



Australian Government

Department of Health, Disability and Ageing

Defining the Public Health Workforce in Australia



Copyright

© Commonwealth of Australia as represented by the Department of Health, Disability and Ageing 2025

Creative Commons Licence



This publication is licensed under the Creative Commons Attribution 4.0 International Public License available from creativecommons.org/licenses/by/4.0/legalcode ("Licence"). You must read and understand the Licence before using any material from this publication.

Restrictions

The Licence may not give you all the permissions necessary for your intended use. For example, other rights (such as publicity, privacy and moral rights) may limit how you use the material found in this publication.

The Licence does not cover, and there is no permission given for, use of any of the following material found in this publication:

- the Commonwealth Coat of Arms. (by way of information, the terms under which the Coat of Arms may be used can be found on the Department of Prime Minister and Cabinet website pmc.gov.au/resources/commonwealth-coat-arms-information-and-guidelines;
- any logos and trademarks;
- any photographs and images;
- any signatures; and
- any material belonging to third parties.

Attribution

Without limiting your obligations under the Licence, the Department of Health, Disability and Ageing requests that you attribute this publication in your work. Any reasonable form of words may be used provided that you:

- include a reference to this publication and where, practicable, the relevant page numbers;
- make it clear that you have permission to use the material under the Creative Commons Attribution 4.0 International Public License;
- make it clear whether or not you have changed the material used from this publication;
- include a copyright notice in relation to the material used. In the case of no change to the material, the words "© Commonwealth of Australia (Department of Health, Disability and Ageing) 2025" may be used. In the case where the material has been changed or adapted, the words: "Based on Commonwealth of Australia (Department of Health, Disability and Ageing) material" may be used; and
- do not suggest that the Department of Health, Disability and Ageing endorses you or your use of the material.

Enquiries

Enquiries regarding any other use of this publication should be addressed to the Branch Manager, Communication Branch, Department of Health, Disability and Ageing, GPO Box 9848, Canberra ACT 2601, or via e-mail to copyright@health.gov.au

Contents

- Executive summary 4
- 1. Introduction 9
- 2. Approach and methods 11
- 3. Defining public health practice..... 14
- 4. Functions of the Australian Workforce 19
- 5. Workforce competence 25
- 6. Workforce composition 38
- 7. A sustainable and future-proofed Workforce..... 49
- Glossary 51
- Acronyms 53
- References..... 55

Executive summary

Background and context

Public health is the art and science of preventing disease, prolonging life and promoting health through society's organised efforts. [1] This is achieved through the public health workforce, who promote health and wellbeing; research disease and injury prevention; detect, prevent and address communicable and non-communicable diseases; and respond to natural and man-made environmental threats. In doing so, the Public Health Workforce (Workforce) adds to the health, resilience, and future prosperity of people living in Australia.

The importance of an efficient and effective Workforce to support the public health needs of all Australians is emphasised by:

- disparities in the health status of disadvantaged and marginalised communities
- the growing burden of chronic diseases and obesity, and recent emergencies including cyclones, floods, and bush fires
- recent threats of influenza pandemics and the SARS-CoV-2 (COVID-19) pandemic.

The COVID-19 pandemic highlighted the importance of a skilled, rapidly activated and adequately resourced public health response. It further highlighted the need for a long-term approach to strengthen Australia's public health capacity. Strengthening the Workforce will ultimately assist in preventing disease and promoting wellness, and protecting Australia from emerging health threats. At present, the Workforce in Australia is not well defined. A definition of the Workforce will aim to provide a foundation to support the future proofing of the Workforce. This will be achieved through workforce planning which will better prepare the public health system to respond to future threats and emergencies.

The *National Preventive Health Strategy 2021–2030* (the Strategy) describes an overarching, long-term approach to preventive health in Australia. The Strategy identifies enhanced Workforce planning as an immediate priority, to mobilise, sustain and future-proof an effective prevention and preparedness system which is embedded '*across, and beyond, the health system*'. [2]

Purpose, methods and approach

The public health workforce is a group of professionals who work to protect and improve the health and wellbeing of communities. These professionals work in various settings, including government services and agencies, not for profit organisations, healthcare facilities and academic and research institutions. This Paper provides a key point of reference for defining the Workforce in Australia, to inform future decision-making with respect to the continuous development and improvement of the Workforce. The intended audience for this paper is primarily policy makers and public health stakeholders.

To define the Workforce, a process involving 3 stages was undertaken:

- Stage 1: A desktop review of published and grey literature and websites to develop a draft definition.
- Stage 2: An internal workshop with stakeholders within the Australian Government Department of Health, Disability and Ageing to test the drafted definition.
- Stage 3: Stakeholder consultations with relevant public health sector representatives and experts to revise and finalise the definition.

Defining the Workforce in Australia

The definition of the Workforce is made up of the following components: Workforce functions, services and enablers, Workforce competencies and Workforce composition. It is represented in Figure 1.

Workforce functions, services and enablers

The Workforce comprises people who engage in the delivery, planning and evaluation of programs designed to maintain and improve the health of communities. The Workforce is defined by the set of functions that it carries out. [3, 4] Australian public health functions align well with international guidelines and frameworks, and include service- and enabler-oriented or cross-cutting functions, shown in the Box below:

Service-oriented functions	Enabler-oriented functions
<ul style="list-style-type: none"> • Health Promotion • Environmental health & protection • Early detection and prevention of illness arising from priority diseases and conditions 	<ul style="list-style-type: none"> • Public health policy and strategies • Resourcing for public health initiatives • Cross-sectoral partnerships • Public health communication • Professional development • Evaluation and redesign • Addressing inequality • Public health research and translation • Public health laboratory science
Cross-cutting functions	
<ul style="list-style-type: none"> • Health intelligence and surveillance • Preparedness against and control of threats 	

In common with current international guidance, public health practice in Australia can be categorised into three **core public health services** (disease prevention, health promotion, health protection), which are the foundations of public health. These services are supported by a range of **enablers** (governance, advocacy, information and capacity). [5] The Workforce in Australia must be fit-for-purpose to provide these services and enablers to fulfil the

functions of public health through primordial, primary and secondary prevention mechanisms. [6, 7]

A competent Workforce

International progress has been made towards defining public health functions and associated tasks, the competencies (knowledge, skills, attributes and values) needed to achieve these, and the people who are included in the Workforce. The term ‘competence’ refers to the capability of an individual – and by extension the Workforce to which the individual contributes – to deliver a set of practice activities and tasks, as outlined in Table 1.

Table 1: WHO public health and emergency workforce competency domains

Six individual competency domains	Five practice activity domains
<ul style="list-style-type: none"> • Community-centredness • Decision-making • Communication • Collaboration • Evidence • Personal conduct 	<ul style="list-style-type: none"> • Systems for public health • Public health intelligence • Public health programs and services • Management of resources for public health programs and services • Public health emergency management

There are many sets of competencies relevant to public health including the sets commonly used in Australia, each relevant to specific sub-disciplines of public health. Many education and training programs are based on these sets of competencies. The behaviours comprising individual competence, and the range of practice activities identified through Australian-specific website searches and expert consultations, are consistent with work recently undertaken by the World Health Organization (WHO). [8] This alignment demonstrates the need for an appropriately-trained Workforce to competently deliver public health programs through locally designed services. Training was recognised as a priority for future-proofing the Australian public health system during the consultation phase of this project. It is reasonable to expect that in Australian public health units, the people undertaking public health work have been trained in appropriate core competencies.

Workforce composition

In Australia, the Workforce can be defined based on the categories identified by the WHO:

- **general workforce:** consisting of the core public health workforce, health and care workforce, and other workforce (non-health professions), as shown in Table 2.
- **executive management:** consisting of people working in executive management, and leadership and policy authority roles with specialist training or responsibilities oversee and facilitate the work of the general workforce, as shown in Table 2.

- **surge workforce:** capacity can be mobilised through both the general and executive sections of the workforce, depending on the specific skills needed for emergency management.

Table 2 WHO categories for the public health and emergency Workforce

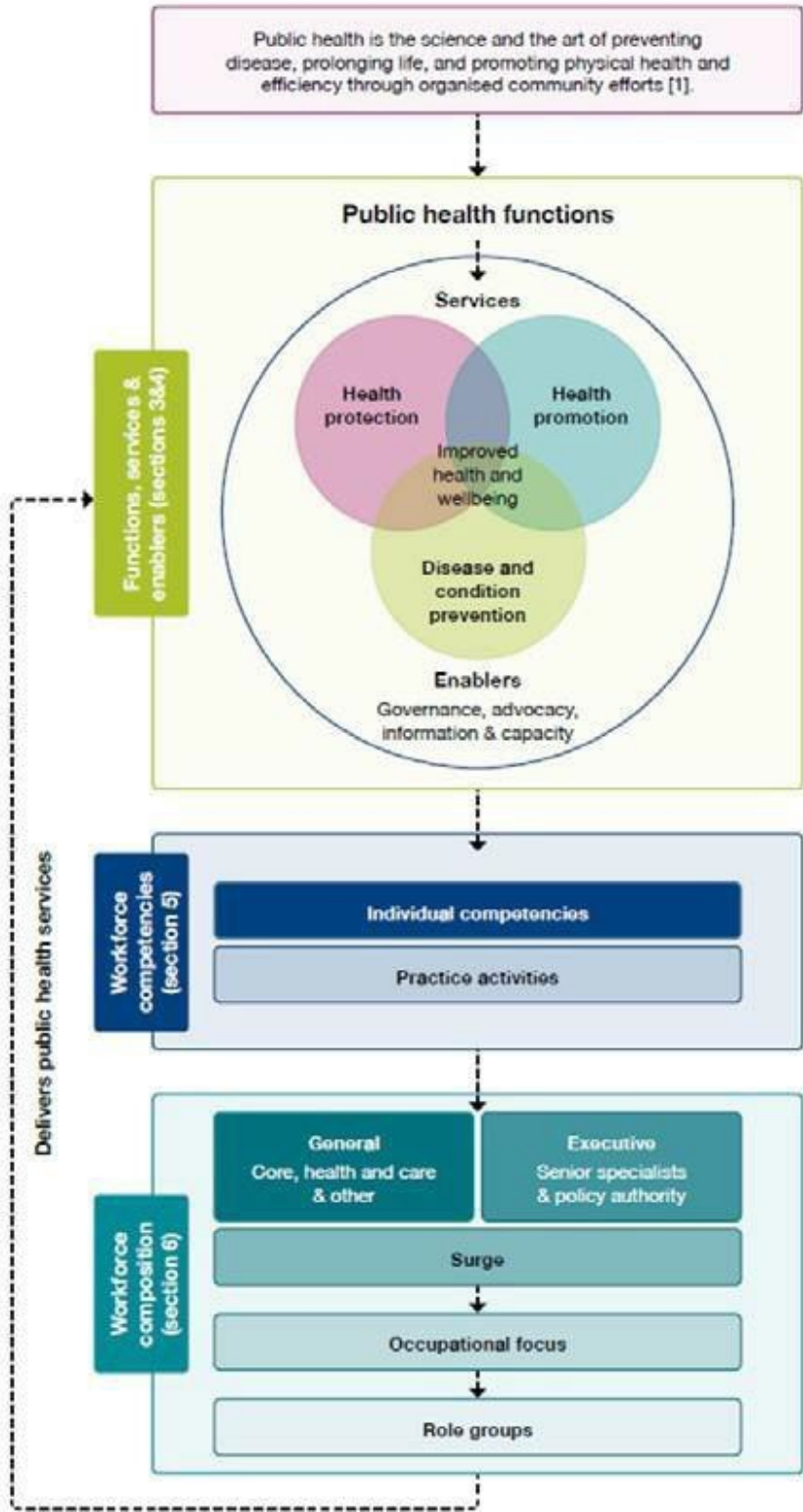
General Workforce	<ul style="list-style-type: none"> • Core public health workforce • Health and care workforce • Other workforce 	<ul style="list-style-type: none"> • People whose work is entirely directed to public health efforts • People who principally deliver clinical and personal care, but who perform several public health functions • People not working in health settings but whose functions are critical to the health of the public
Executive Management and Leadership	<ul style="list-style-type: none"> • Senior specialists • Policy authority 	<ul style="list-style-type: none"> • People with specialist training and with executive responsibilities • People with policy, decision-making, and coordination roles with resourcing and oversight responsibility

Future-proofing and securing the quality of the Workforce in Australia will enhance both usual service provision and provide mechanisms for surge capacity. This requires education and training, increasing employment, and securing surge capacity. There will be opportunities to participate in international Workforce programs, such as implementation of the WHO Roadmap [8], to enhance Australia’s international standing as a public health leader.

The Australia Government has commenced some of this work through this Paper.

Defining the Public Health Workforce in Australia (this Paper) provides a shared understanding of the definition of the Workforce in Australia, to assist in future decision-making on the prevention of, and preparedness for, communicable and non-communicable diseases. Providing a clear, nationally consistent definition of the Workforce is important for the development and improvement of the Workforce and for future workforce planning (Figure 1).

Figure 1 The definition of public health, associated functions, services and enablers, competencies and practice activities, and composition



1. Introduction

Defining the Public Health Workforce in Australia (this Paper) outlines the definition of the public health workforce (Workforce), to support the Workforce's continuous development and improvement.

1.1. Background and scope

Charles-Edward A. Winslow was the first to define public health, a definition which formed the basis of the World Health Organization's definition of health and is still used widely today: "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". [9]

What is public health?

Public health is the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organised community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organisation of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health [1].

Public Health is achieved through 'securing and maintaining the conditions in society that enable people to live healthy and fulfilling lives' [10] and applies to services and functions which keep the public as healthy as possible. The 'public' is everybody, and includes many different discreet population groups, for example First Nations peoples, youth, ageing, people from diverse ethnic or sexual and gender backgrounds.

1.2. Wider determinants of health

The goal of public health is to strive for improved population-wide health and wellbeing. This cannot be achieved without understanding and addressing the wider determinants of health.

The wider determinants of health refer to the broader factors that affect individuals' health outcomes. [11] These include social, environmental, structural, economic, cultural, biomedical, commercial and digital factors. The wider determinants can lead to inequity and inequality within society and often exist at the systemic level, leading to an uneven distribution of burden of disease in Australia. [2] To improve population-wide health, an equity lens must be applied to public health initiatives, so that the needs of priority population groups are identified and prioritised for action. [12]

The [1986 Ottawa Charter for Health Promotion](#) set out the principles for individuals or groups to be able to improve and maximise, their health. Notably, the prerequisites for health are: ‘peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice and equity’. [13] As resources for health are not confined to access to health care and medicine, this was an important step in recognising the interplay between multiple sectors in the enabling of public health.

The [United Nations Sustainable Development Goals](#) programme, adopted in 2015, reinforces the importance of the prerequisites for health. The 17 Sustainable Development Goals (SDGs) are an urgent call to action by all countries to improve health, and education, reduce inequality and economic growth. The SDGs and prerequisites for health in the Ottawa Charter emphasise the need to address the wider determinants of health.

[Overview the National Preventive Health Strategy 2021-2030](#)

In 2021, the Australian Government launched the [National Preventive Health Strategy 2021–2030](#) (the Strategy), which aims to: “improve the health and wellbeing of all Australians at all stages of life through prevention”. [2] Preventive health is a key area of reform for the Department of Health, Disability and Ageing, to address the increasing burden of disease, reduce health inequity and increase preparedness for emerging health threats. The Strategy outlines an overarching, long- term approach to preventive health in Australia.

The Strategy also highlights the importance of an available, educated and capable Workforce.

[Why is a definition of the Workforce needed?](#)

Recent public health emergencies in Australia, including bushfires, floods and the COVID-19 pandemic, have highlighted the importance of a strong Workforce to support the needs of our communities.

As outlined in the [National Contact Tracing Review](#), public health experts were instrumental in Australia’s response to the COVID-19 pandemic. [14] The Workforce is integral to the management of possible future public health emergencies and other acute challenges, [2] and dealing with the broader components of public health on a day-to-day basis. It also acknowledges that the Workforce works across different sectors to provide integrated solutions to complex problems, which are evidence- based, culturally safe and responsive, and in turn promotes health and wellbeing, prevents illness and protects the general community. [2]

At present, the Workforce is not well defined in Australia, which results in the Workforce not being identified or appropriately supported. [15] Defining the Workforce is therefore the starting point and critical to supporting ‘enhanced public health workforce planning’ – one of the Strategy’s key priorities. [2] A fit-for-purpose definition of the Workforce needs to consider all those who deliver activities that support the realisation of public health.

1.3. Purpose of this document

The important role of the Workforce in achieving health outcomes and managing public health activities has been widely acknowledged. [2] This Paper aims to serve as the key point of reference for defining the Workforce in Australia and for informing the continuous development and improvement of the Workforce.

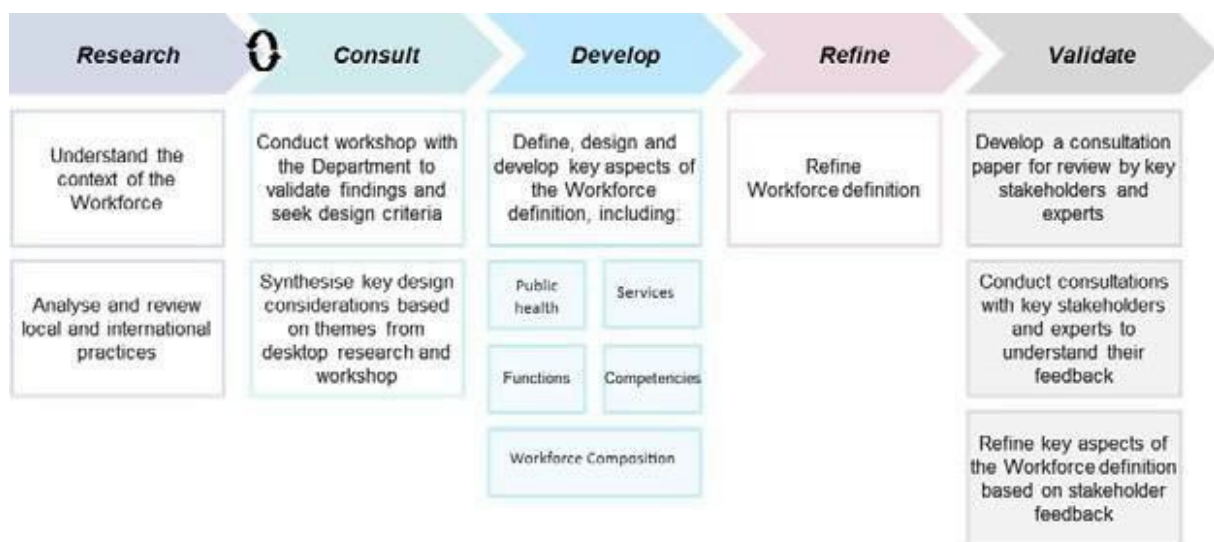
2. Approach and methods

An iterative and collaborative approach was undertaken to define the Workforce, underpinned by a set of eight validated design considerations.

To develop a nationally consistent definition of the Workforce that is fit for purpose and aligns with current internal guidance, three iterations of this Paper were developed. The approach to develop the definition is summarised in Figure 2. The first iteration was developed through a desktop review.

- The second iteration was developed following an internal workshop with stakeholders from the Department of Health, Disability and Ageing.
- The final iteration involved external stakeholder consultations with subject-matter experts and sector representatives. A technical review was undertaken at this stage to ensure alignment with the international context.

Figure 2 Approach to develop an Australian definition of the Workforce



2.1. Key activities

Desktop Literature review

The desktop literature review (desktop review) was designed to understand how Australian jurisdictions and other countries have defined and profiled their Workforce. The desktop review focused on the services and competencies of the Workforce in Australian jurisdictions and other countries.

The desktop review used both grey and published literature, from sources such as Google, Google Scholar, competency sets from Australia, websites of public health agencies and governments, and the structures of public health units in Australia.

Search terms relating to the ‘public health’ AND ‘public health workforce’ were utilised, including: ‘public health workforce composition’, ‘public health (workforce) objectives’, ‘public health (workforce) functions’, ‘public health (workforce) competencies’, ‘public health workforce models’, ‘public health (workforce) definition’ etc. In addition to the grey and published literature, documents provided and referenced by stakeholders in written submissions and stakeholder consultations were reviewed.

Internal workshop

An internal workshop with the Department of Health, Disability and Ageing was held to test and refine the draft definition of the Workforce.

External stakeholder engagement

Outcomes from the internal workshop formed the basis of the consultation paper provided to public health sector representatives and experts (including the Chief Health Officer of each jurisdiction). Feedback from external stakeholders was sought to validate the draft definition. Stakeholders were engaged through a virtual interview, or written submission if unable to attend an interview.

A survey was distributed to capture insights from a broader group of stakeholders from the public health workforce research, education and training sector. Feedback from the consultation process was used to refine and finalise the definition of the Workforce for the Australian context and to ensure it is fit-for-purpose.

2.2. Design considerations

The Workforce’s scope of practice is broad and complex. To accommodate this, 8 design considerations were developed to provide a structured approach to developing and refining the definition of the Workforce (see Table 3).

Table 3 Workforce design considerations

D#	Design consideration	Relevant section
D1	Existing international and national frameworks and approaches should be leveraged when defining and profiling the Workforce.	All
D2	The definition of the Workforce should consider cultural safety, and where possible, align with key existing national strategies that address inequity (e.g. the National Agreement on Closing the Gap).	All
D3	The Workforce can be defined by establishing core public health services and functions, and developing associated competencies and practice activities to deliver the core services.	Sections 3, 4 and 5

D#	Design consideration	Relevant section
D4	Existing role-specific competency frameworks in Australia can be leveraged to further develop culturally relevant competencies within the health sector.	Section 5
D5	Competencies for the Workforce may include non-medical and non-health sector competencies.	Section 5
D6	Workforce composition should include those who achieve essential public health functions, with a particular focus on people whose primary focus is delivering activities at a whole-of-population level, rather than individual level.	Section 6.1
D7	When defining the Workforce, the specific roles of the Workforce need to be defined. These roles may be carried out by those with various backgrounds and qualifications.	Section 6.2, 6.3
D8	A 'surge' workforce should leverage existing skill sets from similar roles in other sectors and industries to support public health emergencies.	Section 6.4

These design considerations highlight the importance of: (a) taking a systems perspective; (b) tailoring the definition to the Australian context; and (c) having a clear view on the following underpinning concepts to support the definition of the Workforce:

- **Essential public health functions:** The set of multi-sectoral activities required, both within and outside, the health sector, to achieve public health.
- **Public health services:** The core services that the Workforce delivers to achieve public health, namely promotion, prevention and protection.
- **Public health enablers:** The systems and stewardship activities which are developed and implemented by the Workforce to enable delivery of public health services.
- **Public health competencies:** The necessary knowledge, skills, attributes and values, demonstrated through behaviours of the Workforce, for effective public health practice.
- **Public health practice activities:** The breadth of tasks undertaken by those engaged in the Workforce.

These concepts underpinned thinking about the composition of the Workforce that delivers public health functions through public health competencies and practice activities. The Workforce definition includes functions, services and enablers, and competencies and practice activities that are tailored to the Australian context. This will subsequently increase the acceptance and adoption of the definition in relevant settings, as illustrated in Figure 1.

3. Defining public health practice

The overarching aim of public health is to improve whole-of-population health outcomes and prolong and improve the quality of life of individuals and communities. The 3 core services of public health are health promotion, health protection, and disease or condition prevention.

3.1. Essential public health functions as defined by WHO

The term 'functions' is widely used in international frameworks. [3, 4, 16] Following a major international review, the World Health Organization (WHO) has recently redefined and validated 12 Essential Public Health Functions (EPHF), which are intended for use internationally to underpin and consistently define public health practice. [3, 4]

WHO Essential Public Health Functions by service and enabling-oriented or cross-cutting functions [4]

Service-oriented

- Public health emergency management
- Health protection
- Disease prevention and early detection
- Health promotion

Enabling-oriented

- Public health stewardship
- Multisectoral planning, financing and management for public health
- Community engagement and social participation
- Public health workforce development
- Health service quality and equity
- Public health research, evaluation and knowledge
- Access to and utilisation of health products, supplies, equipment and technologies

Cross-cutting

- Public health surveillance and monitoring
-

3.2. The Global Charter for the Public's Health

The World Federation of Public Health Associations (WFPHA) Global Charter for the Public's Health (the Global Charter), originally designed using the previous version of the EPHF, similarly divides the elements of public health practice into services and enabling functions (henceforth referred to as enablers). [5] It is therefore possible to map the elements of the Global Charter against the WHO EPHF. This structure was designed to be flexible and allow for revision as new public health priorities emerge.

The Global Charter sets out 3 interrelated core services of public health – health protection; health promotion; and disease and condition prevention. The public health services are those needed to improve population-wide health and prolong and improve the quality of life of individuals and

communities. The enablers – governance, advocacy, information and capacity – support the provision of the public health services.

Figure 3 The Global Charter for the Public's Health [5]



Core public health services

Table 4 provides a description of the three core services of public health, as outlined in the Global Charter.

Table 4 Description of the public health service

Services	Description
Health Promotion [13, 17-19]	<p>Health Promotion is the process of enabling people to have increasing control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions. This is achieved through addressing underlying adverse determinants (such as socioeconomic disadvantage and poor living environment), and amplifying protective factors (such as cultural resilience, healthy diet and exercise). A key goal of health promotion is to reduce health inequities.</p> <p>Health promotion acknowledges the impact that the health determinants play in achieving overall public health outcomes. In Australia, this is particularly true for First Nations peoples and other priority populations.</p>
Health Protection [19, 20]	<p>Health protection is efforts to prevent and control public health emergencies and protect against infectious diseases and environmental hazards (such as nuclear, radiation, man-made and natural disasters, and bioterrorism hazards). Disease control is a major element of health protection.</p>
Disease and condition Prevention [19, 21]	<p>Health protection includes enhancing the proactive elements of protective factors (such as air and water quality, food safety and standards) and managing hazardous incidents. Examples of how this can be achieved includes undertaking monitoring and surveillance activities, effective regulation, and coordination, and undertaking risk and health impact assessments to enable clean air, water, food and occupational health across a nation.</p>

Enablers to support public health services

Table 5 describes the enablers that support the core public health services, as outlined in the Global Charter. Critical elements of these enablers, established through consultation with sector representatives and experts, are highlighted.

Table 5 Enablers for service provision

Enablers	Description
Governance [19, 22]	<p>Governance refers to the processes, structures and institutions that provide oversight and management of the health system. It includes aspects such as regulation and legislation; strategic policy frameworks; stewardship and financing; partnership engagement; and continuous quality improvement.</p>

Enablers	Description
Advocacy [19, 23]	Public health advocacy is the use of knowledge and evidence to influence decision-makers and public opinion to achieve improved health outcomes. Undertaking advocacy involves leadership and ethics, education, communications, social-mobilisation and community sector engagement. Establishing public trust to enable public health programs and campaigns to be utilised appropriately, enhancing the effectiveness of interventions is particularly important to support emergency responses. [24]
Information [19]	<p>Collection, analysis, dissemination and uptake of public health research, evidence and data are key components of the information function for the purposes of surveillance, monitoring and evaluation.</p> <p>Conducting routine high-quality public health surveillance for notifiable diseases and chronic conditions, environmental surveillance, and targeted surveillance for specific zoonoses, includes the collection of relevant timely, complete and accurate data. [25] Undertaking routine and regular descriptive epidemiology to understand the patterns of disease for a specific demographic or population, from both the perspectives of geography and the progress of time. [26] Establishing mechanisms to enable data to be accessed from different systems to support a holistic picture to detect and monitor health events, supports access to data that is readily available and able to be disseminated when needed. This is particularly important in supporting public health surveillance to track health events. [25]</p>
Capacity [19]	The focus of this paper is the fourth key enabler - the development of a sustainable Workforce, which includes core public health workers, and the health and care and other workforces, to enable an appropriately skilled workforce. [16] This includes aspects such as workforce planning, public health education and curricula standards and accreditation, and maintaining workforce capabilities through ongoing training, particularly promoting a continuous learning and improvement environment to support a highly skilled workforce that values research and innovation. [3, 4]

3.3. Summary

Internationally, public health practice has been clearly defined by the WHO and WFPHA.

It involves delivery of a set of functions that can be further categorised into three core public health services (disease prevention, health promotion, health protection). Public health services are supported by a range of enablers (governance, advocacy, information and capacity).

These services and enablers are also the foundations of public health in Australia. The Workforce in Australia must be fit-for-purpose to provide these functions to fulfil the functions of public health through primordial, primary and secondary prevention mechanisms.

4. Functions of the Australian Workforce

Functions identify and describe the components of work undertaken by the Workforce to achieve improved public health outcomes

The **functions** comprising public health practice are embedded and delivered through a set of core services and complex and inter-related **enabling systems**. Delivery is always context-specific; that is, appropriate ways of delivering public health services differ between and within regions, so that the components of specific service programs must be designed for local populations. To do this, Australia needs a competent public health Workforce.

4.1. Functions that are fit-for-purpose

In Australia, functions of the Workforce were previously defined by the National Public Health Partnership (NPHP), [27] and remain relevant and visible in the recently redefined WHO EPHFs as outlined in Section 3. Each of the state and territory health departments are structured to deliver the EPHFs, albeit in different and locally appropriate ways. This is appropriate as local communities often have unique public health needs. For example, cancer screening programs in the Central Desert will not work unless they are designed using culturally responsive practices; and the protections in place for arbovirus disease will be different in the tropical north from the temperate south.

In Table 6, local descriptions of public health ‘functions’ have been grouped based on:

- data extracted from an examination of state and territory websites, to identify local public health programs and priorities
- consultations with Australian stakeholders.

These are simultaneously mapped against the WHO and WFPHA frameworks to illustrate how these functions can be adopted to be fit-for-purpose in Australia, while aligning with the related international frameworks.

Table 6 Alignment of adapted Workforce functions against international frameworks

Workforce program functions in Australia	Description	WHO EPHF [3, 4]	Global charter elements [5]
Health intelligence and surveillance	Routine monitoring and surveillance of health intelligence, the population health status, risk, protective and promotive factors, and threats to health. Health system performance and service utilisation Appropriate analysis and	Public health surveillance and monitoring (Cross-cutting)	Enabler (Information)

Workforce program functions in Australia	Description	WHO EPHF [3, 4]	Global charter elements [5]
	communication of results to communities and authorities.		
Preparedness against and control of threats	<p>Managing public health emergencies and threats for the purpose of national and international health security, by:</p> <ul style="list-style-type: none"> Monitoring and responding to routine public health monitoring and surveillance system reports; testing of all stages (plan, prepare, respond, recover, and review) of emergency management plans Appropriate communication with affected/potentially affected communities. <p>Note: Health threats can include chemical, biological, radiological and nuclear (CBRN) threats, communicable disease outbreaks and pandemics, and natural disasters.</p>	Public health emergency management (Service-oriented)	Enablers (Information, Capacity, Governance)
Public health policy and strategies	<p>Leading and advocating for effective and transparent public health institutional structures, including leadership, coordination, accountability, and state and territory, National and International regulations and laws</p> <p>Supporting equitable and cost-effective decisions that improve health outcomes.</p>	Public health stewardship (Enabler-oriented)	Enablers (Advocacy, Governance)
Resourcing for public health initiatives Cross-sectoral partnerships	<p>Providing, planning, influencing and/ or advocating for adequate and equitable funding for public health</p> <p>research, strategies, policy and program development and implementation.</p>	Multisectoral planning, financing and management for public health (Enabler-oriented)	Enablers (Information, Capacity)

Workforce program functions in Australia	Description	WHO EPHF [3, 4]	Global charter elements [5]
Environmental health and protection	Protecting populations against health threats, by developing and implementing standards to protect from environmental and occupational threats to health, including climate change, chemical and radiological hazards, communicable and noncommunicable diseases, mental health conditions.	Health protection (Service-oriented)	Service (Protection)
Early detection and prevention of illness arising from priority diseases and conditions	Developing and implementing preventive health measures for prevention and early detection to reduce the morbidity and mortality of health conditions and injuries in the population.	Disease prevention and early detection (Service-oriented)	Service (Prevention)
Health Promotion	<p>Promoting health and well-being as well as actions to address the wider determinants of health and inequity by designing, implementing, and evaluating programs and services specifically addressing health inequalities</p> <p>Multi-sectoral programs to address the broader determinants of health</p> <p>Evidence-based communication and advocacy programs.</p>	Health promotion (Service-oriented)	Service (Promotion)
Public health communication	<p>Strengthening community engagement, participation and social mobilisation for health and well-being</p> <p>Supporting the population through accessible, culturally appropriate and participatory decision-making</p> <p>Identifying and maintaining communication channels for providing appropriate, accurate, meaningful and understandable public health messaging and information for specific communities, building on and strengthening social capital</p>	Community engagement and social participation (Enabler-oriented)	Enablers (Advocacy, Governance)

Workforce program functions in Australia	Description	WHO EPHF [3, 4]	Global charter elements [5]
	through local consultation, participation and empowerment to develop public trust.		
Professional development	<p>Developing and maintaining an adequate and competent public health workforce by monitoring and evaluating the Workforce in parallel with population requirements</p> <p>Assessing and developing basic and higher-level education and training mechanisms and opportunities, and career development opportunities</p> <p>Regularly reviewing Australian competencies against international benchmarks.</p>	Public health workforce development (Enabler-oriented)	Enabler (Capacity)
Evaluation and redesign Addressing inequality	<p>Ensuring appropriateness, quality, and equity in provision of and access to health services by aligning with local population priorities[30]</p> <p>Continuous evaluation and evidence- based redesign (where necessary) of public health policies, strategies and programs including the assessment of the cost-effectiveness of health policies, strategies and programs by undertaking a cost-benefit analysis (including social cost-benefit analysis), where appropriate</p> <p>Addressing structural inequalities, for example by maintaining food and water security, access to income; ensuring equality of access to services regardless of ethnic identification, sexual orientation, geographic location, educational background or economic status.</p>	Health service quality and equity (Enabler-oriented)	Enablers (Governance)

Workforce program functions in Australia	Description	WHO EPHF [3, 4]	Global charter elements [5]
Public health research and translation	<p>Advancing public health research and knowledge development</p> <p>Providing, planning, influencing and/or advocating for adequate and equitable funding for public health research to strengthen public health evidence-base for operational and strategic policy and program development</p> <p>Supporting knowledge translation processes</p> <p>Developing and maintaining standards for ethical public health research.</p>	Public health research, evaluation and knowledge (Enabler-oriented)	Enabler (Information)
Public health laboratory science	<p>Promoting equitable access to and rational use of safe, effective and quality- assured health products, diagnostics, supplies, equipment and technologies, by:</p> <p>Ensuring equitable access to essential medicines, diagnostic and treatment procedures; and other therapeutics</p> <p>Assessing safety and efficacy of diagnostic procedures, medicines, treatment procedures, and therapeutics</p> <p>Implementing legislation to ensure the safety of medicines, treatment procedures, and therapeutics</p> <p>Managing supply chains.</p>	Access to and utilisation of health products, supplies, equipment and technologies (Enabler-oriented)	Enablers (Governance, Capacity)

4.2. Summary

Feedback from both consultations and data collected from state and territory health department website searches is summarised below.

Data derived from Australian stakeholder consultations confirmed the necessity of strengthening and maintaining locally delivered public health functions. The list of Australian functions that emerged, categorised by service-oriented and enabler-oriented or cross-cutting functions include:

Service-oriented

- Health Promotion
- Environmental health & protection
- Early detection and prevention of illness arising from priority diseases and conditions

Enabler-oriented

- Public health policy and strategies
- Resourcing for public health initiatives
- Cross-sectoral partnerships
- Public health communication
- Professional development
- Evaluation and redesign
- Addressing inequality
- Public health research and translation
- Public health laboratory science

Cross-cutting

- Health intelligence and surveillance
- Preparedness against and control of threats
- Australian public health functions align well with international thinking and demonstrate an overall understanding of the work associated with public health practice.

5. Workforce competence

A competent Workforce performs a broad range of practice activities and tasks for the delivery of public health services and functions.

The word 'competence' describes the ability of people, and by extension the workforce, to perform a range of tasks to deliver a service. Context-specific service activities are provided through the integration of relevant knowledge, skills, values, and attitudes, delivered to a stated standard. The background education and training received and levels of learning achieved, as well as personal characteristics of individuals, and employment roles and responsibilities, combine to form professional competence. [29]

State and territory governments established the National Registration and Accreditation Scheme (NRAS) for health practitioners in 2010 by introducing consistent legislation in all jurisdictions. The NRAS ensures that regulated role groups are registered against consistent, high-quality, national professional standards, making it easier to work across different states and territories. The Australian Health Practitioner Regulation Agency (Ahpra) administers the NRAS.

Although professional accreditation agencies govern professional competence, this is not consistent for public health internationally. This has led to the development of several public health competency sets. However, whilst each competency set has been developed for specific contexts, overall they identify very similar elements of public health practice. [30]

The analysis presented here is a synthesis of information drawn from publicly available peer-reviewed and grey literature; locally relevant competency sets; state, territory, and national government health department websites; and interviews and workshops with key stakeholders. The results confirm that the tasks for competent public health service provision in Australia are broadly mirrored in those identified in international settings.

5.1. WHO Roadmap competency and outcomes framework

The most recent analysis of competency frameworks was conducted in the context of the WHO Roadmap project [8]. The WHO Roadmap is the result of joint efforts across leading public health and emergency response experts, organisations and associations. The collaboration process highlighted:

- the importance of engaging policymakers, politicians, practitioners and professional associations
- the need to focus on developing competencies and skills, and mapping and measuring the diverse occupations involved in delivery of the EPHFs
- identifying and understanding key stakeholders, and defining roles from the outset
- contextualising to regional, national and subnational settings.

This analysis of 125 internationally identified competency sets is available in the Competency and *Outcomes Framework* towards the delivery of the Essential Public Health Functions

document. Of note, all frameworks used in Australia were included. This section sets out the competency domains and subfunctions identified in the WHO Roadmap project, against the practice areas and tasks relevant in an Australian context.

The WHO classified 2 distinct groups of competencies needed for competent public health practice:

Individual Competencies

- 6 domains outlining the personal attributes needed for effective work
- Not confined to only the public health and emergencies workforce group, but are considered necessary for professional practice, including all people who work in public health at any time, regardless of basic training.

Public health practice activities

- 5 domains describing the tasks.
- Specific to public health practice and are delivered through sets of specific tasks.

Tables 7 and 8 below show how the public health skills and tasks identified for this project relate to the WHO Roadmap and are relevant to the Australian context.

Individual competencies

Results of the WHO Roadmap project resulted in a framework of 6 domain areas including 20 inter-related personal competencies¹ which are essential for effective practice (see Table 7). The 6 domains include:

1. Community-centredness
2. Decision-making
3. Communication
4. Collaboration
5. Evidence
6. Personal conduct

As with all personal competencies, these are context-specific. Leadership for public health involves proactively motivating colleagues, strategic change and challenges, and finding ways to influence successful outcomes.

¹ The level of proficiency required for each of the competencies is dependent on the role function of an individual. Furthermore, the level of proficiency can increase over time with greater experience.

Table 7: Individual competencies needed for effective public health practice

Summary of behaviours demonstrating individual competencies in Australia	WHO individual competency domains
<p>1. Community-centredness subdomains:</p> <ul style="list-style-type: none"> • Encourages community development activities which address the needs of diverse local populations and communities • Routinely includes culturally diverse populations from all socioeconomic and education backgrounds, genders, health status and ages in planning for future public health service provision • Considers both urban, and rural and remote areas and communities when planning public health sector service provision and research activities • Uses behavioural science theories to minimise the consequences of biases, prejudice, and assumptions, and influence decision-making for health for all • Recognises significance of cultural identity so that policies, programs and strategies are developed and implemented from a culturally competent perspective • Routinely employs differentiation between cultural awareness, competence and safety, and culturally appropriate communication methods and techniques • Models respectful behaviours, practices, communication and conflict management, and does not tolerate stigma 	<ul style="list-style-type: none"> • Promotes health equity among individuals and communities • Enables people to increase control over, and to improve, their health and lives • Fosters inclusive and participatory approaches to public health that embrace cultural diversity and inclusion
<p>2. Decision-making subdomains:</p> <ul style="list-style-type: none"> • Recognises and navigates the complex relationships within the health system, including the different organisations and people embedded in the health system • Uses evidence-based and ethical approaches to design and deliver complex, multi-partner public health policies • Includes evidence generated from many disciplines using many ways of gathering, reporting, and analysing information 	<ul style="list-style-type: none"> • Takes an evidence-informed approach to decision-making • Applies systems thinking to public-health problem-solving • Adapts to unexpected or rapidly changing situations

Summary of behaviours demonstrating individual competencies in Australia

WHO individual competency domains

- Maintains situation awareness and uses calm and flexible approaches to rapidly emerging evidence and changing public health risk situations

3. Communication subdomains:

- Uses health literacy and health diplomacy skills for enabling effective partnerships and collaboration.. This is to be applied to, including news media, scientific journals, and political forms of communication, for impact on the way that people access, understand, appraise and apply health-related information and services
- Presents and adapts information about health for specific populations and broader communities across all communication types including discussion, presentations, reports, formal peer-reviewed papers, social media and other electronic communication mechanisms
- Enables protective and preventive measures using internal and public communication measures and trusted partners about health threats
- Identifies situations requiring attendance of an interpreter, translator, or 'chaperone' or other broker
- Uses inclusive language and adapts messages to local contexts
- Uses active and compassionate listening and reflection skills and clarifies two-way understanding
- Seeks and uses mechanisms to deal with misinformation and disinformation
- Disseminates key policies relating to public health strategy to appropriate stakeholders and understands the relationship between policy and public health

- Communicates actively and attentively
- Conveys information purposefully, including through trusted sources and key partners
- Adapts communication to the contextual goals, needs, urgency and sensitivity of the situation)

4. Collaboration subdomains:

- Works collaboratively in internal and external teams towards achieving shared visions and goals

- Engages in collaborative practice in defined teams
- Engages in collaborative practice in partnerships and coalitions

Summary of behaviours demonstrating individual competencies in Australia

WHO individual competency domains

- Nurtures cross-cultural partnerships and complex stakeholder environments to improve population-wide public health outcomes
- Takes responsibility for own contribution to team outcomes
- Fosters partnership establishment and mediation between different sectoral interests and with relevant representatives (for example, leaders, communities and individuals) to build communities-of-practice
- Encourages a blame-free, enquiring, questioning workplace
- Actively hears perspectives of other stakeholders, considers different viewpoints, seeks consensus decisions, and endorses group resolution even when not in agreement (unless unethical)

- Learns from, with, and about, others
- Constructively manages tensions, conflicts, resistance, or opposition

5. Evidence subdomains

- Uses concepts relating to population health including health equity, wider health determinants, health promotion, disease and injury prevention strategies, and health protection
- Seeks specific existing data and facilitates the generation of new evidence from a range of sources and for a variety of situations, and promoted transparency of evidence in use
- Uses critical appraisal skills to evaluate evidence, including reappraisal of embedded practices, and identifies possible systemic biases in public health practice
- Analyses public health issues for the development of public health promotion policy and programs
- Follows protocols and engages in assessment of outcomes to evaluate success and safety of programs

- Assesses data, information, and evidence from a range of sources
- Promotes evidence-informed public health practice
- Contributes to continuous quality improvement

6. Personal conduct subdomains:

- Works within limits of personal skills and training, awareness of personal limitations, seeks appropriate assistance

- Works within the limits of competence and role responsibilities
- Demonstrates high standards of ethical conduct

Summary of behaviours demonstrating individual competencies in Australia

WHO individual competency domains

- when encountering situations outside role responsibilities
 - Demonstrates emotional intelligence, and always acts with honesty and integrity
 - Adheres to principles of public health ethics in public health practice for practitioners and departments
 - Undertakes regular professional development opportunities and engages with current and emerging technologies to support public health practice
 - Prepares reports, presentations, and articles to a standard acceptable for publication, in a timely manner
 - Monitoring, awareness, and care of personal physical, mental, social, and emotional wellbeing, and seeking help when needed
- Engages in lifelong learning
 - Adopts strategies to manage own health and well-being

Public health practice activities

Practice activities are the specific components of work which make up professional practice in public health that are undertaken by the Workforce. Practice activities are broad ranging, and it would be unusual for a single person to be competent at a high level in all of these areas.

The WHO Roadmap project [8] results identified 40 practice activities organised into 5 practice activity domains (see Table 8). The 5 domains include:

1. Systems for public health
2. Public health intelligence
3. Public health programs and services
4. Management of resources for public health programs and services
5. Public health emergency management

As with the elements of individual competency, practice activities are also inter-related. For successful program delivery, several practice activities will usually have to occur simultaneously. Each domain outlines a set of between 5 and 11 practice activities, which are deconstructed into detailed lists of associated tasks in the WHO framework.

Presented here is a high-level comparison of the tools and tasks identified during project consultations and website reviews.

Table 8: Summary of tools and tasks required for practice activities

Summary of tools and tasks to deliver practice activities in Australia	WHO domains for practice activities
<p>7. Systems for public health</p> <p>The Australian health system and the federated structure within which the health system operates</p> <ul style="list-style-type: none"> • Developing state, territory and federal legislation to promote and protect public health • The complex relationships within the Australian health system including the different organisations, professions, locations, embedded within it • The infrastructure, policies, processes, materials, people and relationships that make up the Australian health care system • Support mechanisms for public compliance of policy • The state and territory, national and international public health and health promotion policies and regulatory strategies to improve local and international public health outcomes • Codes of practice, standards and relevant legislation impacting public health • The relationships within the health system including the complexities of different organisations and people embedded in the public health system, and facilitation of community engagement • Analyses and reviews of policies from an economic, equity and ethical perspective for informing future policy decisions • Establishing, maintaining, and reviewing public health informatics systems to support health surveillance and public health practice • Establishing and reviewing surveillance systems for continuous monitoring of routine and event health data for measurement, monitoring, and reporting of population-wide health status • Public health system resource allocation for changing public health interests and needs • Effective multidisciplinary working relationships and staff management, conflict management processes, teams supported to achieve objectives, adherence to organisational rules and project guidelines • Evidence based policies which conform with current legislation and regulations, and align with 	<ol style="list-style-type: none"> 1. Establishing and maintaining public health governance mechanisms 2. Establishing and maintaining mechanisms for community engagement and social mobilisation 3. Developing and operationalising policy with public health impact 4. Setting public health strategies 5. Developing and operationalising legislation and regulatory frameworks with public health impact 6. Optimising resource allocations within multisectoral financing mechanisms 7. Optimising the workforce for the delivery of the EPHFs 8. Managing supply chain 9. Quality assurance of public health infrastructure 10. Establishing and updating public health information and informatics systems 11. Establishing and updating public health intelligence systems

Summary of tools and tasks to deliver practice activities in Australia

WHO domains for practice activities

existing planning procedures, with measurable outcomes

- Identifying cultural priority populations, socioeconomic and education backgrounds, genders, health status and ages when developing public health policies and programs
- Foster alliances which encourage collaborative multi-sector approaches to policy and legislation subspecialities (such as OneFood) to protect agriculture and aquaculture
- Workforce recruitment mechanisms which ensure that public health staff are appropriately trained
- Maintain and manage supply chains for public health services (for example vaccine stockpiles, national medicines stockpile, chronic disease screening kits)
- Recognition of political aspects of public health problems

2. Public health intelligence

- Research methods and designs (including qualitative, quantitative, mixed methods and others) to identify and measure public health indicators, inequities and population health and build on existing and emerging evidence
- Adherence to research project guidelines and protocols and continuous audits, organisational reviews, quality assurance and evaluation of research programs
- Interrelationship between human, plant and animal health and the ecosystems which support them (multidisciplinary, transdisciplinary, and interdisciplinary) [33]
- One Health and public health theory including social science, environmental sciences, ecology, climate change, animal health, food safety, biodiversity, vector -borne diseases, zoonoses, antimicrobial resistance, food and water security, safety and shelter security
- One Health and public health sciences including pathology, microbiology, epidemiology of endemic and emerging communicable and non-communicable diseases
- Research programs for public health practice include diverse population groups, in particular

12. Planning public health assessments

13. Designing instruments, tools, and methods for data collection
14. Conducting public health investigations
15. Conducting risk assessments and emergency preparedness assessments
16. Maintaining continuous data monitoring and surveillance mechanisms
17. Conducting rapid assessments (during emergencies)
18. Conducting a public health situation analysis
19. Assessing data, information, and evidence for public health intelligence
20. Communicating intelligence to decision-makers
21. Risk communication and community engagement)

Summary of tools and tasks to deliver practice activities in Australia

WHO domains for practice activities

women, First Nations peoples, and peoples whose first language is not English

- Databases capable of measuring and monitoring the epidemiology of local communicable diseases
- Databases capable of measuring and monitoring the epidemiology of local non-communicable and chronic diseases
- Descriptive analyses and interpretation of disease and other health-related event data for use in planning public health assessments
- Testing of risk assessment and emergency management frameworks and procedures including rapid assessment techniques and situation analyses
- Public health sub-population contexts (social, environmental, political, economic)
- Sciences related to public health (including the disciplines of medicine, health sciences, social, environmental sciences)
- Publication / dissemination of epidemiological findings to stakeholders and decision-makers and the general public
- Generation of evidence for the management, evaluation and planning of services for the prevention, control and treatment of disease and other health-related events
- Research evidence for the development of future health promotion or preventive strategies

3. Public health programs and services

- Project management including, record-keeping and reporting, budgeting and finance, resource, contractual and legal obligations and constraints including organisational and budget changes
- Robust routine quality assurance processes for assessing program effectiveness and efficiency
- Manage public perception, facilitate dialogue with communities and actively consult and co-design with individuals, communities and organisations
- Coalitions to engage stakeholders and partners in sectors that support the wider determinants of health, to develop and sustain strategic capabilities, actions, guidelines, and procedures, for public health equity and action

22. Planning public health programs and services

- 23. Developing a stakeholder engagement strategy
- 24. Collaborating with stakeholders
- 25. Executing public health programs and services
- 26. Advocacy for public health
- 27. Providing information and resources to impact community health and wellbeing
- 28. Developing and delivering public health campaigns
- 29. Monitoring, evaluation, and reporting

Summary of tools and tasks to deliver practice activities in Australia	WHO domains for practice activities
<ul style="list-style-type: none"> • Negotiation to build trust, maintain relationships, and achieve positive health outcomes • Commitment to evidence-based policy to support cross-sectoral development of public health action policies, and use of appropriate media for public health promotion • Cross-state and national border and international health risks, using a OneHealth approach in delivering national and global health security • Primordial prevention programs such as pool fencing, traffic-free zones, lead-free fuel, smallpox vaccination • Primary health protection and health promotion programs and services, for example, organisations responsible for designing, implementing and maintaining a range of programs including immunisation, screening for treatable diseases (e.g. breast cancer, cervical cytology, bowel cancer), health promotion campaigns such as QUIT smoking • Community information to support communities, to encourage screening, monitoring, and intervention programs support health protection and health promotion campaigns • Occupational health and safety program support 	<p>30. Continuous quality improvement of programs and services</p>
<p>4. Management of resources for public health programs and services</p> <ul style="list-style-type: none"> • Analyses of equity, cost, efficiency and effectiveness for public health resource allocation and availability for effective development and implementation of strategic and operational plans • National and (relevant) jurisdictional public health system funding models • Structured procurement processes and business planning • Management and continuing professional development of peers, colleagues and junior staff, through coaching, providing appropriate direction, training and guiding others • organisations managing educational programs and community strategies for health promotion, working in partnership with relevant jurisdictional, national and international agencies and tertiary education providers including practice-based training programs 	<p>31. Managing financial resources for public health programs and services</p> <p>32. Managing physical resources for public health programs and services</p> <p>33. Managing public health infrastructure</p> <p>34. Managing personnel for the delivery of public health programs and services</p> <p>35. Providing education and training programs for the public health and emergency workforce)</p>

Summary of tools and tasks to deliver practice activities in Australia	WHO domains for practice activities
<p>5. Public health emergency management</p> <ul style="list-style-type: none"> Public health emergency legislation, plans, strategies, logistics, and procedures Emergency management frameworks (Plan, Prepare, Respond, Recover, Review) include a provision for public input Emergency procedures and incident control systems for responding to public health emergencies Organisation-specific roles in public health emergency management including lead agency, chain of command, and personal roles and functions and during all emergencies (very few emergencies do not include a public health component) Supply chain and stockpiles secured (for example vaccine cold chain, essential medicines, emergency equipment) Rapid assessment techniques and processes Communication mechanisms for dissemination of information about health threats and precautionary and preventive measures. Provision and coordination of emergency health services during emergencies Provision of chronic condition and screening services during emergencies Business and health service continuity and recovery 	<p>36. Planning for risk management and emergency management actions</p> <p>37. Implementing risk management and emergencies preparedness actions</p> <p>38. Coordinating emergencies response</p> <p>39. Providing health services as part of emergency response</p> <p>40. Coordinating service continuity and health systems adaptation and strengthening</p>

5.2. Existing competency frameworks for the Workforce

Table 9 sets out the individual and specialised competency frameworks already in use in Australia. A review and adaptation for the Australian context was undertaken, to ensure that public health degrees include appropriate content for both local and international practitioners. [30] To improve alignment with the work undertaken by the WHO, some of these existing frameworks are now currently under revision (indicated in the table by *).

Table 9: Australian competency frameworks for public health professions

Current frameworks	Organisation	Professional group	Online access
Public Health Medicine	Royal Australasian	Public Health Physicians	https://www.racp.edu.au/docs/default-

Current frameworks	Organisation	Professional group	Online access
Advanced Training Curriculum	College of Physicians, Australasian Faculty of Public Health Medicine		source/trainees/ advanced-training/ public-health-medicine/ public-health- medicine-advanced-training-curriculum.pdf?sfvrsn=77252c1a_10
Foundation Competencies for Public Health Graduates in Australia*	Council of Academic Public Health Institutions Australasia	Public Health Graduates	https://caphia.com.au/competencies
International Union for Health Promotion and Education (IUHPE) Core Competencies and Professional Standards for Health Promotion*	Australian Health Promotion Association	Health Promotion Practitioners	https://www.healthpromotion.org.au/images/docs/IUHPE_core_competencies_for_health_promotion_.pdf
Environmental Health Course Accreditation Policy	Environmental Health Australia	Environmental Health Officers	https://www.eh.org.au/documents/item/868
Minimum Indicators and Standards of Accreditation for Intermediate or Advanced Field Epidemiology Training Programs	Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET)	Field Epidemiologists	https://www.tephinet.org/what-we-do/fetp-accreditation-and-quality-improvement
Aboriginal and Torres Strait Islander Health Curriculum Framework	Australian Government	Health professional graduates	https://www.health.gov.au/sites/default/files/documents/2020/12/aboriginal-and-torres-strait-islander-health-curriculum-framework.Pdf

5.3. Summary

In the Australian context, a number of education and training programs are based on sets of competencies, each relevant to the specific training program. The results of this synthesis show that the behaviours comprising individual competence and the range of practice activities identified through Australian-specific website searches and expert consultations, are consistent with the competency domains and subdomains identified by the international WHO Roadmap project.

Consultation undertaken for this project highlighted the need for an appropriately-trained Workforce to competently deliver public health programs through locally designed services. Senior Australian public health experts recognised this as a priority for future-proofing the Australia public health system.

6. Workforce composition

The Workforce delivers public health functions, which contributes to the provision of public health services, and include all those who deliver activities and tasks that support the realisation of public health.

6.1. Overview of the Workforce in Australia

The public health and emergency workforce in Australia can be categorised into 3 distinct groups of people working to deliver the essential public health functions (also referred to as the general workforce):

- the **core public health workforce**, who are trained in public health and focus on delivering whole-of-population interventions
- the **health and care workforce**, who are trained and registered as health and care professionals, whose role is focused on providing services predominantly to individuals, which may include performing public health functions
- **other workforce** with related occupations who contribute to addressing the wider determinants of health as a part of their professional responsibilities, but who may not recognise their contributions to public health. [32]

The group of people working in the core public health workforce need to be skilled in many of the individual competencies and practice activities outlined in section 5. While the health and care workforce who deliver some public health functions may be skilled in only one or 2. The other workforce group possibly none at all.

These groups do not work in professional isolation, are directed by **specialists** and team leaders/ managers, and are regulated by **policy authorities**. The latter 2 groups (that make up executive management and leadership) are crucial for effective service delivery, and those working in these roles need to demonstrate managerial and leadership competence in addition to public health competencies.

During the COVID-19 pandemic and other public health emergencies (for example, chemical, biological, radiological and nuclear threats, as well as man-made and natural disasters), a **surge workforce** is required to support response and recovery efforts and supplement the existing Workforce during periods of crisis. Surge personnel can be drawn from any of the workforce categories (general workforce and executive management and leadership). The general workforce, executive leadership and management, and surge workforce make up the public health and emergency workforce. The occupational focus of each of these groups is outlined in Figure 4 below.

Figure 4: Overview of the Workforce composition including descriptors of occupational focus

Public health and emergency workforce				
People who deliver the essential public health functions to maintain and improve the health of communities.				
General workforce			Executive management and leadership	
<p>Core public health workforce</p> <p>People who are engaged in the delivery of the essential public health functions (either multiple functions or specialised towards single functions), have formal training in public health who identify public health as the primary purpose of their role, and deliver population- level interventions</p>	<p>Health and care workforce</p> <p>People who are trained in, and focused on, delivering clinical and/or personal care, predominantly on an individual level, but who perform public health functions as part of their clinical/social care role (including when individual care may be contributing to population-level interventions)</p>	<p>Other workforce</p> <p>People who work within non-health settings where the public health functions are not their primary focus, but who periodically support activities that address the wider determinants of health and reduce inequity</p>	<p>Senior specialists</p> <p>People with specialist training and with executive level decision-making or coordination responsibilities, who may already be within any group of the public health and emergency workforce</p>	<p>Policy authority</p> <p>People with policy and decision-making or coordination roles at the sub-national or national level, who are responsible for resourcing and overseeing delivery of the public health functions</p>
Surge workforce				
People with skill sets that can be mobilised quickly to support public health emergency responses, who may be drawn from any group of the public health and emergency workforce				

6.2. The general public health workforce

The 3 categories of the Workforce are described in greater detail in the tables below, with examples of the responsibilities, employment settings and role groups, which make up each occupational focus area.

Core public health workforce

The core public health workforce consists of people who are engaged in the delivery of the essential public health functions (either multiple functions or specialised towards single functions). [32, 33] They have formal professional education and training in public health and identify public health as the primary purpose of their role, and deliver population-level interventions. This section of the Workforce may contribute to either public health policy and practice, or research and education functions.

Table 10: Overview of the core public health workforce role groups

<p>Responsibilities</p>	<ul style="list-style-type: none"> • Designs, supports and/or implements public health initiatives, campaigns and programs to influence the health of a whole population or community for a particular region. • Collates, manages, analyses, interprets and/or disseminates data and information from a wide range of primary and secondary health, social, economic and demographic data sources. • Undertakes research to better understand diseases, their determinants and distribution at a population level; advises on strategies to control and prevent diseases; and influences public health policy and programs. • Research and/or delivers education about public health challenges, including those relating to the health of people, animals and the environment.
<p>Employment</p>	<p>Employed primarily within government health agencies, but also for health-related non-government organisations (such as provider organisations and peak bodies). May also be employed in higher education, further education sectors, or research institutions whose primary focus is public health.</p>
<p>Role groups (Illustrative example but not exhaustive)</p>	<p>Examples of the role groups which could be considered to support practice and policy activities include:</p> <ul style="list-style-type: none"> • Public Health Physicians² and Public Health Registrars*

² Public Health Physicians (which can be a role or a qualification) have another key responsibility to deliver health protection actions. The responsibilities include protecting individuals other than patients. Examples of this can include contact identification and tracing efforts and treating patients to reduce the public health risk to others

	<ul style="list-style-type: none"> • Non-medical Public Health Officers³ • Policy and Advocacy Officers • Epidemiologists and Biostatisticians • Health Promotion Practitioners • Health Protection Officers • Environmental Health Officers/Professionals <p>Examples of the role groups which could be considered to support research and education functions include:</p> <ul style="list-style-type: none"> • Public Health Educators • Public Health Researchers.
Functions	<p>Those who support practice and policy can work across any of the essential public health functions. Typically, those supporting research and education can work across any of the essential public health functions and often fulfil an academic function within their organisation.</p>

*Registered practitioners under the NRAS

Health and care workforce

Clinical and social care refers to those who deliver individual-level interventions but who perform public health functions as part of their clinical/social care role (including when individual care may be contributing to population-level interventions). [32-34] Individual-level interventions seek to provide one-to-one, individualised care, education and/or advice to improve someone's health. For example, a General Practitioner conducts preventive screening (for example, skin cancer screening) for an at-risk individual.

³ Public Health Officers are from non-medical backgrounds that receive the same specialist training in public health as the public health physicians, but are not qualified to apply to become a Fellow of the Australasian Faculty of Public Health Medicine (AFPHM). Individuals must complete a Master of Public Health (or equivalent), followed by the specialised training program. Where applicable (e.g. NSW), this program generally runs for three years and involves workplace-based training placements which are intended to educate trainees in all aspects of public health

Table 11: Overview of health and care workforce role groups

<p>Responsibilities</p>	<ul style="list-style-type: none"> • Involved in one-on-one health care, a Health Worker undertakes the management, treatment and planning to improve the individual’s health. • Involved in evidence-based delivering preventive activities at an individual level. This can include providing information, education, screening and brief clinical interventions. • In some instances, public health advice is delivered to protect others – such as the immediate family or close contacts. • A GP or nurse may advise a client to cease smoking or change diet, to reduce individual risk of chronic disease. • Medical practitioners are legally responsible for notification of certain conditions of public health importance under state and territory legislation. • Includes non-clinicians who clinical and/or personal care (for example, aged care workers, social workers).
<p>Employment</p>	<p>Work across the health system in clinical and non-clinical settings. This includes:</p> <ul style="list-style-type: none"> • Those who provide clinical care: <ul style="list-style-type: none"> • Clinicians who have undergone clinically focused education, which involves an accreditation and registration process with relevant organisations and conduct one-on-one clinical management with patients • Examples include medical practitioners, Aboriginal health practitioners, some allied health professionals, midwives and nurses. • Those who provide social care and healthcare support: <ul style="list-style-type: none"> • Those that are accredited or regulated healthcare workers in Australia and have a wide variety of qualifications as well as those who are unregulated. • For example, people who have a health accreditation to deliver one-on-one health care. The accreditation can range from certificate II level through to advance diploma qualifications. Qualifications can be obtained as part of a traineeship or apprenticeship and commonly require a combination of workplace training and training through a registered training organisation, such as a TAFE. [37]
<p>Role groups (Illustrative example but not exhaustive)</p>	<p>Examples of the role groups which could be considered as delivering clinical and/or social care and healthcare support include:</p> <ul style="list-style-type: none"> • Medical practitioners* • Nurses* • Midwives*

	<ul style="list-style-type: none"> • Dental practitioners* • Pharmacists* • Aboriginal health practitioners and Aboriginal health workers⁴ [35] • Allied health professionals (inclusive of those who are AHPRA- and self-regulated) • Personal care and healthcare support workers • Primary healthcare workers • Non-clinical support workers • Social workers • Medical researchers • Medical educators • Laboratory scientists
Functions	Those who provide personal and/or clinical care primarily work to support health promotion, disease and condition prevention.

Other Workforce

The other workforce refers to personnel working in other associated professions who are periodically engaged in the delivery of the public health functions, but this is not the primary purpose of their role. Effective public health action requires the engagement of workers across multiple sectors, and collaboration between the core public health workforce and other multi-disciplined professionals is essential. This other workforce includes those who address the wider determinants of health. [36] They play a vital role in supporting the long-term outcomes of public health. It is unlikely that the other workforce role groups would self-identify as part of the public health Workforce, as they often work in sectors outside of health settings. Some examples of role groups can be found in table below.

⁴ iv Aboriginal health workers play a pivotal role in Aboriginal Community Controlled Health Organisations (ACCHOs) and are predominantly focused on health promotion and advocacy. They connect clinical, non-clinical and community health. The prominent role they play includes, for example, implementation and facilitation of First Nations smoking programs, maternal and child health programs, and chronic disease management and prevention. Aboriginal health practitioners, on the other hand, are AHPRA-regulated and predominantly focus on clinical care. Aboriginal health practitioners and Aboriginal health workers work closely together to achieve public health outcomes for the communities they serve.

Table 12: Overview of other workforce role groups

Social	
Social	<ul style="list-style-type: none"> Community and religious leaders⁵ Social workers
Education	<ul style="list-style-type: none"> Primary and high school teachers Higher education teachers
Economic	<ul style="list-style-type: none"> Employment recruiters Occupational health & safety officials
Environment	<ul style="list-style-type: none"> Town planners Utility service providers
Food security	<ul style="list-style-type: none"> Supply chain manager Agricultural researcher

6.3. Executive management and leadership

There are 2 groups within the executive management and leadership group:

- Senior specialists
- Policy authority

These groups apply specialist or policy competencies to their executive level decision-making or coordination responsibilities. [33, 37]

Senior specialists

Senior specialists have received specialist-level training in their respective group of the public health and emergency workforce. They may also hold specialist registration as part of the National Registration and Accreditation Scheme (NRAS). They apply the public health competencies to execute executive level decision-making or coordination responsibilities, whilst managing and leading programs that deliver the essential public health functions.

⁵ Community and religious leaders play a particularly important role in supporting public health messaging for culturally diverse communities. This was evident during the COVID-19 pandemic, where they were used as ‘information intermediaries’ to enable public health messages to reach individuals.

*Registered practitioners under the NRAS

Table 13: Overview of role groups who are senior specialists

<p>Responsibilities</p>	<ul style="list-style-type: none"> • Determines, formulates and reviews the general policy program and the overall direction of an organisation that supports public health, within the framework established by a governing body (e.g. board of directors). • Manages projects and programs to deliver public health outcomes. • Forges partnerships and influences local agencies. • Supervises and provides training to workplace-based training program attendees.
<p>Employment</p>	<p>Works across health settings, primarily in government health agencies, but also for health-related non-government organisations (such as provider organisations and peak bodies).</p> <p>Depending on the role, those who work within executive direction and management roles may need to be clinically qualified and registered, particularly for statutory positions. For example, Chief health officers are generally required to hold a medical qualification to fulfil their position.</p>
<p>Role groups (Illustrative example but not exhaustive)</p>	<p>Examples of the role groups which could be considered senior specialists include</p> <ul style="list-style-type: none"> • Chief health officer/chief public health officer • Chief medical officer • Chief nursing and midwifery officer • Director of public health
<p>Functions</p>	<p>Senior specialists can work across any of the public health functions.</p>

Policy authority

These are individuals who have policy and decision-making or coordination roles at the sub-national or national level, who are responsible for resourcing and overseeing delivery of the public health functions at a systems level. They are senior officials who generally work for governments at the respective jurisdictional level, or in regulatory authority agencies, and may be from any of Overview of policy authorities the occupational groups.

Table 14: Overview of policy authorities

Type of authority	Example policy authorities
Government	Health ministers Departments of health Australian Institute of Health and Welfare National Health and Medical Research Council Public health units
Regulatory	Australian Commission on Safety and Quality in Health Care Therapeutic Goods Administration Medical Radiation Practice Board of Australia Australian Health Practitioner Regulation Agency

6.4. Surge Workforce

The surge workforce are people with skill sets that can be mobilised quickly to support public health emergencies. Public health emergencies are caused by events which impact on public health or are events that can potentially overwhelm the health system. [38] Examples of events include:⁶

- Communicable disease outbreaks and pandemics
- Man-made and natural disasters
- Chemical, biological, radiological and nuclear (CBRN) threats.

Emergency management

During a public health emergency, it is critical that the Workforce has the adequate capacity to deliver a timely response. The required number of people, with the necessary skills and expertise, to meet the surge demand is dependent on the magnitude or nature of the emergency. If the demand exceeds the available capacity of the general Workforce, support will be required from the surge workforce. [39]

There are established formal surge mechanisms in place to support the emergency response. [40] However, they may not be sufficient in some instances. In the case where greater workforce capacity is required, a surge workforce may be drawn from the general workforce, for example:

- The **core public health workforce** may be needed to support emergency management, depending on the magnitude of the emergency – the scale and geographic locations – and at the discretion of the relevant authorities. The potential adverse impact of health

⁶ The examples of public health emergencies are not in an order of risk severity.

services being delivered needs to be taken into consideration. For example, during the COVID-19 pandemic, the Australian Government, states and territories provided interjurisdictional contact tracing and outbreak support to aid the Victorian outbreak. At the same time, a surge workforce was recruited. University students who were studying relevant degrees (e.g. Masters of Public Health) were seconded to the NSW Ministry of Health to assist with contact tracing during the NSW COVID-19 outbreak response. [14]

- The **health and care workforce** with relevant skills may be leveraged to support responses that cannot be accommodated by core Workforce alone, along with a surge workforce. For example, during the COVID-19 pandemic, pharmacists were utilised to support vaccination efforts and regulatory actions were undertaken to allow retired healthcare workers to be recruited to deliver clinical services, maintain access to services and as contact tracers.
- A surge workforce made up of **community members** may be drawn on to help with emergency support. Many community members are trained in basic public health skills for the purpose of supporting emergency responses. In certain public health emergencies, this surge workforce may be deployed to help support the response. For example, during COVID-19, the ACT State Emergency Services (SES) supported those isolating and quarantining through the delivery of home support and food to support the public health response.

6.5. Summary

This analysis shows that in Australia, the Workforce can be defined based on the categories provided in the WHO Roadmap, with a general workforce consisting of the core public health workforce, health and care workforce, and other workers as illustrated in figure 5. People working in executive management and leadership roles with specialist training or responsibilities, as well as a surge workforce who can be mobilised in times of crises, can be identified in each of the respective categories on the following page.

Figure 5: Overview of the Workforce composition including example⁷ role groups⁸

Public health and emergency workforce				
People who deliver the essential public health functions to maintain and improve the health of communities				
General workforce			Executive management and leadership	
Core public health workforce	Health and care workforce	Other workforce	Senior specialists	Policy authority
Public health physicians	Medical practitioners including district medical officers	Road safety personnel	Chief health officers	Ministers of health
Public health officers	Nurses	Natural resources and environment personnel	Directors of public health	Senior policy advisors
Policy and advocacy officers	Midwives	Public works personnel	Chief medical officers	Regulatory authority officials
Epidemiologists	Dental practitioners	Food supply chain workers	Chief nursing and midwifery officers	Government department officials
Biostatisticians	Pharmacists	Civil defence and law enforcement personnel	Chief veterinary officers	
Health promotion officers	Allied health professionals	School teachers	Emergency services commissioners	
Health protection officers	Aboriginal health workers/practitioners	Lawyers	Public health attorneys	
Environmental health officers	Social workers	Town planners	Chief executive officers in NGOs	
Public health researchers and educators	Veterinarians	Engineers		
	Medical laboratory technicians	Media/communications personnel		
	Entomologists	OH&S officers		

Surge Workforce

People with skill sets that can be mobilised quickly to support public health emergency responses, who may be drawn from any group of the public health and emergency workforce

⁷ Illustrative but not exhaustive
⁸ Role groups refers to the individual jobs that form each occupational focus and carry out the relevant activities to achieve public health outcomes

7. A sustainable and future-proofed Workforce

A competent Workforce must be protected from erosion to future-proof normal service delivery as well as secure surge capacity.

This paper has provided the results of a broad-ranging set of enquiries into how public health is conceptualised, defining the functions of the Workforce, what a competent workforce delivers, and the composition of the core and broader public health workforce.

The methods used include a broad desktop review of existing peer-reviewed and grey literature, and a set of qualitative consultations with industry executive and professional interest groups. Also included were questionnaires and face-to face focus groups and electronic communications, as well as a review of Australian state and territory health department websites. Results of the desktop review were used to design the qualitative enquiry, and qualitative results were used to refine workforce functions and tasks as relevant for Australia. These were mapped against current international best practice sets of functions and tasks.

Existing definitions of public health are broadly unchanged for the last century, a reflection that the core functions which public health efforts are designed to address are fundamentally unchanged. Although many refinements have since occurred in line with changing population structures and their needs and forward looking competencies are increasingly being required and used in public health (e.g. genomic analysis in virology and bacteriology and parasitology). Competency sets have been developed and refined accordingly, as understanding of the public health landscape has evolved. The emerging use of modelling and of artificial intelligence for finding signals for and then forecasting the nature of epidemics will be critical in future-proofing the Workforce in Australia.

Recent work, especially by the WHO, has (re)defined the functions the public health Workforce perform in greater detail. It has also deconstructed these into hundreds of tasks which comprise the work of both core public health workforce and those who perform some public health tasks as part of their routine work. The research undertaken for this analysis of the Workforce in Australia, identified a very similar set that has been mapped in this document against these international works.

In much of the world, public health education at all degree levels is accredited (currently micro-credentialling is not included), and in many countries public health practitioners are registered using similar mechanisms as other medical, health and allied health practitioners. These degrees are built around competency frameworks (all of which were included in the WHO analysis) and are independently assessed, leading to benchmarking and harmonisation of core content and academic standards. This affords transportability of qualifications and recognition of expertise, and a competent internationally mobile workforce.

There are about 2,000 Master of Public Health and 1,500 public health-related bachelor degree graduates every year in Australia. [41] Whilst a very small number of Australian public health degrees are accredited internationally, the vast majority do not have transnational recognition. Australian research has shown that, for health science graduates, public health graduates are employed in an unusually broad set of occupations and workplaces [35]. Only about one third of public health job descriptions required applicants to have a public health qualification [36], suggesting a significant gap in both required skills and underuse of existing skills.

Future proofing and securing the quality of the Australia public health Workforce will enhance both usual service provision and provide mechanisms for surge capacity.

Glossary

Table 15: Glossary of key terms

Term	Meaning
Aboriginal Community Controlled Health Organisation (ACCHO)	A primary healthcare service initiated and operated by the local Aboriginal community to deliver holistic, comprehensive and culturally appropriate health care to the community which controls it, through a locally elected Board of Management. [42]
Clinicians	A practitioner who spends most of their total weekly working hours engaged in clinical practice (that is, in the diagnosis and/or treatment of patients including recommending preventive action). A clinician may work clinical and non-clinical hours and may or may not be a medical practitioner. [34]
Competencies	Informed by functions, competencies are the capabilities and proficiencies required by the Workforce to deliver the public health objectives. [16]
Core Workforce	People who are engaged in the delivery of the public health objectives who identify public health as being the primary purpose of their role. [33]
Cultural safety	Cultural safety is about overcoming the power imbalances of places, people and policies that occur between the majority position and the minority person of a diverse cultural background so that there is no assault, challenge or denial of the person's identity, of who they are and what they need. Cultural safety is met through actions from the majority position which recognise, respect and nurture the unique cultural identity of culturally diverse people. Only the person who is the recipient of a service or interaction can determine whether it is culturally safe. [43]
Disease and condition prevention	The development of programs aimed at prevention and early detection of disease or condition. [21]
Equity	Equity is the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability or sexual orientation). [44]
External stakeholders	Representatives from outside of the Department of Health, Disability and Ageing.
Functions	Functions are the activities required by the Workforce and wider communities to deliver public health outcomes. [3, 4]

Term	Meaning
Health diplomacy	Health diplomacy brings together the disciplines of public health, international affairs, management, law and economics. It focuses on those health issues that need the cooperation of many stakeholders to address issues of common concern. It can occur at many levels, including internationally, regionally and nationally. [45, 46]
Health promotion	Consorted efforts to reduce health inequalities through addressing the wider determinants of health including socioeconomic influences. [17, 18]
Health protection	Efforts to control and prevent public health emergencies and protect the population against health hazards. [20, 47]
Health security	Health security is defined as the activities required, both proactive and reactive, to minimise the danger and impact of acute public health events that endanger people's health. [48]
Individual-level interventions	Individual-level interventions seek to provide one-to-one individualised care, education and/or advice to improve someone's health.
Internal stakeholders	Representatives from the Department of Health, Disability and Ageing.
Population-level interventions	Public health interventions which are delivered to whole populations.
Primary health care	Primary health care covers health care that is not related to a hospital visit, including health promotion, prevention, early intervention, treatment of acute conditions and management of chronic conditions. In Australia, primary health care is typically the first contact an individual with a health concern has with the health system. [49]
Public health	Public health is the art and science of preventing disease, prolonging life and promoting health through the organised efforts of society. [1]
Public health services	The three public health services are health protection, disease and condition prevention and health promotion. [5]
Risk communication	Risk communication is the real-time exchange of information, advice and opinions between experts or officials and people who face a threat (from a hazard) to their survival, health or economic or social wellbeing. [50]
Role groups	Specialised jobs responsible for the delivery of public health outcomes.
Workforce	People who are engaged in the delivery of public health functions and maintaining and improving the health of communities.

Term	Meaning
Surge Workforce	People who have skill sets that can be leveraged in emergencies. This can include those whose roles may not usually involve the delivery of public health.
Wider determinants of health	Non-medical factors that influence individual health status and health outcomes. [11]
Other Workforce	People who are periodically engaged in the delivery of public health objectives, where the delivery of public health objectives is not the primary purpose of their role. [36]

Acronyms

Table 16: list of acronyms

Acronyms	Description
ACT	Australian Capital Territory
ADF	Australian Defence Force
AHPRA	Australian Health Practitioner Regulation Agency
CBRN	Chemical, biological, radiological and nuclear
CDC	Centre for Disease Control
EPHF	Essential Public Health Functions
GP	General practitioner
IUHPE	International Union for Health Promotion and Education
NGO	Non-government organisations
NPHP	National Public Health Partnership

Acronyms	Description
NSW	New South Wales
OH&S	Occupational health and safety
SES	State Emergency Services
TAFE	Technical and further education
WFPHA	World Federation of Public Health Associations
WHO	World Health Organization

References

1. Winslow, C.E.A., The Untilled Fields of Public Health. *Science* (American Association for the Advancement of Science), 1920. 51(1306): p. 23–33.
2. Australian Government National Preventive Health Strategy 2021-2030, Department of Health, Editor. 2021.
3. World Health Organization, 21st Century Health Challenges: Can the essential public health functions make a difference? 2021.
4. World Health Organization, Application of the essential public health functions: an integrated and comprehensive approach to public health. 2024, Geneva.
5. World Federation of Public Health Associations. Global Charter for the Public's Health. 2016; Available from: <https://www.wfpha.org/the-global-charter-for-the-publics-health/>.
6. AbdulRaheem, Y., Unveiling the Significance and Challenges of Integrating Prevention Levels in Healthcare Practice. *Journal of primary care & community health*, 2023. 14.
7. Kislring, L. and J. Das, Prevention Strategies. 2020, StatPearls Publishing: Treasure Island (FL).
8. World Health Organization. Public health and emergency workforce: A roadmap. 2022; Available from: <https://www.who.int/teams/health-workforce/PHEworkforce>.
9. World Health Organization, Constitution of the World Health Organization. 1948.
10. Lin, V., S. Fawkes, and J. Smith, What is public health? Definitions and applications, in *Public Health Practice in Australia*. 2023, Routledge.
11. Wilkinson, R. and M. Marmot, The solid facts: social determinants of health. 2nd ed. ed. 2003, Copenhagen Centre for Urban Health, World Health Organization
12. VicHealth, Addressing determinants in healthy settings approaches. 2015, Victorian Health Promotion Foundation.
13. World Health Organization, Ottawa Charter for Health Promotion, in First International Conference on Health Promotion. 1986: Ottawa
14. Australian Government, National Contact Tracing Review, A report for National Cabinet, Department of Health, Editor. 2020.
15. Watts, R.D., et al., No Two Workforces are the Same: A Systematic Review of the Enumerations and Definitions of Public Health Workforces. *Frontiers in Public Health*, 2020. 8.
16. World Health Organization & Association of Schools of Public Health in the European Region, WHO-ASPHER Competency Framework for the Public Health Workforce in the European Region. 2020.
17. Australian Health Promotion Association, Core Competencies for Health Promotion Practitioners. 2009.
18. World Health Organization. Health Promotion. 2023; Available from: <https://www.who.int/westernpacific/about/how-we-work/programmes/health-promotion>.
19. Lomazzi, M., A Global Charter for the Public's Health—the public health system: role, functions, competencies, and education requirements. *European journal of public health*, 2016: p. 1-3.
20. NSW Health, Health Protection Report. 2017, NSW Government,.

20. Australian Government. About preventive health in Australia. 2023; Available from: <https://www.health.gov.au/health-topics/preventive-health/about>.
21. Carlson, V., et al., Defining the functions of public health governance. *American journal of public health*, 2015. 105 (Suppl 2): p. S159–S166.
22. Moore, M., What is Public Health Advocacy?, in *Casebook for Advocacy in Public Health*. 2021, World Federation of Public Health Associations: Geneva, Switzerland.
23. Gille, F., S. Smith, and N. Mays, Evidence-based guiding principles to build public trust in personal data use in health systems. *Digital health*, 2022. 8.
24. Centers for Disease Control and Prevention, Key Characteristics of Data Quality in Public Health Surveillance, in *Birth Defects Surveillance Toolkit*. 2020.
25. Naito, M., Utilization and application of public health data in descriptive epidemiology. *Journal of epidemiology*, 2014. 24(6): p. 435–436.
26. Lower, T., et al., Implementation of the Australian core public health functions in rural Western Australia. *Australian and New Zealand journal of public health*, 2004. 28(5): p. 418–425.
27. Centers for Disease Control and Prevention. *Advancing Health Equity in Chronic Disease Prevention and Management*. 2022; Available from: <https://www.cdc.gov/chronicdisease/healthequity/index.htm>.
28. Mulder, M., Conceptions of Professional Competence, in *International Handbook of Research in Professional and Practice-based Learning*, S. Billett, C. Harteis, and H. Gruber, Editors. 2014, Springer p. 107-138.
29. Coombe, L., C. Severinsen, and P. Robinson, Practical competencies for public health education: a global analysis. *International Journal of Public Health*, 2020. 65 (7): p. 1159-1167.
30. Rosenfield, P.L., The potential of transdisciplinary research for sustaining and extending linkages between the health and social sciences. *Social science & medicine*, 1992. 35(11): p. 1343–1357.
31. World Health Organization, National workforce capacity to implement the essential public health functions including a focus on emergency preparedness and response: Roadmap for aligning WHO and partner contributions. 2022: Geneva.
32. Centre for Workforce Intelligence, *Mapping the core public health workforce*. 2014.
33. Australian Government. *Workforce: Glossary*. 2017; Available from: <https://www.aihw.gov.au/reports-data/health-welfare-services/workforce/glossary>.
34. NAATSIHWP, National Framework for Determining Scope of Practice for the Aboriginal and/or Torres Strait Islander Health Worker and Health Practitioner Workforce. 2021, National Association of Aboriginal and Torres Strait Islander Health Workers and Practitioners.
35. Public Health England, *The wider public health workforce: A review*. 2019.
36. Australian Government. *Occupation Profile: Chief Executive or Managing Director*. Available from:
37. <https://www.jobsandskills.gov.au/australian-skills-classification#occupations~111111>.

38. Inspector-General for Emergency Management. Public Health Emergency. 2023; Available from: <https://www.igem.vic.gov.au/assurance-in-emergency-management/public-health-emergency>.
39. NSW Health, Public Health Workforce Surge Guidelines, Public Health Preparedness, Editor. 2023, NSW Government.
40. Australian Government. National Critical Care and Trauma Response Centre. 2023; Available from: <https://nationaltraumacentre.gov.au/>.
41. Watts, R.D., et al., The growth of Australian public health graduates and courses, 2001-2018: implications for education and employment opportunities. Australian and New Zealand journal of public health, 2021. 45(2): p. 95–100.
42. NACCHO. Aboriginal Community Controlled Health Organisations (ACCHOs). Available from: <https://www.naccho.org.au/acchos/>.
43. Closing the Gap in Partnership, National Agreement on Closing the Gap. 2020.
44. World Health Organization. Health Equity. Available from: https://www.who.int/health-topics/health-equity#tab=tab_1.
45. World Health Organization. Health Promotion Glossary of Terms 2021; Available from: <https://iris.who.int/bitstream/handle/10665/350161/9789240038349-eng.pdf?sequence=1>.
46. World Health Organization. Health diplomacy. 2023; Available from: <https://www.emro.who.int/health-topics/health-diplomacy/index.html>.
47. NSW Health. Health Protection NSW. 2021; Available from: <https://www.health.nsw.gov.au/about/ministry/Pages/hpnsw.aspx>.
48. World Health Organization. Health Security. Available from: https://www.who.int/health-topics/health-security#tab=tab_1.
49. Australian Institute of Health and Welfare. Primary health care in Australia. 2016; Available from: <https://www.aihw.gov.au/reports/primary-health-care/primary-health-care-in-australia/contents/summary>.
50. World Health Organization, Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response. 2020.

Health.gov.au

