



# Knowledge of HIV and Related Best Practices Among Non-HIV Specific Health Care Providers

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## Questions

Do non-HIV specific health care providers lack HIV knowledge or skills? What negative health outcomes occur when non-HIV specific health care providers do not use best practices?

## 🔍 Key Take-Home Messages

- One Canadian and several U.S. surveys have consistently shown a lack of HIV-related knowledge (1;2), awareness of HIV-related guidelines (3;4), and failure to screen for HIV (5;6) among non-HIV specific health care providers.
- Lack of HIV-related knowledge represents missed opportunities to reverse HIV-related dementia (7), curb the epidemic (4) and successfully treat patients (8;9).
- High rates of stigmatizing attitudes (2) and a refusal to treat patients with bloodborne infections (10) have been reported among non-HIV specific health care providers.
- Non-HIV specific health care providers can be trained to provide high-quality care. Organized education programs have been shown to increase testing rates (11-13), improve HIV-related knowledge (12) and improve awareness of HIV-related guidelines (11).

## ❗ The Issue and Why It's Important

Lack of HIV-related knowledge or skills can lead to sub-optimal health outcomes for people living with HIV. Inaccurate beliefs about HIV transmission can contribute to stigmatizing behaviours on the part of health care workers, and inadequate knowledge about seroprevalence rates can cause health care workers to underestimate HIV risk and fail to test for HIV. Given that HIV care is increasingly moving outside specialized HIV clinics, it is essential that doctors, nurses and other health care providers possess up-

## References

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to-date information about HIV.

## What We Found

### Lack of HIV knowledge or skills

Studies conducted in the past ten years have consistently shown that non-HIV specific health care providers lack knowledge or fail to adhere to HIV treatment guidelines.

A study of 973 physicians in New York state found that 40% were unaware of a state-wide law mandating the offer of routine HIV testing to all patients aged 13 to 64 (5). Similarly, a survey of 232 emergency and internal medicine physicians in Ohio found that only 30% were aware of current U.S. Centers for Disease Control (CDC) testing recommendations and that fewer than 70% were routinely assessing patients for HIV transmission risk factors (3).

A study of obstetrical and gynecological nurses and auxiliary workers in Maryland found that respondents were knowledgeable about vertical transmission but fewer than 50% could correctly answer questions about the difference between HIV and AIDS, the life expectancy of a newborn diagnosed with HIV or the life expectancy of a woman living with HIV who is not on antiretroviral therapy (ART) (2).

In addition, a study of 101 pediatric care providers in Pennsylvania found that only 40% screened for HIV “most” or “all of the time,” and that 73% of suburban pediatric care providers underestimated their local HIV seroprevalence rate (6). A survey of 1,665 Canadian family physicians and obstetrician-gynecologists found that only 1% could correctly identify the transmission probability of HIV and only 6% could correctly identify the transmission probability of chlamydia (1).

### Effects of lack of HIV knowledge or skills

#### Inadequate HIV testing

A Pennsylvania-based study about pediatric care providers by Goyal et al. noted that lack of knowledge has a significant impact on the failure to offer testing, since most adolescents cite not being offered an HIV test as a main reason for not getting one (6). The authors of a study in Texas, which found that 41% of primary care providers were unaware that U.S. CDC recommendations, stressed that HIV testing is a vital intervention necessary to curb the epidemic and lower community transmission rates (4).

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## **Inadequate HIV care**

A national U.S. study that assessed HIV knowledge among 585 physicians and nurses with geriatrics specialties found that 83% were unaware that dementia due to HIV may be reversible (7). The study authors noted that this lack of awareness represents a missed opportunity to reverse a devastating condition (7).

A study of 236 registered nurses by Watkins and colleagues in Texas found that up to 75% knew “little” or “next to nothing” about resistance testing, medication side effects and medication adherence—noting that a lack of HIV-related knowledge represents barriers to successful treatment (8).

Another national U.S. study that compared 5,247 HIV-positive patients of GPs (“non-expert generalists”), GPs with HIV expertise (“expert generalists”), and infectious disease specialists found that non-expert generalists were delivering lower quality care (9). More than 80% of patients being cared for by infectious disease specialists and expert generalists were on ART, compared to 73% of patients being cared for by non-expert generalists. Only 31% of non-expert generalist patients had their viral load controlled, compared to 39% of expert generalist patients and 41% of infectious disease specialist patients (9).

## **HIV-related stigma**

A Maryland study examining HIV-related knowledge among obstetrical and gynecological nurses and auxiliary workers found that lack of knowledge could lead to stigmatizing attitudes (2). For example, 47% of the obstetrical and gynecological nurses and workers surveyed said that women living with HIV should not have children (2).

An Israeli study assessing nurses’ knowledge of bloodborne pathogens (BBPs) and professional behaviours found that of 180 participants, 77% reported avoiding therapeutic contact with BBP-infected patients (10). The study also found that nurses’ understanding of standard precautions did not influence their willingness to care for BBP-infected patients (10).

According to the authors of the Maryland study, stigmatizing attitudes could deter women living with HIV from accessing health care services (2), while the authors of the Israeli study stressed that stigma could have a negative effect on the quality of care that patients receive (10).

## **Effectiveness of non-HIV specialist education**

In the U.K., an educational intervention called SHIP (Sexual Health in Practice) was introduced to improve knowledge and practices among general practitioners (GPs) in relation to sexually transmitted

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infections, sexual health and contraception (13). A 2012 study looked at the effect of SHIP on general practice HIV testing rates in London, and found that practices with SHIP-trained practitioners conducted more HIV tests (526 tests per practice before training compared to 1,556 tests five months after training) and detected more cases of HIV (from 10 to 22 diagnoses per year) (13).

In Texas, a program called TRIAD (Texas Rapid-testing Implementation at Delivery) was established to increase HIV testing among pregnant women (12). The brief educational program, which was aimed at physicians, nurses, midwives and pharmacists, included facts about perinatal HIV transmission, information about rapid testing technology and information about who should be considered for rapid testing. A survey of 194 participants found significantly greater knowledge about HIV prevalence and rapid testing after the program, with sustained results at the three month follow-up (12).

A similar U.S. program called One Test, Two Lives (OTTL) was launched by the U.S. CDC in 2008 to increase awareness and implementation of national prenatal HIV testing recommendations. OTTL materials consist of a communication guide for talking about HIV tests, fact sheets, a due date projection wheel, waiting room posters and other resources. In 2011, the CDC assessed the impact of OTTL and found that obstetricians and gynecologists who had seen OTTL materials were more aware of testing recommendations and more likely to include HIV testing as a regular screening test for all patients (11).

The authors of the U.S. study comparing generalist, “expert generalist” and infectious disease specialists stressed that generalists can be trained to provide high-quality care to patients with complex chronic illness through multiple means, including continuing education courses, conferences and literature updates (9). Similarly, a study of pre-exposure prophylaxis (PrEP) knowledge among HIV-providers and non-HIV-providers in California and New York found that higher PrEP knowledge scores were associated with a higher rate of PrEP prescriptions (14). The authors of the PrEP study emphasized that education about PrEP had to be a key component of successful PrEP implementation (14).



## Factors That May Impact Local Applicability

All studies cited in this review were conducted in high income countries, specifically the United States, Israel, the United Kingdom and Canada.



## What We Did

We searched Medline using a combination of text terms HIV AND (physician\* or doctor\* or nurse\* or pharmacis\*) AND [text terms (knowledge or skill\*) or MESH terms (Knowledge or Health Knowledge, Attitudes, Practice)]. The search was limited to articles published in English since 2005.

### Rapid Response: Evidence into Action

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#### Prepared by

Emily White  
Jason Globerman

#### Program Leads / Editors

Jason Globerman  
Jean Bacon  
Sean B. Rourke

#### Contact

rapidresponse@ohtn.on.ca

#### For more information visit

[www.ohtn.on.ca/rapid-response-service](http://www.ohtn.on.ca/rapid-response-service)



THE ONTARIO HIV  
TREATMENT NETWORK

The Ontario HIV Treatment Network  
1300 Yonge Street, Suite 600  
Toronto ON M4T 1X3

[www.ohtn.on.ca](http://www.ohtn.on.ca)