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ORIGINAL ARTICLE

Practical competencies for public health education: a global analysis

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Abstract

Objectives We quantified the contents of existing public health competency frameworks against the elements of the World Federation of Public Health Associations' Global Charter for the Public's Health.

Methods We conducted a desktop analysis of eight public health competency frameworks publicly available on the internet. Using a pre-formed template, competency statements from each framework were mapped against the elements of the Global Charter—core public health services (Protection, Promotion and Prevention) and overarching enabling functions (Information, Governance, Capacity, and Advocacy). We then quantified coverage of the Charter's elements in each of the frameworks.

Results We found that although the public health competency frameworks vary considerably in terms of coverage and focus, they all cover every element contained in the Global Charter. However, there were a number of areas of competency identified in some frameworks not explicitly referred to in the Charter including cultural safety, human rights and systems thinking.

Conclusions The Global Charter provides a mechanism for comparing competency sets, checking public health curricula content, informing competency framework and curricula (re)design, and planning and monitoring workforce needs.

Keywords Competency frameworks · Curricula · Global Charter for Public Health · Mapping

Introduction

The World Federation of Public Health Associations (WFPHA) is an organisation which seeks to coordinate public health activities conducted through its worldwide public health membership. The WFPHA recognises the Vienna Declaration (United Nations 1993), which underscored the importance of the Ottawa Charter (World Health Organization 1986). It also acknowledges the existence of both new and re-emerging threats to public health, and the importance of the Sustainable Development Goals (United Nations 2015). Aligning with these acknowledgements, the WFPHA has developed and published a Global Charter for the Public's Health (Lomazzi 2016) (henceforth the Global Charter), an internationally applicable framework describing the structures of public health practice.

The Global Charter framework elements include core public health *services* (Protection, Prevention and Promotion) that are supported by a set of overarching enabling *functions* (Information, Governance, Capacity, and Advocacy) (Fig. 1). The components included in each of the elements are as follows (Lomazzi 2016):

1. Protection: international health regulation and coordination; health impact assessment; communicable disease control; emergency preparedness; occupational health; environmental health; climate change and sustainability.
2. Prevention: primary prevention: vaccination; secondary prevention: screening; tertiary prevention:

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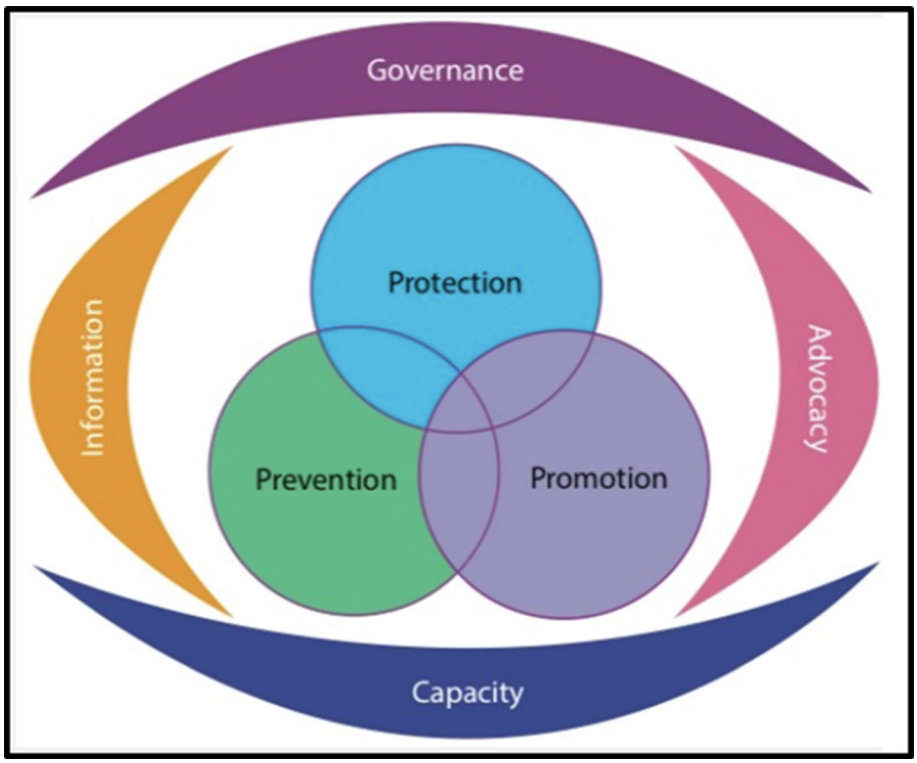

Fig. 1 Global Charter for the Public's Health (WFPHA 2019)

evidence-based, community-based, integrated, person-centred quality healthcare and rehabilitation; healthcare management and planning.

3. Promotion: inequalities; environmental determinants; social and economic determinants; resilience; behaviour and health literacy; life-course; healthy settings.
4. Governance: public health legislation; health and cross-sector policy; strategy; financing; organisation; assurance: transparency, accountability and audit.
5. Information: surveillance, monitoring and evaluation; monitoring of health determinants; research and evidence; risk and innovation; dissemination and uptake.
6. Advocacy: leadership and ethics; health equity; social-mobilisation and solidarity; education of the public; people-centred approach; voluntary community sector engagement; communications; sustainable development.
7. Capacity: workforce development for public health, health workers and wider workforce; workforce planning: numbers, resources, infrastructure; standards, curriculum, accreditation; capabilities, teaching and training.

In 2007, the World Health Organization (WHO) endorsed the WFPHA Charter and invited the WFPHA to develop ways in which its Charter can be used globally.

One of the goals of the WFPHA is to 'develop and advance public health practice, education, training and research'. The WFPHA Public Health Professionals' Education and Training Working Group (PETWG) was established in 2010 to develop a strategy to globally harmonise essential public health performance standards and 'apply these standards of quality for public health education and training'. An intended outcome is to 'use the Global Charter as a public health and educational framework' in order to enhance the 'discourse on public health education training and practice' and 'support the existing initiative of the Association of Schools of Public Health to develop key competencies and a possible accreditation framework' (WFPHA 2019).

Several national public health groups and training organisations have developed sets of public health competencies. The ways in which they were developed, subsequent evolutions, and their intended uses, differ considerably and these histories are not necessarily included in the resulting documents. Broadly however, these competency sets are intended to be used as roadmaps for the development and design of public health training programs.

During development of the Global Charter, all available national competency frameworks used for developing, reviewing and accrediting public health education and training programs were taken into consideration. Because of the way the Charter is structured, with its core and overarching elements, it has the potential to act as a tool for international benchmarking of education and training programs and public health curricula. The PETWG recently

undertook to test this assumption by quantifying the contents of existing public health competency frameworks against the elements of the Charter. Of note, the PETWG chose to limit this exercise to competency frameworks designed for educating 'public health professionals' as opposed to those designed to educate discipline-specific 'health professionals who perform public health functions' (Tao et al. 2018).

Methods

An internet search was conducted to identify and retrieve all publicly available sets of current public health competency frameworks. A desktop analysis of eight identified documents was undertaken by three PETWG members in 2019, and the contents mapped against the Global Charter. The framework documents can be categorised as follows:

Five are country- or region-based frameworks.

1. European Core Competencies for Public Health Professionals (ASPHER 2018).
2. Foundation Competencies for Public Health Graduates in Australia (CAPHIA 2016).
3. Accreditation Criteria—Schools of Public Health & Public Health Programs (CEPH 2016).
4. Core Competencies for Public Health in Canada (PHAC 2008).
5. Generic Competencies for Public Health in Aotearoa—New Zealand (PHANZ 2007).

Two are Public Health Medicine specialty-based frameworks.

6. Public Health Medicine Advanced Training Curriculum (RACP 2017). Note this program only admits medical practitioners.
7. Public Health Speciality Training Curriculum. (UKFPH 2015). Note this fellowship is obtainable for appropriately trained non-medical personnel.

One has been designed as a Global Public Health specialty framework.

8. Global Public Health Curriculum (GPHC)—Revised shortlist of specific global health competencies (Laaser 2018).

All of these frameworks are structured according to various areas or domains of practice, each underpinned by several units or elements of competency. However, the number of domains and competencies varies considerably between the framework documents, as does the level of detail provided in supporting explanatory information. As shown in Table 1, the number of domains ranged from six (ASPHER 2018; CAPHIA 2016; RACP 2017) to 23 (Laaser 2018) and the specific competencies from 22 (CEPH 2016) to 154 (Laaser 2018).

Some competency frameworks specifically distinguish between knowledge-based competency, (what the student is expected to know and understand), and practice-based competency (what the student should be able to do) (ASPHER 2018; CAPHIA 2016; Laaser 2018). In the other frameworks the competencies are written only as practice-based skills to be obtained. As public health degrees are designed to prepare students for public health practice, we therefore agreed at the outset that for consistency, where the frameworks provided additional details of required underpinning knowledge or intellectual-based competencies, these would be excluded from the mapping and only the practical or practice-based competency statements would be included. Furthermore, where examples of practice (ASPHER 2018; PHAC 2008; UKFPH 2015), scope of practice (PHANZ 2007), or levels of achievement (UKFPH 2015) were indicated against the competencies, only the competencies themselves were mapped. We also chose to restrict mapping to the foundational competencies for the Master of Public Health (MPH) program in the CEPH (2016) framework and excluded those relating to the Bachelor degree that were minimal in number and more conceptually based, and the Doctoral degree that indicated an advanced level of proficiency that none of the other frameworks overtly addressed.

Initially, using a pre-formed template in an MS Excel spreadsheet (see Table 2), team members independently mapped the competencies against the elements of the Charter. Discrepancies were identified and a collective consensus-based discussion process used to resolve differences. Throughout the process, we systematically recorded the number of competencies that were unanimously mapped to the same elements of the Global Charter, versus those that were not, and subsequently calculated a percentage score of agreement. The level of agreement reached for each of the individual frameworks, ranged between 63 and 100%. We achieved 100% agreement on three of the frameworks, and after discussion regarding the results for the remaining frameworks, agreement was reached for all competencies within these frameworks. We did not calculate Kappa scores as a measure of agreement of our categorisation because there was only one instance where a proposed competency was not thought to be about public health per se (Kappa scores cannot be calculated unless there are items that achieve negative scores by at least one reviewer).

In most cases, the discrepancies arose because of different interpretations of implicit meaning. This resulted in inconsistent mapping to elements that are not directly associated with executing the intended, or explicitly stated, action. For example, one of the competencies in the

Table 1 Domains and competencies included in each of the frameworks

Frameworks	Domains	Competencies	Uniform Resource Locator
Country or regional			
ASPHER	6	44	https://www.aphea.be/docs/research/ECCMPHE1.pdf
CAPHIA	6	108	http://caphia.com.au/testsite/wp-content/uploads/2016/07/CAPHIA_document_DIGITAL_nov_22.pdf
CEPH	8	22	https://media.ceph.org/documents/2016.Criteria.pdf
PHAC	7	36	https://www.canada.ca/content/dam/phac-aspc/documents/services/public-health-practice/skills-online/core-competencies-public-health-canada/cc-manual-eng090407.pdf
PHANZ	12	34	https://app.box.com/s/vpwqpz8yyus8d8umucjzbtdi1m111p5u
Medicine specialty			
RACP	6	70	https://www.racp.edu.au/docs/default-source/default-document-library/public-health-medicine-advanced-training-curriculum.pdf?sfvrsn=77252c1a_4
UKFPH	10	86	https://www.fph.org.uk/media/2621/public-health-specialty-training-curriculum_final2019.pdf
Global specialty			
GPHC	23	154	https://doi.org/10.4119/seejph-1876

ASPHER Association of Schools of Public Health in the European Region, *CAPHIA* Council of Academic Public Health Institutions Australasia, *CEPH* Council for Education on Public Health (USA), *PHAC* Public Health Agency of Canada, *PHANZ* Public Health Association of New Zealand, *RACP* Royal Australasian College of Physicians, *UKFPH* United Kingdom Faculty of Public Health, *GPHC* Global Public Health Competencies

CAPHIA (2016) framework states that graduates should be able to '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)'. One of the team members had initially mapped this competency against Advocacy functions in the Charter because of the reference within the *competency statement* to risk communication activities. However, it was collectively agreed that the intended action is the planning of disease prevention/control strategies and not implementation of communication strategies and was therefore only mapped against Protection and Prevention services.

Similarly, the CEPH (2016) framework indicates that graduates should be able to 'assess population needs, assets and capacities that affect communities' health'. This statement was included under the domain of Planning and Management to Promote Health. One member of the team initially mapped this statement under Promotion services in the Charter because of the title given to the *domain*. As the intended action in the competency statement refers to health assessments and appraisals of community resources and capabilities, this was eventually mapped under Protection services and Capacity functions.

Results

Once the mapping of competencies was completed, it was possible to quantify the coverage of Charter elements within each of the frameworks, by calculating the percentage of domains and competencies (Tables 3, 4) covered in each competency set. Levels of coverage of Charter elements vary considerably within each of the frameworks. As the numbers of competencies varies between sets, this should not be used as a direct measure of comparison. Nevertheless, the percentage scores provide an indication of the importance placed on the particular category of competencies by the authors for each set.

For instance, of the 23 domains in the GPHC framework (Laaser 2018), only six (26%) were mapped against Protection services, compared to 17 (74%) against the Information functions. Similarly, of the 89 competencies in the UKFPH (2015) framework, 11 (12%) mapped to Promotion services compared with 43 (48%) against Advocacy functions.

There are also variations in the levels of coverage of Charter elements between the different frameworks. Based on the number of domains that address services in the CAPHIA (2016) and PHANZ (2007) frameworks, there is a focus on Protection services, whereas the PHAC (2008) and the GPHC frameworks (Laaser 2018) focus more on Promotion services. Based on the competencies allocated against functions, four of the frameworks focus more on Information functions (ASPHER 2018; CAPHIA 2016; CEPH 2016; Laaser 2018), while the other four focus more on Advocacy functions (PHAC 2008; PHANZ 2007; RACP 2017; UKFPH 2015).

Although levels of coverage vary considerably, all the frameworks cover all elements of the Charter. However, there were a number of areas of competency that were identified in some frameworks that were not explicitly

Table 2 Template used for mapping competencies against elements of the Charter

Elements of the Global Charter for Public Health		Competencies listed under each domain of practice within the Framework					
		Domain 1	Subtotal	Domain 2	Subtotal	Etc	Total
Functions	(1) Governance						
	Subtotal						
	(2) Information						
	Subtotal						
	(3 Advocacy						
	Subtotal						
	(4) Capacity						
	Subtotal						
Services	(5) Protection						
	Subtotal						
	(6) Prevention						
	Subtotal						
	(7) Promotion						
	Subtotal						

Table 3 Coverage of domains

Elements of the Global Charter for Public Health		Frameworks							
		ASPHER (6 Domains)	CAPHIA (6 Domains)	CEPH (8 Domains)	PHAC (7 Domains)	PHANZ (12 Domains)	RACP (6 Domains)	UKFPH (10 Domains)	GPHC (23 Domains)
Functions	(1) Governance	4 (67%)	4 (67%)	3 (43%)	5 (63%)	8 (67%)	5 (83%)	9 (90%)	15 (65%)
	(2) Information	5 (83%)	6 (100%)	6 (86%)	4 (50%)	6 (50%)	4 (67%)	8 (80%)	17 (74%)
	(3) Advocacy	4 (67%)	6 (100%)	5 (71%)	6 (75%)	10 (83%)	6 (100%)	10 (100%)	12 (52%)
	(4) Capacity	2 (33%)	5 (83%)	6 (86%)	6 (75%)	8 (67%)	5 (83%)	7 (70%)	12 (52%)
Services	(5) Protection	4 (67%)	4 (67%)	3 (43%)	3 (38%)	5 (42%)	6 (100%)	6 (60%)	6 (26%)
	(6) Prevention	4 (67%)	2 (33%)	3 (43%)	3 (38%)	4 (33%)	5 (83%)	6 (60%)	8 (35%)
	(7) Promotion	4 (67%)	3 (50%)	3 (43%)	5 (63%)	4 (33%)	6 (100%)	4 (40%)	10 (43%)

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Table 4 Coverage of competencies

Elements of the Global Charter for Public Health		Frameworks							
		ASPHER (44 Competencies)	CAPHIA (108 Competencies)	CEPH (22 Competencies)	PHAC (36 Competencies)	PHANZ (34 Competencies)	RACP (119 Competencies)	UKFPH (89 Competencies)	GPHC (154 Competencies)
Functions	(1) Governance	10 (23%)	31 (29%)	12 (33%)	10 (45%)	15 (44%)	25 (21%)	25 (28%)	39 (25%)
	(2) Information	13 (30%)	60 (56%)	23 (64%)	9 (41%)	14 (41%)	31 (26%)	36 (40%)	47 (31%)
	(3) Advocacy	8 (18%)	31 (29%)	14 (39%)	11 (50%)	19 (56%)	42 (35%)	43 (48%)	23 (15%)
	(4) Capacity	4 (9%)	25 (23%)	16 (44%)	10 (45%)	17 (50%)	27 (23%)	34 (38%)	33 (21%)
Services	(5) Protection	13 (30%)	33 (31%)	5 (14%)	5 (23%)	6 (18%)	33 (28%)	18 (20%)	17 (11%)
	(6) Prevention	6 (14%)	23 (21%)	4 (11%)	4 (18%)	8 (26%)	26 (22%)	16 (18%)	19 (12%)
	(7) Promotion	8 (18%)	32 (30%)	4 (11%)	8 (36%)	6 (18%)	29 (24%)	11 (12%)	15 (10%)

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referred to in the Charter. These include cultural competency - particularly in relation to culturally safe practice in service provision for indigenous populations (CAPHIA 2016; CEPH 2016; PHAC 2008; PHANZ 2007; RACP 2017), human rights (Laaser 2018), and systems thinking (ASPHER 2018; CEPH 2016; RACP 2017). For the purposes of our mapping exercise, competency statements pertaining to cultural safety were mapped to the Capacity function as it relates to the capabilities of practitioners. Human rights statements were mapped to Governance or Information, depending on whether in the context of the particular competency statement it was being referred to in relation to legislation or ethics. Systems thinking statements were mapped to Governance, Information or Capacity depending on whether the statements were referring to quality assurance, monitoring and evaluation, or planning processes.

Discussion

Comparing the competency sets was challenging as they are all constructed differently, as summarised in Table 5. As previously noted by Harrison et al. (2015), variations in structure and terminology pose key challenges, influencing how the frameworks are interpreted. More specifically, as aforementioned, we found some framework documents include sections outlining both the underpinning knowledge (K) required and the practice-based (P) competency statements; although on the whole, these mirror each other. Others only include the practice-based competencies

Table 5 Comparison of features of the competency framework documents

Frameworks	Types of competency: K—knowledge P—practical	Practical examples: Y—yes N—no	Levels of proficiency: Y—yes N—no	Level of prescription: P—prescriptive B—broad	Level of complexity: H—high L—low	Formatting style: R—report S—structured
ASHPER	KP	Y	N	P	H	R
CAPHIA	KP	N	Y	B	L	S
CEPH	KP	N	Y	B	H	R
PHAC	P	Y	N	B	L	S
PHANZ	P	Y	N	B	L	S
RACP	P	N	Y	B	H	S
UKFPH	KP	Y	Y	B	H	S
GPHC	KP	N	N	P	H	R

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expected of graduates. Some of the frameworks include practical examples against the competency statements, while others do not. For instance, the UKFPH (2015) framework suggests that the competency to 'appraise options for policy and strategy for feasibility of implementation' can be demonstrated by 'assess[ing] options for configuring a smoking cessation service.' We are aware however, that practical examples may be published separately to the competency sets we have reviewed, as is the case for the Global Public Health Competencies which had a Special Edition of the South Eastern European Journal of Public Health published in 2016 dedicated to the topic of A Global Public Health Curriculum (2nd Edition).

Several competency frameworks detail different levels of proficiency. The most obvious of these differences is based on the level of degree studied as evident in the CEPH (2016) framework, particularly given the increasing numbers of undergraduate (Bennett et al. 2010) and DrPH level programs (Evashwick 2013). However other differences include levels of competency achieved during study (RACP 2017; UKFPH 2015) or distinguishing between general or specialist practice (CAPHIA 2016) or staffing functions (e.g. front line to management or consultant) (CEPH 2016; PHAC 2008). The level of prescription attributed to the proficiency requirements of graduates also varies, from those frameworks making broad (B) competency statements to those that prescriptively (P) detail what is expected. For example, the CEPH (2016) framework broadly indicates that graduates are expected to 'apply epidemiological methods to the breadth of settings and situations in public health practice'. In extreme contrast, the ASPHER (2018) framework prescribes that graduates should 'apply basic statistical concepts in a concrete but simple empirical setting, such as…' and lists 19 associated methods.

Arguably, the frameworks that contain broader competency statements are more flexible and accommodative of changing contexts and issues. Any 'overarching pedagogical framework must accommodate insights and research from a variety of perspectives that apply across disciplines, credentials, institutions, and nations' (Evashwick et al. 2013). Additionally, the more prescriptive the frameworks are, the more detailed and complex they become and the more challenging it is for educators to include all elements in curricula. The frameworks that take the broader approach allow educators more flexibility in adapting the content of their curricula and allows for programs to choose to focus on areas of specialty, while still complying with the core competency requirements (Evashwick 2013).

Most of the frameworks are highly (H) complex. For the three documents that are written in a report (R) style, consisting primarily of text and lists, this exacerbates the complexity, as the reader has to search for the competency statements through the additional detail contained in the manuscript. The ASPHER (2018) framework is further complicated by the fact that each domain is compiled in a slightly different way based on discipline-specific content, a problem reportedly acknowledged by one of its key authors (Harrison, Egemmell and Ereed 2015). Those frameworks that are more stylised and structured (S), with the competency statements clearly outlined in tables, are generally much less (L) complex. Although they too are structured and thus easy for the reader to follow, the level of complexity in the RACP (2017) and UKFPH (2015) framework documents stems from the inclusion of the various levels of proficiency alongside detailed practical examples and layered elements of competency.

Moreover, mapping the competency frameworks against the Charter elements was made difficult due to the different backgrounds and cultural contexts informing both their initial development and this contemporary analysis. Indeed, it has been noted by others (Harrison et al. 2015) and confirmed by this exercise that there is an apparent lack of specific competency frameworks for low- and middle-income countries, which need an appropriately educated workforce to address their particular challenges. Selecting a framework that covers competencies relevant to these countries when providing teaching online or to an increasing number of international students who are accessing education in high-income countries is critical.

Our analysis confirmed that in part, each document reflects temporal, geographical, and political issues occurring when and where they were written. These influencing factors also potentially explain the differing focus on certain Charter elements or specialty areas across the various frameworks, as different authors and editors respond to their respective contexts. The UKFPH (2015) framework is a good case in point. Until recently, public health in the National Health Service was overseen by Medical Officers of Health, medical specialists with postgraduate public health qualifications (Evans 2003). In response to 'high profile system failures related to communicable disease outbreaks and falling recruitment' (Cole et al. 2011), in 1997 the incoming Labour government pledged to 'take public health "out of the ghetto"', and established Primary Care Trusts, services with a focus on addressing health inequalities (Evans 2003). Central to this initiative was 'a process to open up the examinations and membership of the Faculty of Public Health Medicine' (Evans 2003), and the recruitment to director posts of non-medical candidates with a Master's degree in public health (Cole et al. 2011; Evans 2003). The subsequently renamed Faculty of Public Health developed a national multidisciplinary public health curriculum that has since been modified several times, the latest in 2015. The 2010 revision included the leadership and ethical management attributes needed to provide public

health services, to complement the traditional science-based practice components (Cole et al. 2011). The 2015 edition focuses on the integration of academic rigour and application of the competencies for independent consultant practice, with particular emphasis given to the understanding of the global influences on health, arguably in response to recent criticism that its training program needed to be adapted to reflect the challenges of a contemporary globalised society (Lee et al. 2011).

In Aotearoa New Zealand, the public health competency framework is unique in its focus on Māori health and Te Tiriti o Waitangi. In 1840, Te Tiriti o Waitangi was signed as a contractual agreement between the Crown and Tangata Whenua. The Crown is now represented by the New Zealand government, agencies and individuals, which implement government policies and/or draw their authority from the Crown. The Aotearoa New Zealand public health sector places Te Tiriti o Waitangi as central to any public health activity, acknowledging the role of colonisation in producing the ongoing health inequities faced by Māori (Berghan et al. 2017; Came et al. 2017). Te Tiriti o Waitangi is understood as a legislative, ethical, policy and professional competency that is essential for those working in public health. This competency relates to expectations that practitioners be proficient in the application of Te Tiriti o Waitangi, New Zealand's colonial history, Māori models of health, and partnership with Māori communities (Berghan et al. 2017).

Likewise, the disciplinary lens of its reviewers inevitably influences interpretation of framework contents. This applies to not only the team members that undertook this mapping exercise but also any educators using the frameworks to inform their teaching and curriculum development. Given the ASPHER (2018), CEPH (2016), RACP (2017) and UKFPH (2015) frameworks are used for accreditation of faculty or public health education programs, this subjectivity equally applies to accreditors. How this subjectivity influences interpretation and implementation is therefore an important consideration. Presumably, the frameworks that are more prescriptive assist to reduce subjectivity in their interpretation. However, more prescription in turn risks limiting their applicability to diverse contexts and the competency of practitioners to respond to changing public health issues, or potentially result in relevant competencies not being covered in a curriculum, 'especially when some organizations stipulate a particular competence framework to be used' (Harrison et al. 2015).

For this reason, we would argue that the Charter provides a mechanism for being able to compare competency sets and is another mechanism to check public health curricula content and could be useful in considering competency frameworks and curricula (re)design. Equally, it could be useful for the planning and monitoring of workforce needs in practice contexts, for instance in government health departments or consultancy organisations.

However, the gaps identified in the Charter would need to be rectified to ensure it explicitly identifies cultural competencies, human rights and systems thinking as part of the functions that enable service provision. We would argue that cultural safety, particularly pertaining to service provision for indigenous populations, and systems thinking competencies should be included in the Capacity function as they inform practitioner thinking and behaviour, and that human rights should be included under Governance as the moral principles but also legislated frameworks that dictate practice standards.

We also note that competencies (both knowledge and practice) are about what is expected to be taught, but not andragogical approaches to delivering content. As Evashwick (2013) argues: 'for the field to develop worldwide standards, common expectations of outcomes, criteria for cross-national recognition of educational credentials, and interprofessional engagement, serious attention to the underlying [andr]agogy is warranted'. Yet only the UKFPH (2015) framework addresses this issue by including additional information sections that provide a guide to delivery modes for the curriculum and training program. (Re)design of curriculum frameworks in the future should consider including a section on andragogical best practice or at least application of local contextual influences such as cultural factors that inform best practice.

The Charter was not designed for curriculum design but rather to map the breadth of public health practice. Public health curricula are supposed to prepare graduates for public health practice. Therefore, whilst we have shown that public health curricula do cover the elements of the Charter, the converse is not true, not least because we have identified areas in curricula not covered in the Charter. Ultimately, though, we argue that it does not matter which competency set educators use to develop programs so long as the one chosen is an appropriate set locally, that it is used in its entirety rather than selectively (for cultural and/or political expediency) and that it fits the Charter framework (for international relevance). This is all the more important given as Evashwick et al. (2020), recently argued that 'attaining national or international standards is a long way from coming to fruition'. This exercise has also highlighted small areas of future revision for the Charter to ensure that all aspects of existing competency frameworks are explicitly covered in all international settings.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest. The authors declare that the research was conducted in the

absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Human and animal rights This research did not involve human participants or animals.

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