National Review of Sex and Gender Inclusion in Australian Health and Medical Programs Accredited under the National Scheme

This report was prepared by:

Bronwyn M. Graham, Uday Adavi, Victoria Gregory, Veronica Le Nevez, Madeline News, Kongchay Vongsaiya, Georgia White, Shiming Zheng

The Centre for Sex & Gender Equity in Health & Medicine at The George Institute for Global Health Australia.

Acknowledgements to Professor Cara Tannenbaum for guidance on the preparation of this report during her tenure as Distinguished Fellow at The George Institute for Global Health.

Suggestion citation: Graham, B.M., Adavi, U., Gregory, V., Le Nevez, V., News, M., Vonsaiya, K., White, G., Zheng, S. (2025). A National Review of Sex and Gender Inclusion in Australian University Health and Medical Programs Accredited by the National Scheme. Department of Health, Disability, and Ageing. Commonwealth of Australia, Canberra.

Executive Summary – findings from the audit 3

1. Introduction 4

1.1 Aims and Objectives 6

2. Method 7

2.1 Search Strategy 7

2.2 Data Extraction 7

2.3 Data analysis 7

2.3.1 Quantitative analysis – frequency of sex and gender inclusion in curricula *7*

2.3.2 Qualitative analysis – context of sex and gender inclusion in curricula *7*

2.4 Stakeholder engagement 8

3. Results 10

3.1 Quantitative Analysis 11

3.1.1. Overall integration of sex and gender by profession. *11*

3.1.2 Comparison of sex versus gender related content in curricula *14*

3.2 Qualitative Analysis 16

3.2.1 Contextual analysis of sex and gender content in health and medical curricula in specific professions *16*

3.2.2 Inclusion of sex and gender content in specific areas of health in medicine *18*

3.3 Narrative Synthesis of Stakeholder Perspectives 19

3.3.1 Regulation as the Key Driver of System-Level Change *19*

3.3.2 Building Awareness and Capability Across the System *19*

3.3.3 Supporting Consistent Interprofessional Collaboration and Education across the Career Continuum *20*

3.3.4 Case study of system-wide change: cultural safety *20*

3.3.5 Examples of best practice *21*

3.3.6 Summary of stakeholder perspectives *22*

4. Limitations of the Review 23

5. Interpretation 23

6. Opportunities for Better Integration of Sex and Gender in Health and Medical Education 24

7. Policy Options Analysis 26

8. References 27

Appendices 29

Executive Summary – Findings from the Audit

This project was funded by the Australian Government Department of Health, Disability and Ageing to support the work of the National Women's Health Advisory Council.

We reviewed every health and medical program accredited by the National Registration and Accreditation Scheme ('the National Scheme') in Australia for the extent and nature of sex and gender integration in their curricula.

All 16 professions accredited by the National Scheme were reviewed, including Aboriginal and Torres Strait Islander Health, Medicine, Midwifery, Nursing, Paramedicine, Pharmacy, Psychology, Physiotherapy, Medical radiation practice, Chiropractic, Dental, Chinese medicine, Occupational Therapy, Optometry, Osteopathy, and Podiatry.

8843 curricula from 575 programs at 123 institutions were included in the review.

A reasonable benchmark would be that approximately 85–90% of programs demonstrate appropriate integration of sex and gender considerations.

Examination of the individual curricula taught across all programs showed that only 9.5% (1 in 10) of curricula contained any mention of sex and gender.

Where sex or gender was mentioned, it was often descriptive (such as in case studies, e.g. 55-year-old woman), or in reference to sexual and reproductive health.

Most mentions to sex and gender referred to "women/woman" or "gender". Less than 10% of mentions referred to sex-related terms, such as "sex", or "male/female".

No curricula contained any mention of sex or gender differences in cardiovascular disease.

Four curricula discussed chronic pain in relation to sex and gender differences or women's health.

Input was sought from informed stakeholders on potential avenues for improved integration of sex and gender in health and medical education, including representatives from the Australian Health Practitioner Regulation Agency (Ahpra, who administer the National Scheme), the National Boards (who set Accreditation Standards), leaders in Cultural Safety, and leaders in best practice of sex and gender integration in education.

Stakeholders identified several opportunities for improvement, including changes to the accreditation standards, combined with capacity building amongst educators.

1. Introduction

Health and medical practice is routinely conducted with little regard for sex and gender (defined in Box 1). This sex- and gender- 'neutrality' is based on a pervasive assumption that aside from health conditions that relate to reproductive organs, all other disease states present similarly in males and females[2]. There is now extensive evidence that challenges this assumption. We now know that many health conditions present differently, disproportionately, or exclusively in individuals as a function of their sex or gender[4]. As just some examples:

Symptoms of cardiovascular disease and stroke differ in males and females[5], and asthma[6] is differentially impacted by sex and gender specific factors in males and females, including sex differences in lung development, impacts of pregnancy and the menstrual cycle, and gender differences in occupations leading to differential environmental risks.

The burden of anxiety and depressive disorders, chronic pain conditions, musculoskeletal disorders, and dementias is disproportionately higher in females relative to males, whereas the burden of ischaemic heart disease, chronic liver and kidney diseases, respiratory infections and lung cancer is disproportionately higher in males relative to females[4].

Gendered beliefs around masculine and feminine roles and expectations differentially impact engagement with health services which can delay diagnoses and treatment, with detrimental consequences for prognosis and survival rates. For example, men may avoid engaging with health services due to greater perceived stigma or minimisation of symptoms[7], and women may hesitate contacting ambulance services to avoid being a burden[8].

Prostate cancer is exclusive to males and trans women, gynaecological cancers (including ovarian and cervical cancers) are exclusive to females and some trans men, and reproductive mood disorders (like premenstrual dysphoric disorder) are exclusive to people with menstrual cycles.

Box 1. Definitions of Sex, Gender, and Innate Variations of Sex Characteristics.

In this report, our definitions of sex and gender are consistent with those of the Australian Bureau of Statistics' Standard for Sex, Gender, Variations of Sex Characteristics and Sexual Orientation Variables[1]. Sex refers to a set of biological sex characteristics including chromosomes, hormones, and reproductive organs, typically recorded at birth as male or female, although a person's reported sex may change across the lifespan. Gender is a sociocultural construct encompassing identity, expression, and experiences and may be classified in many ways – such as man, woman, non-binary, or gender-fluid. A person's gender may differ from their sex and may change across the lifespan. Innate variations of sex characteristics refers to people born with innate genetic, hormonal or physical sex characteristics that do not conform to medical norms for female or male bodies. It refers to a wide spectrum of variations to genitals, hormones, chromosomes and/or reproductive organs.

Despite overwhelming evidence that sex and gender are strong determinants of health, the health and medical research that informs healthcare practices has typically focused on adult males, based partly on assumptions that males are simpler (lacking hormonal fluctuations associated with the menstrual cycle) and safer (no potential to become pregnant) research models than females[9-13]. The predominant focus on males in health and medical research has hindered knowledge about health conditions across the board (i.e., for female-specific conditions as well as those that impact all people) in women, as well as trans and gender diverse people, and people with innate variations of sex characteristics[14].

This has led to poorer health outcomes in these groups, including delayed and missed diagnoses, and adverse reactions to treatments[15]. Failure to account for sex and gender in health and medical research also has detrimental consequences for males – for example, males experience greater mortality rates than females across a range of conditions, including non-reproductive cancers[16] and sepsis[17], and are more likely to die prematurely than females[18,19].

In addition to sex-and gender-related knowledge gaps in health, there is growing public awareness, supported by extensive empirical evidence, that women and gender diverse people experience prejudice in healthcare settings (sometimes termed 'medical misogyny'). This is corroborated by empirical studies showing that women are under-prescribed pain relief[21], and experience unreasonably long durations between first presentation and diagnosis for conditions like endometriosis[22].

The #EndGenderBias Survey[20] found that two thirds of women who responded to the survey reported to have experienced gender bias or discrimination within hospital and general practice settings, including denial and dismissal of pain and other symptoms.

Gender bias may be an extension or a consequence of a lack of understanding of sex and gender differences in disease presentation (e.g., gender differences in expression of pain, sex differences in symptoms of heart attacks). Notably, bias and stigma in the healthcare system are also experienced by trans and gender diverse people[23], and people with innate variations of sex characteristics[24].

Clearly, improving the quality of healthcare by taking sex and gender into account stands to benefit all people, regardless of their sex and gender. Meaningful improvement will require cross-sector changes along the whole health and medical pipeline, from fundamental research through to health and medical education, and healthcare services. In this regard, over the last two decades policies have been introduced to improve sex and gender integration in health and medical research[25], including by the Canadian Institutes of Health Research, Horizon Europe, the USA National Institutes of Health, and the UK National Institute of Health Research. In Australia, the National Health and Medical Research Council and the Medical Research Future Fund introduced the Statement on Sex, Gender, Variations of Sex Characteristics and Sexual Orientation in 2024 ('the MRFF/NHMRC Statement')[26], which strongly encourages all funding applicants to take these variables into account. As of 2026, integration of sex, gender, variations of sex characteristics and sexual orientation will be a mandatory requirement and will be assessed in most funding schemes.

Research policies requiring sex and gender integration are gradually improving the quality of health and medical science through greater inclusion of females and sex- and gender-disaggregated data analysis[27]. Unfortunately, this has not yet filtered through to clinical practice guidelines, which are a key mechanism for translation of knowledge from research to practice. A recent review of Australian clinical practice guidelines revealed poor integration of sex and gender differences in guidelines[3], which was echoed in a subsequent review of UK clinical practice guidelines4. Practice guidelines represent a critical juncture in the health and medical pipeline, not only because they inform healthcare policies and procedures, but also, because they inform education of health and medical students – an equally important part of the pipeline.

Internationally, sex and gender are not well integrated in health and medical education[28,29]. Little is known about how well sex and gender considerations are integrated within Australia's health and medical education, but as a reasonable target, it would be expected that 85-90% of programs should include at least some reference to sex and gender. A recent review on representation of women and women's health in Australian medical curricula and clinical textbooks reported a dearth of content on women's health and sex and gender differences[30]. Likewise, a recent review of men's health, women's health, and gender content in a sample of Australian curricula selected from medicine, nursing, pharmacy, clinical psychology, and social work found only 11.9% of curricula referred to men's health, 37.5% of curricula referred to women's health (mostly in nursing and medicine curricula in the context of sexual and reproductive health), and gender was referred to in 41.8% of the curricula reviewed, mostly in public health and social work[31]. A comprehensive review of whether sex and gender considerations (defined as teaching that health conditions appear differently, disproportionately, and exclusively in people as a function of their sex and gender) are integrated across the breadth of Australian health and medical education is yet to be conducted.

1.1 Aims and Objectives.

The present report aimed to assess the extent and nature of sex and gender integration in Australian health and medical curricula in programs accredited under the National Registration and Accreditation Scheme, which is administered by the Australian Health Practitioner Regulation Agency (Ahpra). We quantified the extent of sex and gender integration in curricula for all 16 professions in the National Scheme. We then conducted qualitative analysis on the nature of sex and gender integration in seven key professions: Aboriginal and Torres Strait Islander Health, Medicine, Nursing, Midwifery, Pharmacy, Paramedicine, and Psychology. These areas were selected for closer inspection based on the frequency of interactions of patients and consumers with these areas of health practice, their relevance to priority populations including Indigenous Australians and LGBTQIA+ Australians, and because a significant proportion of the health and medical workforce is covered by these professions. They represent a broad spread of health services including primary care, specialist services, and allied health. We also sought to consult with stakeholders involved in the regulation and delivery of health and medical education (including Ahpra, National Boards, and university representatives) to identify the opportunities and barriers to improving sex and gender integration in health and medical curricula, and identify examples of best practice. We aimed to synthesise these quantitative and qualitative data to identify key gaps and opportunities to improve the curricula to ensure awareness and consideration of sex and gender differences in health conditions and treatment amongst Australian health and medical students.

2. Method

2.1 Search Strategy

A complete list of all accredited programs for all professions was accessed from the Ahpra website on 18th July 2025. A desktop search of university webpages manually located the individual curriculum ('unit') for each program and converted each to PDF. We attempted to locate all units for all programs for all professions, with the exception of Psychology, for which only postgraduate programs leading to general registration as a psychologist in a health-related discipline (clinical psychology, counselling psychology, health psychology) or endorsement in a specialist profession in a health-related field (e.g., clinical, neuropsychology, educational psychology) were included. All units from 92% of programs were located, and 8% of programs had some units that were inaccessible. This resulted in 8843 individual units from 575 programs across 16 professions being included in the review, ensuring that the dataset was strongly representative of the currently accredited programs in health and medical education across Australia.

2.2 Data Extraction

A list of key terms relevant to sex and gender was developed and underwent consultation for inclusiveness and accuracy with the UNSW Community of Practice for Trans, Queer, and Intersex, and the Guunu-maana (Heal) Aboriginal and Torres Strait Islander Health Program at The George Institute for Global Health. See Appendix 1 for the final list of key terms. Each unit was searched for the presence of key terms using an automated search algorithm. The number of "hits" (i.e., each instance in which a key term was detected in a unit) was automatically quantified for each unit of each program. The surrounding context of each hit (i.e., the sentence in which the key term appeared, as well as the prior and proceeding sentences) was also extracted for qualitative analysis.

2.3 Data analysis

2.3.1 *Quantitative analysis – frequency of sex and gender inclusion in curricula.* The number of times each sex and gender key term appeared was calculated for each unit of every program in each profession. The frequency of sex and gender key terms (the number of units containing reference to any term, as well the frequency of each individual term within units) was compared across the 16 professions. Frequency data enabled the assessment of the overall visibility of sex and gender-related language in units. High frequency might suggest stronger integration or emphasis, while low or absent references could indicate a lack of sex and gender consideration. However, frequency alone does not capture the context of sex and gender usage, and frequency data alone may over- or under-represent meaningful integration of sex and gender. For example, a unit may mention sex or gender several times but in superficial ways (e.g., the term "woman" is used throughout midwifery units in reference to the subject of care), or it may mention sex or gender only once but in a way that positions it as central to the learning outcomes of the course (e.g., a unit entitled "Health, Gender, and Society" implies critical engagement with gender as a social determinant of health). To develop a more nuanced understanding of the integration of sex and gender within curricula, the quantitative analysis was complemented with qualitative follow-up analysis.

2.3.2 *Qualitative analysis – context of sex and gender inclusion in curricula.* For the seven priority professions, the surrounding context of each appearance of a sex and gender term was qualitatively analysed to code each unit for the nature of sex and gender inclusion with regard to depth, nuance, and criticality. Where context could not be gauged from the surrounding sentences, the full text of the curricula was reviewed. The qualitative analysis enabled the significance of sex or gender-related incorporation into units to be ascertained. This included identifying the location of the key term within the unit (e.g., within learning objectives or outcomes, weekly topics or content outlines, assessment descriptions, required reading, or other sections such as general statements).

Attention was paid to elements including:

- Purpose of inclusion: Is sex or gender referenced in relation to health disparities, diversity, identity development, social structures, etc.?
- Framing: Is sex presented as a biological construct? Is gender presented as a social construct? Are sex and gender terms conflated?

- Intersectionality: Are mentions of sex or gender situated alongside race, class, sexuality, or disability?
- Curriculum positioning: Is sex or gender central to the unit's goals, or is it mentioned peripherally or only once?

Coding categories for units were developed via deductive (i.e., theory-driven) and inductive (i.e., data-driven) processes. Each unit within each program was coded, with many units meeting criteria for more than one code. A second-level thematic analysis was then conducted. For each code, the research team examined the justifications provided for its application in different units, which were then synthesised to generate higher-order themes, highlighting common patterns and gaps in sex and gender content across units.

2.4 Stakeholder engagement

The stakeholder environment for health and medical education in Australia encompasses regulatory bodies (top-down drivers for change) and universities, their students, and communities (bottom-up sources of expertise, influence and implementation).

The National Registration and Accreditation Scheme provides the overarching policy framework for regulating Australian health practitioners. It is administered by Ahpra in partnership with 15 National Boards representing 16 areas of health practice, and Accreditation Authorities. The National Boards register practitioners, set professional standards and policies, and approve the accreditation standards applied to university programs. The Accreditation Authorities are appointed by the Boards to undertake accreditation functions including developing accreditation standards, and accrediting programs of study.

Initial feedback from the education sector highlighted the importance of top-down levers for embedding sex and gender considerations in curricula. The project team therefore prioritised engagement with regulatory stakeholders positioned to influence reform of accreditation standards and health practitioner registration. These included Ahpra, and a representative sample from The National Boards, including Medicine, Nursing & Midwifery, and Psychology, selected as the largest professions covering the most frequent contact with the public.

University stakeholders included representatives from the UNSW Faculty of Medicine and Health Leadership, including the UNSW Medical Dean (who is also a Director on the Australian Medical Council and a Chair of the Australian Medical Council assessment committee). We also sought engagement with representatives from Monash University who have led 'best practice' sex and gender integration in curricula to provide case studies showing how integration can be achieved within existing structures.

Recent policy and practice developments around cultural safety for First Nations communities offered a case study to examine the institutional levers required to embed changes to accreditation standards across all professions. Given the impact of sex and gender on health is a cross-disciplinary issue, understanding the processes that led to cultural safety being embedded in accreditation standards may offer useful insights to analogous processes that could lead to better integration of sex and gender across all professions. Therefore, The Aboriginal and Torres Strait Islander Health Strategy Unit at Ahpra and the Guunu-maana team at The George Institute for Global Health were included in the stakeholder cohort. Table 1 provides the full stakeholder list.

Stakeholders were contacted via email, where available, and via LinkedIn, with an introductory message that outlined the project and invited them to participate in a 45–60 minute interview with members of the project team. Nine interviews were scheduled involving 15 stakeholders between August and October 2025, after which, a consultation session was held with the National Women's Health Advisory Council in November 2025 in which preliminary findings and draft opportunities for improvement were presented for feedback from the Council. Interview questions were derived from a desktop review of the stakeholder's organisational context, influence, and expertise, (see Appendix 2 for question examples), and explored the barriers and enablers to embedding sex and gender considerations within national university health curricula. The interview transcripts were summarised, analysed and coded into themes using an inductive approach.

Table 1. Stakeholder Engagement List

Stakeholder	Name and Position	Mechanism of Engagement
Ahpra	**Helen Townley** Interim Executive Director Health Workforce **Rachel Griffiths** Acting National Director Policy and Accreditation **Marina Fidanza** Policy & Project Manager, Accreditation and Assessment **Michael Carpenter** National Manager, Accreditation and Assessment	Video Meeting 2/9/25
Ahpra	**Jayde Fuller** National Director, Aboriginal & Torres Strait Islander Health	Video Meeting 10/9/25
Guunu-maana at The George Institute for Global Health	**Keziah Bennett-Brook** Program Director **Kate Hunter** Program Lead	Video Meeting 15/9/25
National Board – Medical **National Board - Psychology**	**Susan O'Dwyer** Chairperson (Medical) **Rachel Phillips** Chairperson (Psychology)	Video Meeting 1/10/25
National Board – Nursing and Midwifery	**Veronica Casey** Chairperson	Video Meeting 8/10/25
UNSW/ Australian Medical Council	Faculty of Medicine and Health Leadership including: **Cheryl Jones** Dean, Faculty of Medicine and Health, and Director, Australian Medical Council, and Executive Member, Australian Academy of Health and Medical Sciences	Video Meetings 11/8/25; 24/9/25
Monash University, Centre for Human Anatomy Education (CHAE)	**Michelle Lazarus** Director, Centre for Human Anatomy Education (CHAE), Monash University, Deputy Director, Monash Centre for Scholarship in Health Education (MCSHE) **Georgina Stephens** Senior Lecturer (Anatomy & Developmental Biology), Centre for Human Anatomy Education (CHAE)	Video Meeting 24/9/25
Monash University	**Jill Hennesey** Vice Chancellor's Professorial Fellow at Monash University	Video Meeting 16/9/25
National Women's Health Advisory Council	**Rebecca White** Assistant Minister and Council Members	In person – Melbourne and Video Meeting 10/11/25

3. Results

Box 2. Key Findings

1/2 programs (294 of the 575 programs reviewed) across the 16 professions contained at least one mention of sex or gender in any of the curricula.

1/4 medical programs, and 1 in 3 nursing programs, contained no mention of sex and gender in any of the curricula.

Only **1/10** curricula addressed sex or gender. Out of 8,843 curricula reviewed across 16 professions, just 840 included any mention of sex or gender.

Only **1/4** medical curricula contained any mention of sex or gender.

Less than **10%** of mentions referred to sex-related terms; gender predominated.

Where sex or gender was mentioned, it was often **descriptive** (such as in case studies, e.g., 55-year-old woman), or in reference to sexual and reproductive health.

∅ No curricula contained any mention of sex or gender differences in cardiovascular disease.

4 curricula discussed chronic pain in relation to sex and gender differences or women's health.

.

3.1 Quantitative Analysis

3.1.1. *Overall integration of sex and gender by profession.*

At a program level (i.e., considering sex and gender integration in standalone degrees or diplomas), just 51% of programs included any mention of sex or gender content in any of their units (Table 2; Figure 1). This means that 1 in 2 accredited health and medical degrees or diplomas in Australia contains no mention of sex or gender in any of the units taught in that degree or diploma. Aboriginal and Torres Strait Islander Health and midwifery were the only professions containing at least one mention or sex or gender in every accredited program offered in Australia. Strikingly, 1 in 4 medical programs, and 1 in 3 nursing programs, contained no mention of sex or gender in any of their units.

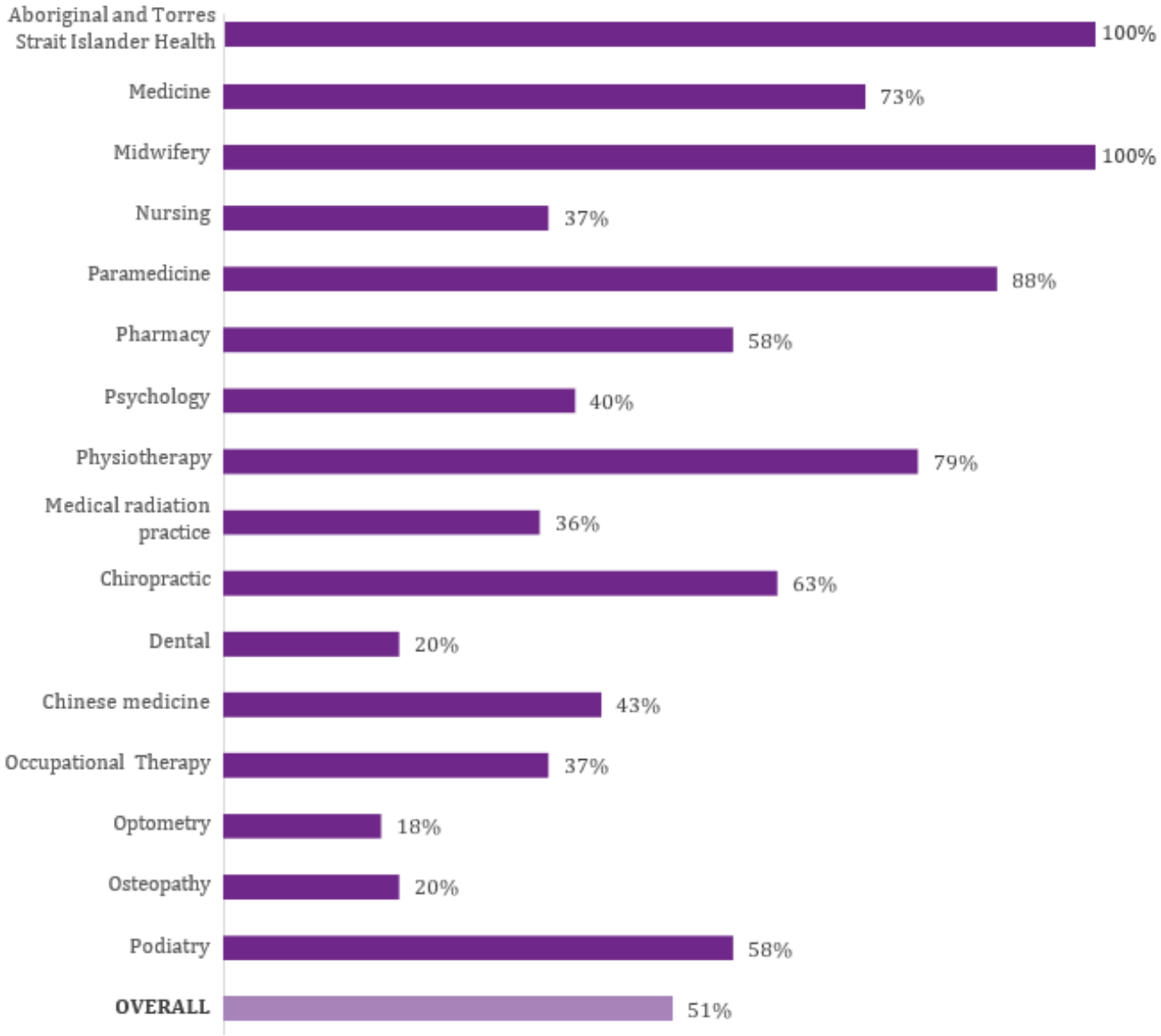
Table 2. Proportion of health and medical programs included in the National Registration and Accreditation Scheme that mentioned sex and gender in any unit

Profession	N. Accredited Programs in Australia#	N. Programs with Sex and Gender*	% Programs with Sex and Gender
Aboriginal and Torres Strait Islander	9	9	100
Medicine	56	41	73
Midwifery	36	36	100
Nursing	123	45	37
Paramedicine	24	21	88
Pharmacy	26	15	58
Psychology	97	39	40
Physiotherapy	48	38	79
Medical radiation practice	22	8	36
Chiropractic	8	5	63
Dental	56	11	20
Chinese medicine	7	3	43
Occupational Therapy	35	13	37
Optometry	11	2	18
Osteopathy	5	1	20
Podiatry	12	7	58
Overall	**575**	**294**	**51**

The number of programs (i.e., standalone degrees or diplomas) in each profession listed as accredited on the Ahpra website on 18th July 2025.

* Refers to the number of programs that had at least one unit (i.e., individual course/curricula) containing at least one mention of the sex and gender key search terms.

Figure 1. % Programs across each profession including any units that mention sex or gender key terms.



The number of programs (i.e., standalone degrees or diplomas) in each profession listed as accredited on the Ahpra website on 18th July 2025.

* Refers to the number of programs that had at least one unit (i.e., individual course/curricula) containing at least one mention of the sex and gender key search terms.

At the level of the individual curricula (units) taught across all programs, only 9.5% of units (1 in 10 units) contained at least one mention of sex or gender, a finding that was consistent across most professions (Table 3; Figure 2). The one exception was midwifery, where just under three quarters of units contained any key terms – although given midwifery is entirely focused on female-specific health, a greater frequency of key terms in midwifery units was expected, and indeed, the absence of any key terms in over a quarter of midwifery units is surprising. After Chinese medicine (where 3 of 6 units contained key terms), medicine had the third-highest frequency of sex and gender content, albeit at low rates, with only a quarter of units referring to the key terms, followed by Aboriginal and Torres Strait Islander Health, with 13.9% of units referring to the key terms.

The remaining professions had fewer than 10% of units containing any key terms, including professions where sex and gender differences are well established, including physiotherapy (9.5% of units), paramedicine (7.75% of units), psychology (3% of units), and pharmacy (3% of units).

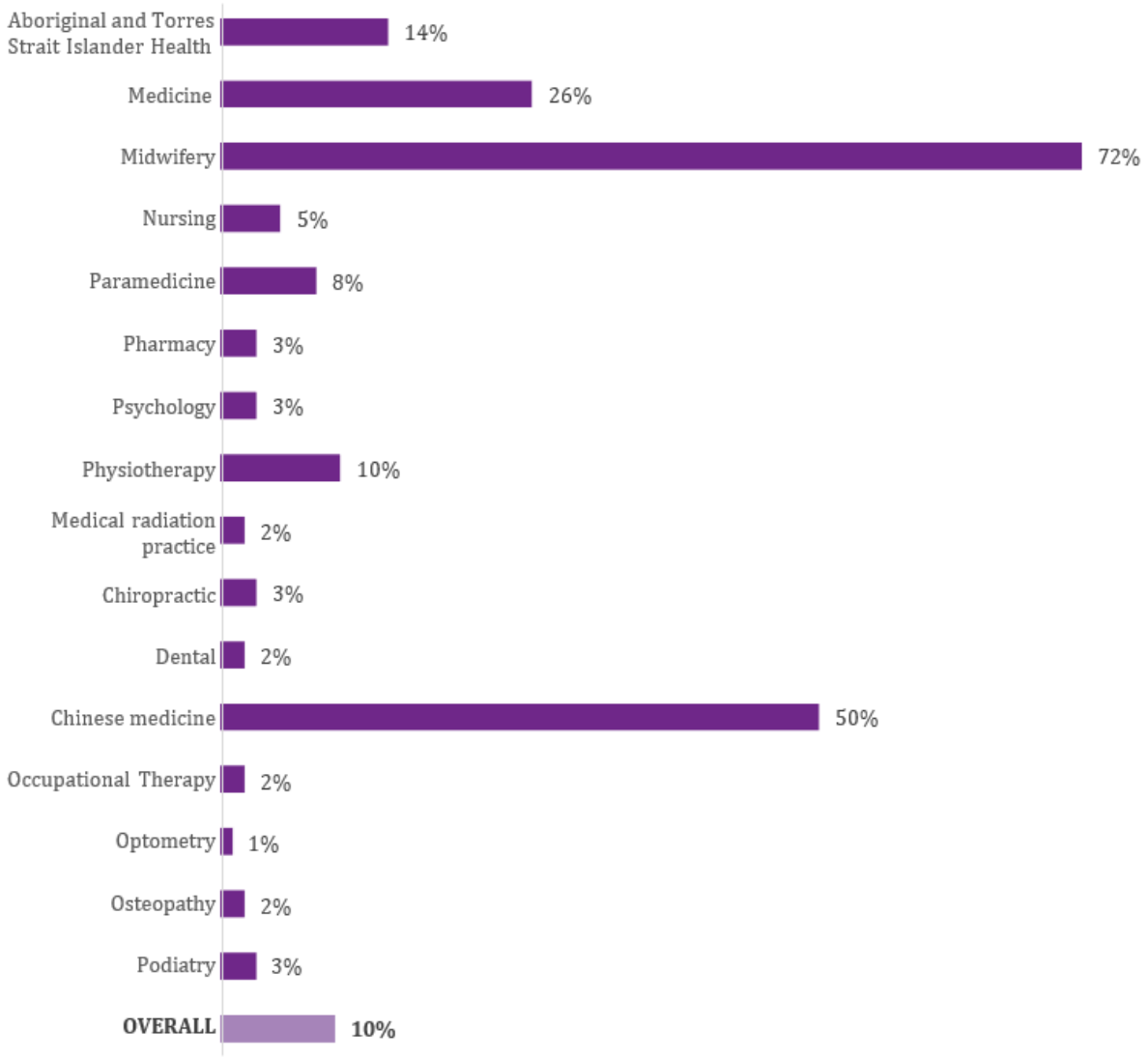
Table 3. Proportion of individual curricula (units) from all health and medical programs included in the National Registration and Accreditation Scheme that mention sex and gender

Profession	N. units#	N. units with Sex and Gender*	% unit with Sex and Gender
Aboriginal and Torres Strait Islander	366	51	14
Medicine	510	132	26
Midwifery	479	346	72
Nursing	1306	66	5
Paramedicine	542	42	8
Pharmacy	670	20	3
Psychology	1098	33	3
Physiotherapy	986	94	10
Medical radiation practice	472	9	2
Chiropractic	137	4	3
Dental	775	12	2
Chinese medicine	6	3	50
Occupational Therapy	884	16	2
Optometry	196	1	1
Osteopathy	99	2	2
Podiatry	317	9	3
Overall	8843	840	9.5

Refers to the number of individual units (i.e., curricula for individual courses) that comprise the different programs for each profession.

* Refers to the number of units that were identified to contain at least one mention of the sex and gender key search terms.

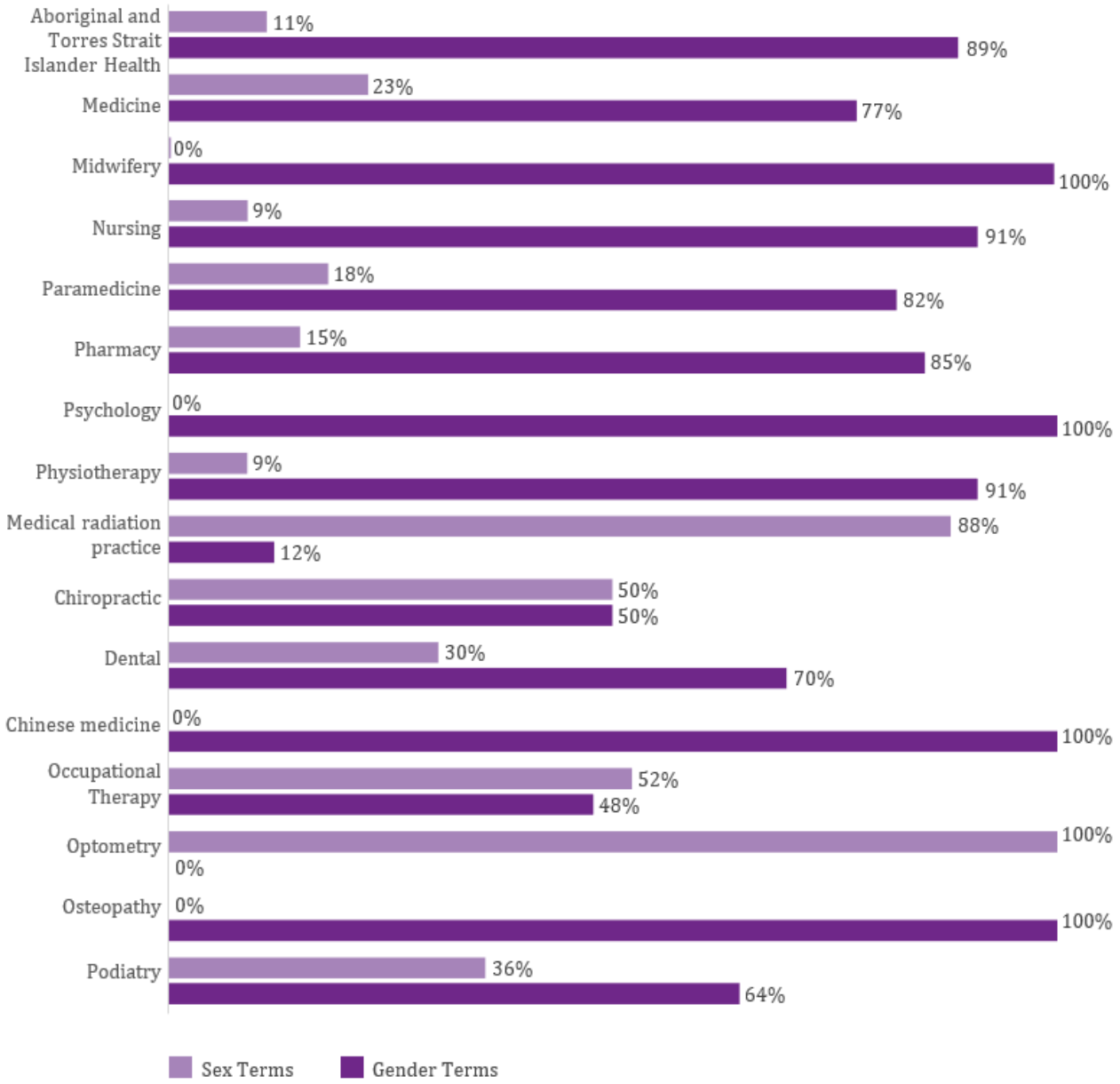
Figure 2. % units across all programs in each profession that mention sex or gender key terms.



3.1.2 *Comparison of sex versus gender related content in curricula.* Analysis of the 9.5% of units that did contain mention of sex or gender revealed an almost exclusive focus on gender-related terms (comprising 91% of all key terms detected) rather than sex-related terms (comprising just 9% of all key terms detected) (Figure 3). Even in medicine, only 22.6% of the key terms detected related to sex.

Psychology, Chinese medicine, and osteopathy contained no units with references to sex-related terms. Medical radiation practice, occupational therapy, and optometry were the only professions with greater references to sex than gender terms, but these professions had very low rates of key terms across the board (with sex or gender terms only appearing 50 times across units from these programs).

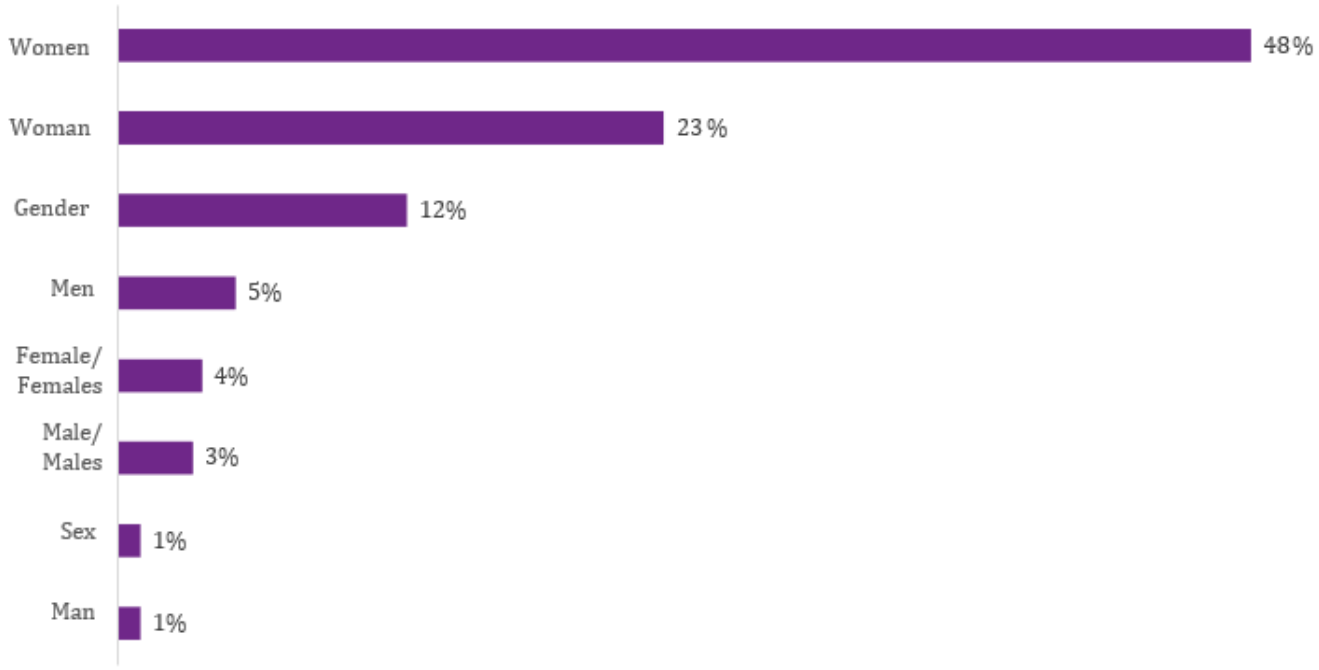
Figure 3. Comparison of mentions of sex-related terms versus gender-related terms in units.



Closer inspection of the frequency of the individual key terms detected in units across all professions (Figure 4) showed that "woman" and "women" were the most common key terms used (comprising 70.7% of all the detected sex and gender key terms), followed by "gender" (comprising 12.2% of detected key terms). By comparison, "female" comprised only 3.6% of detected key terms, and "men/man" or "male" comprised only 10% of all key terms detected.

The remaining 20 key terms comprised fewer than 5% of all terms detected, with "sex" comprising just 1.4% of detected terms. Indeed, the term "gender" was used 8.6 times more frequently than the term "sex" across all professions (and 5.6 times more frequently within units from medicine). Terms denoting gender diversity (including references to trans or non binary people) or terms denoting innate variations of sex characteristics appeared very rarely or not at all.

Figure 4. Percentage of individual key terms (out of all key terms detected) across all units. Note: the following terms comprised < 1% of mentions: trans/transgender, gender diverse, intersex, boy/s, queer, girl/s, non binary, gendered, gender fluid, sistergirl, brotherboy. The following terms were not mentioned at all: variations in/of sex characteristics, transexual, transmasculine, transfeminine, gender non-conforming.



3.2 Qualitative Analysis

3.2.1 *Contextual analysis of sex and gender content in health and medical curricula in specific professions.* All units from the seven priority professions that included key terms were further analysed qualitatively for the nature of sex and gender incorporation. Final coding categories for sex and gender are listed and described in Table 4. A heat map depicting how often sex or gender were mentioned in these different ways is shown in Figure 5.

OFFICIAL

Table 4. Coding categories for qualitative analysis of curricula

Code	Definition
Critical Engagement with Gender	Gender is critically engaged as a social construct, considering identity, social norms, power dynamics, and cultural context, and integrated into professional and educational practice.
Peripheral Mention of Gender	Gender is mentioned superficially or peripherally, typically as labels or demographic descriptors, without deeper engagement or integration into learning objectives or critical analysis.
Biological Essentialism (Gender)	Gender is framed primarily through biological differences, often equating sex and gender, with limited acknowledgment of diversity, social context, or identity complexity.
Inclusive Pedagogy and Practice (Gender)	Gender is incorporated into teaching and learning through inclusive, culturally responsive, and person-centred practices, emphasising equity and respect for diverse identities.
Intersectionality (Gender)	Gender is considered alongside intersecting social, cultural, and structural factors such as race, class, sexuality, and ability, highlighting complexity in shaping experiences and outcomes.
Central Integration of Gender	Gender is deeply embedded in learning objectives, content, and assessments, forming a foundational component of the curriculum.
Sex-Based Medical Relevance	Sex is applied in functional, medical, or clinical contexts to guide practice, screening, and education, emphasising biological and anatomical differences.
Sex and Gender Conflation	Gender terms are applied to sex-based categories, blurring the distinction between sex and gender.
Inclusive/nuanced sex-based terminology	The construct of sex is recognised with nuance, including recognising the different elements of sex. Recognition of intersex populations is made explicitly.
Central Integration of Sex	Sex is embedded as a central factor in learning objectives, assessments, and clinical protocols, guiding professional and educational outcomes.
Peripheral Mention of Sex	Sex is referenced incidentally or descriptively, without substantive integration into learning objectives, assessments, or professional application.

OFFICIAL

Figure 5. Heatmap depicting frequency of different usages of sex and gender mentions in curricula.



Across disciplines, a clear pattern emerged: Peripheral mentions of gender predominated, although disciplines centred on women's health or patient care, such as Midwifery and Medicine, demonstrated stronger and more integrated treatment of gender, whereas others, particularly Paramedicine and Nursing, addressed gender superficially or biologically. The vast majority of the (very few) mentions of sex-related terms were framed in terms of sex-based medical relevance to guide healthcare practices, clinical decision-making, and targeted education, typically in the areas of sexual and reproductive health, pregnancy support, sex-specific diseases, but also minimally evident in other areas such as nutrition. These references predominantly reflected a binary understanding of sex, and were often used as descriptors in case studies, some of which appeared to be incidental (e.g., 55-year-old woman). Inclusive, nuanced use of sex-related terms was evident occasionally. Sex and gender conflation also occurred occasionally, typically due to inappropriate use of gendered terms when sex-based terms would be more accurate. Sex was very rarely centrally integrated in curricula.

3.2.2 *Inclusion of sex and gender content in specific areas of health in medicine.* To further understand the context in which sex and gender content appears in health and medical curricula, we sought to identify if sex and gender terms were being used in relation to specific kinds of health conditions. For this purpose, we focused on the 132 units containing sex and gender key terms in medical programs (Figure 6). Key findings were as follows:

- The majority of sex and gender mentions (around 40%, in combination) were in reference to sexual, reproductive, or urological health, or "women's health".
- Just over a third of all sex and gender mentions were in reference to health conditions or areas of health that are relevant to all people, irrespective of sex or gender (e.g., rural health, mental health, occupational health). Notably, a large proportion of sex and gender terms in these instances were used to denote the subject of care in case study descriptions, e.g., "Sam is a 35-year-old woman who presents for her annual influenza vaccination", where the sex or gender of the patient appeared incidental to the content.
- One fifth of sex and gender mentions were contained in non-specific statements about diversity and inclusive practice without reference to any specific health condition.
- There were only two references to "men's health". This suggests that sex and gender is largely conceptualised in medicine as being relevant to female-specific health conditions rather than as a critical determinant of all health conditions in all people, including males.

Figure 6. Sex and gender mentions in medical curricula distributed according to the fields of medicine in which the mention occurred.



We also sought to determine whether sex and gender content appears alongside specific health conditions for which there are very well-established sex and gender differences.

To this end, we focused on **cardiovascular disease** and **pain**. Key findings were as follows:

- Only three units (of 89 units containing course content on cardiovascular health) included sex- and gender-related terms in reference to cardiovascular health, all of which were incidental descriptors in case studies (e.g., "Ellen is a 53-year-old woman requesting a repeat script for perindopril which she takes for hypertension").
- No units contained any mention of sex or gender differences in cardiovascular health.
- Eight units included sex- and gender-relevant terms in relation to pain management, of which three were incidental descriptors in case studies (two referring to men, one referring to a woman), two were in relation to sexual and reproductive health (including in gender diverse people), one was in relation to managing chronic pain in women's health, one unit explicitly stated that chronic pain is more prevalent in women than in men, and two units explicitly encouraged students to consider how their approach to treatment of a pain presentation may differ based on the gender of the patient.

3.3 Narrative Synthesis of Stakeholder Perspectives

3.3.1 *Regulation as the Key Driver of System-Level Change.* Stakeholders identified regulation as the main mechanism to drive consistent sex and gender integration into university curricula and standardise competencies across the health workforce. A top-down approach – through mandating changes to course accreditation and professional registration standards – was broadly viewed as the most effective way to consistently embed sex and gender into university education.

"There is a role for accreditors and regulators. The Councils are key."

Prof Cheryl Jones, UNSW Sydney

However, several stakeholders highlighted the need for foundational actions first, such as establishing a clear and shared conceptualisation of the competencies or behaviours that reform seeks to instill amongst health professionals.

"What does it look like? What does it mean? What does it look like in practice?"

Prof Veronica Casey, Nursing and Midwifery Board

The process of regulatory change was acknowledged as inherently slow and incremental, but that complementary actions could be simultaneously taken to improve the system. For example, Michael Carpenter, from Ahpra, noted that supporting guidelines can be issued by Ahpra that can establish clear expectations for education providers regarding sex and gender considerations. Moreover, Prof Cheryl Jones, Dean of Medicine and Health at UNSW suggested that including sex and gender in the University Strategy would facilitate change.

3.3.2 *Building Awareness and Capability Across the System.* Some stakeholders stressed the importance of ongoing research investment to grow the evidence base, to develop content for the curriculum.

"You've got to have that knowledge base to teach the knowledge base."

Dr Susan O'Dwyer, Medical Board of Australia

In addition, some highlighted the challenge of already crowded university curricula, with uncertainty around how sex and gender could be integrated into existing teaching.

"Universities and faculties face significant resource constraints… funding and availability of expert educators… hinder the timely integration of new content."

Rachel Phillips, Psychology Board of Australia

As highlighted in conversations with Monash University representatives, addressing these gaps will require targeted training for all actors in the health education and regulatory ecosystem, including regulatory institutions, universities, and educators, with leadership playing a pivotal role in fostering institutional readiness.

Regulatory stakeholders noted that sex and gender informed healthcare was an increasingly important issue raised by community members and consumers, and that there was a responsibility of regulators to respond to this and ensure curricula reflect contemporary societal expectations. Conceptualising reform in terms of public safety and healthcare quality was highlighted by many as a particularly effective approach.

3.3.3 *Supporting Consistent Interprofessional Collaboration and Education across the Career Continuum.* Continuous professional development (CPD) was emphasised as a key mechanism for ongoing learning, with Ahpra already engaged in CPD work related to cultural safety and family and domestic violence. Joint statements issued by Ahpra and the National Boards were also cited as a mechanism for interprofessional collaboration, which set out consistent expectations from regulators in areas beyond strictly clinical practice.

Stakeholders highlighted that sustainable change requires a career-long, multifaceted approach that extends beyond university education. The shared Code of Conduct, which describes the professional behaviour and conduct National Boards expect from registered health practitioners, was cited as one example of a potential platform to embed practical guidance for practitioners.

"There is so much more research to show better outcomes for patients or communities with interprofessional learning, team-based collaboration and accreditation collaboration."

Prof Veronica Casey, Nursing and Midwifery Board

3.3.4 *Case study of system-wide change: cultural safety.* This case study of cultural safety reform in Australia's National Registration and Accreditation Scheme shows how system-wide change can be driven through regulatory, legislative and Indigenous-led governance (Table 5). Sector pressure, political will, and national policies such as 'Eliminating Racism and Closing the Gap' led to a 2017–18 Cultural Safety Strategy Statement of Intent, signed by all National Board chairs, which created collective commitment and the Aboriginal and Torres Strait Islander Health Strategy Group to steer reform. A shared, Scheme-wide definition of cultural safety was then developed, followed by legislative changes requiring all regulated practitioners to deliver culturally safe, racism-free care, with codes of conduct and regulatory powers used as levers to hold practitioners to account.

The reform, aspects of which are still being developed, is deliberately whole-of-system and intergenerational: cultural safety is being embedded across the professional lifecycle, from student enrolment through to consultant years, including for internationally trained practitioners, with expectations flowing into curricula, accreditation and continuing professional development. There is a disruptive nature to this shift—challenging powerful groups, cost concerns and existing accrediting structures—by proposing an independent, Black-led accrediting body and insisting on Indigenous leadership in defining, teaching, and accrediting cultural safety. The work emphasises self-determination, intersectionality (especially for Indigenous women), and large-scale capacity building, while recognising that unlearning racism and transforming practice norms will require sustained cultural and systems change over generations.

Table 5. Key/Best Practice Features of Cultural Safety

Theme/Approach	Description
Shared, cross-scheme commitment	Change anchored in a Statement of Intent signed by all National Board chairs and aligned with national anti-racism and Closing the Gap policies.
Common, 'protected' definition	A single, Scheme-wide definition of cultural safety used consistently across professions to guide standards, education, and regulation.
Legislation as a core lever	Cultural safety embedded in law as an ongoing registration requirement, supported by codes of conduct and regulatory powers.
Whole-of-lifecycle approach	Expectations flow from student entry through postgraduate training and international practitioner pathways, not just CPD add-ons.
Indigenous-led governance	Aboriginal and Torres Strait Islander leadership (e.g., Health Strategy Group) and proposals for an independent, Black-led accrediting body.
Deliberate disruption of existing structures	Willingness to challenge powerful groups, funding arrangements, and traditional accreditation models to prioritise cultural safety.
Intersectional and trauma-informed lens	Explicit attention to compounded harms (e.g., for Indigenous women) and the need for trauma-informed regulatory practice.
Intergenerational systems change	Cultural safety framed as long-term work requiring unlearning racism, building capacity at scale, and normalising new practice norms over time.

3.3.5 *Examples of best practice.* Monash University's Centre of Human Anatomy provides a best practice model for embedding sex and gender considerations in health professional education (Table 6). Change was catalysed by LGBTQIA+ students who identified conflicting references of sex and gender content that made some students feel excluded or overlooked in anatomy teaching. The leadership team responded and made inclusivity core to its business – commencing with a comprehensive review of language and terminology across the curriculum, shifting toward precise, structure-based terms such as "person with a uterus and ovaries" and balanced referencing to include all bodies. The work was iterative, transparent, and underpinned by the principles of psychological safety, co-design, and responsiveness to evolving evidence and language.

This model also demonstrated how bottom-up advocacy and top-down support can create sustainable, system-level change. Monash embedded inclusive practice through staff training, paid community involvement, and 'living' guidance documents that evolved to reflect the contemporary understandings of sex and gender. Inclusivity was positioned as relevant to all students and all anatomical content and not restricted to pelvic or reproductive topics.

Table 6. Case Study: Key/Best Practice Features of Sex and Gender Integration at Monash University Centre for Human Anatomy

Theme/Approach	Description
Student-led problem identification	LGBTQIA+ students' lived experience is used as a catalyst to identify gaps and drive change.
Strong leadership	Inclusivity is framed as a non-negotiable priority, supported and modelled by leadership.
Curriculum-wide language reform	Shift to precise, structure-based terminology across the curriculum to ensure accuracy and inclusivity
Iterative 'living' curriculum	Curriculum is regularly reviewed and updated to reflect evolving evidence, terminology, and community expectations.
Co-designing with communities	Communities are involved in ongoing curriculum design, with paid participation to ensure meaningful engagement.
Staff capability building	Staff receive training on sex, gender, bias, cultural hegemony, and fostering psychological safety and permission to make mistakes.
Embedded, not siloed	Sex and gender considerations are integrated across all anatomy units rather than isolated in niche courses.
Systems lens	Reform connects student perspectives (bottom-up) with educator leadership (top-down) to enable sustainable systemic change.

3.3.6 Summary of stakeholder perspectives:

- The primary levers for change are through **regulation:** changing course accreditation and professional registration standards.
- Many support greater inclusion of sex and gender in curricula, but more work is needed to **clarify** what this might look like in practice, including the professional capabilities expected of graduates entering their healthcare professions.
- The effective integration of sex and gender into curricula will require stronger **cross-disciplinary coordination** than is currently in place.
- Changes to university curricula need to happen alongside other initiatives such as **training** for university staff, and **ongoing professional development** in the health workforce.
- Change to health and medical education needs to happen alongside greater emphasis on **sex and gender integration in research,** to grow the knowledge base.
- There is growing recognition of the role that health professional regulators need to play in understanding and responding to (changing) **community expectations.**
- **Mobilising students** to engage with receptive leaders was viewed as an effective means to drive curricula change via bottom-up mechanisms.

4. Limitations of the Review

The findings from this report should be interpreted alongside consideration of its limitations. Course materials beyond curricula (including lecture slides, readings, and textbooks) were not included in the review. It is therefore possible that sex- and gender-related content may be included in these materials for units that did not mention it in the curricula, and that the depth and relevance of sex- and gender-content in these materials may be greater than what was conveyed by the information in the curricula. Relatedly, the review did not encompass specialist medical college curricula or continuing professional development modules, which would assess the extent to which sex and gender considerations are taught as part of advanced education. Nevertheless, the scope of the present review enabled assessment of the extent to which sex and gender considerations are taught as part of foundational education.

Stakeholder engagement was primarily focused on regulators and academic leadership who are positioned to exert top-down influences over course content; in this regard, additional engagement with representatives from the Accreditation Authorities would be valuable, as well as all National Boards, and other professional bodies. Additional work is required to understand the perspectives of students and educators, as well as the general public. Nevertheless, the strong public engagement with recent media on sex and gender (including the medical misogyny investigation by The Age and The Sydney Morning Herald, and the Victorian Inquiry into Women's Pain) suggests that sex and gender integration in healthcare and medical education of healthcare professionals is a priority for the public.

5. Interpretation

The finding that 1 in 2 programs contain no mention of sex or gender keywords in any of their curricula, and that only 1 in 10 curricula across all programs mentions sex or gender keywords, reveals that little or no attention has been given to meaningful, evidence-based consideration of how health conditions present differently, disproportionately, or exclusively in people as a function of their sex and gender in Australian health and medical teaching in programs accredited by the National Scheme. This is substantially lower than the expectation that 85-90% of programs should have appropriate integration of sex and gender. This demonstrates that the one-size-fits-all (i.e., sex and gender-neutral) medical model continues to dominate health and medical teaching and practice in Australia, in direct contradiction to the tenets of personalised healthcare.

Where sex and gender are included in programs, the overwhelming emphasis is on gender in patient descriptions (e.g., a 55-year-old woman). By comparison, consideration of the importance of sex as a determinant of health is almost negligible.

Stakeholders concurred that sex and gender should be core components of health and medical teaching but had differing perspectives on what constitutes minimal and acceptable standards. Barriers raised included the lack of a consistent definition or template for sex and gender integration, and many agreed that changes to accreditation standards would help drive consistent and meaningful improvement to curricula in this regard.

6. Opportunities for Better Integration of Sex and Gender in Health and Medical Education

Sex and gender issues are complex and evolving, with recent legal and regulatory developments highlighting the sensitivity of this area. Responsibility for health and medical education is shared between the Commonwealth government and state and territory governments.

What is taught in health and medical programs is shaped by a range of interconnected factors, including standards set by regulatory bodies, clinical practice guidelines, the strength of the evidence base, and the capability and awareness of educators. Improving the integration of sex and gender considerations is therefore likely to require a multi-pronged and staged approach. Sequencing of any changes would be important to support continuity and consistency, and to ensure reforms are underpinned by a robust and evolving evidence base.

Potential opportunities arising from the review are suggested below to facilitate better integration of sex and gender considerations. Opportunities are organised according to whether they could be achieved in the short or long term, noting multiple stakeholders and system influences contribute to health and medical education and a detailed implementation plan would be required to implement. It is noted that these opportunities do not take into consideration factors such as resourcing, duration and accountability.

The suggested opportunities address eight broad categories:

- governance arrangements
- shared understanding of good practice
- practice guidelines and safety and quality standards
- evidence base and research
- awareness raising of sex and gender gaps in health and medical education
- codes, standards and competencies
- engagement and capacity building
- accountability.

Shorter term opportunities:

1. Work with an independent group of experts to steer, advise, track and record progress on actions taken to advance appropriate integration of sex and gender in health and medical curricula.

2. Develop a shared understanding of what good practice looks like in relation to sex and gender integration in health and medical curricula, through expert and community consensus (i.e., an agreed definition of good practice). Note that this is distinct from the definitions of sex and gender, which are aligned with those of the ABS Standard.

3. Develop guidance for best practice integration of sex and gender considerations in health and medical curricula.

4. Introduce policy within the *NHMRC's Procedures and Requirements for Meeting the Standards for Clinical Practice Guidelines* that all clinical practice guidelines endorsed by the NHMRC include a standalone section on sex and gender considerations.

5. Embed sex and gender into nationally consistent standards for safe and quality care.

6. Building on the MRFF and NHMRC Statement on Sex, Gender, Variations of Sex Characteristics and Sexual Orientation, have sex and gender considerations a mandatory requirement for all government-funded grants.

7. Undertake a priority research funding round into the leading causes of disease burden that present exclusively, differently, or disproportionately in people as a function of their sex and gender.

8. Present individualised results and feedback from this review to key stakeholders (e.g. universities and National Boards). Combine feedback to these groups with educational materials about sex and gender influences on health (tailored according to profession), and best practice principles to improve sex and gender integration in teaching curricula (see Appendix 3 for an example of a standardised integration template using heart disease as an example).

9. The main findings from this report should be published in peer-reviewed journals and disseminated to the public via a communication strategy.

Medium to longer term opportunities:

10. Once an agreed understanding of good practice is developed, set an expectation for sex and gender literacy in professional behaviour and code of conduct for registered health professionals.

11. Analyse sex and gender inclusion in existing professional competencies or accreditation and professional registration standards. Design new competencies or standards to reflect sex and gender integration where required.

12. To unify and accelerate the work outlined above, encourage National Boards to work with Accreditation Authorities to integrate sex and gender in health and medical curricula, after an agreed understanding of good practice in this area has been established.

13. Identify additional levers and avenues to integrate sex and gender considerations in health and medical curricula.

14. Collaborate with peak bodies to facilitate the development of prototypes for curricula that incorporate sex and gender that can be used as models for other areas (see Appendix 3 for an example from cardiovascular health).

15. Consider convening an annual summit of all change agents to clearly define expectations and timelines, celebrate quick wins, and share progress.

16. Repeat this audit in 3-5 years to assess the effectiveness of actions taken and monitor improvement.

7. Policy Options Analysis

Table 7. Policy options analysis for the opportunities arising from this review

Policy Options	Benefits	Risk Assessment
1. Maintain Existing Practice (Status Quo)	No additional burden on universities or regulators. Universities can adapt curricula to improve sex and gender integration at their choosing. **Expected outcomes:** Sporadic improvement in sex and gender integration may occur as awareness is raised in overlapping sectors (e.g., research funders).	**Risk assessment: High.** With status quo, healthcare practice unlikely to improve. Persisting gaps in diagnostic accuracy, patient safety, and treatment outcomes. Reputational risk of inaction. University sector and healthcare fall behind community expectations. Continued inconsistency across universities. Widespread uptake unlikely, any progress likely to be slow and uneven.
2. National Boards to work with Accreditation Authorities to integrate sex and gender in health and medical curricula*	Cross-discipline reform of accreditation competencies or standards to integrate sex and gender in health and medical teaching. Standardised integration of sex and gender considerations across curricula. **Expected outcomes**: The most rapid route to curricula reform (once a shared understanding of best practice has been established) and the most rapid route to improvements in healthcare quality (despite the time lag to issuing new competencies or standards).	**Risk Assessment: Moderate**. Long time lag to develop new standards. Potential pushback from Accreditation Authorities, National Boards, and universities. Potential need for additional resources to build capacity to appropriately adapt to new standards.
3. Targeted activities to promote voluntary uptake of sex and gender integration in curricula*	Universities can adapt curricula to improve sex and gender integration at their choosing. **Expected outcomes:** Some improvement in sex and gender integration likely to occur as awareness is raised but widespread and consistent uptake will not be achieved.	**Risk assessment: Moderate**. This approach has low accountability, as there are no accreditation standards or accountabilities in place to mandate the teaching of sex and gender considerations in curricula. Quality and extent of sex and gender integration likely to be inconsistent across universities and professions. Widespread uptake unlikely, and over a longer timeframe, in the absence of regulatory pressures. Impact on healthcare quality likely to be smaller and over a longer timeframe than that which could be achieved through regulation.

*These two options are not mutually exclusive and can be deployed simultaneously

8. References

1. Australian Bureau of Statistics. Standard for Sex, Gender, Variations of Sex Characteristics and Sexual Orientation Variables. ABS, 2020.
2. Naghipour A, Becher E, Gemander M, Oertelt-Prigione S. Designing clinical practice guidelines for equitable, inclusive, and contextualised care. BMJ. 2025 Oct 10;391:e085684. doi: 10.1136/ bmj-2025-085684.
3. Kirkman M, Honda T, McDonald SJ, Green S, Walker-Bone K, Winship I, Fisher JRW. Consideration of sex and gender: an analysis of Australian clinical guidelines. Med J Aust. 2025 Mar 3;222(4):205-209. doi: 10.5694/mja2.52602.
4. Patwardhan V, Gil GF, Arrieta A, Cagney J, DeGraw E, Herbert ME, Khalil M, Mullany EC, O'Connell EM, Spencer CN, Stein C, Valikhanova A, Gakidou E, Flor LS. Differences across the lifespan between females and males in the top 20 causes of disease burden globally: a systematic analysis of the Global Burden of Disease Study 2021. Lancet Public Health. 2024 May;9(5):e282-e294. doi: 10.1016/S2468-2667(24)00053-7.
5. Carcel C, Woodward M, Wang X, Bushnell C, Sandset EC. Sex matters in stroke: A review of recent evidence on the differences between women and men. Front Neuroendocrinol. 2020 Oct;59:100870. doi: 10.1016/j. yfrne.2020.100870.
6. Jenkins CR, Boulet LP, Lavoie KL, Raherison-Semjen C, Singh D. Personalized Treatment of Asthma: The Importance of Sex and Gender Differences. J Allergy Clin Immunol Pract. 2022 Apr;10(4):963-971.e3. doi: 10.1016/j. jaip.2022.02.002.
7. Macdonald, J.A., Mansour, K.A, Wynter, K., Francis, L. M., Rogers, A., Angeles, M.R., Pennell, M., Biden, E., Harrison, T., & Smith, I. (2022). Men's and Boys' Barriers to Health System Access. A Literature Review. Prepared for the Australian Government Department of Health and Aged Care, Canberra.
8. Eastwood KJ, Shi A, Howell S, Buttery A, Bray JE. Sex differences in the intention and decision to use emergency medical services for acute coronary syndrome in Australia: a retrospective study. Emerg Med J. 2025 Jan 21;42(2):108-116. doi: 10.1136/emermed-2023-213800.
9. Beery AK, Zucker I. Sex bias in neuroscience and biomedical research. Neurosci Biobehav Rev. 2011 Jan;35(3):565-72. doi: 10.1016/j. neubiorev.2010.07.002. Epub 2010 Jul 8. PMID: 20620164; PMCID: PMC3008499.
10. Yoon DY, Mansukhani NA, Stubbs VC, Helenowski IB, Woodruff TK, Kibbe MR. Sex bias exists in basic science and translational surgical research. Surgery. 2014 Sep;156(3):508-16. doi: 10.1016/j.surg.2014.07.001.
11. Woitowich NC, Beery A, Woodruff T. A 10-year follow-up study of sex inclusion in the biological sciences. Elife. 2020 Jun 9;9:e56344. doi: 10.7554/eLife.56344.
12. Barlek MH, Rouan JR, Wyatt TG, Helenowski I, Kibbe MR. The Persistence of Sex Bias in High-Impact Clinical Research. J Surg Res. 2022 Oct;278:364-374. doi: 10.1016/j.jss.2022.04.077.
13. Feldman S, Ammar W, Lo K, Trepman E, van Zuylen M, Etzioni O. Quantifying Sex Bias in Clinical Studies at Scale With Automated Data Extraction. JAMA Netw Open. 2019 Jul 3;2(7):e196700. doi: 10.1001/ jamanetworkopen.2019.6700.
14. Haupt S, Carcel C, Norton R. Neglecting sex and gender in research is a public-health risk. Nature. 2024 May;629(8012):527-530. doi: 10.1038/d41586-024-01372-2.
15. Westergaard D, Moseley P, Sørup FKH, Baldi P, Brunak S. Population-wide analysis of differences in disease progression patterns in men and women. Nat Commun. 2019 Feb 8;10(1):666. doi: 10.1038/s41467-019-08475-9.
16. Haupt S, Caramia F, Klein SL, Rubin JB, Haupt Y. Sex disparities matter in cancer development and therapy. Nat Rev Cancer. 2021 Jun;21(6):393-407. doi: 10.1038/s41568-021-00348-y.
17. Rudd KE, Johnson SC, Agesa KM, Shackelford KA, Tsoi D, Kievlan DR, Colombara DV, Ikuta KS, Kissoon N, Finfer S, Fleischmann-Struzek C, Machado FR, Reinhart KK, Rowan K, Seymour CW, Watson RS, West TE, Marinho F, Hay SI, Lozano R, Lopez AD, Angus DC, Murray CJL, Naghavi M. Global, regional, and national sepsis incidence and mortality, 1990-2017: analysis

for the Global Burden of Disease Study. Lancet. 2020 Jan 18;395(10219):200-211. doi: 10.1016/S0140-6736(19)32989-7.

18. Crimmins EM, Shim H, Zhang YS, Kim JK. Differences between Men and Women in Mortality and the Health Dimensions of the Morbidity Process. Clin Chem. 2019 Jan;65(1):135-145. doi: 10.1373/clinchem.2018.288332.
19. Luo Q, Steinberg J, Kahn C, Caruana M, Grogan PB, Page A, Ivers R, Banks E, O'Connell DL, Canfell K. Trends and projections of cause-specific premature mortality in Australia to 2044: a statistical modelling study. Lancet Reg Health West Pac. 2024 Jan 5;43:100987. doi: 10.1016/j.lanwpc.2023.100987.
20. Jenkinson, B., Dobson, A., Hockey, R., Martin, S., Ferguson, M., & Mishra, G. D. (2025). #EndGenderBias Survey Detailed Report. Australian Government Department of Health and Aged Care.
21. Guzikevits M, Gordon-Hecker T, Rekhtman D, Salameh S, Israel S, Shayo M, Gozal D, Perry A, Gileles-Hillel A, Choshen-Hillel S. Sex bias in pain management decisions. Proc Natl Acad Sci U S A. 2024 Aug 13;121(33):e2401331121. doi: 10.1073/pnas.2401331121.
22. De Corte P, Klinghardt M, von Stockum S, Heinemann K. Time to Diagnose Endometriosis: Current Status, Challenges and Regional Characteristics-A Systematic Literature Review. BJOG. 2025 Jan;132(2):118-130. doi: 10.1111/1471-0528.17973.
23. Bretherton I, Thrower E, Zwickl S, Wong A, Chetcuti D, Grossmann M, Zajac JD, Cheung AS. The Health and Well-Being of Transgender Australians: A National Community Survey. LGBT Health. 2021 Jan;8(1):42-49. doi: 10.1089/lgbt.2020.0178.
24. Jones T, Hart B, Carpenter M, et al. Intersex: stories and statistics from Australia. Canberra: Open Book Publishers, 2016.
25. Graham BM, Tannenbaum C, Witt A, Bennett-Brook K, Haupt S, Womersley K, Lamon S, Norton R. The power-and complexity-of policy to drive advances in women's health. Sci Adv. 2025 Mar 7;11(10):eadt0576. doi: 10.1126/sciadv. adt0576.
26. National Health and Medical Research Council. Statement on sex, gender, variations of sex characteristics and sexual orientation in health and medical research. Canberra: NHMRC, 2024.
27. White J, Tannenbaum C, Klinge I, Schiebinger L, Clayton J. The Integration of Sex and Gender Considerations Into Biomedical Research: Lessons From International Funding Agencies. J Clin Endocrinol Metab. 2021 Sep 27;106(10):3034-3048. doi: 10.1210/clinem/dgab434.
28. Anderson NN, Gagliardi AR. Medical student exposure to women's health concepts and practices: a content analysis of curriculum at Canadian medical schools. BMC Med Educ. 2021 Aug 18;21(1):435. doi: 10.1186/s12909-021-02873-8.
29. Jenkins MR, Herrmann A, Tashjian A, Ramineni T, Ramakrishnan R, Raef D, Rokas T, Shatzer J. Sex and gender in medical education: a national student survey. Biol Sex Differ. 2016 Oct 14;7(Suppl 1):45. doi: 10.1186/s13293-016-0094-6.
30. Merone L, Tsey K, Russell D, Nagle C. Representation of Women and Women's Health in Australian Medical School Course Outlines, Curriculum Requirements, and Selected Core Clinical Textbooks. Womens Health Rep (New Rochelle). 2024 Apr 5;5(1):276-285. doi: 10.1089/whr.2023.0037.
31. Seidler ZE, Hall N, Macdonald JA, Oliffe JL, Smith JA, von Saldern SM, Wittert GW, McGee MA, Sheldrake ML (2023). Men's Health Education Project. Final Report. Prepared for the Australian Government Department of Health, Canberra.

Appendices

Appendix 1. Key sex and gender search terms

Key terms for Sex

- Sex
- Male or males
- Female or females

Key terms for Gender

- Gender
- Gendered
- Man
- Men
- Woman
- Women
- Girl or girls
- Boy or boys
- Transgender
- Transexual
- Trans or trans*
- Transmasculine
- Transfeminine
- Nonbinary or non-binary
- Gender non-conforming or gender nonconforming
- Gender fluid
- Gender diverse
- Queer
- Sistergirl
- Brotherboy

Key terms for innate variations of sex characteristics

- Intersex
- 'variations in sex characteristics'
- 'variations of sex characteristics'
- 'innate variations of sex characteristics'

Appendix 2. Sample questions presented to stakeholders

Current practice

1. How are sex and gender considered in the national regulatory framework for developing and accrediting medical curricula?
2. Are there mechanisms in place to review how sex and gender data are incorporated into health and medical education?
3. How does the process of amending course accreditation standards differ from changing professional registration standards?
4. What are the methods of ensuring national consistency?

Barriers and challenges

5. What do you see as the primary barriers to embedding sex and gender considerations into core and continuing education?
6. Are there legislative or jurisdictional limitations to consider when changing curricula?
7. Does the National Law need to be amended to bring in new accreditation standards?
8. What are the short, medium and long-term factors to consider when implementing a shift in medical accreditation or registration standards?

Opportunities and levers for change

1. What existing mechanisms (e.g., accreditation, CPD requirements, standards reviews) could be used to support inclusion of sex and gender literacy in health and medical education?
2. How could national boards or accreditation authorities be supported to lead and sustain the change in this space?
3. What was the timeline and process of embedding Aboriginal and Torres Strait Islander cultural safety into medical education?
4. Was there a clear catalyst that led to the creation of Ahpra's Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy 2020-2025?

OFFICIAL

Appendix 3. Example of a standard sex and gender integration template to be used in medical school curricula. For illustrative purposes, cardiology is used as a case study.

Unit sections	Minimal standard of sex and gender integration	Cardiology as a case study
Epidemiology	Sex or gender-related differences in risk, incidence, prevalence or progression of the condition or disease being studied.	Heart attacks (AMI) are more common in men at a young age; however young women with heart attacks are twice as likely to die during hospitalization. Gender, independent of sex, is associated with poor outcomes after heart attacks in younger patients.
Patient identification and anatomy	Identify patient sex assigned at birth and gender. Size of anatomy and type of reproductive organs may be relevant.	Ask how patient wishes to be addressed and if they have a loved one who can be contacted. Heart size and vasculature smaller in females (may be relevant for stent placement).
Normal physiology	Describe sex-related differences in normal physiology.	Females have longer Q-T intervals on EKG than males and thus may be more susceptible to drug-induced arrythmias caused by long Q-T syndrome.
Pathophysiology	Describe sex-related differences in pathophysiology	Females more likely to have coronary microvascular disease and vasospasm than males.
Symptom presentation	Describe sex or gender-related differences in symptom presentation.	Men more likely to have substernal squeezing chest pain when having a heart attack. Women less likely to have chest pain, more likely to have breathlessness, fatigue, sweating, dizziness.
Diagnostic tests/ thresholds	Recognize potential limitations in diagnostic testing; Note any sex-specific thresholds for biomarkers or laboratory value references.	Women less likely to show ST-elevation on EKG during acute heart attacks. Exercise testing results are more variable in women. Sex-specific thresholds exist for troponin, hemotocrit/hemoglobin, cholesterol.
Treatment/medication dosing	Report sex -related differences in drug metabolism (pharmacokinetics and pharmacodynamics), treatment safety, toxicity and effectiveness. Note gender-related impacts on access to care and treatment.	Women less likely to be offered standard-of-care treatment after a heart attack and ensuing heart failure. Higher risk of bleeding in women prescribed oral anticoagulant medication. Women less likely to be offered cardiac rehabilitation than men.
Other forms of bias	Common diagnostic errors or biases.	Longer door-to-balloon times (cardiac catheterization and stenting) in women with heart attack, which can be reduced when bias is removed from diagnostic protocols

Adapted from McGregor et al. Sex as a biological variable in emergency medicine research and clinical practice: a brief narrative review. West J Emerg Med 2017;18(6):1077-108

OFFICIAL