Pharmacy Education (2026) 26(1) 80 - 95
https://doi.org/10.46542/pe.2026.261.8095

RESEARCH ARTICLE

Mapping pharmacy curricula in one Australian pharmacy school

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Keywords
Aboriginal
Australia
Health curriculum framework
Pharmacy school
Torres Strait Islander

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Abstract

Background: Recent years have seen higher education focus on decolonising curricula and integrating First Nations' knowledge into university degrees. The Australian Government introduced the Aboriginal and Torres Strait Islander health curriculum framework (2014) to support this integration in health education. This study aimed to map and examine alignment of a pharmacy school's curriculum to the eight foundational principles of the Aboriginal and Torres Strait Islander Health Curriculum Framework through stakeholder interviews, and identify barriers associated with the teaching of First Nations content. **Methods:** Semi-structured interviews (n=30) were conducted with key stakeholders. Interviews were audio-recorded and transcribed verbatim. Transcripts were coded in NVivo to Ritchie and Spencer's Framework and the Aboriginal and Torres Strait Islander Health Curriculum Framework. **Results:** Interviews revealed that although cultural safety was covered in curricula, it was sporadically integrated more in practice-based units in comparison to science-based units. Mapping participant quotes to the Framework, revealed that of the eight areas of the Aboriginal and Torres Strait Islander Framework, five areas needed further development. **Conclusion:** Through curriculum mapping, a holistic picture of a curricula's' First Nations' health and cultural safety was gathered and allowed for the identification of gaps in content and barriers were identified.

Introduction

The phrase First-Nations People/s representing Aboriginal and Torres Strait Islander Australians will be used throughout this paper except when quoting from resources or transcripts which have used alternative terminology.

First Nations Australians are one of the oldest continuing cultures on this earth with occupation of Australia stretching back 60,000 years (Clarkson *et al.,* 2017). Unfortunately, there are significant health disparities between Australians who identify as First Nations versus those who do not. These inequities are amply reported upon; however, they are not often attributed to lack of awareness about history, culture, and the long term impact of invasive colonisation (Markwick *et al.,* 2014). Awareness of key determinants of health is crucial for health professionals' understanding and ensuing safe clinical practice. This awareness needs to occur at a foundational level of education (primary/secondary school curricula). It also needs to be threaded through professional clinical training (Al-Habbal & Ibrahim, 2024). However, since inception of formal education systems in Australia, First Nations history and perspective have not traditionally been included in curricula (Foley, 2003) and systemic racism within education is an ongoing issue (de Plevitz, 2007). This discounting of First Nations' knowledges, traditions and cultural sciences at all levels, has resulted in 'whitewashed curricula' (Dowling & Flintoff, 2018).

Australian health education, is predominantly couched in biomedical frames and normalise deficit discourse leading to embedded racism as it represents people through failures and deficiencies (Fogarty *et al.*, 2018). It is increasingly recommended that curricula require decolonisation so learners can frame their learning from the perspective of First Nations people in

strength-based frames shifting the paradigm towards equity and inclusivity (Dowling & Flintoff, 2018). Curriculum decolonisation may be defined as "*an inherently plural set of practices that aim to interrupt the dominant power/knowledge matrix in educational practices*"(Morreira *et al.,* 2020). These practices subsequently affect both knowledge produced via research and selected for a curriculum (what content is taught), and the ways in which teaching, learning, and assessment occur (how curriculum is taught, including the social power relations at work in teaching and learning). Therefore, decolonisation should be a wholistic approach involving all stakeholders regardless of content taught (e.g. science vs practice).

According to Du Plessis 2021, decolonisation involves those who are marginalised telling their history and sharing culture to enable institutions to reflect the values of all (Plessis, 2021). One way to start the decolonisation process is mapping curricula, exploring if content is meaningful, enhances student learning and aligns with First Nations education frameworks. Curriculum mapping is the systematic analysis of content in a curriculum and is critically important to identify and rectify curricula gaps and alignment of learning to outcomes (Archambault &

Masunaga, 2015). It is specifically important to map curricula to government-led frameworks, as they have been co-designed and specifically focus on improving First Nations content. In turn, this exercise can ensure health professionals are appropriately trained to provide healthcare to First Nations' people.

In Australia, health curricula can be guided by a Federal Government framework referred to as the Aboriginal and Torres Strait Islander Health Curriculum Framework (Department of Health and aged care, 2014). This framework outlines ways universities can integrate and embed First Nations ways of knowledge. The framework consists of suggested primary learning outcomes, assessments, a cultural capability model and graduate learning outcomes. The framework as a whole, assists to develop students into culturally safe health care professionals. It is underpinned by eight key principles (see Table I) forming the basis of this study, to review curricula from an academic point of view. This Framework to date is the only government endorsed national framework for embedding cultural safety in health school curricula.

Table I: The Aboriginal and Torres Strait Islander health curriculum framework principles

Principles	Description
PRINCIPLE 1	Leadership at all levels is key to supporting effective implementation of Aboriginal and Torres Strait Islander health curricula. • Organisational leadership, commitment and accountability at all levels, including the executive level, supports full implementation of Aboriginal and Torres Strait Islander health curricula • Undertaking cyclical organisational assessments provides opportunities to enhance and support more effective curriculum implementation • Building leadership capabilities in graduates to be advocates and agents of change in their chosen health profession is key to transforming health practice
PRINCIPLE 2	Respectful partnerships and collaboration with shared responsibility between Aboriginal and Torres Strait Islander and non-Indigenous people are required in curriculum design and implementation. • Meaningful involvement of local Aboriginal and Torres Strait Islander peoples in the development and implementation of curricula is essential • Curriculum content and the learning process must emphasise learning 'from' and 'with' rather than 'about' Aboriginal and Torres Strait Islander peoples • Shared responsibility between Aboriginal and Torres Strait Islander and non-Indigenous staff for leading and dealing with Aboriginal and Torres Strait Islander matters is critical
PRINCIPLE 3	The process of learning is equally as important as content. • Transformational teaching and learning approaches that favour adult learning principles and enable a critically reflexive learning experience whilst caring for the wellbeing of students is essential • Aboriginal and Torres Strait Islander pedagogies should be integrated into teaching practice • Strengths-based learning1 incorporating innovative, experiential and practice-based examples should be emphasised
PRINCIPLE 4	Self-reflexivity and humility develop respectful health care practice. • Self-reflexivity and critical analysis of one's own cultural values and privileges are integral to respectful health care practice • Development of humility and respectful person-centred health care practice involves recognising and understanding the feelings and experiences of Aboriginal and Torres Strait Islander peoples
PRINCIPLE 5	Holistic health service delivery is essential. • Aboriginal and Torres Strait Islander peoples have unique health needs shaped by the local context and colonial history, which requires responsive, effective person-centred health services

Principles	Description
	• Health services should be informed by comprehensive primary health care principles and models of interprofessional2 practice, these elements are integral in the education of health graduates
PRINCIPLE 6	Local context and diversity must be recognised. • Curriculum content and the teaching and learning process should reflect the local Aboriginal and Torres Strait Islander context and the diversity of Aboriginal and Torres Strait Islander people
PRINCIPLE 7	Development of intercultural capabilities is a lifelong learning journey. • Foundational content on Aboriginal and Torres Strait Islander health should be introduced in the first year of study and then built on through horizontal and vertical integration throughout HPPs • The development of cultural capabilities is a lifelong journey, extending beyond formal education and practice
PRINCIPLE 8	Ongoing professional development and professional support for Aboriginal and Torres Strait Islander and non-Indigenous educators is essential. • HPPs should offer ongoing cultural learning and professional development opportunities for all levels of staff • Support needs to be provided for Aboriginal and Torres Strait Islander and non-Indigenous educators, recognising the emotional load encountered while teaching in this context • Educators should have strong theoretical and practical understanding of Aboriginal and Torres Strait Islander pedagogical principles that support safe and effective transformational learning.

Even though the Framework was published in 2014, its inclusion is not mandatory in curriculum development in the Australian Higher Education Sector. On the other hand, The Australian Pharmacy Council (APC), states that pharmacy curricula should have inputs from First Nations people (APC, 2020) and the Shared Code of Conduct published by the Australian Health Practitioner Regulation Agency (AHPRA) talks of providing a culturally safe environment with specific mention of First Nations people (Ahpra, 2024). With cultural safety being made a disciplinary issue, practice behaviours can be mapped to the standards (Appendix A), and further training recommended when practitioners breach the code (Ahpra, 2023).

Pharmacy is a profession, whose practitioners are mainly community facing, thus, it is particularly important that training is framed within the Aboriginal and Torres Strait Islander Health Curriculum Framework (Department of Health and Aged Care, 2014) as well as compliant to professional codes (Ahpra, 2024). There have been steps to help pharmacists become more culturally safe, with the development of continuing professional development modules co-designed by the Pharmaceutical Society of Australia and First Nations' stake holders. The Deadly Pharmacist modules created in 2022 (Training for pharmacists working within Aboriginal Community-Controlled Health Services, 2022), and the development of the Leaders in Indigenous Pharmacy Profession (LIPPE) network (2021) aim to enable First Nations leadership in the delivery of pharmacy education (Leaders in Indigenous Pharmacy Profession Education Network, 2021).

It is therefore timely to explore if pre-registration pharmacy training, is meeting such standards, understand how pharmacy degree providers evaluate the effectiveness of cultural safety content in relation to the health of First Nations Peoples and uncover reasons for why curricula may fall short. A previous study by the authors reported gaps in pharmacy curricula on a nationwide scale (Burke et al., 2024) however no study has looked in depth at specific pharmacy units of study. Given research is scant, a 'deep dive' exploration into specific curricula offered by one Institution presents a good starting point that could serve as a case study for other programmes to follow.

The University of Sydney was chosen as it is the Alma Mater of the Author, and the Sydney Pharmacy School is the largest, oldest and one of the most prestigious providers of pharmacy education in Australia (Department of Pharmacology University of Sydney, 1999). This single site pharmacy curricula mapping would serve to identify gaps and areas for improvement to ensure that future pharmacists are trained to practice ways deemed to be culturally safe. This research project aimed to demonstrate an effective method of combing through a Pharmacy school's curricula and mapping it to the eight principles of the Framework to identify gaps and find strategic ways forward to improve curricula design.

Methods

Approval to conduct the qualitative study was obtained through the Human Research Ethics Committee of The University of Sydney (Ref No. 2020/526).

The study was reported in accordance with the COREQ-32 checklist criteria (Tong *et al.,* 2007).

Research setting

Sydney Pharmacy School (SPS), Faculty of Medicine and Health, The University of Sydney. At the time of recruiting and interviews (2020), the Sydney Pharmacy School (SPS) offered three main pharmacy degrees (1. Bachelor of Pharmacy: a 4-year undergraduate degree with yearly cohorts of approximately 250 students, 2. BPharm & Management: a 5-year undergraduate degree with yearly cohorts of approximately 50 students, 3. Master of Pharmacy: a 2-year postgraduate degree with several science-based pre-requisites with cohorts of approximately 65 per year).

Sampling strategy

Key academic stakeholders were identified through their allocations to specific Units of Study (UoS) (n=42) taught within the Sydney pharmacy school. A Unit of Study defines a unit subject with a defined volume of teaching activity. At Sydney, each UoS is has a Unit of Study Outline, (subject outline) and an academic lead responsible for teaching delivery, content design, assessment, marks and student communication (UoS Coordinator). The UoS outlines are available publicly on the university's internet pages (The University of Sydney, 2021). To supplement data collected from UoS coordinators, two other key stakeholders including a tutor and a staff member in the Faculty of Medicine and Health (External to SPS), who identified as First Nations, were also interviewed.

Each participant was emailed the participant information statement and consent form with reminder emails sent at 2 weekly intervals if a response was not received. A convenient time for the lead researcher (Alexander Burke (AB) – A male Aboriginal PhD student) and consenting participant was arranged, and a subsequent semi-structured interview was conducted either face to face or via an internet-based video conferencing facility (Zoom).

The interview guide (Appendix B) consisted of questions around the delivery of Australian First Nations health and cultural competence/safety content in UoS, the perceptions of the adequacy of the school's teaching of cultural competence/safety and participants' experiences and professional learning, regarding cultural competence/safety. The interview guide was developed by the research team after exploring the then current Australian Pharmacy Council's accreditation standards and consisted of open-ended questions with prompts.

The specific interview technique used was yarning. The term 'yarning' is used by First Nations Australians which consist of conversations that relies on and creates specific forms of relationality between people, lands, and knowledge systems. As a research method, it may be considered 'as a First Nation's mode of sharing and delivering knowledges and experiences reflecting and respecting First Nation's worldviews and ways of knowing, being and doing, and reciprocity' (Kennedy *et al.,* 2022; Walker *et al.,* 2014). This style of semi-structured interview approach, allowed for a more casual conversation that could be employed by the lead researcher (Walker *et al.,* 2014).

Data handling and analyses

Audio recordings of interviews were transcribed verbatim using a third-party transcription service – Rev.com. AB re-listened to recordings and read each transcript to confirm accuracy. Transcripts were then analysed and coded according to the Framework analysis approach of Ritchie and Spencer (2003) (Ritchie *et al.,* 2003). Framework analysis often applies a more deductive approach to data handling, however, Gale et al states that inductive approaches also have a role therefore, emergent themes outside of the Framework were also explored (Gale *et al.,* 2013). Coding was facilitated using NVivo. AB was responsible for initial codes, and discussion with supervisors resulted in the finalisation of quotes mapped to the dimensions of the Frameworks (Ritchie *et al.,* 2003;Department of Health and Aged Care, 2014)

Ritchie and Spencer (2003) pose that using a Framework for qualitative analysis is best suited to research that asks specific questions and as such aims to uncover new phenomena. Framework analysis can also serve as a method to assess policies and procedures from the very people that will be affected. The Framework proposed by Ritchie and Spencer (2003) for qualitative data analyses allows one to explore data through four major frames.

- Contextual frame: -analyses the current context, i.e.,' what is happening',
- Diagnostic frame: - outlines the reasons for or against doing something, or reasons for why a phenomenon is occurring the way it is.

  Evaluative frame: - analyses how well the current context is working.
- Strategic frames: - analyses the current context and helps define ways forward for improvement.

This resulted in the creation of a matrix of quotes seen in Table II and one emergent theme.

Table II: Quotes mapped to Aboriginal and Torres Strait Islander health curriculum framework and Ritchie and Spencer's framework analysis

	Contextual	Diagnostic	Evaluative	Strategic
PRINCIPLE. 1. Leadership at all levels is key to supporting effective implementation of Aboriginal and Torres Strait Islander health curricula.	• *“There’s no Aboriginal leadership”.* • *” There’s no structural support for it…and no structural acknowledgement”.* • *“we’ve been trying to do everything we can to get more Aboriginal students doing pharmacy. And in the eight years that I’ve been here, we’ve recruited two, in eight years”.*	• *“Look if a budget wasn’t an issue, then I think we would have an Aboriginal health worker as one of our staff members and teachers”.* • *“Knowledge, time, resources finances. I don’t think there’s a champion for it. I don’t think it’s rewarded even if there was. I think if you were the champion, that’s good on you”.*	• *“A dedicated role, I guess, would be really good. But I guess the problem with a dedicated role is then it doesn’t become embedded through the culture of the actual school itself”.*	• *“I think within the university now it has been recognised that we need to have this. And if that means providing a salary for Aboriginal [and] Torres Strait Islander people to contribute in a genuine way then that’s what the university needs to do”.*
PRINCIPLE. 2 Respectful partnerships and collaboration with shared responsibility between Aboriginal and Torres Strait Islander and non-Indigenous people are required in curriculum design and implementation.	• *“We also probably haven’t done the level of consultation that we should have”.* • *“I guess that goes back to my point about consultation and input that is external, where we perhaps we may not have it in our school with the current academic or professional staff we have”.* • *“I haven’t collaborated with the cultural competence centre”.*	• *“What would be really good would be to know who to contact or if we could actually get somebody who’s indigenous to do the lecture”.* • *“I think that should be taught by someone who knows what they’re doing. I don’t think any of us in the pharmacy school will ever be at a level where we should be teaching that because we’re not experts in it. We need people who are properly expert to have it done properly”.*		• *“I don’t know if they’ve consulted with the community. I think they need to consult with the community to ask whether or not the Indigenous people need more”.* • *“We need to be more visible in doing something in advocating for Indigenous health”.* • *“I think there should be a consultative process with the relevant Indigenous Australian representatives, both have education and cultural insight and there needs to be a focus on them, definitely”.*
PRINCIPLE. 3 The process of learning is equally as important as content.	• *“It’s one thing to teach them something, and then it’s another, when it’s the application point of view”.* • *“I think at the moment everybody puts in what they feel is relevant and sometimes you’re repeating the information and sometimes you’re completely omitting something that may be quite useful”.* • *“I think of even complimentary medicines as well. Sometimes I feel like that’s something that’s just been shoved into the curriculum at*	• *“I guess in terms of barriers, I think the main thing would be seeing how it fits in”.* • *“I think that the University of Sydney, it’s a very large and traditional organisation and we find it challenging to accept that there may be better ways of delivering education in other settings”.* • *“I definitely don’t think there should be any barriers, because I can see the importance of the inclusion of it in the curriculum and I would be all for it”.*	• *“They will learn. They will learn because they’re young and they’re impressionable and they know. They’re not dull people, but I think we could give them more preparation”.* • *“We don’t have tools to measure the impact of what we’re doing”.* • *“So, integration is great for learning, but integration is very poor when it comes to having barriers for assessment”.*	• *“It should be integrated”.* • *“If we take the example of New Zealand again, I’m absolutely certain, if they have OSCE’s, they will have a mock patient situation where you have a Māori patient. So, absolutely”.* • *“Skills assessment needs to be applied rather than exam assessment. So, it needs to be embedded in our communication skills and perhaps some of the barriers or elements that go into our oral communication skills*

	Contextual	Diagnostic	Evaluative	Strategic
	times, same as cultural competence and Aboriginal health".	• *"Another barrier would be the current internal change. And so, it's unclear in general how curriculum development should be authorised. So, we don't know what level of change to our unit of study requires approval".*		*assessments or standalone, but again, skills assessments".*
PRINCIPLE. 4 Self-reflexivity and humility develop respectful health care practice.	• *"I guess I never really thought about it, to tell you the truth".* • *"A student said, but I was born in Australia. So therefore, I'm Indigenous. So, I think, we need to make sure that they're coming out of uni, not saying those things".*	• *"I think what we need as educators, is that we are just as ignorant as perhaps the students we're trying to teach, we are not offered extensive training in this area".* • *"I think all of us are just kind of treading on territory that we're not trained in ourselves".* • *"I think when it comes to cultural competency, nobody wants to admit their shortcomings".*	• *"But really how to assess it is not something that I…Well, I can't hold them back in their profession.* • *"Just doing lip service to, and I think that is disgraceful, and we should apologise for it".*	• *"I feel people need to know that they're part of the problem, also part of the solution, before you start teaching it".* • *"Aboriginal students like yourself can be proud to come to the university for yourself. Understand the good and bad of our history. That's something that needs to be done. I don't think that's done enough".*
PRINCIPLE. 5 Holistic health service delivery is essential.	• *"We can't take the person away from the culture because then we'll just become a stereotype. So, we need to have an understanding that there are cultural beliefs, there are cultural issues, but there are also specific people issues too".*			• *"In my opinion, the non-clinical competencies would be around communication, communication that is culturally safe, that is respectful, that reflects on perhaps the entrenched values and beliefs and history of Indigenous people. Also, I think to be able to play a role of advocacy for Indigenous peoples".*
PRINCIPLE. 6 Local context and diversity must be recognised.	• *"Look at the end of the day, I would argue that our placement exposure is minimal at best… Even if you spend all six weeks out in a practice that looks after Aboriginal [and] Torres Strait Islanders, I don't expect you to be awesome at it after six weeks, I don't expect anyone to be awesome at it after six weeks".* • *"There's a history in Australia of research ethics that is pertinent to Indigenous people in particular, because there's a history of abuse and a lack of respect that we are trying to overcome in modern times".*	• *"That big understanding is really key, if you're going to work with us. And the big thing is, even if you don't think you're going to work with an Aboriginal Person, you probably are. You're a pharmacist".* • *"Students don't want to do rural placements. They want to do the ones that's a walk down the street from their house or at worse, in the suburb over".*	• *"We had, I think, two students go out last year and it seemed to have been really fantastic experience where I got to go out at the time to the indigenous health service".* • *"Some people would want our graduates to hit the ground running and be able to provide a benefit. I feel that our stage, our graduates, they need a bit of time before they start providing the benefit. I think they're very ready to learn, but maybe they should have learned more".*	• *"I would like to see more Placements in the future and given that we are here in Camperdown close to probably one of the biggest urban Aboriginal communities in Australia or indeed the world, then it makes sense that we try and leverage that more closely".*

	Contextual	Diagnostic	Evaluative	Strategic
PRINCIPLE. 7 Development of intercultural capabilities is a lifelong learning journey.	• *"I don't think that, that this is explicitly covered… I think it's assumed that this knowledge will be gathered on the job, rather than explained as they go through the degree, which it should be from day one".* • *"I think that curriculum development is not provided much time".* • *"I think we're introducing it well; I think we're not developing it well… We're giving people a first stage understanding, we're not integrating and following up enough in the senior years of the degree".*	• *"Teaching cultural competence to the students, every hour an academic staff member spends on worrying about teaching cultural competence is one less hour they have for research and less for everything else".* • *"Students don't have an infinite amount of time. And every time we put something in, we have to take something out, so it doesn't get longer".* • *"Look, my honest opinion is that it's always going to be difficult because we are a pharmacy school, not necessarily a public health school, unless he had a unit of study that was focused on indigenous health and that certainly should be taught off as included in the new curriculum".*	• *"We don't know if what we're doing is working. You don't know if it's sustainable and having an impact on our patients… Like I said before, I feel the content is sometimes not as important as long as they understand the basic framework and how to approach these scenarios".* • *"I would say even within the different academic institutions, particularly within pharmacy, I don't think anyone can point to anyone and go, "They're doing great. I wish we w[ere] like that." And they do and they exist, which highlights that it's not a priority in any group".*	• *"I am aware of the graduate cultural capability model that the Australian government department of health instituted, and perhaps that could be a starting framework for us to think about what we could include in our new curriculum".* • *"I think if it becomes mandatory that every unit has to have three hours or five hours or something like that, of particular cultural competence or indigenous study embedded into it and there is no way out of it, I think then people will make it happen".*
PRINCIPLE. 8 Ongoing professional development and professional support for Aboriginal and Torres Strait Islander and non-Indigenous educators is essential.	• *"I have no specific training in that area, but having said that, as academic staff, we generally don't host specific training in many of the fields that we teach in".* • *"I Think myself as a staff member, I would need some sort of training or, because I must admit, maybe when I first joined, I had some sort of very generic cultural confidence module, but I can't even remember it. And I wouldn't even know how to go about incorporating this into my unit*	• *"I know there has been some opportunities for some staff to participate in cultural competence training, but not all staff".* • *"Academic staff interest… The university essentially doesn't care about teaching and cares about research. Teaching is what you do to bring in the money. Teaching is not what gets you promoted, which is what people care about".*		• *"At this point? Any training".* • *"Perhaps a few pharmacy teaching retreats that are simply focused on this topic".* • *"I think that training shouldn't just be for staff, it needs to be for students. And I'm aware that the university does have these service learning courses*

Results

A total of 30 academic stakeholders were interviewed (28 staff responsible for the coordination of 33/42 UoS and 2 First Nations stakeholders) Interviews ranged from 12 to 40 minutes (average 20 minutes). Table 2 reports the main study findings with illustrative quotes mapped against Frameworks (Ritchie et al., 2003; Department of Health and Aged Care, 2014)).

The school was providing a range of activities across degree programmes in different UoS that focused on First Nations health, however after mapping quotes, it was apparent that there were deficits in all principles with principles 1, 2, 3, 5 and 7 being most neglected. Overall, curricula volume devoted to First Nations content was minimal, offered in a fragmented way and without continuity. For example, most participants stated there was a lack of clear direction and, content they 'feel' is relevant is included, rather than based on curriculum mapping and identified gaps. One participant devoted "*only half an hour*" to First Nations content within a UoS involving 115-200 hours of time dedicated to learning and activities.

Principle 1: Participants noted that there was "*No Aboriginal leadership*". It was however discussed that nurturing future leaders was difficult, as there was a lack of First Nations students coming through the degree with only three enrolling in the eight years prior to 2020 and two after 2020. This issue is not specific to pharmacy, but rather "*a university wide thing*".

Participants also stated that while the Faculty of Medicine and Health was doing better than other faculties in the university, "*there's a lot of work to be done and many noted funding as a major barrier with minimal money available to support leadership roles*". Academics also reported a lack of advocates and incentive to support the inclusion of the First Nations content, however, most believed 'there should be no excuses', and a position should be made available for First Nations leadership. It was also noted that this should start at the ground level with attracting more First Nations students to the degrees. Conversely, there were some staff that were apprehensive of having one First Nations leader, as they were concerned that if a dedicated role became available, it could potentially stiffen cultural change as people may then not see this content as "*everyone's responsibility*".

Principle 2: Participants noted "*We also probably haven't done the level of consultation that we should have*" with community members or organisations. Participants noted that First Nations content was often taught by in house School/Faculty staff, without First Nations heritage. When participants did source First Nations input into teaching, it was valued highly with a participant noting "*That was a really interesting perspective for students to get*". Participants stated that it was important for students to hear an "*Indigenous voice*" on issues relating to First Nations health. Many participants wanted to have open dialogue with community and to have First Nations people in the classroom teaching and assessing students but were unaware of where to source First Nation community members.

Principle 3: When talking about why processes haven't been changing, many stated that this may be due to institutional inertia, being a "*hundred-year-old organisation*", it may be "*stuck in its ways*". Going forward, staff wanted to see content integrated across UoS's and assessments moved from multiple choice questions and short answer responses to application/skills-based assessments around First Nation's health. Clearly these ideas align with Principle 3, which advocates use of transformative adult pedagogies and consider the use of pedagogically innovative teaching methods equally important to insertion of content. It was noted that embedding this kind of assessment would however be challenging.

Principle 5: Holistic health service delivery was the most poorly reported aspect of the Framework. Staff were aware that culture plays a large part in understanding the health of First Nations people and, culture should not be taught in isolation. There were few ideas made by participants as to why holistic health currently is or is not being explored, and ideas for future plans were limited, with mention that non-clinical competencies should be assessed in ways other than written exams.

Principle 7: Participants noted that curricula should be built upon and consolidated using a spiral approach, where concepts are introduced early in a degree and becoming deeper and more complex as students' progress. Participants however believed this was currently ineffective, with one noting: "*I think we're introducing it well, I think we're not developing it well*". Participants also noted that content inclusion decisions were "*siloed*", and they were unsure about what content was being taught in preceding or forthcoming years.

Institutionalised racism and tokenism: An additional theme that was evident in the data was that of embedded systemic racism and tokenism. Some participants reported not seeing the relevance of including First nations content into their UoS or they could not think of ways to include this content in a meaningful way, with responses famed around concepts of equality, rather than equity. Further, participants' responses suggested that cultural safety is given lower priority than therapeutic knowledge. One participant stating "*if we improve anything by putting*

more stuff in, we have to take something else out" alluding to more First Nations content would mean removal of clinical content. Data also portrayed the impression that cultural safety was an afterthought in the curricula and would be 'slotted in' after all therapeutic content had been covered "*Oh, I have got to put some Indigenous content in my lecture, what do I do with 1 hour*".

Based on participant perceptions, systemic racism may appear to be institutionalised, with some stating that clear barriers would be their colleagues: "*People just do not want to change… the course coordinators themselves will be barriers*." Another example of possible systemic racism was the implied notion of impartiality in the curriculum, ignoring the impact racism has in First Nation people's health and health-seeking behaviours: "*I think it's still content…there is not much I can do because this theory applies to every population…It doesn't really differentiate between Indigenous people or knowing Indigenous people…there is nothing I can force to embed into my teaching*". Another issue evident related to systemic racism was tokenism, with one participant stating: "*There's a lot of parts to the case… It's still possibly just tokenistic that the person is Indigenous*." This statement alluded to a specific case study, where the case patient was First Nations, but there were no specific learnings built around First Nations issues, cultural considerations or the ways First Nations people see health, making this a tokenised gesture.

Discussion

This study took a deep dive into the pharmacy curricula in one of the country's teaching Institutes to identify areas for future improvement. This deep dive specifically involved mapping curricula content against the principles of the Aboriginal and Torres Strait Islander health Curriculum Framework (DepartmentofHealthandAgedCare, 2014). Difficulty with incorporating principles 1,2,3, 5 and 7 with 1 and 2 specifically being about having designated roles for First Nations staff were evident deficits.

Importantly, this research highlighted that some participants were unclear about the amount of substantive consultation conducted with respect to pharmacy curricula. Adhering to Principles 1 and 2 is especially important in the context of Australia, where First Nations people have been subject to hundreds of years of programmes and directives designed without their direct input and consent, explicitly disrespecting the self-governance and decision-making capabilities of First Nations people. This non-consultative approach to curriculum design in health may be deemed as an example of systemic or institutionalised racism that is perpetuated.

This research also brings up other questions of importance. Accredited degrees are offered by the school under study, however, similar to other pharmacy schools (Burke et al., 2024), there are clear gaps in adhering to principles (1-7) of the Framework (DepartmentofHealthandAgedCare, 2014). This issue highlights a serious concern that faces all Pharmacy schools. Are the concepts that are being taught around cultural safety and First Nations health being represented correctly? And are they an accurate reflection of the views of First Nations people? This also leads to an issue around a tokenistic approach to meeting accreditation standards. It may be suggested that the Australian Pharmacy Council play a critical role in guiding and facilitating pharmacy schools to meet these standards. First Nations health content needs to be woven in the weft and warp of the curricular fabric. Currently such content is patchy and siloed, as noted by participants in this study and, whilst content inclusion may be led by academics in a genuine desire to ensure coverage, the planning perhaps needs to be overarched, else the exercise becomes tokenistic. It appeared that at the time of interview, there was no linkage of content within and across UoS and such content had not been thoughtfully sequenced or spaced within the degree. A future direction may be to place an experienced pharmacy educator to lead this topic/theme across curricula with meaningful linkage that adheres to key principles of the Framework. Ideally this staff lead should be a First Nations person, but until such time, the school can work by establishing meaningful and consultative engagement with First Nations communities.

Curriculum that meaningfully incorporates First Nations heath content should espouse key principles of adult pedagogy as well as First Nations' pedagogy. Assessing knowledge should not be in the stilted form of multiple-choice questions (MCQs), but far more reflective (Delany *et al.,* 2018). As noted by Jaris Swidrovich, there is a fundamental difference in the way knowledge is passed in First Nations communities vs traditional western institutions and without concerted efforts by institutions to instil these ideas into students he states "*Pharmacy students and pharmacy practitioners are socialismed into perceiving Western intellectual traditions as the superior knowledge system*" (Swidrovich, 2023).

Beyond the curriculum, our results indicate that there are problems such as systemic racism and tokenism ingrained in institutional culture. Tokenism, as defined by the Cambridge dictionary 'is something that a

person or organisation does that seems to support or help a group of people who are treated unfairly in society, such as giving a member of that group an important or public position, but which is not meant to make changes that would help that group of people in a lasting way' (Cambridge dictionary, 2024). In other words, it is about merely paying lip service, for example, having a visible minority to give the appearance that issues are being taken seriously, which can manifest as indifference. Many participants thought it was not their business to address problems, that those allocated to such positions should take the onus of making changes around First Nations content in curricula. This has been noted by First Nations health researchers. Virdun 2013 states, where "*The lack of explicit responsibility for the development and teaching of Indigenous elements of the curriculum by non-Indigenous academics can manifest as weak engagement or interest in either developing students or dealing with unacceptable behaviour*" (Virdun *et al.,* 2013). The issue is not just about incorporating content in curricula, but ensuring the academic community sees this as a priority and shared responsibility.

Moving forward, pharmacy can look to other fields that also identified gaps in their curricula and have developed and evaluated new approaches to their learning and teaching. Gongora et al. explained how they integrated cultural competence into their Sydney university veterinary science curriculum. In their example, students were rotated through learning stations with clients of culturally diverse backgrounds including First Nations people, and teachers talked to students gathering their thoughts on the experience both individually and as a group. Further, they discussed at lengths the relationships between animals and humans across cultures, and also taught First Nations practices and knowledge in conservation and managing biodiversity (Gongora *et al.,* 2020). Importantly, Gongora et al. explains that these students were taught about the value of, and how to, communicate cross-culturally (Gongora *et al.,* 2020). By doing this, they introduced fundamental levels of awareness which could be scaffolded into more complex ideas of cultural competence and humility (Gongora *et al.,* 2020) They have since observed that the integration of cultural competence into the curriculum resulted in positive changes in attitudes and behaviours of students.

In this study the authors uncovered that some aspects of cultural competence were perceived to be quite well structured in the early years of the degrees, which was encouraging. As noted, though, many participants stated they were isolated in their field and were unaware of what was happening in other UOS's. This is important because without knowing what is going on in other UOS it is hard to know if the content in one's own unit is being duplicated, or alternatively, if one believes that cultural competence is being covered in another UOS, they may neglect to cover content in theirs. Having an overarching view and designing a new curriculum is a great way to have strategic oversight of the whole degree. It is noted that this issue is practicable to those going through the process of curriculum redesign. But starting this process is an appropriate way to see what should be addressed and can be implemented in all schools.

Moving on from here, there are other measures that can be implemented to help further decolonise curriculum. For many years the idea of 'nothing about us without us' originally a slogan used by disability activists to emphasise that research and ideas about that community should not be conducted without the input of that group (Koontz *et al.,* 2022), is now being used by members of all minority groups (Lumby, 2024). Therefore, schools should make sure that community consultation is conducted in line with what has been stated in both the Health Curriculum Framework (Department of Health and Aged Care, 2014) and the accreditation standards (APC, 2020), with a needs-based analysis with First Nations people to see if what is being taught aligns with what community wants. Furthermore, co-designed case studies to ensure real-life experiences of First Nations people, creating accurate pictures of what pharmacy students may experience while practicing and, dedicated roles for First Nations people to help with the continuing update of curricula is warranted. Further, having staff whose role is ensuring that the inclusion of cultural safety content remains 'everyone's business' and that pharmacy schools are basing their curriculum on degrees that have done well in this area should be prioritised.

It should be noted that this study is a pointed method for how schools can both audit and start to look inwards at their own curricula to start the process of decolonisation. The study had a number of strengths, including collection of data representing 79% of the pharmacy units taught across three degrees in one pharmacy school, as well as employing an approach conducive to First Nations ways of knowing and being as the principal researcher was a First Nations pharmacist and applied a yarning approach. There were however some limitations to this study. The sample was only one pharmacy school and did not explore units outside of the school's control. Future studies may look at units taught external to a singular university department. Secondly, the questions posed were not directly based on the Health Curriculum Framework but covered broader curriculum design. This could have limited participants responses, however many points

raised crossed over with the Framework. This study only explored the views of UoS coordinators hence only applied the eight underpinning principles of the Framework. Future studies may wish to explore further elements of the Framework such as graduate capabilities from the student perspective. Another limitation was that the interviews were conducted in 2020 and were analysed recently against the Framework. Therefore, it should be noted that within the last 5 years the Sydney Pharmacy School has begun to implement a new curriculum where these findings have been incorporated to Indigenise the curriculum. However, as the new curriculum is being introduced, the old curriculum must be taught out and will continue to be part of the school for many more years, acting as a benchmark and a way to improve the future degrees.

Conclusion

This study mapped a pharmacy school's curricula to the 8 key principles of the Aboriginal and Torres Strait Islander Health Curriculum Framework. Whilst cultural competency was embedded in many UoS, gaps in the teaching of content were identified. Many staff members had ideas for future improvements to be incorporated into future curricula, now being ensued.

Acknowledgement

The authors acknowledge Aboriginal and Torres Strait Islander Peoples as the traditional custodians of the country now known as Australia and that sovereignty was never ceded. Four authors are studying/employed on the lands of the Gadigal, and the lead author identifies as Aboriginal. This Aboriginal land has seen education and healing practices conducted by Aboriginal and Torres Strait Islander Peoples on it for tens of thousands of years. Given the lands now host a teaching institute, makes it imperative to action the acknowledgement and integration of Aboriginal and Torres Strait Island ways of knowledge creation and knowledge sharing with the more occidental approaches that the institute has previously espoused. This research embodies this purpose.

The authors would like to also state that although this paper may portray a very negative view of the pharmacy school, this research is not meant to demean or belittle the efforts of those who have contributed time to build this pharmacy curriculum, but is meant to be a critical look and a path forward to making a more inclusive and better learning environment, and I would like to thank all those who took part.

Conflict of interest

All authors on this paper were employed or studied with the Sydney University School of Pharmacy at the time of writing and data collection.

Ethical approval and informed consent

Ethical approval was obtained on September 4th, 2020, from the University of Sydney Human Research Ethics Committee with the reference number (Ref No. 2020/526). The whole study protocol adhered closely to relevant laws guiding the research involving human subjects. Informed consent was obtained from all study participants. The Transcripts were then deidentified and stored on a password protected computer in a locked room.

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Appendix A: Australian Pharmacy Council Criterion that mention the Inclusion of First Nation Australians

Criterion 3.3: Programme planning, design, implementation, evaluation, review and quality improvement processes are carried out in a systematic and inclusive manner, involving input where relevant from staff, students/interns, graduates, supervisors, practitioners, employers, patients and consumers, Aboriginal and Torres Strait Islander peoples, and other key external stakeholders to ensure that the programme remains fit-for-purpose. Outcomes from these processes are clearly communicated in a timely manner to stakeholders.

Criterion 3.4: Programme design, content, delivery and assessment specifically emphasise and promote Aboriginal and Torres Strait Islander cultures, cultural safety and improved health outcomes. Aboriginal and Torres Strait Islander peoples should have direct input into curriculum design and content, and where possible should be involved directly in delivery and assessment.

Appendix B: Interview guide

Thank you for agreeing to be interviewed today. My name is Alex Burke and I am currently completing my honours research under the guidance of Rebekah Moles, Bandana Saini and others.

My research is aiming to look at the current Aboriginal and Torres Strait Islander or Indigenous Health/Cultural Content that is currently taught with the pharmacy degrees at the University of Sydney. If you coordinate any Units of Study, please feel free to reference your discussion to these Units of Study or you may talk generally. Apart from hearing about the topics/depth of content in your Unit of Study (or the degrees generally), I would like to gather ideas on how this content was developed, its benefits as well as ideas for future improvements.

Please note that everything you say will be confidential and that you can stop this interview at any time. I would like to start the recording now, is that ok with you?

In starting the discussion, what in your opinion are the skills/capabilities or knowledge that pharmacy graduates need to provide health services to Indigenous patients

1. **Could you start by telling me a bit about the unit of study that you teach? (NB this question is only asked to the teachers, other stakeholder start at Question 3)**

a. How long have you taught this unit?

b. What does it mainly aim to teach?

2. **Would you describe in detail any Aboriginal and Torres Strait Islander health/cultural competence content in your UoS (or the general pharmacy curriculum)?**

a. Who made the decision to include the content?

b. Who teaches the content?

c. What is the format of teaching for this content?

d. How much time is devoted to this content (face to face teaching, self-directed learning and assessment)

e. What resources are needed to sustain it/ change it?

f. If there is no such content- --reasons for not including any topics related to this

3. **In your opinion how adequate is the Aboriginal and Torres Strait Islander Health/ Cultural Competence content taught in the pharmacy programme?**

a. Adequate /why not?

b. Meets or does not meet national need

c. Sufficiently /insufficiently prepares graduates to meet Indigenous consumer need

4. **How do you think Aboriginal and Torres Strait Islander Health and cultural competence should be taught in a new curriculum?**

a. Topics (specific to pharmacy)

b. Teachers (Indigenous staff, Aboriginal Health Workers, others with experience)

c. Positioning in the curriculum

d. Instructional format (tute/wshops/ experiential/simulated patients, case studies, service learning)

e. Assessment method (assess knowledge, capability or competence)

f. Evaluation of impact (finding if curriculum addition makes a difference)

5. What is your own training with respect Aboriginal and Torres Strait Islander Cultural Competence?

a. How did you gain this training?

b. What more training would you like/need?

6. **If you were asked to include this content in a Unit of Study you were designing, what resources would you like to help you do this?**

a. Frameworks (Standards/Guides/Case studies)

b. Consultation opportunities -local University Indigenous Health Experts/other pharmacy educators

c. other resources

7. **Any other information you wish to share on this matter?**

General Demographics

Would you mind if I asked a few questions about yourself, so as a research exercise, my team and I are able to see if different participants had different viewpoints?

Age bracket – 25-35, 36-45, 46-55, 56-65, 65+

Gender (can just be noted rather than asked)

Experience with Indigenous Health/Indigenous patients/consumers yes/no

Born in Australia yes/no

Identify yourself as being Culturally and Linguistically Diverse yes/no

Have educational qualifications eg Grad Cert/other yes/no

Teaching experience in other Uni yes/no

Teaching experience in another country yes/no

Appendix C: Anonymous table of the interviews conducted the year in which it was taught and overall what they were teaching

Year taught	Science/Practice/Pharmacy Science/Business/Integrated	Interviewed y/n	Reason not interviewed	Aboriginal content in curriculum Y/N
1	Science	N	Not taught by internal pharmacy academic	N/A
1	Science	N	Not taught by internal pharmacy academic	N/A
1	Practice	Y		Y
1	Pharmacy Science	Y		N
1	Science	N	Not taught by internal pharmacy academic	N/A
1	Science	N	Not taught by internal pharmacy academic	N/A
1	Practice	Y		Y
1	Pharmacy Science	Y		N
1	Business	N	Not taught by internal pharmacy academic	N/A
1	Business	N	Not taught by internal pharmacy academic	N/A
2	Pharmacy Science	Y		N
2	Pharmacy Science	N	Participant did not respond	Y
2	Pharmacy Science	Y		N
2	Science	N	Not taught by internal pharmacy academic	N/A
2	Science	N	Not taught by internal pharmacy academic	N/A
2	Pharmacy Science	Y		N
2	Practice	Y		Y
2	Pharmacy Science	N	Participant did not respond	N
2	Business	N	Not taught by internal pharmacy academic	N/A
2	Business	N	Not taught by internal pharmacy academic	N/A
3	Practice	Y		N
3	Integrated	Y		Y
3	Integrated	Y		Y
3	Integrated	N	Participant did not respond	N/A
3	Integrated	N	Participant did not respond	N/A
3	Practice	Y		N
3	Integrated	Y		Y
3	Integrated	Y		Y
3	Integrated	Y		Y
3	Business	N	Not taught by internal pharmacy academic	N/A
3	Business	N	Not taught by internal pharmacy academic	N/A
3	Business	N	Not taught by internal pharmacy academic	N/A
3	Business	N	Not taught by internal pharmacy academic	N/A
4	Pharmacy Science	N	Participant did not respond	N/A
4	Practice	Y		N
4	Cross School	Y		N
4	Honours	Y		N
4	Honours	Y		N
4	Practice	Y		N
4	Practice	Y		Y
4	Practice	N	Participant did not respond	N/A
4	Practice	Y		N
M1	Practice	Y		Y
M1	Pharmacy Science	Y		N

Year taught	Science/Practice/Pharmacy Science/Business/Integrated	Interviewed y/n	Reason not interviewed	Aboriginal content in curriculum Y/N
M1	Pharmacy Science	N	Participant did not respond	N/A
M1	Pharmacy Science	N	Participant did not respond	N/A
M1	Pharmacy Science	Y		N
M1	Practice	Y		Y
M1	Practice	Y		Y
M2	Pharmacy Science	Y		N
M2	Pharmacy Science	Y		N
M2	Pharmacy Science	N	Participant did not respond	N/A
M2	Practice	Y		Y
M2	Practice	Y		Y
M2	Practice	Y		Y
M2	Capstone	Y		N