

# Indigenous Environmental Health

Report of the First National Workshop

20 – 22 May 1998  
Cairns, Queensland

Edited by

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## Abbreviations

AEHW	Aboriginal Environmental Health Worker
AEHWP	Aboriginal Environmental Health Worker Program
ARMCANZ	Agricultural and Resource Management Council Australia and New Zealand
AS	Australian Standard
ATSIC	Aboriginal and Torres Strait Islander Commission
BCA	Building Code of Australia
CDEP	Commonwealth Development Employment Program
CHIP	Community Housing and Infrastructure Program
CIAS	Community Information Access System
DHS	Department of Human Services
EHO	environmental health officer
EHW	environmental health worker
EHMS	Environmental Health Maintenance System
HACS	Department of Health and Community Services
HDWA	Health Department of WA
HINS	Housing Infrastructure Needs Survey
HIPP	Health Infrastructure Priority Projects
IGWG	Inter-Governmental Working Group
IHANT	Indigenous Housing Authority of Northern Territory
NAHS	National Aboriginal Health Strategy
NATA	National Association of Testing Authorities
NEHF	National Environmental Health Forum
NHMRC	National Health and Medical Research Council
RSF	Regional Services Fund
TAFE-TEQ	Technical Advanced and Further Education
THS	Territory Health Service

## **Preface**

The National Environmental Health Forum was established by the Directors of Environmental Health from each State and Territory and the Commonwealth and has a secretariat provided by Commonwealth Department of Health and Aged Care.

The National Environmental Health Forum is publishing a range of monographs to give expert advice and guidance on a variety of important and topical environmental health matters. This publication is the first in the series on indigenous environmental health. A list of published monographs appears on page vii.

## **Acknowledgments**

This publication has been made possible by technical assistance provided by States' and Territories' Environmental Health Branches and funding from the Commonwealth Department of Health and Aged Care.

The First National Workshop on Indigenous Environmental Health was organised in conjunction with the Australian Institute of Environmental Health whose support is much appreciated.

Particular recognition must be paid to the following people who participated in organising the Workshop and who supported it throughout.

- Owen Ashby - Australian Institute of Environmental Health
- Steven Corbett - New South Wales
- Jim Dodds – Queensland
- Wayne Jolley - Western Australia
- Xavier Schobben - Northern Territory
- Craig Steel - South Australia
- Janine Tardrew - Northern Territory
- Tracy Ward - Northern Territory

In addition the special efforts of Jim Dodds, Stuart Heggie and others from Queensland Health in organising and managing the venue is acknowledged.

## Disclaimer

The papers in these proceedings do not necessarily represent the views of the National Environmental Health Forum, or the Health Departments represented on the Forum, or of the authors.

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## Published monographs

### *Water series*

1. Guidance for the control of Legionella (1996)
2. Guidance on water quality for heated spas (1996)
3. Guidance on the use of rainwater tanks (1998)

### *Soil series*

1. Health-based soil investigation levels, 2<sup>nd</sup> edition (1998)
2. Exposure scenarios and exposure settings, 2<sup>nd</sup> edition (1998)
3. Composite sampling (1996)

### *Metal series*

1. Aluminium (1998)
2. Zinc (1997)
3. Copper (1997)

### *Air series*

1. Ozone (1997)
2. Benzene (1997)
3. Nitrogen dioxide (1997)
4. Sulfur dioxide (1998)

*General series*

1. Pesticides in schools and school grounds (1997)
2. Paint film components (1998)

**Background**

There exists throughout most Australian States and Territories, a large and unacceptable discrepancy between the health of indigenous and non-indigenous people. This is well demonstrated by Western Australian figures that indicate a difference in life expectancy of nearly 20 years between indigenous and non-indigenous people. Diabetes, cardiovascular disease, respiratory diseases, enteric and parasitic diseases claim a huge toll on Australia's indigenous people.

There are very significant links between many of the medical conditions affecting indigenous people and poor environmental health standards. Safe water and food, proper sewage and refuse disposal, adequate living space and sanitary facilities, provision of power and vector control are all critical determinants of health in any community. Unfortunately, indigenous communities throughout Australia are too often deprived of the good environmental health standards considered normal in the greater Australian community.

Relevant government and non-government agencies in each State and Territory have been grappling with these problems largely in isolation. To date, there has been little if any dialogue across State/Territory jurisdictions.

In 1997, the National Environmental Health Forum proposed a National Indigenous Environmental Health Workshop, targeting agencies and individuals directly involved in indigenous environmental health policy or service delivery.

The National Environmental Health Forum delegated responsibility for the Workshop to an organising group with representatives from:

- Western Australia
- Queensland
- South Australia
- Northern Territory
- New South Wales
- Tasmania
- Australian Institute of Environmental Health

The following principles were determined by the group to be used as a guide throughout the organisation process:

- the Workshop should address major environmental health issues;
- the format would be heavily weighted towards workshops for particular issues;
- the environment would be non-threatening and encourage participation;
- there would be a record produced of the Workshop; and
- the Workshop should aim to reach conclusions, strategies and recommendations.

## Objectives

The objectives of the workshop were to:

- discuss common concerns and issues;
- develop collaborative strategies across jurisdictions and agencies; and
- review relevant National initiatives.

## Introduction

The Workshop was attended by one hundred and twelve delegates, of which a majority were Indigenous Environmental Health Workers and Environmental Health Officers.

The program ran over three days. Four specific issues were canvassed and discussed at length at the Workshop;

- Housing Infrastructure Standards and Quality Control Mechanisms;
- Water Quality and Quantity;
- Environmental Health Worker Training, Support and Professional Development; and
- Community Environmental Health Information Management.

In each segment dealing with these specific issues, the format included an initial key speaker, followed by speakers from each State or Territory who briefly described the position of their own jurisdiction. The plenary sessions were followed by delegates breaking into six groups to workshop the particular issue and report back to a summary session.

The afternoon of the second day was highlighted by a visit to Yarrabah, an indigenous community of around 3,000 people. Here delegates were able to relate the issues discussed to an actual situation.

The Workshop was marked by the enthusiasm of the participants. Discussions continued long into the evenings after each day's close. Information and experiences were generously shared.

A formal evaluation was undertaken at the conclusion of the Workshop. Fifty five evaluation forms were received. Responses were substantially positive and supportive of the Workshop. A significant comment was that more input should be sought from field officers such as Environmental Health Workers. Many saw great value in the networking and establishing of contacts that occurred. The need for further workshops to build on the foundations of the inaugural workshop was strongly supported.

## Recommendations

Many issues and points of discussion were raised in the final session of the Workshop, which was devoted to summarising and developing recommendations. These include material from the summary sessions and issues which arose over the three days. Time constraints resulted in the development of a set of recommendations in the weeks following the Workshop. These recommendations were circulated to all delegates Australia wide. Thirteen delegates responded with comments, which were consolidated and ultimately distributed, to all delegates as a final set of recommendations on 1 September 1998. These recommendations are as follows.

This Workshop *noted*;

- The well-documented level of environmental health need in indigenous communities.
- The failure of existing housing and health infrastructure due to poor design, construction or maintenance, as an important contributor to the high rates of infection, injury and infestation in indigenous communities.
- There is little evidence that the National trend towards self certification is achieving the required standards, particularly in remote indigenous communities.
- The valuable contribution of Environmental Health Workers (EHW) to the improvement of environmental health conditions in remote indigenous communities and that in some jurisdictions EHW lack adequate career structure, salary levels and support systems.
- That poor initial construction and poor specification of essential health hardware (eg water, taps , soap etc) is a major cause of housing failure in indigenous communities and needs to be addressed urgently if current programs are to have lasting benefits.
- The limited advancement in the provision of safe drinking water to indigenous communities.

Furthermore, the Workshop *endorsed* a set of principles that should apply to the assessment of function of current housing stock and to the approval of new housing in indigenous communities.

- Maintenance of essential safety and health items within the house should be funded irrespective of the collection of rent.
- The provision of basic infrastructure as a whole is a Government responsibility.
- Housing and infrastructure on indigenous communities should be subject to planning approval, construction supervision and certification processes equivalent to those expected in mainstream communities.

- That a modest investment in the development of appropriate technology and health hardware needs consideration from funding agencies.
- That all environmental health strategies and initiatives should embrace the concept of community self management and all jurisdictions should assist communities in this regard.
- In order to be able to function to their potential, Environmental Health Workers must be supported by appropriate training, career structure, salary levels and support mechanisms from both within and external to their communities.
- Housing construction or maintenance in any community should incorporate community consultation as a primary factor in any design, construction and maintenance program.
- Consideration should be given to providing a portion of funding allocated for the maintenance of housing to be applied to localised training of community members for self maintenance.

Therefore, the Workshop *recommends*;

- The adoption of rigorous inspection and certification of all building works in indigenous communities, through either the funding process or through normal local government approval and certification processes.
- The development of a national Environmental Health Worker strategy to look at training, employment and career structures. The Australian Institute of Environmental Health should take responsibility for initiating this process with relevant government departments as required.
- That the National Environmental Health Forum examine legislative and structural impediments to the development and implementation of national environmental health standards in indigenous communities.
- That, with input from government water authorities, the National Environmental Health Forum develops a guideline for the provision of water services in indigenous communities.
- That the National Environmental Health Forum in conjunction with the Australian Institute of Environmental Health, develops and promotes national guidelines for the delivery of environmental health services in indigenous communities.
- That future environmental health or housing needs survey planning should consider incorporating a percentage of the project budget into the immediate fix of urgent safety and health work. Any such surveys should provide rapid feedback to the community.
- That the National Environmental Health Forum develop project proposals and investigate funding options for the development of technical solutions to the following problems frequently encountered in indigenous communities;
  - Temperature control;
  - Improving nutrition;
  - Better facilities to store, prepare and cook food;
  - Water treatment to protect health hardware in houses or water tolerant hardware;

- Light fittings allowing better access to health hardware at night;
  - Water harvesting, storage and reuse particularly in desert areas.
- That only appropriate indigenous health promotion programs, resources and tools be utilised to communicate health education information to indigenous communities.

These recommendations have been included in the joint National Environmental Health Forum/National Public Health Partnership and 'National Environmental Health Strategy'.

# 1. Overviews of Indigenous Environmental Health

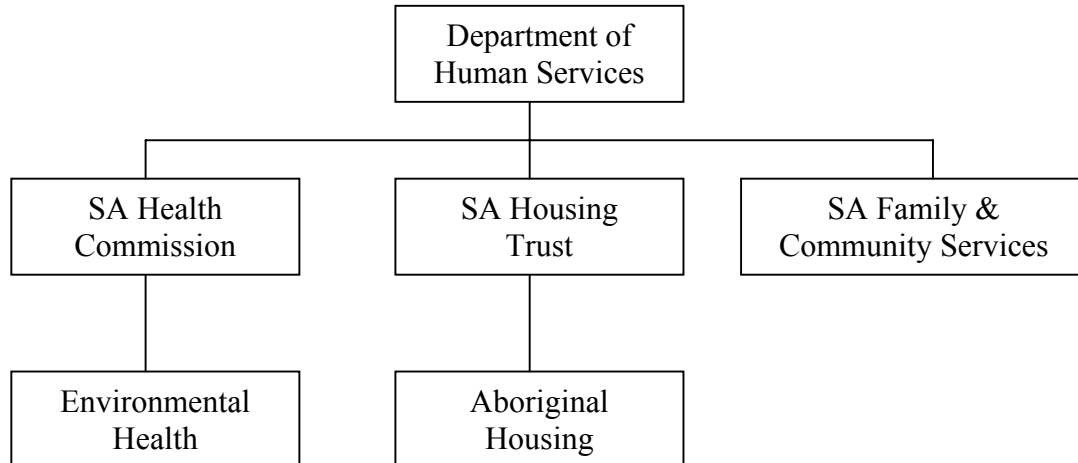
## Indigenous Environmental Health in South Australia

**Craig Steel**

**Environmental Health Branch, Department of Human Services**

The principal piece of environmental health legislation is the Public and Environmental Health Act 1987.

The SA Health Commission is responsible for the administration and enforcement of the Act throughout the State. Within local government areas, Councils are 'the authority'. In areas of the State not incorporated under the Local Government Act, the SA Health Commission is 'the authority'. Section 4 of the Act states: "This Act binds the Crown".



**Fig 1:** South Australian Organisational Structure

## **Environmental health activities**

The Environmental Health branch is responsible for a broad range of key activities including;

- Housing design and construction
- Sanitary drainage
- Waste management
- Food
- Hazardous substances
- Swimming pools
- Environmental health plans

## ***Style of operation***

The South Australian approach to indigenous health continues to evolve. The inspectorial / regulatory approach to 'observe, record and report' has been abandoned to adopt a practical support role for Aboriginal health agencies. This is achieved by 'getting out into the paddock' with them to ensure the work is appropriate and relevant and that the issues identified by the community are resolved and remain that way.

## **Environmental health partners**

The existing partnership between the SA Health Commission's Regional Services Section and Nganampa Health Council is one of which we are proud - we regard it as State Best Practice in SA in the field of indigenous environmental health.

## ***Our workshop expectations***

We have not come here to promote our approach but to learn of yours so that we may improve wherever possible. We have found one learns more by listening - not talking.

## **Indigenous Environmental Health in Queensland**

**Andrew Malcolm**

**Environmental Health Services, Cairns**

Prior to 1986, the Department of Family Services administered environmental health practices in Aboriginal communities in Queensland. Hygiene officers originally fulfilled the role of the Environmental Health Officer (EHO).

After 1986, the Health Department of Queensland attempted to look after the environmental health aspects of the communities but there were a number of problems, in particular the inadequate mediation between the council and the community.

As a result, the Joint Health Board was formed by a group of independent EHOs who instigated a contractual service to the communities that was intended to involve five-weekly visits. This program too had its problems which included:

- it was not indigenously run;
- it was not continuous; and
- it was expensive (some communities were receiving five visits a year from an EHO at a cost of \$25 000 to the community)

In the early 1990s a working party visited WA to attend the state EH Conference and to observe the Aboriginal Environmental Health Worker (AEHW) program then in place in WA. This program was imported into Queensland but it was found not to be suitable for the conditions found in Queensland.

The Aboriginal and Islander Health Worker Education Program was set up to train Aboriginal and Islander EHWs. In 1993 the course became Technical and Further Education (TAFE) accredited but there were no funds to run the program so the Council approached the communities to gain grass roots support. Support came from the communities for the program and as a result TAFE granted funds to start the program. In 1994 the first intake (15 places) was accepted into TAFE for Aboriginal and Islander training.

Currently there are 38 Aboriginal and Islander EHWs in Queensland and 58 students in the course.

## **Indigenous Environmental Health in Tasmania**

**Joe Conti**

**Department of Community & Health Services, Launceston**

Tasmania has only one remote Aboriginal community, which is located on Cape Barren. Over time facilities have been either upgraded or replaced. This has included either upgrading or renewing the housing, and having the reticulated sewerage system upgraded to cope with up to twice the current population of 40-48 people.

The main issue of concern in this environment is transport and what to do when the available transport breaks down.

## Indigenous Environmental Health in the Northern Territory

**Xavier Schobben,  
Territory Health Services, Darwin**

The Northern Territory consists of 17 % of Australia's landmass and has 1 % of the Australian population. Table 1 provides a perspective of the indigenous population.

**Table 1 : Approximate Northern Territory statistics**

Total population	187 000
Aboriginal population	46 000
Percent of Australian indigenous population	13 %
Percent of total NT population	26 %
Urban Aboriginal	30 % (14 000)
Remote Community Aboriginal	70% (32 000)

Indigenous communities range from a few people in a family group or a small number of family groups generally termed "Outstations", to communities with a population of up to 2000. Table 2 gives indicative data prone to variation of the size of indigenous populations.

**Table 2: Size distribution of indigenous communities**

<b>Population</b>	<b>Number of Communities</b>
Unoccupied	150
Less than 50	392
50 – 99	60
100 – 249	45
250 – 800	25
Over 800	6
<b>Total</b>	<b>678</b>

## **Aboriginal health indicators**

The scale of indigenous health problems is highlighted by 1990 age standardised mortality rates:

- Death rates from cardiovascular diseases were over 3 times that of non-Indigenous Territorians;
- Death rates from respiratory diseases were almost 6 times that of non-Aboriginal Territorians;
- Death rates from diabetes were almost 8 times that of non-Aboriginal Territorians;
- Deaths rates from renal failure were almost 11 times that of non-Aboriginal Territorians;
- Homicide and death rates from injury purposely inflicted by other persons were 6 times that of non-Aboriginal Territorians; and
- The death rates from infection in young Aboriginal children were 15 times the non-Aboriginal rates.

To address this, the Territory Health Services (THS) has an annual Budget of \$355 million of which approximately 55 % is spent on the Aboriginal population who comprise 26% of total population. The Environmental Health budget is \$3.9 million, 1 % of the total budget.

## **Aboriginal environmental health policy**

The objective of the Aboriginal Environmental Health Policy is to improve environmental health conditions in Aboriginal communities through:

- intersectoral action establishing and maintaining standards for installation and maintenance of health-related infrastructure;
- supporting the Aboriginal Environmental Health Worker program to increase skills and control at community level;
- establishing improved environmental health information and support systems for all Aboriginal communities; and
- Health advocacy with the appropriate agencies.

## **Aboriginal environmental health promotion - key activities**

The key activities of Aboriginal Environmental Health Promotion are :

- A visiting program to Aboriginal communities by Environmental Health Officers
- Managing the Aboriginal Environmental Health Worker (EHW) Program.
- Supporting :
  - the National Aboriginal Health Strategy (NAHS)
  - the Health Infrastructure Priority Program (HIPP)
  - the Indigenous Housing Authority of Northern Territory (IHANT)
- Input to national and NT Aboriginal Health policy

## **Intersectoral collaboration**

Many of the determinants of environmental health lie outside the direct control of health authorities. For example, the provision and maintenance of housing, water services, sewerage and power, which are major influences on the environmental health status of communities, rest with infrastructure agencies. Numerous agencies contribute to Environmental Health in the Northern Territory including;

- Territory Health Services
- Power & Water Authority
- Department of Housing & Local Government
- Office of Aboriginal Development
- Education Department
- ATSIC
- Indigenous Housing Authority of the Northern Territory
- Ove Arup/ Morton Consultants

Health agencies must take a leadership role in promoting environmental health by engaging such agencies in coordinated action.

Examples of Intersectoral Collaboration in the Northern Territory are:

- Health Infrastructure Priority Projects (HIPP)/National Aboriginal Health Strategy (NAHS) Infrastructure Program Support.
- Indigenous Housing Authority of the Northern Territory (IHANT)
- Potable Water Committee
- Environmental Health Task Group.

## **Our Workshop expectations**

1. To listen, discuss and learn more from workshop participants on Aboriginal Environmental Health matters.
2. To identify particular problems in Aboriginal Environmental Health and to discuss possible strategies for resolving them.

## **Indigenous Environmental Health in New South Wales**

**Alison Smith,  
New South Wales Health Department, Sydney**

Three pilot communities have been established that are self-controlled in environmental health matters.

NSW Health has established six trainee EHO positions at the University of Western Sydney for Aboriginal people with a guaranteed contract for two years upon graduation; this time is likely to be extended.

## **Indigenous Environmental Health in Western Australia**

**Jean Thornton,  
Office of Aboriginal Health, Perth**

Aboriginal health issues facing Western Australia are similar to those found throughout Australia.

The Health Act 1911 does not apply to Crown Land. With approximately 99 % of the WA Aboriginal communities located on Crown land, the public and environmental health consequences are quite a problem.

In order to get around this problem, public and environmental health standards are being written into contracts for tenderers for any building works being undertaken. Failure to comply gives the health authorities an avenue for litigation through the civil court system.

Currently there are some 4 to 5 Government Departments covering EHW training. These departments overlap, there is minimal coordination and no one department takes ultimate responsibility for the work. When training is provided it does not necessarily guarantee the EHE employment in that position. This may result in low morale amongst the EHWs.

## **2. Housing infrastructure standards and quality control mechanisms**

In recent years the appropriateness of applying urban standards for housing, water, sewerage and other environmental health systems to indigenous communities, particularly remote ones, has been questioned. Different lifestyles, more demanding conditions and remoteness (resulting in increased maintenance costs) have supported the argument for the development of appropriate standards. Some jurisdictions have already begun developing appropriate standards with a national initiative occurring along similar lines.

Appropriate standards and their effective application are essential to improve environmental health conditions in indigenous communities. Whatever standards prevail, the means of applying them are currently a problem in many jurisdictions. In some, building control and health legislation may not legally apply to indigenous communities, while in others there is no administrative processes capable of effectively overseeing the standards. Creative and conventional mechanisms must be explored and implemented to ensure that infrastructure is properly installed and to ensure the best use of resources.

### **Keynote address one: Housing infrastructure standards and quality control mechanisms**

**Stephi Rainow,  
Ngnampa Health Council, SA**

The Ngnampa Health Council was created in 1984 after it was noticed that there was a high level of infectious diseases in the Aboriginal community. A team called the UPK Review was set up by the SA Health Commission to look at Aboriginal health in the state. The main finding was that people were not able to undertake public health measures at home because there was a high failure rate of health hardware (stoves, hot water units, washing machines etc).

The main reasons for the failure of the health hardware were not the actions of the tenant but rather:

- Poor design: health hardware could not cope with the conditions in the environment;
- Poor supervision of contractors; and
- Poor construction of facilities.

Nine healthy living practices were drawn up by the UPK Review :

1. Capacity to wash (particularly children under 5)
2. Wash clothes and bedding
3. Remove waste
4. Improve nutrition
5. Reduce crowding
6. Separate dogs from kids
7. Control dust
8. Temperature control
9. Reduce trauma – Our practical experience has indicated this should be the number one priority in future.

Simple changes were made to the design of the houses to increase their longevity including the following:

- Dust and waterproof power outlets
- No glass or gyprock was used in the construction
- Vandal proof tap handles

The issue of drainage had been identified as an area of concern. Problems result from poor workmanship in installing the health hardware appliances due to lack of supervision. As a result, SA Health Commission now processes all drainage applications, conducts all inspections, and requires all builders to be licensed.

The lack of maintenance had been identified as the main problem. The money for maintenance had previously been going direct to the communities where it was being inefficiently used as a result of poor management.

In order to gain funding for housing maintenance, the Ngnampa Health Council approached the CHIP branch of ATSIC and was granted the funding required.

The money is now pooled regionally into Regional Service Funds (RSF) and it is from this that maintenance hardware and tradespeople are funded

With better management, the same amount of money is being spent on the maintenance of the housing, but the facilities are improving across the board as can be seen in the following tables 3, 4 and 5.

**Table 3 : Cost of maintenance per household**

<b>Year</b>	<b>Money going to</b>	<b>\$/ household/ year</b>
1994	Community	\$1000
1997	Regional Service Funds	\$1042

**Table 4 : Community and Supplied Facilities (community A)**

<b>Facilities</b>	<b>1986</b>	<b>1994</b>	<b>1997</b>
Cold water working	70%	100%	100%
Hot water working	45%	80%	96%
Waste removal working	35%	70%	87%

**Table 5: Community and Supplied Facilities (community B)**

<b>Facilities</b>	<b>1986</b>	<b>1998</b>
Cold water working	58%	100%
Hot water working	31%	95%
Waste removal working	51%	95%

Source: Nganampa Health Council Internal Housing Assessment Report

Further concerns that have been raised are:

1. Aquifers – those communities on bore water have increased in population and water use, but the quantity and quality of the water is not known. An in-depth water study looking at the quality of the water is currently being undertaken.
2. Hot water – not enough hot water and there is still a high failure rate of hot water units
3. Temperature in housing – data logging of the housing is being conducted.

## Key note address two: Housing for Health

**Paul Pholeros,  
HealtHabitat, NSW**

The National Housing for Health program was founded in central Australia in 1986 with the indigenous community involved from the beginning and at the core of the program. Any program designed for housing for the indigenous community has to involve indigenous people if it is to get any community support.

The National Housing for Health program operates on a small budget and spends approximately \$3 000 to \$5 000 per house which includes all travel and repair costs.

Only safety and health issues are addressed by the program. In carrying out the surveys, various items are not just looked at, but they are tested (eg. Does the stove work? Do the taps work? What temperature is the fridge operating at?). Once the appliances have been tested a record is made of what is and is not operating. Should any item/s be noted as non-functioning, then it will be repaired on the spot if this is possible. If not, then repair or replacement in the following week will be arranged, or if it is a major appliance or failure, in the following three months.

A criticism by the National Housing for Health program is that too many surveys are conducted and failures only noted with no follow up remedial work and repair. The reasons repairs or correct work are not undertaken for Aboriginal housing have been noted. They include :

1. The perception that the problems are insignificant. The National Housing for Health program started by repairing 12 houses and has now increased that number to 700. Some may say that this is minute when compared to the 96 000 Aboriginal houses in Australia. But for those 700 houses repaired, there has been a major difference to the quality of life for those people who live in them.
2. Myths –for example “*that Aboriginals trash their homes*”. This has been found to be untrue and the real problem is that the appliances are unsuitable for the environment or that workmanship in construction and/or installation is poor.
3. Separation of policy and practice procedures
4. Separation of survey and fix procedures

The underlying problems with Aboriginal housing which must be addressed are

- Poor workmanship
- Poor design
- Poor thinking
- Poor supervision of construction and maintenance

## **Housing infrastructure standards and quality control mechanisms in Western Australia**

**Bill Atyeo**  
**Shire of Meekatharra**

Aboriginal housing has long been plagued by poor standards and conditions. The main areas of concern of housing have been identified as:

1. Insufficient housing
2. Inadequate and poor design
3. Houses not suited to the location
4. Inappropriate materials (eg. chipboard used for kitchen benches)
5. Overcrowding
6. Poor hygiene standards
7. Low level of essential services (eg. sewer, power, water)
8. Lack of training in the use of equipment supplied with the houses resulting in a lack of responsibility for and poor maintenance of the houses
9. High cost of housing
10. Cost of trades people for maintenance
11. Lack of housing hardware (eg. fridges, washing machines etc)

### ***Addressing housing problems***

A range of actions is being undertaken to address these problems:

1. Using Consultants who take the design to the people, and find out what the community wants
2. Improving design of the structures
3. Increasing house numbers using the Aboriginal Housing Board through Homeswest
4. Expanding the Aboriginal Environmental Health Worker (AEHW) program
5. Local Government becoming more involved
6. Having the Aboriginal Housing Board manage the Maintenance Service Plans
7. Collecting relevant information with the Inter-Governmental Working Group (IGWG) survey (the Environmental Health Needs Survey 1997)

### ***Barriers to overcome***

1. The Crown is not bound by the Health Act
2. The Building Code of Australia and the Builders Registration Board (WA) do not apply to indigenous housing on Crown land
3. Lack of resources
4. Non-supportive departmental policies
5. Lack of opportunities for Aboriginal people to be able to take responsibility for their own health
6. Decision makers don't respond to problems
7. Lack of cooperation/coordination

## **Housing infrastructure standards and quality control mechanisms in New South Wales**

**Scott McGufficke**  
**Far West Area Health Service**

NSW legislation concerning the erection of housing comes under the umbrella of the Environmental Planning Assessment Act and the Local Government Act. These refer to the Building Code of Australia (BCA) which in turn refer to Australian Standards (AS).

An important issue is that all legislation concerning the construction of the housing is generic. Also, there is currently no Australian Standard appropriate for Aboriginal housing.

## **Housing infrastructure standards and quality control mechanisms in South Australia**

**Liz Butler**  
**Aboriginal Housing Unit, South Australian Housing Trust**

Under the Development Act 1994 local government administers council areas and the Development Assessment Commission administers non-incorporated areas.

The Public & Environmental Health Act is administered by Local government in council areas while the SA Health Commission administers in non-incorporated areas. The non-incorporated area comprise approximately 85% of the State and include nearly all Aboriginal communities. The Act binds the Crown.

A Housing Forum has been formed to coordinate Aboriginal Housing activities. It represents:

- SA Housing Trust
- SA Aboriginal Housing Authority
- Division of State Aboriginal Affairs
- ATSIC
- Development Assessment Commission
- SA Health Commission
- Nganampa Health Council
- HealthHabitat
- Anangu Pitjantjatjara Services
- Pitjantjatjara Projects

### *Housing design specifications*

A basic specification has been developed by the Housing Forum. This specification is intended to cover workmanship and materials in a general manner applicable to all forms of construction for various types of units.

In particular, this specification refers to:

- housing plans;
- sanitary drainage layout; and
- pre-cast concrete product designs.

### *Quality control*

Improving quality control has been the most important contributor to the success of our program. There are several steps for ensuring quality control:

1. Site-specific approval
2. Only licensed trades people are used
3. Only approved products are used
4. Construction is only as per the approved plan
5. 7 days notification for inspection will be given
6. No backfilling of utility trenches until they are inspected and passed
7. No self-certification of work by tradespeople
8. No unauthorised variations from approved specifications.

## **Housing infrastructure standards and quality control mechanisms in Queensland**

**Ted Aldred**  
**Queensland Health, Rockhampton**

The Queensland Health Department is in a transitional stage in its involvement with Indigenous Environmental Health. Housing is playing a keynote in our current Indigenous Environmental Health activities. Until now, the Queensland Health Department has not been involved across the board in developing strategies and specifications for Aboriginal housing. The result has been a fragmented approach with different departments working in isolation with the result of “What you see is what you get.”

There are other problems. For example, there has been no education of the residents on how to use the equipment supplied in the houses. There is also a lack of ownership/consultation with the residents.

Getting qualified tradespeople and inspectors out into the rural and remote communities is difficult and funding for housing maintenance cannot be guaranteed.

## **Housing infrastructure standards and quality control mechanisms in Northern Territory**

**Ronald Lamilami**

**Indigenous Housing Authority of the Northern Territory**

Coordination between Aboriginal people and agencies, and the relevant Government Departments and bodies is vital.

The Northern Territory has the greatest housing shortage for indigenous people and the lowest health standards in Australia.

The Indigenous Housing Authority, Northern Territory, was established in 1995 after consultation between the Commonwealth and State Governments and with bodies such as ATSIC Regional Councils. It operates on a budget of \$38.7m annually.

A series of policies has been drawn up to guide Aboriginal housing in the future and includes:

- Rent levels
- Maintenance of health hardware
- Community Housing Management

Our experience has been that there is great value in establishing a peak State body, such as the Indigenous Housing Authority of the Northern Territory, with appropriate representation. The NT Health agencies recognise the close inter-relationship between housing and environmental health and the importance of effective community housing management.

A three year rolling program has been found to be both beneficial and preferred over annual budgeting processes.

The Three priorities in the Northern Territory are:

1. Development of housing standards
2. Efficient community housing management
3. Effective environmental health surveys

## Workshop Session Summary

### ‘Housing Infrastructure Standards and Quality Control Mechanisms’

The following suggestions are the outcome of the workshop groups. The suggestions have been collated and summarised.

<b>Issues:</b>	<b>Strategies:</b>
Legislation and Development of National Standards for Indigenous Environmental Health.	<ul style="list-style-type: none"> <li>- Legislation should be uniformly applied to the whole of each State/Territory and across all States &amp; Territories and should bind the Crown.</li> <li>- Discussion should take place to develop national principles and standards (eg a specialised Building Code of Australia) relevant to Indigenous housing, and to determine variations in legislation to reflect diverse local conditions.</li> <li>- Legislation should be written only in consultation with communities (a bottom up approach) and should demonstrate appropriate cultural awareness.</li> <li>- It is essential to clarify the roles and responsibilities of all levels of government and of all agencies in relation to government policy.</li> <li>- Legislative and policy development action plan should be included in NEHS implementation.</li> <li>- Political advocacy to change policy should be encouraged and Ministerial endorsement and commitment to Indigenous Environmental Health should be sought.</li> </ul>

- Design and Development
- Full consultation involving community meetings and family discussions should be the foundation for design and planning.
  - Community management plans should be developed and implemented.
  - Design and technology should be appropriate, for local requirements and conditions.
  - Planning and construction should be an integrated process and should involve all stakeholders.
  - Where practicable local skills should be used.
  - Consolidation of information on sources of financial and material resources should occur and the information should be made available to communities.
  - The maintenance priorities are health and safety of occupants and the communities.
- Maintenance and Construction
- There should be a program of scheduled continuous maintenance, rather than an *ad hoc* emergency repair approach.
  - Maintenance schedules need to be implemented to ensure proper maintenance, inspection and repair.
  - Community training programs regarding self-reporting mechanisms and home maintenance for residents (especially during ‘handover’ process) should be developed and should encourage community involvement.
  - Funds for repair and maintenance need to be allocated from the overall infrastructure funds. A proportion of rent collection should be allocated towards home maintenance.
  - Access to, and the integration and sharing of, physical and financial maintenance resources needs to be improved.

### Enforcement and Supervision of Construction.

- A whole of Government approach including Total Management Programs is required for effective enforcement and supervision.
- All builders and trades persons must be licensed.
- There should be a formal process of inspecting and certifying the adequacy of work and this should be undertaken by an objective third party.
- Contractors who display cultural sensitivity and whose work is of an acceptable standard should be preferentially considered for future tendering.
- Community involvement should be enhanced through training local supervisors and employing local professionals.
- All building approvals must be assessed by local government with an acceptable supervision process. The supervisor should specify the minimum number of site visits.
- The communication process that currently exists should be developed further to provide a process that promotes effective and efficient communication between all stakeholders.

### Communication Between Stakeholders

- Coordination of communications requires identifying roles and responsibilities of the stakeholders to improve dissemination of information.
- It is essential to consolidate all information sources and materials and to distribute the information to communities
- Issues should be raised through various mechanisms including professional institutes and tertiary education institutions. Participation through Internet information sharing is one useful mechanism.

Involvement of  
Indigenous People

- Encourage community involvement in the development of appropriate standards based on high levels of coordination, cooperation and communication.
- Formalise involvement of indigenous people in decision making and legislative processes involving environmental health.
- Support political advocacy to change policy to be more culturally aware.
- Identify, develop and utilise local skills.
- Encourage community ownership of housing. and community management plans.
- Encourage occupiers and owners to be more closely involved in maintenance programs.
- Full consultation beyond councils through community meetings and families should be encouraged.

### 3. Water Quality and Quantity

Water is essential to life. Water of adequate quality and quantity is the first ingredient to produce a healthy community. However there are still many Aboriginal communities which have either insufficient quantities of water to support good sanitation practices or have water of questionable quality. Each community has a right to be assured of an adequate supply of safe water.

With the imminent introduction of new Water Quality Guidelines, questions arise as to how quality and monitoring requirements can be met in indigenous communities. Remoteness creates major costs and obstacles for regular sampling for bacteriological purposes and for rapid repairs/maintenance of supply systems. The issue of responsibility for water supply and water quality is raised as an important foundation for indigenous environmental health.

#### **Keynote Address: Planning principles for Community Development**

**Mark Moran**

**Department of Local Government and Planning, Cairns**

Conventional town planning is based on certain concepts:

- The Nuclear family
- Economies of scale
- All houses face street
- High property values
- Strict control of development
- Disconnection from neighbours

By contrast an out-station is marked by:

- The extended family
- Camp layout
- Clustered dwelling
- Communal areas
- Greater living spaces (internal and external)
- Informality of development
- Links to the surrounding landscape

Out-stations have mobile populations with large population fluctuations from anywhere between 0 and 30 people. Space is used to mediate social relationships (if communities get on with each other they may move closer to each other and *vice versa*)

### ***Design Principles***

The rationale for out-station development must include four key issues:

1. Spatial separation between groups should be allowed for
2. Mobility of groups and individuals should be practicable
3. The process of planning and development should promote community control and, where possible, avoid formality
4. Links to the landscape, use of bush tucker and gardening must be considered

A number of logistical issues can cause some concern. The informal approach to development and remoteness of some areas may create problems with transport and access to services. Often, existing town plans are incompatible with development. There can be land limitations such as native title, logging and land zoning. Logistics can make the cost of development very expensive.

## **Water Quality and Quantity in New South Wales**

**Greg Bell**

**New South Wales Health Department**

Indigenous community water supplies are of two types:

1. The water supply is managed by Local Authorities or Water Authorities where communities are attached to towns
2. Water supplies are managed in a variety of ways (eg. Local Government, Lands Council, Private Authorities/Consultants) for independent discrete communities

The water supplies use bores, surface waters and rainwater tanks.

Key participating stakeholders are:

- NSW Health
- Area Health Services
- Local Councils
- Department of Land and Water Conservation
- Land Councils/Partnerships
- Department of Housing
- Consulting Engineers/Project Managers
- ATSIC

### **Water supply standards**

All public water supplies are required to comply with the provisions of the NHMRC/ARMCANZ Australian Drinking Water Guidelines. At present, 1987 guidelines are applied but implementation of 1996 guidelines is in progress.

### **Current and ongoing programs**

1. *“Water and Sewerage”* is an interdepartmental program purely designed for both discrete and fringe Aboriginal communities
2. *“Water and Sewerage Scheme”* for small towns is a mainstream scheme administered by Department of Land and Water Conservation. The scheme takes all small towns into consideration and therefore impacts on those Aboriginal communities situated within or on the fringe of larger traditional towns.
3. Use of memoranda of understanding between health and water authorities to deal with water issues within the community. These include organisations from the Water Corporation down to smaller local authorities.
4. Development of regional/state water management databases
5. Service level agreements have been signed between Government and private analytical labs with respect to user pays principles and cost-to-government principles.
6. There has been continued progress in EH partnership activities with various agencies in relation to Aboriginal Health.
7. *“Housing for Health”* is a national program adopted by each state. In NSW *“Housing for Health”* has a series of initiatives to ensure good drinking water and domestic supply.

### **Impediments/challenges to water supplies**

The most important influences on the provision of water supplies are:

- Small/remote communities are subject to limited revenue bases from rates and rent;
- Not all communities have a reliable water supply;
- Not all communities have a maintained or treated water supply;
- Not all rural water supplies are subject to quality testing programs;
- Coordination of stakeholders is difficult;
- Insufficient training and backup for operators in rural and remote communities;
- The remoteness of communities in regard to water supply maintenance/testing facilities;
- The need for review of the undergirding legislative framework;
- Persistent problems with communication; and
- Issues of notification concerning blue green algae.

## **Water Quality and Quantity in Western Australia**

**Owen Ashby**

**Environmental Health Service, Health Department of WA**

There are around 260 discrete Aboriginal communities in WA. Most are remote and concentrated in the Kimberley, Pilbara and Goldfields regions. The vast majority rely on independent bore water supplies.

### *Water services to the communities*

There is a list of 48 communities funded by the State's Aboriginal Affairs Department. They were previously serviced by the Water Corporation which also provided monthly sampling. A competitive tendering process was recently introduced and the Program Manager is Ove Arup. Service Providers are now being appointed across three regions covering WA.

### *Relevant standards*

The currently used standard is the NHMRC/ARMCANZ Australian Drinking Water Quality Guidelines (1996). The 1996 Guidelines require weekly sampling for all water supplies and this presents logistical problems.

As a result of these problems the Working Party on Water Testing in Aboriginal Communities was formed in 1996 to address the lack of sampling on Aboriginal communities.

The Working Party comprises:

- Health Department of WA
- Aboriginal Affairs Department
- Water Corporation
- PathCentre
- Western Australian Municipal Association
- Australian Institute of Environmental Health
- Murdoch University
- Water Purity Committee

The Working Party has examined expanding the list of 48 communities by using other agencies to provide sampling (eg Local Governments) and using new technology. Currently it is accepted that not all communities can be sampled regularly because of

their remoteness. It has been recommended that communities with less than 1000 people have their water sampled monthly.

### ***Field testing of water***

The Working Party has sponsored the assessment of a field test kit to supplement monthly sampling and to provide screening tests where there is no sampling. The Colilert Field Test Kit was selected for assessment after reagent trials of Colilert and Colisure. It provides a presence/absence test for indicator organisms (Coliforms). It is a simple process: a reagent is added to the sample and incubated in a field incubator. The colour change is read after 24 hours. The system is now being field tested by the Water Corporation and PathCentre in parallel with normal sampling.

If a satisfactory result is obtained from the Colilert Assessment Project and funding is provided the system can be introduced into communities in phases and operators will be trained to test, record results and take follow up actions according to a protocol.

## **Water Quality and Quantity in Tasmania**

**Joe Conti**

**Department of Community & Health Services, Launceston**

Tasmania has recently introduced the Public Health Act which adopts the standards and guidelines

The recommended water sampling schedule for small communities is fortnightly sampling for populations greater than five thousand and end point sampling for populations less than five thousand.

The principal stakeholders for water supply are:

- Local authorities;
- Three regional Water Authorities;
- The Department of Primary Industry and Fisheries; and
- The Department of Land Management.

The indigenous community on Cape Barron Island has a small, inadequate water scheme. Tank-water is the most important source. A new tertiary treatment plant has been developed according to NHMRC standards.

## **Water Quality and Quantity in South Australia**

**Craig Steel**

## Environmental Health Branch, Department of Human Services

The major South Australian water sources are the River Murray, the Great Artesian Basin, the Eucla and Officer Basins and rain water.

The South Australian Government is committed to working with the Commonwealth Government in the implementation of a nationally consistent set of policies concerning water pricing, water allocation, water for the environment, and trading of water allocations.

The Water Resources Act 1997 is a new piece of legislation that provides for the management of the State's water resources. Water pricing is based on the principles of 'user pays' and 'full cost recovery'. Water allocations will be provided to all users based on ownership, volume, reliability and quality. Trade of water allocations will be permitted including trade across state boundaries. Formal allocation of water will also be made to the environment.

The overall goal of the State Governments involvement in water resource management is to ensure the State's water resources are managed and used in an ecologically sustainable manner.

The State's water plan "South Australia: Our Water, Our Future" was prepared under the Water resources Act. The plan proposes to provide local and regional communities with the information and authority to achieve community and local government management of local water resources. The plan also sets out formal provisions for the environment's water needs. Management tools such as economic incentives protect water supplies and encourage reuse and recovery of urban storm water, treated sewage effluent and local ground water.

Remote and rural communities are not declared as water districts under the Act, and responsibility for them is unclear. SA Aboriginal communities generally have adequate volumes of water provided by the Essential Services Section of the Division of State Aboriginal Affairs. Oak Valley is an exception.

Water quality monitoring is performed on an *ad hoc* basis and is narrow in focus.

A study by Nganampa Health Council about water use provided the information in Table 6.

**Table 5: Daily Water Usage (Aboriginal community)**

Item	L/day
Shower	50-400
Basin/tub	25-50
Washing machine	90-450
Toilet	30-140 (5-7% of total)
Kitchen sink (cold)	40-150
Kitchen sink (hot)	40-130

Source: Energy and Water required for Health on the Anungu Pitjantjatjara Lands. Nov 97; Paul Pholeros.

A groundwater study was commenced in 1997 to investigate a wide variety of chemical, biological and physical parameters of water supplies in the remote regions of South Australia. Ngnampa Health Council, Australian Geological Survey Organisation, Commonwealth Department of Health and Community Services, SA Department of Environment, Heritage and Aboriginal Affairs and SA Department of Primary Industries and Resources were involved in the study.

### **Unresolved issues of water supply**

1. Sustainability of bore water supplies.
2. Difficulties in achieving some water quality criteria.
3. Determining responsibility for water supply, water quality, and water monitoring.
4. The impact of the 'user pays' principle on Indigenous health.

## **Water Quality and Quantity in Northern Territory**

**Greg Wyvill**

**Aboriginal Essential Services, Power and Water Authority, Darwin**

### **Microbiological quality**

There are substantial logistical problems and costs associated with routine water sampling and transport of samples in a good condition to a NATA registered laboratory within 24 hours.

A significant number of samples fail because of operator error in collection and transport. In some communities, sampling occurs monthly.

Given the problems of sampling and the possibility of inaccurate results, undue emphasis on the results of a single result paint a misleading picture of water quality not supported by anecdotal evidence. This can be exacerbated by the statistical methods used to interpret results (eg a requirement that 98 % of samples comply with criteria: a noncompliant result for a single month will suggest only 92% compliance) for the twelve results for a year.

Secure water supplies may be provided through the use of physical barriers against contamination. Ground water separation is an example of the use of the physical separation of water from potential contamination.

***Physical and chemical quality:***

There are variable differences between guideline levels for colour, taste, hardness and TDS, and community perceptions of acceptable quality.

Corrosive water will have an impact on supply infrastructure causing accelerated deterioration. It may also cause exceedances of water quality standards (eg for copper)

The use of appropriate (special) housing plumbing standards may be required to minimise the effects of variable chemical water quality.

***Quantity of water supply***

The uses of 'L/capita/day' design criteria are preferred to 'L/household/day' because of higher house occupancy rates experienced in Aboriginal communities. Community water storage capacities should include allowance for fire fighting flows. It is important to identify a sustainable water resource for each stage of development from out-station through to major community.

Material and construction standards must be compatible with the water supply design.

**Water Quality and Quantity in Queensland****Stuart Heggie  
Environmental Health Unit, Cairns**

Generally, there are few problems with water quality in Queensland. The water treatment systems in place only include chlorination. The microbiological quality is acceptable, but there has been limited evaluation of physical and chemical quality.

Failures are followed up with the Community Council, which is in charge of the water supply.

On the mainland there are watercourses nearby that can supply the community in the dry season but island communities can run out of water early in the dry season. "*Water Wise*" Queensland is an education program used in the Torres Strait to promote rationing and conservation of water.

In most areas monitoring is done by Indigenous Environmental Health Workers. There are also some Indigenous Water Officers. Laboratory monitoring of samples is either provided free of charge by Qld Health or with a small surcharge by local labs in Cairns or Thursday Island.

The State Government has supplied money for the water supply infrastructure and it is hoped that by the year 2000 all the Torres Strait Islands water systems will be upgraded and access to maintenance personnel will be readily available.

## Workshop Session Summary

### ‘Quality, Quantity and Sustainability of Water Supplies’

The following suggestions are a collation of the outcomes from the workshop groups which, discussed

Issues	Strategies
Source of supply	<ul style="list-style-type: none"> <li>▪ Native Title ownership will provide a greater sense of community ownership of water policies.</li> </ul>
Consumption	<ul style="list-style-type: none"> <li>▪ The ‘user pays’ principles may have a significant impact given the high cost of water supplies. The impact of ‘user pays’ should be closely reviewed if being considered for a community.</li> <li>▪ Education of communities will have a major benefit on the maintenance of safe and adequate supplies.</li> </ul>

## Water Quality

- Protection of water sources is essential.
- Appropriate standards and legislation must be developed to protect indigenous water supplies.
- Use of rainwater tank supplies may alleviate problems with ground water supplies and should be encouraged.
- Identification and delegation of responsibility with respect to source and supply should be undertaken for each community.
- The treatability of particular water problems and appropriate treatments should be determined.
- Testing and monitoring protocols which address issues including access and frequency on and off site should be developed.
- Emergency planning and response protocols should be developed for situations where there are gross exceedances of water quality criteria.

## Water Sampling

- The cost and access to sampling are major barriers to adequate sampling programs. There is a need to investigate ways of overcoming these barriers.
- Methods of on site testing versus off site testing should be appraised to determine whether this will enable improved testing programs.
- Frequency of sampling determined by a range of factors including specific events and population changes. Sampling schedules should have sufficient flexibility to account for these factors.
- Programs which will allow coordination of transporting samples from single or multiple communities will reduce costs and reduce problems.
- of sample deterioration should be developed.
- Ensure priority access to labs to reduce the risk of sample deterioration.
- There is a need for quality control at all stages of sampling and analysis.
- Methods to subsidise sampling to enable a uniform national rate for testing should be investigated.
- Regular surveys (eg monthly) to protect sources and distribution networks are necessary and should be incorporated into sampling protocols.

## Adequacy of Supplies

- Sustainability is a major issue. Long term goals should be set to minimise wastage and get the most out of resources.
- Programs to reuse and recycle water should be assessed and implemented where culturally appropriate.
- Education of communities on the need to protect and sustain supplies is necessary.
- The quantity, availability and accessibility of sources should be appraised for each community. This should include identifying new and existing sources of supply.

## Sustainability

- To ensure sustainability a variety of actions should be considered for each community :
- Mapping water resources, measuring usage patterns and maintaining entire systems is important.
- Reducing consumption where this does not exacerbate health and safety hazards. This can be achieved by measures such as hardware, training, education and maintenance.
- Protecting sources from pollution. Establishing an agreed protocol for dealing with failures of Water Quality Guidelines.
- Informed use: drinking versus washing
- Reclaiming and reuse of water where culturally appropriate.
- Harvesting water eg rainwater from roofs, recharging water aquifers, and using desalination units and artificial dams.
- Diversifying sources and using new technologies.

## Education of Users, Communities, Suppliers and Workers

- Education should be undertaken as part of an overall health plan.
- Education should cover awareness of sustainability, cost, efficient use and protection of supplies, maintenance and waste minimisation.

### Management of Water Supplies

- Involvement of all stakeholders and identification of their roles and responsibilities are fundamental components. Empowering the community is a necessary part of stakeholder involvement.
- Local control, education and training are vital aspects of community empowerment.
- Training and support are essential to ensure the availability of skilled people for the role of Essential Services Officer
- Adequate provision of protected water storage facilities is required.
- Appropriate waste management processes at a community level are vital for protecting water supplies.
- Population growth and demands need to be considered in providing sustainable supplies.
- The responsibilities for service delivery within a community need to be clearly defined.

### Water Management Plans

- Total Regional Management Strategies are necessary as well as community level strategies.
- Pre development resource assessment is required to ensure that resources can be used efficiently and sustainably. Consumption studies will be part of the resource assessment.
- An ongoing monitoring program should be part of the water management. The monitoring program should record:
  - Rates of water use
  - Failures or faults in supplies
  - Water testing results
  - Expert advice should be sought in the planning phase to ensure that there is an appropriate design and reticulation system.

- |                                       |   |
|---------------------------------------|---|
| Development of Water Management Plans | <ul style="list-style-type: none"> <li>▪ Appropriate Government processes should be used in developing water management plans. The processes should have due regard to cultural values.</li> <li>▪ Water management plans should ensure best use of all classes of raw water.</li> <li>▪ Where there are systematic failures to comply with guidelines, a staged schedule with time lines to achieve compliance should be developed.</li> </ul> |
| Funding (initial and ongoing)         | <ul style="list-style-type: none"> <li>▪ There is a need to identify responsible parties and processes at all levels of government that could contribute to funding. Having access to this information and successful and unsuccessful funding experiences will facilitate funding for communities.</li> <li>▪ Where funding is sought, the budget should be adequate to meet relevant NHMRC/ARMCANZ Water Guidelines</li> </ul>                |
| Water Costs                           | <ul style="list-style-type: none"> <li>▪ As a principle, remote indigenous communities should pay no more for domestic water than city dwellers.</li> <li>▪ Assessments of individual and community capacity to pay should be performed.</li> </ul>   |

## **4. ENVIRONMENTAL HEALTH WORKER TRAINING, SUPPORT AND PROFESSIONAL DEVELOPMENT**

Environmental Health Workers (EHWs) who live and work in indigenous communities are employed in some jurisdictions to provide fundamental environmental health services to their communities. While there have been recent significant advances in the standardisation of training, EHWs often lack support both from within their communities and from environmental health agencies. Back up is needed when the EHO encounters problems they are not trained to cope with and their skills need to be constantly updated.

EHWs will be a more effective part of the environmental health network if solutions can be found to some of the problems related to training, support and professional development.

### **Key Note Address**

**Jeff Standen**

**Environmental Health, Territory Health Services, Darwin**

#### *Introduction*

There are three priorities for EHWs:

1. Training
2. Support
3. Professional Development

This paper examines those three areas in the context of the Northern Territory's Aboriginal Environmental Health Worker Program.

#### *Role of Government in environmental health services*

The role of Local Government is not well developed in the Northern Territory. The Territory Health Services employs Environmental Health Officers (EHOs) in rural and remote areas, funds communities to employ EHWs, and provides essential services and housing infrastructure.

The Commonwealth Government funds environmental health infrastructure through programs such as the Health Infrastructure Priority Project which became incorporated into the National Aboriginal Health Strategy.

### ***Establishment of the Northern Territory's Aboriginal Environmental Health Worker Program***

In 1991 the NT Department Health and Community Services (HACS) conducted a review and recommended the employment of 10 Aboriginal EHWs. By 1993, funding had been approved by Cabinet to start employing the first EHWs and it was decided to use Service Agreements between Territory Health Service and Community Councils.

Initially EHWs were informally trained by EHOs. Batchelor College took over the training role and by 1994 Certificate III in Health Studies (Aboriginal Environmental Health) had been developed. This course was accredited in the 2nd semester, 1995. As yet, no competency standards have been developed for EHWs.

### ***Review of the Northern Territory Aboriginal Environmental Health Worker Program***

During the first 3 to 4 years of the program, there was a high turnover of EHOs involved in EHW training. This resulted in confusion about the aims and strategy of the program amongst new EHOs. It was also found that Service Agreements were not being met by either party. The perception of participating EHOs was that the program '*worked well in some places at some times*'. A review of the program was advocated by those involved.

The review was a descriptive study to gain a better understanding of '*what factors had enhanced or hindered the effectiveness of the program*'. During the review process EHOs, EHWs, community representatives and stakeholders from other NT Government Agencies were consulted.

### ***General review outcomes***

1. EHWs were fundamental to the improvement of environmental health in remote Aboriginal communities.
2. It was inferred that people understood the meaning of "environmental health".
3. The role and responsibilities of EHWs were unclear to the community council (the employer), the EHWs themselves, and the EHOs (the support).
4. Issues arising at the establishment stage included:
  - Insufficient time was allocated to initial establishment and consultation ;
  - The need for broad community consultation was highlighted;
  - It was realised documentation of the process is essential to future running of the program; and
  - The position of the EHW needs to be established in the context of the wider environmental health program.

## Training issues

Batchelor College training has proved to be a positive experience for EHWs. However, institutional-based training doesn't provide the student with all the knowledge and skills required to work to their best within the cultural hierarchy of a community setting. A key issue remains "*Institutional-based training versus community-based training*".

There is a need for greater communication between training provider, support agencies and employer.

## Support issues

While support is the key to a successful program it is also the greatest area of neglect. Initially, the assumed level of support needed for AEHWs was too low and increased and continued Territory Health Service support has been needed.

Several questions have been highlighted by the review :

- What are we supporting EHWs to do?
- Is the EHO the most suitable support person?
- Do EHOs need more training?

The provision of support has been complicated by staff turnover from both Territory Health Service and within Communities. Including other stakeholders in the program will assist in broadening the depth of support available to EHWs.

## Professional development

Factors that have hindered professional development include:

1. Literacy and numeracy skill limitations
2. Lack of encouragement.
3. Non availability of further courses and positions for EHWs.

*The need to clarify, What is the role of the EHW and what is the aim of the program? Are they a cultural broker? Are they a repair and maintenance person? If so, would they do better to become plumbers?*

Four issues that will need to be faced are :

1. Is there a statutory role for EHWs?
2. Is the EHW a step to eventually becoming an EHO? If so,
  - Who will fund positions?
  - If all EHWs became EHOs there would be a rate of one EHO per 500 people.
  - Is this rate necessary?
3. Should there be training for jobs that don't exist or can't be supported?
4. Establishing a whole new profession (EHWs) provides opportunities for discussion at a national level about roles, competencies and national standards.

### **Current Northern Territory initiatives**

1. Developing and implementing the recommendations following the Aboriginal Environmental Health Worker Program (AEHWP) Review.
2. There is an increasing inter-agency focus for all environmental health issues including the AEHWP.
3. EHW competencies are being graded and developed through Health and Community Services Industry Training Advisory Board initiatives.
4. Territory Health Service Aboriginal Employment & Career Development Strategy was initially implemented in 1997.

### ***History never repeats?***

It is interesting to compare the current activities with the past.

The Hygiene Workers program in the NT ran from 1951 to 1966. We have changed the names of the programs and those involved in it, but have replicated similar patterns. In particular, we can see the same:

- Lack of support;
- Confusion over roles and responsibilities; and
- Lack of resources available to workers and community members in the field.

## **Environmental Health Worker Training and Support in Western Australia**

**Iris Prouse**

**Kimberley Public Health Unit, Health Department of WA, Derby**

In Western Australia, the EHW training program consists of three levels:

### **1. Certificate 2:**

This provides skills to carry out routine assessment, repair and maintenance. The training has compulsory modules:

1. Introduction to Environmental Health
2. Sewerage systems
3. Personal, home and dog health
4. Rubbish and environmental management
5. Water supply
6. Field work
7. Pest management

And optional modules:

1. Literacy
2. Numeracy

180 hours of fieldwork are required. A problem that has been identified is that once trained, skills need to be updated on a regular basis.

### **2. Certificate 3:**

This provides supervisory skills, and skills for planning and implementing and evaluating programs. It is assumed students already have certificate 2 level skills.

The modules are:

1. Introduction to the role of the AEHW
2. Community development
3. Appropriate technology
4. Personal home and food hygiene
5. Pests and pesticides
6. Dog management
7. Rubbish
8. Water
9. Sewerage
10. First aid and Occupational Health and Safety

A problem is the need for an additional educator to teach the Certificate 2 course due to the time involved in the course.

### 3. Certificate 4:

The prerequisite for this is Certificate 3. It teaches managerial and supervisory skills

#### *Problems for EHWs:*

1. The training for use of different types of heavy equipment needs to suit the equipment available in each community.
2. There is no EH award
3. There is no wage structure

#### **Support for EHWs**

The Kimberly Public Health Unit provides several support mechanisms:

1. Training programs
2. Field Support Officers
3. Newsletters
4. Kimberly AEHW seminar
5. Planners/recorders

Shire EHOs & EHWs provide :

1. Legislative advice
2. Community visits/site inspections
3. Provisions of information
4. Delivery of services

Community support includes:

1. Providing an induction course for community leaders to ensure the EHWs role is understood and their skills are utilised.
2. Community Leaders Manual – popular with Community Council
3. Aboriginal Medical Services
4. Aboriginal Affairs Department

Problems arise with the high turnover of both Community Leaders and administration and health staff. Each staff change over requires a new induction and education of the EHW role and expertise. Funding for induction course has ceased due to changes in DEET and ATSIC funding.

#### *Professional development and career pathways*

An EHW seminar program has been developed and a total of three seminars have been held since 1995. The seminars highlight the high profile of AEHW's in their communities.

The current program has been designed to enable both horizontal and vertical career movement.

## **Environmental Health Worker Training and Support in Queensland**

**Stuart Heggie**

**Environmental Health Unit Cairns, Queensland Health**

### **History**

Before 1984 Missions controlled the Indigenous communities. 1984 was marked by two events:

- Deeds-of-Grant-in-Trust were issued; and
- The Community Services (Aborigines) Act 1984 and Community Services (Torres Strait Islanders) Act 1984 were passed.

In 1990, democratically elected Councils were established in association with ATSIC.

### **Health status of Indigenous people**

The health status of indigenous people provides a powerful argument for the provision of effective environmental health services. In Queensland the indigenous community experiences:

- 2-5 times higher rate of salmonellosis;
- 30 times higher rate of shigellosis;
- More than double the rate of TB;
- Nearly 6 times the rate of meningococcal infection; and
- 4-5 times more hospital separations for “infectious and parasitic diseases”.

### **Environmental health services**

Historically, environmental health services were provided by one or more of the following mechanisms:

- Hygiene Officers
- Queensland Health EHOs
- Local Government EHOs
- Far North Queensland (FNQ) Joint Health Board
- Tropical Public Health Unit (TPHU)

Currently only Qld Health EHOs from TPHU still provide this role.

### **Environmental Health Worker (EHW) Program Development**

After the 1991 Pundulmurra EHW Conference in Port Hedland, (WA), a working group was formed in 1992.

By 1994 a draft curriculum and syllabus had been completed and the EHW course was accredited by TAFE-TEQ in 1995.

The appointment of a project officer by the Tropical Public Health Unit (TPHU) was followed by the appointments of EHW Coordinators for the Torres District and the Northern Queensland Zone.

### ***EHW course curriculum***

There are two levels:

1. Certificate Level comprised of numerous modules that includes subjects such as:
  - Introduction to Primary Health Care
  - Communication for Health Workers
2. Diploma Level comprised of numerous modules that include six core environmental health subjects which are:
  - Water
  - Sewerage Systems
  - Waste Management
  - Food Hygiene
  - Pest Management
  - Disease and Environmental Health

And some of the elective modules include subjects such as:

- Community Nutrition
- Tropical Diseases
- Aboriginal & Torres Strait Islander (A&TSI) Political History

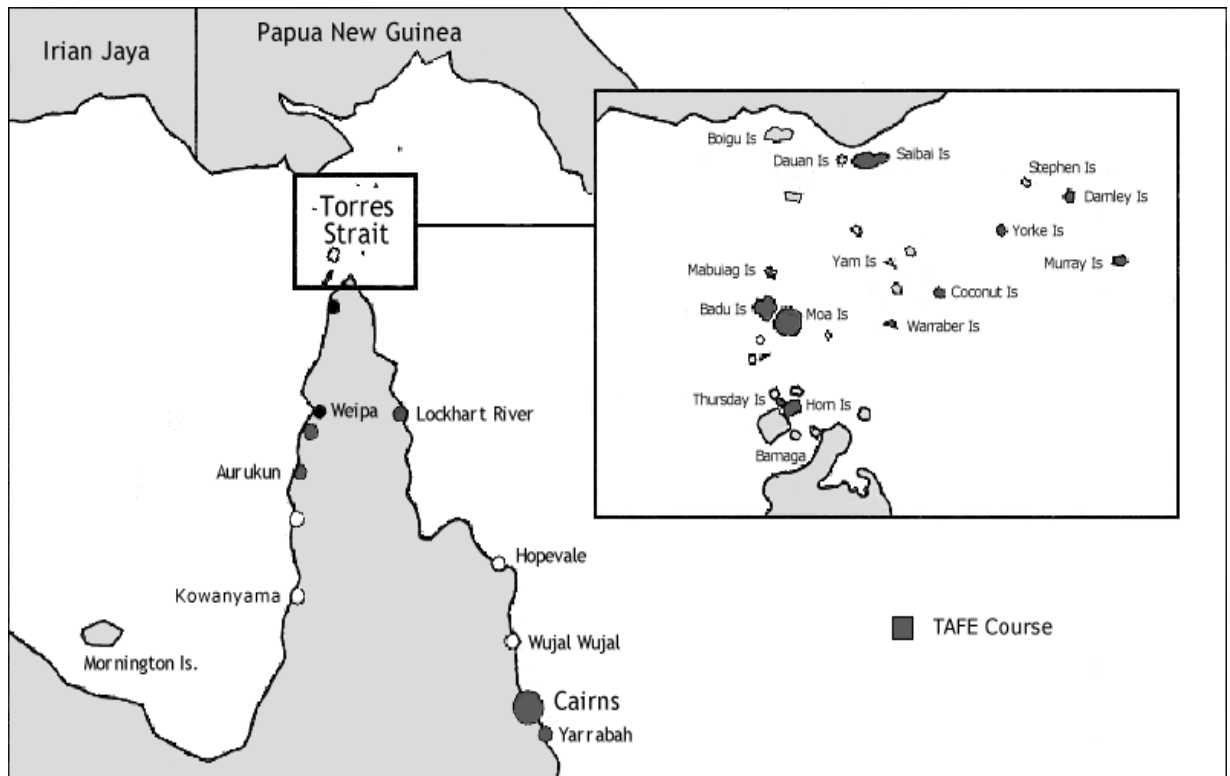
### ***Course delivery and recruitment***

The courses are undertaken at the FNQ Institute of TAFE, Cairns in “block-release” format and with “off-campus” training. The Diploma of ATSI Primary Health Care (Environmental Health) is of 2-years part-time duration. After the position of EHW Coordinator was created on Thursday Island, a delegation met with Council Chairpersons and the first intake was selected in mid 1996.

### ***Purpose of the course***

The purpose of the course is:

*To improve physical environments which predispose to poor health by introducing a sustainable scheme to train and employ indigenous EHWs in Aboriginal and Torres Strait Islander communities.*



**Figure 2:** The locations of TAFE students in Far North Queensland and in the Torres Strait Islands. Traineeships are located in Wujal Wujal, Hopevale and Kowanyama.

### *Public policy*

Various policies have had an influence on the establishment and content of the course including:

- National Aboriginal Health Strategy (NAHS) (1990-94)
- Queensland Health's Aboriginal and Torres Strait Islander Health Policy (1994)
- Royal Commission into Aboriginal Deaths in Custody (1994)
- Queensland Government Public Works Committee Report on the Provision of Infrastructure in Cape York (1997)

### *Scope of the course*

The EHW Course will allow the EHWs to perform environmental health duties to a level capable of improving community standards with a commensurate level of autonomy and effectiveness.

### *Objectives of the Environmental Health Worker Program*

The course is seen as a key part of the EHW Program. The objectives of the EHW Program are to:

- improve the health status of all community members;

- provide employment for community members;
- provide an indigenous environmental health service;
- provide a more effective full-time health service;
- establish a more culturally appropriate education and liaison role between community members and the EHW; and
- provide a career path that can articulate with the Bachelor of Applied Science (Environmental Health).

### ***Outcomes of the Environmental Health Worker Program***

More wide ranging outcomes of the course will be:

- Improved environmental health standards throughout the community;
- A more complete health service through collaboration between clinical health workers and EHWs;
- Increased awareness and knowledge of environmental health standards through education of community members; and
- Reinforcement of indigenous health workers as the key personnel in primary healthcare services.

### ***Achievements of the Program***

In the short period the Program has been running, a range of achievements have been noted:

- Better management of refuse collection and disposal;
- More reliable water treatment and testing;
- Regular inspections of food stores;
- Initiation of dog health programs;
- Surveillance of mosquito breeding sites;
- Safer disposal methods for sewage;
- Initiation of community clean-up schemes; and
- Development of environmental health promotion materials.

### ***Future of the Program***

The Royal Commission into Aboriginal Deaths in Custody (1994) stated:

*“That special initiatives ... to facilitate the entry into and successful completion of courses of study and training by Aboriginal students be expanded ... in all relevant areas of health services training”;*

*“That the States recognise the contributions of Aboriginal health workers and in so doing review ... the establishment of appropriate career structures.”*

Progress has been made with programs such as the Indigenous Bachelor of Applied Science (Environmental Health) University of Western Sydney (Hawkesbury) offering support to Indigenous students in their distance education, relative to the Bachelor of Applied Science (Environmental Health) course.

Graduate Indigenous EHOs are then employed within communities, or local, State and Federal Government agencies and can gain full membership of the Australian Institute of Environmental Health.

This is a beginning but there must be continued interagency support, adequate resourcing, employment opportunities and a sound career structure.

### *Conclusions*

The success of the EHW program lies largely with the indigenous people and the support of health professionals such as Environmental Health Officers.

EHOs should not feel threatened by the emergence of EHWs, but should view them as assistants for the improvement of public health.

## **Environmental Health Worker Training and Support in South Australia**

**Craig Steel**

**Environmental Health Branch, Department of Human Services**

### *Environmental Health Workers*

A maximum of 3 EHWs has been employed by Aboriginal Health Services with funding from the SA Department of Human Services. At present there is no formal training available in SA. The WA training manual appears to be an appropriate model for SA. TAFE SA showed interest some years ago in developing a training program but no action occurred.

### *Apparent hurdles in South Australia*

There are several problems that need to be confronted in SA including:

1. Lack of training courses;
2. Lack of designated paid positions;
3. A tendency to pay only at Commonwealth Development Employment Program (CDEP) rates; and
4. Lack of status of EHWs compared to Aboriginal Health Workers.

### ***Aboriginal Environmental Health Officers***

We should also aim to have Aboriginal Environmental Health Officers employed at all levels of government and with Aboriginal Health Services.

At present there is only one Aboriginal Environmental Health Officer in South Australia.

A search is currently being undertaken for a trainee EHO to study at Flinders University of SA or the University of Western Sydney.

## **Environmental Health Worker Training and Support in New South Wales**

**Alison Smith**

**New South Wales Health Department, Sydney**

New South Wales has an AEHW forum which involves every related agency in NSW. The forum has met three times to discuss matters concerning EHWs. No agency has been identified as responsible for EHW training and thus no training program has been instigated.

A Degree course for Aboriginal EHOs has been established. The program provides 6 positions for 4 years with a guaranteed 2 year contract upon completion at the University of Western Sydney. The course consists of 3 days work with 2 days study each week.

The focus in New South Wales has been on getting EHOs to view environmental health problems not in the context of “non-Aboriginal environmental health” or “Aboriginal environmental health” but to consider them in the whole context of environmental health.

## Workshop Session Summary

### Environmental Health Worker Training, Support and Professional Development

The following recommendations have been compiled from the workshop groups.

Issue:	Strategies:
Roles and Responsibilities	<ul style="list-style-type: none"> <li>• The roles and responsibilities of educator, health promoter, manager/coordinator, field officer, fixer and auditor need to be clarified.</li> <li>• Liaison between community and visiting clinicians, and data collectors should be improved.</li> <li>• Mechanisms of reporting and accountability need to be developed clearly.</li> <li>• All processes should acknowledge cultural differences across communities</li> <li>• Training and career paths need to be linked to roles and responsibilities</li> <li>• Differences between training outcomes and community needs should be addressed.</li> </ul>
Recognition of Position	<ul style="list-style-type: none"> <li>• The development of career paths, award structures and position descriptions is needed.</li> <li>• Employment opportunities need to be evaluated.</li> <li>• Legislative requirements for the employment of EHWs should be considered.</li> <li>• Support and acceptance for EHWs from community, chairperson and administrator are essential.</li> <li>• The development of a national EHW program which includes training, competency standards and prior learning is necessary.</li> </ul>

## Funding

- Financial commitment from Commonwealth, State, Local Government and communities is essential to fund EHW positions
- Alternative funding sources should be identified.
- The National Environmental Health Forum should be encouraged to lobby for a legislative basis for the employment of EHWs and its corresponding funding.

## 5. Community Environmental Health Information

Environmental health information from indigenous communities is essential to:

- Identify major issues;
- Develop programs to improve environmental health conditions;
- Evaluate environmental health programs; and
- Focus funding according to needs.

The environmental health network, funding agencies, indigenous resource agencies desperately need reliable and current information. However, communities have become impatient and even hostile about the growing number of surveys. They perceive surveys to be intrusive and of little tangible benefit.

How then can the information needs of agencies be accommodated while respecting the views of the indigenous community members?

### Key Note Address

**Wayne Jolley**

**Environmental Health Service, Health Department of WA**

#### Who needs information about Indigenous communities?

Indigenous communities and virtually all health and infrastructure provider agencies including:

- ATSIIC
- Aboriginal Housing Directorate
- Aboriginal Affairs Departments
- Health Departments
- Local Governments

#### *Why do you need information?*

Information must be not only accurate but relevant. Accurate and relevant information will help to efficiently deliver the right services to the right people. Accurate and relevant information will ensure that the correct answers are provided to the correct question. But information gathered and not interpreted and acted upon is wasted.

### ***What sort of information is required?***

Gathering and correctly interpreting information is one of the keys to a successful program. Information must be targeted to answering the right questions. Examples of information that may be required are:

1. Community profile
  - Contact details (Chairperson, phone, fax, etc)
  - Administration details (eg: Resource Agency)
  - Population demographics (eg age distribution)
  - Services provided
  - Personnel (eg: EHW contact details)
2. Environmental Health Infrastructure
  - Water supply and reticulation (eg water treatment methods, maintenance records)
  - Sewerage system
  - Refuse disposal
  - Power supply and distribution
  - Community food store (eg food hygiene audit reports)
3. Housing
  - Type and number
  - Population per house
  - Sanitation facilities
  - Maintenance/repair needs
4. Programs
  - Health promotion activities
  - Dog control programs (scabies prevention)
  - Pest/vector control (eg identification of mosquito breeding sites)

### **How can information be obtained?**

Information can be accessed and obtained from a variety of sources:

- From the agencies which routinely seek information which are also repositories of information (eg: ATSIC, Housing Directorate, Health Dept, local governments);
- From other agencies (eg: service providers for relevant information); and
- Directly from the communities

## Perception of surveys by communities

Communities often perceive surveys negatively. They can be perceived as:

- Unpopular;
- Intrusive;
- A waste of time and money; and
- Of no benefit to the community.

## The information test

Gathering useful information and using it usually depends on the goodwill of the community so it is important that surveys are constructed so that they are seen positively. Before any agency commences seeking information on a broad scale or embarks on a survey it should question:

- What information is required and for what purpose?
- Is the information really necessary?
- Can the information be used?
- Can the information be obtained from another source?

## *Some considerations for surveys*

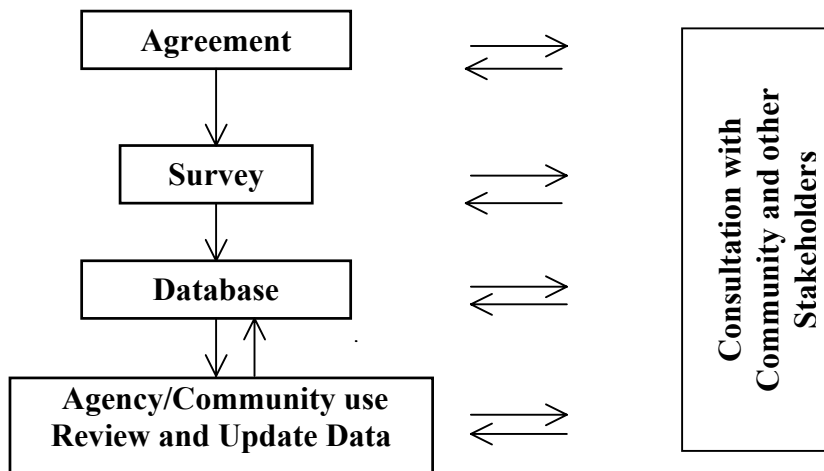
Surveys are seen as unnecessary, unpopular intrusive and of little value and this must be addressed. This problem may be tackled by:

- Collaborating with other agencies to reduce the number of surveys;
- Being clear about the purpose and how it will assist the stakeholder;
- Critically and rigorously reviewing the information requirements
- Consulting with all stakeholders; and
- Establishing protocols for information release to the community and other parties.

## A futuristic information model

A model that will address many of these problems consists of four steps:

1. Agencies agree that information is to be gathered including:
  - The type of information;
  - The format of the survey; and
  - The standards for information gathering and interpretation.
2. Initial survey and interpretation of data is undertaken.
3. Central database created with mechanisms for appropriate data sharing is created.
4. Agencies/communities use and regularly review and update data and refer data to central database.



**Figure 2:** Information Model

## Information Management in South Australia

**Craig Steel**

**Environmental Health Management, Department of Human Services**

South Australia has Environmental Health Management Plans which are an initiative promoted by the SA Public and Environmental Health Council. The plans are modelled on an Australian Institute of Environmental Health endorsed policy document. The principle behind the plans is that data collection should only occur in conjunction with community service to benefit the community.

### Where to start

Most Aboriginal EH issues are well known and documented. It is therefore important to ensure that data collection is necessary, appropriate and serves a purpose. There are plenty of places to start service provision that facilitate data collection.

## **Information Management in Western Australia**

**Peta Williams**

**Office of Aboriginal Health, Health Department of WA**

Over the last 6 to 7 years a number of surveys have been conducted including:

- ATSIIC housing and infrastructure survey 1992;
- Health Department of WA 1994/95; and
- Aboriginal Affairs – community profiles.

Discrepancies in the results obtained and duplication of data were noted in the various surveys. As a result, the EH Needs Coordination Committee was established with the commitment of:

- ATSIIC;
- Health Department of WA;
- Commonwealth Health and Family Services Department;
- Aboriginal Affairs; and
- WA Municipal Association.

A working group was established by the EH needs Coordination Committee with the task of coming up with a program that would provide:

- A joint survey for all parties;
- Reliable and consistent results;
- Minimal duplication of data; and
- Fulfilment of the needs of the various stakeholders.

Each agency involved contributed \$50 000 towards the survey. The survey required informed consent (individual Councils and householders) and the data was collected using Council EHOs and AEHWs. Data are due for release shortly.

## **Information Management in the Northern Territory**

**Janine Tardrew**

**Aboriginal Health Strategy Unit, Territory Health Services**

Information is limited, uncoordinated and difficult to access. There are historical reports, surveys of limited scope; and some community profiles. There is a Community Information Access System (CIAS) covering 80 communities and giving information about structure and limited infrastructure detail.

### **Current issues and problems**

ATSIIC Regional Councils and the Indigenous Housing Authority (IHANT) need information in order to efficiently plan the distribution of limited resources. There has been the development of National Housing Performance Indicators and subsequent requirements to report against these indicators.

Health Ministers also have performance indicators that include some measures of Environmental Health performance. Some Health Departments across Australia use performance measures that require indicators of environmental health performance. A limited number of validated environmental health indicators are available. The development of environmental health indicators is being pursued by the National Environmental Health Forum.

### **Current programs and initiatives**

There is a pilot of Environmental Health Maintenance Systems (EHMS) survey involving five communities. This has included household surveys.

New environmental health survey forms are being developed to link with:

- 1998 ATSI Housing Infrastructure Needs Survey (HINS);
- National Performance Indicators Housing & Health; and
- Community Information Access System database.

The survey forms are intended to increase accessibility of information.

### ***Questions raised by information gathering***

Is there a need for National Environmental Health Performance Indicators?  
In making information more accessible, how do we maintain confidentiality?

## **Queensland Perspective**

**Jim Dodds**

**Environmental Health Unit, Queensland Health, Brisbane**

There is no formalised data collection in Queensland.

The Health Information Centre has collected information, and some reports have been produced. In the past, collection of data has followed the formula of “*survey without service*”.

## Workshop Session Summary

### ‘Community Environmental Health Information and Health Promotion’

These recommendations are compiled from the suggestions of the workshop groups.

Issues	Strategies
Purpose of Health Information	<ul style="list-style-type: none"> <li>• The issue of community environmental health education should be managed with a whole of Government approach.</li> <li>• Indicators should be developed that enable the measurement of EH risk.</li> <li>• The cost of a survey should be measured against the cost of the potential health outcomes.</li> </ul>
Performance indicators	<ul style="list-style-type: none"> <li>• Ethical screenings of surveys is vital before surveys are started.</li> <li>• The development of performance indicators will need to involve innovative approaches.</li> <li>• The NEHF should advocate and develop EH Indicators linked to general health gains</li> </ul>
Survey information and process	<ul style="list-style-type: none"> <li>• Surveys must be designed with a well defined scope.</li> <li>• The survey process should be relevant and appropriate, involve adequate consultation, and respect ownership of data and confidentiality. The definitions and standards should be developed by the NEHF.</li> <li>• A streamlined, consistent process with national standards is important to avoid duplication and waste when collecting health information.</li> <li>• Surveys should only be undertaken in conjunction with service delivery and when of value to the community. For example, surveys should impart skills or provide a needed service: service may be broader than <i>ad hoc</i> repair but must be an outcome from the survey.</li> <li>• New surveys should utilise existing data and ensure the</li> </ul>

- integrity of data and information collected.
  - The level of information required by the community to make informed decisions about needs and priorities should be established.
  - Community consent, participation and feedback is essential.
  - Consideration of any conflicts of interests involving family and cultural matters is important.
  - EHW training should include training in survey and data base design and advocate a holistic approach to information collection.
- Confidentiality and Ownership
- Signed consent is vital from both the community and individuals.
  - Government agencies have a right to access information as well as provide access to the results to the community.
  - Data may need to be aggregated to prevent the identification of individuals or, in sensitive circumstances, of communities.
- National standards
- National indicators are required to assist in monitoring the effectiveness of survey programs.
  - All levels of Government should be involved in developing and implementing national standards.
- Methodology and Feedback
- Action plans and strategies should be available before starting a survey program.
  - Feedback is essential and should be available in an understandable format
  - Surveys should be based on practical outcomes rather than only on generating statistics.
- Indigenous worker involvement/support
- The role and work of the Environmental Health worker in health information gathering and health promotion needs to be recognised.

Baseline surveys and no survey without service

- Consultation is required to identify the community's needs.
- Before a survey is started, funds should be allocated for upgrades of health hardware.
- Encouragement and positive endorsements could be offered for participation in a survey.

Health Promotion

- There is a need for a more coordinated approach to health promotion programs.
- The community should be involved in all stages of a program: development, delivery, evaluation, and feedback.
- Evaluation of a health program and resulting impacts should be compulsory and results must be reported back to the community.
- Efforts should be made to raise the profile of health promotion
- Health promotion programs should encourage cross community mentoring.
- EHWs and other field officers should be utilised to promote interagency discussion of EH issues and run school - based campaigns.
- Clean up days could be used to promote messages at the community level
- Programs should consider the health promotion needs of people on the ground and availability of practical resources on the ground.

## **6. A Public and Environmental Health Perspective:**

### **The Dynamics of Maori Health in Aotearoa, New Zealand.**

**Pita Paul**  
**Health Protection**  
**Auckland Healthcare Services**

To live full and healthy lives people need safe, supportive, and sustainable physical and social environments, as well as adequate protection against preventable diseases and health hazards. Public health aims to prevent or minimise illness and disease by attempting to remove or reduce the risks to the health of a population.

By world standards, New Zealand has a comparatively high standard of health. However, some major health problems and disparities do exist. There is considerable potential for improving the health of New Zealanders, and an urgent need to do so. There is a special need to improve Maori health. With a few notable exceptions such as cancer of the large bowel, melanoma, and suicide, Maori have a lower health status than non-Maori.

For several decades comparisons between Maori and non-Maori have been used to measure progress in Maori health and demonstrate significant disparities. Valuable data have been obtained but comparisons have been more useful in describing the incidence of illness or relative mortality rates, rather than in measuring progress over time, identifying new challenges to health, or assessing the capacity of Maori to recover or adjust even in adverse environmental, social and economic conditions.

I want to describe just two of a number of approaches to explore the dynamics of Maori health. The first describes demographic and epidemiological transitions; the second focuses less on disease and sickness and more on links between health and other social, cultural, economic, and environmental factors, or what I call the Maori development approach.

#### ***Maori Health Transitions***

The cornerstone of quality and culturally appropriate health care services for Maori people is embedded in the Treaty of Waitangi, signed in 1840. It was a pact drawn up between the British Crown and the Confederated tribal chiefs of New Zealand, calling for the Crown and its agencies to be pro-active in protecting and preserving the unique characteristics of Maori people and their culture, in return for the chiefs ceding governorship of the Dominion of New Zealand to the Crown.

In 1894, the Maori population had reached such a low ebb that extinction was predicted. In 1896, it was estimated that there were only 42,650 Maori (down from 120,000 in 1840) and predictions of a 'dying race' appeared to be accurate.

A series of epidemics, notably influenza, measles, whooping cough, and typhoid fever had taken their toll, along with high mortality rates in childhood, and the land wars.

The turning point probably came in 1900 when the Department of Public Health was established and a new form of Maori leadership emerged. Maui Pomare, Te Rangi Hiroa, Tutere Wirepa and Apirana Ngata were instrumental in convincing Maori communities to improve the quality of water supplies and adopt hygienic sanitation measures. Working closely with Maori councils, they acted as links between public health policies and Maori communities, encouraging better housing, improved nutrition, and vaccination against diseases such as smallpox and typhoid. Slowly, and then after 1940, quite rapidly, the population grew. Reduced mortality and large families laid to rest any notions of a dying race. By 1991, there were more than 511,000 persons of Maori descent living in New Zealand.

Two other major demographic shifts also occurred. First, fertility rates, which were generally high at least until 1962, declined. Before the 1960s each Maori woman could expect to have six or seven children on average. Then rates decreased dramatically until by 1990 Maori fertility rates were as low as 2.2. The change in fertility rates was an expression of enhanced contraceptive availability and changing socioeconomic status.

The second demographic shift was associated with the rapid urbanisation which took place after World War Two. Previously a predominantly rural population, by 1986 over 80 percent of Maori were living in urban areas. Although some have returned to rural areas since 1986, Maori remain essentially an urban population with over 20 percent living in the greater metropolitan Auckland region.

This century, following urbanisation, new lifestyle factors brought additional health risks, no less significant but more likely to lead to chronic health rather than diminished life expectancy or excessive mortality. Reduced family support, alcohol and drug misuse, smoking, poor diets, high risk leisure pursuits, inadequate preparation for parenthood, persistent unemployment, and sub-standard housing have become the new major health risk factors.

### *Positive Maori Development*

In 1984, the Hui Taumata (Conference) was held to consider Maori economic development. A decade of Maori development was launched at this hui. An overriding theme was the notion of positive development based on the economic, social, and cultural development of iwi (tribes). For too long, the hui maintained, Maori had assumed a dependency relationship with the State, and in the process had lost independence and cultural initiative. The gathering recommended a greater focus on Maori self determination utilising tribal structures.

Several themes emerged at the Hui Taumata. Self determination and tribal authority were closely linked to economic self sufficiency, wise management of natural resources, the delivery of social services by Maori, and a greater emphasis on Maori cultural values, including Maori language.

Two aspects of Maori development had particular significance for Maori health. First, the link between health and the position of Maori, was highlighted.

Maori social, economic, and political prestige was felt to be associated with their health status and, just as alienation of land had been accompanied by depopulation, so cultural and political alienation were thought to be the precursors of poor health and increased mortality.

Second, positive Maori development integrated social, cultural, and economic dimensions. Whereas, sectoral development encouraged parallel and often independent attention to health, employment, welfare, housing and incomes, the preferred Maori development approach was an integrated one that recognised linkages and launched comprehensive programs. The significant point is that health cannot be separated from other social and economic considerations. Moreover, the Maori development model underlined the direct and indirect associations between people, the environment, political power, economic standing and social wellbeing. Self determination concerned not only the rights of tribes, but also empowerment as a prerequisite for good health.

During the decade of Maori development from 1984, Maori health was reconstructed within a Maori context. Maori health perspectives were widely accepted and tribal delivery mechanisms were advocated as a reliable method of accessing Maori networks. Tribal authorities began to include health as a legitimate focus in tribal development plans, eventually regarding it as equal to other issues such as land, the environment, and the economy.

### *Environmental Protection*

Environmental protection was a further source of concern to Maori. Through the legislative process Maori successfully challenged projects which would have increased environmental pollution. At the heart of the matter was a fear that tribal health status, already precarious, would be jeopardised even further if food sources were contaminated from sewage or industrial waste. Moreover, no Maori were convinced that pre-treatment of waste would be sufficient to prevent a degree of pollution to overcome spiritual desecration.

Cultural pollution was regarded as being damaging to health as toxic pollutants. Pipelines and waste out falls offended Maori sensibilities, especially when an impure mass from one source was fed into a separate, clean, and spiritually significant place. Bodies of water each have their own life principle, in equilibrium with the life principle of people. Water, according to Maori views, is too important to health to be used as a conduit for waste material. Land based disposal is preferable.

Maori were simply restating what should be common sense. A polluted environment is just as incompatible with good health as a lack of political power or a depressed economy. Further more, little is to be gained from simply shifting the source of pollution to somewhere else.

Since the Hui Taumata, progress in health standards has been made in several areas. Unemployment however remains a major concern. The links between health and unemployment are complex and two way, but unemployment has effects on mental health and cardiovascular problems, both areas where Maori are over-represented.

### *The Development of Maori EHOs and HPOs.*

In response to the wider workforce goals of the Ministry of Health, a framework for Maori health protection and environmental health development was seen as a highly significant innovation in Maori public health development. Consultation with Maori, and current strategic development undertaken by Auckland Healthcare Services Ltd., determined that there is a need to respond to these issues in a way that adequately services Maori, both now and in the future. As health protection is a relatively new concept, it is now timely for Maori to develop their own expertise to provide solutions, and to gain a stake in this new technology.

There is a serious shortage of suitably qualified Maori Health Protection Officers and Environmental Health Officers in the New Zealand workforce, less than 2% are Maori.

Auckland Healthcare have produced fast track strategies to recruit and train Maori in this area. There are currently nine students at various levels of the Applied Science tertiary training program who will have graduated by 2000. Longer-term strategies are being designed to incorporate environmental learning at secondary school level. Pivotal to this type of learning is the desire to equip health professionals with a Maori dynamic as well as a sound understanding of western science.

### *Conclusions*

In the Maori development model, the Maori vitality is seen as a function of the total and physical environment. Health is one measure of that dynamic but cannot be assessed in personal terms alone. Some balance is required between individuals and groups; between people and their circumstances, and between societies and their surroundings. Health is a feature of cultural life.

The decade of Maori development successfully showed that Maori health was not only related to dissemination of health information and the provision of health services, but that it was also a reflection of mana (Maori self-determination). In this respect, the resolution of Treaty of Waitangi grievances, the maximisation of resources such as land, energy, minerals, and forests, and the desire and active participation of Maori to formulate and implement joint policy initiatives, were seen to be crucial to generating the enhancement of Maori health development.

Kia ora Koutou katoa.