

FOUNDATION COMPETENCIES FOR PUBLIC HEALTH GRADUATES IN AUSTRALIA

2nd Edition

Foreward

This update of the Australian Public Health Graduate competency guide builds upon the significant first edition of this national core competency framework document produced in 2009 by the Australian Network of Academic Public Health Institutions (ANAPHI). Funding for its development through a complex Delphi process was provided through the Public Health Education and Research Program (PHERP) administered by the Department of Health and Ageing. The original guide was developed through contributions from numerous public health experts from academic institutions, community organisations and public sector organisations including the Department of Health and Ageing.

This revised guide was developed under the auspices of Council of Academic Public Health Institutions Australia (CAPHIA) and involved input from all 23 Australian universities offering a Master of Public Health (MPH) program in 2015. Due to the widespread usage of the original MPH competencies document for the design of both MPH and undergraduate public health programs, this review has expanded the context of the competencies for this dual purpose. The review process was coordinated by Shawn Somerset, Priscilla Robinson and Helen Kelsall.

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Table of Contents

Purpose	1
Underlying Assumptions	3
Practice Goals within the Competencies	4
Relevance of the Australian Qualifications Framework (AQF)	5
The 2015 REVIEW	6
Public Health Graduate Competencies	8
Areas of Practice	8
Area of Practice: Health Monitoring and Surveillance	9
Area of Practice: Disease Prevention and Control	11
Area of Practice: Health Protection	13
Area of Practice: Health Promotion	15
Area of Practice: Health Policy, Planning and Management	17
Area of Practice: Evidence-based Professional Population Health Practice	20
Appendix 1: Historical Aspects of Australian Public Health Training	23
Public Health Education and Research Program (PHERP)	23
ANAPHI: An Historical Context	23
Indigenous Public Health: Closing the Gap	24
Public Health Workforce Training in Australia	24
Emerging Public Health Problems and Surge Capacity	27
Public Health Workforce Training: The International Context	28
Appendix 2: Underpinning Knowledge for Indigenous Public Health Competencies	29
Underpinning Knowledge for Indigenous Public Health Elements of Competence	29
Appendix 3: Background to the Original Foundation Competencies for Public Health Graduates in Australia	33
A Competency Based Education Framework for MPH Programs	35
References and Bibliography	37

Purpose

In view of the diversity of the field of Public Health, and indeed of the various undergraduate Public Health and Master of Public Health (MPH) courses across Australia, this document describes a comprehensive spectrum of competencies to benchmark curriculum development in MPH and Public Health undergraduate degree programs in Australia. The first edition of the foundation competencies was originally intended for MPH programs. Since the publication of the initial MPH competency document in 2009, there has been a significant increase in the number of undergraduate Public Health focused degree programs on offer in Australia, many of which have used the 2009 document to inform curriculum development. In view of this changing context of public health education, the competency themes outlined are assumed to be relevant to both undergraduate and postgraduate courses.

This revised framework is offered as a guide to Public Health degree program curriculum development. It is envisaged that the document will:

- support academic teaching programs to build their own curricula
- guide participation in shared curricula where programs lack specialist capacity
- enable cross-referencing in curriculum review processes
- be referenced in course handbooks
- assist in course planning with students
- provide a communication resource which encompasses the broad and diverse spectrum of the Public Health discipline
- inform career planning and development for students and graduates of Public Health and
- support accreditation processes.

The guide will also enable benchmarking against various international requirements in the Public Health employment sector.

The competency framework describing foundation practices of graduates enables flexibility in the delivery of the training and provides scope for the inclusion of specific content from each university teaching program. While some institutions may not have sufficient capacity to deliver all baseline competencies

within their public health faculty, the document provides opportunities to create new, or strengthen existing, institutional collaborations and consortium arrangements.

The competencies set out in the 2009 document drew upon an earlier compilation, the Competencies Standards for Public Health Practice (Human Capital Alliance 2007). Whereas the Competencies Standards for Public Health Practice provided a set of “workplace practice competencies” that were expected of an MPH graduate after six months experience, this document sets out:

- the minimum baseline set of competencies that can be expected of any Public Health graduate upon graduation, and
- examples of specialist competency elements within each area of practice.

Importantly, this is a baseline set of competencies that are likely to be developed through an undergraduate public health program or a generalist MPH program, with some higher level skills which cover specialist competencies that graduates might acquire in a particular area of specialisation within an MPH program, designated “Examples of Specialist Elements”. Thus, these competencies provide guidance on basic education and training in core areas of public health (as acknowledged by practitioners and educators), as well as specialist education and training which can be pursued through elective content or as a separate degree, dependent on the capacity of each individual institution.

The framework should be seen as setting out at least a partial set of minimum competencies for a variety of health professions. These professions include, but are not limited to, biostatistics, epidemiology and health protection and promotion. The competencies in this framework may not constitute all of the minimum competencies for these professions, some of which require additional specialised training.

Underlying Assumptions

Grant (1979) emphasised that the underpinning program assumptions of any competency based education program need explicit articulation. The assumptions of this 2016 competency document include the following:

- Grant (1979) originally set out the *minimal baseline* set of competencies of every Public Health graduate that are achievable in a university-based teaching program
- the relevance of the competencies has now been extended to development of undergraduate Public Health graduates
- the application of the competencies outlined in this document should be conducted in conjunction with the Australian Qualifications Framework (AQF – see below), which distinguishes Bachelor (level 7) and Master (level 9) programs.

This competency framework document is intended *to be used as a guide to academic teaching programs* regarding a set of baseline standards for Public Health degree program curriculum development. It assumes that:

- the teaching of the competencies will be informed by both current evidence and research and the changing needs of industry in relation to the specific areas of practice
- all Australian Public Health graduates need to be culturally attuned to not only Aboriginal and Torres Strait Islander health issues, their history and specific challenges, but also Indigenous agency in the development of successful population health strategies to improve Aboriginal and Torres Strait Islander health
- an understanding of ethics is fundamental knowledge for all Public Health graduates
- improvements in population health are created through dynamic partnerships with communities, industry, government, scientists, health professionals and other advocates for change.

Practice Goals within the Competencies

An Australian Public Health graduate should attain the practice goals in the six areas of public health practice outlined in the national competency framework below (see Appendix 1). These include *Evidence-based Professional Population Health Practice*, which underpins the other five practice areas: *Health Monitoring and Surveillance*; *Disease Prevention and Control*; *Health Protection*; *Health Promotion*; *Health Policy, Planning and Management (health systems)*.

Each of these six practice areas has a practice goal. Each goal is underpinned by 'units of competency'. Each unit of competency is defined by specific "Elements of Competence". The units of competency also include the specified underpinning knowledge accompanying the competency statements. The achievement of elements in all of the competency units are the minimum proposed attainment requirements for Australian Public Health graduates.

If a graduate wishes to specialise further in one or several of the practice areas, "Examples of Specialist Elements" are offered to guide curriculum developers. Other competencies can be added to this specialist list, depending on the strengths and expertise of each academic faculty, and public health workforce needs.

Relevance of the Australian Qualifications Framework (AQF)

It is a critical proviso of this competency framework that it be used in conjunction with the AQF to inform specific levels of proficiency achieved for each competency within a program, since these will vary between undergraduate and postgraduate levels.

At the time of this present revision, the AQF determined that a graduate of a **Bachelor Degree program** (level 7) would:

- have broad and coherent knowledge and skills for professional work and/or further learning
- have broad and coherent theoretical and technical knowledge with depth in one or more disciplines or areas of practice
- have well-developed cognitive, technical and communication skills to select and apply methods and technologies to:
 - analyse and evaluate information to complete a range of activities
 - analyse, generate and transmit solutions to unpredictable and sometimes complex problems
 - transmit knowledge, skills and ideas to others
 - apply knowledge and skills to demonstrate autonomy, well-developed judgement and responsibility in contexts that require self-directed work and learning, and within broad parameters to provide specialist advice and functions.

Further, the AQF determined that a graduate of a **Master Degree program** (level 9) would:

- have specialised knowledge and skills for research, and/or professional practice and/or further learning
- have advanced and integrated understanding of a complex body of knowledge in one or more disciplines or areas of practice

- have expert, specialised cognitive and technical skills in a body of knowledge or practice to independently:
 - critically analyse, reflect on and synthesise complex information, problems, concepts and theories
 - research and apply established theories to a body of knowledge or practice
 - interpret and transmit knowledge, skills and ideas to specialist and non-specialist audiences
 - demonstrate autonomy, expert judgement, adaptability and responsibility as a practitioner or learner.

Thus, it would be expected that MPH level courses would include some specialist competency elements, the extent of which would be determined by the capacity of each individual institution.

The 2015 REVIEW

In 2014–2015 a review of this set of competencies was undertaken. The process occurred initially through all Australian universities that were offering an MPH being invited to provide written input and also to nominate an editorial representative. In view of the fundamental importance of Aboriginal and Torres Strait Islander health within Public Health policy and practice in Australia, Public Health Indigenous Leadership in Education (PHILE) was also included in the consultations. From this wider group, a core group of three editors (SS, PR and HK) was assembled by CAPHIA to manage the consultation and reporting process. A semi-structured survey, with telephone contact for specific points of clarification, was subsequently implemented. All 23 Australian universities offering an MPH program, plus PHILE, participated. Over the course of the three-year review process, the interim findings were presented at consecutive CAPHIA Learning and Teaching Fora to ensure oversight of the review process and to garner further feedback into the process.

The initial survey revealed fifteen of the universities reported having used these competencies extensively in the design and review of their MPH programs, and almost all of the remainder had used similar sets provided by other public health organisations and/or colleges of public health.

Epidemiology and biostatistics were reported as core to all public health teaching. A small number of competencies were seen as obsolete, but only by single respondents; several additional competencies were proposed and included in the competency tables below.

How to Use This Document

This document sets out a range of competencies relevant to curriculum development of postgraduate and undergraduate programs in public health. The level of achievement within each area of competence will be determined by the level of study (undergraduate or postgraduate), the emphasis or major of the particular degree, and the nominated specialisations of the faculty of offer. It is anticipated that all degree programs will enable attainment across all competencies, but with higher level content in specialist areas, in order to comply with AQF requirements. The Examples of Specialist Elements provide possibilities for extended studies, such as thesis and project work, and specialisation in work organisations.

Public Health Graduate Competencies

Areas of Practice

- Health Monitoring and Surveillance
- Disease Prevention and Control
- Health Protection
- Health Promotion
- Health Policy, Planning and Management
- Evidence-Based Professional Population Health Practice

Area of Practice: Health Monitoring and Surveillance

Practice Goal: Assess, analyse and communicate population health information
 (#Additional competency added in 2016 version)
 (*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
1. Monitor and evaluate population health data or indicators	<p>1.1. Describe common measures of indicators for population health</p> <p>1.2. Calculate and interpret the epidemiologic measures of occurrence (prevalence, incidence of diseases, death); and association between exposure (including risk behaviour) and disease (e.g. risk ratios) and measures of public health impact (e.g. population attributable risk)</p> <p>1.3. Generate and interpret descriptive statistics and appropriate graphics for summarising and displaying epidemiologic data</p> <p>1.4. Generate and interpret simple inferential statistics</p> <p>1.5. Interpret mixed method research findings relevant to a population's health including those generated through qualitative methods</p> <p>1.6. Analyse and describe the health status of a population based on demographic and epidemiological information</p> <p>1.7. Describe the determinants / causes of a significant population health problem</p> <p>1.8. Interpret data which include stratified and marginalised groups of people in a way that demonstrates cultural competence[#]</p> <p>1.9. Analyse key health indicators for Aboriginal and Torres Strait Islander peoples[*]</p> <p>1.10. Analyse key indicators of determinants of health for Aboriginal and Torres Strait Islander peoples[*]</p>

Unit of Competency	Elements of Competence
2. Analyse the quality of findings from a surveillance or screening program	2.1 Describe the features of different types of surveillance systems and screening programs designed to address specific population health problems
	2.2 Interpret and communicate surveillance findings from an identified population
	EXAMPLES OF SPECIALIST ELEMENTS
	2.3 Design a population-based surveillance system
	2.6 Evaluate a population-based surveillance system
	2.4 Assess the suitability of surveillance systems and/or screening programs designed to address an identified population health problem
	2.5 Outline a communication strategy for surveillance findings to trigger required health system response/s

Underpinning Knowledge – Health Monitoring and Surveillance

- Demographic information/data sources
- Epidemiological measures/data sources
- Patterns of health, illness, injury and their determinants in populations
- Basic descriptive and inferential statistics
- Effective design and operation of screening programs
- Evidence-based data collections
- Health information systems (for example, cancer registries, notifiable disease systems, syndromic surveillance)[#]
- Components of a surveillance system including their strengths and weaknesses
- Social determinants of the health of specific populations based on demographic data regarding: population structure; housing; education; employment; income and access to health care
- Quantitative, qualitative and mixed methods research approaches

Area of Practice: Disease Prevention and Control

Practice Goal: Detect, prevent and control communicable and non-communicable diseases among human populations through systematic interventions such as screening, immunisation and contact tracing
(#Additional competency added in 2016 version)
(*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
3. Plan a disease prevention/control strategy	3.1 Describe key elements of a population-based disease prevention strategy such as screening, immunisation and contact tracing
	3.2 Design a key element of a comprehensive population disease prevention strategy (such as a component of an immunisation, screening, contact tracing, surveillance, counselling or risk communication activity)
	3.3 Assess the relative merits (e.g. considering suitability to target group, resource requirements, etc.) of alternative disease prevention measures (e.g. education, immunisation, incentives, legislation, policies, standards, screening)
	3.4 Explain how legal frameworks, organisational structures and service delivery systems influence disease prevention and control
	EXAMPLES OF SPECIALIST ELEMENTS
	3.5 Design a population-based disease prevention / control strategy
	3.6 Evaluate a population-based disease prevention / control strategy
	3.7 Develop a strategy to activate a health system response based on an understanding of the legal implications, organisational structures and service delivery systems used in disease prevention and control

Unit of Competency	Elements of Competence
4. Formulate and implement a response to a public health emergency	4.1 Describe effective intervention strategies for public health emergencies
	4.2 Outline key components of an effective emergency response to a specified disease
	4.3 Describe examples of emergency response measures within the health and emergency services sectors
	4.4 Identify local, national and international mechanisms (including legislative and regulatory frameworks) for responses to public health emergencies
	EXAMPLES OF SPECIALIST ELEMENTS
	4.5 Design and/or coordinate activities/elements of an appropriate emergency management plan to ensure constant readiness to respond (biological, chemical or radiation exposure incidents, natural disaster or terrorist attack)
	4.6 Assess the relative merits (e.g. considering suitability to target group, resource requirements, etc.) of alternative emergency response measures (e.g. laws, regulations, compliance measures, policies and protocols)

Underpinning Knowledge – Disease Prevention and Control

- International, Commonwealth and State and Territory legislative and regulatory structures for disease prevention and control
- Public health emergency plans and pandemic plans
- Host, agent and environment system interactions
- Structures of public health emergency response systems (including mechanisms for rapid response and surge capacity)
- The biological, molecular and genetic causes of disease and their distribution within populations
- Ethical, social and legal issues in disease prevention and control
- Specific biological, chemical and physical agents which increase the vulnerability of individuals or populations to a public health emergency
- Relationship between health behaviours, human biology and disease prevention and control
- Multiple dimensions of disease prevention and control including behavioural, socioeconomic and environmental factors
- Role of public health advocacy in achieving disease prevention and control
- Evidence-based data collections

Area of Practice: Health Protection

Practice Goal: Promote, develop and support physical interventions which ensure a safe and healthy environment

(#Additional competency added in 2016 version)

(*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
5. Describe environmental health safety standards and related management procedures	<p>5.1. Outline key parameters for safety within key domains of environmental health</p> <p>5.2. Describe key elements of evidence-based approaches to environmental risk management and hazard control including the role of existing health agencies, critical infrastructure, legislative and regulatory measures</p> <p>5.3. Outline the impact of social, cultural, political and regulatory factors that influence responses to environmental health issues</p>
6. Map and analyse the environmental determinants that contribute to disease in a given community or population	<p>6.1 Identify and describe environmental determinants and risk factors in a given community or population</p> <p>6.2 Specify environmental drivers of illness / injury in a given community or population</p> <p>6.3 Identify vulnerable individuals / groups and describe specific environmental health risks in a given community or population</p> <p>6.4 Outline key standards and apply appropriate assessment tools and methods to determine environmental factors that adversely affect health in a given community or population</p> <p>6.5 Analyse key environmental risk factors in a given community or population</p> <p>6.6 Identify and describe the impacts of climate change and implications for ecologically sustainable development[#]</p> <p>6.7 Develop a communication plan to alert appropriate service providers in health and other sectors to trigger appropriate responses in a given community or population</p>

Unit of Competency	Elements of Competence
	<p>EXAMPLES OF SPECIALIST ELEMENTS</p> <p>6.8 Formulate a risk assessment plan to define and characterise the potential influence of environmental factors</p> <p>6.9 Conduct and report on a risk assessment project to define and characterise the nature and potential influence of environmental factors</p> <p>6.10 Conduct and report on an appropriate environmental health stakeholder analysis and consultation</p>
7. Design an environmental health intervention in a given community or population	<p>7.1. Identify the key goals, objectives and strategies of an environmental health intervention, including an evaluation strategy</p> <p>7.2. Identify the key professionals, community leaders and other relevant stakeholders to collaborate on the environmental health intervention</p> <p>7.3. Develop specific components and activities of an environmental health intervention</p> <p>7.4. Incorporate statutory requirements into an environmental health intervention design</p> <p>EXAMPLE OF SPECIALIST ELEMENT</p> <p>7.5. Design a strategy for ecologically sustainable development, taking into account climate change and its impacts on water, food, sanitation and other critical issues[#]</p>

Underpinning Knowledge – Health Protection

- Environmental standards and use of data warehouses
- Environmental monitoring standards – international, national and local
- Evidence-based and other environmental health data, including toxicology and ecology
- General mechanisms of toxicity in eliciting a toxic reaction
- Risk assessment methods, risk management and communication approaches
- Federal and State regulatory programs, guidelines and authorities that control environmental health issues
- Legislative and ethical issues relating to environmental health protection
- Approaches to assessing, preventing and controlling environmental hazards that pose human health and safety risks
- Climate change theory
- Genetic, physiological and psycho-social factors, including poverty and low educational status, that affect susceptibility to adverse health outcomes following exposure to environmental hazards
- Identity and function of key national and international environmental health agencies[#]

Area of Practice: Health Promotion

Practice Goal: Promote population and community health by both changing social, economic, cultural and physical environments through consultation, engagement and empowerment, and strengthening the skills and understanding of individuals to achieve and maintain their health
(#Additional competency added in 2016 version)
(*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
8. Prioritise population / community health needs	<p>8.1. Describe international/national/state/regional priority health problems relevant to specific populations/communities</p> <p>8.2. Describe Aboriginal and Torres Strait Islander health in historical context and analyse the impact of colonial processes on health outcomes*</p> <p>8.3. Conduct a stakeholder analysis (including analysis of power and control) and identify prospective partners with reference to the health needs of a specific population/community</p> <p>8.4. Analyse, and present appropriately, information on the health of a specific population/community (e.g. causes/determinants of health, illness/injury)</p> <p>8.5. Develop criteria to prioritise health problems for a specific population/community</p> <p>8.6. Analyse and prioritise health problems for a specific population/community using appropriate criteria</p> <p>EXAMPLES OF SPECIALIST ELEMENT</p> <p>8.7 Engage community and other sectoral stakeholders in needs assessment and priority setting</p>
9. Plan and evaluate evidence-based health promotion initiatives	<p>9.1 Analyse and compare relevant theories and models to the application of health promotion strategies to address a health problem within a specific population/community</p> <p>9.2 Critically appraise potential evidence-based health promotion initiatives to address effectively a health problem within a specific population/community</p> <p>9.3 Critically evaluate an Aboriginal and Torres Strait Islander health promotion program*</p>

Unit of Competency	Elements of Competence
	<p>9.4 Develop a health promotion plan, specifying target groups and including specific goals, objectives, strategies, broad budgetary implications and related evaluation criteria based on the best available evidence</p> <p>9.5 Articulate clear and measurable objectives, an effective action plan and a sound and sufficient budget</p> <p>EXAMPLES OF SPECIALIST ELEMENTS</p> <p>9.6 Implement and manage a health promotion initiative</p> <p>9.7 Catalyse community engagement and leadership to promote health</p> <p>9.8 Advocate across sectors to build capacity to promote, protect and maintain good health</p> <p>9.9 Strengthen inter-sectoral partnerships and capacity to promote health</p>

Underpinning Knowledge – Health Promotion

- Comprehensive primary health care: The Alma-Ata Declaration on Primary Health Care; The Ottawa and Bangkok Charters for Health Promotion, WHO Commission on Social Determinants of Health and the Millennium Development Goals
- Patterns of health, illness, injury and their determinants in populations
- Health promotion theories and models of individual, community and organisational behaviour change
- Social capital, social inclusion, social networks and their influence on health
- Social and political structures, processes and their effects on health including: international charters; human rights; primary health care; mutual obligation; market forces; self-determination, and strategies of empowerment
- Effective group work practice
- Theories, models, evidence of effective community engagement and capacity building, including consultation, community development and empowerment
- Project and program planning and management
- Criteria for prioritising health interventions balancing competing needs, equity and social justice
- Social marketing theory, new communication technologies as applied to health promotion communication and learning theories
- Social mapping
- Needs assessment theory and its application
- Advocacy theory and practice
- Monitoring and evaluation theories and practices[#]

Area of Practice: Health Policy, Planning and Management

Practice Goal: Promote efficient and equitable gains in population health by developing appropriate policy, legislation, regulation, governance and/or fiscal measures

(#Additional competency added in 2016 version)

(*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
10. Develop an advocacy strategy regarding a population health issue to influence public policy	<p>10.1 Articulate the role of public policy in promoting and protecting health and preventing disease</p> <p>10.2 Articulate key institutional structures, political processes and influences on the public health system</p> <p>10.3 Analyse the feasibility of a population level public health policy (including consideration of relevant: social, economic, political, legal, ethical and environmental factors; organisational, governance, regulatory and financial structures; workforce capacity, and international obligations)</p> <p>10.4 Develop an advocacy strategy regarding a population health issue to influence public policy and/or regulations, based on evidence of both effective interventions to address the problem and effective public health advocacy</p> <p>EXAMPLES OF SPECIALIST ELEMENTS</p> <p>10.5 Analyse leadership styles appropriate to the effective implementation of a specific health policy</p> <p>10.6 Analyse communication and coordination challenges to policy change within an organisation</p> <p>10.7 Facilitate collaboration between internal (organisation) and external (community) stakeholders and reconcile their potential competing interests and power differentials to develop effective health policy</p>
11. Articulate key funding mechanisms and finance sources, and distinguish costs and benefits in relation to specific population health projects/ programs	<p>11.1 Describe principal funding / finance sources relevant to a public health system</p> <p>11.2 Apply the principles of economic evaluation to public health allocations at the population/community level</p> <p>11.3 Apply the principles of economic evaluation to Aboriginal and Torres Strait Islander programs with a particular focus on the allocation of resources relative to need*</p>

Unit of Competency	Elements of Competence
	<p>EXAMPLE OF SPECIALIST ELEMENT</p> <p>11.4 Develop a cost effective public health project / program / contract for which – in terms of scope of work – performance, deliverables, probity, fairness and value for money are able to be audited</p>
12. Analyse a government population health policy	<p>12.1 Describe the historical policy context and current evidence regarding a population health problem</p> <p>12.2 Describe key stakeholders in a population health problem</p> <p>12.3 Describe key institutional structures, agencies and workforce capacity relevant to a key population health problem</p> <p>12.4 Analyse the efficacy of a population health policy on the basis of an appropriate set of criteria</p> <p>12.5 Critically evaluate an Aboriginal and Torres Strait Islander health policy*</p>
13. Analyse/evaluate the management of a population level program/project	<p>13.1 Identify the program logic of a population health program/project (i.e. the relationship between the rationale and objectives of a program, program planning, implementation and evaluation)</p> <p>13.2 Analyse the management of a population health program in terms of strategic focus, organisational authority, leadership capacity, strategic partnerships, resource allocation, workforce capacity and mechanisms of accountability</p> <p>13.3 Analyse/evaluate a population health program/project outcomes relative to relevant performance standards, objectives and negotiated specifications</p> <p>EXAMPLES OF SPECIALIST ELEMENTS</p> <p>13.4 Design a process, impact and/or outcome evaluation plan for a population health program/project that reflects the needs of key stakeholders</p> <p>13.5 Design and conduct an economic evaluation of a program</p> <p>13.6 Integrate the results of an evaluation/analysis of a population health program/project with current policy and practice in collaboration with policy makers and practitioners</p>

Underpinning Knowledge – Health Policy, Planning and Management

- The political system in Australia; government and legislative processes
- The international, Federal, State and local contributions to the health system
- Systems, key institutions and stakeholders in the Australian health system: understanding principles of governance, how to assess appropriateness of governance arrangement at institutional and system levels
- The health systems in Australia and in each jurisdiction, with particular reference to key government institutions
- Public health law and regulations (international, Commonwealth, State)
- Political theory, policy analysis and development theory
- Advocacy theory and practice
- Implementation and constituency building
- Leadership, organisational and management theory
- Health financing[#]
- Economic analysis and evaluation[#]
- Performance monitoring and program evaluation
- Health program planning and design
- Project management tools, for example: critical path method (CPM); bar and Gantt charts; Program Evaluation and Review Technique (PERT); Logic models
- Social, economic, environmental, legal and ethical factors relevant to policy development

Area of Practice: Evidence-based Professional Population Health Practice

Practice Goal: Engage professionally across population health with generic knowledge and skills of systematic research, ethical practice, teamwork, stakeholder analysis, health communication and cultural safety
 (#Additional competency added in 2016 version)
 (*See Appendix 2 for Indigenous competencies)

Unit of Competency	Elements of Competence
P1. Design a systematic, appropriate and ethical population health study and synthesise and articulate findings	1.1 Describe key issues in population health that are amenable to research and ultimately contribute to health gain
	1.2 Assess peer-reviewed and evidence-based information (including systematic reviews) relevant to a study in population health
	1.3 Critically apply findings from a literature search to clearly define a population health research problem
	1.4 Formulate and articulate testable hypotheses / researchable research questions relevant to population health
	1.5 Outline an appropriate population health research design that meets ethical and legislative requirements
	1.6 Outline methods to identify, collect and analyse relevant population health data / appropriate information and to ensure the veracity of sources
	1.7 Synthesise and articulate population health research findings
	EXAMPLE OF SPECIALIST ELEMENT
	1.8 Identify, collect and analyse relevant population health data/ information and justify the veracity of sources

Unit of Competency	Elements of Competence
P2. Describe core principles of just, ethical / legal public health practice	<p>2.1 Describe the potential benefits, risks and costs of population health project / research to the community</p> <p>2.2 Justify population health activities by applying ethical principles including maleficence, beneficence, equity and justice</p> <p>2.3 Analyse population health activities (collection, management, dissemination and use of data and information) with regard to the public health code of ethics</p> <p>2.4 Outline the central intent of privacy laws to protect confidentiality, including implications for population health practice</p> <p>EXAMPLE OF SPECIALIST ELEMENT</p> <p>2.5 Develop an ethics proposal and seek approval from appropriate bodies as required</p>
P3. Collect, organise, critically analyse and articulate secondary information	<p>3.1 Locate secondary information, systematically review and assess its quality and usefulness for the purposes of public health research, policy and practice (including systematic reviews – Cochrane, Campbell etc)</p> <p>3.2 Present information in a truthful and useful way, and evaluate both the information itself and the sources and methods used to collect it</p>
P4 Analyse own professional strengths and personal skills to work effectively with others and in teams	<p>4.1 Demonstrate the capacity to interact effectively with other people both on a one-to-one basis and in groups and to work effectively as a member of a team to achieve a shared goal</p> <p>4.2 Demonstrate a capacity for critical self-assessment regarding one's capacity to interact effectively with other people both on a one-to-one basis and in groups and to work effectively as a member of a team to achieve a shared goal</p> <p>4.3 Demonstrate a capacity for critical self-assessment regarding one's leadership and advocacy skills</p>

Unit of Competency	Elements of Competence
P5 Enable an environment of cultural safety	<p>5.1 Demonstrate the capacity to foster an environment, which is culturally safe for people, where there is no assault, challenge or denial of identity of who they are in accessing what they need for optimal health</p> <p>5.2 Demonstrate a reflexive public health practice for cross-cultural contexts</p> <p>5.3 Demonstrate a reflexive public health practice for Aboriginal and Torres Strait Islander health contexts*</p>
P6 Undertake a stakeholder analysis	<p>6.1 Map key interest groups with a stake in a specific population health issue on the basis of available information</p> <p>6.2 Articulate potential stakeholder standpoints regarding a specific population's health on the basis of available information</p>

Underpinning Knowledge – for Public Health Practitioners

- Comprehensive primary health care: The Alma-Ata Declaration on Primary Health Care; The Ottawa Charter on Health Promotion, and Millennium Development Goals
- Research design and methods
- Quantitative and qualitative data analysis and recognition of the value of both types of data in gathering evidence
- Public health laws
- Concepts of reliability, validity and responsiveness of measures
- Communication and dissemination approaches
- Location of peer-reviewed evidence-based information (including Cochrane, Campbell etc)
- Cultural security and safety
- Privacy legislation
- NHMRC Guidelines for Ethical Conduct of Research in Humans

Appendix 1: Historical Aspects of Australian Public Health Training

Public Health Education and Research Program (PHERP)

Established in 1987, the Australian Government's Public Health Education and Research Program (PHERP) was a nationally coordinated response to Professor Kerr White's 1985 review of public and tropical health in Australia. The Kerr White review initiated a significant shift in thinking within the health system from a largely curative focus to a more preventive emphasis.

The vision articulated in the Kerr White review led to the establishment of PHERP to ensure a well-trained quality Australian public health workforce. Key initiatives were subsidised university places for public health education and research training, and a complementary research program. Before PHERP commenced there was only one postgraduate public health education program in Australia.

Over a twenty-two year period, the Australian Government made a significant investment in PHERP, which evolved through four phases, and was not continued beyond the end of Phase IV in 2010. In the final phase of PHERP, the Australian Network of Academic Public Health Institutions (ANAPHI) was supported by PHERP to complete the national competency framework, seek endorsement of the framework and propose an implementation plan.

ANAPHI: An Historical Context

There were two main drivers that resulted in the formation of ANAPHI in 2000. The first imperative was the need for broader partnerships in the public health teaching and research effort through greater collaboration among and between Australian academic public health institutions and industry. The second was the need for closer partnerships between State, Territory and Commonwealth governments, and industry, to better understand competing priorities and needs. Nationally, academic public health leaders recognised the importance of these partnerships as a vehicle to enable a greater responsiveness to national public health concerns.

ANAPHI had four specific goals: to raise the profile of public health; to improve the accessibility and the quality of public health education and training; to improve the quality and accessibility of Australian public health research; and

to raise the impact of Australian public health education and research. ANAPHI included all Australian universities that taught public health at undergraduate and postgraduate levels. Some, but not all, ANAPHI affiliated universities received PHERP funding to support both undergraduate and postgraduate public health course coordination, curriculum development and public health research training.

Indigenous Public Health: Closing the Gap

The commitment by the Australian Government and the Council of Australian Governments (COAG) to Closing the Gap regarding the health of Indigenous Australians was underscored in November 2008; with COAG committing to the provision of an additional \$1.6 billion over four years to expand primary health care and targeted prevention activities to reduce the burden of chronic disease on Indigenous Australians. This investment followed a previous commitment towards other significant measures to strengthen workforce capacity in Indigenous health.

It is due to the significant emphasis being given to Indigenous health in the contemporary context that the competency framework document places special emphasis on the core competencies in Indigenous public health that are required of every MPH graduate. The substantial policy commitments require a trained and educated public health workforce able to engage in Indigenous public health practice, with a set of foundational core competencies that enable skilful, effective and appropriate engagement regarding the complexities of Indigenous public health. The core Indigenous public health competencies outlined in this document and associated pedagogical considerations are given more in-depth coverage in the complementary National Indigenous Public Health Curriculum Framework (available at the CAPHIA website at <http://caphia.com.au/testsite/wp-content/uploads/2016/07/National-Indigenous-Public-Health-Curriculum.pdf>).

Public Health Workforce Training in Australia

A number of workforce issues continued to affect public health workforce training. These included: public and political awareness and acknowledgement of the importance of a competent, specialist Public Health workforce; a ready supply of practitioners (affected directly by training and registration requirements); the development and integration of professional standards, and the regulation of an increasing number of health professionals.

The National Workforce Agenda

Whilst the accreditation of public health degrees and regulation of public health practitioners has been addressed in some depth in the northern hemisphere, in Australia COAG considered how to prepare an appropriate health workforce for the future. The 2006 National Reform Agenda was mainly concerned with both fiscal and workforce capacity. The stream on 'human capital' included, amongst other things, a consideration of the health of the workforce. In particular, the COAG specifically addressed a number of health initiatives which broadly fell into two groups. The first initiatives were public health / health promotion oriented and included: addressing reduced workforce participation due to injury and disability; a reduction of important risk factors, and chronic illness which might hamper workforce participation. The second group aimed to improve the outcomes of the health (care) system. The first of these requirements, in particular, highlighted the need for a competent and well-resourced Public Health workforce.

National Health and Hospitals Reform Commission: A healthier future for all Australians (2009)

The report from the National Health and Hospitals Reform Commission was a thoughtful document, with a set of recommendations which paid substantial attention to prevention, primary health care, palliative care and a range of public health (preventive) services. High on the proposed work agenda was the introduction of competency-based training frameworks and multidisciplinary training approaches.

The new prevention agenda

The 2008 *Australia 2020 Summit* included a stream which proposed "A long-term national health strategy". The resulting recommendations were almost entirely around evidence-based medicine and policy, illness prevention, and workforce training. The five themes of the report were – "*healthy lifestyles, health promotion and disease prevention; the health workforce and service provision; addressing health inequalities; future challenges and opportunities in health; and health research, research translation and research training*". The development of a national preventive health agency was an important recommendation of the Summit.

The Preventative Health Taskforce was set up to address the agenda set by the Summit, and its final report, *Australia: the healthiest country by 2020*, had a clear vision for halting the rise in obesity, reducing smoking and harmful alcohol consumption rates, and for addressing the gap in life expectancy between Indigenous and non-Indigenous Australians. Apart from endorsing COAG's

commitment to a National Prevention Agency to facilitate the coordination and liaison of health promotion, health information and policy and practice, the taskforce also set out the possible core work of such an agency, summarised as:

- Translate broad policy into evidence-based strategies;
- Monitor and evaluate national policies and programs in preventative health;
- Administer national programs, facilitate national partnerships, and advise on national infrastructure for preventative health;
- Develop and implement comprehensive, sustained social marketing strategies for preventative health;
- Develop comprehensive national surveillance systems for identified preventative health priority areas;
- Establish a National Strategic Framework for preventative health research;
- Foster leadership, mentoring and knowledge sharing across a network of preventative health research centres;
- Conduct a national audit of the prevention workforce;
- Develop immediate, mid- and long-term strategies to build a competent national preventative health workforce with the capacity to meet the health care needs of all Australians;
- Develop sustainable and cost-effective funding models for a comprehensive and integrated approach to prevention both within and external to the health sector (ibid: p51).

The core work of the proposed agency described above is highly relevant in the context of the Public Health competencies, as core Public Health training addresses all of these work areas at least at a minimum level. An audit of the national public health workforce was a priority area in the work of the new agency.

The National Preventive Health Agency was established in 2011. Its subsequent abolition in 2014 further emphasises the relevance and importance of the ANAPHI Public Health Competency Framework, which has endured beyond the various policy initiatives that led to its initial development.

Emerging Public Health Problems and Surge Capacity

Chronic Diseases

The changing demographic structure of the Australian population has altered the national disease profile. The Australian Institute of Health and Welfare has listed the national health priority areas as: arthritis and musculoskeletal disorders; asthma; cancer; cardiovascular disease; diabetes mellitus; injuries; mental health; and obesity (for details see <http://www.aihw.gov.au/nhpa/index.cfm>).

The diseases of ageing have clearly emerged as important, particularly in view of the potential to prevent or delay onset. The prevention agenda has become increasingly important, and requires a competent, specialised and well-resourced workforce of public health practitioners.

Pandemics

Since the 1970s, new diseases have emerged on an almost annual basis. Although not all of these have caused widespread ill-health in humans, the diseases which have occurred in the last few years – SARS (2003); H5N1 Avian Influenza (from 2003 and ongoing); AH1N1 variant influenza (“swine flu”) (2009); Ebola virus (2015), and Zika Virus (2016) – all have had the potential to cause widespread disease, and have been identified, monitored and partially controlled by national and international networks of public health practitioners working in collaborative and multidisciplinary teams.

Biosecurity

Biosecurity depends on a stable ecosystem and a peaceful environment. Threats to biosecurity therefore include two distinct areas: bioterrorism and environmental disruption. Either of these can threaten the health and security of people, and their effects can be monitored and, in many cases, addressed and modified through specialist public health intervention.

In light of these national and international emergent issues, the development of an agreed set of competency guidelines for Public Health training across the Australian jurisdiction is a critical component to ensure public health educators can guide developments in public health capacity building.

Public Health Workforce Training: The International Context

The MPH is generally considered to have a number of core components transportable within and outside Australia. Global recognition of an MPH award is an important and integral part of the marketing of these degrees to potential students.

Internationally, regulation and registration of public health professionals is increasingly acknowledged as important in delivering positive public health outcomes. In the European Union and the USA, in order to ensure the development of a competent accredited professional workforce, MPH degrees require registration. Increasingly in both jurisdictions, competency-based training linking education and practice is the norm. These standards were promoted by: the Public Health Foundation in the USA (2009); the Core Competency Standards of the Public Health Agency of Canada (2007); and the Association of Schools of Public Health in the European Union (Otok et al 2011) under the Bologna process (2005).

In Australia various competency frameworks and standards have been developed for various sections of the health and public health workforces (Lin et al 2009). Despite global recognition of the MPH and the necessity for quality public health institutions, workforce and training, the public health workforce is the only sector of the Australian health workforce which remains largely unregistered. A notable exception is the small subsection of the Australian public health workforce who undertake postgraduate public health education, usually a MPH, and an accredited public health training program towards Fellowship of the Australasian Faculty of Public Health Medicine (AFPHM), Royal Australasian College of Physicians and public health medicine specialist registration with the Australian Health Practitioner Regulation Agency (AHPRA).

Appendix 2: Underpinning Knowledge for Indigenous Public Health Competencies

The underpinning knowledge for the Indigenous public health core competencies is an extract from the National Indigenous Public Health Curriculum Framework. This document is available from www.onemda.unimelb.edu.au/publications/reports.html (accessed 15/03/16).

The Framework provides an expanded approach to the integration of Indigenous health within Public Health teaching programs and provides some foundation principles, pedagogical strategies and resources, and institutional guidelines to support delivery of the six core Indigenous public health competencies. In addition to outlining the underpinning knowledge, the Framework provides suggested teaching and learning strategies, resources and assessment approaches for each competency.

Area of Practice: Health Monitoring and Surveillance

Practice Goal: Assess, analyse and communicate population health trends

Unit of Competency	Elements of Competence (Aboriginal and Torres Strait Islander Public Health)
1. Monitor and evaluate trend/s in population health	<div>1.8 Analyse key comparative health indicators for Aboriginal and Torres Strait Islander peoples</div> <div>1.9 Analyse key comparative indicators regarding the determinants of health for Aboriginal and Torres Strait Islander peoples</div>

Underpinning Knowledge	
<div>1.8 Indigenous and Australian population health status indicators regarding:<ul style="list-style-type: none">chronic diseaseschildhood diseasesmental health.</div> <div>Key considerations regarding data reliability</div> <div>Ethical considerations regarding data collection</div>	<div>1.9 Key social determinants of Aboriginal and Torres Strait Islander health based on demographic data regarding:<ul style="list-style-type: none">population structurehousingeducationemploymentincomeaccess to health care.</div>

Area of Practice: Health Promotion

Practice Goal: Promote and support healthy lifestyles and behaviours through action with individuals and families, and by strengthening communities and building social capital through consultation, participation and empowerment

Unit of Competency	Elements of Competence
8. Prioritise population/ community health needs	8.2 Describe Aboriginal and Torres Strait Islander health in historical context and analyse the impact of colonial processes on health outcomes
9. Plan evidence-based health promotion initiatives	9.3 Critically evaluate an Aboriginal and Torres Strait Islander health promotion program

Underpinning Knowledge

<p>8.2 Key historical legislation – immediate & long-term effects</p> <ul style="list-style-type: none"> • Invasion – the concept of “Terra nullius” and related implications • Protection & segregation • Assimilation <p>Colonisation & trans-generational effects</p> <ul style="list-style-type: none"> • Stolen land • Stolen children • Stolen wages <p>Indigenous initiatives and health</p> <ul style="list-style-type: none"> • Maintaining connection to the land • Aboriginal community-controlled health service delivery • Aboriginal health workers • Indigenous models of health 	<p>9.3 Human rights, self-determination & empowerment;</p> <p>Comprehensive Primary Health Care</p> <p>Cultural dimensions of Indigenous health:</p> <ul style="list-style-type: none"> • Local and regional diversity regarding the social determinants of health • Indigenous spirituality and traditional healing practices • Kinship, group affiliations and gendered social practices • Community governance structures and protocols • Existing community initiatives, capacities and strengths • Colonisation and health: • Racism, its institutional manifestations and effects • Colonising discourses about Indigenous people and related effects
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Area of Practice: Health Policy, Planning and Management (health systems)

Practice Goal: Promote, develop and support efficient and equitable gains in population health by developing appropriate policy, legislation, regulation and/or fiscal measures

Unit of Competency	Elements of Competence
11. Articulate key funding mechanisms and distinguish costs and benefits in relation to specific population health projects/programs within the Australian health care system	11.3 Apply the principles of economic evaluation to Aboriginal and Torres Strait Islander programs with a particular focus on the allocation of resources relative to need
12. Analyse a health policy relevant to the Australian health system	12.5 Critically evaluate an Aboriginal and Torres Strait Islander health policy

Underpinning Knowledge

- 11.3 An understanding of economic analysis of Indigenous health spending with particular consideration of funding equity in relation to burden of disease:
- Equity considerations regarding burden of disease in funding allocations
 - Factoring implicit costs of delivering effective and cultural safe and competent care.

Underpinning Knowledge

12.5 Human rights, self-determination & strategies of empowerment

Comprehensive Primary Health Care

Cultural dimensions of Indigenous health:

- Local and regional diversity regarding the social determinants of health
- Indigenous spirituality and ongoing traditional healing practices
- Kinship, group affiliations and gendered social practices
- Community governance structures and protocols
- Existing community initiatives, capacities and strengths.
- Colonisation and health:
- Local experiences of racism, its institutional manifestations and effects
- Colonising discourses about Indigenous people and related effects.
- Indigenous initiatives and approaches to health:
- Aboriginal models of health and wellbeing
- Aboriginal community-control of health services
- Aboriginal health workers and their role.

Area of Practice: Professional Population Health Practice

Practice Goal: Engage as a professional in population health with knowledge and skills in population health research, ethical population health practice, stakeholder analysis, information synthesis, effective communication and cultural safety

Unit of Competency	Elements of Competence
P5. Enable an environment of cultural safety	5.3 Demonstrate a reflexive public health practice for Aboriginal and Torres Strait Islander health contexts

Underpinning Knowledge

- Ethical Indigenous health practice as informed by the NHMRC Ethics and Values Statement for Research with Aboriginal and Torres Strait Islander Australians
- Reflexive public health practice for Indigenous contexts – understanding factors shaping own professional, socio-cultural and personal standpoint including values, perspectives, attitudes, assumptions, beliefs, behaviours regarding Indigenous people and their health
- The nature of evidence and ways to access knowledge from an Indigenous perspective
- Effective communication with Indigenous Australians – appreciating the existence of local protocols; an awareness of cultural safety; awareness of Indigenous learning styles

Appendix 3: Background to the Original Foundation Competencies for Public Health Graduates in Australia

The Review of the Public Health Education and Research Program in 2005 recommended the development of:

“foundation competencies for ‘judgment safe public health practitioners’ in epidemiology, biostatistics, health economics, intervention, relevant social sciences and Indigenous health; and on how they should be assessed and quality assured to the required standards considering the possibility of an external examination”

(Durham & Plant 2005: 50).

In response, the PHERP Quality Workshop in September 2006 began the development of a set of competencies describing the practice of a public health practitioner as a basis of a set of standards for public health curriculum development, drawing on previous work both in Australia and internationally. Within the workshop, participants questioned the use of ‘disciplines’ or ‘domains’ of public health and proposed building competency-based curriculum standards based upon key public health functions. Participants at the workshop advocated developing competencies that described key workplace performances of a competent public health practitioner:

“The focus needs to shift to what are the basic skills that MPH students must possess? We are still talking about what makes up an MPH course rather than focusing on building a workforce. Schools of Public Health should be focusing on this in the future.”

The Quality Workshop required further follow-up with the participation of leading public health academics to develop a consensus on the key public health functions and the key competencies within them. An online Delphi Conference using the “Delphi Method” (Linstone and Turoff 2002) was conducted towards achieving these outcomes. Participants in the Delphi process were the original Quality Workshop participants and included public health academics, employers from public sector organisations and policymakers.

The emergent competencies were organised under the five core public health functions as defined by the former National Public Health Partnership (NPHP 2000):

- Health Monitoring and Surveillance
- Disease Prevention and Control
- Health Promotion
- Health Protection
- Health Policy, Planning and Evaluation.

Two additional key functions were identified:

- Research Methods
- Professional Public Health Practice.

On the basis of the results of the Delphi Process, a draft of “Competency Standards for Public Health Practice” (Human Capital Alliance 2007) emerged. The competencies were based around the five key public health functions identified as “Areas of Practice” with two “Underpinning Competency Groups”.

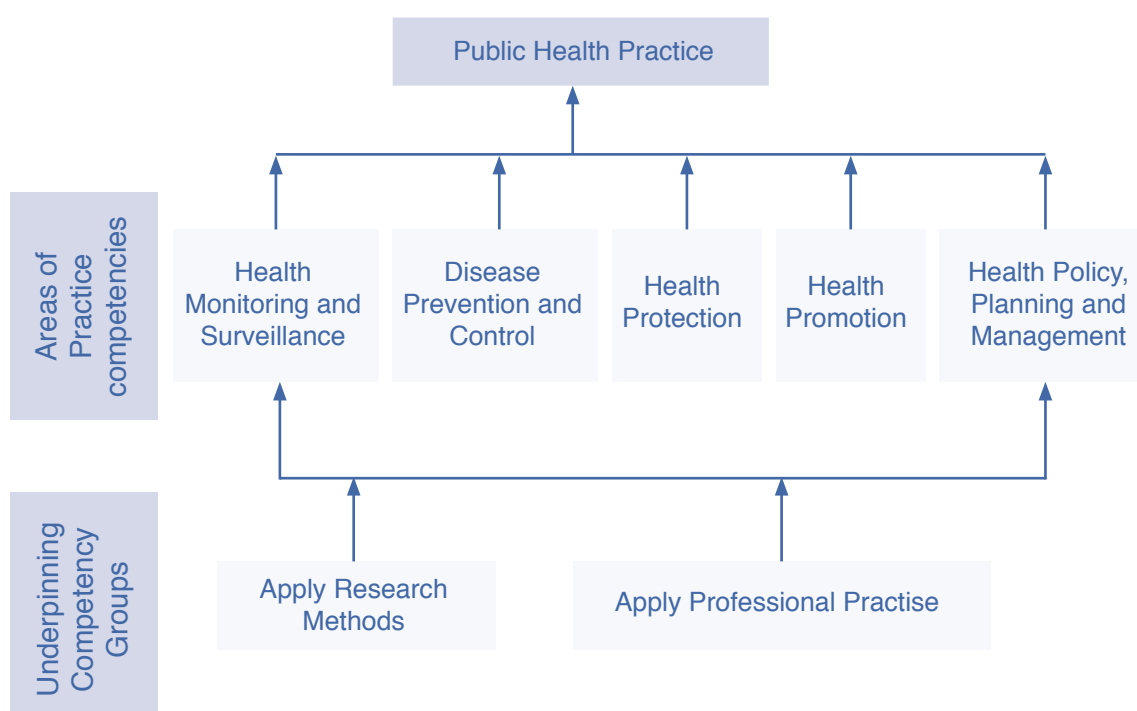


Figure 1: Competency Standards for Public Health Practice Framework (Human Capital Alliance 2007)

The competencies were envisaged as “Workplace Practice Competencies” that an MPH graduate might achieve after six months in the public health workforce, however because of the expertise and experience of the original workshop delegates and Delphi participants, in reality the resulting competency framework document described the broad range of competencies of a well-trained, and experienced public health workforce. A process to further refine the competency framework was initiated in 2009.

A Competency Based Education Framework for MPH Programs

Within this document, a competency is understood to describe a holistic performance incorporating skills, underpinning knowledge and an integrated set of attitudes and values.

“The approach to competency here is to outline the ‘complex combinations of attributes’ (knowledge, attitudes values and skills) . . . thus competence is conceived of as complex structuring of attributes needed for intelligent performance in specific situations . . . this approach has been called the ‘integrated’ or holistic approach to competence and it is the conception that has been adopted by the professions in Australia”

(Gonzci 1994: 28).

Furthermore, following Winter (1990), these competencies were constructed around the notion of a particular professional role. The occupational role to which are ascribed the core public health functions, their competencies and characteristics is that of an **ethical and judgment safe professional public health practitioner**.

Wolf (1995) suggested a set of competency standards is based on a functional analysis of the occupational role involving an examination of the key purposes of the area of professional practice and identifying key functions:

“The functional analysis enables the analyst to identify the key outcomes [or functions] – those related to the underlying purposes. Those key outcomes must then be turned into units and elements of competence, expressed in outcome terms.”

(ibid: 16).

Similarly, Grant defined a competency as a composite performance of a particular set of skills. Combined and inter-related, these skills describe the capability for a composite performance by the learner that is greater than

the sum of the individual skills (1979: 29). Grant identified the need for a competency-based program to include a statement of goals, competencies and objectives to organise the program into manageable components. Goals encompass units of competence, which encompass elements of competence, which encompass objectives or performance criteria/indices.

In this document, each “Unit of Competency” addressed the goal for each area of practice. Each Unit of Competency incorporates a range of “Elements of Competence”, the underlying skill set, which with the underpinning knowledge formed the composite performance described in the “Unit of Competency.”

References and Bibliography

Association of European Universities (CRE). 2000. *The Bologna Declaration on the European space for higher education: an explanation*, 29th February 2000. Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:c11088> (accessed 15/03/16).

Association of Schools of Public Health in the European Union, 2008. *ASHPER's European Public Health Core Competencies Programme (EPHCC) for Public Health Education*. Aarhus, Denmark.

Australian Qualifications Framework Advisory Board, 2007. *Australian Qualifications Framework: implementation handbook*. Australian Qualifications Framework (AQF) Advisory Board to MCEETYA, Carlton.

Australia 2020. *Australia 2020 Summit Final Report, 2008*. Commonwealth of Australia.

Council for Education on Public Health website explains rationale for the process as well as how it is undertaken. For information go to <http://www.ceph.org/i4a/pages/index.cfm?pageid=3274> (accessed 15/03/16). Further information is available at <http://www.asph.org/>, the website for the Association of Schools of Public Health.

Council on Linkages Between Academia and Public Health Practice, 2005. *Core competencies for Public Health*. Available at: <http://www.phf.org/Link/prologue.htm> (accessed 6th August 2009).

Durham G, Plant A. 2005. *Strengthening Workforce Capacity for Population Health (Phase III PHERP Review 2005)*. Commonwealth of Australia, Canberra.

European Union for Quality Assurance in Higher Education (EUQA), 2005. *Standards and Guidelines for Quality Assurance in the European Higher Education in Area*. EEUQA, Helsinki, Finland. (Available through the Bologna Process website at: <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/>, accessed 15/03/16).

Gonczi, A. 1994 Competency based assessment in the professions in Australia, *Assessment in Education: Principles, Policy & Practice*, Mar1994, Vol. 1, Issue 1 pp27 – 42.

- Grant, G. 1979. *Implications of Competence-Based Education*. In (Eds.) Grant, G, Elbow, P, Ewens, T, Gamson, Z, Kohli, W, Neumann, W, Olesen, V. and Riesman, D. A. *On Competence: Critical Analysis of Competence Based Reforms in Higher Education*, San Francisco, Jossey-Bass pp1–17.
- Human Capital Alliance, 2007. *Competencies Standards for Public Health Practice*, Department of Health and Aging, Canberra.
- Lin V, Watson R, Oldenburg B. 2009 *Commentary - The future of the public health: the importance of workforce*. Australia and New Zealand Health Policy, 2009, 6:4.
- Linstone, HA and Turoff, M. 2002. *The Delphi Method: Techniques and Applications*. (Available at: <http://is.njit.edu/pubs/delphibook/ch1.html>, accessed 15/03/16).
- National Health and Hospitals Reform Commission, 2009. *A Healthier Future for all Australians*. Commonwealth of Australia, Canberra.
- National Public Health Partnership 2000 . *National Delphi Study on Public Health functions in Australia*. The National Public Health Partnership, Melbourne (The National Public Health Partnership website continues to be accessible at: <http://www.nphp.gov.au>, accessed 15/03/16).
- Otok R, Levin I, Sitko S, Flahault A. 2011. *European accreditation of public health education*. Public Health Reviews 2011;33:30-8
- Potential Benefits of the National Reform Agenda. Productivity Commission Research Paper report to the Council of Australian Governments. Commonwealth of Australia, 2006. Available at <http://www.pc.gov.au/research/supporting/national-reform-agenda>. accessed 15/03/16).
- Preventative Health Taskforce, 2009. *Australia: the Healthiest Country by 2020* (discussion paper). Commonwealth of Australia.
- The Public Health Agency of Canada, 2007. *Core Competencies for Public Health in Canada – core competency statements*. Commonwealth of Canada, (Available at: <http://www.phac-aspc.gc.ca/ccph-cesp/index-eng.php>, accessed 15/03/16).
- The Public Health Foundation. *Council on Linkages: Core Competencies for Public Health Professionals*. United States of America. (Available at: http://www.phf.org/resourcestools/pages/core_public_health_competencies.aspx, accessed 15/03/16).

The Public Health Practitioner Certification Board (PHPCB) website at <http://www.phpcb.org/>. accessed 15/03/16).

Winter, R. 1990., *Learning From Experience: Principles and Practice in Action Research*, Falmer Press, Lewes.

Wolf, A. 1995. *Competence Based Assessment*, Buckingham Open University Press.

