Indigenous Environmental Health

Report of the Fifth National Conference 2004
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The enHealth Council, a subcommittee of the National Public Health Partnership, brings together top environmental health officials at the Federal and State and Territory level, along with representation from local government, the Australian Institute of Environmental Health, the environment, public health sectors and the wider community. The primary source of advice and direction on Indigenous environmental health issues is drawn from the National Indigenous Environmental Health Forum, a subcommittee of the enHealth Council. The Council has responsibility for providing national leadership, implementing the National Environmental Health Strategy, forging partnerships with key players, and developing and coordinating advice on environmental health matters at a national level. The advice development process is strongly based on collaboration and consultation.

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# Glossary

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<td>AIEH</td>
<td>Australian Institute of Environmental Health</td>
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<td>AMRRIC</td>
<td>Animal Management in Rural and Remote Indigenous Communities</td>
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<td>ATSIC</td>
<td>Aboriginal and Torres Strait Islander Commission</td>
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<td>ATSIS</td>
<td>Aboriginal and Torres Strait Islander Services</td>
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<td>CDEP</td>
<td>Community Development Employment Program</td>
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<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation</td>
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<td>IHANT</td>
<td>Indigenous Housing Authority of the Northern Territory</td>
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<td>NAIDOC</td>
<td>National Aborigines and Islanders Day Observance Committee</td>
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<td>NIEHF</td>
<td>National Indigenous Environmental Health Forum</td>
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<tr>
<td>RSPCA</td>
<td>Royal Society for the Prevention of Cruelty to Animals</td>
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<tr>
<td>TAFE</td>
<td>Technical and Further Education</td>
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<tr>
<td>UPK</td>
<td>Uwankara Palyanyku Kanyintjaku</td>
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Preface

This publication has been produced by the enHealth Council and the National Indigenous Environmental Health Forum (NIEHF) and is the fifth in the series of Indigenous environmental health conference monographs. The report aims to contribute to the debate around, and increase the understanding and awareness of, environmental health issues, with a key focus on Indigenous Environmental Health Workers.

National Indigenous Environmental Health workshops and conferences are held regularly in order to provide a forum for discussing Indigenous environmental health issues, to raise the profile of Indigenous environmental health issues and to give Indigenous environmental health practitioners a voice.

The first Indigenous Environmental Health Conference was held in Cairns in 1998 with the aim of providing an opportunity for those working in and with Indigenous communities to discuss common concerns and issues in Indigenous environmental health.

The second conference was held in Broome in 1999. The resulting recommendations were used to inform the final development of the Implementation Plan for the National Environmental Health Strategy and to further develop collaborative projects and strategies for progress on a national basis through the enHealth Council. A key recommendation from this conference was to establish a national Indigenous advisory committee.

The third conference was held in Alice Springs in 2000, and was facilitated by members of the newly established NIEHF. The NIEHF is made up of Environmental Health practitioners from each state and territory and is a subcommittee of the enHealth Council. Each NIEHF member gave a presentation at the conference.

The fourth conference was held in Adelaide in November 2002. The themes of presentations and discussions reaffirmed the importance of a well-trained Indigenous environmental health workforce. They also emphasised that Indigenous environmental health workers and officers should be accorded status reflecting the importance of their role, and their training should be provided at accredited and recognised levels.

The fifth conference was held in Terrigal in 2004 and brought together Environmental Health practitioners from across Australia and New Zealand who showcased their projects and programs, successes and challenges. It is anticipated that delegates armed with this knowledge might consider adapting these programs within their own communities.

The recommendations of this conference will be the core focus of Indigenous environmental health activity for the enHealth Council and the NIEHF for the ensuing years. Progress on these recommendations will be monitored and the results will be presented at the sixth National Indigenous Environmental Health Conference.
Acknowledgements

This publication has been made possible by the technical assistance provided by the state and territory Environmental Health Branches and funding from the Australian Government Department of Health and Ageing. The final text was compiled by: Karen Cambrell, Monique Sharp, Xavier Schobben and Shane Nichols and edited by: PenUltimate, Pty Ltd.

The NIEHF and the enHealth Council are grateful for the financial assistance provided by the following organisations for the organisation of the fifth National Indigenous Environmental Health Conference:

- New South Wales Health
- Australian Government Department of Health and Ageing
- Department of Health and Community Services, Northern Territory
- Department of Human Services, South Australia
- Department of Human Services, Victoria
- Queensland Health Department
- Western Australian Department of Health
- Australian Institute of Environmental Health.

There has also been considerable assistance from around the nation and delegates are acknowledged for their efforts.

In particular, special thanks to members of the National Indigenous Environmental Health Conference Organising Group who organised the conference and supported it throughout:

- Clayton Abreu, Indigenous Environmental Health Coordinator, Tropical Public Health Unit, Queensland
- Owen Ashby, Manager, Aboriginal Health Unit, Western Australian Department of Health
- Julie Driver, Environmental Health Officer, Regional Services Branch, Department of Human Services, South Australia
- Shane Nichols, Aboriginal Services Manager, Quality Improvement Unit, Barwon-South Western Region, Department of Human Services, Victoria
- Merle O’Donnell, Environmental Health Coordinator, Environmental Health Services, Central Public Health Unit Network, Queensland
- Glenn Pearce, Senior Environmental Health Officer, New England Public Health Unit, New South Wales
- Philippe Porigneaux, Senior Policy Officer, Department of Health and Community Services, Northern Territory
- Iris Prouse, Coordinating Officer, Environmental Health, Kimberley Public Health Unit, Western Australia
- Andrew Reefman, Administration Officer, Aboriginal Environmental Health Unit, New South Wales Health
- Trevor Robinson, Aboriginal Trainee Environmental Health Officer, Central Sydney
• Area Health Service, New South Wales
• Xavier Schobben, Director, Environmental Health, Department of Health and Community Services, Northern Territory
• Monique Sharp, Project Officer, Aboriginal Environmental Health Unit, New South Wales Health
• Jeff Standen, Manager, Aboriginal Environmental Health Unit, New South Wales Health
• Craig Steel, Acting Director, Environmental Health, Regional Services Branch, Department of Human Services, South Australia.

National Indigenous Environmental Health Conference Organising Group
Foreword from the National Indigenous Environmental Health Forum

The NIEHF is pleased to present the proceedings of the fifth National Indigenous Environmental Health Conference, held in Terrigal, New South Wales. The NIEHF acknowledges the Darkinjung people, traditional owners of the country visited by all conference delegates. The NIEHF also thanks the National Indigenous Environmental Health Conference Organising Group and New South Wales Health for their tremendous assistance in organising the conference.

The NIEHF was first established under the auspices of the enHealth Council in May 2000. One of the NIEHF’s major functions is to identify, and provide comment and policy advice, to the enHealth Council on Indigenous and environmental health issues and related national strategies and activities. Some of the NIEHF’s recent achievements include contributions to:

• the Indigenous Environmental Health Mapping Project
• development of the Population Health Training Package
• the third, fourth and fifth National Indigenous Environmental Health Conferences in Alice Springs, Adelaide and Terrigal, respectively
• the National Aboriginal and Torres Strait Islander Health Strategy
• review of the National Environmental Health Strategy
• the Indigenous Environmental Health Workforce Review.

Indigenous environmental health continues to be a major priority for the enHealth Council and the NIEHF will continue to ensure those issues that impact greatly on Indigenous environmental health, particularly in relation to Indigenous Environmental Health Workers, are identified, discussed, decided upon, and progressed through the enHealth Council in a timely manner.
The presentations in this monograph are excellent examples of the diverse nature of Indigenous environmental health. This is demonstrated through the six conference themes of:

- environmental health workforce development
- housing issues and planning
- local, regional and national initiatives
- community capacity building and partnerships
- community food supply and nutrition
- environmental health services in communities.

The presentations are also a welcome reminder of the many positive actions occurring in Indigenous communities both nationally and internationally and provide inspiration for what can be achieved ‘Today, Tomorrow—Together.’

Xavier Schobben
Chair
National Indigenous Environmental Health Forum
Introduction from the enHealth Council

The enHealth Council acknowledges the Darkinjung people and takes great pleasure in presenting the proceedings of the fifth National Indigenous Environmental Health Conference. The conference was kindly hosted by New South Wales Health on behalf of the NIEHF, in Terrigal New South Wales, in November 2004.

We particularly appreciated the attendance of international delegates and those who travelled the lengths of this country to meet on the New South Wales Central Coast.

By holding the National Indigenous Environmental Health conferences, the enHealth Council and the NIEHF aim to raise the profile of Indigenous environmental health and to provide a forum for discussion of priority Indigenous environmental health issues.

At this year’s conference we built upon the achievements of the previous four by reflecting on areas where improvements have been made and by examining those in which there is still work to be done.

In 2003 you may have seen the report of the Steering Committee for the Review of Government Service Provision titled, *Overcoming Indigenous Disadvantage: Key Indicators*, which confirms our understanding that poor environmental health conditions contribute to poor health outcomes within the Indigenous population. The report is encouraging in that it lists environmental health as a strategic area for action because of its potential to have a significant impact in reducing Indigenous disadvantage and its suitability for policy action.

While it is important to remember that there will be a lag period before improvements in environmental health lead to improved health outcomes for Indigenous Australians, the enHealth Council and the NIEHF will continue to support and advocate for improvements in Indigenous environmental health through a range of activities, including the release of these proceedings.

I would like to acknowledge, on behalf of the enHealth Council, the significant effort of the NIEHF and the National Indigenous Environmental Health Conference Organising Group in expertly guiding the organisation of this successful event.

I would also like to thank the presenters for contributing to such an exciting program and the sponsors and supporters, without whose assistance the conference would not have been possible.

Michael P Jackson
Chair
enHealth Council
Recommendations

The following recommendations were distilled by the NIEHF from over 160 comments received from delegates during the conference's workshop sessions. These recommendations have been presented to the enHealth Council for consideration and placement into an appropriate Action Framework.

1. Environmental health input to be provided for the proposed third edition of the National Indigenous Housing Guide, including the need to incorporate sustainable Indigenous housing principles and standard housing designs.

2. Advocate for communities to be listed as ‘special areas’ under the Building Code of Australia to recognise the special needs of building housing for Indigenous communities and to provide a legislative basis for Indigenous housing design and construction standards.

3. Develop award/s for Indigenous Environmental Health Workers to ensure uniformity in pay and recognition of Indigenous Environmental Health Workers.

4. Provide scholarships and/or cadetships for Indigenous environmental health practitioners, particularly Indigenous Environmental Health Workers, to expand the Indigenous environmental health workforce.

5. Frequently update the enHealth Council web site to improve dissemination of information to stakeholders and to raise the profile of the NIEHF.

6. Give due consideration to providing reticulated sewerage systems in all major Indigenous communities to improve the standard of sewage management in Indigenous communities.

7. Subject all Indigenous community water supplies to appraisal under the Framework for Management of Drinking Water Quality contained within the National Health and Medical Research Council's *Australian Drinking Water Guidelines* (2004) to ensure safe drinking water supplies in Indigenous communities by using a preventive management approach for drinking water.

8. Conduct a national review of the status of Indigenous environmental health every four years to monitor the standard of environmental health in Indigenous communities.

Conference opening

This section contains the presentations made to introduce and open the conference. They include the opening address by Ken Wyatt, the Director of Aboriginal Health at New South Wales Health, the keynote address by Hal Wootten, who has been involved in Aboriginal welfare for much of his career, and several other presentations relating to the general themes of the conference.

Opening address

Ken Wyatt, Director Aboriginal Health, New South Wales Health

As a Noongar man from Western Australia, I’d like to acknowledge the Darkinjung people on whose land we meet today and on whose land we’ll share our experiences about the work we’ve done. Also on behalf of the New South Wales Department of Health I’d like to welcome all of you to what I believe is a conference that offers many solutions in the experiences people will share with each other in the workshop sessions.

Looking at the theme of the conference ‘Today, Tomorrow—Together’, I actually want to go back to yesterday. In one sense today and tomorrow is something we all have been and will be actively involved in, but if we talk about yesterday …

I want to go back to the National Aboriginal Health Strategy that involved people like Shane Houston and Teddy Wilkes. They, along with some of the Elders in this room, shaped the agenda for ‘environmental health considerations’ in the thinking of governments, both federal and state, and in doing that work they had to do the hard yards of convincing bureaucracies that we had to have a joined up, whole-of-government, holistic approach to addressing the health needs of our people. They put on the agenda that environmental health is a significant element in shaping our people’s wellbeing. If we consider the whole principle of wellbeing, we have to look at all the issues that impact on us, and environmental health has been at the forefront of challenging some of the thinking.

I think the sad part is that the level of ‘resourcing’ that’s been made available across the nation is not sufficient. It’s often hamstrung by some of the criteria and conditions governments have placed on the Community Housing Infrastructure Program. The National Aboriginal Health Strategy argued for resources that could be used flexibly, resources that could be used in the way the communities for whom they were intended actually needed.

I think the other thing that is a challenge is that we so often hear all the bad news. We hear about the tremendous gaps, which do exist, but we also don’t promote those things that work well. My first involvement with environmental health was in Western Australia back in the late 1980s when we started the Environmental Health Workers Program. It’s pleasing to see a couple of my colleagues and friends have come from the Pilbara and from the Kimberly here today. They were at the beginning of the work in Western Australia when the training program was put in place through Pundalmarra College. They went back into the communities and started an holistic approach in planning the way their communities wanted to shape infrastructure and have an impact on health conditions—and that’s always been a challenge.

I moved to New South Wales some 18 months ago and in my first meeting with the Manager of the Aboriginal Environmental Health Unit, Jeff Standen, I was absolutely delighted to hear of the work New South Wales Health is doing in ‘Housing for Health’. There is a strong drive to shape and change the way our organisation thinks about the combination of environmental health and all the other factors that make a difference to a person’s wellbeing.

And those challenges are not easy to overcome because so often we have to compete against acute care costs that tend to detract in terms of where the money should be spent, and sometimes we forget about going to the front end of prevention.

To all of you here, I want to acknowledge the contribution each and every one of you make and the work you do within all of your areas, both within the sovereign nations of the diverse cultural makeup of the Aboriginal and Torres Strait Islander society, but also in your geographic
locations. Because it doesn't matter whether it's urban or remote, the challenges are still the same: the pressure points and access to services that are so often taken for granted are not always accessed by Aboriginal and Torres Strait Islander people.

One of the things we all need to think about is getting environmental health in the thinking of all our communities, because it is from that level, through the Indigenous Coordination Centres, that I hope we will influence the Australian Government in the way it provides resources to this area of need.

Unless we address housing—the infrastructure in which our communities live—we will not see the changes to simple things like ear and eye health problems, and so the challenge is taking the message forward.

In one sense the issues you're going to be covering in this conference are in accord with what the enHealth Council challenged the Standing Committee for Aboriginal and Torres Strait Islander Health to look at: what the Standing Committee should be doing about environmental health. As part of that process we've produced a scoping paper and, at our next meeting on the 17th of this month, we will look at a proposed paper for passing back to the enHealth Council. We've agreed there are specific things we really want to look at, and influence, from a national perspective regarding environmental health matters.

In partnership with all of you, we want to consider the impact of disadvantage, families living in survival mode whose working capital and disposable income mean they cannot fix environmental health problems themselves. Our work must focus on both urban and rural and remote issues: housing requirements, the importance of health hardware, transience and mobility, young people and, most importantly, workforce issues and teaching new skills in our communities. Our communities are not without some capacity to help themselves, however. I always say we don't have to build capacity; we should enhance what is already there. What we want to do is add value to the capacity that already exists among our people, and I think environmental health is one key area in which that can be achieved.

I want to acknowledge all of those who've been involved in organising this conference. When Jeff Standen first came to see me and said it was being planned and told me some of the key themes, I was excited by the prospect because I think the conference themes go to some core issues. I asked him, 'What would your numbers be?' and he said, 'We're aiming for about 170–175.' When I asked him last night what the numbers were he said 'In excess of 220'. That, in itself, is a tremendous result: we're bringing together Aboriginal and Torres Strait Islander people from across the nation, as well as non-Indigenous people who work in partnership with us. That brings together an incredible wealth of knowledge and experience that can be shared and help shape the future.

I hope that the deliberations and the sharing of knowledge at this conference will be shared not only among yourselves, but that the papers of proceedings become part of what goes back to the bureaucracies—our organisations. This is our opportunity to change how our organisations think.

Another exciting opportunity we have is the way governments are moving. Even though we've lost an elective arm and a voice, we shouldn't look at those changes as being negative. We should look at them as opportunities and involve the community in becoming a voice from the grass roots up in the way the new structures will evolve and roll out.

I was pleased, Xavier, to hear that a number of the recommendations stemming from the work you and your predecessors have done, and of the level of success you've achieved. I compliment all of you. Congratulations on the work of all who are here and I wish you well in your endeavours. Thank you.
Conferences such as this give environmental health practitioners at all levels, from all over Australia, the opportunity to talk together, and that is a very rich opportunity. Delegates can network, find out what works and what doesn’t, share ideas and stories, and adapt solutions to their own local context. It is my hope that you go home from this conference inspired about the work we do and the ways in which we can improve Aboriginal environmental health.

In improving Aboriginal environmental health in Australia there are really three spheres of action: government, non-government and the community, and it is up to all of us to do our bit and work together. This year’s conference theme ‘Today, Tomorrow—Together’ gives us an opportunity to reflect on how we can do things better together.

In the government sphere, the enHealth Council has a number of working groups. The NIEHF is one of those and there are several others that address issues such as water, air, toxicology and contaminated sites. The enHealth Council consists of the Directors of Environmental Health from every state and territory. It also includes representation from the Australian Government Department of Health and Ageing, the Australian Institute for Environmental Health, the Public Health Association of Australia, the Australian Consumers’ Association, the Standing Committee on Aboriginal and Torres Strait Islander Health, and the Department of Environment and Heritage. Recently, representatives of local government, who are very important in terms of delivering improvements in environmental health at the local level, have also joined the Council.

The tasks of the enHealth Council are to act as the peak environmental health advisory committee to government, providing leadership in environmental health across the board in Australia; to forge partnerships with key players; to drive implementation of the National Environmental Health Strategy; and to develop and coordinate national environmental health advice.

The strength of the enHealth Council is the expertise, commitment and passion of its members. There is contribution not only from the directors and the people on the Council, but from within the governments that are represented. The members provide a very important conduit to the enHealth Council and to government. The role of the NIEHF is to provide policy advice to the Council and to comment on relevant strategies from an Indigenous standpoint.

The National Public Health Partnership comprises Directors of Public Health from throughout Australia and New Zealand. It looks at the broader picture of public health issues in Australia and reports directly to the Australian Health Ministers Advisory Council. The Standing Committee for Aboriginal and Torres Strait Islander Health also reports to that Council. The enHealth Council reports to the National Public Health Partnership along with other specialist groups, such as the Strategic Inter-Governmental Nutrition Alliance (SIGNAL)\(^1\) (about nutrition) and the Communicable Diseases Network Australia (CDNA)\(^2\) (about communicable diseases).

The Chair of the NIEHF now sits on the enHealth Council. That was an important step so there is now no gap: members of each working party are on the Council, just as members of the enHealth Council and CDNA sit directly on the Partnership.

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The important thing about this arrangement is that there is a conduit. There is a pathway that allows the NIEHF, through the enHealth Council, to go up to the Partnership and to Ministers, and that is our opportunity to raise the profile of Indigenous environmental health and the needs of Aboriginal communities.

What is it that we can and can’t do? We can identify where national approaches are needed and do something about it; we can develop national policies, guidelines and models; we can conduct specific projects—and we have done that in response to the recommendations of previous conferences; and we can provide a communication pathway to health Ministers. I have to say that I think we need to do more of that. We need to further lift the profile of Indigenous environmental health issues before our health Ministers. We can share information, skills, experience, expertise and we can advocate in a number of different forums. What we can’t do is guarantee funding; we can’t take action without working in consultation and collaboration; and we can’t deal with issues that are outside our terms of reference.

I want to acknowledge the challenges you face in delivering environmental health at the coalface. I’ve been to a number of communities in Western Australia and I recognise the situation with which many of you are faced. These communities are isolated both geographically and professionally. You are on your own to a large degree, with limited support, and there are often questions about the status of our workforce in Indigenous communities. There is poor infrastructure and competing demands. Where do you start dealing with the all the issues that confront you on a day-to-day basis? There are inadequate pay structures for many of our community workers and not enough hands on deck. There is inadequate funding for resources and equipment. I would challenge people in the broader community to go to an isolated community and live without a water authority, a local government that collects the rubbish, and all the other resources we’ve come to expect.

The value of investing in environmental health has been recognised in a number of different places. In the report of the Western Australian Government Task Force on Aboriginal Social Justice there is a key quote we have used many times. It is:

The greatest improvement in environmental health conditions, particularly in remote communities must be treated as the single highest priority for Government programs. Some of the most basic improvements that we can make in Aboriginal health are through improvements in environmental health programs.¹

Some of our achievements include an increase in the number of Indigenous environmental health workers. We are better at sharing and building on lessons learned. There is a greater awareness of the issues within governments at all levels from local through to federal. We have improved the training of environmental health officers, particularly the opportunities for environmental health workers to progress to becoming environmental health officers, and I acknowledge the Batchelor Institute and the New South Wales Training Scheme. Promotion of the importance of the work of environmental health officers has also improved through initiatives such as production of the video My Job that came out of a recommendation of a previous conference.

The Standing Committee for Aboriginal and Torres Strait Islander Health has recently issued the Cultural Respect Framework for Aboriginal and Torres Strait Islanders; and the National Public Health Partnership has produced Public Health Laws of Relevance to Rural and Remote Aboriginal and Torres Strait Islander Communities. Our enHealth Council water-working group, in conjunction with the Bureau of Rural Sciences, has done some work on rural and remote water supplies; a report has been developed and is about to be released. A review of the National Environmental Health Strategy has been completed over the last couple of days. Indigenous environmental health is one of the key priorities in that strategy.

¹ Western Australian Government Task Force on Aboriginal Social Justice, Western Australian Government, Perth.
A recent review of Indigenous environmental health workers has specifically addressed identification and funding of positions. We would like to see a paid Aboriginal environmental health worker position in every community. We have made some improvement in the consistency of education and training across jurisdictions and are looking for improvement in employment and career paths. We need to develop award wages rather than relying on the Community Development Education Program (CDEP). That is something about which we need to advocate at all levels in order to redress the current inequality.

One of the issues of workforce support that has been identified is the value of web sites, particularly for our officers working in isolated locations. There are some good web sites provided through the University of Western Sydney, Peter Stephenson’s work, Edith Cowan University and the enHealth Council.

The report, Accountability in Indigenous Environmental Health Services, produced by the Australian Government Department of Health and Ageing, 2002 is very useful. It looks at structures that deliver Indigenous environmental health services in different states and territories and analyses what is working and what is not.

What is the way forward? There is indeed much work to be done and we won’t be resting until we have made an even greater impression. Environmental health is the cornerstone of health improvement. If we can improve environmental health on the ground and fix the issues in environmental health we can reduce a lot of the impact on hospitals and clinics. We need to work together. Indigenous environmental health is a key priority for the enHealth Council and the National Public Health Partnership.

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Bruce Morton, National President,  
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The Australian Institute of Environmental Health (AIEH) would like to acknowledge the traditional owners for their support of the conference. I’ll briefly cover what AIEH, as an organisation, is and some of our initiatives.

The AIEH was formed in the 1930s. We are a long-established organisation for environmental health practitioners. We have members across Australia and have state-based branches and regional groups which are a forum for member exchange. We were one of the founding members of the International Federation of Environmental Health, so we not only have local, state and national links, but we also have international links as well as a national Indigenous environmental health special interest group.

**Mission statement**

The AIEH seeks to provide a healthy, safe and attractive natural, built and social environment for the Australian community through enhancement of the practice of environmental health and the professional development of environmental health practitioners.

**Corporate goals**

The AIEH’s corporate goals are:

1. **Professional development**—To ensure professional excellence in the science and practice of environmental health.
2. **Environmental health advocacy**—To fulfil the task of being the peak professional environmental health organisation in Australia.

3. **Organisational development**—To ensure a dynamic and efficient organisation which functions in an effective and responsive manner for its members and the objectives of the Institute.

### Initiatives

One of our initiatives is an accreditation program for environmental health education. Some of the benefits of this initiative have been increased professionalism among practitioners, that the skill of graduates and their level of education is more consistent and that employers have more confidence in qualifications. We have involved all universities offering environmental health degrees in our Educators' Forum and encourage universities to meet the accreditation standards. We also work to increase the popularity of the environmental health profession.

Another initiative is the Australian Food Safety Assessment Program. It’s a standard for assessment of food premises and is a practical process that environmental health practitioners can implement in their community and in local governments across Australia. It means environmental health practitioners can identify food safety non-compliance with national consistency. It provides a uniform assessment system that reduces subjectivity without oversimplifying the assessment procedure.

One of our principle initiatives is the Journal of Environmental Health that has received continuing support from the federal Department of Health and Ageing and the enHealth Council. The journal has covered environmental health topics as diverse as: communicable diseases, food safety, Indigenous health, infection control, environmental impact from landfill sites, air pollution, climate change and heavy metals.

In 1986 AIEH (or the Australian Institute of Health Surveyors as it was known then) became a founding member of the International Federation of Environmental Health which now has 33 member countries. The next (8th) World Congress will be held in Dublin, and then Brisbane will host the 9th World Congress in 2008. This will be a great opportunity to ensure that environmental health across Australia—and certainly Indigenous environmental health—is represented in the program and it will be a momentous occasion for AIEH and our members.

I’d like to close by saying that AIEH demonstrates its support for Indigenous health and the Indigenous environmental health workforce by:

- recognising Indigenous health as a priority area
- creating a membership category for environmental health workers
- having an Indigenous environmental health special interest group
- advocating for improvement of Indigenous environmental health outcomes and Indigenous environmental health workforce issues
- sponsoring Indigenous environmental health activities such as this National Indigenous Environmental Health Conference
- providing a forum for Indigenous environmental health issues to be understood and addressed
- providing contacts, networking and professional support
- providing professional development activities.

The AIEH is pleased to be part of this important conference and is looking forward to working with the relevant organisations to implement the stated outcomes of improving the status of environmental health workers and the health of Indigenous people. I invite conference participants to become members of AIEH and advocate, through an organisation, for resources to address the environmental health needs of Indigenous people.
Thank you for your welcome, and to the Darkinjung people for the invitation to their land. I am honored and humbled to be invited to deliver the keynote address at your conference. I am, after all, a whitefella, and one who has no expertise in environmental health. What should I talk about? Obviously I can’t tell you how to be an environmental health worker or how to be an Indigenous person in Australia. One thing I do have a bit of experience in is being a whitefella in this country, nearly 82 years of experience in fact. I worked out the other day that I have been in this country more than a third of the time since Captain Cook sailed up the east coast. You may think this shows how very old I am; perhaps it shows what a short time white people have been in this country.

So I will talk about being a whitefella in a country where whitefellas arrived uninvited 217 years ago, taking what they wanted without paying much attention to the effect on the displaced Aboriginal people. We have still not found a solution to how the two peoples can live together, in reasonable equality and with good lives available to everyone. I grew up during the Great Depression and the second World War that immediately followed it. That may not sound a very promising beginning, but the post-war world into which I emerged as a young man was a time of great hope. We had just defeated the evil regimes of Nazism and Fascism, and would now set about ridding the world of racism, colonialism, war, inequality and poverty, and establishing international security and universal human rights. In Australia the government appointed a 40-year-old economist, Dr Herbert Cole ‘Nugget’ Coombs, as Director of Post-war Reconstruction. Interestingly his detailed plans for a more just society did not mention Aboriginals. It was to be another 20 years before he became sensitive to their situation, and went on to be a champion of their interests.

So perhaps it’s not surprising that I didn’t know anything about Aboriginals either. As a child I had gladly given my pennies at Sunday school to ‘help the good missionaries care for the poor Aboriginals’, but beyond that I knew nothing of their position. I assumed good people were attending to the issues. My own minor involvement in remaking the post-war world was in the context of preparing Papua New Guinea for independence. I made some close friendships among the Indigenous people of that country, which left a nagging feeling in the back of my mind that it was strange that I knew so little of those in Australia.

As a barrister in Sydney working in industrial relations, I was briefed in 1965 to appear for pastoralists in the equal pay case, which was about bringing Northern Territory Aboriginal workers under the Pastoral Industry Award. However, there were no Aboriginals involved in the case, not even as witnesses, and no one thought to ask them what they wanted.

The graziers, who knew them as their employees, predicted that introduction of equal pay without any other measures being taken would have disastrous consequences for Aboriginals. They considered equal pay must be introduced as a matter of principle, the human rights of Aboriginals to employment, and to the same remuneration as other employees, should be recognized. The Commonwealth Government and the Arbitration Commission showed little interest in this prediction; they considered equal pay must be introduced as a matter of principle, the human
right to be free of discrimination. So equal pay was introduced without preparing for it, and in a few years Aboriginals were gone from the cattle stations on their traditional land, into settlements in towns on other tribes’ land, where they could settle down to generations of unemployment, and unfettered use of another human right recently granted to them, the right to drink alcohol.

It was about that time that the 1967 referendum was passed, after years of campaigning by Aboriginals. Today it is seen as a great event, but at the time it was a rather empty gesture. It did not confer citizenship or anything else on Aboriginals. By removing discriminatory provisions from the Constitution it helped the Commonwealth Government avoid embarrassing criticism overseas. It gave the Commonwealth new powers that would allow it to take over Aboriginal administration from the states and territories; but Cabinet had agreed beforehand that it would not use those powers. Protection and assimilation were out of fashion, but nothing had taken their place.

It was to be some years before I finally got my chance to get to know Aboriginals. The University of New South Wales asked me to set up its new law school, and while there in 1970 I was approached by young Aboriginals who were angry about the way police treated Aboriginals in Redfern [in Sydney]. They soon convinced me of the justice of their claims, and we worked together to establish the first Aboriginal Legal Service. I didn't have any difficulty in finding a way to think about this question. A group of citizens were being denied their rights, and the rule of law, which as a lawyer I cherished, was not being applied.

It never occurred to us to ask for government funding. The Service started with no office of its own, no employees, a big panel of lawyers who had agreed to take cases without fee, free messaging offered by a commercial answering service, and a body of Aboriginals and whites who had agreed to do all the legwork and serve on the committee without fees of any sort. It was a wonderful time that everyone who was there remembers. There was interracial warmth and cooperation and friendship, and everything seemed possible. Some of our Aboriginal members, elated by what had happened, went off and formed the first Aboriginal Medical Service, and in the ensuing years a great network of Aboriginal community organisations spread out across Australia.

I persuaded the University of New South Wales to adopt the first program for the special admission of Aboriginals in any Australian university. The law school opened with two Aboriginal students in its first year, and later produced the country’s first Aboriginal magistrate and first Aboriginal judge.

Back in 1970 the histories by Rowley, Reynolds and others were not yet written, and I learned what I could about the way Aboriginals had been treated from my newfound friends and the families and communities they took me to visit. How did I think about my position as a whitefella in this wider context?

Looking back I have found a submission that I made to a Senate Committee, in which I referred to an Aboriginal population (then officially counted as 140,000). I concluded:

> If 140,000 of our countrymen were prisoners of war in a foreign country, we would not rest until they were released. Yet within this land a large part of 140,000 of our countrymen are prisoners of an historical injustice and its consequences—ignorance, malnutrition, poverty, discrimination, disease, lack of opportunity, destruction of their individual personality and their social fabric. Many live in conditions that would be considered appalling in a prisoner of war camp, and are subjected from birth to a brainwashing about their inferiority that no military power has yet attempted on its captives. To liberate these our countrymen we have only one enemy to overcome—ourselves—our apathy and indifference, our selfishness, our turning of the head.

The great post-war optimism about making a better world had melted away under the influence of the Cold War abroad and comfortable
complacency at home. Suddenly it came rushing back with the election of the Whitlam Government at the end of 1972, but this time Aboriginals were included. In February 1973 Whitlam told the newly established National Aboriginal Consultative Council:

> If there is one ambition my Government places above all others, if there is one achievement for which I hope we shall be remembered, if there is one cause for which future historians will salute us, it is this: that the Government I lead removed a stain from our national honour and brought back justice and equality to the Aboriginal people.1

The Whitlam Government policies included a separate Ministry for Aboriginal Affairs, the outlawing of racial discrimination, land rights through grant and purchase of land, heritage protection, incorporation of Aboriginal organisations and communities, copyright for Aboriginal art, provision of legal aid, self-determination and achievement of equality in health, education, housing, and employment. The succeeding Fraser Government continued most of the Whitlam policies, although sometimes in a less generous or less favourable or more limited form.

Despite these differences, the Whitlam Government ushered in a new approach to Aboriginal policy that was to provide the basis for a broadly bipartisan framework of policy for the next two decades.

In 1973 I became a judge in the Supreme Court of New South Wales and lost continuous contact with Aboriginal issues. I was comfortable with the Whitlam way of thinking about how we should treat Aboriginals. Without following what was happening in detail, I assumed that the bipartisan policy consensus was working to improve the situation of Aboriginals and that, albeit more slowly than one would have liked, they were moving to a more equal place in Australian society. There was a fair degree of complacency—one of the major disappointments coming in the mid-1980s when the Hawke Government squibbed implementing the long-standing Australian Labor Party policy of national land rights in the face of an outrageously misleading campaign by the mining industry. Nevertheless it remained an article of faith that if the bipartisan policy continued, Aboriginal disadvantage would ultimately disappear.

A major challenge to the complacency came in mid-1987, when the issue of deaths in custody surfaced in alarming form. In just six weeks—between 24 June 1987 and 6 August 1987—there were five Aboriginal deaths in custody, all by hanging, and four in police cells. This followed 11 deaths earlier in the year, five by hanging. I was bewildered. How could people hang themselves unaided in a police cell? Was it credible that so many people, mainly young Aboriginals, were taking their lives?

The following year I was appointed as one of the members of a Royal Commission investigating these deaths, and found answers to these questions. First, it is very easy, and very common all over the world, for prisoners to hang themselves unaided. All they need do is make a loop from clothing or bedding, hang it over a doorknob, light switch or other support, put their head in the noose and lean their weight on it, and in a few minutes the interference with the flow of blood and oxygen to the head will make them unconscious, and unless they are found they will be dead in a few minutes.

Second, Aboriginal prisoners actually hanged themselves slightly less frequently than did other prisoners. The reason so many Aboriginals were dying in custody was not that they died at a greater rate than other prisoners, but simply that so many Aboriginals were in custody.

The big question was, why were so many Aboriginals in prison? The major reason was, we believed, the disadvantaged state of the Aboriginal communities. Severely disadvantaged people invariably have a high rate of conflict with the law, much of it as a result of drunkenness and the violence, disorder and petty crime that goes with it. The appalling figures for imprisonment

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sat alongside equally disturbing statistics of disadvantage in health, education, housing, employment, and alcohol and drug misuse.

This state of disadvantage was of course the very thing that government policies for the previous 20 years were supposed to be changing. Why hadn't they worked? In his five-volume report, the National Commissioner, Elliott Johnston, did not challenge the general thrust of policy, but argued that it had not been applied adequately, with enough determination and resources, and with enough regard for self-determination. He carefully examined each head of policy and made recommendations for improvement and greater effort.

The Royal Commission Report was well received, and for a time governments busied themselves with the recommendations and provided extra funding. But 13 years have passed since the Royal Commission, and appalling disadvantage remains. Life expectancy is most frequently cited, but there are many other statistics that have failed to improve. In many communities the tragic impacts of alcohol, domestic violence, child abuse or neglect, poor school performance, poor health and other dysfunctional features have become worse, or at least more widely known.

What should a whitefella think about this?

Rednecks say, 'It's all their own fault. They deserve everything they get. You mustn't give them special rights because we should all be equal.' I don't have any trouble rejecting that point of view, because I know the history, and how cruelly Aboriginal rights were denied for so long, and I have seen the brave struggles of many Aboriginal friends over the years against tragedy and adversity, and their attempts to build better communities.

Another right wing view says that the problem lies in attempts to cling to an Aboriginal culture that has no place in the modern world. We should stop treating Aboriginals as different, and tell them to embrace modern culture, get off welfare and live like other people.

I believe a basic flaw in this position is that it just doesn't recognise the importance of Aboriginal identity. Most Aboriginals I know, even those who have university educations, who have succeeded in professions, and who have had little contact with communities—and including those who have married whites—fiercely value their Aboriginal identity. It may mean different things to different individuals, but it is important to nearly all of them. However we whitefellas envisage the future, it must allow Aboriginals to go on being Aboriginals in ways that are important to them.

Then there is a range of views among people sympathetic to Aboriginals who want to help them. They say that the history of dispossession is responsible for everything, that Aboriginals are being denied their human rights, their right to health, their right to education, their right to an economy, their right to preserve their culture and language. Often they speak as if nothing has been done or tried in the last 30 years, which is not only silly, in view of all the money that has been spent, but rather insulting to the many thousands of Aboriginals and whites who have worked hard to change things. They don't suggest that Aboriginals do things like sending kids to school, stomping on the drunks who keep the kids awake and beat up their mothers, taking exercise and giving up grog, tobacco and fast food. They fear they would be 'blaming the victim' if they talked about such things. Instead they encourage Aboriginals to see themselves as victims of history who should be out campaigning for apologies, amendments to the Constitution, treaties, reconciliation, sovereignty and the grant of self-determination. The trouble with these policies is not that they are bad or harmful in themselves, but that they send the wrong messages to Aboriginal people. Those who advocate these policies tend to be very nice people who have had very little contact with ordinary Aboriginals. They often get very romantic about preserving Aboriginal culture and Aboriginal communities, without knowing what these things mean to individual Aboriginals battling to find a decent life for themselves and their families.

Aboriginal advocate Noel Pearson, has criticised ‘progressivists’, along with the Labor Party, the Royal Commission, Aboriginal Legal Services, and drug and alcohol experts. I don't think Noel's
criticisms are always fair or helpful, but he has some good ideas about how we should think about the future. I admire the way he gave up the chance of a comfortable career as a lawyer or politician, and went back to his home in Cape York to grapple with grassroots problems in communities that face enormous internal problems.

Noel’s basic statement, ‘Our Right to take Responsibility’, argues that the starting point has to be individual Aboriginals taking responsibility for themselves, and then their families. It is no use asking government for rights or resources, or trying to reform communities, until individuals take responsibility for their own behaviour and the effect it has on their own lives and the lives of those around him. Noel went on to identify alcohol as a key obstacle to any improvement in the Aboriginal situation. His main criticism of the Royal Commission is that it did not face up to the key role of alcohol and place the control of addiction at the forefront of its recommendations.

Noel’s views about how one should deal with alcohol remain controversial, but I believe he has done a great service in breaking through the taboo on blaming the victim and insisting on the threshold need to break the devastating grip alcohol has on many Aboriginals and communities. This is of course only his starting point. Other important ideas are the need to bring Aboriginals into the real economy instead of the gammon welfare economy in which so many are trapped; the need for government to find ways of delivering services and resources in ways that empower Aboriginals to take responsibility instead of disempowering them; and the critical need to see that children are educated, even if they have to leave their communities to get good secondary and tertiary educations.

Noel isn’t always tactful, but this shouldn’t stop us recognising that he has had the courage and wisdom to say a lot of things that needed saying. Certainly many of them would have been very difficult for a whitefella to say.

It is pretty clear from these discordant voices that Australia hasn’t yet found a shared vision about the future of Aboriginals to replace the bipartisan consensus that we lived with for 20 years after Whitlam. Looking back, the Royal Commission was the last great ‘hurrah’ of that consensus; it has been slowly falling apart ever since.

There is, I believe, still the latent goodwill in the non-Aboriginal population that brought them out in hundreds of thousands to walk over bridges a few years ago. What they lack is any credible vision of a way forward, a policy framework they can believe in as a way of removing the inequality and disadvantage of Aboriginals that continue to shame and plague the country. The vacuum was very clear at the last election when Aboriginals barely featured in the campaigning of the main parties.

I have no golden key to the future; indeed I don’t believe there is such a key. But I owe it to you at least to say in conclusion how I now see the situation.

I think it is remarkable how Aboriginals survived the combination of neglect and destructive policies of the first 180 years. It is remarkable how many of them lived dignified if poverty-stricken lives with footholds in the rural economy or unskilled work in the cities. The great irony is that, just when national policy was about to become sympathetic to them, economic conditions changed and neither their rural skills nor their unskilled labour were in demand. Government policies did not address this situation and Aboriginal communities were left to a lethal mix of unemployment and newly available welfare and alcohol.

The well-intentioned bipartisan policies had some fatal contradictions and ambiguities. Aboriginals were expected to make the cultural changes needed to compete in a modern, capitalist and highly technological world while at the same time preserving an ancient culture. They were expected to gain education, vocational skills and jobs that are available only to the mobile, yet cleave closely to their traditional land, which usually lacked the economic viability to support their rapidly expanding populations. Although recognised as having been marginalised from education and administrative and business experience, Aboriginals were expected to be instantly capable
of managing large institutions and budgets by the mere fact of their Aboriginality. On the one hand Aboriginal society was expected to act as a nation with impersonal institutions like the Aboriginal and Torres Strait Islander Commission (ATSIC), but on the other hand to cherish its local and kinship-based character.

There was great confusion about what self-determination could mean. Aboriginal people were encouraged to speculate about all kinds of imaginary collective futures while overlooking Noel Pearson's point that the first step in self-determination must be for individuals to get back control over their own lives, so often eroded by alcohol and welfare dependency.

I think one of the most important things to realise is that self-determination is not something government can give Aboriginals; it is something Aboriginals must do. They must do it in their own lives, in their families and, if they want to live in communities, in their communities. It involves, and depends on, a lot of elementary things that only Aboriginals can do, like getting grog under control, eating good food, taking enough exercise, sending kids to school with a good night's sleep and a good breakfast. Many Aboriginals of course do these things, but too often their efforts are undermined by those who do not.

When Aboriginals want and are ready to make use of a national organisation, they should build one, working up through their communities and regions. Such an organisation, built by themselves, could be a real instrument for whatever form of self-determination they choose, and they might want government to help with resources and legal powers. It would be a totally different thing to leaving it to government to set up an organisation, as it did with ATSIC, which was built on the assumption that self-determination was something government granted to Aboriginals, not something Aboriginals did for themselves.

I am very happy to be giving this keynote address because I am talking to many Aboriginal people who are really engaged in self-determination. You and your non-Aboriginal colleagues work on the basic infrastructure on which all communities depend: shelter, water, waste disposal, power, pest control, pollution control and so on. Of course it is sometimes part of your job to fight to ensure the government does its share in supplying funds and resources, but you also work to ensure the people in communities take control of these important parts of their lives. On this can be built many other things, not least a generation of children who are healthy, well-fed, well-educated and proudly Aboriginal, ready to go out and seize the opportunities the world offers them, instead of falling victim to alcohol and drugs, crime and institutionalisation.

I salute your efforts. All power to you.

For further information

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Supporting the Indigenous environmental health workforce and communities nationally through recognised skill development and qualifications

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Paper withdrawn

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Health inequalities, environmental health and sustainable Indigenous communities

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Associate Professor Pierre Horwitz, Consortium for Health and Ecology, Edith Cowan University, Western Australia

Pierre Horwitz

To the Darkinjung people, thank you for the welcome to your land and to your place. We looked at the conference theme, that a ‘healthy community starts with a healthy living environment’ and we want to ask two questions: ‘What are the relationships between people, their health, their places and the consequences of their actions?’ and ‘Does environmental health deal with these relationships appropriately?’ In particular we want to focus on the words ‘consequence’ and ‘response’ because we are dealing with a system that responds to our acts. We are going to look at a case study to provide one example of the consequences of our actions and to try to answer our questions.

The Peel Harvey System is located in the south west of Western Australia. The Darling Scarp runs north-south and is only about 200–300 metres high. There is an estuary and a shallow lagoonal system inland. When the area was colonised in the 1830s, in winter the rivers would flow over the scarp and spill out across the Swan Coastal Plain (between the scarp and the ocean) and it would become inundated with water. Colonists saw this as a problem and believed they needed to drain that land to get access to it, to move along the Swan Coastal Plain and to use that land for agricultural purposes. So during the first 100 years they built a series of dams in the headwaters on the Darling Scarp, which then provided water to Perth. They also installed drains so any overflow reached the ocean much more rapidly and they could use the area for agriculture.

The point is that in the first 100 years alienation was created between the land and the water and between the Indigenous people and their significant places. Those pre-existing relationships between people, land, water and living things were almost completely misinterpreted during the draining and damming processes.

Mandurah, due to its location at the mouth of the Peel–Harvey estuary, 100 kilometres south of Perth, became a place that attracted holiday-makers and retirees. More agricultural progress occurred with more dams and drains built, and application of fertilisers to much of the cleared land. This led to a cascade of consequences.

The pattern of human habitation changed quite dramatically over a 150-year period. The various physical interventions dramatically altered the nature of water flow across the plains. Sediments and nutrients were being delivered to the estuary in quite a different way, much more rapidly, and the estuary started shallowing, which meant it warmed faster. The warmer water combined with higher nutrient content led to a change in water quality. There was also a dramatic change in the hydrology. Again, we started to see the system respond to us and we needed to read that response as evidence of a relationship between people, land, water and living things, but I’m not sure we did.

A crisis point arrived in the 1970s when we started to get massive algal growth. This was macro-algal growth in the first instance which caused aesthetic and odour problems. Then we also started to get blue-green algal blooms leading to odour and toxin problems, people complaining of nausea and rashes, liver damage in stock, fish kills and pet illnesses. So the question rapidly became ‘Well, is this really the place we should go for our holidays?’ Residents started to complain and, through their local government, called for an investigation.

We had a scientific investigation to which national experts were called. They told us we had a eutrophication problem—algae was reducing the oxygen in the water and disrupting the ecosystem—caused by sediments and nutrients, that we needed to manage the catchment, and that land owners needed to become involved in that process. The issue of hydrology and the
changed water flow across the plains wasn’t prominent in their investigation. They proposed two things in particular. One was to change the fertiliser regime to a very slow-release fertiliser on the Swan Coastal Plain and the second was to put a cut in between the Harvey System and the ocean so it could flush more easily and get rid of the sediments and nutrients in a substantial way. The Dawesville Cut was two kilometres long and designed to tidally flush the system. Because it required taking a piece of land and building an engineering structure, and it involved a land development deal. It is very interesting to look back at that deal to see who was involved: government, politicians, land owners, real estate agents and engineering companies. It is equally interesting to note who was not involved: the Indigenous community and the health sector.

There was a dissident voice from the health sector at the time: a medical entomologist, Tony Wright, who said, ‘You’re just going to exacerbate another problem there and that is the mosquito problem’. He predicted that tidally flushing the area would expose some of the salt marshes further inland to high tide inundations, leaving areas for mosquito breeding. An increase in mosquitoes would lead to more Ross River virus infections. The work Mike Lindsay, Sue Harrington and their colleagues have done in the Department of Health has demonstrated quite conclusively that there are now elevated incidences of Ross River virus. It is quite serious that we should be having these sorts of responses from a system. You start getting into a feedback loop: the development led to increased population, and the increased population meant the mosquitoes had to be controlled. This involved digging channels or runnels, which work in south-east Queensland has demonstrated can expose acid sulphate soil. The exposed soil increases acidity, and this mobilises heavy metals so we’re creating another series of problems. We have a serious emerging environmental and health problem in the Peel Harvey System that we’re all quite worried about.

Land use change has consequences for human health and we need to start building that into our reasoning in terms of government processes. There is a relationship between the state of the ecosystem and the health of people and it doesn’t affect the health of people equally: different people suffer different exposures. The approach to the Peel Harvey System to me signifies our reactive, simplistic, linear approach to a system that is non-linear, diverse, adaptive and responsive. Somehow we need to change the way we do things so we understand places and what’s locally appropriate. Perhaps in a way that is more akin to an Indigenous way of thinking, where land is life and where we are living in a sentient cosmos.

I don’t know of a suitable word in the English language that conveys this sense that humans, their environment and their wellbeing are actually linked. Environmental health as it is currently practiced maybe maintains that separation. We are taking steps to try to bring those things together, but maybe we need to do that in a more substantive way.

Ted Wilkes

It’s been a great experience working alongside Pierre in true partnership. I think both of us are learning and bouncing ideas off one another, so I just wanted to recognise that.

I’d like to look at the current situation from an Aboriginal perspective. First I want to mention that we in our Indigenous world are a very diverse people. We live in different geographies, in the deserts, on the coast or in urban centres. We speak different languages, have different levels of health and living conditions, some of us have moved away from the extended family structure as a result of trying to survive in the western world. Our skin colour ranges from very dark to very fair. Some Indigenous people are comfortable assimilating into western ways of living while other people just pull right away. Elders are trying to hold on to the old ways for us, but their job is made hard. They have a mistrust of the western system, which they’ve developed through history and that’s just a natural occurrence.

The health and quality of life of Indigenous Australians is not improving. Other Australians are becoming healthier and living longer. Life expectancy is still 20 years less for Indigenous Australians and has been this way for as long as
people can remember. Morbidity and mortality rates continue to identify Indigenous Australians as the anomaly in this lucky country.

As Pierre said, we weren’t involved in what happened around Mandurah in relation to the Dawesville Cut. We in Indigenous Australia do look at some of the systems as being systemically biased. The fact that Aboriginal people were diminished in their capacity to be a part of the planning around the Peel inlet is evidence that we are still being ruthlessly colonised.

That other Australians are not seeing the environment the way we see it is certainly something that has concerned me and other Indigenous Australians for a long time. It is incumbent on non-Aboriginal people who are either at this conference or working in environmental health to start looking outside of what we call the normal square of environmental health. There is a definite gap between what the western system calls environmental health and what Indigenous Australians call environmental health, and we need to close that gap.

When we talk about environmental health we talk about the spirits in our world. We say the spirits will look after the environment for us; and time, in an Indigenous context, isn’t looked at as it is by western people—that everything must happen by tomorrow. In the Indigenous context the spirits will return what I might call our Budyar to the Nyungar people. Eventually that will happen. We don’t mind you coming here to enjoy living on the land with us as long as you do it with respect, but at the end of the day Mother Nature will look after the land for us. Unfortunately these spirits don’t have control over ignorance and there are some very ignorant human beings walking around in Australia exploiting the land for very selfish reasons. We’ve got to stop that.

**Figure 1: Impact of White colonisation on Aboriginal health**

Source: Matthews JD 1997, ‘Historical, social and biological understanding is needed to improve Aboriginal health’, Recent Advances in Microbiology, 5:257–334.
A lot of Nyungar people moved to Mandurah from Perth and other places seeking a better life. In 2002 the Health Insurance Commission identified the Nyungar population in this region at about 1143. A few years before, that population would have been 300 or less, so in a very short time we've seen a pretty big movement of Indigenous people into a locality.

The impact the development of the Peel–Mandurah region has had on the Nyungar population has been devastating. Local Nyungar people have had little say in this development. Some Nyungar people had no real understanding of what it was they were agreeing to. Hunting and fishing grounds have been rearranged or have vanished forever. In some places access to these grounds is denied. Fishing and hunting seasons have been changed to fit in with the needs of the mainstream population. In accordance with western law, catch sizes and numbers are different. Nyungar people living in Mandurah are confused about their Native Title rights so tend to hunt and fish in accordance with western law.

A lot of the old fellas I've talked to around Peel find it very difficult to talk about some of the sacred and significant sites and the stories they remember from when they were younger. During their lives the trees have disappeared or the lake has disappeared or those birds that used to fly through the sky over this part of the world no longer fly here, so these old fellas can't keep telling us the oral histories in the way they would like to. It's something that we younger people have to grab hold of and try to do in a modern context. Whether we get these old fellas to actually allow these stories to be incorporated into the communications technology we've got, I don't know, but we have to look at options.

Pinjarra is a town known for a massacre that occurred in 1834. Most of the Nyungar people who lived in Pinjarra have been relocated to Mandurah thereby diminishing the capacity for maintaining the Pinjarra Nyungar Cultural Centre and the Pinjarra Massacre Site.

Many Nyungar who have moved to Mandurah are let down after having high expectations. The socioeconomic outlook for them and their families is in many cases no different to the situations they have moved from. Most Nyungsars in Mandurah live in public housing. Family feuding in Mandurah occurs and can be linked to unsatisfactory housing placements: feuding families being moved into the same locality. Lack of meaningful employment and activities for Nyungars living in Mandurah means more idle time resulting in alcohol, tobacco, and other substance misuse. This brings on health problems and can lead to crime, domestic violence and child abuse.

Socially stressed families—which many of the Nyungar families living in Mandurah are—place enormous pressure on town and city resources. Relieving this stress must be strategic and resourced. This must occur before these families become dysfunctional.

Canal developments have increased mosquito risk and living conditions of Indigenous people in this area leaving them more exposed than other Australians.

Aboriginal people living in Mandurah are marginalised because the development in the first instance was about the mainstream, it was about moving people into canal type living and looking after retirees from Perth. In a document prepared by the Peel Community Development Group under the guidance of a regional Project Advisory Group called the Health Needs Analysis of the Aboriginal & Torres Strait Islander Community in the Peel Region, key interventions identified the need for social and emotional wellbeing services. The establishment of family health and wellbeing centres to link to existing services are also needed as well as services to undertake preventive health care. Nyungar people hope this needs analysis will at least bring about better access and equity regarding health services.

Local government will be expected to play a greater strategic role in the environmental health needs of Indigenous Australians, more so as Indigenous Australians develop their own regional and local capacity. We've got to move to control some of our local environments, and being on the local councils is very important.
The Council of Australian Governments made commitments to Aboriginal Australia prior to this meeting and before ATSIC was dismantled. The local council has augmented Council of Australian Governments trials throughout Indigenous settings, which says to me very clearly that Australian governments want to develop capacity at regional and local levels. That is good because what we Indigenous Australians have gone through in the last decade or so is a whole learning experience about where we have capacity and where would we like to have capacity. I think most of us are saying now that we’ve been through the development of national and state profiles, it’s really in our backyards that we want to develop, and I think regionalising Aboriginal Australia in that context is a good thing.

Thank you very much.

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Environmental health workforce development

This section includes presentations on how the environmental health workforce, especially Indigenous workers, is being trained to fulfil their roles, and also on changes in provision of training for environmental health workers.

From midden to mainstream

Michael Spry, lecturer, Batchelor Institute of Indigenous Tertiary Education, Northern Territory

The Batchelor Institute—now in its 30th year—acknowledges the vast diversity of Australian Indigenous culture and is in the process of developing an Institute-wide set of unique cultural protocols that many hope will keep the identity of the organisation. As the Institute’s cultural backbone strengthens, environmental health is also growing stronger. From humble beginnings in 1972, environmental health has come a long way at Batchelor. With two Indigenous staff members currently holding positions in the Environmental Health Unit, the program is looking at being at the forefront with its course delivery.

Today Certificate II, III and IV (focusing on remote area delivery) and a Bachelor of Applied Science (Environmental Health) are offered in block release and external study modes. The Certificate Program will fall under the New Population Health Framework in 2006 with the possibility of the Institute delivering courses to students all over Australia.

Environmental health at Batchelor Institute

Batchelor’s focus is on delivering environmental health in a context-specific method so students are able to take home the practical knowledge that will develop into a productive skill-base.

Teaching environmental health as an Indigenous man reminds me of my own changes in personal perspective about environmental health, and the community realisation that I once had to overcome. Students starting study in environmental health see the community as they have seen it from day one. A person with a community-based upbringing sees broken pipes in bathroom walls, household rubbish piled in a lounge room corner or flea and tick ridden dogs sleeping with people on an everyday basis. These situations need to change to improve health.

Environmental health problems in the community can be likened to the subtle indicators found in the bush when hunting or when a season is changing. Extra training emphasis must therefore be put on the environmental health indicators, enabling students to overcome the norm and become a proactive community member.

Developing learning pathways that incorporate cultural protocols

Cultural frameworks have been around for thousands of years as rules, beliefs and law; I will loosely call them cultural protocols. As an Indigenous man, environmental health and cultural frameworks are relevant, practiced in everyday life, and are not ‘literature learned’ concepts. This life experience brought into the learning setting allows for a good understanding of what students are about and how a student might better respond to the environmental health content delivered.

The Institute is currently working with the ‘both way system’ described by AhChee as a two-way learning method, which is a ‘process whereby Aboriginal and European cultures come together to develop appropriate curriculum that benefits both cultures’. Harris (1990) defined two-way Aboriginal schooling as:

- a strategy to help make the matter of choice real in both worlds; to provide opportunity for the primary Aboriginal identity to stay strong, though changing, and these continue to be the source of inner strength and security necessary for dealing

1 The title ‘From midden to mainstream’ portrays the sacred nature of knowledge and the path taken towards empowering Indigenous people to improve health.

with the Western world ... Aboriginal people today are increasingly interested both in being empowered in terms of the Western world and in retaining or rebuilding Aboriginal identity as a primary identity (Harris, 1990:48).

The debate has widened to embrace a ‘both ways’ concept. Whereas Harris promotes ‘cultural domain separation’ to allow each domain (Aboriginal and non-Aboriginal) to grow independently, the ‘both ways’ position focuses on those aspects of each domain which are compatible. The ‘both ways’ position accepts that it is necessary for some aspects of each domain to grow separately, but argues that in today’s world there also needs to be a growing together of some aspects of each domain.\(^3\)

Whether at a curriculum writing level or at a classroom teaching level ‘both way’ concepts should have adaptability.

This idea used in the classroom setting could be described as an ‘all way’ system: see Figure 2.

**Figure 2: ‘All way’ system of learning**

![Diagram of ‘All way’ system of learning](image)

Note: arrows depict information flow

**Addressing ethical issues within the teaching context**

Different regions across the Northern Territory and Australia have variations in cultural protocols. Certain relationships/protocols in one group may not be used or be as stringent in another, therefore would need consultation with the people involved to gain the right context. In some of the more traditional Indigenous groups, brothers and sisters are not allowed to talk to or even look at each other; adjustments to teaching methods would need to be made if they were enrolled to study the same course. They might have to be put in separate workshops, or be tutored after hours, or the course may need to be delivered in the community at a later stage. The lecturer’s responsibility is to consult with the students involved and make the necessary adjustments. Decisions on alternative teaching options would be based on the ability to achieve the learning outcomes.

Often during my introductory lecture or when a new student arrives I will ask if there are family connections in the classroom. Introductions through this method give the student relevance and pride in his/her hierarchical placement as well as allowing others with different cultural links to appreciate or learn those differences. Robin Hurley describes ‘already knowing something about the context in which the problem was situated’ as being ‘important in enthusiasm’ with problem solving skills in Aboriginal children.\(^4\)

The ‘community expert’ is an important catch-cry I use for students to bring together the learnings of environmental health and encourage what unique and important life knowledge the students already present.

In a 1993 article in the *Australian Journal of Adult and Community Education* Jill Byrnes refers to Lester, cited in Wafer (undated) who said: ‘knowledge was taught through face-to-face communication, by speech, action and behaviour,'

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then stored in the human memory.\(^5\) A good description of Indigenous learning, and how relevance to places and interactions in those places has great importance, is that the land is a ‘living library’.

There are many ways of incorporating culture into learning; and I use these few methods to increase the relevance for Indigenous students.

**Linking community knowledge systems and modern day environmental health**

The goal for Indigenous-specific education is best summed up in an address by an Anhnhem Land Elder (name not published for cultural reasons) at a Batchelor graduation ceremony:

> The challenge for tertiary institutions, funded to enrol Aboriginal students and to implement programs for these students, is to develop courses of study that begin with the knowledge and skills that the students bring with them from their communities, and then develop the students’ study programs through continual reference to their society.

A practical, context-specific focus is how the Environmental Health Program attempts to follow this advice, continually adjusting and adapting teaching methods to best suit its students.

Figure 3 depicts the common areas of environmental health that can be easily associated with past and present Indigenous practices.

Highlighting the connection between traditional skills and knowledge, gives students the confidence they need to become good environmental health professionals; it challenges the idea that ‘this is all white man’s knowledge’, without relevance to the Aboriginal community. Students at Batchelor are encouraged to talk to Elders and other community members to find ‘community-specific relevance’ for the environmental health knowledge they have learned.

The Institute’s Environmental Health Program also endeavours to schedule courses so they do not clash with culturally important times of the year. Many communities in the Northern Territory have age-old ceremonies that form the lifeblood of a lot of

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Aboriginal culture and traditions. Ceremonies may have varying levels of community importance and, as an educator accustomed to attending ceremonies, knowing students’ involvement should be given high priority for community respect and personal development. Social cohesion in the community is achieved due to the strengths of Aboriginal culture. Taking this into account we should ensure that the training provided supports these traditional structures and does not threaten them. Acknowledging that respect in the community is gained firstly as an Indigenous community member and secondly as an environmental health professional is very important. Peter Stephenson, in reference to Indigenous living conditions, says:

“White, western knowledge will assist Indigenous practitioners understand the gravity of the problem from a conventional perspective, but the task of securing improvement will also require ways of working that most non-Indigenous practitioners could never hope to come close to understanding.”

Hughes can further contextualise this statement:

“Community development is about empowerment and true participation through communications, knowledge exchange, decision-making, education, and the application of agreed upon courses of action.”

**Conclusion**

As the learning journey continues we hope to better address ethical issues within the learning structure, develop learning pathways, and link knowledge systems to develop appropriate environmental health delivery. The ‘both ways’ system of ideas in my view is empowering students to be the ‘expert’ by making the knowledge exchange through formal study complementary to Indigenous knowledge. The real tertiary outcome is not the piece of paper to hang on the wall or the graduation statistic but the empowerment of Indigenous people to make a difference at the community level.

With the National Review of Indigenous Environmental Health Workers in its final stages, and the National Indigenous Environmental Health conferences and forum seeking cultural content within courses, Indigenous environmental health is looking to the future as governments put the ball in our court for changes in community health and infrastructure.

The insight and personal life experiences that Indigenous environmental health educators and professionals alike have to offer highlight the positive direction of environmental health.

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**Other sources**


**Home-grown solutions for healthier homes: The Healthy Housing Worker program in far west New South Wales**

Paul Kemp, Property Manager, Murdi Paaki Regional Housing Corporation, New South Wales

Gloria Dorrigo, Field Officer, Murdi Paaki Regional Housing Corporation, New South Wales

Bill Balding, Director, Far West Area Health Service, New South Wales

Colin Thorne, Healthy Housing Worker

**Bill Balding**

Colin, Paul, Gloria, and myself would like to thank the traditional owners and to tell you about one of the ways we’re trying to solve problems with which all people who manage Indigenous housing in remote parts of New South Wales, indeed Australia, are grappling. These are the problems of isolation, lack of trades, lack of money (nobody wants to give ongoing funding, it’s all one-off), lack of skills and lack of support.

We would like to acknowledge Bruce Graham, the Managing Director and big picture thinker for Murdi Paaki Housing, which is the Indigenous Housing Corporation for the Murdi Paaki ATSIC Region in New South Wales, and also Stuart Gordon and Hugh Burke, the Far West Area Health Service’s big thinking team.

There is a very strong, productive partnership between the Murdi Paaki Regional Housing Corporation and a number of others who are on board to help; like us in the Far West Area Health Service. With our regional ATSIC, we organise an Indigenous environmental health forum that brings state and local players to talk about Indigenous health issues on a regular basis. It’s been going for four or five years and has been very productive in a broad range of areas: water and sewerage, housing, and policy framework and structures. It’s starting to kick some goals in terms of achieving things and organising ourselves in the west.

I know you people from the north and the Territory will laugh at us when we say we have ‘remote New South Wales’. We think we do. We have the issues of isolation, depressed economies, lack of jobs, lack of opportunities, but we are a little bit different in some respects in that in New South Wales, from a government perspective, we are not used to thinking ‘remote’. The Northern Territory Government is used to dealing with remote issues, but in New South Wales I don’t think we do it very well.

We’re lucky that Murdi Paaki Housing Corporation and the Far West Area Health Service cover approximately the same area, about a third of New South Wales. We have a small, scattered population, a high Indigenous population (it’s the highest per capita in the state), and a population with a very low socioeconomic status. We have very high incidence of disease, unemployment and injury, and we have problems with access to health services.
Gloria Dorrigo

The Murdi Paaki region is a very big part of New South Wales. It’s probably 1000 kilometres from Mildura in the south up to Collarenebri, which is my area. To travel that long distance—especially for the property manager, Paul Kemp—is not just an overnight stay and go home the next day. You have to get there and then tenants are ringing you up and wanting you to come and see them: you get there and things just go on and on. The isolation has really hit us with our travelling, but there’s such a need for us out there.

When we took over the houses in the Murdi Paaki region from the previous housing organisation they were in very poor condition. The tenants didn’t know anything about paying rent and looking after the houses and were losing heart. They didn’t want to pay rent because they couldn’t see where the money was going. Repairs to the houses weren’t being done. The funding bodies wouldn’t fund the organisation because they didn’t have money in the bank from the rent, so it was a catch-22 situation. We came along and fixed it all up. We’ve been going since 1996 and I’ve worked here for seven years. All I can see is that it’s just getting better for Aboriginal people in our area. To have Healthy Housing Workers in remote areas like Ivanhoe and Weilmoringle is just unreal. Tradespeople have to travel at least 130 kilometres just to get there and, if a tenant doesn’t know how to change a washer, that costs us $130 for travel, plus $66 for the tradesperson to change the washer. It was costing a lot of money. When Stuart Gordon, who’s since left the health service, came to Bruce with the idea of Healthy Housing Workers, Bruce just jumped at it. He thought it was great, and the boys have been on board now for two years, so full credit to them.

We have strategic alliances with a lot of agencies within the community. The Far West Area Health Service has helped us with strategic support and dog surveillance programs. The Murdi Paaki Aboriginal Environmental Health Forum developed building guidelines and handled the great air-conditioning debate, a water and sewage review and reform (we’ve had a lot of trouble out in our communities with that) and commissioned the Weilmoringle Thermal Control Study. As well, under the Barwon Darling Alliance, we worked with local governments in the communities.

Bill Balding

What we’re doing is grouping workers from isolated communities in pairs and employing them in those communities. The idea is that because trades are so difficult to get and so expensive, Healthy Housing Workers will be trained to nip problems in the bud before they develop into full-scale problems. Initially, they are essentially handymen with an environmental health focus. We will, however, encourage them to develop trade skills in order to broaden their employment potential. We’ve targeted remote and isolated communities, but we’re rolling the program out into more and more communities.

We have just completed the second year of the five-year pilot program. Currently we have eight trainees. They’re all enrolled in a training program provided by the Batchelor Institute. Importantly, commonwealth, state and regional funding bodies are contributing to the program.

It’s all about preventive maintenance: educating the community on environmental health issues and enabling the community to look after itself and sustain its housing. Early intervention is a key part of the program. Hopefully—although this is hard to measure—we’re also reducing respiratory illness, infectious diseases, and injury. This is not just because there’s a healthier home, but also because there is a readily-identified person within the community to whom people can take problems.

Paul Kemp

We’ve got four Healthy Housing Workers in the Ivanhoe–Dareton area. They’re local boys from those communities and they’re pretty skilful fellas who can do minor emergency works on homes. Also at Collarenebri and Weilmoringle they’re on board with us and Bourke’s just about to start, so we’ll have two in those communities. That’ll be kicking off very shortly. My personal thought on it is that, to a housing provider, these fellas are an asset. It’s a great saving they create for the
company so we can direct funds into housing issues and it’s something that is working very well in our area.

Other communities like Wilcannia, Walgett, Enngonia and Gulargambone are places we’d like to take Healthy Housing Workers, and they can then play their part for their own community. That’s the beauty of it, they’re local people in their own community. Remember that there are no trades in these communities, no one can go and do a job straight away. You have to wait days or a week before a tradesperson can get to those communities. These fellas can identify problems. We use the modern technology of phone and fax. They can talk to a tradesperson direct and issues are followed up as soon as possible.

Our main office is in Broken Hill, so the job involves a lot of travelling. A lot of the field staff are constantly away from home. It’s a big job and it’s something that we all take really personally. It’s there for our people and it means a lot to us.

The organisational chart at Figure 4 shows that Murdi Paaki sits at the top and this is the support that the fellas get. The field officers are just a phone call away if they’re not in the community. Healthy Housing Workers have a mentor that comes to the community every second week. We have a licensed builder who works with the fellas. If they’re not confident enough to do a job the builder comes in and he’ll spend a week with the fellas to get them up to standard.

That’s another issue: quality and standard. The Aboriginal builder gets those boys over the line. They also do training, different training in the community, whatever TAFE courses come along, first aid certificate, occupational health and safety, anything that’s happening in those communities, they get involved in.
Colin Thorne

When we first started two years ago we had to use our own cars and we had a tool kit. Now we have a trailer, car, mobile phone and everything else that goes with it.

During our work we go to the tenant's house and we do a health and safety survey in which we check that everything's safe and healthy in the house and there're no plumbing problems or stuff like that. We generate a lot of our repair work through these surveys. Also we get trade requests where we may employ a plumber, electrician or carpenter to come into the house and fix problems. We also go back later and check that the tradesmen have done their jobs properly, so they don't come to our communities and get paid for doing nothing. We're entitled to the same quality of work that anybody else is.

Paul Kemp

There are indicators that show that our work has been very effective in the communities. The average life span of a house in Aboriginal communities is around eight years. With the Healthy Housing Workers we've turned it into about 20 years. It's also cut the trade requests by half, as these fellas are undertaking the basic jobs. Prevention and maintenance and improving health and safety conditions are the things the Healthy Housing Workers have been addressing, and we're now on top of a lot of them. The last five or six years have seen a great improvement in our communities so I'd just like to say thanks a lot for that.

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Batchelor’s new environmental health degree: a workforce capacity-building initiative for a healthy and sustainable future

(Abstract)

Zane Hughes, lecturer, Batchelor Institute of Indigenous Tertiary Education, Northern Territory

Requests for environmental health workforce capacity building and community development programs have been high on the agenda of every National Indigenous Environmental Health Conference conducted across Australia to date. Coupled with this has been a demonstrated need for a career path for Indigenous environmental health workers. Over the past 18 months, Batchelor Institute of Indigenous Tertiary Education in the Northern Territory has been responding to these overlapping concerns by developing Australia's newest industry-recognised environmental health degree.

In February 2004, the first cohort was admitted into a Bachelor of Applied Science (Environmental Health) program. The program aims to bring capacity building, community development, and environmental health, within an appropriate career structure, together formally. Program designers worked closely with the Australian Institute of Environmental Health, Territory Health Services and other training and employment stakeholders to develop a program that both meets national professional accreditation requirements and serves the specific needs of environmental health practitioners for Indigenous community settings.

This paper briefly outlines the history of the Batchelor Institute as an established site for Indigenous environmental health learning and explains how the new degree was developed as part of its natural growth and expansion.
of training scope, in line with the needs of Indigenous practitioner needs. The presentation takes a close look at the structure and content of the program. It illustrates how units in this newest national environmental health degree focus on:

- environmental health infrastructure
- housing and construction
- public health risk management
- sustainable development
- community capacity building
- project planning
- legislative requirements for effective practice in any Australian jurisdiction.

The presentation outlines the flexible nature of delivery such that the entire program can be undertaken over three to six years through a combination of block-release and external studies, depending on the amount of support for study given by the employer. This feature of course delivery is designed to enable environmental health service providers such as community councils, land councils and local and state authorities to recruit and support Aboriginal and Torres Strait Islander environmental health officer trainees. It also helps students gain professional experience with employed environmental health professionals across their programs of study, and is in line with Batchelor’s strong belief in the benefits of learning through experience and sharing this work-based learning with fellow students.

The paper concludes with a call for conference participants to look to the future and consider their professional and career development desires and opportunities. The aim here is not only to secure individual career improvements, but also to raise the overall number and influence of Indigenous professionals in the environmental health field. It is through development of such a strong and effective critical mass that we will ultimately see the necessary policy, resourcing, legislative and operational shifts that are needed to meet the immediate and long-term needs of the broader Aboriginal and Torres Strait Islander population.

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Housing issues and planning

Housing is a major environmental health issue. This section includes presentations on housing and community planning. Management of existing housing, construction of new housing, maintenance of housing, improving housing to function better, and better planning are all covered.

The Northern Territory Indigenous Community Housing Survey

Philippe Porigneaux, Senior Policy Officer, Environmental Health, Northern Territory Department of Health and Community Services

Phillip Bush, Environmental Health Worker, Yugul Mangi Community, Ngukurr, Northern Territory

In 1995 a multi-lateral agreement between the Northern Territory Government, the Australian Government and ATSIC established the Indigenous Housing Authority of the Northern Territory (IHANT). This organisation aims to increase housing availability and reduce overcrowding by developing policy and allocating funding for:

- construction of new housing
- upgrade and maintenance of existing housing
- housing management.

IHANT allocates funding to Indigenous community housing organisations in the Northern Territory. Maintenance money for Indigenous housing in remote communities is derived from two sources—annual maintenance grants (allocated per house) and rent (paid by tenants).

In 1998, IHANT introduced the Environmental Health Survey that the Indigenous Housing Branch of the Department of Community Development, Sport and Cultural Affairs, in its capacity as IHANT program manager, oversaw. A survey of each house was undertaken to assess maintenance requirements and identify urgent, essential and general maintenance needs.

The first survey was carried out in 1998–99, the second in 1999–2000, and the third in 2001–02. The data were entered by the Department of Community Development, Sport and Cultural Affairs and analysed by the Menzies School of Health Research. Evaluation reports followed each round and these included recommendations for survey improvement. This evaluative process showed that the quality, coverage and usefulness of survey data had diminished over the three survey rounds.

During 2002, a review was proposed on the basis of recommendations made in the third evaluation report. The Department of Community Development, Sport and Cultural Affairs conducted the review with the aims of:

- assessing whether the objectives of the survey reflected the aims of IHANT
- assessing the appropriateness of the survey instrument
- checking whether there were strategies in place to align the survey with relevant policies and programs of the Northern Territory and Australian Government.

The major findings of the review were that the objectives of the survey were consistent with IHANT’s overall goal of improving housing and related health outcomes for Indigenous Territorians. There was evidence of a gap within the survey’s policy framework, and a lack of comprehensive procedural guidelines affected both the accuracy and coverage of data collection.

The review produced 37 recommendations to address survey shortcomings, which the IHANT Board considered in 2003. Subsequently, the survey was approved for redevelopment in 2004.

Survey redevelopment

A collaborative survey redevelopment process took place between February and June 2004, with the Menzies School of Health Research contracted as project manager. The project drew on experience in the Northern Territory, and Australia more broadly, with the following outcomes:

- A standardised methodology for surveying houses was developed.
• A land use survey for verification of vacant lots and updating current lot usage was proposed.

• A comprehensive Indigenous community housing survey form was developed in three parts: general information, house assessment and customer satisfaction.

• An Indigenous Community Housing Survey manual, to be used as a training resource and field guide for surveyors, was produced. The manual contains a survey overview, advice on interacting with the community, survey tools and protocols, data entry and analysis protocols, and reporting requirements for feeding survey results back to the community.

• A database was constructed enabling generation of comprehensive maintenance reports.

**Capacity building**

In order to facilitate implementation and increase local capacity, assistance of community members (particularly Indigenous community housing organisation employees and Indigenous environmental health workers) is sought wherever possible. Working in partnership results in sharing of social, cultural and technical skills. Community staff build confidence and expertise, which aids in undertaking future smaller-scale and more regular surveys proposed as part of the community housing management process.

The survey teams working house-to-house interact with residents and gain an appreciation of living conditions. Issues associated with hygiene, occupancy rates, trends in defects, and variations in house design provide insight and potential for developing future programs or improving living conditions.

Survey teams spend several days on site, which helps them become known to community members. Friendship and trust is strengthened within the team and with members of the community and its administration. This encourages future working relationships to progress a raft of environmental health programs supported by the community.

Quality information from the Indigenous community housing survey increases decision-making, reporting and planning capability at all levels. The survey data support IHANT decisions regarding funding allocation, since it highlights areas of greatest need and enables the Northern Territory to report on a greater range of parameters contained in the National Reporting Framework for Indigenous housing. Also, common issues throughout the housing stock and community infrastructure are identified, which is used to improved designs for future housing and amend standards.

In the community, Indigenous community housing organisations have access to specific and timely information on housing maintenance needs. The community reports help local planning and prioritisation of work. Community survey reports focus on the functionality of health hardware in order to highlight areas that have the potential to affect residents’ health and safety.

The community reports contain descriptions of key findings as well as work lists. The work lists provide specific maintenance needs for the interior and exterior of each house. Maintenance items specify any problems that may have been identified throughout the house, and are classified according to whether they are urgent (need to be done first), essential or routine. Reports also indicate whether items need maintenance, upgrade, replacement or further investigation by technical tradespeople, such as carpenters, plumbers, electricians or engineers.

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Housing for Health update

Paul Pholeros, Director, Healthabitat, New South Wales

Andy Irvine, Chief Executive Officer, OTG Environmental Solutions, Environmental Consultants, New South Wales

It is good to be presenting an update of Housing for Health work to this group. I recognise many people at this conference that have worked for many years on the work in the field. This brief update will give the latest national results for the Housing for Health and Fixing Houses for Better Health projects.

What started as a small public and environmental health review in central Australia in the mid 1980s, has grown gradually (Housing for Health project) in many states and is now a national program that aims to make urgent safety and health hardware repairs to existing housing and surrounding living areas.

The Fixing Houses for Better Health program and Housing for Health projects have the following key concerns:

- To make immediate change, to ensure that on day one of every project 'fix' work commences.
- To prioritise all work on the basis of maximum health gain (healthy living practices are explained in more detail below).
- Using defined, standard, and repeatable tests of a house and its components, to collect accurate, detailed data, to ensure small-scale immediate improvement goes hand-in-hand with careful documentation of longer-term needs and basic housing faults.
- To employ local Indigenous people on every project, ensuring that some local people receive 'on-the-tools' training about how to test and do minor 'fix' work on their houses.
- To employ licensed tradespeople to carry out more extensive 'fix' work within 24 hours of the project's commencement.
- To use the data generated by projects to expose building and product faults and to help define the principles essential for better designs and specifications.

Figure 5 gives the most current national figures for all projects since 1999.

Why are the results so poor at Survey Fix 1?

When looking at the results in Figure 5, a key question is: why are the initial Survey Fix 1 results so poor? The most common reasons given are set out below. Detailed information gained from the Fixing Houses for Better Health and Housing for Health projects is then presented to test these often-publicised 'theories'.

Tenant damage

Theory: While often put in many ways, the most common explanation offered for the poor performance of houses is tenant damage, or misuse or misunderstanding of how to use the house. This frees designers and builders of much responsibility as whatever gets built will be damaged in much the same way.

Reality: Figure 6 shows that the prime cause of need for repair is not damage, but routine maintenance. Since the last conference the main change in these figures has been the increase in faulty work and decrease in routine work. Damage work remains near constant at 7 per cent.

The age of the houses

Theory: Much Indigenous housing stock is old and the figures simply reflect this fact. This pushes debate into the arena of providing new housing. Usually combined with the need for new housing is the need for many more new houses, often reducing the budget and specification levels for new houses. New housing will perform better than old.

---

3 Currently 253 checks and tests are carried out on each house.
While much Indigenous housing is old; there is no clear evidence that new housing is performing any better than the old. Figure 7 compares age and overall function for approximately 200 houses in four widely-scattered communities in one state. Budgets are often stretched to build more new houses so as to alleviate the very real problem of over-crowding. But this can only be done by reducing the cost of houses, and this often means there is less money spent on key specification items, leading to loss of house function. Common ‘reductions’ are in the areas of:

- little or no insulation
- poorer hot water system, tapware, and door and window quality
- fewer and lower quality light fittings
- no yard works or fencing
- fewer inspections of the works.

Figure 5: Comparison of national average function rates between Survey Fix 1 and Survey Fix 2 for Critical Healthy Living Practices

All Housing for Health and Fixing Houses for Better Health projects
Comparison of house function at Survey Fix 1 (before any fix work commenced) and at Survey Fix 2 (after fix works have commenced)

Note: projects in progress SF2 data incomplete

Critical Healthy Living Practices

- Total SF1 (represents a total of 3478 houses, 103 projects, from 4 states and 1 territory and 1 region)
- Total SF2 (represents a total of 2779 houses, 86 projects, from 4 states and 1 territory and 1 region – Total fix budget varies on individual project $3500 min to $7600 max average per house)

Notes: Survey Fix 1 covered 3478 houses, in 103 projects, in 4 states, a territory and a region; Survey Fix 2 covered 2779 houses

Source: National Consolidated data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.

Figure 6: National ‘fix’ work data

National Fix work (All FHBH and FHB projects) showing reason fix work was required, as reported by licenced trades. Data represents 32,878 items fixed from 45,878 inspected 1999–2004

Source: National Consolidated data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.

Reality: While much Indigenous housing is old; there is no clear evidence that new housing is performing any better than the old. Figure 7 compares age and overall function for approximately 200 houses in four widely-scattered communities in one state. Budgets are often stretched to build more new houses so as to alleviate the very real problem of over-crowding. But this can only be done by reducing the cost of houses, and this often means there is less money spent on key specification items, leading to loss of house function. Common ‘reductions’ are in the areas of:

- little or no insulation
- poorer hot water system, tapware, and door and window quality
- fewer and lower quality light fittings
- no yard works or fencing
- fewer inspections of the works.
Poor design

Theory: Inappropriate design has not allowed people to interact with the house properly and the house has not provided for the needs of those using it. More and better-informed consultation at the design stage will improve the performance of housing.

Reality: Design and detailed specification does contribute to the poor performance of houses. But, as shown above, damage is not the major issue, nor is 'making the house more robust' if that robustness is solely to counter vandalism. Robustness of the house's fittings, hot water system and waste system in response to overcrowding and aggressive water quality should definitely be considered. Areas needing better design, careful specification and detailing include:

- waste water systems able to cope with large numbers of people
- hot water systems appropriate to water quality, running costs and house population
- bathroom layouts and floor drainage to cope with large numbers of people
- shower roses appropriate to water quality
- light fittings and energy saving bulbs or tubes
- doors and hardware, particularly locks
- windows and new ways of insect screening
- cook tops and ovens
- kitchen bench splash backs
- kitchen storage units
- solutions to keeping food cool and pest free
- usable yard areas with cooking, sleeping and storage potential
- thermal performance equivalent to sitting outside the house under a tree.

Figure 7: House performance, by age, in 211 houses across a region

Source: A selection of National data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.
Poor construction

Theory: Buildings are built badly and therefore fail. They need to be built of stronger materials and generally in a more robust fashion.

Reality: It is important to note, in Figure 8, the high level of routine maintenance that may well have resulted from poor initial construction. For example, drains with minimal falls are more likely to become blocked by heavy use. More disturbing is the ‘fix’ works needed due to licensed trades assessing the plumbing and electrical work as faulty. Twenty-two per cent, or over 10 000, electrical inspections/repairs were due to the original work being considered ‘not damaged or needing maintenance’ but rather being installed incorrectly, the wrong part or component being fitted or the essential item being absent from the house.

Poor construction, coupled with lack of supervision, leads to houses that do not function. Consultation, design and specification will not produce better housing unless it is ensured that decisions made during the design process are enacted on the building site.

Figure 8: Breakdown, by trades, of repair work needed by reason for repair

National Fix work (All FHBH and HH projects) showing reason fix work was required, as reported by licenced trades. Data represents 32,878 items fixed from 45,878 inspected 1999–2004

Source: National Consolidated data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.

Poor data

Theory: The data does not properly reflect the condition of Indigenous housing. Housing is far better than this data would indicate. Other state and national data show better performance of housing.

Reality: Data from the ATSIC-funded Fixing Houses for Better Health (1) project 2000–02, include approximately 200 houses from each of Western Australia, the Northern Territory, Queensland and South Australia. There has been constant criticism of the project data, perhaps because they tell an unpalatable story about house function. Typical criticisms have been:

- ‘The questions are too hard and no house would pass!’ The simple test is to examine the questions in detail. For example, with the shower test, ask yourself which items you would not want in your house when showering tomorrow morning. The seven items are shown in Figure 9.
The data are collected by Indigenous teams who are untrained. The teams are given training in the field, first on demonstration boards with electrical and plumbing fittings able to be tested and fixed. Team leaders supervise them in the field and data sheets are checked at various stages to ensure accuracy. As the majority of the survey/repair teams come from the participating community they quickly see the marks they make on the survey form lead directly to a licensed tradesperson fixing the house, and therefore have every reason to ensure accuracy. Figure 10 shows current employment of Indigenous staff on projects nationally.

‘What use are the data? … They are too complex.’ The data are first, and most importantly, used to identify repair work in the house so immediate change can occur. The example below shows how data can also be used later to determine building component failures and lead to better design.

An example using the collected data from many projects to improve the ability of people to have access to a working shower may make the point clearer.

Figure 10: Comparison of Indigenous and non-Indigenous staff numbers

Breakdown of Indigenous and non-Indigenous staff from a total staff of 1163 people from projects totalling 2002 houses—1999–2004

Note: Numbers are incomplete and represent staff from only 2002 of 3478 houses completed, as information has not yet been collated.

Source: National Consolidated data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.

By looking at Figure 11 we can take the following design actions, in order of the highest common failures, to:

- improve the specification of shower roses
- look for more detail about the performance and type of hot water service specified
- improve the hot and cold taps.

If hot water systems appear to be a major issue, there are further available data that can provide a more detailed analysis. For example, Tables 1 and 2 provide further useful analysis of hot water system performance.
**Figure 11: National analysis of Critical Healthy Living Practices, ‘Shower working’**

Note: Item performance of 792 houses at Survey Fix 1 before any repair work
Source: National Consolidated data combining Housing for Health and Fixing Houses for Better Health data as collected and collated by Healthabitat.

**Table 1: Type of hot water systems available at Survey Fix 1**

<table>
<thead>
<tr>
<th>Hot water system power type</th>
<th>% houses</th>
<th>No. of houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot water system power type: solar</td>
<td>43</td>
<td>339</td>
</tr>
<tr>
<td>Hot water system power type: electric</td>
<td>49</td>
<td>387</td>
</tr>
<tr>
<td>Hot water system power type: gas</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>Hot water system power type: heat pump</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Hot water system power type: solid fuel</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hot water system power type: no hot water system available</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Note: 784 house were surveyed
Source: This table has been extracted from the 2nd edition of the *National Indigenous Housing Guide*, published by the Australian Government Department of Family and Community Services.
Common faults identified in houses throughout the Housing for Health and Fixing Houses for Better Health projects have been documented and forwarded to the publishers of the National Indigenous Housing Guide.

**Conclusion**

Housing for Health projects continue to go about the difficult task of making small but important improvements in the day-to-day living environment to improve the health of those living in the houses.

Your interest and support in debunking myths and falsehoods about the program, combined with the effort many of you make in the field, will ensure continuation of the work.

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**Table 2: Function of hot water systems at first survey, before any repair work was conducted**

<table>
<thead>
<tr>
<th>Function of systems</th>
<th>Percentage functioning OK</th>
<th>No. of houses OK</th>
<th>Total houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot water pressure release/relief valve OK (on all systems)</td>
<td>54%</td>
<td>421</td>
<td>784</td>
</tr>
<tr>
<td>Hot water pressure release/relief valve OK (on all systems)</td>
<td>54%</td>
<td>421</td>
<td>784</td>
</tr>
<tr>
<td>Hot water pressure release/relief valve OK (on all systems)</td>
<td>54%</td>
<td>421</td>
<td>784</td>
</tr>
<tr>
<td>Hot water per person (&gt;50 litres per person considered a minimum)</td>
<td>42%</td>
<td>309</td>
<td>740</td>
</tr>
<tr>
<td>Temperature OK (&gt;44°C) at time of survey: solar</td>
<td>68%</td>
<td>230</td>
<td>339</td>
</tr>
<tr>
<td>Temperature OK (&gt;44°C) at time of survey: electric</td>
<td>79%</td>
<td>306</td>
<td>387</td>
</tr>
<tr>
<td>Temperature OK (&gt;44°C) at time of survey: gas</td>
<td>23%</td>
<td>11</td>
<td>48</td>
</tr>
<tr>
<td>Temperature OK (&gt;44°C) at time of survey: heat pump</td>
<td>75%</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Temperature too hot &gt; 62°C at time of survey: solar</td>
<td>20%</td>
<td>68</td>
<td>339</td>
</tr>
<tr>
<td>Temperature too hot &gt; 62°C at time of survey: electric</td>
<td>43%</td>
<td>168</td>
<td>387</td>
</tr>
<tr>
<td>Temperature too hot &gt; 62°C at time of survey: gas</td>
<td>6%</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>Temperature too hot &gt; 62°C at time of survey: heat pump</td>
<td>0%</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: This table has been extracted from the 2nd edition of the National Indigenous Housing Guide, published by the Australian Government Department of Family and Community Services.

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Housing Improvement and Child Health Study

Philip Donohoe, Executive Officer, Animal Management in Rural and Remote Indigenous Communities

Harold Ulamari, Research Officer, Menzies School of Health Research

It is my privilege to stand before you today providing feedback on the Housing Improvement and Child Health Study 20 months into the project. In doing so I acknowledge the traditional ownership and history of Indigenous people from this place here where I stand. I acknowledge the traditional owners from various Northern Territory communities and in particular the Dhamarrantji family and Yolngu from East Arnhem Land who have taught me so much. I am also thankful to Harold Ulamari (a Jingili man originally from Beetaloo station) and community interviewees for their humility and long suffering because of my cross-cultural clumsiness and persistence and therefore offensiveness in asking very personal questions.

I am an emotional guy, visiting this great country with fear and trembling every time I disembark from a vehicle or plane. I am visiting another nation. I am often a stranger and my activity is not subtle. I am deeply privileged at being welcomed to the various communities we visited during this study. I am thankful for the information people entrust to both Harold and myself. I am encouraged by how well people live, providing care and support to each other in mostly difficult and overcrowded situations. I thank the people who have welcomed me to their country and have shared their homes and intimate life stories with me.

Let me be clear from the beginning; no one likes me conducting this study because the questions are mostly too personal and inspections culturally inappropriate. However, their commitment to their children and their children’s future is the reason for their support.

The Health Improvement and Child Health Study is a large study funded by the National Health and Medical Research Council conducted over a two-and-a-half-year period with completion expected around September 2005. We are currently two-thirds of the way into this project. The Health Improvement and Child Health Study aims ‘to build on previous work by establishing a two-year cohort study of children living in selected remote Aboriginal communities in the Northern Territory where substantial housing infrastructure projects are conducted over two years. The health of children will be measured against improvements in housing stock.’

The key objectives of the study are to:

- conduct a socio-demographic and parent-reported child health survey
- conduct a survey of the household environment, focusing on the functional status of household hardware and on possible confounding factors
- conduct an audit of health centre records of children whose parents/guardians have provided consent for their participation
- determine if there is an improvement in selected health outcomes that can be attributed to improvements in household infrastructure, and if specific components of infrastructure appear more important in this regard
- feed back information about the results of the study to key members of the community.

Environmental Health Survey 1 (EH1) collected baseline data. Environmental Health Survey 2 (EH2) will collect data after the intervention (that is, construction of new houses) using the same survey instruments.

A community survey has been included in the study using, as far as possible, variables assessed in the national Community Health Infrastructure
Needs Survey. Project officers observe
community-level infrastructure as it relates to
child health. Areas for investigation include:

- population increases and duration of
  increase—for example, a funeral
- community access (roads, air, etc.)
- power and water infrastructure, services
  and maintenance
- essential service officer staffing
- housing office staffing, planning and
  management
- public ablution facilities
- support centres in the community.

Information is collected using some questions
from the 1999 Community Health Infrastructure
Needs Survey. This verifies 1999 survey data
and updates environmental health infrastructure
status at the time of EH1. This community
survey component involves observations around
the general community, and some interviewing of
housing office or council employees. It does not
involve any additional interviewing of household
residents or inspection of individual houses.

The questionnaires used in the pilot study were
modified for the project. This mostly involved
incorporating a number of standardised questions
from the Australian Bureau of Statistics 2002
National Indigenous Social Survey for Remote
Areas. This survey was designed for, and has
been used in, remote community settings. These
extra questions had little effect on the scope of
the questionnaires, but will make it easier to
compare the study communities with other remote
communities across Australia.

Other modifications were the addition of three
internationally validated scales for assessing
self-efficacy, depressive affect and depression in
householders and carers. These scales have been
included because of their potential to highlight
significant relationships between these constructs
and the quality of household infrastructure and
child health. These revised questionnaires were
tested at an East Arnhem community before
being implemented in the main study.

Interviews with consenting householders from
houses where children under seven years of age
are living with consenting main carers/guardians
cover the following topics:

- movement between houses and between
  communities
- links to traditional land—from this country
  or another region
- socioeconomic status of residents and carer
  (education, work, sources of income)
- household/carver financial security and social
  problems for household residents/carver
- smoking tobacco—quantity of smoking and
  passive smoking
- house maintenance and cleaning—access to
  functioning housing office
- householders’ sense of control
- carer’s general health and emotional
  wellbeing
- how often their children have been ill with
  common childhood diseases.

Only the clinical records of children whose
main carer/guardian gave informed consent were
included in the study. Data was extracted from
these records on site to determine growth patterns
and how often these children present with
common childhood diseases, and was recorded on
anonymous data sheets for the health centre audit.

The study design builds on Professor Ross
Balie’s conceptual framework of confounders,
information and relationships influencing the
outcome: in this case, health improvements for
children under seven years of age. An overview
of confounders affecting child health and
housing improvement was developed so survey
instruments could be designed to capture the most
pertinent data. Analysis of the data will determine
statistically significant associations with housing
improvement. Preliminary analysis of EH1 data
has begun but has not yet progressed to a stage
where meaningful comment can be made.
The quality of the infrastructure in the usual house of residence for each child is assessed through the household infrastructure survey. Where a child is a regular resident of more than one house, the exposure to different household environments will be determined from the proportion of time spent in each household. Where a household has benefited from the building or maintenance program, the date of the intervention is recorded.

The outcomes the study measured are the incidence rates of diarrhoeal disease, ear disease, respiratory tract infections, and skin infections as well as nutritional status. These are determined by a health audit of each child’s clinical records at the community health centre.

So far, eight communities have been studied, with three more expected to be completed by July 2005, increasing the representation from central Australia. Surveys conducted at a community, household, carer and child level have been received in numbers higher than expected leading us to believe the survey will have sufficient exposure to be statistically significant. Child health audits are about to start to retrospectively review illness over a two-year period: 12 months before and after occupancy within the community. Feedback to key community members has commenced and will continue up to the end of the study. By the time of the next Indigenous Environmental Health Conference a full statistical analysis will have been made and we should be able to discuss significant health associations. It is expected a final report of the project will be written after full data analysis. The data is vast and should provide a broad understanding of health and home relationships in an Indigenous housing setting.

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Evaluating the health impacts of Housing for Health on Aboriginal communities in rural New South Wales

Michael Staff, Director, Environmental Health, New South Wales Health

Evaluating the health impacts of Housing for Health on Aboriginal communities in rural New South Wales is something we need to do to inform policy and to be sure we are getting value for money for the investments we are making. When looking at Indigenous health we need to take an holistic view of health that incorporates social, cultural and spiritual elements as well as the absence of disease.

Today I'd like to outline what data is currently available to evaluate the Housing for Health program, acknowledge its limitations, describe the gaps we need to fill, and highlight some alternatives to addressing these gaps. From the outset it is important to acknowledge that collection of data must be linked to provision of service. However, it is equally important to emphasise that for us to keep delivering a service we need to take away with us some evidence that it’s made a difference.

Within the Housing for Health methodology there are nine healthy living practices, and in New South Wales achieving these forms the basis of delivering our program. The Aboriginal Community Development Program administered by the Department of Aboriginal Affairs is spending $240 million over eight years, with $15 million of that earmarked for Housing for Health. New South Wales Health provides additional funding to implement and manage the Housing for Health program.

Of the nine healthy living practices, the four we are concentrating on are washing people, washing clothes and bedding, removing waste, and improving nutrition. These practices could be considered as basic rights, things you’d think everyone should be able to do. A case could easily be made on social justice grounds that if you can demonstrate a group of people don’t have adequate
facilities to perform these practices, and you can demonstrate that a program can help provide them with these facilities, then that program must be improving this group's health. Unfortunately, this type of argument is not always enough.

There are three potentially useful sources of routinely collected health data that might be helpful in evaluating the Housing for Health program. Firstly, the Inpatient Statistics Collection that records all hospital admissions, the reason for admission, and what procedures were performed. Using this type of data tends to only consider the more severe health problems—you need to be sick enough to be admitted to hospital to be included in the data. Secondly, the emergency department presentations database that records similar information. Individuals recorded in this database do not necessarily need to be sick enough to be admitted to hospital to be recorded. And thirdly, general practitioners also collect patient data. While this last category of data has enormous potential, the systems in place are not well developed and there is limited, if any, data available on a routine basis.

Another factor complicating retrieval of useful data to evaluate Housing for Health is the need to accurately identify the Indigenous status of individuals—this can be difficult for routinely-collected data systems. How good is the recording of Indigenous status in the Inpatient Statistic Collection and emergency department data in New South Wales? It varies quite a bit but is probably only fair at best.

So, if we use routinely collected data, what conditions or diagnoses should we look at? The ones we chose are those we would expect to occur without adequate hardware, such as plumbing and washing facilities. The types of illnesses that public health advances have prevented in the developed world: intestinal infections such as gastroenteritis and viral hepatitis, infections spread by the faecal–oral route, and those associated with close contact, such as acute respiratory illnesses, conjunctivitis and skin infections, which would be reduced by improving healthy living practices. These illnesses all tend to be acute and usually not severe enough to result in hospitalisation.

It is also important to appreciate the number of individuals involved in the Housing for Health program. With only a few staff involved in the program, only a very significant decrease in admissions will be noticeable, given the large data sets. A further limitation of the routinely collected data available is the difficulty of identifying which healthcare provider a person from a specific community might go to for treatment. This is made somewhat easier in our case as the Housing for Health program is delivered in remote communities and geographical limitations make the job of identifying the healthcare provider most likely to be used easier.

We have some examples of what routinely-collected admission data is able to tell us. Characteristically there is a wide variation in the number of admissions for the conditions we are considering, and it is difficult to identify any clear pattern. We have concentrated on the figures for children, as we thought they would be the most susceptible to changes in the environment, so perhaps the best marker for improvements in health due to the Housing for Health program.

The data collected as part of the Housing for Health program itself provides convincing evidence that the program makes a significant change in the provision of adequate health hardware. In New South Wales we’ve had three generations of Housing for Health projects that have included a total of 1200 houses, with the second generation being the largest: 550 houses in 20 communities.

We recorded data on 240 survey items at the first visit and, for the purpose of this presentation, have categorised them into seven safety items and the four major healthy living practices, giving a total of 11 indicators. For reporting purposes we have presented figures as either 100 per cent compliance or not. Looking at Generation 2 figures, there are quite dramatic safety improvements following delivery of the program, particularly electricity safety. A similar improvement is seen in the four healthy living practices, although at first pass there does not seem to be much of an improvement in the ‘ability to cook, store and prepare food’ indicator.
The reason for this is that the main focus of the program is on plumbing and electrics, but it does not address issues such as providing freezers and fridges. This has lead to homes not achieving the 100 per cent compliance level at Survey 2 despite improvements in other parts of this category. Overall, you can conclude that the program has made significant gains over the 12 months or so between Survey 1 and Survey 2.

The next question that may be asked is: How sustainable are these observed gains? We have data on one community where a third survey has been conducted two-and-a-half to three years from the initial survey that can help us answer this question. Looking at this data you can see a significant improvement between Survey Fix 1 and Survey Fix 2 data for the majority of the 11 indicators reported. When the community was visited again some two-and-a-half years or so later there had been a decrease in the gains made, but probably not back to pre-program levels. The interesting feature was that this fall was due mostly to easily rectified problems, and the previous high level of functionality was easily regained with modest additional work.

This is perhaps most clearly seen in comparing the average $11 500 spent per house between Surveys 1 and 2, compared to the average $500 spent per house at the time of the third survey to achieve similar gains. The implication is that a modest maintenance program, preferably run by the community itself, is likely to ensure the sustainability of program gains.

Where does all this leave us in relation to making a case that the Housing for Health program is effective and represents value for money? Routinely collected data has limitations: we can show improvements in things we think should make a difference to health, but we have yet to directly measure a definitive health improvement. One suggestion is to look at improvements in an individual's quality of life or sense of control over their life. This is likely to be an area where we can see some changes if we improve people's ability to do the activities of daily living, so they have time and energy to focus on other aspects of their own and their community's life. One of the major challenges is to develop a system of measuring these aspects of an individual's life in a culturally appropriate manner. This is not insurmountable, as a good deal of work has already been done in this area and it is a matter of adapting it for our particular situation. I see this as a challenge we should take up, and with the help of the communities involved in the program, I am sure we can make significant progress.

In closing I would like to make one last point, a point that I think is vital to the success of a program such as Housing for Health. There is no point going into a community doing surveys for the sake of doing surveys. We need to tie any evaluation of the success of the program in with the direct delivery of a service. By doing this we can clearly demonstrate the purpose of the evaluation and work in partnership to make sure we are investing resources in an efficient and appropriate manner to get the maximum gains for Indigenous communities.

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**Temperature control:**
**warm house in winter,**
**cool house in summer**

Justine Hill, Designer, New South Wales

Recent research has found that internal house temperatures during summer and winter, in rural and remote Australian Indigenous housing, can vary by up to 20°C beyond acceptable temperature ranges that promote wellbeing of people living in the house. People experience thermal stress when there are extremes in temperature. This can contribute to dehydration in extremely hot climates, or pneumonia in extremely cold climates. Indigenous children aged 0–5 are particularly susceptible as it worsens existing health problems such as diarrhoeal disease or chest infections.
Poor thermal performance of housing can result in reliance on ‘active’ and expensive-to-run heating and cooling systems. Active heating and cooling involves the input of energy to the house: air conditioners, electric heaters, evaporative coolers, fans. People living in the house may not be able to afford high energy and water bills, which can lead to disconnection of services to the house. They will then not have access to the essential health hardware1 needed for the nine healthy living practices2 necessary to maintain or improve health. Poor temperature control in houses and expensive active heating and cooling systems can also lead to overcrowding of the one room people can afford to heat or cool. Crowding promotes the spread of infection.

Temperature control projects in four different climate areas have been analysed and we have begun to address how to make houses warmer in winter and cooler in summer, in climates where people experience thermal stress due to extremes in temperature. Temperature control projects involve recording and gathering information on thermal performance of existing houses, analysing information and providing recommendations to change the existing house and to design new houses.

Data collected during temperature control projects included shaded external air temperature (ambient air temperature), relative humidity and internal house temperatures from existing houses. The data was recorded using data loggers: electronic devices that can record information on, for example, temperature, humidity, wind speed and direction, over time. Energy and water use data was also analysed. Collection of real world data, as opposed to desktop or computer modelled studies, recorded actual conditions the occupants of a house experienced. Analysis of the data demonstrated a link between design of housing and poor thermal performance experienced during extremes in temperature.

The focus of the project was:

- That much of the existing housing in Indigenous communities in Australia does not provide an acceptable internal living environment with internal temperature ranges that promote wellbeing of occupants.
- That improved design and retrofitting of housing can greatly improve the internal environment and reduce the long-term running costs of temperature control, which will leave occupants with more money to spend on other essential living costs, such as food and clothes.

A methodology and priorities to improve temperature control in existing and new housing in a range of climatic areas in rural and remote parts of Australia was developed. The recommendations examined selection criteria for active heating and cooling systems, and the passive design of new houses as well as retrofitting options for existing houses. Passive heating and cooling requires no energy input either by the occupant of the house or a mechanical device: a veranda roof may shade a wall and window reducing the inside temperature of the house.

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1 The expression ‘health hardware’ was originally used by Dr Fred Hollows to describe the physical equipment necessary for healthy, hygienic living. ‘The equipment must have been designed and installed so it can function and be maintained to help people improve their health status. In a water supply system, health hardware includes both the bore and the basin plug, as well as the shower rose, taps and drain.’ (Department of Family and Community Services 2003, National Indigenous Housing Guide: Improving the living environment for safety, health and sustainability, 2nd edn, Commonwealth of Australia, Canberra, p x).

2 The nine healthy living practices, in order of importance, after life threatening urgent safety works (e.g. electrical hazards) are:
   1 washing people, particularly children
   2 washing clothes and bedding
   3 removing waste safely
   4 improving nutrition
   5 reducing the impact of crowding
   6 reducing the impact of animals, insects and vermin
   7 reducing the impact of dust
   8 controlling temperature
   9 reducing trauma or minor physical injury.

and a concrete slab that can be warmed by the sun during the day in winter may keep the house warm at night.

Key findings were that existing housing had poor thermal performance when there were extremes in ambient temperature (over 40°C or below 5°C). The houses were not providing thermal benefit and were not designed to suit the climate. Occupants often relied on active heating and cooling systems to reduce extremes in temperature. High costs of temperature control sometimes led to disconnection of utility services to the house due to non-payment of bills. Implementation of passive design modifications to existing houses should improve occupants’ health outcomes and contribute to substantial savings in running costs of active heating and cooling systems.

It was also found that active design solutions should not be retrofitted to existing houses until after passive modifications are made, otherwise running costs of these systems will be unaffordable for occupants.

In new housing in the hot/dry climate area, it was found that by addressing temperature control in the design of the house and yard areas (for example, yard fencing and mounding to encourage planting, deep eaves, wall and roof insulation, roof ventilation to expel hot air and installation of ducted evaporative cooling systems), energy costs were less than an ‘ideal future house’, and internal house temperatures were at an acceptable range to promote health for the people living in the house.

This project is significant in that it defines a range of low energy, low maintenance criteria for the design of housing in a range of climatic areas around Australia. The design principles can be used to improve living conditions for Indigenous communities in rural and remote areas. The project is also significant in that a methodology has been developed that can be used on future temperature control projects.

While this project analysed data collected from Indigenous housing, the findings of the research are applicable to housing in the wider context.

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Temperature Control Project, North Western New South Wales

Jeff Standen, Manager, Aboriginal Environmental Health Unit,
New South Wales Health

I’d like to start by acknowledging the Darkinjung people and also the people from the country where this project is delivered.

In New South Wales there are three main providers of housing in Aboriginal communities: the Aboriginal Community Development Program which is run by the New South Wales Department of Aboriginal Affairs; the Aboriginal Housing Office which is the Indigenous housing organisation for New South Wales that manages new housing and spot purchasing of existing housing and upgrades; and, through the Australian Government, the National Aboriginal Health Strategy funded formerly through Aboriginal and Torres Strait Islander Services (ATSIS), and more recently through the Department of Family and Community Services.

The policies of these organisations on providing air cooling are inconsistent, which has led to some confusion in the community. For this reason we have set up an interagency program, sponsored by New South Wales Health through the Aboriginal Community Development Program, to gather evidence and information to guide policy about temperature control and air cooling in Aboriginal housing.

We reviewed the literature and data available to find out what is already known about the effects of extreme temperatures. We reviewed local, national and international literature related to heat
stress, heat-related health issues and heat-related social and behavioural issues. We also looked at industrial information about providing housing under some awards (workers under some awards in western New South Wales are entitled to various forms of air cooling) and temperature control approaches and costs.

From the review we found that the main heat-related illnesses are sunburn, fainting, cramps, exhaustion, heat stroke and ultimately death in the worst instance. People most at risk from heat related illnesses are:

- babies and infants
- the elderly
- those with cardiovascular disease or other chronic and acute illnesses
- those with mental illnesses
- those on medications and drugs
- those with a lack of acclimatisation
- those working, exercising and playing sport in hot environments
- those with a lack of access to an air cooled climate. There were a lot of studies showing that when at-risk people had access to an air cooled environment during a heat wave their survival rate was higher.

The important point about most of these risk factors is that they are disproportionately higher in the Aboriginal population.

High environmental temperatures have also been identified as contributors to an increase in violent crime including homicide, suicide, domestic violence, sexual violence and aggression. There is some seasonal variation in mood, human behaviour and function during the hotter times of the year and some associations have been drawn between high temperatures and sleep deprivation and school attendance.

In preparing the Temperature Control Project, we also looked at industrial boundaries in New South Wales, which are based on both climate and isolation. The state is divided by lines running roughly north–south and if you work in an area west of these lines, depending on which award you are under, certain entitlements go with that work. These lines have been used to draft policy in the past.

In one community in the northwest of the state (the hottest part) we are conducting a trial involving design, implementation and evaluation of cooling solutions in houses, aimed at improving the thermal functioning of those houses during the summer. The project involves retrofitting existing houses and collecting temperature data to measure improvements in thermal efficiency. The project partners are New South Wales Health, Far West Area Health, ATSIC, the Aboriginal Housing Office, the Department of Housing, the Department of Aboriginal Affairs, Healthabitat, the Department of Energy, Utilities and Sustainability and the University of Sydney.

There are 16 houses in the community and their typical characteristics are that they are:

- greater than 20 years old
- elevated
- of light-weight construction
- fibro steel clad
- low pitched iron roofing
- box truss construction
- minimal insulation (what was there was worn and had settled over the 20 years since installation)
- east, north and west walls exposed to sun
- very little shading.

During the first stage of the project we had community workers install temperature loggers in six houses. The probes were situated under the house, in the ceiling space and inside the house at a height of 1.2 metres above floor level (which is the height at which people spend most of their time). Temperatures in these locations were recorded at hourly intervals. The data confirms it is very hot out there. Over a week in January 2003 most days were over 40°C and by the end of the
week temperatures had reached 45°C. It gets hot
in all parts of the state, but in western New South
Wales those temperatures are sustained for long
periods of time—for weeks on end.

Data showing temperature variations within
a house over one day gives a reading of 47°C
in the shade on the veranda at 4.00 pm. The
temperature in one of the non-air conditioned
bedrooms rises on a lag behind the rest of the
house. After 7.00 pm, when the day starts to
cool, the temperature in this room continues to
rise. The data shows that between sunset and
sunrise the house is hotter than the ambient
temperature outside. Data from a house using
a room air conditioner shows that they have
only been able to reduce the temperature in the
bedroom to 30°C. Room air conditioners are not
always installed correctly and can be costly to run.
However, most people in the community have at
least one and find it very difficult to live without
some form of cooling.

When we entered the roof space to install the
ducting for new air conditioning we also had
loose-fill insulation installed. We upgraded the
ventilation in the roof and installed whirlybirds to
expel some of the hot air from the ceiling cavity.
We didn't have the money to replace the whole
roof, but where we had to lift sheeting we replaced
it with new foil sarking to reflect the heat. We
have started to paint the roofs of some houses
with reflective paint and are comparing different
brands of specialist reflective paint with plain
white high-gloss paint, which the CSIRO claims
gives a similar effect. We will compare the results
by using data from the temperature probes in the
ceiling cavity. We will also enclose the space under
the houses to prevent hot air rising through the
floorboards and the effect of this will be measured
by the sub-floor probes.

In addition to these upgrades we have installed
active air conditioning. We used stainless steel
evaporative cooling units mounted on the side
of the house rather than on top. This is for ease
of maintenance access, and if they leak the water
doesn't enter the house.

With the Healthy Housing Workers we have also
installed water and power meters in the six study
houses to monitor consumption by the evaporative
air-coolers. We did this because there was a
concern that their installation may result in higher
electricity charges for tenants. We found that
when the fan is on high the unit draws around
7 amps per hour and on low, 3 amps. These figures
are for cooling the entire house. By comparison,
the room air conditioners this community already
uses draw 4–5 amps per hour to cool one room.

Where possible throughout the project we have
used local labour. We have also engaged the
assistance of one of the local land council members
to conduct a qualitative survey of the tenants to
find out what changes they have noticed as a result
of the project. In addition to the obvious effect of
the houses being cooler, one of the more notable
findings was that before the project the occupants
in houses that had only one room air conditioner
all slept together in the one cooled room. After the
project, occupants are now able to use the whole
house and have gone back to their own bedrooms
to sleep, thus reducing overcrowding.

The key findings of the literature review and the
subsequent Temperature Control Project were that:

- Vast areas of New South Wales are
  extremely hot.

- There is substantial evidence indicating
  there are many people vulnerable to
  heat-related illnesses.

- Heat waves kill more people than any other
  weather-related disaster in the world and
  their incidence is projected to increase with
  the continuation of global warming.

- There are links between social and
  behavioural issues and hot weather,
  particularly violent crime.

- Heat-related deaths are largely preventable
  through behaviour, particularly going
  somewhere cool (for example, shopping
  centre, club). In remote communities this is
  often not possible.
• Good design is essential to temperature control. Passive modifications alone will not reduce temperatures effectively in extreme climates, but must complement active cooling.

• Improving the thermal efficiency of houses in Aboriginal communities should be a high priority.

I would like to acknowledge the Community Working Party and the Land Council in the community where we are running the project; Paul Kemp from Murdi Paaki Housing and the tenants of the houses; Stuart Gordon, Marc Goodall, Thadd Nagas, Dave Ferrall and Paul Williamson from the Far West Area Health Service; Andy Irvine, Darren Mayne, Monique Sharp, Paul Pholeros, Justine Hill, Max Mosher; and all the program partners who have helped fund the project.

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2003 Western Australian Aboriginal Community Environmental Health Needs Survey

Owen Ashby, Manager, Aboriginal Environmental Health, Department of Health, Western Australia

In 1997 the Environmental Health Needs Coordinating Committee commissioned an Environmental Health Needs Survey of all Western Australian Aboriginal communities. The Environmental Health Needs Coordinating Committee is the peak coordinating body in Aboriginal environmental health in Western Australia. The committee, chaired by Michael Jackson, Department of Health Western Australia, comprises Executive Directors of the Department of Indigenous Affairs, ATSIC, the Department of Housing and Works, Western Australian Local Government Association and the Australian Government Department Health and Ageing.

The Environmental Health Needs Survey identified and compiled data on key environmental health indicators and achieved Australia-wide recognition as the national benchmark in capturing information on environmental health conditions in Aboriginal communities.

The survey collected environmental health data from 259 discrete Aboriginal communities (213 occupied) about water, electricity, housing, sewerage (sewage disposal and ablution/laundry facilities), waste disposal, dust and dog control.

The report, Environmental Health Needs of Aboriginal Communities in Western Australia, was published from the survey data in 1998. The report was a single document containing data for use by federal, state and local government agencies. The single source document ensured existing resources were used to the maximum benefit and were targeted more effectively to help those communities with highest priority needs.

The report was circulated widely to Aboriginal and government decision-making bodies at federal, state and regional levels to assist in their planning processes. For the first time, decision makers from the various government agencies were using the same data source for planning and priority-setting.

The 2003 Environmental Health Needs Survey

The 2003 Environmental Health Needs Survey built upon the 1997 survey, with the objective of systematically gathering reliable data from all Aboriginal communities in the state describing:

• the core indicators of environmental health (water, power, solid waste disposal, sanitation, drainage, housing, dust, and dogs)

• other human and physical service facilities in communities to enable profiles of each community to be developed.
The 2003 survey will be used by the Environmental Health Needs Coordinating Committee agencies to:

- measure progress in addressing priority environmental health needs
- identify service-delivery gaps
- target existing resources to priority communities
- lobby government for new resources
- improve cross-government program and service-delivery coordination.

The aim was to survey every discrete Aboriginal community and each local government district in the state, as well as each dwelling within each community. Two survey forms were provided for this purpose:

- A community details form (yellow) of 140 questions
- An individual dwelling form (blue) of 55 questions.

The survey information was collected by environmental health officers, Aboriginal environmental health workers and Aboriginal field support officers. These people were best placed to undertake the task as they have the professional expertise and local knowledge, and as they regularly visit the communities, could collect data with minimal disruption to the community. The arrangements under which these officers are employed were explained at the 4th National Indigenous Environmental Health Conference in Adelaide in November 2002. Currently the Western Australian Department of Health has the following contracts with local government and resource agencies:

- 9 environmental health officers
- 24 field support officers
- 34 environmental health workers.

There has been a substantial improvement, with positive outcomes in the communities serviced by these arrangements.

Before the 2003 survey was started it was estimated there could be up to 400 communities throughout the state. Data was in fact collected from 275 communities (eight did not wish to participate) and assessed by the information technology branch of the Department of Indigenous Affairs. The report of the 2003 survey will again be used by government agencies to aid decision making at the federal, state and regional levels for future planning in community needs. Communities are provided with a copy of their community details and a copy of the report.

Indications are that there has been a substantial improvement in the conditions at some communities. The services or essential facilities in which the majority of communities want to see improvements are water, power, sewerage systems, housing, solid waste disposal, and dust control.

There has been an improvement in many communities as they intend entering their communities in the Clean and Healthy Community Awards sponsored by the Department of Housing and Works and Fire and Emergency Services Association.

Communities are taking pride in their own housing lots with fencing, lawns and gardens. Further improvements will be made with kerbing and sealing of the internal road surfaces.

The community of Karalundi is an excellent example of how conditions can be improved with adequate funding provided for roads, kerbing and adequate water for landscaping and ground beautification. Installation of wastewater ponds has made significant improvements in wastewater disposal and creates possibilities for reuse for tree lots, greening areas and dust control.
Summary

Aim of the survey: To collect environmental health information from all discrete communities.

What was collected? The core indicators of environmental health (water, power, solid waste disposal, sanitation, drainage, housing, dust, and dog health) were surveyed and recorded. Other information that was collected was about human and physical service facilities to enable development of profiles of each community.

Who was involved? Environmental health officers, Aboriginal environmental health workers and Aboriginal field support officers for each community and district collected survey information. A total of 283 communities were identified; eight did not want to participate.

What was the outcome? Results indicate there has been an overall improvement in environmental health conditions in communities throughout the State. However, more funds are needed to continue ongoing improvements. Funding for environmental health worker positions on communities remains a high priority. A substantial database is now available of 275 communities in Western Australia.

Lessons learned: To make further such surveys more successful, it will be important to:

- start early
- define communities
- focus on timing
- improve across-government coordination.

The future: Future activities stemming from this survey will be to:

- revamp the format
- ensure better coordination of housing/environmental health aspect
- seek better funding opportunities
- possibly conduct another survey.

For further information

While the finalised report had not been released at the time of this presentation, copies will be available from:

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Local, regional and national initiatives

This section includes presentations on new programs and projects that have been conducted to improve awareness of environmental health, practice of environmental health, and improved health outcomes in Indigenous communities. There are presentations from both Australian and New Zealand environmental health care workers.

Environmental tobacco smoke and Koori kids

Wendy Shailer, Aboriginal Trainee
Environmental Health Officer, Wentworth Area Health Service, New South Wales

Clark Freeman, Aboriginal Health Education Officer, Wentworth Area Health Service, New South Wales

Wendy Shailer

We feel that our Environmental Tobacco Smoke and Koori Kids Project aptly fits the ‘Today, Tomorrow—Together’ theme of this year’s conference. We’re looking at different methods of making our families healthier by making where we live a healthier place.

Some statistics you may not already know:

- Mainstream smoking rates: 22 per cent
- Indigenous smoking rates: 54 per cent average (some communities 83%).

Environmental tobacco smoke is the combination of smoke from a lit cigarette and the exhaled smoke of a smoker. Breathing in environmental tobacco smoke is also called passive smoking. As adults we can choose to move away. Our kids don’t always have that opportunity. Where we go, they go. When we smoke, they smoke. Results of a British study have indicated that children living with a smoker actually smoke up to 80 cigarettes every year. Unless we have some strategies to protect our kids, they are going to smoke right along with us.

Over the last two years Wentworth Area Health Service has been working with Daruk Aboriginal Medical Service, the Cancer Council of New South Wales, Penrith Council and Western Sydney Area Health Service, with additional support from Central Sydney Area Health Service, to produce a kit for Aboriginal Health Workers. The aim is to reduce the exposure of Aboriginal kids aged 0–6 years.

The Environmental Tobacco Smoke and Koori Kids kit will be officially launched on 15 November 2004. It comprises:

- a flip chart for health workers to use in community or individual health education sessions
- pamphlets for the community to take home
- a training manual so the Aboriginal health workers are given the same information.

The Aboriginal health workers’ goal is to give this information to the community so they can take the message of protecting their kids home.

What we hope to see are healthier kids: reduced asthma presentations, fewer cases of otitis media (glue ear) and respiratory infections, better educational outcomes, and fewer sick days. We can achieve this by working with the community to identify strategies and increase understanding of the risks of environmental tobacco smoke on the kids.

Clark Freeman

First, I’d like to say that this project has only been going for six weeks, so we’re very new at it and haven’t had much time or money to do it. In Wentworth Area Health Service I cover the area from Mt Druitt through to the Hawkesbury and the Blue Mountains. We don’t use PowerPoint presentations in the communities and a lot of the schools don’t yet have computers. That’s why we’ve used flip charts in the kit. We don’t sit in classrooms; we don’t sit in the halls and do our work. We go out and sit in the park, give them a feed and work through the flip charts with them.

We wanted to keep the chart Aboriginal-specific and for the kids to relate to it as well, so we used Aboriginal art all the way through. This is a description of each page of the flip chart:
1. Introduction

The artwork represents the family group as healthy and clear. They don't smoke and are around a campsite or home. The kangaroo represents the male and the emu the female and inside you see the kids within the home environment.

2. Effects of cigarette smoking on pregnancy

We get a lot of young mothers from western New South Wales who come in to have their babies when they're having problems. Smoking while pregnant can cause miscarriage, small underdeveloped babies and can damage unborn babies, especially their blood vessels. It can lead to kidney problems and glue ear (which can lead to hearing problems later in life) and can also delay physical and social development. The picture on the right shows a baby affected by the mother smoking. The milky colouring shows the chemicals absorbed into the womb. The other picture shows a baby who is healthy inside the womb.

3. When you smoke your kids smoke too

First I'll describe the painting. The red smoke symbolises the parent smoking in the home. The yellow lines around it represent the children's exposure to smoke and inside there's two boomerangs. They're a greyish colour to represent the chemicals and they're floating around as a result of the smoking. The worst two places to smoke are in the home, especially when feeding children, and while travelling in the car with the windows up. It's shocking. The harms of passive smoking include breathing problems, asthma, chronic ear infections, otitis media, sudden infant death syndrome, addiction to nicotine, delayed intellectual development and poor educational outcomes.

4. What's in a cigarette?

Along with the nicotine, inside a cigarette there's insecticide, which increases your heart rate and blood pressure. It also slows down the blood flow and makes it harder for oxygen to reach the feet and hands resulting in poor circulation. Cigarettes also contain naphthalene (mothballs), phenyl (paint stripper), butane (lighter fluid), arsenic (rat poison), ammonia (bleach and floor cleaner) and acetone (nail polish remover). So when you go out to have a cigarette just remember that you're having all this! Light or mild cigarettes do not reduce the child's exposure.

Children exposed to cigarette smoke also take in the same carbon monoxide present in car fumes. This mixes with blood cells and deprives the body of oxygen. Car smoke and cigarette smoke have got the same amount of carbon monoxide.

Addiction

Just in the last few weeks the results of a study have become available linking the addictiveness of nicotine with one of the additives in cigarettes, acetaldehyde. Most of the products included in cigarettes are to help it burn so there's more free nicotine, but acetaldehyde doesn't appear to have any function other than to increase the addictiveness of nicotine. An adult can be addicted even after two cigarettes, so when you put children aged 0–6 years in a home where they’re exposed to 80 cigarettes a year, they're addicted. They're going to buy, they're going to steal, they're going to get them somehow. This is another reason it's really important to separate kids from smoke. It's important for their health, their physical development and their social development. If they're not addicted they're not going to be at such risk.

Compared to the smoke inhaled, the smoke exhaled by smokers contains two and a half times more nicotine, three times more carbon monoxide, three times as many carcinogenic substances, and 98 times more ammonia, which causes respiratory irritation.

5. What can I do to protect my children's health?

Quit smoking. You can't just say to someone 'Stop smoking. Quit that now'. It takes time. A lot of people have a lot of problems trying to get there. Talk to a general practitioner about patches and other therapies. Don't smoke around babies and little children. Set up outside areas where you can smoke and remember to keep ashtrays out of
reach of kids because they will just grab them and stick them in their mouths. Talk to your family about how you’re going to change where you smoke and the way you perceive smoking.

Take regular breaks when driving and keep cigarettes in the boot so you have to stop and get out of the car to have a smoke. Don’t have them sitting in the glove compartment beside you or on the console. You can also use patches on long trips. Use smoke-free stickers if you’re concerned about offending people.

6. What’s good about keeping kids away from tobacco smoke?

It leads to a better survival rate for babies, increased birth weights, healthier kidneys, and a reduction in the rates of sudden infant death syndrome. In this artwork the parents are shown not smoking around the children at all and the little fellas are all out having a good time.

7. Where can you go for more help?

The Quit Line is available nationally and <www.smokefreezone.org> is another useful resource. In our area we’ve got the Daruk Aboriginal Medical Service, our local doctors, health workers, health education workers, hospital liaison officers, the Westmead Children’s Hospital, and the drug and alcohol units at Nepean, Wentworth and Westmead Hospitals.

Acknowledgements

I’d like to acknowledge all those people who helped with the program over the six weeks: The Cancer Council of New South Wales, Central Sydney Area Health Service, New South Wales Health, Wentworth Area Health Service and Daruk Aboriginal Medical Service.

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Widening the thin edge of the wedge: benefits of Indigenous community control and involvement in environmental health initiatives

Maria Jellie and Dr Jeff Foote, Institute of Environmental Science and Research Limited, New Zealand

Maria Jellie

I’d like to acknowledge our co-researchers who couldn’t be here today, Marara Rogers and Hone Taimona from Hokianga Health Enterprise Trust. As always, it’s funding that inhibits these things, but hopefully next time they will get to come.

I’d like to explain the title ‘Widening the thin edge of the wedge’. In 1999 some devastating floods in the Hokianga led the Ministry of Health to sponsor a pilot program to see if it was feasible to provide safe drinking water at small, isolated Maori communities. A Ministry of Health representative went up to the Hokianga and spoke to a health protection officer to explain what they were going to do. The health protection officer said, ‘Why are you doing water? That’s the last thing on our list of priorities! Our first would be unemployment, the second would be housing, third would be sewerage and fourth would be water—why are you doing water?’ The answer was ‘Well look, the government said they’re going to do this pilot. You’ve got to grab that opportunity, use it as a thin edge of the wedge, so other spin-offs may come from that.’ This is really what our presentation today is about, how the pilot has been the ‘thin edge of the wedge’ and other spin-offs that have come from it.

Jeff Foote

First I am going to talk about the Hokianga region, which is located on the west coast near the top of the north island, about three hours’ drive north of Auckland. It’s a small, isolated region with a population of about 5000 people, and it’s thinly spread over a number of marginal roads. It’s an amazing place of incredible beauty,
but the Hokianga also suffers from multiple disadvantages, with high levels of sub-standard housing and unemployment, and high rates of disability and illness. In recent years a number of Maori have come back from the cities to the traditional lands that surround the 36 marae clustered around Hokianga Harbour. Marae are central to communities because they’re a place where guests are housed and fed when they attend weddings and funerals and they’re also an important place where people can come together to talk about issues of importance to the community. The marae is actually the whole complex, so it not only includes the meeting house or wharenui, but also the kitchens, the ablution block and the eating area.

The work that Maria and I are reporting on today, which was not part of the pilot, but used the pilot as a case-study, looked at how community development principles can be used to address tricky environmental health issues like drinking water quality in rural, isolated communities.

With the Hokianga Health Enterprise Trust that the Ministry of Health actually contracted to manage the pilot and one of the participating marae communities we undertook a collaborative evaluation of the pilot from a community development angle.

Maria Jellie

Through talks with the Ministry of Health, it became clear that the pilot needed to be community-driven. History has led to a lack of trust of anything that comes from government. The Ministry of Health therefore approached the Hokianga Health Enterprise Trust, which is a community-owned health trust, to undertake the contract and be the interface between the Ministry and the community. The Trust became responsible for the engineering design and manufacture, and the management contract.

A key aspect of the success of the pilot was that the Trust employed a Kaupapa Maori consultation process to determine which marae and communities would be interested in participating in the pilot. Kaupapa Maori means doing it as a Maori process as opposed to a Western process. They carried out the Kaupapa Maori consultation process by employing two kaiwhakakokiri, or negotiators. The kaiwhakakokiri were two local Maori who had genealogy to the Hokianga, they could speak Maori fluently and they knew Maori customs. They also had some technical knowledge so they were able to liaise between the engineers and participating hapu, which are sub-tribes. That was important because they could talk to the engineers, understand what they were talking about and then take it back to the community and say what the options were and what was happening.

An example of how the pilot could have fallen over had they not followed the Kaupapa Maori process, is that there was not enough funds for all 36 marae in the Hokianga to gain safe drinking water. The Maori world is very political. If some marae got to participate and others didn’t, it could have had huge repercussions for the relationships between different sub-tribes and relationships between the Hokianga Health Enterprise Trust and hapu. The two kaiwhakakokiri threatened to resign if all the marae did not get done so the Trust ‘looked outside the square’ for other funding. They brought in the Auckland Savings Bank Trust (ASB) to talk to individual marae to see how they could help finance the pilot. Each marae then had to negotiate with ASB Trust about what was needed, and many were able to get new ablution blocks and kitchens. This relationship with ASB Trust continues today and every year marae put in applications for funding for different projects.

Some of the other spin-offs are:

- Elders are now able to stay longer at marae because of improved facilities. Before they couldn’t stay because they wouldn’t be able to use the toilet facilities or be able to shower.
- Educational projects such as Maori language and genealogy are now being undertaken regularly at marae, building and reinforcing cultural identity.
- Improved project management skills, through each hapu negotiating with ASB Trust and also getting their safe drinking water in, means hapu are able to undertake further projects, whether they be capital works, educational or health, so as to benefit the hapu.
• The pilot has also strengthened the relationship between the Hokianga Health Enterprise Trust and hapu allowing further public health initiatives such as smoke-free marae, fire safety and food safety.

Jeff Foote

Through a series of workshops with the Hokianga Health Enterprise Trust and one of the participating hapu, we had a close look at what aspects of the pilot worked and we were able to identify a number of success factors.

The first success factor was devolution of central government money to a community organisation—the Hokianga Health Enterprise Trust—that had a good relationship with its community. This quote from the Trust nicely captures this:

What they were asking us to do was to be the go-between for the Ministry, [to be] an interface for the community … distrust [of the pilot] was [going to be] one of the things. But we also knew that we did have a lot of respect from the community from our health services [and] the fact that we were a community organisation and that we already had fairly good links with the community.¹

The second and related success factor was the employment of the two local negotiators who were able to engage with communities on their terms:

One of the things that actually gave credibility to Hokianga Health [with the communities] was the appointment of two men who could [speak] Maori clearly and understood the [customs] of Hokianga. So it wasn’t just the fact that they could [speak Maori] they had to be have genealogy back, know the history. They [had to] know how Uncle Bill was related to Uncle Bob.²

The third success factor really gives an indication of the dedication of the local kaiwhakakokiri—the time and energy they poured into the consultation and liaison:

[The consultation] was quite varied from marae to marae and community to community … In some cases you went and had one [gathering] on the marae and people came. You had the [talk] and everything was okay. And in other cases you were called back time and time again … It was any time of day and any day of the week. If [we] were asked to come and meet and address an issue that’s what we did. It wasn’t quite a nine to five job. But we expected that. That’s again the way in which community process works. Right up front we said we would be open to discussion whenever, however.³

The fourth success factor relates to seeing health in terms of community ownership and capacity rather than just the absence of waterborne disease:

I [would] give them the invitation for them to take it over and they [would] take it over … [I] don’t [want to] be with them, but be at the back of them. That’s the concept. The key for us is to make ourselves redundant from [the] project and go on to the next project, you know. Because now they can do it. You were just there initially [to] help them and then the more they can do it themselves the more you step back.⁴

Another success factor was that each organisation saw the pilot as a way to further its own organisational interests beyond providing drinking water. Take for example, the Ministry of Health—Maria talked about this idea of widening the thin edge of the wedge—they saw the pilot not only in terms of clean drinking water, but also as a way to highlight other important environmental health issues in the Hokianga. What’s really exciting is that Hokianga Health has seen the pilot as a way to develop its thinking around community development, and particularly how they can use the Kaupapa Maori consultation process to look at other health promotion/health protection issues like fire safety and nutrition. And the hapu themselves have also used the pilot as a way to

¹ Hokianga Health Enterprise Trust, 2002
² Hokianga Health Enterprise Trust, 2002
³ Verbal Communication, Kaiwhakakokiri, 2002
⁴ Verbal Communication, Kaiwhakakokiri, 2002
achieve other goals, like employment, and also highlighting issues to do with kaitiakitanga or stewardship over the waterways.

Through the workshops we all gained a deeper understanding of what makes community development processes sustainable. We now see community development in terms of widening the thin edge of the wedge or a virtuous cycle, driven by best practice.

However, we realised that implementing best practice is really difficult and can potentially create problems that can turn a virtuous cycle into a vicious cycle, where problems lead to loss of confidence and people are less likely to expand projects. This led us to the conclusion that the success today of Hokianga Health Enterprise Trust and the participating hapu had been their ability to manage ‘best-practice tension’. For example, at the start of the pilot there was a possibility that the Trust would have to ration access to clean drinking water. They harnessed that tension and came up with a novel solution—the ASB Trust funding—that led to a number of spin-offs that helped drive a virtuous cycle forward.

**Maria Jellie**

What now? Well, we have some future collaborative research with Hokianga Health Enterprise Trust and hapu in the Hokianga. In 2003, Hone Taimona from the Trust decided to widen the wedge a bit further and asked if we could help refine the community development model by applying it to failing septic tanks at marae. So we, along with the Trust, and in consultation with hapu, developed a three-year Health Research Council bid to refine the community development model and apply it to septic tanks at marae. In May 2004 the bid was successful and in December 2004 the work will begin.

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**Giardiasis—a public health intervention in promoting community awareness**

Kelly Nean, Aboriginal Trainee Environmental Health Officer, Hunter New England Area Health Service, New South Wales  
Glenn Pearce, Senior Environmental Health Officer, Hunter New England Area Health Service, New South Wales

I’ll start by telling you a little bit about our region. We have 13 local government areas in the New England area and we have one of the highest populations of Aboriginal people for an Area Health Service, approximately 11 000. The traditional area in which we work is mainly Kamillaroi, but we do cross over into some other traditional lands as well. Some of the Aboriginal communities (land councils) in our area are Amaroo, Anaivan, Armidale, Ashford, Glenn Innes, Guyra, Marangali (a corporation), Moombahlene, Moree, Mungindi, Narrabri, Nungaroo, Pilliga, Red Chief, Tamworth, Toomelah, Walhallow and Wee-Waa.

**Giardiasis** is an inflammatory infection, mainly of the small intestine, caused by a parasite. It can infect humans and animals and there are two main types, *Intestinalis* and *Lamblia*. The two main ways in which Giardiasis is spread are through drinking from a contaminated water source, and person-to-person contact, for example by people not washing their hands after they go to the toilet and shaking a person’s hand immediately afterwards or not washing their hands before preparing food. Less common ways are by handling infected animals and

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5 Huxham, C 2003
eating contaminated food. Symptoms include diarrhoea, stomach cramps, bloating, nausea, fatigue, and weight loss. Some people don't show any signs at all, but still pass it on to others, so even if you don't have *Giardiasis*, you should still wash your hands.

Preventive measures for *Giardiasis* include always washing your hands with soap and water after using the toilet, handling animals or changing nappies, and before preparing food and drink. Also, if you have access to a treated water source in your local area, not drinking water from untreated rivers, streams, lakes, dams and tanks. In our area a lot of people don't have access to treated water, which is why we've decided to do this project. If Giardia is in your water source, boiling the water for a minute before drinking it should kill Giardia and any other parasite in the water.

*Giardiasis* is a notifiable disease in New South Wales. From January to August 2004 the New England Public Health Unit received notification of 43 cases. There is a general rule that every notification received represents approximately 10 cases, nine of which go undetected or unreported.

The aim of this project is to raise public awareness and attempt to lower the incidence of *Giardiasis* in the New England area. There is anecdotal evidence to suggest that rainwater tanks are a possible source of Giardia. As many communities in this area rely on rainwater tanks as their only source of water, the risk of contracting *Giardiasis* in this way is an important one for us to address. The recent long period of drought has exacerbated the situation, resulting in a build-up of dust and bird droppings on roofs and in gutters. When it does rain, falls are often sudden and heavy, washing this debris into tanks and resulting in above average contamination of water, particularly in tanks without a first flush diversion device. Educating people about the correct maintenance of rainwater tanks is a major part of our public awareness initiative.

Many of the tanks in communities in the New England region are around 20 years old, have never been de-sludged and do not have first flush diversion devices fitted. Most are gravity fed. The Public Health Unit, in conjunction with local councils, plans to distribute information about maintaining rainwater tanks to communities, including the New South Wales Health Rainwater Tanks brochure.¹

Another aspect of the education campaign will address the importance of hand washing. It is important that parents ensure their children wash their hands with soap and water after going to the toilet and to wash their own hands after changing nappies to avoid contracting *Giardiasis* and also to prevent reinfection within the household.

One of the major challenges we are experiencing during this project is the merger of Area Health Services. In New South Wales we are going from 17 Area Health Services down to eight. As of first January 2005, the head office for the New England area will move to Newcastle. It is a nine-hour drive from Newcastle to Tenterfield (on the New South Wales–Queensland border), the furthest local government region in the new expanded area. Trying to get information out to rural and remote communities in this environment will surely be a challenge. The support of local governments will be sought, but councils have recently undergone their own period of restructuring and consolidation.

Another challenge in managing *Giardiasis* is contacting people with notified cases in order to ascertain possible causes of infection. For instance, we had a contact number for one case recently, an Aboriginal person. The number was for a mobile phone and was answered by the woman's father who said, 'Oh, I'm not sure where she is at the moment. I'll give you another number you can catch her on. And by the way, when you do get her, can you tell her to ring me?' Aboriginal people often move from community to community, so just trying to track down the cases and determine where they've been is a challenge in itself.

In conclusion, we at the New England Public Health Unit believe this initiative will help lower the number of cases of *Giardiasis* in our area and also help communities with rain water tanks learn how to maintain them, thereby providing a better drinking water source.

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This section consists of presentations on how forming better partnerships and channels of communication can improve environmental health outcomes.

**Knowing where we are going: new perspectives on community outcomes**

Steve Fisher, Chief Operating Officer, Centre for Appropriate Technology, Northern Territory

To know where you are going, you have to know where you have been. This starts with an understanding of how to identify and measure impacts of past work. But it also requires a long-term view of how a project contributes to the viability of a community and the livelihood aspirations of a group of people.

A criticism sometimes levelled at community programs is that they spend too much time trying to do ‘good work’ and not enough time working out whether the work has made any difference. This is a harsh view, but it contains a grain of truth. The character of much work in Indigenous communities may be driven by the needs of ‘clients’, such as families, but measurement of the effectiveness of that work remains firmly ‘supply-side’. In other words, we account for that which is put into projects and programs rather than what is achieved as a result. This is a fundamental weakness in grant administration.

This paper describes a strategic shift in the thinking behind the Centre for Appropriate Technology’s work. Our experience has presented us with some insights into and perspectives on community outcomes.

**Aspirations for a better livelihood**

The most direct way policy can influence the sustainability of communities is through applying more rigorous criteria for investment in housing and infrastructure in remote locations. The Centre for Appropriate Technology has changed the way we think about community projects. Instead of talking to families about their needs, we prefer to talk with them about their aspirations. A common question we ask is: ‘what would you want this place to be like in five years?’ Here is a sample of responses we have heard:

- We would like to be less in debt.
- We need more CDEP places.
- We would like the young people to learn the skills of the old people.
- We need a fence to know where our land is.
- We need a fence so the old people feel safe.
- We would like the store to work better.
- We need a fence to keep out people we don’t want to come in.
- We would like more people living here.
- We want to get the corporation up and running again.
- We want to beam out our culture to other people.
- We need a fence to keep out feral animals.

All communities have skills and assets. The challenge is to be able to use these assets for the community to strive for its overall livelihood aspirations, which often means greater opportunities for work, enterprise and trading. This implies a longer-term view of the viability of the settlement, which is the second area I wish to discuss.

**Towards improved community viability**

The Centre for Appropriate Technology has proposed a model that sets out the factors influencing the viability of a community. They are:

- **Effective governance:** Governance is the means by which a group of people allocate resources to achieve their aims. A community requires a form of organisation that is effective in making decisions on resource use.
- **Expressed aspirations:** Viability depends upon some kind of planning taking place, however loosely. Without a plan, it is hard
to work out who might be living in the community in the future and how resources could be used to best effect.

- **Reliable infrastructure**: A community cannot be viable if the infrastructure is unreliable, increasing costs of maintenance, impeding access or posing dangers to residents.

- **Livelihood activity**: A sustainable livelihood is defined as ‘the range of activities that support improved wellbeing through work, enterprise and trading and that can be maintained into the future’. Without livelihood activity, people are not engaged in maintaining, improving or developing their assets.

- **Assets and resource flows**: If the resources flowing out of a community are greater than those coming in, the assets of that community will deplete over time. A positive balance sheet for resource flows is therefore fundamental to the community’s viability and to the livelihoods of its people.

- **Access to services**: The ability of a group of people to live safely and happily in a remote location relies upon their access to services. These include access to essentials such as food and domestic products, as well as health, technical and energy services.

- **Low vulnerability**: Communities often talk about the threats they feel from a variety of sources. A reduction in vulnerability is critical to the ability of the community as a whole to sustain itself.

The danger, in any discussion about viability, is that it potentially leads to a yes/no judgement by an outsider. The real task of any work in this area is to create a space where community members can discuss what they can do to make their community more viable in the long-term.

**Understanding what happened before**

If achieving livelihood aspirations and working towards greater viability of small communities is where we want to go, then knowing the impact of previous work is essential. Impact is the range of positive and negative changes affecting a group of people and which were brought about by an intervention from outside. An intervention is a change in policy, technical, economic, governance or other influences on a group of people.

To illustrate these definitions, let us consider an example of an intervention in a remote community. Suppose a government department makes a grant to renovate the community hall. The impact of the project is the chain of direct and indirect—positive and negative—effects on the people affected by the hall. Even in this simple example, they may be complex (see Figure 12).

**Project preparation and design**

For impact to be measured effectively, projects and programs should be designed in such a way that the desired results of the work are clear at the outset. Here is the example of the community hall again.

### Community hall project

**Purpose**: To support improved livelihoods in Community A.

**Objectives**:

1. To renovate the community hall.
2. To involve 10 community members in the project.
3. To enable five people to complete a training course in building maintenance.
4. To encourage more people to live in the community, making use of under-used facilities and supporting the case for better services.
5. To provide an opportunity for the community council to oversee improvements to housing and infrastructure, starting with a single project.

One method of designing projects to achieve defined objectives and to provide for measurement of impact is the logical framework, which distinguishes between outputs and outcomes.

The characteristics of outputs and outcomes are summarised in Table 3.
Figure 12: Renovating the community hall

Table 3: Characteristics of outputs and outcomes

<table>
<thead>
<tr>
<th>Activity</th>
<th>The work of a project or program.</th>
<th>Example: Homemaker’s program Training program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>A tangible result, expressed as a quantity.</td>
<td>Example: Three training courses delivered A solar energy system installed Information provided on choices of toilet</td>
</tr>
<tr>
<td>Outcome</td>
<td>A change in characteristics, often expressed as a quality but also able to be measured as a numeric change. For outputs to achieve outcomes, other factors play a part, such as opportunity, motivation, support and policy.</td>
<td>Examples: Wellbeing Capacity Safety Happiness Skills</td>
</tr>
</tbody>
</table>
Collecting the right information

‘Collecting the right information’ may be obvious, but it is very easy for any project officer or project manager to concentrate only on the things they can see, touch and photograph. Measurement is, by its nature, quantitative: it measures numbers. But changes in quality of life do not easily translate into numbers on a grid or a balance sheet.

The best way to measure outcomes is to start by recording what people say has happened in the community, even if it seems relatively minor or unconnected, such as:

- The children play over there now.
- We don’t go into town as much as we used to.
- We use the generator more at night.
- He’s always messing around with the car engines.
- There are lots of meetings.
- We are thinking of getting another telephone and a fax machine.

Knowing where we have been involves telling the story of the range of positive and negative changes in the community resulting from the work. These are best measured as quantities (such as increases in dollars, changes in travel time). But where this is not feasible, such as for intangibles, these are best described in words. For example, ‘since the fence was erected, several families said they noticed that more bush tucker was available’.

In many projects, the benefits are only achieved in full some time after the work has been finished. An example is production of a video about environmental health in remote communities, which will take some time to achieve its stated outcomes of healthier people, better practice or a more secure community. The question of exactly when to measure change (and how to pay for the impact assessment work) depends on the nature of each project.

Conclusion

It is no coincidence that listening to what community people say about their aspirations starts a process that ends in listening and observing what has happened through a program or project being undertaken.

This paper has described ways in which experience at the Centre for Appropriate Technology has led us to think about the longer-term aspirations to which short-term projects contribute. Understanding the aspirations of people living on country through their desire for a better livelihood is one approach. Being aware of the questions surrounding the viability of remote settlements is another. In both cases, we have gained insight and new perspectives on community outcomes, often through the age-old basics of observing and understanding the complex links between the assets, aspirations and features of a particular partner community.

Being aspirational and taking a long-term view is only part of the picture. Unless we can become better at demonstrating the impact of remote area projects, then we will lack the authority to argue for better and smarter investment in the future. Effective impact assessment supports better choices in how to spend resources and how to achieve the most from them. It underpins the work of achieving more viable remote communities and striving for better livelihoods.

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Empowering Indigenous communities to identify and resolve environmental health issues

Robert Barnett, Aboriginal Trainee
Environmental Health Officer, Mid North Coast Area Health Service, New South Wales

Ronnie Naicker, Environmental Health Officer, Mid North Coast Area Health Service, New South Wales

In the Mid North Coast region we have eight local government areas. We have an Indigenous population of 9300 according to the 2001 Census with three main Indigenous nations: the Gumbainggir nation in the northern sector, the Dainggatti nation in the central section and Biripi nation to the south.

In identifying Indigenous environmental health issues our main approach is to visit the communities. There's no point doing it in your office, you've got to get out and communicate with the communities and find out what their issues are, not what we think they are. Another way we can identify Indigenous environmental health issues is through our annual meeting with the region's local Aboriginal land councils. We also have standard ongoing agenda items at our meetings with local government and Aboriginal Health. We can also identify issues through projects we run in our area such as Housing for Health and the Community Action Rodent Eradication project. Lastly, we identify issues through complaints, referrals and notifiable disease follow-ups that come through our Public Health Unit office.

Examples of activities and initiatives in which we’ve been involved, in partnership with our local communities, are described below.

**Aboriginal Health Checklist**

Due to the remoteness of our communities and the level of our resources it’s hard for us to get out to our communities and identify issues as they occur. For this reason we have developed the Aboriginal Health Checklist for Aboriginal health workers to use in the communities. It’s a tick box list of environmental health issues and is a quick system for raising these issues and for enabling serious issues to be addressed quickly rather than becoming worse and resulting in a higher cost to the community in the long run.

**Community Action Rodent Eradication Program**

The Community Action Rodent Eradication Program is going to be an ongoing program. It involves community team members identifying rats and mice that are infesting homes in the community, eradicating the rats and mice, and fixing the damage the rodents have caused.

**Community clean-ups**

We’ve run a few community clean-ups in response to needs identified by land councils, Aboriginal Health staff, local government, or by us when we visit the communities and see that there’s a problem. We help the land councils with grant submissions by providing technical support from an environmental health perspective. Most importantly, you need local government contributions, such as the waiving of tip fees. We need to make sure the council is providing a garbage service and that it is working effectively. We also seek support from the Community Development Employment Program. It can provide support and resources such as trucks to take the rubbish away and people to clean up the rubbish.

We have produced an educational brochure that we hand out to members of the communities at the time of a clean-up. It informs people what they need to do to keep rubbish out of their communities.

**Infrastructure upgrades**

We have to ensure that any infrastructure upgrade is appropriate to community needs. We help land councils with funding submissions for infrastructure works. We advocate to funding bodies on behalf of the communities: sometimes the funding bodies don't want to come to the party, so we try to pressure them into looking at funding these projects.
We have done sewer and water supply upgrades and completed a land remediation and revegetation initiative. To take one example, we had some concerns about the public health impacts of an old sewerage system on a community. After our upgrade, the new system and the final effluent disposal site are working well, and there are no impacts in terms of water pollution, overflows or surcharges.

**Water monitoring**

We have two communities with their own water supplies and both are on the Colisure Program. There are community-appointed samplers in both communities. One of the communities is a boarding school and the children take the water samples as part of their science lessons. The communities take their samples twice a month. Once a month we visit the communities and take a sample at the same time. The community samplers test their samples with a testing kit on site (using an incubator and reagent). We send our monthly sample to a lab to cross check the results.

New South Wales Health is the funding body for the program. If we detect the presence of E. coli in the water we try to identify the problem. We work with the community to resolve the issue. This may require issuing a ‘boil water’ alert.

**Mister Germ Program**

This is one of our newest initiatives. It’s a hand-washing program adopted from Queensland Health, and targets children in New South Wales schools from kindergarten through to Year 2. The program is presented by Aboriginal health workers from our local Aboriginal medical services and the Aboriginal Health Section of the Area Health Service. We visit the schools to gain approval from the Principals to present the program to both Indigenous and non-Indigenous students.

**Conclusion**

It’s not been an easy road, either for us or for the communities, in achieving some of the initiatives. We realise, from the Public Health Unit’s perspective, that it’s everyone’s responsibility to work with our Indigenous communities. It is not only the job of the Aboriginal environmental health officer or trainee. We have a team approach.

Due to a recent restructure, the Area Health Service boundaries have changed, which is one of the difficulties we are facing. It’s a challenge to find all the issues immediately due to the diversity, size and location of our communities. The coastline of the Mid North Coast region is approximately 720 kilometres long. That’s a fair bit of travel to get to our Aboriginal communities at short notice.

Another challenge is a lack of community knowledge of service providers. When communities have an issue they often don’t know whether to take it to local government, the Public Health Unit, other government agencies or to non-government organisations. At the other end of the scale there is a lack of local knowledge among the service providers.

Raising the profile of environmental health issues at national, state and local levels is another important task and we at the Public Health Unit try to do that at every opportunity. We also face financial and management constraints. In the Mid North Coast area there are variable environmental health resources in local government. There is some uncertainty about the continuation of training programs. We have some excellent programs in place, such as the Environmental Health Officer Traineeship Program and the Healthy Housing Worker Program, but we are aware that these programs may not go on forever.

We still have a long way to go to resolve our environmental health issues on the Mid North Coast. There are more things we could be doing out there. Some of our communities are still living in very poor conditions. So far we have made a few achievements including removing rubbish from some of our communities, removing disused septic tanks, and regenerating land around the communities. As a result there is less rubbish, fewer rodents, and safer environments, especially for the children. Importantly, there have also been more frequent calls to the Public Health Unit by
local Aboriginal land councils to either raise issues within their communities or to seek advice. This shows us we have made a link to our communities, which is great.

In empowering our local communities to identify and resolve environmental health issues we found some things that are important to keep in mind:

- take a team approach
- work from the ground up
- seek stakeholder input
- maintain open communication and networking
- provide support and advice
- all stakeholders should be flexible, patient and willing to learn from each other.

In the Public Health Unit we have good management support, which fosters the work we do with our local communities. In saying that, I would like to acknowledge our local communities, the local Aboriginal land councils, the Aboriginal Medical Service, local government and the Mid North Coast Area Health Service, and from the Public Health Unit, Paul Corben, Kerryn Allen, Greg McAvoy, David Basso, Ronnie Naicker and Robert Barnett.

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Maori environmental health and protection in Aotearoa

Chris Webber, Regional Specialist—Health Protection, Maori, Toi Te Ora Public Health Unit, Bay of Plenty District Health Board, New Zealand

Greetings from one Indigenous standpoint to another.

In this presentation I will provide an update on environmental health and protection in New Zealand and work in the Bay of Plenty relevant to one of this conferences themes ‘capacity building and partnerships’. I will cover it in three sections: Maori environmental health and protection; workforce development; field work with communities; and application of Maori models.

I would like to acknowledge those in attendance, and others, for their support of partnerships and capacity building. Ngati Awa, a tribe in the Bay of Plenty with whom we have a work program, were due to be with us here today, but sadly couldn't attend. The Whare Waananga O Awanuiarangi, one of our Maori universities, is represented today by Dr Mere Roberts. The university has been looking at training and career pathways for Indigenous environmental health. I also acknowledge the Institute of Environmental Science and Research Limited, our science provider in New Zealand, whose community partners from Hokianga were also unable to be here. Roimata Moore, another Maori health protection officer in the making, based in Auckland, is also here.

Environmental health involving both Maori and western approaches is very strong in the work I'm seeing, which needs to progress in New Zealand. The following two frameworks provide a context.

Our Ministry of Health Maori health strategy, He Korowai Oranga (‘the sustaining cloak’), recognises there are two Treaty partners in promoting Maori health in New Zealand. Objectives should not be based solely on the Crown agenda without acknowledging Maori
aspirations. Like a triangle, both sides stand together to ensure outcomes at the base are achievable. Like most policies, we’re working on it.

I use another framework for workforce development. Designated Maori officers are currently clipped on to a ‘generic box’ (as the only way to get a job). You do your western science and go through the ‘generic regulatory box’ to end up with environmental health outcomes. By comparison, Maori communities traditionally protected themselves, starting with Indigenous knowledge and going through the ‘cultural institution box’ (much of which survives) for similar outcomes. To work with Maori, someone employed at the ‘generic box’ might be expected to operate anywhere along the continuum towards the Maori process. Sub-continua exist, such as being able to speak Maori, being young or old, community position holders, male or female, experienced or just beginning our cultural journey. Instead of a straight-through generic pathway, Maori in the field can experience a varied pathway.

**Workforce development**

Some public health units say they have employed a Maori health protection officer even if that person has not yet completed their training and is not yet designated by the Director General of Health. Nine units say they have a place for one if they could get one. Still there are only three Maori currently designated as health protection officers by our Director General, out of a workforce of 120. I know of only one Maori environmental health officer working for a council, and that workforce exceeds 200. While several are training, Maori on the courses are rare. New options involving distance study seem popular, but we’re not sure if Maori are picking up on it. Cadetships and flexi-study seem preferable. Scholarships alone, compared to traditional courses, are not attracting Maori.

There are large gaps in the sector for Maori. Surveys show most of our environmental health and protection staff are not good with Maori language. Self-rated knowledge of Maori communities and concepts is poor with some mid-range (for example after working with community projects). Quite clearly there is a gap between reality and Maori expectations of being serviced in culturally appropriate ways.

Without an Indigenous environmental health strategy in place there is little consistency in how health units are contracted, how they engage Maori officers, what scope defines health protection (including environmental health) and the application of Maori health concepts. Maori perspectives on health and the environment are holistic, so the western ways of thinking don’t fit well. Employers focus on getting more Maori without refining how best to use their often-varied skill sets. 

Where to next? More surveys of what competencies employers want, networking, structured programs (like the Australian Environmental Health Worker Program) and getting our voice through an Indigenous forum to higher decision-making levels, just as the NIEHF advises the enHealth Council in Australia. Thank you for the examples of how things are done in Australia provided at previous conferences. Due to inspiration from Australia, here in Terrigal I’m officially launching ‘Pathways to Maori Health Protection’, a scholarship and development program. 

**Field work with Bay of Plenty communities**

The 12-month Ohinemataroa Source to Sea pilot project in the Bay of Plenty worked with communities along our Whakatane River from its source down to the sea. It allowed us to take the environmental health interface further into Maori communities where needs weren’t being met. It provided a dedicated role for myself,

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1 To track some of the emerging knowledge in this area, a Maori Health Protection scoping paper has been completed and can be downloaded from <http://www.bopdhb.govt.nz/ToiTeOra/maoriresearchprotect.asp>

2 Details on <http://www.bopdhb.govt.nz/ToiTeOra/maoriresearchprotect.asp>.
without the generic caseloads, and supported a team approach with Maori processes to link internal and external stakeholders.

The process included engaging with community, assessing needs, initiating action or training, empowering stakeholders and devising useful indicators and feedback loops. The Bay of Plenty has some very deprived areas. A lot of work involved marae (traditional meeting places) and face-to-face contact in communities. In Ruatahuna, for example (population 300), we mapped each marae and tested their water supplies (all untreated and unmonitored surface water). We set up a water committee, showed how to take samples, and found levels as high as 1000 E. coli per 100 millilitres. The community was able to use the test results to attract water supply funding through a housing scheme.

A key part of our project was setting up a mobile resource we didn’t already have, so when people met at marae we had a stand, self-help resources, presentations, laptop video library and so on, along with someone to whom they could relate. We tried things like youth projects (lead-testing houses), environmental health plans, sanitary surveys, marae food safety and stakeholder networking and advocacy. For many (mostly rural) infrastructure is poor or failing and authorities turn a blind eye as out-of-work communities have few resources with which to comply with regulations. Power relationships and the need for advocacy are also common themes.

Our project outcomes focus on community environmental health indicators: generic ones like water supply and waste, and others such as people from the communities working in a government agency or participating in resource management. Family approaches (whanau ora) are used, so when a child care centre is visited, the forms don’t just report on the centre, but can also highlight adverse conditions a child’s family may be experiencing. An action/response matrix tries to prevent issues falling through the cracks.

Community environmental health centres were promoted, where those with a basic environmental health knowledge can ask questions or respond to concerns in their community. Some will want to build these into enhanced services with our new and developing primary health organisations. The project also enabled us to establish a database and set of working files so we could distinguish the work we had done with Maori without losing it in the generic history.

Did we do any good? There are the usual challenges—bureaucratic limitations and incapacity, frustrated workers and slow progress—but we have made some gains. We have achieved positive responses from communities and raised awareness all round, we’ve attracted outside funding, fulfilled an advocacy role and are supporting ongoing and emerging projects.

**Application of Maori frameworks**

For me, this work won’t progress in New Zealand unless it’s relevant for Maori. For it to be relevant for Maori, they need to apply their culture to the work. There’s plenty of strength in the existing western tools, but we need to translate them and work in balance.

Today we’ve got various Maori health leaders putting up models that are totally Maori-driven. To be on the right course you need to have leadership and autonomy. The other things you need are access to the Maori world, a healthy lifestyle, a healthy environment and the participation of society. This is a health promotion model.

Other relevant initiatives are: the Taieri River Cultural Health Index, which used a dual western/Indigenous framework for measuring stream health; marae have been viewed as working models; Maori university (waananga) have undertaken best practice field trips including families and communities; and the issue of zero tolerance versus allowable limits has been opened up.

Maori have strong relationships with their environment but often aren’t in the loop with managing environmental health issues. Adapting to adversity may be less successful if the system retains its current weaknesses. Treaty settlements are seeing Maori tribes get back their resources, but experience with managing environmental
health infrastructure is lacking. There’s a tendency for communities to become independent, rejecting the local council (often happy to remain hands-off), but without the people to deal with the environmental health issues seen at the community level.

Our region needs an environmental health worker-type program—we don’t have such a position in New Zealand. We have kaitiaki or guardians—tribal volunteers interested in proper care of resources in the environment—but the paid jobs are tied up by agencies. Kaitiaki pathways into brokered environmental health worker roles would be a double-edged sword. With over a quarter of the population being Maori, the Bay of Plenty has twice the national average, trending towards 50 per cent in the youth population. Only one-quarter of that population speaks Maori. Some townships are 99 per cent Maori, with Maori as a first language. They no longer want to accommodate systemic shortcomings like not being able to use their native tongue.

As Indigenous practitioners we need to network more. There are other Indigenous approaches to share around the Pacific to help motivate further development. For example, Fiji set up a new (largely Indigenous) Public Health Association last year, and started to move aside the ‘Colonial English Health Inspector’ model in favour of ‘Indigenous island problem-solving’. The Cook Islands Tutaka has a six-monthly clean up. Health officers notify before checking communities for mosquito habitats and other hazards. Competitive community pride provides spin-offs for the tourist season. Other island nations have their own versions. Collectively our Indigenous knowledge and approach provides a key to community partnership and capacity.

In conclusion, one of our sayings applies: Kia kaha, kia maia, kia manawanui—be strong (in your workforce development), be brave (in your community partnerships), be staunch (in your Indigenous models).

For further information

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Community food supply and nutrition

Food supplies, and the types of food provided, are major environmental health issues. A great deal of work has been done to improve food supplies to Indigenous communities both in Australia and overseas. Presentations on some of this work are described in this section.

A-B-See with Wor-Ra-Kee (Karuah Family Nutrition and School Access Project)

Delys Brady, Manager, Corporate Planning and Risk Management, Hunter New England Area Health Service, New South Wales

Nell Angus, Community Dietician/Project Officer, Wor-Ra-Kee Project, Hunter New England Area Health Service, New South Wales

Nell Angus

We would first like to acknowledge the traditional owners on whose land we are gathered today. Delys and I will be speaking about Wor-Ra-Kee, the Karuah Family Nutrition and School Access Project. Wor-Ra-Kee, from the traditional Kuttang language, means ‘to see’.

Karuah is a small, beautiful township situated on the Hunter River, a 45 minute drive north of Newcastle. The Karuah Aboriginal community is an urbanised group of about 200 people, in approximately 60 homes on a former mission. They have a community hall, playground, workshop, Lands Council office, and an Aboriginal Corporation office where outreach medical clinics are held.

Food choices in the community tend to be mainly westernised, although some of the Elders have talked about eating river worms, goanna, pipis and snake. The locals report that access to varied, affordable food is limited by lack of transport to travel to the shops and of money to spend there.

Our decision to work with the Karuah community and focus on nutrition, Aboriginal families and school achievement was supported by our research. Firstly, during a consultation for the Hunter Aboriginal Health Plan, local community members indicated they wanted better attendance at school by their children, and improved general health and wellbeing in the community. Secondly, more formal research showed that Indigenous students tend to be lower educational achievers, and that poor nutrition affects absenteeism, concentration and learning at school. It also impacts on health status, weight and oral health.

The Hunter Aboriginal Health Partnership between Hunter Health and Awabakal Aboriginal Medical Service applied successfully for funding through the Australian Government Department of Health and Ageing’s National Child Nutrition Program (aligned to the National Indigenous English Literacy and Numeracy Strategy). Hunter Health and the Families First Initiative also provided financial and in-kind support.

The next step was to get others interested in working with the Hunter Aboriginal Health Partnership and Karuah community, not only to assist with implementation, but also for sustainability and evaluation. The project received guidance, support and sponsorship from:

- Karuah’s Aboriginal community, Local Aboriginal Land Council, Public School and Kamarah Aboriginal Corporation
- Warlga Ngurra Women’s and Children’s Refuge
- Families First Initiative
- National Heart Foundation
- New South Wales Department of Sport and Recreation
- Hunter Health’s Community Nutrition Unit, Health Child and Family Health and Birra-li Aboriginal Birthing Service.

The project’s aim was to improve the nutritional status and educational achievement of preschoolers, school-aged children and adolescents in the Karuah Aboriginal community.
In helping each child start to uncover his or her own potential, the aim was supported by the objectives of:

- achieving good school attendance and concentration through regular access to nutritious food, awareness in the community of the link between healthy eating and doing well at school, and building healthy nutrition practices and knowledge in the community
- overcoming child health, hearing and nutrition problems by improving the assessment of children’s growth and health, and strengthening involvement of other services and sponsors.

**What we did**

To achieve the project’s stated objectives we ran:

- a breakfast club with community workers five days a week during school terms for 18 months from February 2003 where between 10 and 35 kids were offered a variety of healthy food choices each day (the Red Cross provided valuable advice)
- an Arvo Club twice a week after-school during school terms for 15 months
- a Homework Club for one term in 2004 at the request of the children; prior to the project, a homework club had operated every Monday from Karuah Primary School
- Growth Assessment Training that provided basic skills for 10 Aboriginal health workers from across the Hunter in measuring children’s growth, interpreting results and understanding factors affecting children’s growth. Modified from the Northern Territory’s Area Health Service Growth Assessment and Action Plan and funded by Families First Initiative, a three-day workshop was conducted with Hunter Child and Family Health. Health promotion information was provided in course kits, and links were encouraged with mainstream and Aboriginal service providers through provision of two directories.

**Benefits**

The project benefited the children involved, schooling in Karuah, and the community as a whole.

**Children**

Benefits to the children included:

- Opportunities to prepare simple recipes at Arvo Club, as well as grow and taste some different foods. Wor-Ra-Kee was given two garden beds in the Karuah community garden project.
- A focus on traditional art and craft in the Arvo Club using the Traditional Games booklet, from the Department of Tourism, Sport and Recreation web site, that drew on Indigenous history while using modern equipment.
- A place to meet in the morning at Brekkie Club.
- Almost one-on-one assistance at Homework Club.

**Schooling**

Benefits to schooling in Karuah included:

- An evaluation conducted with the school revealed that absenteeism was significantly reduced and suspension days were almost halved. Teachers noted that the children seemed more attentive in class and that disciplinary action seemed not to escalate to suspension as often as it had in the past.
- Teachers also commented that the children seemed to like going to school and learned better in class.

**Community**

Benefits to the Karuah community include:

- Working with the community to renovate and furnish the hall improved their facility, and established rapport and built relationships and trust between the project and community members.
Parents were pleased to see something positive for the kids—some assisted with Arvo and Homework Clubs.

Aboriginal workers employed from the community participated in child protection and food safety training, and had discussions about communicating with children, thereby providing qualifications and skills for later jobs.

The project provided information on food, health and links to learning.

Other services established a Koori Women’s Group, with informal conversations about cooking, food and grocery shopping, and art and craft activity.

The project provided a conduit for involving the Port Stephens Families First Aboriginal Worker and the child support worker from Warlga Nguurra Women’s and Children’s Refuge in the Arvo and Homework Clubs.

An Arvo Club Cookbook of children’s art and recipes was produced.

Other achievements

As well as the planned achievements within the Karuah community, other spin-offs from the project included:

- Sponsorship from the National Health Foundation and the federal Department of Tourism, Sport and Recreation provided team shirts for project workers and the steering committee; and Kid’s Packs of tee-shirt, drink bottle and an Arvo Club Cookbook.

- Two newsletters were produced and distributed to each household.

- A Hunter Version of Eating Well for You and Your Baby was modified, with kind permission from the Queensland Indigenous Infant Project at Inala, to include pictures of Hunter Aboriginal families.

- Participation in 2003 NAIDOC Week festivities at Karuah.

- An end-of-project party during 2004 NAIDOC Week with races, balloon sculpting, kite flying, prizes, and, of course, eating!

Delys Brady Lessons learned

While successful in many aspects, those of you who have implemented a project from scratch would know that things don’t always run smoothly. So, we had to try and reduce potential problems with attention to the following:

- Involvement with the Aboriginal community, essential from the beginning, can be influenced by:
  - a history of individual experiences with the organisation/service we represent, especially where those experiences were not always good
  - community members may regard us/our organisation/services as authority figures and be wary of us, especially in the beginning
  - a history of unsustained project work may mean the project is not the community’s highest priority.

- Community participation is about engaging, involving and empowering as many people as possible. Some pitfalls to be aware of are:
  - communities are built on relationships and it takes time to work these out
  - politics within the community are sometimes hidden to outsiders
  - generating willingness to take on responsibilities is a major challenge and can be impossible in some areas.

- Good planning is essential from the start but flexibility, patience and eternal optimism are also essential for success. For this project, we initially experienced some logistical problems in maintaining a profile when the program only ran during school terms, and the project officer and managers were based 40 minutes from the community. So, we altered our original plan, extended the project officer’s
hours so she became more of a presence in the community and ran a few programs during school holidays.

- Realistically estimate time requirements, and while difficult initially, remember:
  - it takes time to establish relationships in Aboriginal communities
  - non-recurrent projects have a limited life and a lot needs to be achieved in a tight timeframe
  - delays can have a ‘domino effect’ in the community.

- Our advice is to estimate the paid hours needed and then double it, at least.

- Establish the boundaries early, especially when time is limited. Stay focused, clearly state what can and cannot be done within the funding and activity of the project and avoid non-project issues, which can have hidden agendas. Our project officer had to assess every issue brought to her and, if appropriate, refer it to someone else.

- Cultural awareness or competence is especially important when working directly with Aboriginal communities. It is essential to acknowledge the different perceptions of the world that you, as a project worker, have compared to someone who has lived in the community all their life and perhaps rarely travelled beyond it. Fundamental to acceptance is respect, understanding and communication without judgement. It is about respecting and valuing everyone’s view. It can sometimes take years for Aboriginal people to be fully accepted in Aboriginal communities and usually longer for non-Aboriginal people.

- Aim as high as you can and provide as much training and up-skilling as your project will allow. We provided accredited training in child protection and food handling for our workers that equipped them to use safe practice in the project and in future jobs.

Remember to allow for delays and mistakes, communicate effectively about the project and avoid ‘shooting the worker’.

- Getting the team right is probably the element that can make or break a project. The terrific people we were very fortunate to have committed to the project were:
  - our very dedicated Project Officer/ Nutritionist and heart of the project, Nell Angus
  - our great Aboriginal health workers, Vanessa Saunders, Sharon McGregor and Joanne Simms
  - our Families First helpers and funder, Lisa Brown, Michelle Jensen and Teresa Findlay-Barnes
  - our Warlga Nguerra supporter, Tamara Ridgeway
  - our Growth and Assessment Trainer, Eileen Guest.

Gratitude is extended on behalf of our partner in good Aboriginal health, Darren Barton from the Awabakal Aboriginal Medical Service, and my co-originator/co-manager, Cheryl Watterson, and myself to the team and the children of the Karuah Aboriginal community.

**So where to from here?**

Several ongoing activities have stemmed from the project:

- We are still seeking recurrent funding to sustain the Breakfast Club.
- The Arvo and Homework Clubs continue with Families First Aboriginal workers, encouraging community participation.
- Publications continue to be distributed.
- The project has become linked with the chronic care project in Karuah community.

We have also achieved a service model for future projects … with modifications.
Finally

We are very grateful for our funding: we achieved a lot with a little. But Aboriginal communities need projects funded for longer periods to develop trust, and get the ongoing involvement of the community to sustain the project. Tailored approaches are needed, especially those involving the beautiful Aboriginal children. They are, after all, the future of the community. We need to do as much as we can to help them realise their potential. That is our message today.

Wor-Ra-Kee: helping the beautiful Aboriginal children of Karuah 'to see' a better future.

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Dietary adequacy, appropriateness and safety in remote Indigenous communities in Papua New Guinea

Jack Dempsey, Assistant Director, Australian Government Department of Health and Ageing, Canberra and Keith Bentley Centre for Environmental Health

Paper not supplied

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Environmental health services in communities

This section includes presentations on how environmental health is being promoted in communities, and how environmental health services are working. There are also presentations on initiatives that have been undertaken to further environmental health, and case studies of projects.

Indigenous environmental health keeps moving ahead in Queensland

Clayton Abreu, Zonal Indigenous Environmental Health Coordinator, Tropical Public Health Unit, Cairns, Queensland

Stuart Heggie, Director, Environmental Health Services, Public Health Unit, Cairns, Queensland

Sophie Dwyer, Director, Environmental Health Unit, Public Services Branch, Queensland Health

Clayton Abreu

I'd like to acknowledge the traditional owners, the Darkinjung people.

The area I look after is from Mackay and Mount Isa all the way up to the Torres Strait, which are island communities. Our workforce in Queensland consists of three coordinators who look after the northern, central and southern areas of Queensland. I look after the northern zone; Merle O’Donnell looks after the central zone; and Chris Gymore, one of the delegates here today, looks after the southern zone. One of our major roles is implementing the Queensland Indigenous Environmental Health Strategy 2001–06, with six key action areas from our higher priorities to our medium and low priorities. We've achieved all our high priorities; now we're implementing our medium priorities; and towards the end of 2006 we hope to have achieved our low priorities.

Part of our organisation is a strategic group, our special interest group team consisting of all the coordinators and line managers. We look at our overall strategy: what’s working well, what's not working so well. We operate at a state level and can address any big issues.

The district coordinators form the Indigenous Environmental Health Implementation Team, or ‘Imp Team’ for short. There's a coordinator for the Torres Strait, one for north-west Queensland and the Gulf, Mount Isa, the Cape, the Central West, and Brisbane North. As the name implies, our team implements the strategy. We also have funding set aside to train environmental health workers. We offer two training workshops per year.

Recently we offered a training course in Napranum Community in Cape York, and another on Hammond Island in the Torres Strait. We conduct workshops on topics that previous workshop attendees said they wanted. Those two workshops were on animal control—one of the things we looked at was a dog control program in Napranum. I'm really pleased that the people who went through the training achieved accreditation. They actually got up and presented a lesson; they wrote in their lesson plan what they wanted to do, and they handed it all in. Thirteen participants have passed; that’s a big achievement for people who live in a rural or remote community who came down to Cairns to do some training. I think it’s a real recognition of how they’ve advanced through the experience in the community and through working with us coordinators.

I'd like to acknowledge Roy Chevathen, who's one of the delegates here today. He was part of the workshop in Napranum. He's new to the environmental health worker role, but has come up with his own dog health and control program in his community. When I first went to Napranum I saw heaps of dogs all around the communities like you see all over Australia, but when I went back there were no dogs running around. One dog, that they used to call 'Elephant' because of all the mange he had, now has a beautiful coat. Roy has managed to promote not only dog health, but he has also developed control measures and he's actually got the council to support them, which is a big issue. It took a lot of work by Roy and our district coordinator in that
area, Eddy Bobongy, but by getting the council to support his program they also got by-laws enacted. A vet or vet-nurse visits every few months and it’s not only good for the health of the dogs, but their control as well.

That was a big achievement for environmental health workers in Queensland. They’ve seen this program happening and then through the workshop they got inspired to go back to their communities and use what Roy has done with his community to make changes of their own.

I’m so proud of my co-workers, especially in the communities: they get their training, they take it back to their community and they use that training to achieve things in their own communities. Another person I’m going to showcase is Ronald Williams from Bamaga, right on the tip of Cape York. After he attended a workshop on mosquito control he collected mosquito samples from around all the houses in his community and sent them to our office. We’ve got a Dengue Action Response Team (DART) that looks after our northern zone, and they identified those mosquitos to be Aedes aegypti, which spread dengue fever. In the past we had no data showing that Bamaga had that type of mosquito. Ronald did all the work off his own bat, and now Bamaga is properly classified as ‘at risk’.

We call him our mozzie guy from Bamaga, and I’d also like to add he’s been nominated for a state award by the Queensland branch of the Australian Environmental Health Institute.

Another thing I will quickly touch on: earlier in the year we had a dengue outbreak in Townsville, Cairns and the Torres Strait and unfortunately a lady from Thursday Island passed away. In response to that death, Queensland Health staff and all the Indigenous coordinators went to Thursday Island and surveyed every house and property. We sprayed the mosquito breeding sites, checked all the rainwater tanks, and knocked out every breeding site we could find.

Another success story is from Coconut Island. But before I begin I’d like to acknowledge that the community has recently suffered a great loss—an important person in the community has gone missing at sea. I asked the community if they would like me to swap the slides showing him for others, but they said ‘No, he’ll be proud of us to showcase what they have done in a small community.’

So I am showing before-and-after slides of Coconut Island, which has a community of 200–300 people. We had a three-day workshop there to train environmental health workers. The council from the island stayed back every afternoon to ask questions, and they got an understanding of what environmental health is, and how it affects people in the community. After that, the local environmental health worker, Fred David, went to another workshop on problem solving. With what he learned there, the Coconut Island Council did a flip chart about environmental health in their community, and prioritised and considered the issues they identified.

One of the issues was housing, and I’m showing before-and-after slides of the wet area—the toilet and shower—of one of their houses. You can see the leaking ceiling, and the poor planning and design. The council made this a priority and they made improvements to every house. This really shows what environmental health workers can do for a community.

These photos don’t really do justice to the way Fred talks about the Coconut Island community. He says they’d, hands down, win the Tidy Town competition. They’re certainly dedicated: to address dust problems, the entire population came out and helped pave the island’s streets. One of our environmental health workers visited before they’d done this, and it was just like any other town in Australia. When he went back afterwards, it was like a different place.

They’ve also looked after the improvements they’ve made. They’ve now got eateries, and lockable bins so animals can’t disturb the waste. Waste is now under control. The island’s become a bit of a tourist attraction. Even I am amazed at what a local council and environmental health workers have done with the right training and proper communication. Coconut Island is a case study in the way the process of training, communicating with stakeholders, planning and working should be done.
Something else we’ve come up with in Queensland is a reporting tool and reporting framework for environmental health workers in rural and remote communities. If they discover an issue that is too much for the council and its community to solve on their own, they now have a form to report it, and request help. This came from a recommendation from an environmental health workshop, because the problem kept occurring. The environmental health workers at the workshop decided how the form should work: if they have a problem, they take it to the local council; the council uses a template to report it to the district coordinator, myself or one of the others; if it’s too big for the coordinator to help with, we pass it to our line management in Public Health, and so on up the line to the Northern Indigenous Environmental Health Regional Forum in Cairns if needs be. The Forum is made up of all key stakeholders, from government and elsewhere, who have responsibility for Indigenous environmental health. If necessary, issues can even be passed further, to Brisbane, where all the major decision-makers—state managers and the like—will take it on. Sophie and Stuart will discuss that further.

Another thing we’re responsible for is putting out the environmental health worker newsletter. It’s the voice of Queensland’s environmental health workers. We’ve got stories from community environmental health workers and it’s all about what they do, what problems they have, how they solve them. We share that information across our network. Plus I send those newsletters out to our national Forum members.

**Stuart Heggie**

I intend to build on what Clayton was talking about—all the good work that’s been happening in Queensland at the grass roots level—and then discuss what’s happening at a regional level. Sophie will talk about the strategic level. A couple of years ago in Adelaide, when I was speaking to the previous conference, I mentioned that Queensland had just been awarded some funding to employ environmental health workers in 13 Cape York communities. Well we’re half way through that pilot program now so I thought I’d give you an update on its progress.

We were given $500 000 a year for four years in 13 discrete Cape York communities. Two years later, these are some of the statistics that have flowed from there. Of those communities, 85 per cent have now got a graduate environmental health worker or an environmental health worker undertaking their training. Of those workers, 90 per cent are receiving the correct salary identified as part of the funding, and 62 per cent have now got a workstation—essentially an office to work out of. Half of them have got their own PC, they’ve got their own telephone and fax systems, and some of them have developed their own uniform.

To give you an example: here is a photograph of Ronald Williams—our mozzie guy from Bamaga—gleefully showing off his new office, which is fully decked out and probably even better than mine. It speaks for itself that there’s no point just funding a salaried position; you need to have that ongoing commitment to actually set the person up with the correct equipment and office.

Something else stipulated in the funding agreement was that workers needed to have tools and equipment. We’re still negotiating with councils to make sure they purchase the equipment needed: digital cameras, thermometers, test kits and the like. We’ve still got a bit of work to do there. Part of the funding included transport—either a lease of a vehicle, or a council could reimburse their environmental health worker to use their own vehicle, buy a quad bike or whatever. But again, we still have got environmental health workers out there who don’t have transport and who have quite large community areas to deal with, particularly if they want to go to outstations.

You may have seen this photo in your program: this is Derek Walpole from the Arapoon Community, proudly showing off his new Hilux. Because they’d spent so much money on the car all they could afford was some electrical tape to spell out the words ‘environmental health’ on the door, but still I think symbolically that’s a great shot and it just shows you what you can do if the government has a commitment to the program.
So what’s the next phase? It’s been operating long enough now that we are about to embark on a form of evaluation, more qualitative than quantitative, and the tenders have just been advertised. We might go about this evaluation by including key community member interviews; case studies like those Clayton used earlier; and questionnaires for key stakeholders—perhaps other government departments and other people that we regularly deal with to get some feedback as to how well or otherwise the Environmental Health Worker Program is progressing. Obviously to get a sense of whether you are succeeding or not you need to look at a comparison with communities that don’t have an environmental health worker to see if we are making a difference.

The report will probably be available by January. We’re hoping to accompany that report with a cabinet budget review committee funding submission in which we are hoping to demonstrate to the Queensland Government that there’s already a lot of good work being done after two years. We really can’t afford another two years before we think about extending this pilot throughout the whole community. We want to be able to demonstrate to the government that it would be remiss of us to allow these other communities that don’t have funding to wait two years until the pilot is complete. We’re hoping to influence the Queensland Government to roll out the funding not just to the 13 communities of Cape York, but to the rest of the communities in the state: 34 communities, or about $2 million per year to fund an environmental health worker and associated costs.

In terms of training developments: the Cairns TAFE College has, for quite a long time, been the sole provider of Indigenous environmental health training in Queensland, delivering courses at the Certificate, Diploma and Advanced level. The Queensland Aboriginal and Torres Strait Islander Health Worker Education Program Aboriginal Corporation started delivering some new Certificate II, III and IV courses and are looking to offer a Diploma course. So now we’ve got two options for environmental health worker training, and I don’t think I’m speaking out of turn by saying that the Batchelor Institute has not only commenced its Environmental Health degree course in the Territory, but is looking at perhaps delivering a Diploma course for Queenslanders, which may be started as early as next year.

In the interest of advocacy for Queensland environmental health workers I felt it was my duty to visit the Batchelor Institute in the Territory. I found it to be a brilliant institution and have no hesitation in recommending our students undertake their courses. So we’ve currently got 11 Queensland students enrolled at Batchelor who, if they complete their studies according to schedule, will become environmental health officers by 2007 or 2008. For cost efficiency, Batchelor is considering sending teachers to Cairns, rather than bringing those 11 students to the Territory. If things keep growing, Batchelor may in fact set up an annex in Cairns, such is the ongoing demand for courses. I’m showing slides of the library at Batchelor; a typical classroom; the accommodation where students would stay when they visit there. It’s a very convivial, agreeable place to undertake studies.

Finally, in the last year or so we did an underground cooking project. Because there’s been an increased interest in Indigenous cultures and through cultural festivals there’s been a temptation to sell food that’s been prepared underground. We felt we needed to see whether or not that was a viable option. We’re not looking to stop ceremonial use of underground cooking, we were interested in cases where the food cooked underground is sold to tourists or the like.

It was interesting; there was a clash between the cultural need for that method of cooking, and the legislation that says you can’t sell food if it’s not fit for human consumption. But there was no evidence either way, so we decided to conduct a small research project by logging the temperatures of the food as it was being cooked. We did the test on four occasions in different sites across North Queensland, and I’m showing a graph that plots time along the bottom in hours and the temperature that was reached within the food. The discrepancies between the top two lines and the bottom two lines are due to the position of the probe within the meat: outside or
inside. In all cases the temperatures reached were considered to be relatively safe. So, providing the meat is defrosted thoroughly before you cook it, we determined that the temperatures were comparable to conventional cooking. We did find some pathogenic bacteria on the banana leaves in which the meat was wrapped, which may have come from contamination of the leaves, so there’s a suggestion that perhaps aluminium foil may be an option, or making sure the leaves are cleaned before they’re wrapped round the meat.

In the last couple of years we’ve developed some collaborative forums. Clayton mentioned earlier the Northern Indigenous Environmental Health Regional Forum. This is a group of government agencies, usually based in the Cairns area, that are in a decision-making roles where they can have some influence if environmental health workers at the grass roots level are experiencing problems. As the representative from the Tropical Public Health Unit, I chair that Forum, and it includes groups involved in environmental protection, housing, the Australian Government Department of Health and Ageing (by teleconference), formerly ATSIC, but now the Australian Government Department of Family and Community Services Indigenous Coordination Centres, and so on. We get together every three months to discuss problems we have become aware of in communities, and usually it’s the Public Health Unit that raises most issues. So far we’ve had four meetings and the interests and the input from the other departments has been quite high, such that we can actually overcome local issues.

If for some reason we can’t resolve the problem regionally, as Clayton said we can refer it to the Indigenous Environmental Health Government Agency Group that, at its more senior level and with its additional decision-making discretion and powers, can clear the blockage or help rectify the problem. The Executive Director of Public Health chairs that meeting so it’s essentially the same group of departments replicated by more senior people in Brisbane. They also meet quarterly, just after our own meeting, so we can refer issues to them if necessary. The Environmental Health Government Agency Group has links with people at the Director-General level through the Human Services Committee so, as Clayton said, there is a channel through which to pass issues from, for instance, Coconut Island, all the way to Charlotte Street in Brisbane. If the issue cannot be resolved at key points along the way we can take it to the highest level within Queensland Health.

We have heard that web sites are all the rage for information. Queensland Health is looking to develop a web site that environmental health workers can access externally. It’ll have issues regarding Queensland Health, environmental health, public policy, programs and legislation. It’ll be relevant to the duties of environmental health workers and have a particular focus on such issues as food and water. Those with workstations, PCs, and a connection to the Internet can tap into quite a lot of useful resources. It’s mainly descriptive, interpretive and pictorial, without having thousands of words to get through. And there may be some linkages with the Indigenous Health InfoNet web site.

Sophie Dwyer

Thanks Stuart and Clayton. This presentation will seek to inform you about what we are trying to do at the strategic level.

Queensland has a whole-of-government framework around Aboriginal and Torres Strait Islander policy issues called Partnerships Queensland. It’s very broad. We will link with the Partnerships Queensland process rather than separating environmental health from the whole-of-government initiatives. We are focused on contributing to the process to make sure policy-makers don’t forget about environmental health, and on ensuring environmental health is broader than just infrastructure and housing. So instead of developing a new Queensland Health Aboriginal and Torres Strait Islander Environmental Health Strategy, we will create a response plan within the whole-of-government approach. We’re going to re-do our strategy in the light of this response plan and try to build our links with other agencies.

In trying to do that whole-of-government work, we have some real challenges ahead of us. One of the challenges is the tendency for environmental health to be thought of only in terms of housing
and infrastructure. For example: the current bi-
lateral agreement on housing and infrastructure
mentions environmental health, but Queensland
Health is not a party to it. A lot of the effort is
about getting senior people across government
to talk to each other, and that is probably the
hardest job I face. Sometimes the tiered approach
government gets in the way of effective
communication.

Training

The thrust of Di Lawson's presentation is that
training is going to have implications for all
state jurisdictions. We have to promote the
competencies so that training positions are
actually funded. One strategy in the Indigenous
Environmental Health Worker Review includes
declaration of a vocation. We need to persuade
our Department of Employment and Industrial
Relations—the people responsible for training—to
fund public places in the environmental health
training area. That's what declaring a vocation
means for Queensland. We also have to encourage
training organisations to run courses based on the
competencies. So getting the competencies is step
one, but for jurisdictions the next step is to make
sure there are funded places, so we can continue
to ensure the availability of trained environmental
health workers.

Governance

Aboriginal councils in Queensland are going to
become local governments. Historically, their
status was unclear. With legislative changes
proposed in Queensland, Aboriginal councils
will become classified as local governments
like every other shire across Queensland. This
exciting development obviously has significant
implications for the councils, as well as for
Queensland Health. This transition will take four
years, and is supported by a whole-of-governance
improvement strategy. Communities will be
accountable for legislation, such as the Health Act
and the Food Act.

As part of changes to the finance standards,
Queensland will also be introducing a requirement
that local governments include a section on public
health in their corporate plans. This initiative will
support the environmental health workers in the
communities because public health will become
part of local government reporting requirements. It
will take a few years for this to roll through to the
Aboriginal communities. For Queensland Health
there will be a requirement for us to provide elected
representatives with training on their role in public
health legislation and their responsibility to support
environmental health workers.

Award

Nationally, environmental health workers have
advocated for an award. Queensland Health
discussed the issue with our industrial relations
colleagues.

Awards are made by negotiation between unions
and employers and are registered in the Industrial
Relations Court. Government (federal or state)
provides the court. Government doesn't make
awards; it's a negotiation process. Awards can be
registered at the national level as a federal award
or the state level as a state award. There are slight
differences about what's required to get that award
registered. And it's up to the union to decide
where they want to lodge the award.

Anyone who's employed by Queensland Health is
already covered by an award. The difficulty arises
for those who are employed by communities. So,
what are our options? One option is a new award;
another is to consider amending existing awards.

So let's consider the option of developing a
new award. Government cannot be in the
business of developing awards. It's not a matter
for government it's always been a matter for
unions and employers. And an award can only be
registered by a union or employer body. So, we
in government can only help and support people
in developing their own award. An award would
need to come from a trade union.

Developing a new award is a difficult, labour
intensive and time-consuming process. It's a
complex legal document so it has to be in the
interests of the union to actually develop that
award. Unions will only develop an award on
behalf of its own members: they will not do it for people who are not members. Once an award has been drafted it must be registered in a state or federal court. One of the implications of registering an award in a state is that it doesn’t have to name every employer. But if it is registered in the federal industrial relations court, the award has to name every employer it covers. So there’s a big difference between a state award, which names the class of employers, and a federal award which names each employer. These processes may change with the Australian Government’s recent changes to the industrial relations system.

So if it’s too hard to develop a new award, we could look at using an existing one. To do this we have to collate all the job descriptions for environmental health workers. Depending on how they are written they might fit into different awards. We have four possible awards that I’ll quickly look at.

In terms of awards registered in the state industrial relations court, the first option is a health workers award, but that covers clinical health workers and not environmental health workers who are really employed in a different role. And it’s not normally applicable to local government; it’s applicable to health services. So that award doesn’t really look too promising.

The second option is an award for CDEP that’s registered in the state industrial relations court. However, that leads us back to the very problem we are trying to solve. We already have people with high-level skills being payed CDEP wages—according to the CDEP award—and meanwhile there are other people who aren’t skilled who are getting the same pay. So I don’t think that is a realistic option either. How are we going to recognise people with certificates, diplomas, or other qualifications?

In terms of awards registered in the federal industrial relations court: there is an award covering two local governments—Arakoon and Mornington—but it doesn’t include an environmental health worker designation. So the union would have to rewrite it to include environmental health workers. And the union would have to get every other council to sign up to the award. This award only applies in Queensland. It’s a possibility, but not a brilliant solution.

The final award is the Queensland Local Government Award. This is the award under which local government staff in Queensland are normally employed so it would be applicable to Aboriginal and Torres Strait Islander communities, as they become local governments. While it doesn’t name environmental health workers specifically, it does include a class that is relevant to environmental health workers and it includes technical and various qualification levels: it’s the one under which environmental health officers are employed. The union that covers that award—the Australian Services Union—would need to obtain agreement from community councils to become party to the award. I think this is the best option.

However, there is no existing relevant award that has national coverage across Australia. The Queensland Local Government Award is only applicable to people in Queensland so to get a national award, there would need to be an entirely new award.

What are we going to do about this? The first thing is to get a consistent job description. If the job description appears like a health worker job description, it’ll get pulled into the health worker award or a CDEP program award. So we need a consistent—and distinct—job description. That’s one of the tasks Queensland Health will try to address.

Government cannot make the award nor can it facilitate the award. So the second thing is that environmental health workers need to become members of the relevant union for an award to be developed. There is no other way for it to occur, and it’s consistent with the history of every other employee in the country. That is how awards are created. Years ago there wasn’t a childcare award, so childcare staff became members of a union and advocated for an award. Environmental health workers have to join a union, because they are not going to get either a new award or a change to an award unless they are union members. The
Australian Institute of Environmental Health can support that process, but can’t do it for environmental health workers.

Alternatively, government can allocate funding for positions and specify the pay rate to be used. But it will be without an award. That has a long-term risk for environmental health workers if there are any changes to the funding levels or administrative arrangements. In conclusion, to obtain an award to cover environmental health workers those environmental health workers need to join a union and advocate for it.

For further information

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The Dog Health Program in Far West New South Wales

Thadd Nagas, Aboriginal Trainee
Environmental Health Officer, Far West Area Health Service, New South Wales

Ann-Margret Withers, Veterinarian, Royal Society for the Prevention of Cruelty to Animals, New South Wales

Thadd Nagas

Why do we have dog programs? To improve the health of animals in remote Indigenous communities by controlling disease and parasites which could be passed on to people, particularly children, who come into close contact with the animals. We aim to reduce and control the number of dogs and cats in these communities by surgically desexing the animals and we’re currently trialling a contraceptive implant that remains effective for over two years. We undertake our dog programs in support of the Housing for Health work we carry out within our Population Health Unit. In environmental health we’re guided by the nine healthy living principles of Paul Pholeros and colleagues, and principle number six is ‘separating dogs and children’.

To get these projects underway the major step is community consultation. I ring up a few people I know, get myself invited to their land council meetings and give an introduction to the program. We encourage community involvement and support at all times. Most importantly, we don’t put it down anybody’s throat. We ask if the community requires a program aimed at reducing dog numbers. Then, with their help, we organise a local surgery venue and training so that when we leave, local people can follow up with drugs and removal of sutures and the like.

During the program we euthanase any sick or troublesome animals, at their owners’ request; we surgically spay animals and insert implants. We carry out vaccination, gut parasite treatment, skin parasite treatment, heart worm tests, and general consultation with pet owners. In most of the local communities in the far west, if a dog doesn’t have a collar the local council dog catcher can take the dog away so we also give them all a free dog collar and they love us for that.

Participants in the programs so far have included three vet surgeons from the Department of Agriculture, three from the Royal Society for the Prevention of Cruelty to Animals (RSPCA) and three from private practices in Broken Hill and Bourke. The Far West Area Health Service establishes and coordinates the program and provides a lot of field assistance to the vets. The local shire councils always help out by lending us their dog catcher and vehicle, as well as providing assistance with microchipping and registration. We microchip so we can make sure we have the right dog with our implants, but it has actually backfired a bit with the local councils going back to the community, rounding up dogs owned by Indigenous people and handing out fines, and we don’t want that at all.

We also had help from the Pasture Protection Board, RSPCA and vet students from the University of Sydney. Most of all it’s very important to have a local from the community
helping out. These dogs aren't used to us and picking them up is a pretty dangerous job if you're not a local. These local guys tell me which dogs are 'cheeky'. A cheeky dog is one that's going to bite me!

Setting up the surgery is by far the most difficult task once we hit the ground. We've got quite a few vehicles full of equipment—anesthetic machines, implements for cleaning, drugs, and microscopes for parasite identification. Unpacking and getting everything organised is an absolute nightmare. The vets are kept pretty busy. Usually one vet can surgically desex up to 20 dogs a day. Using the implants we can do a lot more. We set up a recovery area for all the animals, which is quite plush with carpet and a heater. We're quite proud of the fact that we've never lost a dog post-surgery on any of our programs thus far.

My favourite part is involving local schools. We go out with pet programs and educate at three different levels on dog safety and why it's important for us to wash our hands after playing with pets.

Seven dog programs have covered over 10 000 kilometres and have allowed us to desex just over 650 animals. A major function of the dog programs is building bridges with the community for the health service to carry out their environmental health work. Following on from this work, five communities now have environmental health worker trainees.

Ann-Margret Withers

RSPCA New South Wales has been involved with the Far West Area Health Service in providing dog health projects in Indigenous communities for the past two years. Our involvement grew out of a number of things including:

- the mobile animal health programs that Broken Hill RSPCA has been operating for a number of years
- RSPCA involvement in a program called Big Licks run by Animal Management in Remote Rural Indigenous Communities (AMRRIC)
- individual vets having a strong interest and desire to be involved in the dog programs
- the invitation of the Far West Area Health Service to assist.

The RSPCA provides vets and vet nurses for the programs. The groundwork Thadd described, involving a lot of community consultation, is crucial. This includes finding a suitable venue for the clinic, which so far has ranged from the Volunteer Bush Fire Brigade shed to a local high school's agriculture plot shed and the community hall of the CDEP. Materials used in the programs are provided by the Far West Area Health Service and the RSPCA, with some donations of drugs from the larger drug companies involved in animal health.

During the program each animal presented was given a health check to ensure it was suitable for an anesthetic, especially given that surgery conditions were less than ideal. Skin conditions were looked at if present and treatment given if possible. Dogs will often have secondary pyoderma (pus-producing skin lesions) from these and other skin irritations so antibiotics were dispensed for use after surgery. If the skin condition was too severe we could not operate on the animal, as they were usually very run down and sick.

A vaccination was given, most importantly to prevent parvovirus, which is a haemorrhagic vomiting and diarrhoea virus that is fatal to the dog without treatment. A heartworm test was performed. Interestingly, we found this to be running at almost 100 per cent positive in Enngonia for dogs over one year of age who weren't on prevention. Heartworm is a mosquito-borne disease that cannot be passed to humans, but is still a good example of the possible spread of disease in a population by mosquitoes.

Each animal was wormed with a worming tablet and more were given out for use later in the year if there were enough supplies. Some drugs used had multiple effects, such as Ivermectin™, which treats mites, worms and heartworm. Each animal was also permanently identified with a microchip, so it could be followed up during future visits or registered with the council if the owner wished.
If the animal was healthy enough, it was permanently neutered by surgical desexing. The ovaries and testicles were removed not only to stop breeding, but also to assist with aggression and roaming and to help stop development of hormonally-influenced cancers.

A small number of animals were euthanased at the request of the owner either due to poor health or aggression.

RSPCA is not just a welfare organisation but a community organisation and helps to provide programs in accordance with the needs of different types of communities; such as Pets of Older Persons Scheme (POOPS), targeting senior members of the community having difficulty meeting the needs of their pets; Community Animal Welfare Scheme (CAWS), offering subsidised de-sexing and micro-chipping of dogs and cats for low income earners or pensioners in regional areas; the ‘RSPCA Auxiliary scheme’, which offers the same program in the western suburbs of Sydney; and ‘Safebeds for Pets’, for the animals of people who are the victims of domestic violence.

We are there for all animals as we see that all animals have needs. We are not singling out Indigenous communities, but a lot of the townships and communities we have been to are relatively remote for New South Wales and vet services are not available.

The aims of the program are:

- To improve the health and welfare of the dogs. A community with strong and healthy animals has a sense of pride and accomplishment.

- Dog population control. Desexing is providing a means of managing large uncontrolled populations and the associated problems such as excessive noise, scavenging, major nuisance from dogs fighting each other, attacks on humans, and the poor health of the dogs themselves from malnutrition and lack of treatment of disease. As the number of dogs decreases, the individual animals can get better care.

The program also aims to contribute to an improvement in human health by decreasing transmission of possible disease from dogs to humans. In addition, learning about animal health is a way of learning about human health. It has been easier to gain access and implement human health programs in communities after a dog health program has been held. The programs also create an awareness of the animal's welfare, the respect it affords, and its intrinsic value as a living creature. This understanding traditionally exists in Indigenous communities. There is a known and statistically proven link between violence towards animals as a child, and the increased likelihood of that child becoming a violent adult. The violence may be of many sorts including murder and domestic violence. These programs are a small step towards trying to break that cycle of violence by fostering and enhancing the bond with the animal and its value to the owner.

The dog health programs need strong local community support to remain sustainable and progress. A one-off program may have far-reaching effects, but it is the repeatable, sustainable program and the continued education of children that will enhance animal and human welfare in these Indigenous communities.

**For further information**

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Animal Management in Rural and Remote Indigenous Communities

Philip Donohoe, Executive Officer, Animal Management in Rural and Remote Indigenous Communities

Chris Brown, Veterinarian

Philip Donohoe

AMRRIC started in 1995 when I did a dog health education program at Ramingining—a town in the Arnhem Region of the Northern Territory—with Professor Rick Speare from James Cook University and operational staff from Territory Health Services. A nurse there was very enthusiastic about the benefits that could be gained by culling hundreds of dogs in the Ramingining community. An Aboriginal lady approached us with a young boy, her grandson, who had a congenital defect and she was crying as she spoke with us. She was pleading with us not to conduct any surgery and not to cull any dogs because she would be responsible for her grandson’s sickness, and any other death that would occur in the community would also be attributable to them. We decided not to go ahead with our planned work. We complied with her ‘cultural/spiritual’ request. Now, my next problem was to share this decision with the local nurse. She was furious with me, but the important thing for me was our team listened to a cultural request, we listened to what the people had to say, and we chose to follow what they wanted us to do.

The consequence of that experience was formation of AMRRIC two years later by Professor Tony English from the University of Sydney and myself. We had realised that many disparate groups of vets were going to the Northern Territory to do work in communities; AMRRIC has begun to act as a coordinating body. We’re committed to education in communities, to providing sustainable programs and to linking the programs with research. We went back to Ramingining and this time had almost unfettered access to working with community members because they trusted us and accepted our respect for their culture.

Chris Brown

I undertook a program with my dad, who’s also a vet, visiting a central Australian community. This presentation is about what we found, trends we discovered and interesting links we identified along the way.

Probably the first and most important thing for us to realise was the value of these dogs to the community. They’re more than just dogs. There’s a very strong cultural association and they’re seen as ‘women’s business’ a lot of the time, they have personal names, they’re used for a variety of functions, such as hunting, company and to provide warmth. They also tend to guard the owners at night. A lot of people in the area are quite spiritual and dogs were used to keep away the spirits. Petrol sniffers, should they be around, also tended to be warded off by the dogs barking.

We found that dogs do add to the burden of human health: skin diseases, diarrhoea, parasites and injuries. Certainly a lot of these are already there, but the dogs tend to make it a little bit worse and this is what AMRRIC is all about: trying to help the dogs and by doing that helping the people as well.

The health problems of the dogs include mange, infestation by Scabei and Dermodex mites, ticks and heartworm. Opinion is divided as to whether dog scabies are infective to humans. While we were in the community my dad scraped some mites off a dog and put them on his own arm. He wanted to see for himself whether there would be a reaction. He took photographs at regular intervals and documented a variety of different skin irritations and rashes, showing that dog scabies can indeed infect a human quickly and easily.

Scabies are picked up from dogs lying around on people’s beds. It’s through direct contact, they might touch on to the skin, burrow in, cause the

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1 The Australian Government, through Senators Amanda Vanstone and Nigel Scullion, funded this Executive Officer position after some lobbying by Philip Donohoe and his friend Billy Gumana from the Numbulwar Community.
reaction and away we go. Obviously children are a big priority and these are the main health problems in the communities.

Another issue we looked at was Salmonella, which causes diarrhoea. The typical cycle is that kids poo into nappies, the nappies get left lying around, a dog goes through the nappy, picks up the Salmonella and it’s recycled and multiplied. Due to poor hygiene standards, the kids then pick up the Salmonella again and the infection spreads throughout the community. Another problem associated with the dogs remaining uncontrolled is that they rummage through the garbage bins in the community.

An interesting thing we found was the tick-borne diseases. Ticks carry parasites within them and we found a number of community people had actually picked up these parasites from the ticks attaching to them.

We were able to collect some data while working at the community. It shows, for instance, that we managed to get the mange levels down, but as the health of the dogs improved the dog population actually increased, which makes sense.

There’s a variety of different housing in the community, from traditional humpies through to western style houses. We found that people who lived in humpies, and their dogs actually had better skin than people who lived in western style houses. It may sound strange that in, what we might consider, a poorer house the dogs are actually healthier, but when you look at the reasons it makes sense. Outside you’re at the whim of the elements, things can dry out. The dust moves away, the environment changes. Whereas inside, it’s confined; everything stays there and there’s the possibility for reinfection. So the traditional way of life helped the skin of the dogs as well.

The conclusion of our study was that there are definite links between dog health and human health. To quantify how great a link, more studies need to be done. But really, we found that living in small, isolated groups and not trying to push everyone into western style housing can actually have a positive effect on the health of the dogs.

Why is AMRRIC important and why is it going to be a worthwhile project? Well, I think you can see the benefit and the significance of it, there’s a definite link between human health and dog health. What a couple of individuals achieved there in a week to 10 days was significant. From a vet’s perspective, I found it an amazing experience. I normally work in a clinic in Sydney and I can honestly say I achieved more in one day in a remote community in terms of benefiting the quality of life of animals and even saving animals’ lives than I would in a full year in practice in Sydney. It also gives city vets broader experience, for instance in my clinic I would rarely see a case of heartworm, which is rife in dogs in remote communities.

For me, it was also the characters we met, the stories we heard. Meeting some of the local people who were there before white man, before they even knew white man existed, just little things like that are just so special.

The objectives of AMRRIC are to provide education, practical support, and probably most importantly, to set up a framework for service delivery. It’s fine for a hundred different groups to go out there and do their own work, but each time a new group goes out they have to make new contacts and learn things for themselves. They’ve got to make their mistakes before they learn from them. The great thing about having this organisation is that there’s going to be one central body that knows the lie of the land, is going to have the contacts in the communities and is going to know how to do things and do them well.

The organisation’s cornerstone is being mindful of the cultural issues. These dogs are very culturally sensitive little creatures, and they’re important. You can’t just bowl on in there, take away a hundred dogs, slice and dice them and send them back. That’s going to create a fair bit of disturbance in the community. When you visit a community, don’t rush it, these places tend to work on their own time—lots of it. Just bear that in mind. Get to know the people, and when you’ve got their trust you’ll have a greater capacity to make more of a difference. It’s great to recruit local people as well because that enhances
and improves trust and they’re a great source of assistance and knowledge and tend to make the job just so much easier.

For further information

AMRRIC has a web site <www.amrric.org> and you can email Philip at phild@amrric.org. If you have any queries or issues you want to raise or people you want to be placed in contact with just email Philip and he can send you that information.

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Wastewater Gardens™ Project at Emu Creek Community, Kununurra Western Australia

Greer Ashby, Environmental Health Officer for Aboriginal Communities, Shire of Wyndham East Kimberley, Western Australia

Emu Creek (Gulgagalganeng) is a small Aboriginal community situated approximately 10 kilometres east of Kununurra in the East Kimberley region of Western Australia, within the Shire of Wyndham, East Kimberley, and the ATSIS Wunan Region. The population of Emu Creek varies throughout the year but generally maintains up to 30 residents, which increases during the Kimberley’s wet season when people from remote outstations come into town.

The community consists of four houses and two shelters that are connected to Kununurra’s town power supply by overhead powerlines, while an on-site bore supplies their water. Originally wastewater was disposed of with the traditional septic tanks and leach drains system. This caused many problems due to the area’s high water table and inadequately or poorly installed septic tanks and leach drains, particularly in areas that had highly saturated soil.

As a result of this type of wastewater treatment system not functioning properly at Emu Creek, engineer Kate West from ARUP—consulting engineers who act as program managers for the Western Australian Remote Area Essential Services Program—appointed Birdwood Downs Company to undertake a feasibility study of installing an alternative wastewater treatment system known as Wastewater Gardens™. ARUP is responsible for managing capital works projects for water, wastewater and power in remote Aboriginal communities funded by the Australian Government through its responsible agency, ATSIC or ATSIS. Funding provided for this Wastewater Gardens™ project at Emu Creek Community allowed $124 000 for all works involved in installing through to commissioning the systems.

As the Birdwood Downs Company proposal confirmed that this type of system would suit the conditions at Emu Creek, the Executive Director of Public Health in the Department of Health approved the Wastewater Gardens™ concept for installation. The project was approved as a pilot study for two years as this was the first time this system would be installed on an Aboriginal community. Suitability factors for installing the Wastewater Gardens™ system at Emu Creek included:

- the community had a permanent population throughout the year
- the community was accessible at all times during the year including the wet season
- the community was connected to a reliable power supply to operate the pumps
- the system would work, even in a high water table area, according to the Birdwood Downs Company calculations.

During the two-year pilot the Birdwood Downs Company was required to maintain the system and address any issues that may arise. After this time an agreement was made that ensured Waringarri Aboriginal Corporation, Emu Creek’s resource agency, would take over responsibility.
Put simply, Wastewater Gardens™ is an alternative wastewater treatment system that uses sub-surface flow of wastewater into a lined gravel wetland bed that is planted with a variety of water-loving plants as chosen by the household residents. Wastewater Gardens™ still uses the traditional method of septic tanks and leach drains, but with the garden gravel bed located between them. However, in this instance it was a requirement that they be designed so the gardens could be bypassed at any stage, were they to fail.

The project at Emu Creek involved a three-stage approach.

- **Stage 1:** Correctly position the septic tanks that were to be completely sealed and have trafficable lids.
- **Stage 2:** Install Wastewater Gardens™ to treat the wastewater produced at each house.
- **Stage 3:** Install appropriately sized leach-drains into well-drained soil on the community.

Birdwood Downs Company installed three Wastewater Garden™ systems to treat the effluent from the four houses and two shelters on-site at Emu Creek. An amendment to the original design meant two of the systems needed pumps to move the effluent from the garden to the leach-drain area during times of heavy rainfall. Works began in early June 2002 and the systems were commissioned in July 2002.

During the initial stages of the proposal, Birdwood Downs Company, together with ARUP, Waringarri Aboriginal Corporation, environmental health officers and senior field support officers met with community members on numerous occasions to explain how the systems functioned, but also to decide on their locations. These agencies continued their involvement with the community right through the construction stage, commissioning of the systems and throughout the two-year maintenance period. Birdwood Downs Company also ran education workshops for residents at which they discussed water usage, water conservation and Wastewater Garden™ maintenance requirements. During construction, CDEP positions were also made available.

Wastewater Gardens™ require minimal maintenance if they are functioning correctly. Maintenance is carried out on the filter located inside the secondary septic tank, which generally requires cleaning/rinsing every three months. Water levels in the garden (gravel bed) need to be checked periodically to ensure the garden doesn’t dry out, and the plants need to be pruned. A maintenance manual was prepared for environmental health workers and senior field support officers who would, on a weekly basis, monitor water levels within the gardens, any odours, rainfall in the area, any vandalism to the systems and the plants’ overall condition. Any serious plumbing issues identified during the weekly checks were reported and addressed by a registered plumber.

Another requirement of approval was that quarterly water samples be collected for the first two years of operation from the secondary septic tank and at the discharge point where the wastewater leaves the garden. Testing the water ensured treatment of the sewage was effective and that fairly purified water was entering the leach-drain area. The water samples were tested for:

- biochemical oxygen demand
- total suspended solids
- faecal coliform bacteria
- total nitrogen
- total phosphorus.

Birdwood Downs Company claims that faecal coliform bacteria can be reduced by up to 99 per cent while biochemical oxygen demand can be reduced by 85–90 per cent, and that removal of nitrogen and phosphorus is substantial in some Wastewater Garden™ systems.
Some of the problems experienced with the Wastewater Gardens™ system at Emu Creek have included:

- rock movement on the walls of the garden exposing the plastic liner
- vandalism to the gardens and plants
- children and dogs playing in the gardens
- if the systems did fail, there was severe pooling of wastewater in the garden wetland, potentially creating an area for mosquito breeding.

The Wastewater Gardens™ at Emu Creek has demonstrated an alternative wastewater system. However, any future installation of these systems in communities needs to be considered on an individual basis for suitability and, further, the overall design of the system could be improved for use on Aboriginal communities.

For further information

www.pcrf.org/wwg/index.html
www.pcrf.org/wwg/fieldaustralia.html

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Indigenous environmental health promotion through music

Joseph Tapayia, Singer/Songwriter, Pukatja Community, South Australia

Fourteen years after the first Uwankara Palyanyku Kanyintjaku (UPK—a strategy for wellbeing) music was recorded onto cassette tape, Nganampa Health Council facilitated a project that produced a second CD of health promotion songs. The CD was an immediate success and two songs that relate directly to nutrition are already strategically useful in implementing the Stores Policy.

A third CD has since been produced and this presentation marks the official launch, showcasing Indigenous health messages for and by Indigenous people—an essential starting point for any real change in population behaviour.¹

A video documentary about the recording of this CD and the role of music in health promotion was shown at the conference.

For further information

A list of UPK Health Promotion resources can be found at <http://www.nganampahealth.com.au/products.shtml> and can be ordered by phoning 08 8952 5300.

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The New South Wales Colisure Program and beyond

Dr Paul Byleveld, Manager, Water Unit, New South Wales Health

Kelly Nean, Aboriginal Trainee Environmental Health Officer, New England Area Health Service, New South Wales

Robert Barnett, Aboriginal Trainee Environmental Health Officer, Mid North Coast Area Health Service

Miriam Miller, Bellbrook Community Water Sampler, Community Member

Miriam Miller

A safe water supply is essential for public health. The National Health and Medical Research Council, which sets our Australian Drinking Water Guidelines, recommend regular testing of drinking water. This is just one step towards providing communities with safe drinking water. It’s to check that everything that’s been done to deliver water to the communities is working properly.

Most cities and towns in regional Australia test their drinking water supplies for what are called indicator bacteria. These are bacteria that indicate possible contamination of the water supply. If these bacteria are found then quite often there’s some repair carried out on the water supply. It’s investigated, there might be a sanitary survey, looking for the source of the problem. Ideally if there’s a problem there would be a repair or an upgrade of facilities. It could be that the community is told to boil its drinking water if there is no simple fix.

When we collect water samples from towns and cities they are expected to reach a laboratory within 24 hours. This isn’t easy when sampling in rural and remote communities and especially the Indigenous communities in regional Australia. For this reason many remote communities don’t get regular water testing. Kits like Colilert and Colisure get around this problem by taking the testing to the communities.

With the Colisure system you take a clean sample container, which we supply to the communities, and fill it with 100 millilitres of water. You then pour the reagent in, incubate it (put it in a small, heated box for 24 hours) and then read the test result. If the sample is yellow, that indicates a clear result. If the sample turns a pink-red colour that indicates the presence of total coliform bacteria in the water which means there may be contamination. If the sample is then placed under an ultraviolet lamp and fluoresces, then E. coli bacteria are present, which indicates faecal contamination.

We are currently running the program in eight remote Indigenous communities in New South Wales. Some communities get town water where the local council delivers water to the community. Generally they have better resources to fix problems, so with this program we focus on communities with an independent supply. We train community water samplers to use the Colisure system and to read results, and we pay them. Each month our public health units visit the community to collect a water sample as a crosscheck. That goes off for normal lab testing to see how the results match up.

Through the program, which we have run for almost five years, communities have shown an increased understanding of water quality issues. Community members and, in some cases, schools involved in sampling get a better feel for drinking water quality. Community leaders find out if there are problems. Where problems can’t be fixed quickly a warning is issued to the community. So far in New South Wales, from the test results the program has produced, we’ve been able to connect a reticulated, potable supply in some areas. One community received an upgrade of their bore and a chlorination system with a maintenance program.

Kelly Nean

Summervale is a little community just outside Walcha in the New England region. The community sampler there is an elderly woman named Mrs Hanes and she really enjoys being actively involved in the water supply for her
community. For us the program involves going out to the community and sampling the water. Not only does the community get to know us, but we also get to know them, which I think is a very important step. Everybody who’s involved with it, including the Amaroo Local Aboriginal Land Council, really enjoys the opportunity.

Robert Barnett

The Bellbrook Community and Miriwinni Gardens are our two communities on the Mid North Coast that have their own water supply. To us water monitoring goes beyond taking water samples. We should be looking at the catchment areas, where the water is coming from. We should also be monitoring the water pipe systems. Broken pipes can affect the water supply to the community.

With this in mind I have a couple of recommendations. The first is to have suitable and culturally appropriate training for residents about their water supply systems and how to manage those systems if something goes wrong: who to contact and what to do so it doesn’t get worse. Too often developers come in and build these systems and train only one person in the community. If that person leaves, the community is left with any problems that arise, and don’t know what to do about them. The second recommendation is that quarterly reports be sent back to the community letting them know what the results are and explaining what they mean.

Paul Byleveld

We are now looking at what the next step is. There are a number of government departments and interested groups in New South Wales providing communities with water supplies, so earlier this year we established an Aboriginal Community Water Supply Working Group to look at the broader issues.

The people on this group are from the New South Wales Department of Aboriginal Affairs; the Department of Commerce; the Department of Energy, Utilities and Sustainability (that supplies country towns with water or their infrastructure); the Department of Local Government; and the Department of Infrastructure, Planning and Natural Resources. We have also involved the New South Wales Aboriginal Land Council, our local public health units and communities in talking about what to do next. And we have gained approval through the Health Department to assign a project officer to start working on solutions.

The first step will be to survey the status of water supply and sewerage systems. In terms of responsibilities, who is doing what for each community? That means talking to the local land councils and to the communities to work out whom, if anyone, is looking after the water supply and who is responsible if there is a problem. We already know some of the answers and there have been reports done before. We are going to bring it all together.

The next step will be to develop monitoring plans for communities. What is the best way to monitor water quality for the communities? Before you start to collect test samples you need to know what your response will be if you find a problem. There’s no point collecting samples and saying ‘We’re sorry there’s a problem’ if there’s no solution. So we need to talk to other agencies and to the communities about how these things can be fixed so they don’t break down. This would be a step towards making recommendations for a sustainable, consistent and coordinated water supply and sewerage service for communities.

We’re not going to stand there and say ‘Well this is the way it’s got to be done’ because for each community there is probably a different way to bring about the best water supply. One thing we have identified is that communities need access to appropriate technical (that might mean plumbers or engineers) and public health support. At the moment that doesn’t work fantastically well right across New South Wales. There are some areas where support is close at hand, in other areas support is a long way away. These are some of the things we’re considering so we can move from simply taking samples, to actually fixing things.

I’d like to acknowledge and thank the community water samplers. People like Miriam Miller (who is here today) who give up their time to collect
the samples and talk to the Public Health Unit about problems that arise in the communities; the Aboriginal trainee environmental health officers and environmental health officers from our public health units across the state; Martyn Burchett in our Water Unit in Sydney who coordinates payments to community water samplers and collection of samples; and Daniel Hui in the New South Wales Health labs, and his staff who test the check samples. These people have worked hard to bring about the success of the program. I should also acknowledge Peter Waples who worked with us a couple of years ago to write a paper that really identified some of the confusion with community water supply and really pointed us towards saying ‘There’s got to be a better way to do it.’ So thank you everyone.

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Sewage Treatment Facility Removal and Site Regeneration Project

Phillip Martin
Initially the project began because the local council received notification of unauthorised dumping just outside the village of Purfleet. Upon inspection it was obvious that it was a bigger problem than we had thought. I immediately called for reinforcements, so Greg kindly came on board and we moved to investigate the site further, and tried to come up with some initiatives to handle the problem. The rubbish contained a lot of glass and whitegoods, such as old fridges and washing machines. It was a haven for vermin and an area where mosquitos were breeding. There were a large number of rats in the area and there would have been snakes as well, so something needed to be done to protect the community. The problem was too large for the land council to deal with so we decided to find some joint funding to help overcome the problem.

John Clark
In 1990 the land in Purfleet was handed over to the land council so we inherited the problem. We didn't have the funds to maintain the sewage treatment facility so we approached the Greater Taree City Council about decommissioning it in 1993 and we hooked up with the main sewer line to Taree.

The sewage pond was about the size of an Olympic swimming pool. Across the middle was a sheet of asbestos and the kids in our community were swimming there which created a serious health problem. Once the facility was removed we had a hole in the ground and people started dumping rubbish in it. We also had a public road alongside which meant anyone driving past could throw rubbish in.

Greg McAvoy
Looking at the problem, we had an idea that we needed to develop a project with some goals that would suit an appropriate funding body. We formed a committee, identified a suitable grant that we could apply for and came up with project goals:

- To reduce the community's exposure to risks of public health significance associated with the project site.

Greg McAvoy
Today's presentation is an overview of a project we've done with the Purfleet Aboriginal community. Just to give you an idea of where we are, Taree is approximately 300 kilometres north of Sydney and the Purfleet community is about 2 kilometres south of Taree.
To minimise the disruption to the surrounding ecosystem by restoring the project site.

How were we going to do that? We were going to remove the decommissioned sewage treatment facility and the rubbish. We were going to prevent further rubbish dumping from occurring. We were going to prevent destruction of the surrounding ecosystem and restore the project site with native and culturally significant trees.

**John Clark**

We set up the Purfleet Environmental Management Committee specifically for this project, but this committee will be ongoing because we need it. We applied for and received an Environment Trust grant of $44,000, which our community gratefully accepted to address the problem. The Department of Aboriginal Affairs was very good in coming to the party with the remainder of the funds. The overall project cost was $58,000.

**Phillip Martin**

We received the grant in December 2003 and we organised a tendering process. The clean up work was contracted out in March 2004 and completed in July. Now, several months later, we’re up to tree planting and weed management and continuing to watch that rubbish is not dumped in the area.

A number of organisations contributed to the project. The Greater Taree City Council is proud to be part of the project and we helped in a number of ways. One of our main contributions was free disposal of 540 tonnes of garbage at our landfill depot, saving the community $32,000 in tip fees. We also contributed to weed control spraying and continue to do so. We estimate that will probably be about $2000 worth of support. Five hundred cubic metres of green waste, worth $2500, was provided from our landfill to lay out on the site. We also contributed to providing 680 native trees in conjunction with the Land Council which would be worth around $1000. All up the Greater Taree City Council has contributed nearly $38,000 to the project.

The local water supply authority, Mid Coast Water, provided information and assistance to us and also allowed us to pump from the pond. The sewage pond contained just over one megalitre of liquid. It took 15 hours to drain and was pumped directly to the sewer in a controlled operation so it didn’t over-supply the pumping station. They estimated it as probably $2000 worth of value given to the project.

In addition to providing the Environmental Trust grant, the Environmental Protection Agency helped by providing advice. They informed us that as the remaining sludge was less than 500 cubic metres, we were allowed to bury it on site. This saved us carting and removal costs.

The site adjoined a State Forest and the Department of Primary Industries contributed by identifying the boundaries. They also provided us with information on types of trees in the area and identified the trees that should be planted to regenerate the site.

**Greg McAvoy**

One of the problems we encountered when trying to prevent further rubbish being dumped was the public road that goes past the site through the bushland to the State Forest. The solution we came up with was to lay some pipes around the edges of the site to prevent car access. Signs have also been erected informing people of the potential health risks associated with the site.

We have also arranged additional waste management services for the community, reducing the need for rubbish to be dumped illegally. Local government is now providing a waste recycling service as well as general waste removal. There is now a quarterly white goods collection service in the community as well as quarterly green waste removal. We’re working with the land council at the moment to set up an annual clean up program and we are providing the community with advice and education on how to manage waste in the house and yard as well as within the community.
As a spin off from this project, we’re in the process of developing an environmental health policy for our community that will go into our five-year plan.

One of the things we became aware of through this project was that environmental health problems can spread rapidly if they’re not attended to. The key to addressing these issues in Indigenous communities is to have patience and determination. We see the need for government departments and community organisations to adopt a coordinated approach to addressing environmental health issues. If we didn’t have a coordinated approach in this instance, the project could have cost anything in the vicinity of $100 000–$120 000 and that would have been a lot more difficult to obtain.

We would like to acknowledge the Purfleet Aboriginal community, Taree–Purfleet Local Aboriginal Land Council, Biripi Aboriginal Medical Service, the Greater Taree City Council, Mid Coast Water, the Department of Aboriginal Affairs, the Department of Environment and Conservation, Mid North Coast Area Health Service and the Department of Primary Industries (State Forests).

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**Impact of swimming pools on health of Aboriginal children in remote Western Australian communities**

Mary Tennant, Epidemiology, Telethon Institute for Child Health Research, Western Australia

The swimming pool study began in May 1999 when the Western Australian Department of Housing and Works asked the Telethon Institute for Child Health Research to determine whether pools that were to be built in remote Aboriginal communities would have any effects on the health of children in those communities. Three swimming pools were opened in the communities of Jigalong, Burringurrah and Yandeyarra in September 2000. We undertook to follow the children in two of these communities—Jigalong and Burringurrah.

We looked at the impact on ear and skin health of these children. In addition we monitored morbidity among children enrolled in the study, by collecting information from the medical files in each community. We also took an interest in the social impact of the pool and conducted regular interviews with adults in the communities to find out what their impressions were.

Results from the first two years were published in the *British Medical Journal*.1

**Introduction**

Indigenous Australian children have very high rates of pyoderma (pus-producing skin lesions) and otitis media (glue ear). In some communities as many as 70 per cent of children have been found to have skin sores, at any one time. The major pathogen of pyoderma is group A streptococcus, which is also associated with

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chronic renal failure and rheumatic fever, both of which have high incidence rates in Indigenous communities in Australia.

Impaired hearing, a symptom of otitis media, can seriously affect performance at school, subsequent employment, and social circumstances in adulthood. Between 10 per cent and 67 per cent of Aboriginal school age children have perforated tympanic membranes, and between 14 and 67 per cent have some degree of hearing loss; remote communities have the highest prevalence.

Drowning occurs at a higher rate in the Aboriginal population in Western Australia than in the non-Aboriginal population. With the introduction of the Royal Life Saving Societies ‘swim and survive’ program (conducted by Royal Life Saving Societies pool managers) all school age children in the communities currently have swimming lessons.

People in remote Aboriginal communities have little or no opportunities for physical exercise, and changes in diet and lifestyle have made Aboriginal people more prone to the group of conditions known as ‘syndrome X’—obesity, Type 2 diabetes, cardiovascular and renal disease.

Method

We compared disease prevalence before and after swimming pools were opened in the two communities (total population approximately 180 in Burringurrah and approximately 250 in Jigalong) located in semi-arid environments 1200 and 1600 kilometres north of Perth, respectively. During the summer, daily temperatures range from 15°C to 45°C, and fall to freezing at night in winter. The swimming pools were opened in September 2000 and are open annually from September to April.

Children were examined four times at approximately six-monthly intervals between July 2000 and March 2002 and a fifth examination was done in the winter of 2003 (August–September 2003). During the winter visit to Jigalong we found a large number of children with ear disease—it was reported that the pool had been under-utilised during the previous summer, and the pool was closed from September 2003 until late January 2004, due to management problems—so we made an extra visit to Jigalong in March 2004.

All children younger than 16 years present in the community were eligible for inclusion in the study if informed consent was obtained. At each survey a paediatrician examined all enrolled children who could be located and children who moved into the communities were also given the opportunity to enrol. In winter 2003, new recruits made up almost 50 per cent of children examined in both communities.

Skin sores were graded according to severity (the ‘sore score’) based on the total number and severity of sores (crusty, pus-producing or dry flat lesions). A sore score of 1–4 was classified as non-severe and 5 or greater as severe. The presence and severity of scabies, abscesses and fungal lesions was also recorded. Experienced paediatricians performed ear examinations. If otorrhoea (seepage from the ear) was found the ear was irrigated with 1:20 Betadine solution to obtain a good view of the tympanic membrane. Colour and position of the tympanic membrane (retracted, bulging or normal) was recorded, as was presence of wax, cholesteatoma (a tumour-like mass of cholesterol and tissue in the ear), perforations and otorrhoea. Pathology indicative of past disease, such as healed perforations and tympanosclerosis (thickening and calcification of the tympanic membrane), was also noted. Two ear, nose and throat specialists examined children with serious ear disease or to confirm the paediatrician’s diagnosis.

We examined the health records of children enrolled on the study and recorded clinic visits for the year prior to pool opening and each year after. The information obtained was in reference to skin, ear and eye disease and the frequency and type of antibiotic prescriptions. In this way we were able to compare health visits in the year prior to pool opening and afterwards.

Since parents were concerned about truancy, the community introduced a ‘no school no pool’ policy (see p. 138) as an incentive for children to
attend school. In addition to having swimming lessons at school, school attendees are given passes permitting them to use the pool after school.

**Results**

Figures 13-16 show a reduction in prevalence of skin infection and eardrum perforations, particularly in Burringurrah.

**Figure 13: Skin infections in Burringurrah**

[Graph showing reduction in skin infections over time in Burringurrah]

**Figure 14: Skin infections in Jigalong**

[Graph showing reduction in skin infections over time in Jigalong]

**Figure 15: Ear infections in Burringurrah**

[Graph showing reduction in ear infections over time in Burringurrah]

**Figure 16: Ear infections in Jigalong**

[Graph showing reduction in ear infections over time in Jigalong]

Among children who remained in Jigalong throughout the study, an average of 6 courses of antibiotics per child were prescribed in the year prior to the pool opening and then 4, 2.5 and 1.3 courses per child, respectively, in each subsequent year. This clearly shows a decrease in the need for antibiotics.

**Pool-related incidents**

There have been no reported disease outbreaks and only occasional faecal accidents in the pools. In each community, there was one pool-related accident—a broken arm and mild concussion.

**Recommendations and feedback to community councils**

We have received comments that people would like better access to the pool for the elderly, disabled and obese. This might come in the form of a larger stairway into the pool or a hydraulic lift.

Very few adults use the pool. The reasons they gave for not using the pool were:

- I used to swim in a pool when I was a child but not now.
- I do not have the right clothing.
- I go there to watch kids.
- It's not fresh water.
- I'm not used to swimming in a pool.
- I panic when kids are around water.
- I don't swim in salty water it hurts my eyes.

Adolescent children in Jigalong attend the pool either as a group of girls or a group of boys; this is something that they arrange among themselves. The majority of people reported that the pool was a good thing for the children as they had somewhere safe to swim, the water was not polluted and swimming lessons were beneficial.

Maintaining interest in the pool is vital to the success of this project. Children are certainly keen to learn to swim and to participate in the carnivals the Royal Life Saving Societies run yearly. An added interest might be inter-community
carnivals between the three communities, advanced swimming classes where the keener children could improve their stroke and fitness levels. Similarly it would be advantageous if there was a mother-and-child swimming program which would start children in the pool earlier than when they reach school. These added activities are beyond the scope of the pool managers who, in addition to maintaining pool water standards and cleanliness, run the ‘swim and survive’ program and supervise children after school hours.

The issue of payment to enter the pool has presented problems for some children. In order to enter the pool a child needs a pool pass after all day attendance at school, a responsible person to supervise while they swim and a dollar for the entry fee. In one community this was too much for the younger children and pool attendance dropped as a result. Another community has consulted families and, with their agreement, a fortnightly levy of $2.50 is imposed on all families so children do not have to be carrying money for pool entry.

To date, no-one in any community has been identified to take on the role of pool manager. At the outset it was agreed by the Department of Housing and Works and the Royal Life Saving Societies that, in the longer-term, it would be desirable for someone from each community to undergo pool manager training and take over management of the pool. The obstacle to this has been finding someone with the level of literacy and numeracy skills to undergo training.

Conclusion
Swimming pools in remote communities have been associated with reduced prevalence of perforations of the tympanic membranes and skin sores, which could result in long-term benefits through reduction in chronic disease burden and improved educational and social outcomes.

Research team
Dr Deborah Lehmann, Dr Desiree Silva, Mary Tennant, Helen Wright (RA), Daniel McAullay, Jacinta Johnston, Kate Butler, Irene Nannup, Sharon Weeks, Manda Hollins, Harvey Coates, Francis Lannigan, Dr John Stuart, Dr Peter Richmond, Dr Helen Wright, Pamela Kelly, Lorateen Garlett, Ashwini Arumugaswamy, Georgia Werna, and Claire Gordon. Associate investigators: Professor Fiona Stanley and Dr Anne Read.

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Storyboard presentations

The following sections present the details and results of projects and programs carried out in various Indigenous communities. Most are presented in a form describing:

- the aims and objectives of the program (what was supposed to be achieved, and why)
- the details of the program (how it was conducted)
- results and evaluation (what happened, and what it means)
- sustainability (how the program or project might fare in the future)
- lessons learned (how it might have been conducted better)
- budget and funding (where the money came from)
- contacts, links and resources (organisations and people who were useful during the project).

Environmental health for Aboriginal communities at the Shire of Derby–West Kimberley

Nick Alford, Environmental Health Officer for Aboriginal communities, Shire of Derby-West Kimberley

Ken O’Donnell, Environmental Health Field Support Officer, Shire of Derby-West Kimberley

Gary Smith, Environmental Health Field Support Officer, Shire of Derby-West Kimberley

Aims and objectives

The program was developed to provide comprehensive environmental health services for Aboriginal people and to improve the level and standard of environmental health in Aboriginal communities. The program aims were to:

- Provide support and advice to Aboriginal environmental health workers and others in communities providing environmental health services.
Support regular environmental health services for Aboriginal communities in the region.

Provide or facilitate repair and maintenance programs to environmental health facilities and equipment on Aboriginal communities in the region.

Monitor and survey the environmental health conditions of communities and assist with accredited information collection programs.

Advance and promote the cause of improved environmental health for Aboriginal communities in the region.

Program

The program was carried out in the Shire of Derby–West Kimberley in Western Australia and provides services to 54 Aboriginal communities in the region. The Health Department of Western Australia, in partnership with the Shire of Derby–West Kimberley, implemented the program. Initially, contracts were on a year-by-year basis. Following last year’s review of state health services by the Health Minister, Jim McGinty, three-year contracts have now been introduced.

There was limited community participation in the program’s inception. However, our environmental health team works actively with numerous community organisations to deliver environmental health programs.

Results and evaluation

The program is evaluated by addressing the list of desired outcomes (aims) detailed above. Half-yearly reports are submitted to the Office of Aboriginal Health.

Many Aboriginal people now have a better understanding of the impact of environmental health on communities and are more readily able to see problems and determine solutions. This empowers people to address local environmental health issues to improve their living conditions, health and wellbeing. Furthermore, community people are readily approaching the shire for assistance and advice—a direct result of developing relationships.

It is a funding requirement that we address all aims and objectives. However, new challenges emerge every day.

Sustainability

The program continues to benefit Aboriginal people as the shire acts as a support and knowledge base for community-based environmental health workers. Education programs, training courses and general activities in communities have lifted the profile of environmental health and improved knowledge about how to avoid sickness and disease and look after the environment. Regulatory duties have improved the standard of building in communities, ensured that development is in accordance with community layout plans, continued monitoring of food outlets and Home and Community Care kitchens, improved the health of community dogs through the Dog Health Program, reduced the likelihood of diseases that can spread from animals to humans, and helped identify environmental health priorities through the Environmental Health Needs Survey.

Since the program’s inception and due to its success, other shires throughout the state have replicated the Aboriginal Environmental Health Program. Some of these shires include Wyndham–East Kimberley, Broome, Halls Creek, Roebourne, Port Hedland, Ashburton and Kalgoorlie.

Lessons learned

We are constantly learning from our involvement in the program. Big improvements are not going to be evident for a long time. It is better to run small, achievable projects regularly and not become disenchanted by failures, but be encouraged by successes. Providing environmental health services to communities sometimes involves flexibility and patience.

One of the major challenges of the program is the sheer size of the area we cover. As a result we have to allocate our resources carefully. The wet season and the heat sometimes make access to communities prohibitive. Quite often there is a
lack of assistance and/or motivation on the part of those we are trying to help. We have begun to overcome some of these problems by obtaining funding for an extra vehicle, developing a close working partnership with Cultural Health (Fitzroy Crossing resource agency), and carrying out environmental health awareness in communities to lift support when undertaking environmental health activities.

Unexpected things always happen in the field. There are too many to mention here. The program is ongoing—we are always looking to do things differently and improve.

Visiting communities regularly helps to develop relationships and to more effectively monitor problems, provide advice and build working partnerships.

**Budget and funding**

The program is funded through the Office of Aboriginal Health Branch of the Western Australian Department of Health. An environmental health officer and two field support officers are allocated $250 000 per year to undertake the Environmental Health Program. The Shire of Derby–West Kimberley provides the administration base.

**Contacts, links and resources**

We have a large database of contacts and also a collection of graphic-rich education packages, equipment and resources, digital images and ideas. We have provided CD-ROM education packages to communities and health agencies throughout Australia. The Derby environmental health team is readily contactable and always happy to help.

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**Kullarri Region Environmental Health Program**

This storyboard aims to present an overview of the work and structure of the Kullarri Region Environmental Health Team. In keeping with the major themes, this presentation will explore ‘environmental health services in communities’ and ‘environmental health workforce development’.

The Kullarri Region encompasses the Broome Shire. Approximately 4500 people in the region identify as being Indigenous; there are five main Indigenous communities and approximately 80 outstations.

The idea is to display enlarged photos, with descriptions, of various aspects of our work, for example tip management, dog health programs and water sampling. There is also a diagram and explanation of the funding and structure, showing the links between communities, state government, local government, resource agencies and TAFE.

The team includes community environmental health workers, a Shire Environmental Health Officer, a Western Australia Health Department Field Support Officer and an Environmental Health Coordinator, a TAFE Environmental Health Worker Trainer, and a Nirrumbuk Resource agency representative.
We have a successful multi-agency approach, with the prime focus being on developing and supporting the role of the community Aboriginal environmental health worker. It is this position that we see as being the key to bringing about improvements in community environmental health and there is always room for improvement.

**For further information**

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**No School = No Pool!**

Philippe Porigneaux, Senior Policy Officer,  
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Phillip Bush, Environmental Health Worker,  
Yugul Mangi Community (Ngukurr)

**Yugul Mangi’s community pools**

The opening of the community’s four pools in 1998 provided a community recreational facility and a safer swimming location to the river and billabongs. The pools were funded through a combined community saving scheme and grants obtained through the community council.

It’s a big hit, with as many as 50–100 students using it each afternoon. The water quality is tested daily and a lifeguard is always present. The area is also used as a gathering place for community events such as live music. The pool provides employment and training opportunities for members of the community (first aid training, bronze medallions, pool supervision and shop employment).
No School = No Pool!

When the pool opened the local teacher, Robin Roger, proposed the idea of restricting entry based on good attendance at school. With the involvement of teachers, parents and the Yugul Mangi Community Council, the program developed with the objective of reducing the high absenteeism at Ngukurr School. Each day the teachers provide a list to the pool operators of all students absent that day. For the students, the list at the gate means No School = No Pool!

Challenges and sustainability

The main challenge was gaining the acceptance of community members and council; this came after discussions about the long-term benefits of better school attendance. The pool costs nothing to use and has been run voluntarily by school staff, with the support of the community and council, since it opened. The No School = No Pool! program will continue indefinitely, and there are ideas to extend it to popular sports such as basketball. School attendance records indicate that it has achieved its objective, with attendance patterns steadily improving. A longer-term outcome of improved literacy and numeracy is anticipated.

Unexpected outcomes improving health!

Anecdotal evidence from the clinic, teachers and pool managers indicate there has been a visible improvement in skin and eye health. School screening data from the early 1990s indicated that trachoma (which can cause blindness) and scabies were of concern. In 1993 the 228 students screened presented 38 trachoma and 19 scabies cases. These numbers have declined and during the six years since the pool has been operating, only one case of scabies was detected in 2001 and trachoma has been reduced to three cases in 1999 and 13 cases in 2003.1

Pool use is seen to have played a contributing part in achieving the objectives of the Ngukurr Environmental Health Plan 1995–2000 and has complimented the school health education sessions run by the clinic which included face washing and skin health. In 2004 there were no cases of trachoma or scabies.

For further information

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Umbakumba Community—Aboriginal environmental health worker—environmental storyboard

Nesman Bara, Aboriginal Environmental Health Worker, Umbakumba Council,
Umbakumba Community1

Aims and objectives

The Aboriginal Environmental Health Worker Program was developed through council and needed someone in the position. I was interested in the job so took my place as an environmental health worker for my community. The job remains in the community and the council runs it. The focus of the project is the health and wellbeing of the community; and other related health issues such as housing maintenance, inspection of the tip, sewage pond, pest control, shop, and school.

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1 Ngukurr Clinic, School Screening Reports 1993–2004
1 The Umbakumba Council and the CDEP run and fund this position.
Program

The main stakeholders are the council and the community. The program started when the council looked at health and wellbeing within the community and appointed an Aboriginal environmental health worker.

We monitor the projects by delivering mops, buckets, dustpans, brooms, rakes, etc. and by showing the community how to use these the right way. This has already benefited the community on how to live the healthy way.

In 2002 we had a scabies day at the school and half the people from the community participated. We give children aged 0–5 annual scabies check ups and educate them about how scabies affects people.

We haven’t had any unexpected outcomes.

Sustainability

The program and the projects it supports will continue in the future. Now that the initial program has been delivered and people in the community have been educated they can take responsibility for their health. In my Aboriginal environmental health worker position I have the opportunity to move to the next step. Projects can be replicated and the program can achieve more than was achieved in the past two years.

Lessons learned

I have learned a lot by becoming an Aboriginal environmental health worker for my community. The council had the opportunity to improve living conditions. General health in the community is better now than it was in the past.

The main difficulty for me initially was that looking back at the past gave me no ideas for the future. But as things progressed I learned. My challenge is to keep improving Aboriginal health and lifestyles.

In terms of what I would do the same or differently in implementing such a program again: I would start by focusing on what I learned from the programs I had delivered and get others who had worked with me during these programs involved.

I have found other contacts, links and resources, such as other local communities to be very useful. Although they may have different programs and projects they still have the same experiences and can share what is needed for the community.

Yes, given more training and skills development, there are other opportunities for me to be involved in other projects and programs within the council.

Budget and funding

The council received funding from the Local Government Association of the Northern Territory. Half the funding has paid for my wages and the other half was used to buy things the community needed for better health and housing outcomes.

For further information

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Mt Isa and Gulf Food Supply Project

Chris Toby, Nutrition Promotion Worker,
Mount Isa and Gulf Food Supply Project

The Gulf Food Supply Project is located at Mount Isa and the Gulf District (North West Queensland), and focuses on the remote communities in those areas.

Aims and objectives

Food supply to remote Indigenous communities in Queensland is variable in delivery, quality, price and range, affecting the food security of the communities. Poor nutrition can adversely affect
the health of community members, who already have a substantially greater burden of disease when compared with total population averages.\(^1\) The major causes of excess mortality are heart disease (death rate is estimated to be two times that in the non-Indigenous population), diabetes (17 times as high), chronic respiratory disease (five times as high), pneumonia (10 times), and injury (three times). Together these five conditions account for 56 per cent of the excess deaths.\(^2\) Likewise the prevalence of obesity is high, though the positive association between obesity and food insecurity is at present unexplained.

The National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan\(^3\) established food access and supply to remote Indigenous communities as a key priority. Improving the food supply is also consistent with the objectives of the Eat Well Queensland program. Development and implementation of a nutrition policy for Department of Aboriginal and Torres Strait Islander Policy Remote Retail Stores\(^4\) has seen the variety and pricing of nutritious foods improve in government run stores, and has been accompanied by an increase in the demand for and consumption of vegetables and fruit, though these are still regarded as suboptimal when compared with population averages.\(^5\)

Other interventions, such as promotion of healthy food choices, have also positively affected consumption of healthier alternatives. For instance, since the inception of the Green Label System, a point-of-sale food promotion program, there has been an increase in the sale of fresh fruit and vegetables by greater than 500 per cent in some of the Torres Strait communities, and an increase greater than 200 per cent in the sale of healthy commercial foods. Further improvements in the variety, pricing and quality of foods within community stores are predicted to continue the trend of increasing the consumption of healthy foods in the communities.

The newly released FoodNorth: Food for health in north Australia report\(^6\) also provides a strong framework to guide future improvement to food supply in remote Indigenous communities. The report summarises some of the key issues, provides examples of interventions and strategies, and identifies leverage points for action. This report stresses the need to establish partnerships, as many of the actions fall outside the mandate of health so there is a need for a coordinated approach to implementing them.

The broad objectives of the Gulf Food Supply Project are to identify the key issues affecting food supply to the communities and, with the cooperation of other key stakeholders, develop and implement strategies to ensure the long-term security of food supply to the remote communities, and ensure promotion of healthy food choices within the communities with particular emphasis on reducing risk factors for chronic disease.

Through the initial needs analysis of food access and supply to the communities, consultation with all stakeholders will ensure all complexities are understood from all perspectives. This should facilitate the next phase of the project, which will involve implementing strategies and programs that are sustainable in the long-term.

**Project/program**

The main stakeholders are: community store owners/managers, take-away store managers, food wholesalers/suppliers/growers, food transporters, community councils and members, environmental\(^6\)

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\(^4\) Department of Aboriginal and Torres Strait Islander Policy Remote Retail Stores 2001


\(^6\) FoodNorth: Food for health in north Australia.
health professionals, Indigenous organisations, Department of Primary Industry, district health staff, Director Primary Health Care, and the Gulf Health Board.

Community participation: In May this year a Food Supply Forum was held in Mount Isa. The aim of the forum was to bring together key stakeholders to develop and implement an action plan for improving access to and increasing consumption of healthy food, particularly fresh fruit and vegetables, in remote communities in the Mount Isa and Gulf District.

Implementation: At the forum a food supply working party was formed. The working party identified that a situation analysis should be completed in each community. After the situation analysis is completed the community members will be encouraged to form a community-based working group to identify issues relating to food supply in their community. The communities will then develop and implement a community-specific action plan.

Timeframe: We are aiming to implement this program over the next two years.

Results and evaluation
The evaluation proposed for this project includes:

- a survey of consumers and retailers
- monitoring price, variety and quality of produce
- monitoring orders and sales of fruit and vegetables
- comparison with a control group of retailers in another remote area.

Sustainability
In order to make this project sustainable, there will need to be:

- development of store policies
- development of practice standards
- an action plan providing a framework towards which future staff and key stakeholders can work, and report against.

Lessons learned
In conducting such a project it is important to use information and knowledge gained from existing and past projects addressing food supply.

Budget and funding
Funding for this project came from the Board of Management Tropical Public Health Unit.

Contacts, links and resources
Primary contacts we have found most useful in this project have included:

- Dympna Leonard - (Dympna Leonard was the project officer who prepared the FoodNorth report).
- FoodNorth - (The FoodNorth project was the initiative of the North Australia Nutrition Group (NANG), the working group for the north Australia health ministers (WA, NT and QLD).
- Healthy Food Access Basket Survey, Nutrition Policy for Remote Retail Stores – This is a survey conducted statewide in Queensland to monitor cost, variety and quality of healthy food in stores throughout Queensland.
- Department of Aboriginal and Torres Strait Islander Policy (DATSIP) – Six stores operate in remote aboriginal communities. In 1998, DATSIP and Queensland Health began a joint project to start healthy food initiatives, this led to the development of the Nutrition Policy for Remote Retail Stores.

For further information
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Aboriginal Environmental Health Worker Poster Series

Michele Bailey, Project Manager, Human Services Training Advisory Council

In 2002 the Human Services Training Advisory Council commissioned a set of seven artist’s prints to:

• Help Aboriginal environmental health workers describe the scope of their work to community members.

• Help registered training organisations deliver vocational training to Aboriginal environmental health workers.

• Raise awareness of environmental health issues, particularly in remote community schools.

The poster topics were decided following consultations with Aboriginal environmental health workers and a mapping of the core activities outlined in the vocational training program.

REDHAND\(^1\) was commissioned to produce the posters, which have been printed on high quality artist’s paper, using a screen-printing technique. This means they can be held in the national museum, art gallery and cultural institution collections.

For further information

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\(^1\) REDHAND is a small privately owned business that produces limited edition prints.
Delegates at the Fifth National Indigenous Environmental Health Conference.
Appendix 1: enHealth Council

Terms of Reference

The enHealth Council Terms of Reference were established by the National Environmental Health Strategy (Chapter 3, Note 3.1) and are as follows:

1. Provide national leadership on environmental health issues by:
   • coordinating and facilitating environmental health policies and programs
   • establishing strategic partnerships between environmental health stakeholders
   • setting priorities for national environmental health policies and programs
   • providing an open consultative system for policy development
   • facilitating cost effective use of environmental health resources

2. Drive the implementation of National Environmental Health Strategy
   • Advise the Commonwealth, States and Territories Local government and other stakeholders on national environmental health issues.
   • Coordinate the development of environmental health action plans at local, state and national levels.
   • Promote and develop model environmental health legislation, standards, codes of practice, guidelines and publications.
   • Strengthen the national capacity to meet current and emerging environmental health challenges.
   • Provide a pivotal link between international fora and environmental health stakeholders in Australia and strengthening Australia’s collaboration with countries in the Asia–Pacific region.

Membership at the time of the Conference

Chair
Mr Michael Jackson

Members
Dr Helen Cameron
Director, Environmental Health, Australian Government
Department of Health and Ageing

Mr Bruce Morton
National President, Australian Institute of Environmental Health

Mr Peter Burnett
Environment Australia

Dr Anne Neller
Public Health Association of Australia

Professor Ian Lowe
Australian Consumers’ Association

Mr Xavier Schobben
Chair, National Indigenous Environmental Health Forum

Mr Brian Dixon
Standing Committee on Aboriginal and Torres Strait Islander Health

National Health and Medical Research Council
Health Advisory Committee

State and Territory
Health department representatives

New South Wales
Dr Michael Staff,
Director Environmental Health

Victoria
Ms Jan Bowman,
Manager Environmental Health

Queensland
Ms Sophie Dwyer,
Acting Manager Environmental Health

Western Australia
Mr Jim Dodds,
Director Environmental Health Service
Appendix 2: National Indigenous Environmental Health Forum

Terms of Reference

The NIEHF, comprising Indigenous environmental health practitioners from around Australia, was established as a reference group of the enHealth Council.

The Terms of Reference agreed to by the members of the NIEHF and the enHealth Council in 2000 are to:

- identify and provide policy advice to the enHealth Council on Indigenous and environmental health issues
- provide comment to the enHealth Council on national strategies/activities that impact on environmental and public health issues
- provide input and direction into the Indigenous Environmental Health Conference/Workshops and other mainstream conferences relating to environmental health.

Membership

Chair
Xavier Schobben, Director, Environmental Health, Department of Health and Community Services, Northern Territory

Members

New South Wales
Glenn Pearce, Senior Environmental Health Officer, New England Public Health Unit, Tamworth

Victoria
Shane Nichols, Aboriginal Services Manager, Quality Improvement Unit, Barwon-South Western Region, Department of Human Services, Victoria

Queensland
Clayton Abreu, Indigenous Environmental Health Coordinator, Tropical Public Health Unit, Cairns

Western Australia
Iris Prouse, Coordinating Officer, Environmental Health, Kimberley Public Health Unit, Derby
Susan Murphy, Director, Pilbara Meta Maya RAC, Derby

South Australia
Julie Driver, Environmental Health Officer, Regional Services Branch, Department of Human Services, South Australia (Deputy Chair)

Tasmania
Jeanette James, Aboriginal Policy Officer, Department of Health and Human Services, Tasmania

Northern Territory
Zane Hughes, Lecturer, Environmental Health, Batchelor Institute of Tertiary Education, Batchelor

Secretariat
Vinny Valentine, Department of Health, Western Australia
Appendix 3: enHealth Council publications

This list includes monographs produced by the National Environmental Health Forum, which the enHealth Council has replaced.

Hard copies of enHealth Council publications can be ordered from:

- National Mailing and Marketing
  - Phone 02 6269 1000
  - Fax 02 6260 2770
  - Email nmm@nationalmailing.com.au

Alternatively, publications can be downloaded from:


Foundation documents

The National Environmental Health Strategy
The National Environmental Health Strategy Implementation Plan 2000

Healthy communities

Healthy Communities Healthy Environment Poster
Healthy Homes—A guide to indoor air quality in the home for buyers, builders and renovators
Unflued Gas Heaters and Your Health brochure
Statement on Unflued Gas Heaters, April 2005

Human–environment Interface

Water series
Guidance for the control of Legionella (1996)
Appendix 1: Regulatory approaches by Australian States and Territories to the prevention of legionellosis (2001)
Guidance on water quality for heated spas (1996)
Guidelines for the Greywater Reuse in Western Australia (Draft)
Guidance on the use of Rainwater Tanks—consumer brochure

Soil series
Exposure Scenarios and Exposure Settings (2001)
Health-based Soil Investigation Levels (2001)
Composite sampling (1996)

Metal series
Zinc (1997)
Copper (1997)

Air series
Ozone (1997)
Benzene (1997)
Nitrogen Dioxide (1997)
Sulfur Dioxide (1999)

General series
Pesticide use in schools and school grounds (1997)
Paint film components (1998)
Guidelines for the control of public health pests—Lice, fleas, scabies, bird mites, bedbugs and ticks (1999)
The health effects of environmental noise—other than hearing loss (May 2004)

Exposure series
Child activity patterns for environmental exposure assessment in the home (1999)

Counter disaster Series
Floods: An environmental health practitioner’s emergency management guide (1999)
**Environmental Health Justice**

**Indigenous Environmental Health series**
- Indigenous Environmental Health No. 1 Cairns (1998)
- Accountability in Indigenous Environmental Health Services—Australia 2002

**Sustainable Development**
- Thinking Sustainable Development—Acting for Health

**Community Participation in Environmental Health Management**
- Common Ground and Common Sense—Community-based Environmental Health Planning (2001)

**Environmental Health Systems**
- National standard for licensing pest management technicians (1999)
- Environmental Health Risk Perception in Australia (2000)
- Health Impact Assessment Guidelines (2001)
- Guidelines for Economic Evaluation of Environmental Health Planning and Assessment: Volume 1—The Guidelines
  Volume 2—Case Studies

**Commonwealth paper**
- Human Health and Climate Change in Oceania: A Risk Assessment 2002 published by the Australian Department of Health and Ageing (April 2003)