The National Environmental Health Strategy
Implementation Plan

National Environmental Health Strategy Implementation Plan
enHealth Council
2000
The enHealth Council brings together top Environmental Health officials at the Federal and State/Territory level along with representation from the Australian Institute of Environmental Health, the environment and public health sectors, the Indigenous community and the wider community. The Council has responsibility for providing national leadership, implementation of the National Environmental Health Strategy, forging partnerships with key players, and the development and coordination of advice on environmental health matters at a national level. The advice development process is strongly based on collaboration and consultation.

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# LIST OF ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
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<tbody>
<tr>
<td>AHMAC</td>
<td>Australian Health Ministers Advisory Council</td>
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<td>AIEH</td>
<td>Australian Institute of Environmental Health</td>
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<td>ALGA</td>
<td>Australian Local Government Association</td>
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<td>ANTA</td>
<td>Australian National Training Authority</td>
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<td>ANZECC</td>
<td>Australian and New Zealand Environment and Conservation Council</td>
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<td>ANZECC</td>
<td>New Zealand Environment and Conservation Council</td>
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<td>ANZFA</td>
<td>Australia New Zealand Food Authority</td>
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<td>ARC</td>
<td>Australian Research Council</td>
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<td>ARMCAzn</td>
<td>Agricultural and Resource Management Council of Australia and New Zealand</td>
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<tr>
<td>ATSIC</td>
<td>Aboriginal and Torres Strait Islander Commission</td>
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<td>CDNANZ</td>
<td>Communicable Diseases Network Australia New Zealand</td>
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<td>CHINS</td>
<td>Community Health Infrastructure National Survey</td>
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<td>CPD</td>
<td>Continuing Professional Development</td>
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<td>CRC</td>
<td>Cooperative Research Centre</td>
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<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation</td>
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<td>EHW</td>
<td>Environmental Health Worker</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>ETS</td>
<td>Environmental Tobacco Smoke</td>
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<td>HACCP</td>
<td>Hazard Analysis Critical Control Point</td>
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<td>HIA</td>
<td>Health Impact Assessment</td>
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<td>NACCHO</td>
<td>National Aboriginal Community Controlled Health Organisation</td>
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<td>NEHAP</td>
<td>National Environmental Health Action Plan</td>
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<td>NEHF</td>
<td>National Environmental Health Forum</td>
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<td>NEHS</td>
<td>National Environmental Health Strategy</td>
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<td>NEPC</td>
<td>National Environment Protection Council</td>
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<td>NEPM</td>
<td>National Environment Protection Measure</td>
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<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
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<td>NOHSC</td>
<td>National Occupational Health and Safety Commission</td>
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<td>National Public Health Partnership Group</td>
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<td>NPI</td>
<td>National Pollution Inventory</td>
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<td>OATSIH</td>
<td>Office for Aboriginal and Torres Strait Islander Health</td>
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<td>PHERP</td>
<td>Public Health Education and Research Program</td>
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<td>SRDC</td>
<td>Strategic Research Development Committee</td>
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<td>TGA</td>
<td>Therapeutic Goods Administration</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WSAA</td>
<td>Water Services Association of Australia</td>
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1. Introduction

Implementing the National Environmental Health Strategy
The National Environmental Health Strategy (NEHS) provides strategic direction for environmental health management across the country. Given the diverse range of stakeholders influencing environmental health, the success of the Strategy rests on these stakeholders recognising their role and embracing new and actively collaborative approaches to environmental health management.

To help achieve this the NEHS established the enHealth Council, a national body with responsibility for its implementation (membership and terms of reference are contained in Note One). This National Public Health Partnership sub-committee will provide national leadership and a focus for cooperation on all environmental health issues. Improving environmental health in Australia requires a well planned and sustained team effort from all partners. The Council will provide the leadership necessary to achieve this and will actively pursue strategic partnerships across the wide range of stakeholders.

Only through the development of effective environmental health systems and ongoing contact, coordination and cooperation amongst stakeholders can the fundamental environmental health goals contained in the Environmental Health Charter, which are the ultimate focus of the Strategy, be achieved and sustained.

This NEHS Implementation Plan aims primarily to develop effective and efficient environmental health systems and to improve the use of existing resources directed at environmental health management.

The Plan is based on the systematic assessment of each of the priority issues identified by the NEHS. This assessment method could equally apply to a wider range of environmental health issues and it is hoped that environmental health managers will find this document useful in developing action plans for their own particular areas.

Plan Design
The Strategy provides the background, discussion and policy direction for each of the priority issues included in the Implementation Plan. The Plan builds on the direction provided by the Strategy, identifying specific ‘Needs’ for each of the issues.

The development process used was as follows:

What is the challenge?

Why is it a challenge?

What is being done?

What more can be done?

NEEDS
Priority Issues

Public comment on the discussion paper, Environmental Health in Australia, Towards a National Strategy and subsequent development of the NEHS, identified a number of key environmental health issues. For the purposes of this Plan these issues have been classified into three domains; environmental health justice, environmental health systems, and the human-environment interface.

This is only a partial listing of the actionable issues identified in the Strategy, with the thirteen identified priorities able to be reasonably accommodated in the first Implementation Plan.

For the purposes of this first Implementation Plan, Action Plans have been developed for the issues within the domains of Environmental Health Justice and Environmental Health Systems. These domains require initial development at a national level. For these issues the enHealth Council is identified as Lead Agency for the Action Plans.

The domain of the Human-Environment Interface can be addressed presently across a range of jurisdictions from federal to local. It is recommended that jurisdictions develop Action Plans as relevant to address the ‘Needs’ identified in this domain.

Action Plans

As with the identification of the ‘Needs’, the development of Action Plans has followed a set format. It is recommended this format be used by jurisdictions developing Action Plans for the Human-Environment Interface.

<table>
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<tr>
<th>Issue:</th>
<th>Challenge:</th>
<th>Need:</th>
<th>Action:</th>
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ACTION OUTPUT LEAD PARTNERS

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- Issue: the environmental health issues being addressed, for example, Indigenous Environmental Health.
- Challenge: the challenge for environmental health management in regard to the Issue.
- Need: what is required to effectively respond to a Challenge.
- Action: the task or series of tasks that must be undertaken to meet each Need.
• Output: the product of an Action.
• Lead: the agency with primary responsibility for undertaking an Action.
• Partners: the agencies with which the Lead Agency will need to collaborate in order to successfully carry out an action.

Evaluation
The Implementation Plan will undergo an open and transparent review every three years. Stakeholders involved in any alterations arising from the review (for example alterations to Action Plans or the addition of new issues) will be formally consulted.

A review will evaluate if:
• the Actions contribute to addressing the Needs;
• the Needs contribute to meeting the Challenges; and
• the Challenges have followed the strategic direction given in the National Environmental Health Strategy?

A review will also evaluate the format and approach of the Implementation Plan.

Midterm (one and a half yearly) progress reviews will also be held to assess progress towards addressing Needs and where necessary minor alterations will be made to Action Plans.

Note One
The enHealth Council
Membership
The enHealth Council has an independent Chair and is composed of representatives from the Commonwealth, State and Territory Governments, the Australian Institute of Environmental Health, the environment protection sector, public health and community sectors and the Indigenous Australian community.

Terms of Reference
• Provide national leadership on environmental health issues by:
  - coordinating and facilitating environmental health policies and programs
  - establishing strategic partnerships between environmental health stakeholders
  - setting priorities for national environmental health policies and programs
  - providing an open consultative system for policy development
  - facilitating cost effective use of environmental health resources
• Drive the implementation of the National Environmental Health Strategy
• Advise the Commonwealth, States and Territories, Local government and other stakeholders on national environmental health issues.
• Coordinate the development of environmental health action plans at local, state and national levels.
• Promote and develop model environmental health legislation, standards, codes of practice, guidelines and publications.
• Strengthen the national capacity to meet current and emerging environmental health challenges.
• Provide a pivotal link between international fora and environmental health stakeholders in Australia and strengthening Australia’s collaboration with countries in the Asia-Pacific region.
Australians are entitled to live in a safe and healthy environment.

Developed as a key component of the NEHS, and established under a set of Guiding Principles, the Australian Charter for Environmental Health identifies the basic environmental health entitlements and responsibilities of all Australians.

Adherence to these principles and striving to achieve the Charter provide the underpinning philosophy for this Implementation Plan.

Guiding Principles of the Australian Charter for Environmental Health

- **Protection of Human Health**
  Protect human health by identifying threats posed by environmental hazards as early as possible and by introducing appropriate safeguards. Ideally, these should be sustainable and cost-effective.

- **Interrelationships between Economics, Health and Environment**
  Economic development, human health and environmental protection are inextricably linked. Economic development should proceed hand-in-hand with measures to protect the environment and promote high standards of environmental health.

- **Sustainable Development**
  Future human health requires that development meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987).

- **Local and Global Interface**
  Changes to local and global environments are interactive and have a significant ability to impact on human health. Environmental health programs need to take into account that global environment protection requires local action and that local actions impact globally.

- **Partnership**
  Planning, implementing and evaluating environmental health programs requires that all involved work together: the general public, Commonwealth, Local, State and Territory governments, industry and business, non-government agencies, and the health and scientific communities. This cooperation should extend to include policies and programs that are not environmental health specific, but which have an environmental health component or impact.

- **Risk Based Management**
  Risk assessment and management are tools used to address existing or potential environmental threats to human health and the adverse effects on people, communities and economic interests. It includes assessing the likely impact of these threats and the development and implementation of strategies for their prevention, minimisation or removal.

- **Evidence-Based decisions**
  Decisions and deliberations must be based on a careful analysis of available scientific evidence about potential environmental risks to human health. However, absence of conclusive evidence is not an excuse for inaction.

- **Efficiency**
  Improving the delivery of environmental health services, encouraging innovation, and careful examination of how environmental health services are provided – including the relative costs and benefits of each alternative – are important considerations for optimal environmental health outcomes.

- **Equity**
  Socioeconomic status and other social factors such as access to community networks, family support and education, are key determinants of health. Providing all Australians with access to appropriate environmental health services will help reduce the gaps in health status between different population groups.
**Australian Charter for Environmental Health**

**Individuals and Communities**

**Entitlements**

Individuals and communities are entitled to live in a safe and healthy environment. This includes:

- Safe and adequate supplies of water
- Safe and nutritious food
- Safe and adequate sanitation
- Clean air
- Safe and sustainable shelter
- Urban and housing designs that promote environmental health
- Environmental management systems that protect environmental health
- Safe occupational environments and work practices
- Safe and adequate recreational facilities, including water
- Information about environmental health issues
- Being consulted on plans, decisions, and activities likely to affect both the environment and health, and to open and transparent decision making on these issues.

**Responsibilities**

Individuals and communities are responsible for:

- Ensuring their own actions contribute to the protection of the environment in the interests of their own health and the health of others
- Participating in decision-making processes on matters likely to affect both the environment and health.
- Ensuring its environmental health services are delivered to a high standard.

---

**Business and Industry**

**Entitlements**

Business and industry are entitled to:

- Management systems (legislative, regulatory and other) that:
  - promote health and the environment while recognising business interests
  - recognise industry capacity for self-management in a co-regulatory environment
  - provide access to appropriate support, advice and information on environmental health
  - provide information on environmental hazards
- Consultation on environmental health decisions that affect business
- Guidelines and standards which:
  - place a reasonable regulatory burden on industry
  - support industry capacity to manage environmental health
  - are developed transparently
  - are consistently and fairly applied.

**Responsibilities**

Business and industry are responsible for ensuring that they:

- Use opportunities and practices that minimise adverse impacts on human health
- Seek and use alternatives to hazardous agents and practices wherever possible
- Reduce levels of pollution and waste wherever possible
- Maintain a high level of occupational health and safety
- Ensure consumer and product safety
- Have a contemporary knowledge of the potential environmental health risks arising from their processes
- Recognise that they are an integral part of the community and therefore have community obligations.
Government Responsibilities

While the charter recognises the responsibilities of individuals, communities and business, government has an obligation to make a major contribution to progressing this charter. Government has been and remains responsible for most of the investment in the infrastructure that underpins the delivery of environmental health services.

Government at all levels is responsible for providing direction and leadership in environmental health policy and management through:

• Setting clear management standards that are consistent across governments

• Ensuring effective mechanisms for linkages between agencies to achieve improved environmental health outcomes

• Ensuring appropriate environmental health infrastructure and services are available and effective

• Ensuring seamless transition between jurisdictions and agencies, especially in management of environment and environmental health issues

• Ensuring that planning and regulatory decisions recognise that the integrity and sustainability of the ecosystem must be maintained

• Transparent and consultative decision-making processes

• Development of consistent legislation, standards, and approaches to enforcement

• Planning, preparing and responding to environmental health challenges

• Aiding community involvement

• Facilitating investment in strategic environmental health research.
3. Environmental Health Justice

Good environmental health management aims to create and maintain environments which are conducive to good health and well-being, it is by its nature equitable since it depends on population-based strategies.

However, two major challenges to equitable environmental health management exist. Firstly we must ensure access to safe and healthy environments for rural and remote Indigenous Australian communities. Secondly, we must ensure that we safeguard the quality of environments for the health of future generations.

These two challenges comprise the environmental health justice component of this Implementation Plan.

3.1 Indigenous Environmental Health

Challenge: Improve the health status of Indigenous Australian communities through the development of appropriate environmental health standards commensurate with the wider Australian population.

Introduction

Good public health is based on the environmental health activities and infrastructure (services) which protect us from the hazards in our environment.

Poor environmental health in many remote Indigenous Australian communities is one of the main factors responsible for the poor public health outcomes frequently associated with these communities. Without environmental health conditions conducive to good health, such as access to safe food, clean water and adequate sanitation, all other public health programs and clinical interventions will continue to be seriously undermined.

Improving and maintaining basic environmental health conditions in Indigenous Australian communities, particularly in remote areas, is central to securing better health outcomes. There needs to be legislative and administrative coverage for public health and environmental health of all Indigenous Australian communities in the same way they apply to the non-Indigenous community.

Furthermore, improvements in environmental health infrastructure and living standards can only be effectively achieved by collaboration with all those working across the different areas of health and social and physical environments.

Overview of Current Activities

A number of government and non-government agencies are involved in providing environmental health services in Indigenous Australian communities, in particular the following agencies:

- The Aboriginal and Torres Strait Islander Commission (ATSIC)
- Office for Aboriginal and Torres Strait Islander Health, Commonwealth Department of Health and Aged Care (OATSIH)
- National Aboriginal Community Controlled Health Organisation (NACCHO) and NACCHO Affiliates
- State and Territory government agencies.
- Local Community Councils
- Local government

Issues

Collaboration

Given the wide range of stakeholders influencing Indigenous environmental health conditions, securing improvements in living standards will be best achieved where there is effective collaboration with Indigenous communities, Indigenous people and the key agencies. It is necessary to establish effective networks that enable the community to be involved in the identification of environmental health concerns and in decision making processes with key agencies.

In the first instance it is necessary to identify the organisations, agencies and communities that are responsible for the management and improvement of Indigenous environmental health. It is recognised within OATSIH, ATSIC and the Population Health Division of
the Commonwealth Department of Health & Aged Care that improvements in environmental health infrastructure and living standards can only be effectively achieved by collaboration with all those working across the different sectors.

**Need:**

Determine and clarify the roles and responsibilities of the agencies with responsibility for the management and improvement of Indigenous environmental health and develop an agreed framework for action.

**Environmental Health Workers in Indigenous Communities**

There are a wide range of agencies and communities involved in securing improvements in environmental health conditions and the public health outcomes which flow from these improvements. This broader ‘environmental health workforce’ works directly with Indigenous Australian communities and other agencies to provide the services and maintain the infrastructure that delivers improved environmental health conditions.

In order to sustain a healthy environment for Indigenous Australian communities there needs to be adequate support and development of the workforce which manages this infrastructure.

Environmental Health Workers play a central role in Indigenous Australian communities and need to be well trained, properly supported and given adequate recognition by their peers and community if they are to be fully effective. More specifically, clearly defining roles and tasks, providing support through on-the-job training, creating career paths, providing effective means for concerns to be heard and promoting partnerships are a few of the measures that Environmental Health Workers in Indigenous Australian communities have identified as being important.

**Need:**

Consensus on national standards for education and training of Environmental Health Workers in Indigenous Australian communities to enhance their effectiveness and career opportunities.

**Representation**

As previously mentioned, for Environmental Health Workers in Indigenous Australian communities to be fully effective they need to be engaged with the various governments and agencies that manage Indigenous environmental health. More specifically, they need to have representation that can adequately present their concerns and interests at the key forums managing Indigenous environmental health.

It is proposed that the enHealth Council establish an Indigenous Environmental Health Forum to provide a mechanism for Environmental Health Workers to be involved directly in providing advice on issues of national significance in Indigenous environmental health.

**Need:**

A mechanism for Environmental Health Workers in Indigenous Australian communities to participate in deliberations and policy decision making of the enHealth Council.
**Indigenous Environmental Health Action Plan**

**Issue:** Indigenous Environmental Health

**Challenge:** Improve the health status of Indigenous Australian communities through the development of appropriate environmental health standards commensurate with the wider Australian population.

**Need:** Determine and clarify the roles and responsibilities of the agencies with responsibility for the management and improvement of Indigenous Environmental Health and develop an agreed framework for action.

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<tr>
<th>ACTION</th>
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<tbody>
<tr>
<td>Identify; the key agencies who manage Indigenous environmental health, their roles and responsibilities, and activities they undertake in Indigenous environmental health.</td>
<td>Map of agencies, roles, responsibilities and activities in Indigenous environmental health.</td>
<td>enHealth Council</td>
<td>Indigenous communities, ATSIC, NACCHO and affiliates, OATSIH Local, State and Territory government, Commonwealth Dept of Family &amp; Community Services, Industry</td>
</tr>
<tr>
<td>Identify the application of legislation and standards in Indigenous environmental health and recommend appropriate action.</td>
<td>Report outlining the application of legislation and standards and recommended actions</td>
<td>enHealth Council</td>
<td>Indigenous communities, ATSIC, NACCHO and affiliates, OATSIH Local, State and Territory government, Commonwealth Dept of Family &amp; Community Services, Industry</td>
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<tr>
<td>Using the above map, identify gaps, duplications/overlaps and opportunities for coordination of activities between key agencies and the Indigenous Australian communities.</td>
<td>Report outlining gaps and duplications and strategies to overcome those problems. Opportunities for coordinating activities.</td>
<td>enHealth Council</td>
<td>Indigenous communities, ATSIC, NACCHO and affiliates, OATSIH Local, State and Territory government, Commonwealth Dept of Family &amp; Community Services, Industry</td>
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<tr>
<td>Negotiate and develop an agreed framework regarding the management of Indigenous environmental health.</td>
<td>Framework document developed and incorporated as part of a national plan to be considered by the National Public Health Partnership Group (NPHPG) and Australian Health Ministers Advisory Council (AHMAC).</td>
<td>enHealth Council</td>
<td>ATSIC, NACCHO and affiliates, OATSIH Local, State and Territory government, Commonwealth Dept of Family &amp; Community Services, Industry</td>
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</table>
**Need:** Consensus on national standards for education and training of Environmental Health Workers in Indigenous Australian communities to enhance their effectiveness and career opportunities.

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<tr>
<td>Review the scope of work undertaken in Indigenous environmental health by Environmental Health Workers (EHW).</td>
<td>Report outlining the scope of work in Indigenous environmental health by EHWs.</td>
<td>enHealth Council through the National Indigenous Environmental Health Forum. Local, State and Territory governments, Academia.</td>
<td>Environmental Health Workers, ATSIC NACCHO and affiliates, OATSIH,</td>
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<tr>
<td>Scope the training and classification systems across jurisdictions.</td>
<td>Report outlining training and classification systems across jurisdictions.</td>
<td>enHealth Council through the National Indigenous Environmental Health Forum. Local, State and Territory governments, Academia.</td>
<td>Environmental Health Workers, ATSIC NACCHO and affiliates, OATSIH, Local, State and Territory</td>
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<tr>
<td>Identify articulation pathways for training programs (that are currently available) and position EHW training with the National Training Framework overseen by Australian National Training Authority (ANTA).</td>
<td>Model training pathway within the National Training Framework</td>
<td>enHealth Council</td>
<td>Environmental Health Workers, ATSIC NACCHO and affiliates, OATSIH, Local, State and Territory governments, Academia, ANTA.</td>
</tr>
<tr>
<td>Advance progress of particular competencies for Indigenous environmental health.</td>
<td>Uptake of model training pathway.</td>
<td>enHealth Council</td>
<td>Environmental Health Workers, ATSIC NACCHO and affiliates, OATSIH, Local, State and Territory governments, Academia, ANTA.</td>
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</table>
**Need:** A mechanism for Environmental Health Workers in Indigenous Australian communities to participate in deliberations and policy decision making of the enHealth Council.

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<tr>
<td>Establish Terms of Reference, Workplan and reporting structure.</td>
<td>Workplan and reporting structure.</td>
<td>enHealth Council through the National Indigenous Environmental Health Forum</td>
<td>ATSIC, NACCHO and affiliates, OATSIH, Local, State and Territory Government. Environmental health workers</td>
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</table>
3.2 Sustainable Development

**Challenge:** Maintain and improve the health of present and future generations through the integration of sustainable development principles and environmental health practice.

**Introduction**

Good health and wellbeing are linked with the state of the environment. As our lifestyles, consumption patterns, development and the continuous growth of settlements continue to degrade the environment, new hazards and diseases will emerge.

Sustainable development was defined by the World Commission on Environment and Development in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The WHO Commission on Health and Environment (1992) has stated that no development can be called sustainable if it inflicts damage to human health and well-being.

Sustainable development seeks to maintain and improve the environment through addressing a range of physical, social and economic factors. The principles of sustainable development can be used in environmental health management to address some of the causes of environmental health hazards and enhance and promote health.

**Overview of Current Activities**

### International

- **WHO (Europe) National Environmental Health Action Plans (NEHAP):** plans that arrange collaboration between communities and a range of government sectors to improve environmental impacts on health at a national level.
- **WHO (Europe) Local Environmental Health Action Plans:** the second phase in the application of NEHAPs, implementing these plans at a local community level.

### Australia

- **Signatory to the Framework Convention on Climate Change and the Convention on Biological Diversity (Rio Summit, 1992).**
- **Endorsed the Rio Declaration and the Forest Principles (Rio Summit, 1992).**
- **Adopted Agenda 21 - a 300 page plan to guide nations towards achieving sustainable development in the 21st century (Rio Summit, 1992).**
- **National Strategy for Ecologically Sustainable Development, 1992.**
- **From Principles to Practice- an Action Plan for Integrating Sustainable Development Principles and Environmental Health Practice (Commonwealth Department of Health and Aged Care, 2000).**
- **Local Agenda 21: local governments, regional organisations and communities implementation of sustainable development at a local level.**
- **Municipal Health Plans: local government initiated health plans.**
- **Healthy Cities Policy: collaboration between various parts of government and the community in order to address environmental health and community development problems.**
Issues

National leadership

Environmental health management and sustainable development principles share many commonalities, particularly the need for coordinated activity across a range of sectors at all levels of government. The integration of sustainable development principles and environmental health practice can be best addressed under the leadership of a national agency representing a range of environmental health stakeholders and with a mandate for action from Australian health ministers. This agency would also enable Australia to represent itself internationally and regionally in environmental health and sustainable development matters.

Need:

National leadership for integrating sustainable development principles and environmental health practice.

The enHealth Council is ideally placed to fulfil the requirement for national leadership in this area and has accepted the responsibility to do so.

Policy

Policy sets a framework for action. For sustainable development principles and environmental health practice to be integrated their interconnection must be recognised within the policies of sectors performing environmental health and sustainable development work, particularly health and environmental protection departments. These changes in policy changes must then be implemented.

National uniformity in the direction of policies and their subsequent implementation is crucial and best practice guidelines informing this process are needed. The enHealth Council as national leader of this issue will develop these guidelines. In the first instance the Commonwealth, State and Territory Environmental Health Units, members of the enHealth Council, are best placed to use these guidelines, leading their uptake by other relevant sectors.

Need:

- Guidelines informing best practice policy which integrates sustainable development practice and environmental health practice and its implementation.
- Development of best practice policy which integrates sustainable development practice and environmental health practice and implementation of this policy.

Awareness

As outlined in the Overview of Current Activities, some activity has already taken place which integrates principles of sustainable development and environmental health practice, particularly at the local government and community level. To support decisions made in the integration of sustainable development principles and environmental health, all sectors and the community need to be aware of alternative courses of action and the associated risks and benefits.

Need:

Promotion of outcomes from existing environmental health and sustainable development programs.

Support

Where initiative has been taken in integrating sustainable development and environmental health practice and success has been achieved, a system of recognition can be used to encourage and promote the benefits of such an approach. National recognition and endorsement provides a supportive environment for continued action.

Need:

A system of awards to recognise initiatives in integrating sustainable development principles and environmental health practice.

Guiding Principle

Sustainable development is an underpinning principle of the NEHS Implementation Plan (refer Section 2) and requires consideration in all Implementation Plan issues.
**Sustainable Development Action Plan**

**Issue:** Sustainable Development

**Challenge:** Maintain and improve the health of present and future generations through the integration of sustainable development principles and environmental health practice.

**Need:** National leadership for integrating sustainable development principles and environmental health practice.

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<tr>
<td>Promotion of the enHealth Council as the national lead agency for integrating sustainable development principles and environmental health practice to environmental health stakeholders.</td>
<td>Acceptance of the enHealth Council as national lead agency.</td>
<td>enHealth Council.</td>
<td>Environmental health stakeholders.</td>
</tr>
<tr>
<td>Identification of agencies where business is core to the integration of sustainable development principles and environmental health practice (nationally and internationally).</td>
<td>A map of agencies where business is core to the integration of sustainable development principles and environmental health practice (nationally and internationally).</td>
<td>enHealth Council.</td>
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</table>

**Need:** Guidelines informing best practice policy which integrates sustainable development principles and environmental health practice and its implementation.

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<tbody>
<tr>
<td>Develop and promote best practice guidelines.</td>
<td>Best practice policy and policy implementation plans development guidelines published.</td>
<td>enHealth Council</td>
<td>Commonwealth, State and Territory Environmental Health Units.</td>
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</tbody>
</table>
**Need:** Development of best practice policy which integrates sustainable development principles and environmental health practice and implementation of this policy.

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<tr>
<td>Commonwealth and State/Territory Environmental Health Units develop policy on the integration of sustainable development and environmental health practice.</td>
<td>Policy integrating the principles of sustainable development into the policy direction of Environmental Health Units in the Commonwealth, States and Territories.</td>
<td>• enHealth Council. • Commonwealth, State and Territory Environmental Health Units.</td>
<td></td>
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<tr>
<td>Commonwealth and State/Territory Environmental Health Units develop implementation plans to action policy on the integration of sustainable development and environmental health practice.</td>
<td>Implementation of policy demonstrating integration.</td>
<td>• enHealth Council • Commonwealth, State and Territory Environmental Health Units.</td>
<td></td>
</tr>
<tr>
<td>Promote the development and integration of policy.</td>
<td>Demonstration by enHealth Council membership that integration and implementation is achievable.</td>
<td>enHealth Council.</td>
<td>Sectors performing environmental health and sustainable development work, particularly health and environmental protection departments</td>
</tr>
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**Need:** Promotion of outcomes from existing environmental health and sustainable development programs.

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</table>
| Identify and review existing environmental health and sustainable development programs. | • List of existing environmental health and sustainable development programs.  
• Identification of key factors in | enHealth Council. | • Local government.  
• Agencies administering/协调ing environmental health and |
| Promote awareness of links between and means of achieving the integration of environmental health and sustainable development. | Information resource on environmental health and sustainable development programs and key factors in their success. | enHealth Council. | |

**Need:** A system of awards to recognise initiatives in integrating sustainable development principles and environmental health practice.

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<tbody>
<tr>
<td>Develop methodology for selecting and grading initiatives in integrating sustainable development and environmental health.</td>
<td>Transparent recognition and grading methodology.</td>
<td>enHealth Council.</td>
<td></td>
</tr>
</tbody>
</table>
| Initiate awards that support and promotion of successful initiatives leading to their continuation and uptake by other agencies. | Awards. | • enHealth Council  
• State and Territory Environmental Health Units. | |
The National Environmental Health Strategy identifies three key means of improving environmental health in Australia, they are:

- strategic management;
- capacity building; and
- improving practice.

This section of the Implementation Plan outlines the initial actions required to achieve these goals.

National action is required to develop coordinated and consistent environmental health systems across Australia. The enHealth Council will lead this national action but other jurisdictions and all environmental health practitioners will have the principal implementation task.

4.1 Economic Analysis

Challenge: Build economic analyses and arguments for investing in environmental health.

Introduction

Like most other service sectors, environmental health operates within an economic framework and is subject to the same financial pressures, such as limited budgets and the requirements of macro- and micro-economic reform. Additionally, economic programs and projects occurring outside of the health sector can have major implications for environmental health.

Given the substantial competition between and/or within agencies for resources, economic arguments supporting environmental health activities must be developed in order to secure both current and future environmental health management programs.

Current Activities

Environmental economics

Agriculture and resource economists have developed numerous techniques for the valuation of non-market transactions with uncertain outcomes, including:

- Contingent valuation;
- Monte Carlo risk analysis;
- Hedonic pricing; and
- Shadow pricing.

Health economics

- Predominantly focused on clinical outcomes
- Considerable research undertaken to measure the impact of illness on quality of life.
- Health is characterised by ‘investments’ with long term outcomes and work is being devoted to calculating the appropriate discount rate for these outcomes

Public health economics

- Funding is currently based on ‘cost of illness’ studies and absolute expenditures.
Issues
Traditionally, public health economics has been based on determining the cost burden of diseases and the absolute impact of these diseases on the community. This approach has limited applicability in many areas of environmental health and a new approach, concentrating on marginal rather than absolute costs, is needed.

Established environmental economic methodologies are far more relevant for environmental health policy and planning in a number of ways. Existing methods, such as contingent valuation and Monte Carlo risk analysis, can be used to ascribe values to outcomes that are both intangible and uncertain. These methods are particularly relevant to environmental health as many forms of environmentally related diseases can be attributed to numerous (and uncertain) external factors.

Adverse health effects are also not only associated with poor environmental conditions, for example, both the environment and the health of a population could be affected by a lack of investment. When coupled with traditional health economic approaches, established environmental valuation techniques could provide a better framework to evaluate the costs and benefits associated with investing in environmental health.

Need:
A new paradigm for environmental health economics, by building on the linkages between environmental and health economic techniques.
## Economic Analysis Action Plan

**Issue:** Economic Analysis

**Challenge:** Build economic analyses and arguments for investing in Environmental Health.

**Need:** A new paradigm for environmental health economics, by building on the linkages between environmental and health economic techniques.

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<tbody>
<tr>
<td>Prepare a discussion paper on economic methodologies appropriate to environmental health</td>
<td>A background paper for discussion at a workshop.</td>
<td>enHealth Council.</td>
<td>• Commonwealth, State and local government (sectors including health, environment, economics, transport, agriculture and fisheries, and industry); AIEH and other professional bodies; • Environmental economists and Health economists.</td>
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<tbody>
<tr>
<td>Identify economic methodologies that may be applied to environmental health issues and action to progress development of an economic framework for environmental health.</td>
<td>Workshop report and recommendations.</td>
<td>enHealth Council.</td>
<td>All levels of government (and sectors including, environment, health, economics, transport, agriculture and fisheries, and industry); experts in environmental economics; experts in health economics. AIEH and other professional bodies</td>
</tr>
</tbody>
</table>
4.2 Health Impact Assessment

Challenge: Include best practice health impact assessment in decision making.

Introduction

Virtually all human actions impact on health. In its broadest sense, health impact assessment (HIA) is the prospective assessment of any policy or action to identify potential threats and benefits to health. HIA provides a key prospective methodology for best-practice environmental health management.

Within the context of the National Environmental Health Strategy, HIA refers to the performance of health assessments on development proposals to identify potential positive or negative health impacts. Adverse impacts may take the form of direct human contact with hazardous materials, the deleterious effects of environmental change or disruption of social cohesion. Positive effects include those resulting from improved amenity, economic advantage or reduced exposure to environmental hazards.

Overview of Current Activities

Environmental impact assessment has been conducted in Australia since the early 1970s. EIA concentrates on the physical and biological environments and human health considerations are limited to the most gross and direct impacts.


Tasmania’s Department of Health and Human Services has incorporated Health Impact Assessment into the Environmental Management and Pollution Control Act 1994.

Victoria’s Environment Protection Act 1970 requires Works Approval applications received by the Environment Protection Authority to be referred to the Department of Human Services (DHS) for assessment on public health grounds. The DHS is also informed of proposals being considered under the Environment Effects Act 1978 and reviews their details to determine if there may be health effects requiring more detailed assessment.

The Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 requires consideration of the principles of Ecologically Sustainable Development when considering approving certain actions, including relevant social and economic matters.

Issues

Incorporating HIA into EIA

Development approval processes in all States and Territories may require an Environmental Impact Assessment (EIA) to be undertaken in order to ascertain the likely impact of a proposal on the natural environment. It is during this existing and well established process that HIA can best be incorporated.

In many EIA processes the consideration of health issues is already recommended in the general consideration of the environment however methodologies are not clearly articulated. The lack of best practice methodologies often results in assessments limited in scope, confined to gross and direct physical impacts and omitting consideration of health issues resulting from social or psychological impacts.

Best practice guidelines for the performance of HIA during the EIA process and the adoption of these guidelines as a formal part of the EIA process would overcome these shortcomings.

Need:
### Health Impact Assessment Action Plan

**Issue:** Health Impact Assessment

**Challenge:** To protect public health by including health impact assessment in decision making.

**Need:** The inclusion of Health Impact Assessment in Environmental Impact Assessments, using best-practice guidelines.

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4.3 Health Risk Assessment

Challenge: Develop and use best practice methods for assessing the health risks of hazards in the environment.

Introduction

Everything we do is associated with some degree of risk. This may be through choice, such as driving a car, or involuntary, through exposure to air pollution or contaminated soil. Appropriate management strategies are needed to protect public health from important environmental health hazards. However, before these strategies can be developed there is a need to identify and assess the hazards and analyse the risks.

Risk assessment is an important step leading to informed, effective management decisions. The assessment of risk requires an understanding of the nature of the hazard, and integration of this information with an estimate of community or individual exposure. Once risk has been assessed, intervention strategies can be evaluated in order that the best management practices can be used. This is essential since poor management decisions may lead to overexposure of the community to environmental hazards, or to overly expensive remediation strategies which waste community resources.

Overview of Current Activities

Risk Assessment methodologies and criteria have been developed for and used in several discrete areas, examples include:

Contaminated site assessment;

- National Health and Medical Research Council (NHMRC)/Australian and New Zealand Environment and Conservation Council (ANZECC) Guidelines for assessment and management of contaminated sites, 1992.
- National Environmental Health Forum (NEHF) Monographs on exposure scenarios and exposure settings and health-based soil investigation levels.

Food safety

- Hazard Analysis Critical Control Point (HACCP) and food safety.

Environmental management

Uses a range of methodologies for a variety of management purposes.

Chemical safety

**Issues**

**Assessment methods**

Risk assessment methods are based on firm quantitative and qualitative scientific principles, as well as on assumptions, where full scientific understanding is incomplete. Many of these assumptions are clear and stated—such as dose extrapolation, interspecies extrapolation, models of absorption, etc—but some are less obvious and less clearly articulated (for example, cultural values, statutory requirements, societal demands). This has led to the use of a range of risk assessment methods in different countries, and even in different agencies within the same country.

**Risk Assessment Consensus**

There is considerable international effort to harmonise risk assessment methods, and Australia is actively involved in these negotiations. However, differences in regulatory requirements, science policy decisions, and even in the language of risk assessment, make for slow progress. Within Australia there is firm agreement between federal agencies on the methods used to assess and regulate industrial, agricultural and therapeutic chemicals. However, there is no consensus on how to assess health risks associated with chemicals in the environment—such as industrial emissions from chimney stacks, pollutants in ambient or indoor air, or contaminants in soil. Nor is there universal agreement on the most appropriate risk assessment methods for many biological hazards, including certain bacteria and protozoa.

In the absence of consensus and clear national guidelines, different jurisdictions have based decisions on risk assessment methods obtained from other countries, often without clear understanding of the assumptions which underpin these methods. This has lead to inconsistencies and uncertainty, and management decisions which may not be the most appropriate for Australia’s conditions and values. A national framework for health risk assessment is needed to overcome this inconsistent approach.

**Need:**

A national framework for health risk assessment.
Health Risk Assessment Action Plan

**Issue:** Health Risk Assessment

**Challenge:** Develop and use best practice methods for assessing the health risks of hazards in the environment.

**Need:** A national framework for health risk assessment.

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4.4 Information

Challenge: To create an environmental health knowledge base that will inform decision-making.

Introduction

Information empowers decision-making. It establishes baselines, reveals trends, enables performance evaluation leading to identification of best practice, informs resource allocation and identifies new or re-emerging issues.

Environmental health data is collected in many forms and across many sectors. However, the collection, reporting and evaluation of this data may be different between each Local and State government, which places limitations on the usefulness of this data. Data that may be relevant to environmental health is also collected by industry, the environment sector and other agencies as listed below.

The access and application of this data is important in improving the knowledge base for environmental health.

Overview of Current Activities

Environmental Health Data and Information

- Local, State and Territory governments collect large volumes of data on issues relevant to environmental health.
- The National Environmental Health Forum has produced monographs on various environmental health issues.
- Australian academia undertakes research and produces information.
- Industry collects data and compiles information.
- Indigenous specific collections eg Community Health Infrastructure National Survey (CHINS).

Health Data

- The Australian Institute of Health and Welfare develops, provides and analyses information on the health and welfare of Australians.
- The Health Insurance Commission maintains health data through Medicare.
- State and Territory governments gather data through such means as hospitals and communicable disease notification.
- The Australian Bureau of Statistics collects data on national health and environment.

Environment Data

The State of the Environment Advisory Council compiles a comprehensive report on the state of the environment in Australia, including pressures on the environment, the condition of the environment and societal responses to these pressures and conditions.

International

- Environmental health research data and information is gathered and organised by various overseas organisations.
- There are numerous international journals, which report on environmental health issues.

Issues

National Coordination of a Knowledge Base for Environmental Health

The Strategy notes that in order to support environmental health management in Australia, quality data and information is required to:

- help identify and prioritise current and emerging problems;
- help specify safe exposure limits;
- assist in the development of guidelines and standards;
- define, evaluate and compare environmental health interventions;
- meet the needs and expectations of the community;
- inform the community and stakeholders;
- provide a rational framework for discussion and debate; and
- guide the research and development needed for the future.

In order to meet the broad range of data and information needs identified in the Strategy, it is proposed that a number of activities be undertaken to establish a nationally coordinated environmental health knowledge base. Activities include:

- A review of base line data and information (ie. what data and information is currently available);
- The identification and prioritisation of data and information needs;
- The development of environmental health indicators; and
- The creation of a networked environmental health information system.

enHealth Council is well placed to initiate these activities given the broad membership of key environmental health stakeholders.

Need:

Creation of a nationally coordinated knowledge base for environmental health.
## Information Action Plan

**Challenge:** To create an environmental health knowledge base that will inform decision-making.

**Need:** Creation of a nationally coordinated knowledge base for environmental health.

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<tr>
<td>Establishing base line information by conducting the following:  - a systematic national review of environmental health data routinely collected;  - a systematic national review of environmental health reports and publications currently available; and  - a survey on community attitudes on environmental health issues.</td>
<td>Three separate reports which provide base line information on the current status of national environmental health data, information and community attitudes.</td>
<td>enHealth Council</td>
<td>All levels and sectors of Government collecting and monitoring data relevant to environmental health; and the community.</td>
</tr>
<tr>
<td>Develop a method for determining and prioritising environmental health information needs, in consultation with key stakeholders.</td>
<td>Protocol for identifying and prioritising needs.</td>
<td>enHealth Council</td>
<td>All levels and sectors of Government collecting and monitoring data relevant to environmental health.</td>
</tr>
<tr>
<td>National coordination of information - Establish a mechanism for maintenance of a data base on reports and publications and routinely collected data.</td>
<td>Mechanism to maintain up-to-date information and data.</td>
<td>enHealth Council</td>
<td>All levels and sectors of Government collecting and monitoring data relevant to environmental health.</td>
</tr>
<tr>
<td>Promotion of data base and mechanism.</td>
<td>Use of central data base for data and information.</td>
<td>enHealth Council</td>
<td>All levels and sectors of Government collecting and monitoring data relevant to environmental health.</td>
</tr>
<tr>
<td>Establish and consult on a set of nationally accepted environmental health indicators.</td>
<td>Environmental health indicators.</td>
<td>enHealth Council</td>
<td>All levels and sectors of Government collecting and monitoring data relevant to environmental health.</td>
</tr>
<tr>
<td>Seek to develop a national environmental health information system through the establishment of a steering committee with key stakeholders.</td>
<td>Creation of a national environmental health information system.</td>
<td>enHealth Council</td>
<td>Environment Australia, Local, State and Commonwealth Government, from the environment and health sectors; Industry; professional organisations and academic institutions.</td>
</tr>
</tbody>
</table>
4.5 Research

Challenge: Support and encourage improvements to increase environmental health research capacity.

Introduction
One of the keys to improving environmental health outcomes is a strong research effort, both basic and applied, that is directed not only at scientific and technological matters, but also to such areas as management systems and service delivery. In addition, research is vital for developing the capacity to identify and effectively respond to newly emerging hazards, and to provide the evidence base for best-practice environmental health management.

To strengthen the focus on research in environmental health, the following is required:

- An environmental health workforce that is research literate;
- Effective management of the environmental health research effort;
- The ready availability, and exchange of, environmental health research results and other relevant information;
- Effective engagement with the non-health sectors that conduct research relevant to environmental health;
- Awareness of environmental health research conducted overseas; and,
- Facilitation of national and international collaborations, directed at both local and global problems.

Overview of Current Activities

Research and Infrastructure
- Some research relevant to environmental health is being undertaken. For example, there are a number of Cooperative Research Centres (CRCs) examining environmental health matters, in addition to PHERP-funded consortia, CSIRO, some universities, the Bureau of Meteorology, and other government and private agencies.
- There is a range of non-health agencies conducting research relevant to environmental health.
- There are limited numbers of researchers active solely in the environmental health research field.
- National Public Health Partnership Group (NPHPG) - Consideration of priority-driven research in accordance with the recommendations of the Wills Review.
- NHMRC - Strategic Research Development Committee (SRDC) Research Committee (Public Health and Medical).
  The SRDC and the Research Committee are complementary research funding mechanisms.
- ARC - Australian Research Council

Issues
Priority Setting
One of the key areas to look at is priority-driven research, which has the capacity to respond to the issues in environmental health that are identified by environmental health practice and that would feed into a priority setting framework.

Environmental health management involves more than the recognition of the need to prevent or mitigate adverse environmental effects on health. Research needs to also encompass the technological, social and economic fields, in order to develop technologies that are appropriate to environmental health and risk management and communication.

For priority-driven research to be effective there needs to be a priority-setting process in place. It is proposed that researchers, practitioners of environmental health and the community play a role in developing these priorities.
It is recognised within both the NHMRC and the NPHPG that collaboration on strategies for prioritising research is necessary, and that planning and development will focus on setting priorities in public health research, a classification scheme to promote public health research, and other important issues. It is important that the enHealth Council be involved in the work being progressed in this area, with a view to building on established processes and strengthening links.

**Need:**
A priority setting framework for environmental health research.

**Capacity**
Collaborative or multi-centre approaches have been used with some success on a number of issues, the various CRCs being a notable example. Opportunities for further collaborations in environmental health should be explored, both nationally and internationally.

It is important to enhance, build and maintain environmental health research capacity. There are many agencies directly and indirectly involved in research relevant to environmental health. It is therefore important to examine ways in which partnerships with these agencies can be further developed.

**Need:**
Promotion and support of environmental health research.

The enHealth Council has representation from a range of sectors and is well placed to address matters of national coordination. The enHealth Council structure provides a broad base for the development of national environmental health advice, supported by a strong inclusive policy development process, which will increase the capacity for coordinated and targeted action.

An enHealth Research Task Group has been established to consider and progress the research needs identified.
### Research Action Plan

**Issue:** Research

**Challenge:** Support and encourage improvements to increase environmental health research capacity.

**Need:** A priority setting framework for environmental health research.

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| Review elements of existing priority setting frameworks and develop a framework relevant to environmental health research | A priority setting framework for environmental health research. | enHealth Council through the enHealth Research Task Group. | NPHPG
NHMRC
PHERP Network
Environmental Health Practitioners Academics and Educators Population Health Division (Dept. Health &Aged Care). |

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</table>
| Application of the framework to identify environmental health research priorities. | List of environmental health research priorities. | enHealth Council through the enHealth Research Task Group. | NPHPG
NHMRC
PHERP Network
Environmental Health Practitioners Academics and Educators Population Health Division (Dept. Health &Aged Care). |

**Need:** Promotion and support of environmental health research.
4.6 Standards and Guidelines

Challenge: Develop and maintain nationally accepted environmental health standards and guidelines.

Introduction

Environmental health standards and guidelines aim to define the conditions necessary to protect the community from exposure to environmental hazards. They are considered to define best practice and are a key tool for practitioners of environmental health.

Environmental health standards and guidelines are currently developed by a wide variety of bodies. It is preferable that the development of such advice be strategic and coordinated at a national level while ensuring a collaborative and consultative approach involving key stakeholders at each stage in the process.

Overview of Current Activities

Many agencies prepare standards and guidelines relevant to environmental health including, but not limited to, the following:

- National Health and Medical Research Council (NHMRC)
- Australia New Zealand Food Authority (ANZFA)
- National Occupational Health and Safety Commission (NOHSC)
- Standards Australia
- State and Territory Governments
- Local governments
- Other inter-governmental organisations, including: the enHealth Council, the Australian and New Zealand Environment and Conservation Council (ANZECC), the Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ) and the National Environment Protection Council (NEPC - a whole of government body).
- Other statutory bodies, such as the Therapeutic Goods Administration, National Registration Authority for Agricultural and Veterinary Chemicals and the Australian Radiation Protection and Nuclear Safety Authority.
- Internationally, standards and guidelines are developed by a number of organisations and this work should be used to inform the development of such documents in Australia.

Issues

National coordination

Responsibility for the development of environmental health guidelines and standards in Australia is fragmented. They may be developed at the national, State/Territory, or Local level. For some issues there is a single standard or guideline managed by a single body while for other matters a range of bodies may play a role. In addition, standards and guidelines that have significant implications for environmental health can be developed by sectors that lie outside of the health sector, in particular the environment, primary industry and urban planning sectors. This fragmented approach leads to a considerable potential for gaps and inconsistencies if the development and maintenance processes are not nationally coordinated.

In order to meet the challenge identified above, an inclusive process at a national level is required for the development of up-to-date environmental health standards and guidelines.

Need:

A strategic, inclusive and transparent process for developing environmental health standards and guidelines, which includes:

- Systematic identification of need
- Prioritisation
- Standard development
- Collaboration
- Promulgation
- Consultation
- Review

Determining where a guideline or standard is needed, the form it should take and what its priority is in relation to other advice needs requires good information and data. The conduct of regular needs assessments and reviews of existing advice, both nationally and internationally, will provide key information.

Developing frameworks and protocols, in consultation with key stakeholders, for the identification of issues and the development of the standards and guidelines is an important aspect of national coordination. These processes will facilitate the development of advice that reflects a wider range of views, and will be more easily adopted by jurisdictions for inclusion in relevant legislation or procedures.

The enHealth Council, with a broad membership of key environmental health stakeholders, including State and Territory environmental health managers, is well placed to address matters of national coordination. In addition, the Council, as an advisory committee of the National Public Health Partnership, has the links to effectively pursue the involvement of other agencies.

The enHealth Council, while itself is not a standard setting body, will also seek partnerships in the development of guidelines and other advice. One of the key partners will be the National Health and Medical Research Council, the body which has historically played a key role in the development of national health standards and guidelines.
## Standards and Guidelines Action Plan

**Issue:** Standards and Guidelines

**Challenge:** Develop and maintain nationally accepted environmental health standards and guidelines.

**Need:** A strategic, inclusive and transparent process for developing environmental health standards and guidelines

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<tr>
<td>Develop a method for determining and prioritising environmental health standards and guidelines needs, in consultation with key stakeholders.</td>
<td>Protocol for identifying and prioritising needs.</td>
<td>enHealth Council</td>
<td>All sectors of environmental health activity</td>
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<tr>
<td>Create an environmental health standards and guidelines development process in consultation with standard and guideline setting bodies.</td>
<td>Comprehensive advice development process that includes needs identification, prioritisation, collaboration, advice development, consultation, promulgation and review.</td>
<td>enHealth Council</td>
<td>Standard and guideline setting bodies</td>
</tr>
<tr>
<td>Promote enHealth Council methodology and priority setting process to other environmental health standard and guideline setting bodies, moving towards national consistency.</td>
<td>Uptake of enHealth Council methodology and process by other environmental health standard and guideline setting bodies.</td>
<td>enHealth Council</td>
<td>Standard and guideline setting bodies</td>
</tr>
<tr>
<td>Identify, prioritise and refer environmental health advice needs for development in consultation with key stakeholders.</td>
<td>Report on environmental health advice priorities and relevant lead agencies - 2-5 year period.</td>
<td>enHealth Council</td>
<td>All sectors of environmental health activity</td>
</tr>
<tr>
<td>National coordination - Establish mechanism for maintenance of current knowledge on environmental health standard and guideline development nationally.</td>
<td>Mechanism to maintain currency of knowledge of environmental health standards and guidelines developed by the range of bodies.</td>
<td>enHealth Council</td>
<td>Standard and guideline setting bodies</td>
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4.7 Workforce

Challenge: Ensure that the environmental health workforce is best equipped to meet current and future needs.

Introduction:
A large and diverse workforce is responsible for environmental health management in Australia. Practitioners engaged in environmental health activities are employed across a spectrum of government and non-government sectors and represent a wide range of skills, from generalist to specialist. For example: Environmental Health Officers, Public health nurses and Town Planners etc. The skills and training provided to the environmental health workforce are paramount to the successful management of current and emerging environmental health hazards.

Measures to improve the capacity of this workforce to meet future challenges will need to be based on ongoing assessment of the utility of both undergraduate and postgraduate training and the development of practical mechanisms to provide continuing professional development. Fundamental to reviewing the structure, content and delivery of any training will be the need to fully account for the diversity of the environmental health workforce and the broad range of skills and knowledge required to effectively discharge their current and likely future duties.

The value of on the job training and other informal skills development in the field should not be underestimated. Local knowledge and understanding is an important aspect of any training and complements formal training.

Overview of Current Activities

• Undergraduate environmental health training leads to environmental health employment in Australia and occurs in a variety of disciplines and environmental health programs eg. Environmental planning, Environmental Science, Health Promotion and Waste engineering.
• Undergraduate environmental health training is accredited by the Australian Institute of Environmental Health (AIEH).
• AIEH convenes an educators forum 2 times a year.
• Individual undergraduate and postgraduate environmental health subjects are available through a range of institutions.
• Environmental health short courses are available from a number of institutions, generally on an ad-hoc basis.

Need:
• Development of mechanisms for regular updating of training programs for environmental health officers to ensure continued relevance.

In order to apply the core components for Environmental Health Officers to the broader environmental health workforce, a greater understanding of the core concepts and principles that underpin environmental health is required. These concepts and principles need to be promoted to the wide range of professions and training bodies.

Need:
• Broadened awareness of environmental health issues among other environment and health practitioners.
Existing Workforce

The current and future environmental health workforce should have access to environmental health knowledge that relevant and up-to-date. Broad promotion of the view that a health professional carries an “obligation” to life-long learning is needed. Adult learners derive most from education and training which is relevant to their everyday work; and for which they assess there is a need. For example national changes to food safety management and resulting training needs.

The experiences of other professional groups can be used to inform the development of a Continuing Professional Development (CPD) program for the environmental health workforce. It is recognised that a good CPD program is important to workforce development as it continues to support the profession, as well as maintaining the necessary skill base to address current and emerging issues in environmental health.

Need:

Development of mechanisms to facilitate and encourage uptake of continuing professional development.

The enHealth Council has representation from a range of sectors and is well placed to address matters of national coordination. Partnerships with practitioners, employers and training organisations in environment and health are also required to ensure that the broader workforce is equipped with the appropriate skills and knowledge to manage current and future environmental health activities.

It is proposed that the enHealth Council establish a Workforce Task-group to consider and progress the workforce needs identified.
**Workforce Action Plan**

**Issue:** Workforce

**Challenge:** Ensure the environmental health workforce is best equipped to meet current and future needs.

**Need:** Development of mechanisms for regular updating of training programs for Environmental Health Officers to ensure continued relevance.

<table>
<thead>
<tr>
<th>ACTION</th>
<th>OUTPUT</th>
<th>LEAD</th>
<th>PARTNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the current accreditation criteria for environmental health officer training.</td>
<td>Report outlining accreditation criteria and recommended enhancements</td>
<td>enHealth Council, AIEH</td>
<td>Employers and Industry Government, Universities (that currently deliver environmental health courses and accredited by the AIEH).</td>
</tr>
<tr>
<td>Define core curriculum components for environmental health officers and develop core curriculum guidelines</td>
<td>Core curriculum guidelines including core curriculum components for environmental health officers</td>
<td>enHealth Council, AIEH</td>
<td>Employers and Industry Government, Universities (that currently deliver environmental health courses and accredited by the AIEH).</td>
</tr>
<tr>
<td>Consult with and promote to all training and other bodies for application to the environmental health workforce.</td>
<td>Uptake of guidelines</td>
<td>enHealth Council, AIEH</td>
<td>Employers and Industry Government, Universities that currently deliver environmental health courses.</td>
</tr>
<tr>
<td>Establish an appropriate review cycle for regular updating of accreditation criteria and processes.</td>
<td>Review cycle</td>
<td>enHealth Council, AIEH</td>
<td>Employers and Industry Government, Universities (that currently deliver environmental health courses and accredited by the AIEH).</td>
</tr>
</tbody>
</table>
### Need:
Broadened awareness of environmental health issues among other environment and health practitioners.

<table>
<thead>
<tr>
<th>ACTION</th>
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<th>PARTNERS</th>
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<tbody>
<tr>
<td>Contribute to a paper which defines core concepts and principles</td>
<td>enHealth Council input into PHERP paper defining core concepts and</td>
<td>PHERP through the Education and Workforce Development Section of the</td>
<td>enHealth Council through the Workforce Task-group. NPHPG</td>
</tr>
<tr>
<td>underlying environmental health.</td>
<td>principles underlying environmental health.</td>
<td>Department of Health &amp; Aged Care.</td>
<td></td>
</tr>
<tr>
<td>Promote at professional conferences and associations across the broad</td>
<td>Acceptance of environmental health concepts and principles.</td>
<td></td>
<td></td>
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<tr>
<td>range of disciplines.</td>
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### Need:
Development of mechanisms to facilitate and encourage uptake of CPD.

<table>
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<tr>
<th>ACTION</th>
<th>OUTPUT</th>
<th>LEAD</th>
<th>PARTNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review existing AIEH continuing professional development program and</td>
<td>CPD program</td>
<td>enHealth Council, AIEH</td>
<td>ALGA</td>
</tr>
<tr>
<td>recommend strategies to expand program to include the broader</td>
<td></td>
<td></td>
<td>Academia</td>
</tr>
<tr>
<td>environmental health workforce</td>
<td></td>
<td></td>
<td>Employers and Industry Government</td>
</tr>
<tr>
<td>Develop and promote model continuing professional development program</td>
<td>Model Continuing Professional Development Program.</td>
<td>enHealth Council, AIEH</td>
<td>ALGA</td>
</tr>
<tr>
<td>to other agencies and related professional bodies.</td>
<td></td>
<td></td>
<td>Academia</td>
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<td></td>
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<td>Employers and Industry Government</td>
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</table>
5. The Human–Environment Interface

The issues grouped under the heading of the Human-Environment Interface dominate the core business of environmental health management.

While the domains of environmental health justice and environmental health systems are both best coordinated at the national level, through the enHealth Council, all jurisdictions have leading roles and duties in respect to the human-environment interface activities.

It is recommended that managers of environmental health use the methodology described in the Introduction to develop Action Plans relevant to their own jurisdictions which address the ‘Needs’ identified in this domain. In particular it is recommended that governments produce jurisdictionally-relevant action plans for the issues and needs in this section and in doing so engage with industry, business and their community as ‘partners’.

The issues in this domain have been dealt with individually and it is important to recognise that complex relationships can occur, for example, the built environment and indoor air quality. In addition, the impact of these issues may be greater on vulnerable population groups. Consideration of these complexities should not be overlooked when developing action plans.

5.1 Air Quality

Challenge: To protect the community from the health risks posed by poor air quality.

Introduction

Air pollution can lead to significant adverse health impacts, usually via the respiratory and vascular systems and potentially affects large numbers of people. Much has been achieved in the past two decades in controlling ambient air pollution through the regulation of industrial emissions, tightening of vehicle emission standards and the introduction of exhaust catalysts. However, as urban areas expand to accommodate population increases and vehicle ownership and use rises, it is expected that air pollution will increase in Australian cities despite the strict pollution controls.

The management of indoor air quality is of particular concern as people spend the majority of their lives indoors. However, less is known about the health effects of some indoor pollutants, and the levels of exposure to pollutants in various settings such as schools, offices and dwellings. Indoor air has not been addressed at a national level although there are important issues that impact on population health from indoor exposures.

Overview of Current Activities

<table>
<thead>
<tr>
<th>Ambient (outdoor) Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring</td>
</tr>
<tr>
<td>• All jurisdictions, with the exception of the Northern Territory, monitor ambient air quality in major population centres. Licensing requirements for some industries requires them to self-monitor their pollutant emissions. The adequacy of air quality monitoring networks and the reporting of data varies considerably between jurisdictions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standards/Guidelines</th>
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</thead>
<tbody>
<tr>
<td>• National Environment Protection Measure (NEPM) for Ambient Air Quality: The National Environment Protection Council has developed a NEPM for ambient air quality. The NEPM includes health-based standards (enforceable through legislation in all jurisdictions) for the six major air pollutants: carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulfur dioxide, lead and particles (PM10). The NEPM also encompasses standard monitoring and reporting protocols that are to be developed and implemented within three years.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulation of pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Polluting industries are licensed to emit up to a certain level of specified pollutants and can be fined if they exceed the license conditions</td>
</tr>
</tbody>
</table>
Some jurisdictions have a polluter pays system eg Load Based Licensing in NSW

The National Pollution Inventory (NPI) National Environment Protection Measure will monitor the release of specified pollutants to the environment from all sources.

**Research**

- Air pollution and associated health research is currently carried out by environment and health agencies in various jurisdictions, some tertiary institutions and CSIRO.

- Environment agencies are also involved in assessing air pollutant emissions, as well as modelling of pollution distribution and dispersion in their respective airsheds. Health and environment agencies work cooperatively to estimate the levels of exposure of the populations in their jurisdictions. Health agencies appraise the data to determine health consequences in their communities.

- Some jurisdictions have a polluter pays system eg Load Based Licensing in NSW

- The National Pollution Inventory (NPI) National Environment Protection Measure will monitor the release of specified pollutants to the environment from all sources.

**Issues**

**Reducing Health Effects from Air Pollution - Ambient Air**

Population health and wellbeing can be improved through governments encouraging or regulating industry to use the best available technology to minimise pollution, including cleaner production and waste minimisation approaches. Governments at all levels should take into account the potential effects of air pollution in land use planning, including transport planning, and develop policies that promote sustainable development.

Public education and communication measures that highlight air pollution reduction behaviours should also be a part of pollution abatement strategies.

**Need:**

Consideration by all levels of government of the interrelationships of health, air pollution and environment, when addressing air pollution issues including land use planning.

**Indoor Air**

**Monitoring**

- Available data show that levels of pollutants indoors can be found at the same as or higher levels than outdoors. Measurements carried out for specific purposes/locations for pollutants such as oxides of nitrogen, volatile organic compounds and carbon monoxide, have shown very high levels indoors where sources have been present or when ventilation was inadequate.

**Standards and Guidelines**

- The National Health and Medical Research Council (NHMRC) has recommended Interim Indoor Air Quality Goals (which are not mandatory standards) for carbon monoxide, photochemical oxidants (ozone), sulfur dioxide, lead and total suspended particles. NHMRC has also developed specific indoor air quality goals for formaldehyde, radon and total volatile organic compounds.

- Australian Standard 1668.2 “The use of ventilation and air conditioning in buildings”

**Regulations**

- All jurisdictions have regulations for Legionella control.

- Many jurisdictions have controlled exposure to environmental tobacco smoke (ETS) by regulating smoking in public buildings.

- Current research in Australia has linked some indoor pollutants such as oxides of nitrogen, carbon monoxide, ETS, volatile organic compounds and aeroallergens (dust mite particles/faeces, moulds) with specific health effects such as the increased incidence of respiratory disease, cardiac disease and increased incidence of asthma episodes in susceptibles.
Reducing Health Effects from Air Pollution - Indoor Air

Research is urgently required to assess and evaluate the links between health and exposure to indoor pollutants. Governments at all levels should continue programs to eliminate tobacco smoking indoors.

Building designers, builders, building material suppliers and manufacturers (paint, carpet, furniture) and building owners, should develop strategies to minimise the use of materials which emit large amounts of volatile organic compounds.

Public education programs should be developed to reduce high risk activities to minimise the build up of pollutants indoors, e.g., avoid tobacco smoking, avoiding the use of volatile solvent based paints when renovating, avoid buying/using unflued heating appliances.

Significant research has been conducted in Australia to address specific issues, such as oxides of nitrogen and its relationship with health effects, as well as emissions of volatile organic compounds from building products. A nationally coordinated effort to optimise research activity to avoid duplication is needed in Australia.

**Need:**

Intersectoral collaboration to minimise the potential for indoor air pollution in a nationally coordinated program, including a research program.
5.2 Built Environment

Challenge: To protect public health by reducing the adverse health impacts of the built environment.

Introduction

The built environment is a major part of the overall ecosystem in which we exist. It includes all urban developments such as buildings, spaces and products that are created—or at least significantly modified—by people. Whilst hazards in the built environment may have a detrimental impact on population health, comprehensive urban planning, including roads, open space, buildings and social and community facilities, can make a substantial contribution to good health and wellbeing.

As our society becomes increasingly urbanised more effective management of environmental hazards is called for, and this means that the potential health impacts of all aspects of planning, design and construction must be recognised from the outset.

Overview of Current Activities

Guidelines and Policies

• Various guidelines, policies and standards have been developed with the purpose of protecting human health, eg. ‘The Building Code of Australia’ (amended 1999) Standards Australia.

Regulation and Planning

• Various national and State/Territory agencies play a role in managing the built environment.

Research

• The CSIRO Sector for the Built Environment performs ongoing research for the construction, utilities, engineering and transport industries. Additional research on urban development and health is undertaken by a number of universities and Local and State/Territory governments.

Publications

• Publications and journal articles, which provide guidance on the identification, prioritisation, prevention and surveillance of built environment hazards, are available, eg. Environmental Health in the Home 1996, South Australian Health Commission Public and Environmental Health Service. The periodical, ‘Urban Net’, produced by the Australian Housing and Urban Research Institute, provides a regular briefing on the latest research, projects and publications.

Issues

Health Planning

For health concerns in the built environment to be effectively addressed, it is crucial that health be more consistently and explicitly considered in planning processes. Although aspects of health are currently incorporated into relevant legislative requirements, codes and standards, the impact of the built environment on health cannot be understated. People spend large proportions of their lives within the built environment, and in particular indoors, so a special emphasis on health planning is required. This needs to be supported by adequate information, (eg linking indoor air quality and health) so that the best planning decisions can be made.

Planning should consider both positive and negative human health outcomes, and decisions should be based on securing a safe and healthy environment in which individuals and communities can flourish.

Need:

• Adequate recognition of the built environment as a major influence on health.
• Health concerns to be specifically included in planning processes.
5.3 Vector-borne Disease

Challenge: To protect public health through better responding to the risks posed by vector-borne disease.

Introduction
Six mosquito-borne viruses (otherwise known as arboviruses, ie. arthropod-borne viruses) pose major public health threats in Australia - Murray Valley encephalitis, Kunjin, Japanese encephalitis, Dengue, Ross River and Barmah Forest. In addition to the significant morbidity and mortality they can cause, large disease outbreaks can also have a substantial economic impact, including health care costs, loss of productivity, and reduced tourism.

Vector-borne disease control has not received a level of investment equivalent to water and air quality in most jurisdictions. Nevertheless, several States and the Northern Territory, where infection rates are of concern, do undertake significant surveillance and control work.

Parts of Australia also remain at risk of the re-establishment of malaria, given the presence of potential vector mosquitoes and the likely entry of travellers carrying the disease. This risk may be exacerbated by global climate change, as may be the risk of the occurrence of other exotic mosquito-borne diseases. Preventing the re-establishment of malaria basically relies on timely surveillance and appropriate measures to control vector mosquitoes.

Overview of Current Activities

Routine
- Vector mosquito surveillance (ongoing monitoring and/or Ad Hoc) conducted by some State, Territory, local governments and other bodies.
- Vector and nuisance mosquito control (biological, chemical, physical) conducted by some State, Territory, local governments and other bodies.
- Vector-borne diseases are included in the National Notifiable Diseases Surveillance Scheme, managed by the Communicable Diseases Network Australia New Zealand (CDNANZ). Incidence data is published routinely in Communicable Diseases Intelligence.
- CDNANZ provides a forum for exchange of information on vector-borne disease cases, arbovirus ‘activity’ (animal serology data etc) and associated control matters.
- State/Territory and local governments conduct public education programs directed at vector-borne disease prevention.
- Planning may include measures to reduce the risks of arbovirus disease transmission.

Emergency Management
- Many jurisdictions have emergency management plans for control of outbreaks of Australian arboencephalitis. In some instances plans may also cover Ross River virus disease and other vector-borne diseases eg. malaria and dengue.
- Some ‘exercises’ to test the effectiveness of emergency management plans.

Guidelines/advice
- Some jurisdictions have developed guidelines on arbovirus disease prevention and nuisance mosquito control.
- No national guidelines available.

Research
- The NHMRC funds, on a competitive basis, research into vector-borne disease control.
- Some research into vector and disease control conducted by State/Territory health agencies, universities and other organisations eg. Queensland Institute of Medical Research conducts work on biological control of dengue vectors.

Training
- Training courses on vector mosquito control conducted by some jurisdictions on an Ad Hoc basis (Commonwealth supported arbovirus control courses ceased in 1986).

Issues

Surveillance
The planning, conduct and evaluation of arbovirus disease control programs should be based on reliable information about human disease incidence, host animal activity, vector mosquito activity, disease agent prevalence and weather data (rainfall patterns, flooding information, Southern Oscillation Index).

Need:
Surveillance systems to adequately inform vector-borne disease control programs.
5.4 Water

5.4.1 Drinking water

Challenge: To protect public health through the availability of safe and adequate drinking water.

Introduction

An adequate supply of clean water is a cornerstone of good public health. The primary purpose of treating drinking (potable) water is to ensure it is safe for human consumption - it should not present a threat to health through the presence of disease causing micro-organisms, harmful chemicals or radiological sources. Adequate supplies of potable water are reliant on access to reliable and sufficient sources of reasonable quality raw water, effective treatment, and sound distribution practices, often referred to as ‘catchment to tap’ management.

While the majority of Australians, particularly those in urban areas, have access to high quality drinking water there is need for improvement in many rural and remote areas. However, even urban drinking water may sometimes pose a possible health risk, the 1998 Cryptosporidium and Giardia contamination incident in Sydney being a notable example of the need for optimal management of drinking water supplies at all times.

Overview of Current Activities

A considerable number of government and non-government agencies are involved in providing drinking water. The following is only a brief overview of the key agencies and activities.

Standards/Guidelines

- The Australian Drinking Water Guidelines, part of the National Water Quality Management Strategy managed by NHMRC / ARMCANZ, define the parameters for good drinking water quality. They are referred to by State and Territory governments in setting their individual water standards.
- Non-government agencies are involved in developing advice (eg. Standards Australia, suitability of plumbing and water distribution materials for contact with potable water).
- Industry bodies, such as the Water Services Association of Australia (WSAA), may develop guidelines and advice for their members.
- There is currently no national approach to the regulation of water treatment chemicals.

Supply

- Ownership and oversight of water utilities continues to evolve, presenting challenges to governments and others to ensure best management of the infrastructure (including raw water sources,
storage, treatment facilities, distribution systems) and water quality, for all consumers, remains optimal.

• Supply problems in rural and remote areas are being addressed by a range of government agencies.

Research

• A number of Cooperative Research Centres have been established to examine a broad range of water issues.
• WSAA commissions research on water quality issues.
• CSIRO Land and Water operates the Australian Research Centre for Water in Society.
• State and Territory agencies undertake research relevant to their priority needs.

5.4.2 Recreational Water

Challenge: To protect public health by ensuring the safety and sustainability of recreational waters

Introduction

Environmental health hazards associated with recreational waters vary in degree, depending on the nature of the water body and the water type. Chemical and microbial contamination (e.g., bacteria, parasites, viruses and algal blooms) pose the major threats, although injury from physical hazards may sometimes be an additional concern.

The contamination of recreational waters, particularly swimming pools, can result in large scale disease outbreaks, and lead to severe financial cost burdens for both operators and the community.

Overview of Current Activities

Management

• Spas, swimming pools and water parks may be owned and operated privately, by governments or by businesses.
• Regulation of public spas, swimming pools and water parks lies predominantly with local government, with guidelines for operation produced by both the Commonwealth and State or Territory governments.
• Catchment management often relies on inter-sectoral collaboration.
• Natural resource management encompasses recreational water, and is undertaken by State or Territory governments.

Monitoring

• Periodic testing of public recreational waters is managed by local government. Methods vary widely, with the emphasis generally on assessing the levels of treatment chemicals rather than the presence of harmful microbial organisms. Outbreaks of cryptosporidiosis associated with swimming pools in recent years suggest that testing for the presence of harmful organisms, such as Cryptosporidium, may be called for.
• Natural recreational water is often only monitored as an ad hoc response to disease outbreaks.

Standards/Guidelines

Standards and Guidelines for recreational water have been produced by the NHMRC, the National Environmental Health Forum and others, including:

• Australian Guidelines for Recreational Use of Water, 1990; National Health and Medical Research Council.
Some types of water bodies that may impact on health, such as fountains and therapeutic pools, are not adequately covered in the management of built environment waters.

**Need:**
Identification of overlooked issues in managing built environment waters.

**Water treatment chemicals**
Prior to 1987 chemicals used for treating pools, spas and other types of water (including drinking water) were assessed and approved by the NHMRC. A list of these chemicals was last amended and approved by NHMRC at its 102nd Session, November 1986. Neither the NHMRC nor any other national body has since taken action to update this listing or assumed responsibility for assessing and approving water treatment chemicals for safety and efficacy, on a national basis. An ad hoc approach has been adopted in most jurisdictions to approve the use of ‘new’ water treatment chemicals. Best practice information on the use of these chemicals is also needed.

**Need:**
A national process for the routine approval and assessment of water treatment chemicals.

**Issues**

**Management of natural recreational waters**
Environmental health hazards in natural water bodies used for recreation can occur in a variety of forms. Prevention or remediation of these hazards usually occurs indirectly, as a consequence of environmental protection statutes, drinking water source management or natural resource management. A limited focus on safeguarding health restricts the benefits of these measures in preventing hazards in natural water recreational areas.

**Need:**
Comprehensive management guidelines for natural recreational waters.

**Built environment recreational water management**
Contamination of built environment recreational waters usually occurs post-tap, and this is where the management focus should lie. Built environment recreational waters, such as swimming pools, spas and water parks are currently subject to various standards and local government laws which are based on preventing adverse health outcomes. Issues such as the 1997-98 cryptosporidiosis outbreaks in swimming pools in eastern Australia have highlighted the need to ensure that guidelines are maintained up-to-date. A number of State and Territory governments have developed, or are developing, up-to-date guidelines. The undertaking of similar work across a number of jurisdictions indicates a need for more national coordination and collaboration. The WHO is also developing a document, tentatively titled: Swimming Pools, Spas and Similar Recreational Water Environments.

**Need:**
National management guidelines for built environment recreational waters.