

**Evidence Profile (Quantitative)**

**Recommendation Question: Should continuing professional development (short-term education) for nurses and the interprofessional team regarding 2SLGBTQI+ health be recommended?**

Population: Nurses and the interprofessional team

Intervention: Continuing professional development (short term education) regarding 2SLGBTQI+ health

Comparator: No professional development/short-term education

Outcomes: Changes in practice [Critical], Knowledge [Critical], Access to care for patients [Critical; not found within this literature], Patient experience [Critical; not found within this literature], Existence of mandatory professional development and/or training within organizations [Critical; not found within this literature]

Recommendation 5.1: The expert panel recommends that health service organizations provide 2SLGBTQI+ affirming continuing education for all health providers.

Setting: All health care settings.

Bibliography: 11831, 11843, 11884, 11922, 12009, 12027, 12029, 12217, 12869, 12915, 13122, 13483, 13484, 13642, 13977, 14817, 15838, 12314, 12264, 1229, 94, 128, 151, 154, 339, 655, 695, 1532, 1642, 4844, 4902

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Continuing Professional Development	No Continuing Professional Development	Reported effects/outcomes		
<p><b>Change in practice</b> (assessed with: <i>Lesbian, Gay and Bisexual Affirmative Counseling Self-Efficacy Inventory [LGB-CSI]</i>, <i>willingness to provide gender affirming care</i>, <i>Attitudes Towards the Inclusion of Transgender Women in Domestic Violence Services Scale (ATITWDVSS)</i>, <i>comfort and confidence working with transgender women [Likert scale]</i>, <i>homoprejudice scale</i>, <i>provider attitudes</i>, <i>Peer Advocate Self-Efficacy Inventory</i>, <i>self-efficacy [Likert scale]</i> <i>The Sexual Orientation Provider Competency Scale</i>, <i>Contemplation ladder [adapted]</i>),</p> <p><b>Follow-up:</b> <i>immediately post intervention, 2 weeks post intervention, 3 months post intervention, 6 months post intervention, 12 months post intervention</i></p>													
1 <sup>a</sup>	Systematic review of non-RCTs  [most with pre/post design]	Serious <sup>b</sup>	Serious <sup>c</sup>	Not serious	Not Serious	None	1229: 8 USA, 1 Canada	1229: Various interventions used to educate the health and social care workforce on the experiences and needs of LGBT+ older adults.  <b>Additional studies identified:</b>  11884: 7.5 hour workshop for mental health professionals	1229: Interventions helped participants reflect on their biases, attitudes and values and increased positive attitudes towards older LGBT+ adults. There was some evidence of increased empathy for LGBT+ older adults as well as behaviour intentions to use knowledge or skills gained within practice.  11884: N=96	No Control	1229: Overall, results were positive for change in bias, attitudes and values across studies but were mixed for empathy and intent to use knowledge or skill in practice.  Additionally, 17 quantitative studies reported a positive change in practice from pre to post intervention and one study reported no impact on change in practice.  11884: All outcome variables (advocacy, awareness, assessment, and relationship	⊕○○○  <b>Very Low</b>	1229: Jurcek et al, 2020  11884: Pepping, Lyons &

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							11884: Australia	focused on LGBT health and affirmation.	<p>Mean LGB-CSI: Advocacy (LGB) <i>pre-training</i>: 16.12 (7.60) <i>post-training</i>: 21.76 (7.85) <math>p &lt; 0.001</math> effect size 0.73</p> <p>Awareness (LGB) <i>pre-training</i>: 19.28 (5.47) <i>post-training</i>: 23.00 (4.41) <math>P &lt; 0.001</math> effect size 0.75</p> <p>Assessment (LGB) <i>pre-training</i>: 12.55 (4.44) <i>post-training</i>: 15.70 (4.44) <math>p &lt; 0.001</math> effect size: 0.71</p> <p>Relationship (LGB) <i>pre-training</i>: 10.73 (3.50) <i>post-training</i>: 12.64 (3.42) <math>p &lt; 0.001</math> effect size: 0.55</p> <p>Advocacy (T) <i>pre-training</i>: 14.23 (7.42) <i>post-training</i>: 19.74 (8.49) <math>P &lt; 0.001</math> effect size 0.69</p> <p>Awareness (T) <i>pre-training</i>: 18.57 (5.70) <i>post-training</i>: 22.92 (4.77) <math>p &lt; 0.001</math> effect size 0.83</p> <p>Assessment (T) <i>pre-training</i>: 1.78 (4.57) <i>post-training</i>: 15.46 (4.57) <math>p &lt; 0.001</math> effect size 0.81</p> <p>Relationship (T) <i>pre-training</i>: 9.51 (3.62) <i>post-</i></p>		subcomponents) demonstrated improvements from pre-to post-training at $p < 0.001$ using the LGB-CSI and an adapted version for transgender people.		Morris, 2018

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							11922: USA	11922: 90 minute training on transgender health and cultural competency for correctional system health staff.	training 12.05 (3.44) p<0.001, effect size 0.72  11922: N= 34  Mean willingness to provide care to transgender patients:  Pre-training: 4.20 (0.61) Post-training: 4.62 (0.49) p<0.001, 3 month: 4.57 (0.50) p<0.001		11922: Mean willingness to provide gender-affirming care increased from baseline to immediately post-intervention and from baseline to 3-months post-intervention		11922: Hughto et al., 2017
							12009: Australia	12009: Workshop focused on transgender women and domestic abuse, delivered through an anti-oppressive framework.	12009: N= 25  Mean attitudes towards the inclusion of transgender women in domestic violence services: pre-training: 73.2 (7.92) post-training: 87.8 (7.73), p = 0.01, effect size = 1.86)  Mean comfort in working with transgender women: pre-training: 24.8 (1.34), post-training: 27.4		12009: The study reported more positive attitudes towards the inclusion of transgender women in domestic violence services after attending the workshop as compared with before attending the workshop as well as greater comfort and confidence working with transgender women after the workshop		12009: Riggs, Fraser, Taylor, et al., 2016

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							12027: Bangladesh	12027: 2 anti-stigma sessions delivered through a larger "Link up" program focused on HIV and reproductive health.	(1.21) p =0.01, effect size = 1.76  Mean confidence in working with transgender women: <i>pre-training</i> : 13.7 (1.98) <i>post-training</i> : 18.2, (1.01) p=0.01, effect size = 1.95  12027: N=300  Drivers of stigma and discrimination:  Reports that facility has policies to protect PLHIV from Discrimination: Baseline: 29.0% midterm: 38.0% endline: 44.0 p <.001  Believes will be disciplined if policies to protect PLHIV are not followed: baseline: 43.7% midterm: 54.7% endline: 63.7% p <.001  Agree would never test a patient for HIV without the patient's informed consent:		12027: Positive improvements in some drivers of stigma and discrimination at both follow-up times (six and twelve months) although this trend is more significant at the six months follow-up than twelve months.		12027: Geibel et al., 2017

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							12217: South Africa	12217: Health4Men MSM competency training comprised of 8 modules over 10-12 hours.	Baseline: 85.0 % midterm: 89.3% endline: 85.7 % p=.199 .  Agree it is provider's professional responsibility to maintain confidentiality of PLHIV, regardless of personal views or feelings: baseline: 98.3 % midterm: 95.0 % endline: 95.7 % p= .050  12217: 196  Mean homophobia score: Pre-training: 35.37 (17.12) Post-training: 27.85 (15.14) p<0.001		12217: There were decreases in homophobia scores for the global sample as well as most subgroups reported.		12217: Tucker et al., 2016
							12314: USA	12314: Training on LGBT health over 12 modules.	12314: 37  Mean Peer Advocate Self-Efficacy Inventory:		12314: Participant scores on the Peer Advocate Self-Efficacy Inventory measure increased from pretest to posttest for both the pilot, and		12314: Israel, Willging & Ley, 2016

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							12264: Canada	12264: Community based education intervention on sexual minority youth 6 components delivered over 1 session.	Pilot: Pre-training: 3.96, Post-training: 5.07, p<0.001, effect size= 0.58  Revised: pre-training: 4.56, post-training: 5.15., post-training 2: 5.61, p=0.023, effect size= 0.11  12264: N= 2850  Learning outcomes survey: Ability to discuss sensitive topics has improved: mean 3.44, SD 0.847, max= 4 I learned skills to help GLBTQ youth: mean 3.44, SD 0.878, max= 4.  79.5% of participants stated they intended to take at least one action as a result of this training to improve the lives of GLBTQ youth.		the revised training. Effect size was larger for the pilot training.  12264: Participants responded positively to skills learning outcome questions after completing the education intervention.		12264: Craig, Dorion & Dillon, 2015
							12915: USA	12915: 2 hour training workshop on LGBT bullying for all secondary school staff.	12915: N= 77  Comfort intervening regarding: Homophobic remarks		12915: There were mixed results for change in practice. There was an increase in self-efficacy rating intervening on harassment and bullying. However, there was no		12915: Greytak, Kosciw &



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							151: USA	151: The HAI was implemented at 10 sites in Southeast Michigan, including three health departments, a school-based health clinic, two community health centers, two youth-specific health centers, a pediatric clinic, and an HIV prevention and treatment clinic.	<p><i>training</i>: 28.5 (8.4) p-val &lt;0.05</p> <p>Readiness to provide care to TGI: <i>pre-training</i>: 8.6 (2.3) <i>post-training</i>: 9.3 (1.8), p= NS</p> <p>151: n=153 improved changes in sites' endorsement of environmental changes, including their perception that their clinical environment is a safe space for gay and bisexual youth (baseline: mean: 0.90, SD: 0.10; 6-month follow-up: mean: 1.00; SD: 0; p =.001) as well as transgender and gender nonconforming youth (baseline: mean: 0.87, SD: 0.13; 6-month follow-up: mean: 0.99; SD 0.02; p= .007).</p>		151: positive changes were observed in clinic practices after implementing the intervention.		151: Jadwin-Cakmak et al, 2020
							154: USA	154: The LGBT training covered several broad topics, similar to topics addressed by the National Resource Center on LGBT Aging.	154: n=44 Mean Perceived Preparedness pre 1.90 post 1.45 p .001		154: Perceived preparedness decreased from pre to post intervention.		154: Holman et al, 2020



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							339: Australia	339: A multidisciplinary team, including a member of the transgender community, delivered a 1-h education session on three separate occasions to either: (1) Year 3 medical students (hereafter referred to as students) at the University of Newcastle; (2) GPs attending an annual regional conference in Newcastle; and (3) internal medicine physicians (IMPs) at John Hunter Hospital.	339: n=163 higher proportion of participants 'agreed or strongly agreed' that they were confident to assist with adult transition care for an assigned female requesting masculinisation and assigned male requesting feminisation. Following the education session, a significantly greater number of students and IMPs agreed that hormonal and surgical treatment should be offered to the transgender community, and there was a trend towards increase in the GP group.		339: The proportion of participants responded positively to questions about intent to provide appropriate care increased.		339: Arora et al, 2019
							655: USA	655: This project implemented a training for nurses concerning LGBT cultural competence. The training consisted of a learning module entitled "Providing Quality Care to Lesbian, Gay, Bisexual,	655: Pre-intervention behavior subscale score M SD Range 47.60 15.75 15-69 Post-intervention behavior subscale score		655: There was a mean difference of 10.47 between the pre-intervention behavior total score and post-intervention behavior total score.		655: Wyckoff et al., 2019

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							695: Indonesia	and Transgender Patients: An Introduction for Staff Training”  695: The training was delivered through a peer-to-peer model. The training package comprised of 14 modules MSM health.	M SD Range 58.07 16.71 15-75  695: Perceived skills score mean pre 51.2 (8.7) post 53.7 (8.2)		695: Perceived skills increased from pre-intervention to post-intervention.		695: Nugroho et al., 2019
							1532: Europe (Belgium, Bulgaria, Italy, Lithuania, Poland, and the UK)	1532: Pilot for Health4LGBTI training course for healthcare workers: The 1-day course aims to increase healthcare professionals’ (and support staff) knowledge of LGBTI health needs, and healthcare inequalities, as well as at improving their attitudes and skills to provide inclusive healthcare for LGBTI patients.	1532: Overall, the data showed a trend towards more inclusive attitudes with significant results occurring for five questions. [individual scores not reported]		1532: Provider attitude improved from pre to post intervention.		1532: Donisi et al., 2020
							4844: USA	4844: The 2-part lecture series “Providing Health and Social Services to the Trans and Gender Non-conforming Community (Basic and Advanced)” addressed several topics including the differences between sexual orientation and gender identity, cultural	4844: n=45 Provider Comfort: Sensitivity about language (median, IQR) Pre-intervention: 4 (3, 5) Post-Intervention: 4 (3, 4)  Sensitivity about non-verbal communication used: Pre-intervention: 3 (3, 4) Post-Intervention: 4 (3, 4)		4844: provider comfort increased from pre to post intervention.		4844: Walia et al., 2019

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								competency, specific health disparities experienced by LGBTQ community, and culturally competent care for patients who identify as LGBTQ.	Not assuming all patients identify with their sex assigned at birth Pre-intervention: 3 (3, 4) Post-intervention: 4 (3, 4) Awareness of multiple minority status Pre-intervention: 4 (3, 4) Post-intervention: 4 (3, 4) Nonjudgmental communication Pre-intervention: 4 (4, 5) Post-intervention: 4 (4, 4)				
<p><b>Knowledge:</b> A wide range of validated and non-validated tools were used to measure knowledge across the included studies. See footnotes.</p> <p><b>Follow-up:</b> immediately post intervention, 1 week post intervention, 2 weeks post intervention, 3 months post intervention</p>													

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1 <sup>d</sup>	Systematic review of non-RCTs [pre/post design]	Serious <sup>e</sup>	Not serious <sup>f</sup>	Not Serious	Not Serious	None	1229: 8 USA, 1 Canada  11831: USA  11843: Romania	1229: Various interventions used to educate the health and social care workforce on the experiences and needs of LGBT+ older adults.  <b>Additional studies identified:</b>  11831: 60 minute LGBT awareness training for military HCPs via Powerpoint.  11843: 2-day training regarding LGBT identities, health needs and clinical practice.	1229: The findings of all studies suggest an increase in knowledge (awareness) of LGBT+ specific issues, needs and resources, and comfort levels.  11831: N= 51 Results were presented graphically. The bar graph shows an increasing trend from baseline in knowledge regarding LGBT terminology, cultural sensitivity, health care issues, preventative care measures, and barriers to care.  11843: N= 33  Mean SOCCS: Knowledge: pre-training: 3.1 (0.6), post-training: 3.4 (0.6) p< 0.05 Skill: pre-training: 2.9 (1.1), post-training 4.1 (0.9) p< 0.001	No control	1229: All studies reported an increase in knowledge and awareness from pre to post-intervention.  An additional 31 individual studies were identified. Overall all but two quantitative studies reported an improvement after education on health provider knowledge.  11831: There was an overall improvement in knowledge from pre- to post-test in all categories.  11843: Mean knowledge and skill scores increased from baseline to follow-up.	⊕⊕○○  <b>Low</b>	1229: Jurcek et al., 2020  11831: Shrader et al., 2017  11843: Lelutiu-Weinberger et al., 2017

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							11884: Australia	11884: 7.5 hour workshop for mental health professionals focused on LGBT health and affirmation.	11884: N= 96 Mean LGB-CSI Scores: Knowledge (LGB) <i>pre-training</i> : 32.51 (12.52) <i>post-training</i> : 45.99 (13.46) $p < 0.001$ effect size= 1.04 Knowledge (T) <i>pre-training</i> : 29.27 (12.73) <i>post-training</i> : 43.74 (14.44) $p < 0.001$ effect size= 1.06		11884: Mean knowledge score for LGB and transgender clients increased from pre to post-intervention		11884: Pepping, Lyons & Morris, 2018
							11922: USA	11922: 90 minute training on transgender health and cultural competency for correctional system health staff.	11922: N= 34 Mean TKAB score: <i>pre-training</i> : 67.54 (11.61), <i>post-training</i> : 70.15 (10.69) $p = 0.03$ 3- <i>months</i> : 71.21 (10.93), $p < 0.01$		11922: Mean cultural competence score increased from baseline to immediate follow-up and at 3 months. Mean knowledge score increased from baseline to immediate follow-u.		11922: Hughto et al., 2017
							12009: Australia	12009: Workshop focused on transgender women and domestic	12009: N= 25 Mean TCC score-general knowledge: <i>pre-training</i> : 36.74 (4.29), <i>post-training</i> : 37.76 (4.36), $p < 0.001$ , 3- <i>months</i> : 37.71 (4.07), $p = 0.08$		12009: participants were significantly more likely to provide a definition closely aligned with the information provided in the workshop for		12009: Riggs, Fraser,

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							12029: USA	<p>abuse, delivered through an anti-oppressive framework.</p> <p>12029: 6 interactive, online modules focused on transgender adolescent health and 5-hr observational experience in a multidisciplinary pediatric gender clinic</p>	<p>Difference in the corrected definition of transgender: A2= 11.72, p= 0.05. Difference in the corrected definition of cisgenderism: A2= 15.32, p=0.001</p> <p>12029: N= 20</p> <p>Learners' postcurriculum knowledge and awareness scores increased on all 20 queried transgender youth-related measures . p&lt;0.002 for 17 of 20 benchmarks (other p=0.002 or p=0.001),. For 13 of the 20 transgender youth-related benchmarks, the learners' median score increased from the not knowledgeable/aware range (&lt;3 Likert score) to the knowledgeable/aware range (&gt;3 Likert score).</p>		<p>transgender and cisgenderism.</p> <p>12029: Learners' post-training knowledge and awareness scores increased on every queried transgender youth-related measures</p>		<p>Taylor, et al, 2016</p> <p>12029: Vance Jr, Deutsch, Rosenthal, et al., 2017</p>

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							12217: South Africa	12217: Health4Men MSM competency training comprised of 8 modules over 10-12 hours.	12217: Mean sensitivity knowledge score: N=196 <i>pre-training</i> : 6.44 (2.55) <i>post-training</i> : 9.82 (1.32) p <0.001		12217: There were improvements in sensitivity knowledge (for clinicians and clinic support staff) and improvements in specialized clinical knowledge (assessed only in clinicians) from pre to post-training.		12217: Tucker et al., 2016
							12869: Ireland	12869: 50-min training module for professionals providing oncological and palliative care to LGB patients.	12869: N= 201 Knowledge of LGB issues: <i>pre-training</i> : 20% <i>post-training</i> : 75%, not assessed statistically		12869: Participant knowledge of LGB issues increased from pre-training to post-training.		12869: Reygan & D'Alton, 2013
							12915: USA	12915: 2 hour training workshop on LGBT bullying for all secondary school staff.	12915: N=77		12915: Participants understanding of LGBT student increased marginally from pre to post intervention,		12915: Greytak, Kosciw &

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							12314: USA	12314: Training on LGBT health over 12 modules.	<p>Mean understanding of LGBT students' experiences: <i>pre-training</i> 2.41 (0.78) <i>post-training</i>: 2.58 (0.71) p=NS</p> <p>Importance of intervention regarding: Homophobic remarks <i>pre-training</i>: 4.39 (0.78) <i>post-training</i> 4.52 (0.69) p= NS</p> <p>Comments about gender expression <i>pre-training</i>: 4.17 (0.97) <i>post-training</i>: 4.41 (0.78) p=NS</p>		<p>although the difference was minimal.</p>		Boensen, 2013
									<p>12314: N= 37</p> <p>Mean Peer Advocate Knowledge of LGBTQ score: Pilot training: <i>pre-training</i>: 11.50 (33.28), <i>post-training</i>: 15.36 (33.2) p= NS</p> <p>Revised training: <i>pre-training</i>: 18.11 <i>post-training</i>: 23.53, p &lt;0.001 <i>post-training 2</i>: 27.37</p>		<p>12314: Scores on the LGBTQ Peer Advocate Knowledge of LGBTQ Scores in the pilot training were higher.. For participants in the revised training, knowledge increased from pre- to posttest.</p>		12314: Israel, Willging & Ley, 2016



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							12264: Canada	12264: Community based education intervention on sexual minority youth 6 components delivered over 1 session.	p=0.002, effect size= 0.55 12264: N= 2850 Mean score "My knowledge of GLBTQ youth has increased": 3.59 (.754)		12264: Participants rating of knowledge of GLBTQ youth increased from pre to post intervention.		12264: Craig, Dorion & Dillon, 2015
							13122: USA	13122: 2-hour session on LGBT health for emergency department staff including an online component.	13122: Mean AIM Score: <i>pre-training</i> : 64.1 (9.5) N=95 <i>post-training</i> : 72.5( 8.7) N=40 p <0.05 effect size= 0.9		13122: Participants Ally Identity Measure index increased from pre to post intervention.		13122: Bristol, Kostelec & MacDonal d, 2018
							13483: USA	13483: Transgender SCAN-ECHO curriculum on transgender care delivered through 14 brief modules.	13483: Post-test data N= 11 to 57 Across the didactics, 93% of learners received a passing score of 80% or better on the 10-item quizzes.  Evaluation of each session: Rating of gaining new knowledge		13483: The majority of learners received passing scores and rated gaining new knowledge and skills positively.		13483: Shipherd et al., 2016

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							13484: USA	13484: Provider training program in transgender health including hands-on training.	and skills: average: 4.23 (max= 5)  13484: N=31 SOCCS Mean Knowledge of TG clinical issues: pre-training: 26.0 (6.2) post-training: 25.4 (6.3)		13484: Participants Sexual Orientation competency scale did not change from pre to post-intervention.		13484: Leluti-Weinberger et al., 2016
							13642: USA	13642: 2 education sessions on LGBT and health including a panel discussion.	13642: Mean knowledge test scores: <i>pre-training</i> n = 10, 6.3 ( 2.8) <i>Post-training</i> n = 8 9.6 (2.7) p = .033		13642: Knowledge test score increased from pre to post-intervention		13642: Felsenstein, 2018
							13977: Kenya	13977: 2-day training on MSM health with a specific focus on HIV.	13977: N=74 Median change in MSM sexual health knowledge: pre-training: 54 post-training: 67 p<0.001		13977: Knowledge score of participants increased from baseline to post-training.		13977: van der Elst et al., 2013

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							14817: Canada	14817: Theatre knowledge exchange program on LGBTQ people interacting with service providers.	14817: N=28 Knowledge scores from pre-training: lesbian clients: Z=-2.138, p<0.05 bisexual clients: Z=-2.326, p<0.05 transgender clients Z=-2.199, p<0.05, gay clients: p=NS		14817: There was an improvement in knowledge scores among participants immediately following the workshop for lesbian, bisexual and transgender clients but not for gay clients.		14817: Tarasoff, Epstein, Green, et al., 2014
							15838: South Africa	15838: 1 or 2-day training focused on MSM and HIV risk.	15838: Overall knowledge score: <i>pre-training</i> : N=495 80% <i>post-training</i> : N=468 87% p<0.0001		15838: Overall knowledge score increased from pre to post intervention		15838: Scheibe, Duby, Brown, et al., 2017
							94: Canada	94: The curriculum developed, Providing Trans-Affirming Care for Sexual Assault Survivors, is based on evidence-informed competencies for nurses specific to the care needs of trans persons who have been sexually assaulted.	94: Participants' perceived level of expertise related to care of trans persons who have been sexually assaulted improved significantly from pre- to post-training (M = 1.89, SD = 0.84 vs. M = 3.47, SD = 0.62, p < .001). Perceived competence also increased significantly across all		94: competence and expertise increased across all domains from pre to post intervention.		94: Du Mont et al., 2020

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Continuing Professional Development	No Continuing Professional Development	Reported effects/outcomes		
							128: USA	128: This project implemented an educational intervention to improve the attitudes and knowledge of nurses about LGBTQ people. The intervention was titled "LGBTQ Cultural Competence for Registered Nurses." The author delivered the presentation via a lecture to the attendees. It comprised 28 slides organized into three sections: definitions and terminology, health disparities faced by the population, and communication practices.	core content domains of the curriculum. 128: The participants had a strong baseline knowledge about LGBTQ health (M = 14.18, SD = 1.16). After the intervention, their knowledge levels increased to 14.76 (SD = 0.70).		128: Knowledge increased from pre to post intervention.		128: Traister, 2020
							151: USA	151: The HAI was implemented at 10 sites in Southeast Michigan, including three health departments, a school-based health clinic, two community health centers, two youth-specific health centers, a pediatric clinic, and an HIV prevention and treatment clinic.	151: Correct knowledge items significantly increased from baseline (mean: 7.22, SD: .71) to the 6-month follow-up (mean: 7.82, S: .80).		151: Knowledge increased from pre to post intervention.		151: Jadwin-Cakmak et al, 2020
							154: USA	154: The LGBT training covered several broad topics, similar to topics addressed by the National Resource Center on LGBT Aging.	154: n=44 Content Knowledge score pre 4.32 post 7.37		154: Knowledge increased from pre to post intervention.		154: Holman et al, 2020

Evidence Profile Recommendation 5.1: Promoting 2SLGBTQI+ Health Equity

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Continuing Professional Development	No Continuing Professional Development	Reported effects/outcomes		
							339: Australia	339: A multidisciplinary team, including a member of the transgender community, delivered a 1-h education session on three separate occasions to either: (1) Year 3 medical students (hereafter referred to as students) at the University of Newcastle; (2) GPs attending an annual regional conference in Newcastle; and (3) internal medicine physicians (IMPs) at John Hunter Hospital.	339: n=163 After the education session, the healthcare providers were more likely to 'agree or strongly agree' that they felt sufficiently knowledgeable to assist a 13-year-old pubertal adolescent requesting transition; and provide support for a 6-year-old gender-questioning child. There was improved understanding that the potential to develop cancer depends upon the organs present, rather than hormonal status.		339: perceived knowledge increased from pre to post intervention.		339: Arora et al, 2019
							695: Indonesia	695: The training was delivered through a peer-to-peer model. The training package comprised of 14 modules MSM health.	695: N=76 Knowledge (Mean SD) Total (43 items) pre 30.0 (4.4) post 35.0 (5.0) 2 months post 35.0 (5.2)		695: Knowledge increased from pre-intervention to post-intervention.		695: Nugroho et al., 2019
							1532: Europe (Belgium, Bulgaria, Italy, Lithuania, Poland,	1532: Pilot for Health4LGBTI training course for healthcare workers: The 1-day course aims to increase healthcare professionals' (and support staff) knowledge of LGBTI health needs, and healthcare	1532: n=102 Knowledge score (median [IQR]) Pre-intervention: 5 [4-6] Post intervention: 7 [5-8]		1532: Knowledge score increased from pre to post-intervention.		1532: Donisi et al., 2020

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Continuing Professional Development	No Continuing Professional Development	Reported effects/outcomes		
							and the UK)	inequalities, as well as at improving their attitudes and skills to provide inclusive healthcare for LGBTI patients.					
							1642: USA	1642: Web-Based LGBT Cultural Competency Training Intervention for Oncologists: the Curriculum for Oncologists on LGBT populations to Optimize Relevance and Skills (COLORS).	1642: n=33 Knowledge related to the oncology care of LGBT patients. Participants scores (mean, SD) Pre-intervention: 9.6 (1.7) Post-intervention: 11.0 (1.0)		1642: Knowledge scores increased from pre to post intervention.		1642: Seay et al., 2019
							4844: USA	4844: The 2-part lecture series "Providing Health and Social Services to the Trans and Gender Non-conforming Community (Basic and Advanced)" addressed several topics including the differences between sexual orientation and gender identity, cultural competency, specific health disparities experienced by LGBTQ community, and culturally competent care for patients who identify as LGBTQ.	4844: n=45 Sensitivity about language (median, IQR) Pre-intervention: 4 (3, 4) Post-Intervention: 4 (3, 4) Sensitivity about non-verbal communication used Pre-intervention: 4 (3, 4) Post-Intervention: 4 (3, 4) Not assuming all patients identify with their sex assigned at birth Pre-intervention: 3 (3, 4) Post-intervention: 4 (3, 4)		4844: Knowledge scores in one domain were improved and were unchanged in other domains.		4844: Walia et al., 2019

Evidence Profile Recommendation 5.1: Promoting 2SLGBTQI+ Health Equity

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Continuing Professional Development	No Continuing Professional Development	Reported effects/outcomes		
							4902: USA	<p>4902: Transgender Health Education for Correctional Health Care Providers</p> <p>The intervention was designed to be delivered in 1 hour (15 minutes per module) and led by facilitators with expertise in transgender health and corrections.</p> <p>The intervention consisted of four training modules with specific learning objectives.</p>	<p>Awareness of multiple minority status Pre-intervention: 4 (3, 4) Post-intervention: 4 (4, 4)</p> <p>Nonjudgmental communication Pre-intervention: 4 (4, 4) Post-intervention: 4 (4, 4)</p> <p>4902: n=22 Post-test evaluation of the intervention revealed that significant increases were found in providers' transgender health knowledge post-intervention</p>		4902: Knowledge increased from pre to post intervention.		4902: Hughto & Clark, 2019

Explanations:

NS= not significant, exact figures not reported in the original text

A2= Log-likelihood ratio tests

## Evidence Profile Recommendation 5.1: Promoting 2SLGBTQI+ Health Equity

### Knowledge outcome measurement

*pre-test/post-test multiple choice, Sexual Orientation Counselor Competency Scale (SOCCS), Lesbian, Gay and Bisexual Affirmative Counseling Self-Efficacy Inventory (LGB-CSI), Transgender Knowledge, Attitudes, and Beliefs (TKAB) scale, Transgender Clinical Competence (TCC) scale, definitions provided pre and post, self-assessed knowledge (likert scale), self-assessed empathy and importance of intervening (likert scale), Peer advocate knowledge of LGBTQ issues scale, Adapted Lesbian, Gay, Bisexual Knowledge and Attitudes Scale for Heterosexuals, Ally Identity Measure, Knowledge, Skill, Attitude (likert scale)*

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- <sup>a</sup> The systematic review included 7 non-RCTs that reported on change in practice. An additional 17 non-RCTs were identified that reported on change in practice.
  - <sup>b</sup> The review was rated as low risk of bias using the ROBIS tool. The review authors rated all included studies as low or moderate risk of bias due to non-randomized studies and unvalidated outcome measures following the medical education research study quality instrument (MERSQI). We downgraded by 1.5.
  - <sup>c</sup> There were a variety of tools used to measure change in practice. There was also some inconsistency in the result as individual studies reported improvement in bias and attitudes but results for empathy and intention to use skills and knowledge were mixed. We downgraded by 1.
  - <sup>d</sup> The systematic review included 9 non-RCTs that reported on knowledge. An additional 31 non-RCTs were identified that reported on knowledge.
  - <sup>e</sup> The review was rated as low risk of bias using the ROBIS tool. The review authors rated all included studies as low or moderate risk of bias due to non-randomized studies and unvalidated outcome measures following the medical education research study quality instrument (MERSQI). We downgraded by 1.5.
  - <sup>f</sup> A variety of tools were used to measure knowledge. We downgraded by 0.5.



**CERQual Evidence Profile**

**Recommendation Question:** Should continuing professional development (short-term education) for nurses and the interprofessional team regarding 2SLGBTQI+ health be recommended?

**Recommendation 5.1:** The expert panel recommends that health service organizations provide 2SLGBTQI+ affirming continuing education for all health providers.

**Aim:** To explore the perceived benefits of continuing professional development for nurses and the interprofessional team related to 2SLGBTQI+ health on knowledge and changes in practice.

**Bibliography:** 11901, 13973, 13978, 15838

Finding (change in practice): Participants reported positive change in practice through increased comfort with lesbian, gay, bisexual and transgender persons accessing services and an increased ability to provide non-discriminatory, respectful care after receiving continuing education.							
Studies contributing to the Finding	Included study designs	CERQual Assessment				Overall CERQual Assessment of Confidence	Explanation of Judgement
		Assessment of Methodological Limitations	Assessment of Relevance	Assessment of Coherence	Assessment of Adequacy of Data		
11901: Dispenza, Elston, Huffstead, et al., 2017  13973: van der Elst et al., 2015  13978: van der Elst et al., 2013  15838: Scheibe, DUBY, Brown, et al., 2017	11901: Semi-structured interviews with content analysis  13973: Focus groups with framework approach analysis  13978: Focus groups with framework approach analysis  15838: Focus groups with grounded theory analysis	Serious concerns (Four studies included with concerns related to researcher reflexivity, data collection and analysis)	Minor concerns (Three studies from settings with societal differences related to health curriculum and LGBT people)	No concerns (The patterns in the data were relatively clear)	Moderate concerns (Four studies included offering relatively thin data)	<b>Very low confidence</b>	The finding was graded as very low confidence due to serious concerns over methodological limitations of the individual studies, minor concerns over relevance and moderate concerns over adequacy of data.

<b>Finding (knowledge):</b> <i>Participants described increased knowledge of men who have sex with men's sexual health, including STI and HIV risks, and the role of discrimination on health when they received continuing education.</i>							
<p>13978: van der Elst et al., 2013</p> <p>15838: Scheibe, DUBY, Brown et al., 2017</p>	<p>13978: Focus groups with framework approach analysis</p> <p>15838: Focus groups with grounded theory analysis</p>	<p>Serious concerns (Two studies included with concerns related to researcher reflexivity, data collection and analysis)</p>	<p>Minor concerns (Three studies from settings with societal differences related to health curriculum and LGBT people)</p>	<p>No concerns (The patterns in the data were relatively clear)</p>	<p>Serious concerns (Only two studies included offering thin data)</p>	<p><b>Very low confidence</b></p>	<p>The finding was graded as very low confidence due to serious concerns over methodological limitations of the individual studies and adequacy of data, as well as minor concerns over relevance.</p>