

# Advocacy and action in public health: Lessons from Australia, 1901 > 2006



Australian Government  
Department of Health and Ageing



# **Advocacy and action in public health: Lessons from Australia over the 20<sup>th</sup> century**

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Promoting a Healthy Australia

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## Australian National Preventive Health Agency, Canberra

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## Foreword

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This review showcases Australia's achievements in public health over the last century. It was commissioned by the Australian Government Department of Health and Ageing in preparation for the challenges of the 21st century, particularly for expanded efforts in the field of preventive health in Australia.

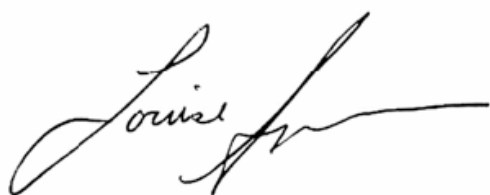
Promoting a Healthy Australia is the first national agency solely focused on prevention, providing an increase in Australia's capacity for disease prevention and health promotion. The Agency is focused on the challenges associated with preventable chronic disease and is playing a key role in tackling risk factors and behaviours. Health Ministers have requested the Agency to focus initially on obesity, smoking and harmful alcohol consumption.

The health many of us enjoy today owes much to the successes of the past one hundred years: controlling communicable disease, assuring the safety of food and water, curbing risk behaviours like smoking and drink-driving - just some of the achievements highlighted in this review. However, the challenges to improving the population's health remain. The burden of disease posed by the health risks of obesity, harmful alcohol consumption, smoking, and social disadvantage, and the diseases of ageing are among those that contemporary public health must address. Yet the lessons of the past century can inform how we tackle existing and emerging problems. In particular, we have learnt that successful efforts have called for, and productively harnessed, the collaboration of quite diverse sections of government and community, working together with energy, imagination and commitment.

As highlighted throughout this report, effective preventive health interventions can save lives and prevent suffering and disability. Such interventions also limit demand on health services so these can be better focused on diseases that are not preventable. As our population ages and we focus on the increasing dominance of chronic disease, prevention has also become a first-order issue in preserving the economic potential of our workforce, and improving the quality of life of all members of our society, particularly Aboriginal peoples and Torres Strait Islanders, and others who are socially and economically disadvantaged.

We congratulate the Public Health Information Development Unit at The University of Adelaide for producing Advocacy and action in public health and commend the review to all who have an interest in learning how Australia manages the great challenge of public health. Promoting a Healthy Australia is pleased to publish this report as a reference and planning resource for the broader public health community.

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**LOUISE SYLVAN**

CEO, Promoting a Healthy Australia

December 2012

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## Preface

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This project was funded under a grant from the Australian Government Department of Health and Ageing.

The report was commissioned by the Population Health Division of the Department, and auspiced by the National Public Health Information Working Group (subsequently the Population Health Information Development Group). An advisory group provided expert opinion to support the direction of the project (see Appendix A).

The aim was to publish a report on the successes of public health action, that is, those measures that contributed to improvements in the health of Australians over the 20th century. The intention was to improve our understanding of what constitutes 'public health', to highlight its capabilities and to provide convincing evidence of the value of investing in public health.

Many areas where public health strategies have been successful were identified. It was only possible, however, to include an overview of a selection of topics in this report. The reviewed literature was broad and included relevant historical documents. However, it revealed few published evaluations that objectively measured the relative performance of successful public health interventions. Thus, in order to support the inclusion of certain topics, we asked public health experts across Australia for their views of the most successful public health interventions since 1901 (the experts are listed in Appendix B, the survey results in Appendix C and the survey questionnaire in Appendix D).

For some topics, there was so much information that only a fraction of it could be included; for other topics, there were gaps in, for instance, historical time trend data, national data analyses or evidence of cost-effectiveness. For other strategies, it was apparent that the benefits had been limited, or effective for only some sections of the community.

This report, therefore, represents merely a 'snapshot' of the public health successes in Australia over the last century. It serves, however, to remind us of how far we have come, how such progress was achieved, and exactly what 'public health' represents, namely, the 'organised response by society to protect and promote health and to prevent illness, injury and disability'<sup>1</sup>, in partnership with local communities and organisations.

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<sup>1</sup> National Public Health Partnership (NPHP), *Public health in Australia: the public health landscape: person, society, environment*, NPHP, Melbourne, 1998.

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- Dr Judith Raftery for her editorial review of the final draft of the report.

The following organisations are gratefully acknowledged for granting permission to use or reproduce their copyrighted data and/or charts:

- Australian Bureau of Statistics for permission to use ABS data from many different publications, as acknowledged in the source notes below the figures and tables;
- Australian Institute of Health and Welfare for making available many of the charts from their review: *Mortality over the twentieth century in Australia: trends and patterns in major causes of death* (AIHW, Canberra, 2006); others from diverse individual publications, as well as those of the National Injury Surveillance Unit. Source notes below the figures and tables reference the individual publications and data books;
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The authors thank the many other people and organisations who have allowed the use of their previously published graphs, tables or other data in this report. In a number of cases, these were re-formatted to a common style for the purpose of publication, while retaining as much of the initial detail and style as possible.

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- National Prescribing Service Limited: 'Common colds need common sense not antibiotics' colour graphic.
- The ETS and Children Project: 'Car and home smoke free zone' colour graphic.
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- Maggie Brady: 'The Grog Book' colour book cover.
- The Cancer Council Victoria: 'Slip! Slop! Slap! Sid the Seagull' colour graphic.

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\*People have been identified by the titles and positions they held at the time of their contribution.

## Overview

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In 1910, Dr JHL (Howard) Cumpston, the first Commonwealth Director-General of Health, raised the 'rapidly developing science of public health' as a 'significant source of the power of the modern state' and identified 'the statesman's first duty as the promotion of the health of the people'.<sup>5</sup> He recognised that a healthier population can contribute much more to the wealth, productivity and welfare of a nation. Australia has become a first world country with a healthy population, enjoying long life expectancies and a generally good quality of life because important public health problems were successfully addressed over the course of the twentieth century. Many of these public health successes are celebrated in this report.

The 20th century was a period of great social, economic and scientific development in Australia. In the early part of the century, public health measures were largely environmentally focused, producing major reforms in sanitation, such as the installation of sewerage and safe drinking water systems, which led to marked declines in waterborne disease by the 1930s. The year 1908 saw the first federal public health legislation in Australia, the Commonwealth *Quarantine Act*, which played an early role in preventing the arrival and transmission of infectious diseases from other countries. Local, state, and federal government efforts reinforced a concept of collective 'public health' action. Improvements in general living conditions (e.g., less overcrowded housing and better nutrition) and in hygiene (e.g., public education about food handling and hand washing) also helped reduce the spread of infectious diseases.

Science and emerging technologies, such as the development of antimicrobial drugs and the timely implementation of mass immunisation programs, drove the second wave of improvements in public health. For example, a national program of diphtheria vaccinations for children was introduced in 1932, and penicillin was developed by Australian researcher, Howard Florey and his team in 1941. Many other improvements in medical treatment were made, and additional widespread immunisation programs introduced in the second half of the century.

These and other advances resulted in dramatic declines in newborn deaths and in deaths from infectious diseases, so that, by the end of the century, death rates were less than one third of what they had been in the early 1900s. As a result, life expectancy at birth for most citizens increased by more than 20 years, although not for Australia's Indigenous peoples - the broader determinants of their wellbeing still need to be effectively addressed.

Australia was an early adopter of innovative technologies, which made food safer and extended the supply of fresh food, among other improvements. Refrigeration was first used in Australian ships exporting fresh meat in 1897, and rapidly became widespread throughout the food industry and the community after World War II. Other new technologies, such as lead-free canning, reduced various hazards in preserving food. By the 1950s, state and local health departments had made substantial progress in foodborne disease prevention through food safety regulation and inspection. Pasteurisation of milk successfully prevented the spread of bovine tuberculosis. Food fortification technology was used from the 1960s when salt was first fortified with iodine, and subsequent measures, including bread flour fortification with thiamine from 1991 and folic acid fortifications of various foods from 1996, reduced preventable deficiency diseases and certain congenital malformations.



Better control and reduction of environmental poisons was achieved through the implementation of broad public health strategies, such as the removal of lead from petrol and paint, the closure of asbestos mines and nation-wide banning of asbestos and asbestos products. Urban air quality improved after the first *Clean Air Acts* in 1967. Fluoride in drinking water, which protects against dental disease, especially for children, was first introduced in Beaconsfield, Tasmania in 1953, and the water supplies of seven capital cities were fluoridated between 1964 and 1977.<sup>234</sup> Improvements in health and housing infrastructure in Indigenous communities halved the incidence of skin and eye infections as demonstrated by Nganampa Health Council's 'Healthy Living Practices' developed in 1987.<sup>161</sup>

Mothers and their infants were another early focus for public health activity in Australia. Large improvements in the safety of birthing and aftercare resulted from the prevention of sepsis and better training of birth attendants. Antenatal and postnatal care, family planning, parental education (especially of mothers), higher rates of breastfeeding initiation after mid-century lows, and the development of universal primary health services all contributed to improvements in the survival rates of infants and children. Australian public health researchers identified infant sleeping position as a preventable risk factor for Sudden Infant Death Syndrome, and strategies to reduce it were implemented using public education campaigns from 1990 onwards.

During the second half of the century, cardiovascular diseases and cancer became more prominent, due in part to the large reductions in infectious diseases. There was a rise, followed by a partial fall in two major afflictions: coronary heart disease and lung cancer. Behavioural risk factors associated with chronic diseases were identified, and concerted public health campaigns led to reductions in tobacco smoking and changes in social attitudes about smoking. Population screening for risk factors proved to be a successful approach to case-finding for certain cancers, offering opportunities for earlier clinical intervention and treatment. Cervical and breast cancer screening programs commenced in 1991, and screening for bowel cancer in 2006. Sun safety measures, refined in the years after the first sun protection campaign in 1981, proved their worth by reducing skin cancer.

Over the century, there were improvements in the working conditions of employees across a wide range of industries and occupations as the fields of occupational health and safety developed. The emphasis at the beginning of the century was on providing basic public health amenities such as toilets, ventilation and fire escapes in workplaces; and on placing limits to the hours and ages of employment of women and children. By the end of the century, workplaces were increasingly used as locations for public health programs to improve health, such as hearing screening, blood pressure monitoring, and screening for preventable genetic conditions. Although workplace hazards and injuries remain potentially significant causes of disability and related health problems, preventable exposures and injuries have been addressed in a number of areas.

Road safety interventions put in place from the 1970s, including national speed limits, mandatory seat belts, blood alcohol limits and breathalyser testing, led to reductions in the rate of motor vehicle fatalities that had been rising steeply, along with the popularity of motoring, since the 1950s. A barbiturate poisoning epidemic was arrested through the implementation of greater restrictions on the prescription and dispensing of barbiturates and other drugs in the 1960s. Other public health measures to reduce preventable injuries included improvements in domestic swimming pool fencing to prevent toddler drownings; improvements in product safety (e.g., nursery furniture, playground equipment); and in information systems, such as that enabling coroners to identify national trends and help eliminate preventable hazards in the community. National gun law reforms, together with the firearms buyback of 1996, contributed to reductions in firearm deaths. National strategies were also developed to reduce the impact of suicide, HIV/AIDS and hepatitis C, and their associated risk factors.

During the 1980s, Australia endorsed the World Health Organization's Alma Ata principles, which emphasised the importance of primary health care, participative approaches to health promotion and illness prevention, and the appropriate use of technology.<sup>6</sup> Health policies were explicitly reshaped to focus on health promotion and the prevention of disease, disability and injury.

Towards the end of the century, there was greater community awareness of the state of the environment, shown in activities such as rubbish recycling schemes, the annual 'Clean up Australia' day and other community-led projects, with the public health sector playing an active role. The future health consequences of global climate change, however, required further effort from environmental and public health practitioners, as impacts in Australia were likely to include increases in heat- and flood-related deaths and injuries and the expansion of geographic areas susceptible to the transmission of tropical infections, such as dengue fever and malaria. Public health science will undoubtedly contribute to the development of knowledge about how best to address these changes as they emerge.

Over the 20th century in Australia, the role of the public health workforce widened considerably, from early action to improve sanitation and the control of infectious diseases such as typhus and plague, to highly sophisticated, multi-faceted programs to limit tobacco smoking within the population. Later, public health programs developed a social contract function, emphasising education and engagement with the community. Under this approach, a government's role was to monitor and warn the population through surveillance; to help prevent health problems through the search for underlying causes and remediating actions; and to minimise the harm and maximise the good arising from the management of health issues. Over time, this led to a sharper focus on equity issues in order to close the gap between the health of the most and least disadvantaged groups in the population. Governments were also concerned to balance the rights of the individual in relation to the state against situations where the rights of the community overrode those of an individual.

By the end of the 20th century, there was wider recognition of the importance of the period of early childhood for human development and health, with evidence from public health research emphasising the critical periods of infancy and early childhood in establishing a basis for health, learning and behaviour throughout life.<sup>228</sup> The cost-effectiveness of public health interventions during the first years of life had been demonstrated by evaluations of programs such as intensive, targeted home visiting and early childhood education. Despite this, more effort was needed to ensure that every child in Australia had the 'best start in life', especially those who were of Aboriginal and Torres Strait Islander origin.

At the start of the 21st century, Australia had a world-class system of health care financing and provision, whereby people were able to access publicly subsidised health care services, pharmaceuticals, and medical technologies, through a range of service and funding arrangements. These included government funding of public hospital and medical services; subsidised pharmaceutical products delivered through the Pharmaceutical Benefits Scheme; and medical devices (e.g., cardiac pacemakers, artificial hip joints) made available in hospitals following approval by the Medical Services Advisory Committee.

The public health practice of 'an organised response' to the protection and promotion of health and the prevention of illness, injury and disability in the population undoubtedly saved many lives during the 20th century. Development of a specialised public health workforce, conduct of public health research, and monitoring and surveying the population's health were essential elements. The establishment of an Aboriginal Community-Controlled Health sector, and an Indigenous public health workforce, developed over more than thirty years from 1971, meant that some of the fundamentals necessary to effect improvements in the health and wellbeing of Indigenous Australians were in place at the start of the 21st century.<sup>656</sup> However, much faster progress was needed.

Improvements in public health over the century lifted educational and labour force participation, especially for older workers; increased overall wellbeing, quality and enjoyment of life; and increased the numbers of people in education, the labour force, volunteering and grand-parenting by reducing the impacts of preventable illness, disability and injury.

Current public health activities draw upon a wide range of methods applied across many different settings including schools, homes, roads, workplaces and health care. In partnership with public health authorities, investment and activity by non-government organisations (NGOs), businesses and communities, and government sectors responsible for education, environment and housing among others, all contribute to improving the health of Australia's population. Modern public health, as recently described by Powles, has come to be 'science plus civic engagement'.<sup>2</sup>

This report aims to raise awareness of some of the successful public health programs that were implemented from 1901 to 2006 in Australia for the benefit of its population. The selection was informed by an extensive literature review, a survey of health experts, and other public health research. The programs that were chosen addressed significant health problems with identifiable improvement in the population's health. They were implemented on a national or universal scale and functioned at that scale for at least five years, and their impact was largely attributable to public health effort rather than to general rises in the prevailing social and economic conditions.

### **The continuing challenge of remedying inequalities in health across the population**

Although there have been many achievements in improving public health in Australia over the last century, the problem of inequalities in health across the population continues to be a challenge. Premature mortality and rising levels of illness remain disproportionately concentrated among the most socioeconomically disadvantaged groups in our society, primarily Aboriginal and Torres Strait Islander Australians, especially those living in remote communities.

In reviewing improvements in health over the 20th century, the Australian Institute of Health and Welfare concluded that benefits had not been shared equally. Despite the large increases in Australian life expectancy by the year 2000, the life expectancies of Aboriginal and Torres Strait Islander peoples was at levels not experienced by the rest of the population since 1900.<sup>3</sup> Reducing these and other inequalities needs to be a priority for the 21st century, and public health programs that offer improvements in the health of Aboriginal and Torres Strait Islander peoples need to be consolidated and extended. The wider social and economic determinants of health also need to be better integrated into cost-effective public health programs.

### **Conclusion**

The 20th century public health successes addressed problems that had a significant impact on the population's health. Public health interventions used a range of methods and many of the most successful were complex, multi-faceted and extensive, instituting concurrent public health action across different areas - for example, in legislation, fiscal incentives, social marketing, health promotion, and provision of public health services. This was as true of some earlier public health successes, such as tuberculosis control from the late 1940s, as of later examples, such as tobacco control from the 1970s.

In 1997, a National Health and Medical Research Council (NHMRC) review of infrastructure for promoting the health of Australians identified that the key elements of successful approaches were:

- strategic direction;
- technical expertise (including surveillance, research and evaluation);
- supportive structures for implementation; and
- sustained investment.<sup>4</sup>

The NHMRC review identified that the greatest improvements in health had been achieved with a sustained response that engaged many components of the health sector (e.g., hospitals, NGOs, universities and public health practitioners), non-health sectors, and, most importantly, the community.<sup>4</sup> While more remains to be done, much has been learned over the last century that can be applied by those charged with achieving public health successes in the hundred years to come.

A wealth of information is presented in this report with the aim of raising awareness of the many successful programs and strategies that made a measurable impact on the health of the Australian population over the period, 1901 to 2006. This report highlights the successful interventions that the public health sector has contributed to Australia's development as a nation since Federation, and offers a valuable resource to people tackling current and future public health challenges. The achievements of public health should be celebrated and stand as models for action to address population health challenges in the future.

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# Introduction

*'The health status of the Australian people has improved markedly over the last 150 years, the period in which modern public health was transplanted to, and matured, in that country.'*

– MJ Lewis.<sup>1</sup>

The 20th century was a period of great social, economic and scientific development in Australia. For the population's health, these developments brought better nutrition and living conditions from the start of the century, widespread immunisation and improvements in medical treatment in the second half, and a growing awareness in more recent times of the effect of socioeconomic and behavioural factors on health. A dramatic decline in perinatal mortality (newborn deaths) and deaths from infectious diseases resulted, with death rates less than one third of what they were in the early years of the century, and an improvement in life expectancy at birth of over 20 years. However, there was also a greater prominence of the chronic diseases (e.g., cardiovascular diseases and cancer).

Furthermore, despite improvements in living conditions and in life expectancy for most people after 1901, some groups did not receive the full health benefit, especially Aboriginal and Torres Strait Islander populations, and other socioeconomically disadvantaged groups. This reinforces the fundamental importance of societal inequalities in relation to inequalities in the health of populations, and the continuing challenge in the 21st century to remedy such injustices.

The contribution of public health interventions and actions to improving the population's health is apparent throughout this review, although their impacts are not always easily proven or attributable as such. This is partly because data have not survived or formal evaluations were never undertaken, especially for early public health programs. It is also because many of the factors that determine the health of a population lie outside the immediate control of the public health sector, and encompass factors such as socioeconomic status, genetic inheritance, culture, and one's level of education. These external factors impinge on many of the interventions examined in this report, and where possible, limitations in the success of public health programs have been identified.

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## Defining 'Public health'

'Public health' has been defined in many ways over the past one hundred years. In 1910, the first Commonwealth Director-General of Health, Dr Howard Cumpston, raised the 'rapidly developing science of public health' as a 'significant source of the power of the modern state' and identified 'the statesman's first duty as the promotion of the health of the people'.<sup>5</sup>

As the public health historian Lewis observed in 2003, 'public health' can refer to both:

- (1) the 'professional knowledge and practices, social institutions, and public policy devoted to the advancement of the collective health'; and
- (2) the 'actual state of health of the people', or the 'health status of the population as a whole'.<sup>1</sup>

*'If you had been born in 1900, you could expect to live until the age of 52 if you were a man, 55 if you were a woman. But you could have died from diarrhoea or enteritis before you were five; one in 10 children did. You may never have known your mother – six women died in every one thousand live births. By the 1990s, it was 11 in every 100,000 confinements. If your father had not been killed in a work accident, or caught tuberculosis or pneumonia, he may have died from a heart attack. Today he is still likely to die of cardiovascular disease or cancer, especially if he was a smoker, but not until the age of 70. In the early 1900s, your brother might have died in a horse accident. By the 1970s, he was more likely to be killed in a car crash, and by the end of the century, it was suicide that was claiming many young male lives.'*

– F Beddie, *Putting life into years: the Commonwealth's role in Australia's health since 1901*, 2001, p. 1.

Over the century, many government-led programs and practitioner and citizen-based movements were initiated to promote health and to prevent disease at a population level in Australia. These progressed at the same time as many international programs, such as food assistance, agricultural development, malaria eradication and so forth, were set up to improve the health of people in other countries.

Under the aegis of the World Health Organization (WHO), a number of significant public health charters set the direction for efforts to improve the population's health:

- the *Declaration of Alma Ata* (1978), which emphasised the importance of primary health care, participative approaches to health promotion and illness prevention, and the appropriate use of technology;
- *Health for All*, which set ambitious targets to achieve 'Health for All by the Year 2000' (1981); and
- the *Ottawa Charter for Health Promotion* (1986), which identified the principal health promotion activities and delineated five action areas for governments - building healthy public policy; creating supportive environments; strengthening community action; developing personal skills; and reorienting health services towards health promotion.<sup>6,7,8</sup>

**Primary health care:**

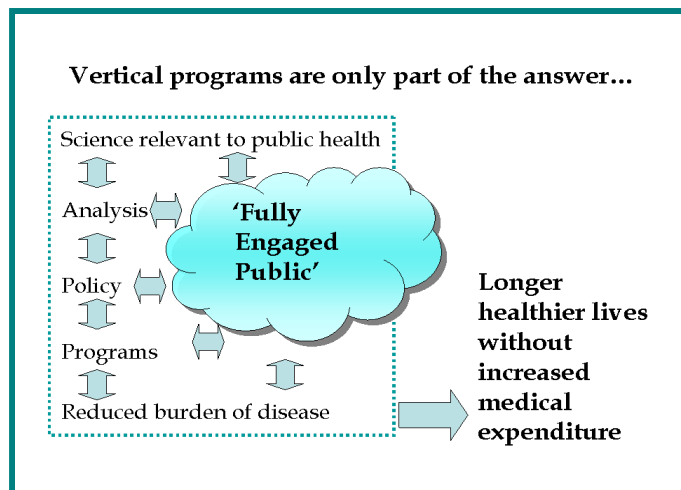
*... includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs;*

*involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors; and demands the coordinated efforts of all those sectors ...*

— *Declaration of Alma-Ata, 1978* [part only].

During the 1980s, Australia endorsed the *Alma Ata* principles, and restructured a number of its health policies towards health promotion and the prevention of disease, disability and injury. Other parts of the health sector were also influenced: the safety and quality movement in acute care; population-focused investment and policy initiatives; the 'health outcomes' methodology; and a population approach to the 'care continuum' including prevention. Research and evidence-based practice contributed to public health analysis. Later, the emphasis shifted towards the ideal of an active partnership with all citizens, with engagement, participation and persuasion used far more widely than the strategies of legal coercion and regulation.<sup>5</sup> This is reflected in the description of modern public health as 'science plus civic engagement' (depicted in Figure 1).<sup>2</sup>

**Figure 1: Public engagement and public health**



Source: Powles, *Public engagement and public health*, 2003.

In this report, the National Public Health Partnership's definition of 'public health' has been used:

*'the organised response by society to protect and promote health and to prevent illness, injury and disability; the starting point for identifying public health issues, problems and priorities, and for designing and implementing interventions, is the population as a whole, or population sub-groups.'*<sup>9</sup>

## Principles and methods of public health

'Public health' is a public or common good, and its execution rests on a set of principles that inform and guide public health action. Visions or long-term goals are commonly framed as 'Better health for all through effective public health action to maintain, protect and promote health'.<sup>10</sup>

A set of principles of public health is shown in Box 1.<sup>11</sup> The first principle, of 'population focus', sets out the aim of improving the overall health of the whole community. It is sometimes described as 'the principle of the aggregate' because public health activity is directed towards the population, or a specific population subgroup, rather than the health of an individual.<sup>12</sup> A focus on the population is warranted, as the entire community benefits from clean water and air, safe food, immunisation, drug regulation, and the health of individuals remains at risk if those factors impinging on populations are left unattended.

The principle of 'prevention, promotion and early intervention' describes a key difference between public health and clinical medicine. Clinical medicine is aimed primarily at the treatment of individuals. Although prevention is part of many clinicians' activities, the major focus of public health is on the prevention of disease, disability and injury before there is a need for clinical intervention. 'Early intervention' describes public health activities aimed at deferring the onset of a disease or condition, its progression or complications, as well as screening activities that enable early diagnosis and intervention (e.g., organised cancer screening).

The public health principle of operating in partnership with communities, and with a wide range of agencies that include government departments (in addition to health), such as transport (for road safety), urban planning (for healthy environments), education (for health literacy in schools), is important. Local government also has carriage of many public health monitoring activities, from inspection of food premises to immunisation. There are numerous non-government organisations (NGOs), such as the Heart Foundation, the National Stroke Foundation, and the Cancer Council Australia, and health foundations (e.g., the Victorian Health Promotion Foundation) that are active partners in public health practice. In fact, without these partnerships, the achievements in public health over the last century would not have been possible.

The principle of 'reducing health inequalities' describes public health work in ameliorating the preventable differences in health between groups in society. These may relate to differences in the distribution of resources, for example, or in access to health care or in the determinants of health. Some variations in the health of communities are unavoidable and arise from differences in genetic

### Box 1 Five principles of public health

#### Population focus

- Aims to improve the overall health of the community.

#### Focus on prevention, promotion, and early intervention

- Tackles the things that can add years to life and quality life to years.

#### Work in partnership

- Works with local communities, sharing information and acknowledging their concerns; and

- Works with other agencies to influence the things that affect health but are not strictly 'core business' for the health sector (for example, collaborations with the police on anti-violence programs).

#### Reduce health inequalities

- Works to reduce the differences in health between sections of the community.

#### Effective and sustainable action

- Uses the best scientific information about approaches – what works and what doesn't; and

- Uses the best mix of approaches to get the best value for investment.

– NPHP, *Highlights of public health activity in Australia 2000-2001, 2002*; citing NSW Health, *Healthy People 2005: new directions for public health in NSW*, 2000, p. 15.



inheritance, age, sex and so on. Others, however, can be avoided or minimised through action to address the underlying causes or risks.

Lastly, the principle of ‘taking effective and sustainable action’ relies on good science, accurate information, and evidence of what works, and uses a mix of approaches to get the best value for any investment made. Hence, many public health programs are complex and multi-faceted, as they aim to address issues on a number of fronts simultaneously. Examples include:

- social marketing to raise awareness and inform the community (e.g., media messages regarding sun protection);
- legislation to enable public health practitioners to act (e.g., quarantine) or to regulate public behaviour (e.g., drink driving laws);
- encouraging participation in health-promoting activities (e.g., city fun runs);
- education to improve population health literacy (e.g., in schools and in the media); and
- the subsidising of products and services (e.g., many pharmaceuticals, immunisation).

In the early part of the 20th century, public health measures in Australia were mainly environmentally focused, and produced major reforms in areas such as sewerage and safe drinking water systems. Later, public health programs developed a social contract function, emphasising education and engagement with the community, with government’s role being to monitor and warn (surveillance), to prevent (search for underlying causes), to minimise harm, and to maximise good. By the end of the century, there was a sharper focus on equity issues (closing the gap between the health of the most and least disadvantaged groups in the population) and on balancing rights (the rights of the individual in relation to the state, and the situations when the rights of the community must override those of an individual).

By the start of the 21st century, public health activities drew upon a wide range of methods applied across different settings (such as schools, homes, workplaces, the media and health care). Activities and investments by the non-health sectors of government (such as education, housing and transport), NGOs and communities, all contributed to the improvement of the population’s health, in partnership with public health authorities (Figure 2).<sup>13</sup>

**Figure 2: Public health methods**

Advocacy and lobbying	Immunisation	Research and evaluation
Communicable disease control	Infection control	Road safety
Community action	Legislation and regulation	Screening to detect disease/risk factors
Community development	Lifestyle advice	Social action
Counselling	Management of biological risk	Social marketing
Diagnosis	Monitoring and surveillance	Training and workforce development
Directed investment	Occupational health and safety assessment	Treatment
Environmental monitoring	Personal skills development	Urban planning
Epidemiologic methods	Political action	Vector control
Exercise of capabilities	Public policy development	Waste management
Food safety	Radiation safety	Other methods of intervention
Health education	Remediation of environment	
Health impact assessment		

Source: Gruszin et al., *Public Health Classifications Project, Phase one: final report*, 2006, p. 21.

### **Determining the proportion of improved life expectancy and health attributable to successful public health action**

Increasingly, research shows that health is the product of many different factors.<sup>14</sup> Those that have the most important effects are known as ‘the key determinants of health’; and include individual characteristics, such as the genes that we inherit from our parents, and aspects of our own beliefs, behaviours and coping abilities. Other significant influences operate in families, neighbourhoods,

communities, culture or kinship groups, and across society as a whole. As many of the health determinants overlap, it can be difficult to ascertain the exact contribution of each factor, and the ways in which they influence our health as a population. Thus, while the health of the population improved significantly over the 20th century, it is difficult to assess how much of that improvement was due solely to public health knowledge and practices, rather than to concurrent changes in living conditions and in the wider determinants of health.<sup>15</sup>

Most researchers, however, credit public health improvements in lifespan to the success of the following elements: improved nutrition; safe, clean water and adequate sanitation; control of infections through vaccination, safer food, and hygiene practices; and other broad public health developments.<sup>16</sup> In Australia, those groups in our population that did not enjoy these public health amenities did not increase their life expectancy to the same degree - for example, Aboriginal and Torres Strait Islander peoples.

Over the century, there were other significant changes in society that, although not the direct result of public health interventions, had beneficial effects on the population's health. These included:

- modernisation, the establishment of a basic wage and welfare safety nets, and a rise in living standards with increasing prosperity;
- controlled fertility and smaller family size;
- changes in agricultural practices and transport leading to better quality food and wider distribution of perishables;
- higher education levels and rising health literacy; and
- access to improved medical treatments and health care services for individuals.

Furthermore, from the time of Federation in 1901, the influence of democratic government for the growing population and the enfranchising, as citizens, of groups such as women, migrants, and the Indigenous population, were all steps towards a healthier population. In the latter third of the century, the negative impacts of social exclusion and racism on health were acknowledged, and further measures put in place to reduce discrimination and increase opportunity for disadvantaged groups within Australia.<sup>17,18,19</sup>

The relative economic security and stability that Australia enjoyed over the century also had a positive effect on health.<sup>20,21</sup> Education and the involvement of the scientifically informed media produced a more health literate population. The role of general education and the consequent rise in health knowledge of mothers had a profound impact on child nutrition, and was credited as the most significant factor in improving infant and child health.<sup>22</sup> With the emergence of the 'wellness revolution', there was a stronger move towards preserving health and preventing illness.<sup>23</sup> Advances in public health knowledge, practices, institutions and policies, and changes in the socioeconomic determinants of health also contributed to the achievements over the 20th century.

## **The National Health Performance Framework**

In measuring the success of public health programs nationally, the National Health Performance Framework is a useful reference point (Figure 3).<sup>24</sup> The framework is a nationally agreed structure for reporting on the performance of all levels of the health system, including the area of public health, and consists of three tiers. The first, Health status and outcomes, has four dimensions: health conditions, human function, life expectancy, and deaths. Many public health successes can be measured directly by these outcomes.

The second tier, Determinants of health, has five dimensions: environmental factors, socioeconomic factors, community capacity, health behaviours, and person-related factors. Numerous public health interventions over the last hundred years are also represented within this tier.

**Figure 3: The National Health Performance Framework**

<b>Health status and outcomes</b>		
<i>Health conditions</i>	<i>Life expectancy and wellbeing</i>	
<i>Human function</i>	<i>Deaths</i>	
<b>Determinants of health</b>		
<i>Environmental factors</i>	<i>Health behaviours</i>	
<i>Socioeconomic factors</i>	<i>Person-related factors</i>	
<i>Community capacity</i>		
<b>Health system performance</b>		
<i>Effective</i>	<i>Appropriate</i>	<i>Efficient</i>
<i>Responsive</i>	<i>Accessible</i>	<i>Safe</i>
<i>Continuous</i>	<i>Capable</i>	<i>Sustainable</i>

Source: National Health Performance Committee, *National health performance framework report*, 2001.

The third tier, Health system performance, is grouped into nine attributes: effective, appropriate, efficient, responsive, accessible, safe, continuous, capable and sustainable. These are useful when considering the 'organised' system of public health and its effects on other systems more widely.

Throughout this report, the domains of the National Health Performance Framework serve as a reminder of the significant public health contribution to the improvement in the health of Australians over the 20th century. Within each major chapter, there are a number of specific examples of programs which highlight the scope of public health intervention. The list only represents programs that were underpinned by relatively robust evidence of their success, as well as those cited most often by surveyed experts.

The chapter titles are:

1. Control of infectious diseases;
2. Maintaining a safe environment;
3. Improved maternal, infant and child health;
4. Better food and nutrition;
5. Preventing injury;
6. Reducing risk factors and chronic diseases;
7. Improving health and safety at work;
8. Universal access to health care, pharmaceuticals and technology; and
9. Improving public health practice.

The report provides an historical overview of the public health actions taken to address the many population health issues that arose over the last century. These successful interventions also led to a more integrated and collaborative 'modern public health' approach taken by the numerous stakeholders and partners who continue to work in public health arenas today.