Sexual Health and HIV/STI Training of Public Health Practitioners in Canada:

Survey, Literature Review and Web Scan

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National Collaborating Centre for Infectious Diseases

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Summary

Purpose

In consultation with the Sexual Health and STI Section of the Public Health Agency of Canada, the National Collaborating Centre on Infectious Diseases (NCCID) identified the need to consider the sexual health training requirements of public health practitioners in relation to the provision of HIV and sexually transmitted infections (STI) services. This paper summarizes information from a survey of current sexual health training and provides information on sexual health education opportunities in Canada, both in medical/nursing schools and in continuing education. A separate section identifies sexual health training programs from a review of the scientific literature.

Methods

The results discussed in this report are based on i) a mail survey of public health practitioners conducted in 2006, ii) a literature review and iii) a web scan of training opportunities available in Canada and internationally. The electronic databases PUBMED, ERIC and CINAHL were searched for the period January 2000-January 2007 based on a search string developed in cooperation with a librarian. Additional studies were included from the reference lists of studies identified in the initial database search, going back to 1990. Google searches as well as searches of the online course calendars of Canadian medical and nursing schools identified training opportunities.

Conclusions

i) Survey
Overall response rate was 51%. The majority of respondents were public health nurses (41%) or medical officers of health (22%) and most were involved in delivering clinical services and program management. Fifty five percent of respondents received sexual health training during their formal professional education and 63% attended continuing education courses. Respondents judged continuing education courses as preparing them for their current activities better than courses during formal training.

ii) Literature Review
Training programs identified in the literature varied in structure, length and content although the majority relied on multiple teaching methods, combining didactic lectures with clinical care, small-group discussions and/or role-play. Interaction with standardized patients as a teaching method was also described in both medical school and continuing education settings.

iii) Existing sexual health training in Canada and Internationally
We identified limited opportunities for Canadian public health practitioners to receive sexual health training and training opportunities ranged in content and delivery. Three Canadian medical schools (of 16 accredited) and four of 54 nursing schools offered sexual health focused courses. Courses offered by the Annual Guelph Sexuality Conference, the Bi-annual Alberta Society for Promotion of Sexual Health (ASPSH) conference and the BC Centre for Disease Control provided continuing education opportunities related to sexual health and STI/HIV. On-line education was available through ASPSH, the Public Health Agency of Canada and BC Centre for Disease Control. Sexual health training models from Australia, the United Kingdom and the United States are discussed.

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I. Purpose

In consultation with the Sexual Health and STI Section of the Public Health Agency of Canada, the National Collaborating Centre on Infectious Diseases (NCCID) has identified the need to consider the sexual health training requirements of public health practitioners in relation to the provision of HIV and sexually transmitted infections (STI) services.

A survey of public health practitioners conducted for the NCCID in 2006, established current levels of sexual health training as well as identifying opportunities for further education in Canada. Also identified were evaluated sexual health training programs from a review of the scientific literature. As well, a web scan determined sexual health related courses in Canadian medical schools, nursing schools and continuing education.

II. Background

"Health professionals specializing in HIV/AIDS prevention should have training in sexual health. Among other skills, professionals should be aware of personal attitudes towards one's own and other person's sexuality and offer a respectful attitude towards persons with different sexual orientations and sexual practices.". (1)

The Canadian Guidelines for Sexual Health Education (2) acknowledge the important role of public health practitioners, particularly physicians, in the reduction of negative outcomes related to sexual health and emphasize the need to review and revise guidelines and objectives currently utilized by educational institutions. (3) The role and capacity of practitioners is also emphasized in the Canadian Guidelines for Sexually Transmitted Infections 2006 (4) and Leading Together: Canada Takes Action on HIV/AIDS. (5)

Practitioners, however, often feel uncomfortable and unprepared to discuss sexuality and sexual behaviour with their clients. (6-9) Courses in sexual health have been viewed favourably by participants and have the ability to raise awareness and positively affect care providers' practice. (10) Nurses have reported increased knowledge and more positive beliefs about people living with HIV, a shift in the way they view behaviour change, and increased knowledge and confidence in discussing sexual health. (11;12) A 1995 study in Quebec found that physicians who received extensive training in human sexuality at university felt more prepared and better able to deal with patient discomfort regarding sexual issues. (13) Evidence suggests that education programs with standardized patient (SP) interactions can increase the ability to elicit more complete sexual histories and perform HIV counselling, (14) while training in motivational interviewing could increase effectiveness in discussing STD prevention. (12) Barrett and McKay conducted a national study on available sexual health training in Canadian medical schools in 1998, (15) hence laying the groundwork for further assessment and improvement of sexual health education. To date, further efforts in this area have not been made.

The Canadian Guidelines also emphasize the need for health care professionals to incorporate the exploration of personal values and attitudes related to sexual health, prior to the successful use of knowledge and acquired skills. (2)

III. Methodology

i. Survey

The National Collaborating Centre for Infectious Diseases conducted a mail survey with public health practitioners having significant responsibility in the field of HIV/STI. A senior official in each province/territory identified survey participants. The survey had two sections. The first part focused on currently offered HIV prevention interventions and perceived priorities regarding HIV prevention. The second section inquired about current sexual health practices, current levels of training in sexual health and training needs. In total, 97 surveys were distributed and 49 completed surveys were received. Of the 49 surveys returned, 22 consistently completed the second section on sexual health training. The high non-response rate to the sexual health section was perhaps due to the fact that direct service questions were asked and many of the respondents did not provide direct service – of the 49 respondents only 8 (16%) spent more than half their time in clinical service.
Participants received a mailed questionnaire accompanied by an introductory letter, with follow-up phone calls where necessary. The information collected by the survey was data-entered and analyzed using statistical software (SPSS). An independent survey company completed the process of survey implementation and data collection.

ii. Literature Review

Electronic databases were searched for citations regarding evaluated sexual health training programs. A librarian conducted electronic searches for the period January 1996 to December 2006 of PUBMED and Educational Resources Information Center of the US department of education (ERIC). A similar search of the Cumulative Index to Nursing & Allied Health (CINAHL) was conducted, with the search string suggested by the librarian for the period January 2000 to January 2007.

PUBMED was searched again for any recent studies, including those identified in the related articles feature. The reference lists of relevant studies were scanned for further references as far back as 1990. Internet searches were conducted to identify other relevant references.

iii. Existing Training in Canada and Internationally

Training offered during formal education and continuing education opportunities were included. The web-based course descriptions for both medical and nursing school programs were reviewed for the 26 accredited medical schools and 56 institutions offering nursing in Canada. Undergraduate and graduate courses were included and searched using the keywords sex, HIV and STD/STI. Descriptions of rotations/clerkships for medical residents were also reviewed if available. As some sexual health courses may be indicated as “special topics” in the course calendars, a Google search was also completed of the university/college’s website, as well as the web in general for the keywords “sexual health” or “sexual medicine.”

Universities not offering medicine or nursing were included in the search only if (a) survey respondents listed them as their institution of formal training, or (b) the university offered a well-known sexual health training opportunity.

Continuing education opportunities were identified by searching the continuing education opportunities offered by the individual universities and provincial licensing boards, as well as a Google search of sexual health training for physicians/professionals/health care workers.

Continuing medical education (CME) sessions focusing on specific STIs or HIV and the medical management thereof were not included.

This search focused mostly on Canadian opportunities, including web-based courses. Sexual health education programs in other countries that could be considered "best practice" were inventoried. To date, only training offered in English has been reviewed.

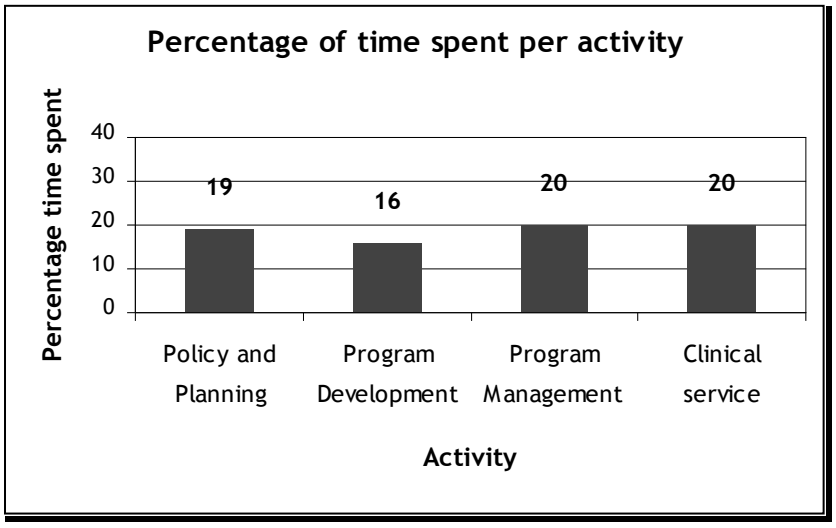
IV. Findings

i. Survey

The response rate to the survey overall was 51%, with the sexual health practices section of the survey consistently completed by 22 respondents (23%). The majority of the respondents were public health nurses (41%) and medical officers of health (22%).

Respondents indicated that, on average, they spent the most time on clinical services, program management and policy and planning. Figure 1 illustrates the average time spent on different activities. Other activities mentioned included teaching/professional education (n=4) and research/surveillance (n=3).

Figure 1



Formal education

More than half (55%) of respondents received sexual health training during their formal/professional education (figure 2). Of those that did receive training, only 15% indicated that it prepared them "very well" for their current practice (figure 3).

Figure 2

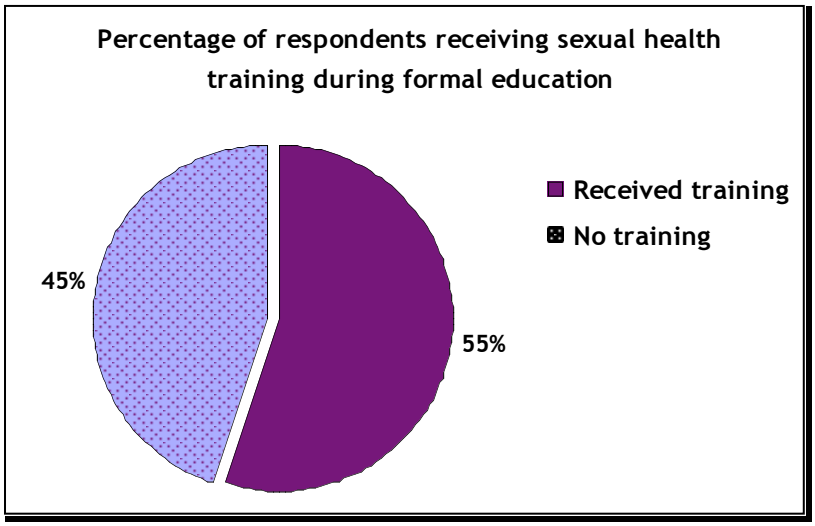
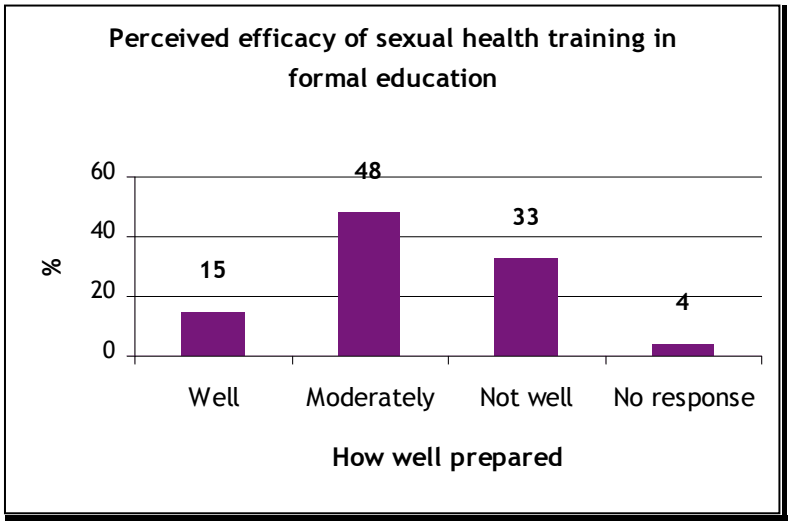


Figure 3



Continuing Education

Almost two-thirds reported they had received sexual health training following their formal/professional education (figure 4). All who received training felt it had prepared them for their current practice at least “moderately well” (figure 5).

Figure 4

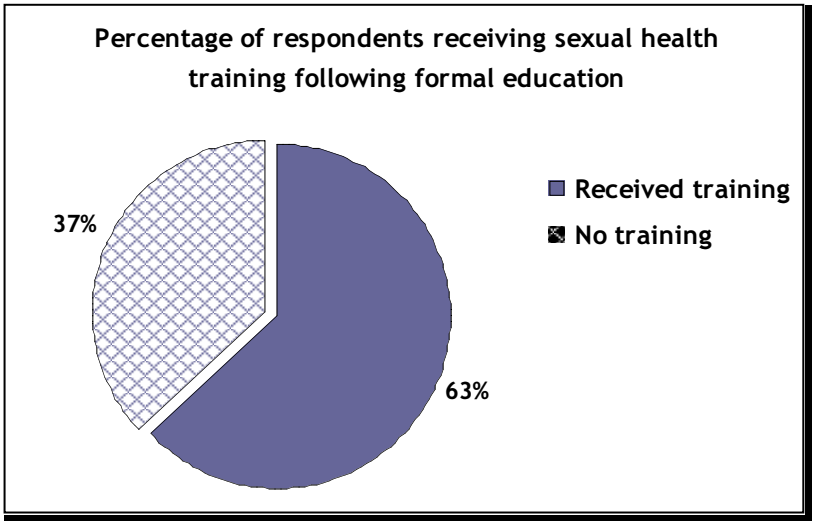
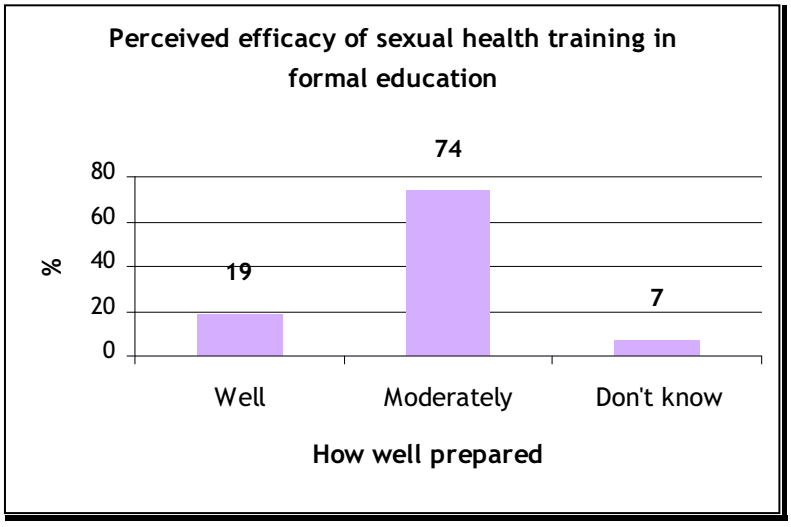


Figure 5



Training Opportunities

When asked to identify sexual health training opportunities, 53% of respondents knew of available opportunities. The most mentioned opportunities were:

- Guelph Sexuality Conference
- Course offered by the British Columbia Centre for Disease Control
- Sexpressions
- Course offered by the Public Health Agency of Canada
- Course offered by the Alberta Society for the Promotion of Sexual Health

Additional training needs were identified by 29 (59%) of respondents. When asked to identify topics for future training, responses indicated a need for increased capacity to work directly with clients and counselling techniques, more specifically:

- National training and certification program for sexual health which includes core competencies
- National certification with some provincial adaptations should be considered
- Access to the best or promising practices that are practical
- Skills enhancement
- Harm reduction
- Motivational interviewing techniques
- New models for counselling
- Effective counselling techniques for "brief" sessions
- Engaging with resistant clients
- Working with "hard-core" transmitters
- New ideas/methods for partner notification

ii. Literature

The focus of this literature review was to determine the effectiveness of sexual health training or education for public health practitioners. The literature search identified 93 abstracts regarding sexual health and the training thereof. Brief reports or announcements on continuing projects were kept for further reference. Retrieved abstracts could be classified in the following broad categories: brief reports/announcements [3], identification of barriers [6], surveys of current practices and needs [13], patient perspectives [5], guidelines and information for performing sexual history taking and counselling [25], and training [44].

Interventions varied widely in structure, length and content. Most utilized multiple teaching methods, combining didactic lectures with small-group work and role-play [14]. The use of standardized patient encounters as a teaching method was reported in five studies and small group tutorial groups in two studies. In three cases, the education intervention was part of medical school training and integrated into the medical school curriculum. Didactic lectures in combination with supervised clinical care were featured in two studies; other methods included individual consultations, community-based learning and teleconferences. Two interventions involved interaction with people living with HIV/AIDS.

Summaries of the training programs identified are included in appendix A.

iii. Existing Training in Canada and Internationally

Canada

Courses during formal training

Fourteen universities offer courses related to sexual health in health science faculties. Of the 16 accredited medical schools, only five provide training in sexual health. However, all courses offered by these universities are electives and only three of these electives have sexual health as their main focus. Other universities have electives that include aspects of sexual health such as sexual history taking in their obstetrics and gynaecology clerkship, psychiatry clerkship, or in reproductive health or clinical skills. Only one elective in family medicine deals with both sexual health and sexually transmitted diseases.

There are 54 nursing schools in Canada and seven offering courses related to human sexuality. A total of nine courses are offered. Four courses focus solely on human sexuality [2], sexual health promotion and HIV/AIDS prevention and care. Other courses include sexual history-taking in advanced practice courses, women's health issues and a peer intervention course which includes counselling.

In related health science departments, six universities offer courses in which the primary focus is sexual health or HIV/AIDS. These departments include health sciences, health promotion, community health, health studies, public health and social studies of medicine.

Continuing education

No CME courses related to STIs and sexual health were found for 2007 or archived for 2006. Listed courses focus either on the management of sexual dysfunction or on the clinical management of specific STIs or HIV/AIDS.

Two organizations offer workshops for health care professionals: the Alberta Society for the Promotion of Sexual Health (ASPSH) and the BC Centre for Disease Control. The main activity of the ASPSH is an online course. However, in 2007 ASPSH also offered a face-to-face Sexual Attitude Reassessment workshop. The BC Centre for Disease Control offer the following face-to-face workshops: HIV Pre & Post Test Counselling, Partner Counselling and Referral Services, and HIV Testing Workshop for Health Care Professionals.

The University of Guelph hosts an Annual Guelph Conference and Training Institute on Sexuality. A two-day main conference is preceded by workshops of varying length, including the Sexual Attitude Reassessment Weekend and the STI Clinical Update, now in its fifth year. Pre-conference workshops for 2007 also included sessions focusing on cultural issues, educating youth and violence. The theme changes every year and for the 2007 conference the theme was Human Rights and Sexual Health: Implications for Education and Service.

Web-based learning

ASPSH offers online workshops in Sexual Health, Sexual Health and Social Marketing, Cross Cultural Competency, Adolescent's Use of Sexually Explicit Media in Their Homes and Communities, and Working with Aboriginal Communities.

The BC Centre for Disease Control offers an STI Clinical Practice Online Certificate Course. The US Centre for Disease Control also offers a range of online courses including Prevention with Positives: HIV Risk Reduction Strategies for Health Care Providers, and Rapid Testing: Advances for HIV Prevention.

The Public Health Agency of Canada (PHAC) also offers educational material regarding sexual health. The majority of the material is aimed at educators, but it also offers a Self-Learning Module on Sexually Transmitted Diseases (STDs) for physicians, medical students, nurse practitioners, nursing students, health care professionals and other interested persons. The course aims to enhance knowledge and skills regarding STD screening and diagnosis, management and treatment, partner notification and prevention measures.

In addition to the annual conference mentioned above, the University of Guelph offers an online course in the Development of Sexuality designed for teachers, counsellors, public health professionals and students.

There are additional websites such as cmeonHIV.ca and mdcme.ca that offer courses to physicians related to HIV and other STIs. The information on these websites is primarily concerned with the clinical management of these diseases and includes no information on sexual history taking or contact tracing

United Kingdom

The United Kingdom (UK) government released a draft Sexual Health and HIV Strategy in July 2001. A key element of the implementation was the training of health care and other relevant professionals. In response, a mapping exercise of training opportunities was conducted in 2002, identifying opportunities in formal education and continuing education in clinical and non-clinical areas. (16)

Sexual health training for health care professionals occurs on all levels in the UK. In medical schools, for example, genitourinary medicine (GUM), which includes detailed history taking as part of risk assessment and partner notification, is offered at all medical schools. (17) The mean time spent teaching sexual health communication skills is 1.8 hours.

Continuing education in sexual health skills exists for all disciplines with a number of accredited courses in each discipline. The majority of courses are offered only on a regional basis, but there are also regulated national courses with systems in place to ensure continuity and standards. An example of this is the multi-disciplinary course in STIs and HIV offered by the Medical Society for the Study of Venereal Diseases (MSSVD). Originally designed for specialists in GUM, it is now open to all doctors, nurses, health advisers and scientists. The ten-day course covers sexual behaviours, the law regarding confidentially, taking a sexual history, psycho-sexual issues, bacterial infections, viral infection and HIV. The MSSVD also offers a shorter Sexually Transmitted Infections Foundation (STIF) course. It is a two-day national and accredited course.

Apart from these courses, universities, sexual health training networks and non-governmental organizations, most notably fpa (formerly the Family Planning Association), offer shorter courses and workshops of which some are accredited and assessed. These courses are guided by national guidelines for quality in sexual health training, developed by the department of health. A number of organizations also provide train-the-trainer courses which enable participants to develop, deliver and evaluate sexual health training in their own populations.

Australia

Australia does not have a national sexual health strategy. (18) In 2003, the Australasian Chapter of Sexual Health was founded within the Royal Australian College of Physicians (RACP) as regulatory body for professionals in this area, but also to create a training structure. They now offer a Sexual Health Training Program and an individual either must be a Medical College Fellow or have completed their Basic Training to be considered for the training, which is three years of clinical practice under supervision in accredited sexual health medicine service.

The GP/Sexual Health Liaison Project in Sydney aimed to improve sexual health services by providing links between specialist sexual health service and general practitioners. They have implemented continuing medical education seminars on Chlamydia, HIV and STI education seminars, a Sexual Health in the Community course, clinical placements in a sexual health clinic and the development of a sexual health website.

The Queensland department of health has an extensive list of training for physicians, nurses, school-based nurses, mental health workers, generalist health care workers and others. The courses are offered through the University of Queensland and include Supervised Training for Sexual Health Specialists, Education in HIV Medicine, Sexual and Reproductive Health (certificate), and Education in Hepatitis C (HCV) Medicine for General Practitioners. Courses for nurses at the University of Queensland include HIV Nursing Practice, Graduate in Sexual Health (certificate) and a Masters of Advanced Practice (sexual health).

Continuing education is available from organizations such as Sexual Health Information Networking and Education, South Australia (SHine SA) and Family Planning Queensland (FPQ). All of these organizations are accredited by the RACP. Courses include Sexual and Reproductive Health (certificate), IUD Insertion Training, Nurse and Allied Health Professional Training, Introductory to Sexual and Reproductive Health Care, and Sexual Health (certificate).

Individual universities also provide opportunities in sexual health, including workshops in public health, graduate certificates, diplomas and a Master of Health Science. The University of Sydney has online graduate programs in sexual health, with the option of a Master of Health Science, Graduate of Health Science (diploma) or Graduate of Health Science (certificate).

United States

There are no national guidelines for sexual health training or a nationally standardized sexual health training program. According to a 1999 survey of medical schools, 60% offered required sexual health courses and an additional 32% offered electives on the topic. (19) Training was usually associated with a single discipline with psychiatry being the most frequently involved (75% of schools surveyed). Most medical schools offer sexual health courses, but the content, format and amount of time dedicated to the topic varies. The majority of the universities have between three and 10 hours of training with one third offering more than 11 hours over the course of the training. The most common topics included in training were sexual dysfunction, sexual identity/orientation and sexuality in disabled or medically ill patients. Sexually transmitted diseases were mentioned only in additional topics, and HIV/AIDS was not even mentioned. The most common format was lectures (87.5%). Less than half of the schools offered clinical training in sexual health. Residency training provided even less opportunities for sexual health training.

There are universities with well-established sexual health training, such as the Robert Wood Johnson Medical School. Pfizer Inc. has offered seven grants to support the evaluation and enhancement of sexual health programs. The University of Minnesota's department of family medicine and community health also has a program in human sexuality that provides undergraduate, graduate and continuing medical education.

Less than half of the universities surveyed had CME programs. A number of organizations offered continuing education, including the American College of Physicians, American Psychiatric Association, North American Menopause Society and the Society for General Internal Medicine.

Web-based courses focusing on sexual health and/or HIV/AIDS are also available. These include the Centers for Disease Control's (CDC) Prevention with Positives: HIV Risk Reduction Strategies for Health Care Providers, and Rapid Testing: Advances for HIV Prevention. The Engenderhealth website offers online mini-courses on sexuality and sexual health, sexually transmitted infections, reproductive health and HIV/AIDS.

In the United States, STD prevention services are delivered in most circumstances by disease intervention specialists (DIS). These individuals are health professionals, both public health personnel and care providers, trained to be proficient in taking sexual histories, providing behavioural counselling, identifying and tracing contacts who may be at risk and referring these individuals for testing and treatments. Modular courses for DIS offered through the CDC include

Introduction to Sexually Transmitted Intervention, Fundamentals of Sexually Transmitted Disease (STI) Intervention, and HIV Partner Counselling and Referral Services. Additional courses depend on individual training centers, but could include Partner Services and Referral for Health care Professionals, Chlamydia Partner Management for Family Planning Providers and Advanced STD Intervention (http://www.cdc.gov/std/training/courses.htm).

These courses are offered at regional sites and augment STI training, including HIV and control measures. They are designed for adult learning, are built on evidence, and enable advanced and relatively uniform proficiency to be widely available for clients and their contacts.

V. Recommendations

i. Create opportunities for public health practitioners to access sexual health training.

There are limited opportunities for Canadian public health practitioners to receive sexual health training, either through their formal training or continuing education. Of the 16 accredited medical schools and 54 nursing schools in Canada, only three medical and four nursing have courses that focus solely on sexual health. In related health science departments, six universities have courses whose primary focus is sexual health. The Annual Guelph Sexuality Conference and the Bi-annual Conference held by the Alberta Society for Promotion of Sexual Health (ASPSH) provide continuing education opportunities related to sexual health and STI/HIV, as does the BC Centre for Disease Control. On-line education is available through ASPSH, the Public Health Agency of Canada and BC Centre for Disease Control. These sexual health training opportunities range in content and delivery.

ii. Incorporate skills, attitudes and values in sexual health training.

While the majority of health care professionals acknowledge that addressing their clients' sexual health needs is part of their role, research indicates they are often uncomfortable and unprepared to communicate about sexuality. Knowledge level, personal attitudes, values and a lack of relevant practical skills are among the reasons given for this.

iii. Develop quality guidelines for sexual health training; allowing for the incorporation of consistent assessment and possible accreditation.

The development of research-based, quality guidelines would provide a framework for developing, delivering and evaluating sexual health training. Quality guidelines would work toward ensuring that all training for public health practitioners, regardless of venue, is consistently high quality.

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Appendix A: Literature Summary

Reference	Country	Objective	Research Method	Training	Findings
Bluespruce J, Dodge WT, Grothaus L, Wheeler K, Rebolledo V, Carey et al. HIV prevention in primary care: Impact of a clinical intervention. AIDS Patient Care STDS 2001;15(5):243-53.	USA	Describes a training program for primary care providers using a systems approach addressing intrapersonal and environmental barriers to HIV risk assessment and prevention counselling in the clinical setting.	• One group pre-test/post-test, mail surveys, written questionnaires. • Post: seven months after intervention. • 49 participants: physicians, physician assistants (PA), nurse practitioners, registered nurses, social workers. • Intervention: training, clarification of provider/staff roles, access to tools and materials, reminders. • Outcome measures: attitudes, beliefs, outcome expectations, knowledge, confidence in skills, and perceived supports and barriers.	• Two components: one intensive training and low-intensity follow-up. • Four workshops: 1 hour (1), 11/2 hours (2) and 6 hours (1). • Training was interactive including role-plays and case stories. • Topics: HIV prevention, support of health care teams, clarification of' roles, and skill building • Reimbursed for training outside regular work hours. • Low-intensity follow up: monthly HIV prevention updates and a one- hour meeting for local opinion leaders.	• That post test providers' attitudes and beliefs were more favourable to HIV risk assessment and prevention counselling. • Participants were less likely to express frustration with high-risk patients: decrease from 100% to 79% agreement • Participants felt more confident that their advice would be effective with gay men and single adult heterosexuals • Reported more confidence in their training in sexual history taking. • Reported more confidence in skills assessing patients' readiness for change. • Reported more support in practice environments.

Bowman MA, Russell NK, Boekeloo BO, Rafi I Z, Rabin DL. The effect of educational preparation on physician performance with a sexually transmitted disease-simulated patient. Arch Inter Med 1992;152(9):1823-8.	USA	Hypothesized that educational material could improve primary care physicians sexual practice history taking and counselling as assessed by a simulated patient (SP) in the physician's office.	• Physicians provided with educational materials; performance evaluated by simulated patient (SP) visits. • 232 primary care physicians, randomly allocated. • SP presented as sexually active young woman with vaginitis and STD/HIV risk behaviours. • Outcome measures: Assessed SP –interaction, sexual history taking practice, counselling techniques.	• Self-study, educational information received included monograph, pamphlet and audiotape. • Physicians also received a risk assessment questionnaire that could be used in patient interactions.	• Physicians who prepared for SP visit with educational material performed significantly better on every dimension. • Physicians who used the risk assessment questionnaire performed better. • 24.9% to 39.8% of physicians did not meet each of the four goals as evaluated by SP. • Despite educational preparation, physicians were not perceived as effective counsellors.
Bradley-Springer LA, Everett M R, Rotach EG, Vojir CP. Changes in clinician ability to assess risk and help patients determine the need for HIV testing: A comparison of three teaching methods. Eval Health Prof 2006;29(4):367-393.	USA	Describes study comparing two less traditional teaching methods with a classroom method to determine whether the less traditional methods resulted in greater improvement of clinician knowledge, skill, and willingness to perform HIV risk assessment.	• SP pre-test/post-test design with three month follow up. • Convenience sample of 86 physicians, nurses, and PAs. Participants chose day for training, not knowing what method would be used in that session. FB arm:n=37; SSM arm: n=30; CL arm: n=19. • Education arms: experiential education using SP with facilitator feedback (FB arm), self-paced education with case-based self-study module (SSM arm) and interactive classroom education (CL arm). • Evaluation: immediate with SP consultation, three months with questionnaire assessing knowledge, ability and willingness.	• FB arm: 10-20 minute verbal feedback on first SP session from SP & facilitator: ability to assess HIV risk, communicate effectively, determine need for HIV testing, and discuss conclusion with SP. • SSM arm: Complete hard copy, case based, interactive self-study module: risk assessment and HIV testing decisions. Completed at the study site • CL arm: 75-minute small-group session with short lectures, case studies, and role plays: practice risk assessment and HIV test counselling skills.	• Education methods were comparable. • Improvement in knowledge, attitudes, and behaviour related to risk assessment and test counselling over all education methods. Slight decay over three months. • Significant overall improvement ($p < .01$, see Table 5) in SP-observed and self-rated performance from pre-test to post-test.

Burr CK, Storm DS, Gross E. A faculty trainer model: Increasing knowledge and changing practice to improve perinatal HIV prevention and care. AIDS Patient Care STDS 2006;20(3):183-92.	USA	Reports on training for health care providers using a faculty trainer model. Projects goals: increased knowledge and change in practice, increased HIV counselling and testing in prenatal care, improved management of HIV in pregnant women.	• Pre-test/post-test evaluation with six month follow up. • 193 health care providers attended one of 12 faculty trainer workshops. 18 providers continued as faculty trainers and trained an additional 545 health care providers. • Outcome measures: perceptions of knowledge prior to and after training; how the information would influence practice.	• Four-hour workshop. • Designed curriculum, including didactic and interactive elements. (available online). • Workshop content: HIV counselling and testing in pregnancy, medical management of HIV in pregnancy, strategies to reduce perinatal HIV transmission, controversies in perinatal HIV care, adult learning approaches. • Presented by project faculty, local guest faculty (obstetricians,paediatricians, or nurse practitioners) active in HIV care locally. • Material included pocket guides to the USPHS perinatal guidelines, customized to include contact information for local HIV experts and services.	• Participants in faculty trainer workshops and trainer led seminars reported significant increases in perceived knowledge in all content areas and intention to change clinical practice. • At six-month follow-up of faculty trainers: over 90% of respondents reported positive impact on their care of women with, and at risk for HIV. • Key elements to successful implementation were: ongoing support of faculty trainers by AIDS educators, involvement of local HIV experts as trainers and resource persons, and use of a standardized curriculum based on national guidelines.
Byrne A, Watson R, Butler C, Accoroni A. Increasing the confidence of nursing staff to address the sexual health needs of people living with HIV: The use of motivational interviewing. AIDS Care 2006;18(5):501-4.	UK	Describe training nurses to use in motivational interviewing (MI) in addressing sexual health issues.	• Pre-test/post-test (self-administered questionnaire) with follow up meeting six months after training. • Initial consultation to determine training needs and strengths. • 10 nurses. • Outcome measures: knowledge and confidence in using MI and addressing sexual health issues. Qualitative feedback.	• Workshop length: one morning. • Workshop included: models of behaviour change, MI, basic counselling skills. • Didactic teaching, group work and role play. • Presented by clinical psychologists working with HIV/sexual health services.	• Participants' knowledge of and confidence in MI increased, remained to six months. • Shift in way they viewed behaviour change. • Increased knowledge and confidence in discussing sexual health, recognizing effective interventions and discussing this. • MI was experienced as a useful and constructive approach to addressing sexual health with people living with HIV.

Carney JS, Werth JL, Martin JS. The impact of an HIV/AIDS training course for baccalaureate nursing students. J Nurs Educ 1999;38(1):39-41.	USA	Describes specialized course to train baccalaureate nurses to work with individuals living with HIV.	• Pre-test/post-test with control group. • Outcome measures: knowledge of HIV and attitudes towards people living with HIV.	• Components of course: epidemiology, medical considerations, treatment, ethical and legal issues, psychosocial issues.	• Participants receiving training reported significantly increased knowledge and reported more positive beliefs about individuals living with HIV.
Chiang S, Geisler WM, Jackson JR, Rebar RW. Assessing the impact of a comprehensive sexually transmitted disease curriculum on learning outcomes. Am J Obstet Gynecol 2004;191(5):1822-7.	USA	Assesses impact of a sexually transmitted disease curriculum for third year medical students.	• Compared STD curriculum with STD curriculum plus STD clinic experience. Prospective randomized: • 108 third year medical students in ob-gyn clerkship: 47 randomized to curriculum and clinic, 61 to curriculum only. • Locally developed pretest/posttest and obstetrics-gynaecology NBME subject examination. • Outcome measures: knowledge of bacterial and common parasitic STDs, viral STDs, non-STD genital infections.	• STD curriculum: microbiology course on HPV, herpes and bacterial STDs with two-hour lab module, lecture on STD history-taking skills with two mock patient interviews, lectures in reproductive endocrinology and in Ob-gyn clerkship, STD overview lecture and online STD syllabus. • STD clinic experience: three half day sessions at STD clinic.	• Student performance on NBME STD items improved. • No significant difference between STD curriculum and STD curriculum with clinic experience. • Clerkship timing had an independent effect on STD related NBME performance.

Curran VR, Mugford JG, Law RMT, MacDonald S. Influence of an interprofessional HIV/AIDS education program on role perception, attitudes and teamwork skills of undergraduate health sciences students. Educ Health 2005;18(1):32-44.	USA	Evaluation study of undergraduate HIV/AIDS interprofessional education program for medical, nursing and pharmacy students.	• Combined one group pre-test-post-test and time-series study design. • 133 health sciences students were enrolled: 45 third year nursing students, 62 second year medical students, and 26 final year pharmacy students. • Outcome measures: changes in role perception, attitudes towards collaboration, self reported teamwork skills and satisfaction with a shared learning experience. • Four different evaluation instruments, self-report and observational report from tutor.	• PBL format: eight to 10 students from each profession. Assigned tutor. • Met for three one- hour sessions over a three-week period. • Content: Sessions 1, 2: paper-based case study. Session 3: SPS simulating a HIV/AIDS patient. Expected to collaborate in interviewing SP and preparing an interprofessional care plan.	• Students reported greater awareness of roles. • Improved attitudes towards teamwork. • Students reported greater knowledge of the clinical treatment and management of HIV/AIDS. • SPs were effective in fostering an experience of realism and motivating collaboration between students.
Cushing A, Evans D, Hall, A. Medical students' attitudes and behaviour towards sexual health interviewing: Short- and long-term evaluation of designated workshops. Med Teach 2005;27(5):422-8.	UK	Reports on workshops aimed at improving fourth-year medical students' attitudes and behaviour in talking to patients about sexual health.	• Pre-test/post-test with one year follow up. • Sample size varied. • Outcome measures: attitudes toward talking with patients about sexual health, intended behaviour, reported behaviour. • Non-intervention groups for behavioural intentions and behaviour.	• Half-day workshops, 40 students per workshop.. • Located in module of rheumatology, A&E and dermatology. • Brief lecture: sexual response phases and PLISSIT model. • Small group work with four case studies: discuss, role-play.	• Participants more likely to see relevance of sexual health enquiry. • Participants felt more confident and competent to broach subject. • Expressed greater intention to address sexual health. • At one year, no difference between intervention and non-intervention groups in asking about sex.

Dancy BL, Despotes J, Razzano L, Cook J. The impact of AIDS continuing education on psychiatric and non-psychiatric nurses' knowledge. J Contin Educ Nurs 2000;31(5):204-08.	USA	Describes Fundamentals of Mental health and HIV/AIDS program and its effectiveness with psychiatric and non-psychiatric nurses.	• Pre-test/post-test non-equivalent no control group design. Posttest followed immediately after training. • 240 nurses. • Outcome measures: HIV/AIDS knowledge regarding medical and neurological issues, testing issues, psychosocial issues, HIV/AIDS legal issues.	• Interdisciplinary approach, social workers, psychologists, counsellors and physician assistants. • One session, five hours. • Topics: medical, neuropsychiatry aspects of HIV/AIDS, HIV test counselling, legal issues, psychological and counselling issues. • Lectures, small group discussions. • Training manuals.	• All nurses had significantly more knowledge at post-test then pre-test. • Non-psychiatric nurses were significantly more knowledgeable at pre-test and post-test but psychiatric nurses showed more improvement from pre-test to post-test.
Dieckhaus KD, Vontell S, Pfeiffer C, Williams A. The use of standardized patient encounters for evaluation of a clinical education program on the development of HIV/AIDS-related clinical skills. J HIVAIDS Soc Serv 2005;4(2):9-26.	USA	Project aimed to determine feasibility and effectiveness of standardized patient encounters (SPE) as evaluation of HIV clinical education.	• One-group. Pre-test/post-test • 33 primary care resident physicians. • Outcome measures: obtaining medical history, identification of clinical issues, use of referral resources, use of laboratory resources, development of medical plan, patient education. • Evaluation: self-reported confidence in skills, two SPE encounters (videotaped). Reviewed with checklist.	• Second year primary care residents assigned to an urban HIV outpatient clinic. • Education was integrated into curriculum of residency training program. • Three hours of didactics: basic management skills of HIV outpatient care, initial evaluation and primary care, laboratory testing, common outpatient issues, medication management. • 12-16 hours of directly supervised clinical care under supervision of HIV medical specialist. • Printed resources: HIV care training manual.	• Focus more on evaluation with SPE than training. • Performance assessment with SPEs was found feasible and acceptable. • Trainees reported increased confidence in all but two aspects of HIV care and management but did not increase to very confident in any area. • Confidence was higher in skill sets that could be generalized to other medical conditions. • Lower confidence in technical skills associated with advanced HIV disease.

Epstein RM, Levenkron JC, Frarey L, Thompson J, Anderson K, Franks P. Improving physicians' HIV risk-assessment skills using announced and unannounced standardized patients. J Gen Intern Med 2001;16:176-180.	USA	Describes and evaluates two brief, multi-component, office-based educational programs.	• Pilot randomized trial of education methods, descriptive feasibility study, and validation of scale. • 24 primary care physicians. • Randomly assigned to interventions: announced SP visits, unannounced SP visits. All attended seminar on HIV risk assessment. • Evaluated: unannounced SP visits, mean 16 weeks after first visit. • Outcome measures: improvement in RHIRS scores from pre to post-test, ordering HIV tests.	• SPS trained to present as: generally healthy 33-year-old patient with headaches and fatigue and underlying concerns about HIV. • Announced SPs: in-role for 15 min., physician self-evaluation and 15 min. verbal feedback. • Unannounced SPs: in-role during entire visit, feedback by phone a couple of days later. • HIV risk assessment seminar: 90 minutes, included discussion, video trigger tapes, role playing.	• Results from interventions were equal –displayed same amount of learning. • RHIRS scores improved to post-test. • HIV testing increased significantly. • Physicians favoured announced visits: immediate feedback, convincing, no deception • Intervention proved to be feasible, inexpensive and well accepted.

Feldman J, Miner M, Millis M. Training family practice residents in HIV care. AIDS Patient Care STDS 2004;18(7):395-404.	USA	Describes an HIV Curriculum Project, its effect on residency training in HIV disease in selected programs in Minnesota, and its implications.	• Pre-test/Post-test with historical control. • 214 family practice residents participated over three years. • Data collected annually (1997 through 2000) using self-report pencil and paper tests. End of curriculum survey completed by those residents (n _ 30), who completed the entire three- year curriculum. • Outcome measures: knowledge, attitudes, confidence, and intention to treat HIV-positive patients, numbers of HIV patients seen and number of HIV-ELISA tests performed.	• Interdisciplinary curriculum incorporating 18 topics in three content areas: prevention, medical management, psychosocial issues. • Integrated into standard teaching curriculum, spread over three-year residency program. • Presented by family practice and subspecialty faculty, community organizations, HIV specialists, and psychologists. • Sexual Attitude Reassessment Seminar focusing on physician awareness, attitudes, and communication regarding sexuality offered. • HIV clinical, service, and research electives established and available to all interested residents.	• Overall knowledge and attitude scores improved significantly compared to baseline. Compared to historical controls, residents who completed the curriculum also had significantly higher knowledge scores and more confidence in their ability to treat patients with HIV. • No significant change in prevention knowledge or attitudes toward prevention, scores did not differ from those of controls. • Overall intention to treat and boost confidence in preventing and treating HIV improved, although not significantly. • Yearly number of HIV ELISA tests increased from 1145 to 1665.

Ferrara E, Pugnaire MP, Jonassen JA, O'Dell K, Clay M, Hatem D, Carlin M. Sexual health innovations in undergraduate medical education. Int J Impot Res 2003;15 Suppl 5: S46-50.	USA	Describes genesis, development and three innovative curricular components of the Sexual Health Initiative Project (SHIP) implemented at University of Massachusetts Medical School (UMMS).	• Descriptive. • Medical Students. • Sexual health integrated into curriculum. • Outcome measures: none.	• Integrated sexual health curriculum across four years of medical education. • Multidisciplinary faculty: clinicians, basic scientists, medical ethicist, educators. • Addresses sexual health knowledge, skills, attitudes in medical school curriculum; core skills in sexual history-taking, physical exam; skills in self-awareness, reflective practice; knowledge of population-specific sexual health, dysfunction, treatment. • Three innovative components reported: The basic science interface: dissecting the pelvis (1st year elective); Cultural competence: caring for gay, lesbian, bisexual, transgendered (GLBT) patients; Women's health mini-selective course.	• Relevant and critical areas of instruction include: assessment of high-risk behaviour and counselling strategies; defining of "normal" sexual function inclusive of all sexual orientations; assessment and treatment of sexual dysfunction; and screening for sexual abuse and/or assault. • Barriers to addressing sexual health in healthcare context, both from perspective of patient and physician, must be taken into consideration. • Emphasis on the clinical relevance of incorporating nonjudgmental, targeted screening for sexual health issues with all patients.

FitzGerald M, Crowley T, Greenhouse P, Probert C, Horner P. Teaching sexual history taking to medical students and examining it: Experience in one medical school and a national survey. Med Educ 2003;37(2):94-8.	UK	Two-fold: describes feasibility and acceptability of training and examining medical students in taking a sexual history. Compares practices with other universities.	• Training and evaluation, survey, no control or pre-test. • In training: 131medical students. Survey: 22 (out of possible 23) medical schools. • Training integrated in medical school curriculum. • Outcome measures, training: performance in objective structured clinical examination (OSCE) - lifestyle station - including SP and written paper. • Questionnaire evaluating OSCE. • Outcome measures, survey: schools offering genitourinary medicine (GUM), communication skills training, sexual history taking and examination.	• Specific sexual history taking integrated into undergraduate curriculum, GUM component increased by half a day. • Main body of teaching in year four – includes seven hours attached to a GUM clinic. • 29 hours of GUM teaching throughout medical school: 11 concerning sexuality and communication skills, two hours specifically on sexual history taking. • Revision lecture before OSCE. • Small group work, didactic lectures, role-play.	• Focused more on examination of sexual health history taking. • One student failed lifestyle station, majority obtaining high marks. • No relationship between marks in sexual health station and psychiatry or medical history taking. • OSCE judged fair and a good test of skills. • All medical schools offer GUM, 17 teach communication skills specifically for sexual health. • Sexual history taking examined in six schools. • Mean teaching time for sexual health communication skills was 1.8 hours.
Flaskerud JH. A psychoeducational model for changing nurses' AIDS knowledge, attitudes, and practices. J Contin Educ Nurs 1991;22(6):237-44.	USA	Literature review	• Literature review	• Not applicable	• Proposes model for changing knowledge and clinical skills, knowledge and attitudes and attitudes alone.

Frank LR, Day R. Evaluation of HIV clinical consultation provided by the AETCs: Improving clinician capacity to provide HIV treatment. J HIV AIDS Soc Serv 2005;4(2):97-112.	USA	Describes an evaluation of the effectiveness of HIV clinical consultation offered by AIDS Education and Training Centers (AETC) program. More focused on development of evaluation instrument.	• Multi-site evaluation, post-test only, no control. • Mail surveys within one week of consultation. • 318 HIV/AIDS care providers, two samples: 144 received clinical consultation from AETC, 174 received clinical consultation from NCCC. • Outcome measures: ease of access to consultation, outcome of consultation (e.g. increased confidence in patient management), intention to use future consultations, implementation of consultant recommendation.	• Consultations either conducted in clinical practice of consulting professional, bringing expertise to care settings or distance-based through phone, email, telemedicine. • Consultation helps less experienced providers to: update HIV knowledge; obtain HIV clinical guidance; obtain diagnostic, therapeutic clinical guidelines and algorithms; network between primary care settings and academic, tertiary care settings; provide clinical decision support by experts.	• Reported data indicate high levels of satisfaction with clinical consultations. • More than half (57.9%) of consultees implemented all recommendations and another 33% implemented some recommendations. • Clinical support requested for specific patient cases, and led to greater confidence in ability to provide state-of-the-art treatment to patient who motivated consultation. • Many of the consultees have numerous contacts with the AETC consultants.
Gavin J, Lempp H, Elliman A, Grogan C. Teaching in partnership: Linking a medical school and a community trust. British Journal of Community Nursing 2002;7(1):32-6.	UK	Describes interprofessional teaching program in community setting.	• One-group pre-test/post-test. • 24 second year medical students. • Core curriculum and special study module. • Outcome measures: respecting patient views, applying theory to practice, attitudes toward people living with HIV/AIDS, future involvement in HIV/AIDS services.	• Interaction with patients at clinic and in their homes. • Supervised by clinical nurse specialists in HIV/AIDS. • One day a week for three months. • Objective: understand the complexity of families living with HIV/AIDS and their ability to cope. • Topics: epidemiology, pathology, social and emotional issues, profile of care provision, sexual heath promotion and HIV prevention models.	• Students' learned to appreciate range of people infected and affected (age, gender, ethnicity, sexual orientation). • Learned to take patients' medical, social and emotional needs into account. • Recognized they had incomplete knowledge of HIV/AIDS, often leading to preconceived ideas/prejudices. • Identified need for more detailed sexual health information. • All students successfully passed course assessments. • 25% decided to continue in HIV/AIDS services.

Haist SA, Griffith CH, Hoellein AR, Talente G, Montgomery T, Wilson JF. Improving students' sexual history inquiry and HIV counseling with an interactive workshop using standardized patients. J Gen Intern Med 2004;19(5 Pt 2):549–553.	USA	Evaluates use of SP in teaching sexual health during sexual history-HIV counselling (SHHIVC) workshop over one year.	• Post-test only, non-randomized control. • 83 third year med. students: 41 received workshop, 44 in control. • Four hour workshop during ambulatory internal medicine clerkship. • Evaluation takes place 3.5 weeks after workshop during SP examination of clerkship. • Outcome measures: sexual history inquiry, HIV/STD transmission education, condom counselling, HIV testing.	• Four hour workshop based on standardized patient encounters. • Students interviewed SPs individually or in pairs (two hours). • Faculty-preceptor led discussion on issues arising from encounters and factual information on obtaining sexual history, methods of birth control, STD prevention, HIV risk assessment, HIV risk reduction counselling. • Half of students in year received workshop. • Control: Assigned text book reading.	• Students who attended workshop scored significantly higher on SOP checklist items specific for SHHIVC. • Students who attended workshop scored significantly higher on subscales of sexual health history taking and HIV/STD transmission. • No significant differences for subscales of condom counselling, and HIV/STD testing counselling. •
Haist SA, Lineberry MJ, Griffith CH, Hoellein AR, Talente GM, Wilson JF. Sexual history inquiry and HIV counseling: Improving clinical skills and medical knowledge through an interactive workshop utilizing standardized patients. Adv Health Sci Educ Theory Pract 2007 Jan 6. [Epub ahead of print].	USA	Evaluates use of SP in teaching sexual health during sexual history-HIV counselling (SHHIVC) workshop over three consecutive academic years.	• Post-test only, non-randomized control. • Conducted over three years: 266 third year med students - 129 in workshop, 137 in control. • Four hour workshop during ambulatory internal medicine clerkship. • Evaluation: 3.5 weeks after workshop during SP examination of clerkship. • Outcome measures: sexual history inquiry, HIV/STD infectivity counselling, condom counselling, HIV testing counselling. • Also written exam and open-ended written exercise upon completion of SP. encounter.	• Four hour workshop based on standardized patient encounters. • Students interviewed SPs individually or in pairs (two hours) • Faculty-preceptor led discussion on issues arising from encounters and factual information on obtaining sexual history, methods of birth control, STD prevention, HIV risk assessment, HIV risk reduction counselling. • Control: assigned text book reading.	• Students who attended workshop scored significantly higher on SP checklist items specific for SHHIVC. • Students who attended workshop scored significantly higher on subscales of sexual history inquiry, HIV/STD infectivity counselling and HIV/STD testing counselling. • Students who attended workshop scored significantly higher on written exam and post-standardized patient encounter open-ended written exercise. • No significant differences for condom counselling.

Henderson H, German VF, Panter AT, Huba GJ, Rohweder C, Zalumas J et al. Systems change resulting from HIV/AIDS education and training: A cross-cutting evaluation of nine innovative projects. Eval Health Prof 1999;22(4):405-426.	USA	Evaluation of nine diverse HIV/AIDS training programs. Reports on degree of change in health care delivery attributed to training.	• Post-test only. All self-report data. Quantitative and qualitative measures. 218 HIV care providers. • Nine diverse training programs. • Evaluation: self-report. Telephone interviews, eight months after training. • Outcome measures for study as a whole: background Information, perspectives on HIV/AIDS, patient care, and systems change. • Outcome measures for systems change: examples of system change, rating of training as positive, negative, no effect.	• 2,040 sessions over four years. • Programs varied, delivering educational updates. Included programs to increase willingness to provide HIV/AIDS care, increase provider capacity, train providers in using distance-learning approaches, reduce perinatal HIV transmission, and recognize HIV/AIDS-related delirium.	• Half of the training participants (55.5%) were able to provide at least one instance of systems change as a function of the training experience(s). • Most recommended training to at least one other person (83.4%). More than half (52.1%) recommended training to several others. • Nearly three quarters of the participants (73.4%) rated training as either very valuable or extremely valuable.
Huba GJ, Panter AT, Melchior LA, Anderson A, Colgrove J, Driscoll M et al. Effects of HIV/AIDS education and training on patient care and provider practices: a cross-cutting evaluation. AIDS Educ Prev 2000;12(2):93-112.	USA	Evaluation of nine diverse HIV/AIDS training programs. Reports on effects of training on patient care and provider practices.	• Post-test only. All self-report data. Quantitative and qualitative measures. • 218 HIV care providers. • Nine training programs. • Evaluation: self-report. Telephone Interviews, average of eight months following training. Asked to provide specific examples of a resulting change in health care system. • Outcome measures for study as a whole: background Information, perspectives on HIV/AIDS, patient care, and systems change.	• 2,040 sessions over four years. • Programs varied, delivering educational updates. Included programs to increase willingness to provide HIV/AIDS care, increase provider capacity, train providers in using distance-learning approaches, reduce perinatal HIV transmission, and recognize HIV/AIDS-related delirium. •	• Training rated positively regarding thoughts on HIV, patient care and system functioning. • Seen as most effective in service provision, least for setting up referral networks. • Reported increased knowledge at individual and system level. • Changes in provider-patient care interactions. • Affected inter-professional and inter-agency collaboration (referral networks).

Katsufrakis PJ, Radecki SE. Clinical training in Human Immunodeficiency Virus Disease for community physicians: The Los Angeles experience. West J Med 1992;156:619-623.	USA	Describes training program and the evaluation thereof.	• Post-test only with six-12 month follow up. • 21 community physicians. • Preceptorship. • Outcome measures: satisfaction with training, confidence in treatment, patient care.	• One-week intensive perceptorship. • One-on-one training from infectious disease specialists. • Purpose: enable trainees to manage HIV associated conditions, early diagnosis and referral.	• High level of satisfaction, most expectations met. • 43% reported increased confidence in providing counselling. • Provided HIV care and testing in their practices.
Kidd J, Neste LD, O'Hara R. Teaching and learning about sexual histories during undergraduate medical education: A comparison of two approaches. Med Teach 2001;23(3):252-257.	UK	Describes and compares two sexual history taking teaching approaches.	• Pre-test/post-test, but conducted differently for groups. • 100 students in small group session, 50 in large group session. • Small group vs. large group sessions. • Outcome measures: measured differently for different methods. Includes confidence, competence.	• Small group: groups of four to six, two hour sessions. Includes identification of topics, role-play, brainstorming. • Large group: 50 students for one hour. Lectures, small group activities, group discussion. Topics include why take sexual history, what information is gathered, when is it appropriate, what barriers?	• In small groups students interact and participate in discussions more easily. • Small groups are more cost-intensive, require special facilities. • In large groups don't gain as much: fewer opportunities for discussion and no opportunities to practice skills. • Less costly, can accommodate more students.
Lachat, M.F. & Cowen, E.R. Developing a community-wide HIV/AIDS nurse education series: A strategy for success. J Contin Educ Nurs 1993;24(6):255-7.	USA	Describes development and implementation of community education program.	• Evaluation of training is post-test only. • Nearly 200 nurses. • Outcome measures: satisfaction with training, support for further training.	• Monthly dinner-lecture series. • Non-hospital setting. •	• Main focus not on evaluation of training but description of participatory development. • Minimal evaluation data: indicate high level of satisfaction and support.

Lalonde B, Uldall KK, Huba GJ, Panter AT, Zalumas J, Wolfe LR et al. Impact of HIV/AIDS education on health care provider practice: Results from nine grantees of the SPNS program. Eval Health Prof 2002;25(3):302-320.	USA	Evaluation of nine diverse HIV/AIDS training programs. Reports on change in provider practice.	• Post-test only. Self-report data. Quantitative and qualitative measures. • 218 HIV care providers. • Nine diverse training programs. • Evaluation: self-report. Telephone interviews, average eight months post training. Asked to give specific examples of a resulting change in health care system. • Outcome measure for provider practice: change in practice, rating of training effectiveness.	• 2,040 sessions over four years. • Programs varied, delivering educational updates. Included programs to increase willingness to provide HIV/AIDS care, increase provider capacity, train providers in using distance-learning approaches, reduce perinatal HIV transmission, and recognize HIV/AIDS-related delirium. •	• Significant site? effects in terms of training-induced changes in care provided. • 82% of respondents identified at least one change in their practices. • Broad domains of change were identified, most notable behaviour changed in terms of patient and family education, counselling and testing, collaboration with other providers involved in a patient's care, and other patient service provisions.
Panter AT, Huba GJ, Melchior LA, Anderson D, Driscoll M, Rohweder C et al. Healthcare provider characteristics and perceived confidence from HIV/AIDS education. AIDS Patient Care STDS 2002;14(11):603-14.	USA	Reports on six training programs Examines influence of provider characteristics on training outcomes.	• Repeated measures design. • Post-test, no control. • 3779 individuals, mostly primary care providers. • Different training programs. • Outcome measures: self-reported change in confidence. Link with provider characteristics.	• Six training projects designed to keep health providers up-to-date on emerging developments and approaches in HIV/AIDS care. • Data available for 296 trainings. • Most training sessions were designed to impact knowledge change (90.9%), with large percentages designed to impact attitude change (69.6%) and/or skills/behaviour change (75.3%).	• Showed little support for links between provider characteristics and change in confidence due to training. • Confidence levels before training high, increased confidence after training. • Most comfortable providing services to clients with HIV/AIDS and knowledge of training content. • Less confident of management and counselling of clients. • Change in confidence differed according to different projects.

Parish SJ, Clayton AH. Sexual medicine education: Review and commentary. J Sex Med 2007; 4:259-268.	USA, brief mention of UK	Reviews existing models and practices in medical education at all levels.	• Literature review.	• Not applicable.	• Current training in sexual history taking and sexual medicine assessment is variable, non-standardized or inadequate. • Knowledge gap between developments in sexual medicine and clinical skills.
Peters FL, Connoll KM. Incorporating the affective component into an AIDS workshop. J Contin Educ Nurs 1991;22(3):95-9.	USA	Describes training program, no primary evaluation data.	• Post-test only. Quantitative and qualitative measures. • Target audience is nurses. • Evaluation after sessions. • Outcome measures: satisfaction, degree to which workshop objectives were met.	• One-day workshop. • Includes latest information on HIV/AIDS, ways to reduce personal and occupational risk and panel discussion with people living with HIV/AIDS. • Affective education exercises – structures discussion on feelings, attitudes, opinions and beliefs.	• Evaluation not primary goal, only anecdotal. • Majority of participants report increased knowledge, comfort and acceptance of persons with AIDS.
Poindexter CC, Lane TS, Boyer NC. Teaching and learning by example: Empowerment principles applied to development, delivery, and evaluation of community-based training for HIV service providers and supervisors. AIDS Educ Prev 2002;14(5):391-400.	USA	Describes a participatory method of developing, implementing and evaluating an educational program.	• Post-test only. Conducted three months after training. • HIV workers and supervisors. • Outcome measures: relevance, attainment of goals.	• Workshops lasting two full days or 12 hours. • Direct care workshops included: principles of helping, human services values, interaction techniques, work environment, advocacy and cultural competence.	• Not focused on evaluation, reports minimal data. • Provides framework for development, implementation and evaluation of training working with community.
Ridings H, Jennings PR. Development and dissemination of an HIV training program. Perspective on Physician Assistant Education 2003;14(3):174-7.	USA	Describes process of development, implementation and evaluation. Process focused, not evaluation.	• One group pre-test/post-test. • Physician assistants, rural primary health care providers. • Evaluated through preceptors, writing paper and site-visits. • Outcome measures: knowledge, instructor's ability, quality of curriculum.	• Four week elective clerkship for PAs and 16 hour didactic teaching. • For rural health care providers: teleconferencing, CD-ROM.	• Primarily focused on process, not evaluation. Minimal evaluation data. • Significant increased in post-test scores for didactic component. • Significant increase in post-test scores for clerkship experience.

Rosen D, Abedini BR, Jean-Baptiste R, Richetti D, Youngblood A, Spooner L. Multi-discipline HIV longitudinal training: Utilizing AETC resources to build HIV care capacity in minority-serving health centers. J HIV AIDS Soc Serv 2005;4(2):57-77.	USA	Case study describing implementation and delivering of training. No evaluation data.	• Case study. • Primary care providers.	• Not applicable.	• Not applicable.
Rosen R, Kountz D, Post-Zwicker T, Leiblum S, Wiegel M. Sexual communication skills in residency training: The Robert Wood Johnson model. J Sex Med 2006;3(1):37-46.	USA	Describes implementation and evaluation of training program.	• Pre-test/post-test with follow up of smaller sample. • 46 medical residents. • Evaluation at follow up completed by only nine residents. • Outcome measures: satisfaction, perceived changes in comfort and ability, changes in practice to follow up.	• Half-day intensive workshop. • Focus: sexual history taking and sexual disease management. • Includes presentations on sexual function and dysfunction, basic skills in sexual communication and history taking skills, role of multicultural perspectives.	• Focused on sexual education in terms of dysfunction rather than STDs/HIV. • Program was well-received, high levels of satisfaction. • Participants rated themselves more likely to engage in sexual inquiry following workshop. • Data from follow up interview report lasting changes in practices.
Sacks, S., Drabant, B. & Perrin, E. Communicating about sexuality: An initiative across the core clerkships. Acad Med 2002;77(11):1159-60.	USA	Describes cross-clerkship curriculum for third-year medical students. Not focused on evaluation.	• Post-test only. In paediatric clerkship non-randomized control. • Unknown sample • Outcome measures: comfort in dealing with issues of sexuality.	• Medical school curriculum incorporated into all years of study. • Included in four clerkships: internal medicine, family medicine, paediatric and psychiatry.	• Not evaluation focused, minimal data. • Increased comfort dealing with sexuality issues. • In paediatric clerkship: only slight decrease in homophobic attitudes.

Sibbald B, Freeling P, Coles H, Wilkins J. HIV/AIDS workshop for primary health care staff. Med Educ 1991;25:243-250.	UK	Describes development and evaluation of HIV/AIDS workshop.	• One group pre-test/post-test. • 74 General practitioners and practice nurses. • Evaluation: self-report questionnaires from participants, interviews with facilitators, report by non-participant observer. • Outcome measures: attitudes and willingness to give advice, negotiate reduction in risk behaviour and care for HIV patients, attitudes to teamwork.	• One-day workshop. • Three group facilitators. • Program consisted of two lectures and four small-group exercises.	• Favourable changes in attitudes and willingness. • Increased willingness to provide advice, negotiate safer sex and needle exchange, counsel HIV patients, and controlling infection in general practice. • Change in willingness to counsel sexual partners and family members of HIV patients more pronounced with nurses. • Doctors more confident in avoiding cross-infection in practice.
Skelton, J.R. & Matthews, P.M. Teaching sexual history taking to health care professionals in primary care. **Med Educ 2001;**35(6):603-608.	UK	Reports on series (nine) of the acceptability of training interventions, education principles involved and recommendations.	• No summary data of effectiveness. Review of free text comments. • In total 141 primary health care professionals (physicians and nurses) participated. • Outcome measures: quality of training, relevance of topic, acceptability of courses.	• Range of sessions, all designed to help primary health care professionals identify and deal more effectively with sexual health issues. • Centered on role play and sometimes video work.	• Overall quality of courses and topic relevance was rated highly for all sessions. • Courses were highly acceptable to participants. • Courses have the capacity to raise awareness and facilitate appropriate language.

Solursh DS, Ernst JL, Lewis RW, Prisant LM, Mills TM, Solursh LP, Jarvis RG, Salazar WH. The human sexuality education of physicians in North American medical schools. International Journal of Impotence Research 2003; 15 Suppl 5:S41-5.	USA & CA	Describes a survey of US and Canadian medical schools to determine extent of sexual health training.	• Survey: one page checklist. • 93 US medical schools (out of 124) and eight (out of 16) Canadian universities. • Survey included questions on type, length of educational experience, required course or elective, whose responsibility, specific subject areas included, student involvement in sexual medicine clinical programs, continuing medical education.	•	• Focus mostly on sexual dysfunction. • 83.2% of universities used lecture format. • Multidisciplinary teams responsible in 64 (63.4%) schools. • Majority (54.1%) of schools provided three–10 hours of education. • 43 (42.6%) schools offered clinical programs. • 56 (55.5%) provided students in their clerkships with supervision in dealing with sexual issues.
Sowell R, Seals G, Wilson B, Robinson C. Evaluation of an HIV/AIDS continuing education program. J Contin Educ Nurs 1998;29(2):85-93.	USA	Evaluation and outcomes of a continuing education program.	• One group pre-test/post-test with long-term follow up. Quantitative and qualitative measures. • 173 rural nurses, usable evaluation data was available for 90. • Evaluation also included daily class evaluations. • Outcome measures: self-perception of professional preparedness, willingness to care and attitudes toward people with HIV/AIDS, knowledge of HIV/AIDS.	• 18-day semi-structured classroom learning and 12-day internship. • Small classes to facilitate interaction. • Modules focused on immune function/diagnosis and treatment, psychosocial/community development, occupational/socio-cultural issues. • Themes woven throughout: women and HIV/AIDS, paediatrics/adolescents, HIV as a family disease, continuum of care, adult learning strategies.	• Assessment of professional preparedness improved, especially in terms of following the provincial HIV/AIDS policy. • Improved attitude towards people with HIV/AIDS, positive shift in concerns toward caring for HIV positive people. • Gains in knowledge in all modules. • In follow-up survey, participants reported feeling better prepared to care for people living with HIV/AIDS.

Stanton M, Johnson P. Effect of training program on physicians' attitude towards knowledge and practice patterns related to assessment and screening of clients with HIV/AIDS. Online Journal of Rural Nursing and Health Care 2000;1(3) 13p.	USA	Describes development, implementation and evaluation of a training program.	• One-group pre-test/post-test, convenience sample. • 114 Hispanic primary care physicians. • Outcome measures: attitudes toward people living with HIV/AIDS, practice patterns and knowledge.	• Four-part, modular program on screening, testing of high risk and referral of patients testing positive for HIV. • Four classes, three hours in length taught one-to-one by physician instructors in Spanish or English. Classes followed a lesson plan with very specific content for each module. • Implemented on a one-to-one basis at physician's place of practice. • Six bilingual physician instructors were trained. • Standardized course materials.	• Increase in knowledge from pre-test to post-test. • Increased discussion of sexual issues with patients and physicians confidence in assessing HIV risk behaviours. • Increase in actual number of patients tested and/or referred to an independent lab for testing. • Increase in assessment, screening and counselling of patients with high-risk behaviours. •
Valois P, Turgeon H, Godin G, Blondeau D, Cote F. Influence of a persuasive strategy on nursing students' beliefs and attitudes toward provision of care to people living with HIV/AIDS. J Nurs Educ 2001;40(8):354-8.	CA	Persuasive messaging as teaching method.	• Pre-test/post-test, non-randomized control. • 74 nursing students: 27 in experimental group, 47 in control. • Outcome measures: beliefs, attitudes, perceived behaviour control.	• Persuasive messages were presented to experimental group on three occasions. • 30 minute session led by same nurse health educator. • Session 1: presentation of arguments; session 2: discussion of questions; Session 3: group discussion of case studies.	• Program successfully increased knowledge in experimental group. • Positive change in attitudes and behaviour control of experimental group. •
Waddell RD, Kulig RP. Webcasting: An innovative approach to HIV/AIDS: Professional training in a rural setting. J HIV AIDS Soc Serv 2005;4(2):45-55.	USA	Description of program using on-line webcasts as education method.	• Case study.	• Not applicable.	• Not applicable.

Wagner E, McCord G, Stockton L, Gilchrist VJ, Fedyna D, Schroeder L, Sheth, S. A sexual history taking curriculum for second year medical students. Med Teach 2006;28(2):184-6.	USA	Description and evaluation of a curriculum.	• Post-test only, no control. • 94 Medical students • Evaluation included surveys on curriculum, performance in SP based exams. Continuous evaluation by seminar leaders. • Outcome measures: evaluation of curriculum, student performance during clinical skills assessment (CSA), sexual history taking scores.	• Taught during one semester. • Consists of four activities: • physician moderated small groups critiquing video of physicians inquiring about sexual health • Saturday morning activity (Saturday Sex): taking sexual histories from actual patients. • Reading • SP interviews, videotaped. Written exercise based on interview and group discussions.	• Highest rated aspect of curriculum was Saturday Sex. • Students reported more awareness of importance of sexual histories, greater effectiveness and comfort taking histories. • Over 80% of students asked sexual health question in CSA. • Seminar leaders rated students' skills above average.
Weerakoon P, Stiernborg M. Sexuality education for health care professionals: A critical review of the literature. Annual Review of Sex Research 1996;7 181-127.	Interntnl	Literature review of studies published between mid 1970's and 1995.	• Assesses education according to: target population, aims and objectives, learning methodology, instructors selection, constraints and limitations, course evaluation.	•	• Courses vary in format, departmental affiliation and student year. • Sexuality education given low priority in curriculum. • Research constrained by time, resources and lack of control groups.
Weerakoon P, Wong M. Sexuality education on-line for health professionals. Electronic Journal of Human Sexuality 2003; 6: 7p.	AUS	Describes an on-line (web-based) sexuality education program.	• Descriptive, no evaluation. • Target population: allied health professionals.	• First class session is face-to - face. Remainder of semester offered on-line. • Developed on PLISSIT management model. • Introduction followed by three stages of learning. • Discussion forum: for small group work and messages from group coordinator. • Chat space: consultations and discussions.	