. The successful results from the Apunipima 'baby baskets' program was a shining example highlighted at the conference [16].

Three baskets were provided to Aboriginal mothers in remote Cape York communities: one basket at confirmation of pregnancy, one at birth and one 6 months after birth. These baskets contained items such as vouchers for fresh fruit and vegetable, nappies, a baby sleeper and new towels designated for use with the infants. A profound effect on child health outcomes was reported, with the scheme also allowing health workers to initiate communication with expectant mothers and 'have a yarn' [talk] about their pregnancy and motherhood. These sessions assisted healthcare workers to educate the mothers about various health issues including improving nutrition with the fresh fruit and vegetables, and sanitation through use of designated towels and sleep-ware for the infants. Especially important is the opportunity to disseminate information to the community regarding the appropriate use of medicines, and in particular antibiotics necessary to contain drug resistance. Addressing these three issues alone will help to control the spread of infectious disease and stem antibiotic resistance particularly in remote Indigenous communities.

### Future directions – Trans-disciplinary Research

The Australian Health and Medical Research Congress (AHMRC) is an initiative of the ASMR. Since 2002, the biannual Congress has partnered with over 80 professional societies with the view to share knowledge, foster new collaborations and address the major health challenges facing Australia, including Indigenous health. The 2014 AHMRC will specifically explore how 'trans-disciplinary research' is required to answer the big questions. Trans-disciplinary research goes beyond multi-disciplinary research by establishing broad collaborations, not only between researchers and clinicians, but also other non-academic groups such as policy makers, industry partners and community groups. Our past experiences have taught us that involving the aboriginal community in research is especially important for Indigenous health.

The 2014 AHMRC will strive towards bridging the gap in health outcomes between Indigenous and non-Indigenous Australians by providing a vehicle that brings together relevant stakeholders for dialogue and potential new partnerships. The Congress will play host to a symposia focussed solely on chronic diseases facing Indigenous health. In addition, there will also be a free forum focussed specifically on Indigenous health that invites contributions from researchers, healthcare providers, and policy makers together with the wider community. Now in its third year, these public forums have provided a breeding ground for respectful discussion and have seeded new policy directions that have been the basis of our submissions to state and federal governments [17]. The ASMR firmly believes that positive health outcomes can be achieved for Indigenous Australians by listening, sharing and collaboration.

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