HIV Non-Disclosure and the Criminal Law: Establishing Policy Options for Ontario

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EXECUTIVE SUMMARY

This report contributes to the development of an evidence-informed approach to using the criminal law to address the risk of the sexual transmission of HIV in the province of Ontario. In recent years, the application of criminal law powers to circumstances of HIV exposure in sexual relations has emerged as a key HIV-related policy issue. In Ontario, people living with HIV/AIDS (PHAs), AIDS Service Organizations (ASOs), human rights advocates and others have raised concerns about the expansive use of the criminal law in addressing HIV-related sexual offences. They have raised questions about fairness in the application of the criminal law and about its negative consequences for PHAs and established public health and community-based HIV prevention strategies. This report is rooted in these concerns. It responds to them in two ways. First, it explores various forms of evidence relevant to a thorough policy consideration of the use of the criminal law in circumstances of sexual exposure to HIV. Second, it proposes policy options for addressing the problems posed by the criminalization of HIV non-disclosure in Ontario.

This report emphasizes that uncertainty in the criminal law formulation of the obligation to disclose HIV-positive status is foundational to current problems in the use of the criminal law to regulate the risk of the sexual transmission of HIV in Ontario. It further emphasizes policy issues and problems arising at the nexus of science and criminal justice, in particular, those posed by the inconsistent use of complex scientific research by courts in deciding cases of alleged HIV non-disclosure. Finally, the report underscores that the criminalization of HIV non-disclosure hinders established HIV prevention efforts and contributes to HIV-related stigma.

In Canada, according the Supreme Court's decision in *R v Cuerrier*,[1] PHAs have a legal obligation to disclose their HIV status to sex partners before engaging in sexual activities that pose a "significant risk" of transmitting HIV. In spite of over 100 prosecutions, Canadian courts have yet to clearly define what sex acts, under what circumstances, carry a legally "significant risk" of HIV transmission. This has led to the overarching problem posed by the criminalization

The Project

This Project was funded by the Ontario HIV Treatment Network and involved a research collaboration between York University, the Canadian HIV/AIDS Legal Network, the HIV & AIDS Legal Clinic (Ontario), the Black Coalition for AIDS Prevention, the AIDS Committee of Toronto and the Toronto PWA Foundation.

- Project Team—A university professor of sociology, a lawyer and executive director of a community legal clinic for people living with HIV, an executive director of a Toronto-based African and Caribbean HIV organization, an executive director of Toronto's largest HIV direct-service organization, a youth HIV worker, and two lawyer/policy analysts with Canada's foremost HIV legal organization, some of whom are living with HIV—contributed to the proposal and provided direction throughout the project.
- Project Consultants—A lawyer with expertise in HIV/AIDS, and a professional science writer.
- Expert Advisory Committee—Composed of people living with HIV, university-based researchers, medical and mental health professionals, lawyers, public health officials and people from front-line HIV organizations—provided advice on the direction of the project, the outline of the report and a draft report.

The Project—Activities

- Canadian and international literature review and policy analysis of the criminalization of HIV non-disclosure, and public health management of HIV infection.
- Creation of a national database on criminal cases of HIV non-disclosure. Production and analysis of trend and pattern data.
- Medical/scientific literature review of HIV transmission risk and HIV as a chronic manageable infection.
- Legal analysis of Canadian HIV non-disclosure prosecutions and prosecutorial policy from Canada and other jurisdictions.
- 25 key informant interviews with medical and mental health professionals, lawyers, public health officials and people from ASOs.
- Individual and focus group interviews with a total of 28 people living with HIV.
- Meetings, consultations, workshops and conference presentations to multiple audiences throughout Ontario and Canada (For details see Appendix 1, page 72).

of HIV non-disclosure in Canada and Ontario—that PHAs are unable to determine, with any certainty, what their legal obligations are under the Criminal Code.

The problematic nature of the criminal law obligation to disclose HIV-positive status extends beyond uncertainty to questions about the appropriate parameters of the significant risk test and the role of scientific research in its determination. Important developments have occurred in scientific research on HIV since the *Cuerrier* case was decided in 1998. Principal among them is a reduction in the risk of the sexual transmission of HIV infection associated with the use of successful antiretroviral therapy. Scientific research on HIV transmission risk is an important resource in delimiting the legal concept of "significant risk," yet it is complex and rapidly evolving. Close scrutiny of Ontario criminal cases of HIV non-disclosure raises questions about the fairness of the administration of criminal justice in the province given the failure of Ontario courts to consistently understand and apply relevant scientific research. This problem has been exacerbated by a broad interpretation of the significant-risk test on the part of Ontario police and Crown counsel, resulting in charges being laid and proceeded with in circumstances where, scientifically, there is little risk of HIV transmission.

The vagueness of the criminal law obligation to disclose HIV-positive status and its unclear relationship to current scientific research contribute to problems in the public understanding of HIV and of people living with HIV/AIDS. Over the past three decades, public health authorities and ASOs have developed effective programs for preventing HIV transmission. The growing use of the criminal law to address HIV non-disclosure has created confusion among public health nurses and ASO counselors about what activities present a risk of criminal prosecution. This has led to mixed messages in HIV prevention counseling and has challenged the ability of front-line workers to support PHAs. At the same time, mainstream media coverage has drawn on court proceedings in criminal cases in ways that exaggerate the risk of HIV transmission and that represent PHAs as irresponsible, dishonest and criminally dangerous.[2,3] This has aggravated HIV-related stigma and fear precisely at a time when, in medical contexts, HIV is increasingly understood as a chronic manageable infection.

Despite these many problems, the criminalization of HIV non-disclosure in Canada and Ontario has occurred in the absence of a broad and informed public policy discussion on the use of the criminal law to reduce HIV transmission. The Canadian HIV/AIDS Legal Network has played a leading role in the legal analysis of the criminalization of HIV non-disclosure in Canada. In recent years, Canadian legal scholars have begun to write on the topic[4-8] and ASOs have organized public discussions on the role of the criminal law in reducing HIV transmission. However, in Ontario and elsewhere in Canada, key decision-makers responsible for policy development (including MPPs, MPs, Attorneys General, other ministers and senior staff responsible for justice, health and public health law and policy) have not publicly participated in the debate regarding criminalization of HIV non-disclosure. This is in marked contrast to comparable jurisdictions such as Switzerland, Australia, England and Wales where analysis of the public policy implications of criminalization and of scientific research on the risks of HIV transmission have helped clarify for police, prosecutors and courts the appropriate scope of application of the criminal law.

This report enhances public policy discussion of the criminalization of HIV non-disclosure among key stakeholders in Ontario. It responds to an unmet need in the provincial response to the issue by creating and exploring four forms of evidence relevant for considering the role of the criminal law in addressing HIV non-disclosure and by identifying and analyzing policy options for responding to the problems posed by the criminalization of HIV non-disclosure in Ontario. Each of the four forms of evidence and the policy options corresponds to a key section of the report as outlined below.

Section 1: The criminalization of HIV non-disclosure in Canada and Ontario: Trends and patterns

Public policy discussion of the criminalization of HIV non-disclosure in Ontario and Canada, more broadly, has been hampered by a lack of aggregate empirical

data on the nature of the phenomenon. In response to this gap in knowledge, we offer an analysis of trends and patterns in criminal cases. Our analysis is based on, to our knowledge, the first systematic database of information on criminal cases of HIV non-disclosure in Canada. The following are among our key findings:

- From 1989 to 2009 Canada has seen 104 cases in which 98 individuals have been charged with criminal offenses related to HIV non-disclosure;
- During the same period Ontario saw 49 cases in which 47 individuals were charged;
- Ontario accounts for 47% of Canadian cases;
- 89% of individuals charged in Ontario have been men;
- In Ontario, 84% of criminal cases for which year of charge is known have occurred since 2004;
- 50% of heterosexual men charged in Ontario since 2004 have been Black;
- 68% of criminal cases in Ontario result in convictions;
- in 34% of cases resulting in conviction in Ontario, HIV transmission did not occur;
- 68% of convicted cases in Ontario have resulted in prison terms.

Section 2: The problem

The key problem with the criminalization of HIV non-disclosure in Ontario is that Ontarians living with HIV/AIDS cannot determine, with any certainty, what their legal obligations are under the Criminal Code. PHAs have a criminal law obligation to disclose their HIV-positive status before engaging in activities that pose a "significant risk" of serious bodily harm to another person. However, the significant risk test has not been clearly defined by Canadian courts. We offer an analysis of how criminal courts in Ontario and Canada have variously interpreted and applied the significant risk test in their decisions. Our analysis indicates three main forms of inconsistency in the application of the test:

- inconsistencies in evidence used to establish whether the sexual relation involved a significant risk of HIV transmission;
- inconsistencies in how courts have interpreted the legal test; and
- inconsistencies in actual decisions.

Section 3: Scientific research on the risk of the sexual transmission of HIV infection and on HIV as a chronic manageable infection

The inconsistency in the interpretation and application of the "significant risk" test by courts in Ontario and Canada is partly attributable to the complex and rapidly evolving nature of scientific research on HIV sexual transmission risks. Police and Crown prosecutors have not always been guided by scientific research in their decisions, resulting in criminal charges being laid and cases being pursued when, from a scientific perspective, little risk of HIV transmission occurred. We respond to this problem by providing a careful review and analysis of scientific research on the risk of HIV transmission and on the nature of HIV as a chronic, manageable illness. Our discussion highlights areas where scientific consensus exists and where knowledge is uncertain and still developing. It provides an evidence base that can help clarify the legal test for when the criminal law imposes a duty of HIV disclosure on PHAs.

Section 4: Social research on the use of the criminal law to address HIV non-disclosure in Ontario: Findings from a qualitative research study

The public health and criminal law policy literatures caution that the criminalization of HIV exposure/transmission may negatively affect HIV prevention efforts. Empirical research exploring this claim is in its early stages of development and very little work has focused on the Ontario or Canadian context. We respond to this gap in knowledge through original empirical research on the impact that the criminalization of HIV non-disclosure has on PHAs and on health-care and service providers in Ontario. Some of our key findings are:

- The vagueness of the significant risk concept has produced fear and anxiety among PHAs and confusion among health-care and service providers;

- The uncertainty of the significant risk concept has led to mixed messages in HIV prevention and has resulted in some service providers counseling PHAs to disclose regardless of the transmission risk of the sexual activities involved;
- It is difficult to explain the duty to disclose HIV status imposed on PHAs under the criminal law and reconcile it with the duty imposed on them by public health authorities under the Health Protection and Promotion Act[9] to prevent the spread of HIV;
- The criminalization of HIV non-disclosure prevents vulnerable PHAs from seeking the support they need regarding HIV disclosure issues;
- Many PHAs are concerned that disclosing their HIV-positive status to sexual partners does not protect them from criminal charges;
- PHAs and providers are concerned about the extent to which court decisions in HIV non-disclosure criminal cases have been adequately informed by scientific research;
- PHAs and providers have numerous suggestions for responding to the problems posed by the criminalization of HIV non-disclosure including: clarifying the legal test for significant risk of HIV transmission, exploring possibilities for coordination between the public health and criminal justice systems, and implementing prosecutorial guidelines.

Section 5: Options for addressing the problem

In Ontario, public discussion of the criminalization of HIV non-disclosure has been framed by media coverage of the issue. The mainstream media emphasize the question of individual moral responsibility for HIV transmission while sidestepping the difficult question about what the appropriate circumstances are for applying criminal law to a complex social and medical problem. In order to encourage practical solutions that can respond to the uncertainty and related problems posed by the criminal law related to HIV non-disclosure, we identify and explore three policy options. They are:

1. case-by-case interpretation and application of the law;
2. amendment of the Criminal Code; and
3. development of Crown policy and a practice memorandum.

Options 1 and 2 both face significant barriers related to uncertainty regarding outcomes and the potentially lengthy period of time to bring about changes in the law. Therefore, we recommend Option 3.

We recommend that the Ontario Ministry of the Attorney General establish a consultation process to inform the development of policy and a practice memorandum regarding cases involving allegations of non-disclosure of sexually transmitted infections, including HIV.

References

1. *R v Cuerrier*, [1998] 2 SCR 371. (*Cuerrier*)
2. Mykhalovskiy E and Sanders C. (2008). There is no excuse for this wanton, reckless, self-indulgent behavior. A critical analysis of media representation of the criminalization of HIV non-disclosure in Canada. Presented at the November 2008 Ontario HIV Treatment Network Annual Conference. Toronto, Ontario.
3. Miller J. (2005). African immigrant damnation syndrome: The case of Charles Ssenyonga. *Sexuality Research & Social Policy*. 2(2):31-50.
4. Grant I. (2008). The Boundaries of the criminal law: The criminalization of the non-disclosure of HIV. *Dalhousie Law Journal*. 31(123-180).
5. Grant I. (2009). Rethinking risk: The relevance of condoms and viral load in HIV nondisclosure prosecutions. *McGill Law Journal*. 54:389-404.
6. Symington A. (2009). Criminalization confusion and concern: The decade since the *Cuerrier* decision. *HIV/AIDS Policy & Law Review*. 14(1):1, 5-10. Available: http://www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1485
7. Flaherty J. (2008). Clarifying the duty to warn in HIV transference cases. *Criminal Law Quarterly*. (54): 60-78.
8. Stewart H. (2004). When does fraud vitiate consent? A comment on R. v. Williams. *Criminal Law Quarterly*. (49): 144-165.
9. Health Protection and Promotion Act, R.S.O. 1990, c. H.7.

SECTION 1

THE CRIMINALIZATION OF HIV NON-DISCLOSURE IN CANADA AND ONTARIO: TRENDS AND PATTERNS

Public policy discussion of the criminalization of HIV non-disclosure in Ontario and Canada, more broadly, has been hampered by a lack of aggregate empirical data on the nature of the phenomenon. This data gap extends to all features of the criminalization of HIV non-disclosure, from the general demographic characteristics of people facing charges, to temporal trends and geographic patterns in criminal cases, to the cumulative disposition of criminal cases. In response to this gap in information we have created, to our knowledge, the first systematic database of information on criminal cases related to HIV non-disclosure in Canada. An analysis of key features of the phenomenon illuminated by that data is presented below.

Our data collection efforts extend the pioneering work of the Canadian HIV/AIDS Legal Network. Through the systematic review of Legal Network files and additional sources we have generated a database of 19 information fields which forms the empirical foundation of our analysis. For a discussion of the process through which our data was generated, please see "Collecting data on HIV non-disclosure cases in Canada." We orient to aggregate quantitative data as one important building block that can contribute to an evidence-informed discussion of the criminalization of HIV non-disclosure. At the most basic level, the data help to flesh out or "make visible" key features of the criminalization of HIV non-disclosure that would otherwise remain opaque. We caution, however, that our analysis should be understood in the context of the limitations of the existing data. We also emphasize that, like any exercise that uses descriptive or other statistics to suggest patterns or trends, our analysis raises as many questions as it answers. We begin with a discussion of temporal, geographic and demographic characteristics of the criminalization of HIV non-disclosure, and then turn to a discussion of the disposition of cases and sentencing upon conviction.

Collecting data on HIV non-disclosure cases in Canada

For over two decades, the Canadian HIV/AIDS Legal Network has researched and reported on HIV-related criminal charges. We searched the Legal Network's publications and their paper and electronic files for information about criminal cases related to HIV non-disclosure. We supplemented this information with electronic searches of legal databases (Lexis-Nexis Quicklaw, CanLii) and internet searches. In addition, we communicated with networks of lawyers with expertise in HIV or criminal law, and front-line workers in AIDS service organizations, and requested that they inform us about cases of which they were aware.

Temporal trends in criminal cases related to HIV non-disclosure in Canada and Ontario

In the existing Canadian policy literature on the criminal law and HIV non-disclosure, commentators have expressed concern that criminal cases are increasing over time.[1-3] Often, metaphors that suggest a gradual, forward progression in the number of cases are used to describe the presumed temporal trend in cases. For example, many describe the Canadian situation as one that involves a "criminalization creep." [4-7]

While our data support the claim that cases are increasing over time, they do not indicate a gradual increase. Rather, they show a long period of relative inactivity, with only a few criminal cases per year (with the exception of 1999 the year following the *Cuerrier* decision), followed by a sharp increase in annual cases in 2004 that is sustained until 2009. Rather than a criminalization creep, the trend in criminal cases follows a two-phase process involving a long period of inactivity followed by a sustained increase. As Figures 1 and 2 demonstrate, this holds for both Canada and Ontario.

For Canada, we have identified a total of 104 cases in which 98 individuals have been charged with criminal offenses related to HIV non-disclosure from 1989 to 2009. During the first 14 years for which data are available the

annual number of cases ranged from 0 to 6 with an average of just over 2 cases per year. Representing a watershed year, 2004 showed a two-fold increase in the number of cases from the previous year. The annual number of cases peaks in 2006 at 16 but remains relatively high with a range of 7 to 11 cases per year since that time. Approximately 65% (62/95) of criminal cases for which the year of charge is known have occurred in the five-year period between 2004 and 2009.

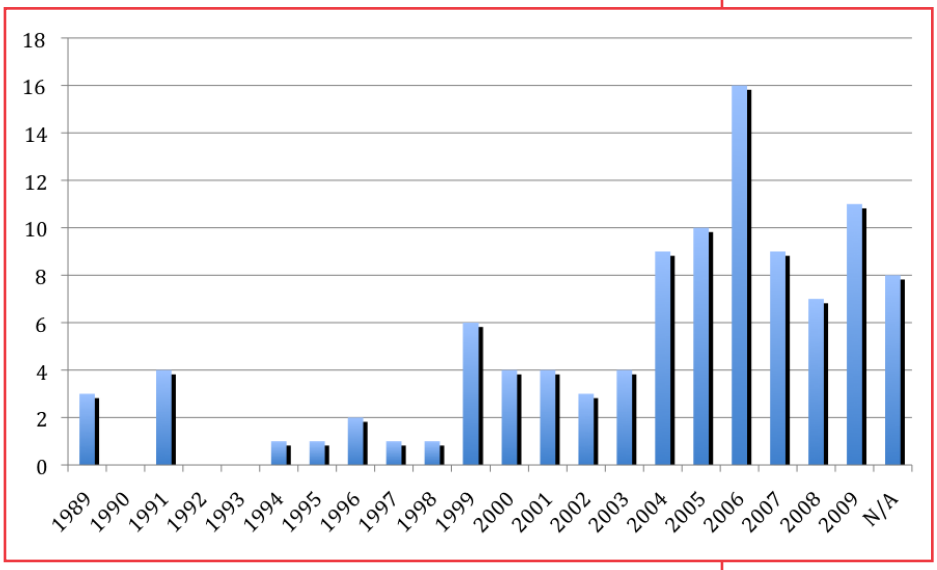

Figure 1
HIV non-disclosure cases, Canada, 1989 to 2009 (n=104)

This temporal trend is even more pronounced for Ontario. We have identified a total of 49 cases for Ontario in which 47 individuals have been charged with criminal offenses related to HIV non-disclosure from 1989 to 2009. In the first 15-year period criminal cases are infrequent. They occur in only six of the years during that period and in all but one year there is only a single case. This period of inactivity ends in 2004 with a dramatic increase in the number of annual cases, which peaks in 2006 and is sustained at a heightened level relative to the first period through to 2009. In Ontario, a full 84% (38/45) of criminal cases for which the year of charge is known have occurred since 2004.

Our data show that there has been a pronounced intensification of criminal cases of HIV non-disclosure since 2004 in Canada and, especially, in Ontario. This sudden increase in the annual number of criminal cases calls for explanation. A full explanation is beyond the scope and resources of this project. However, we emphasize the need to take into account a number of potential explanatory factors and developments.

One important factor is the response by police and Crown prosecutors to key legal developments. For example, the surge of cases in Canada in 1999 and the sustained increase in cases nationally and in Ontario that began in 2004 both followed key court decisions: *Cuerrier* in 1998 and *Williams* in 2003. The increase in cases from 2004 onward may also reflect formal or informal changes in policing practice and/or policy that have resulted in a greater proportion of complaints moving forward to the criminal charge phase. The increase may also reflect an overall increase in the number of

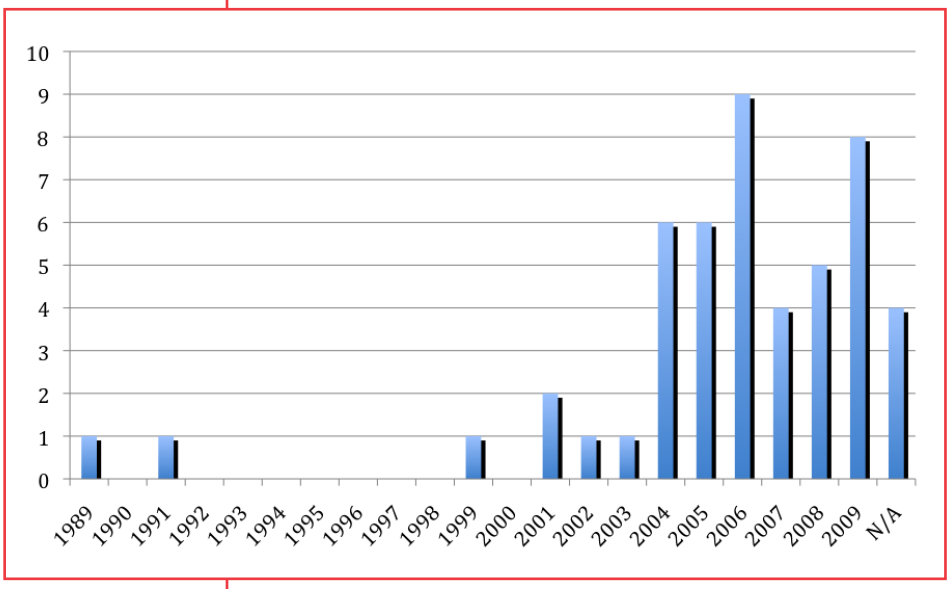

Figure 2
HIV non-disclosure cases, Ontario, 1989 to 2009 (n=49)

complaints being made. This, in turn, might result from a growing understanding among individuals who have been exposed to HIV in sexual relationships where there has been no disclosure that they have experienced a criminal wrong that warrants a police complaint. Finally, informal changes of practice among Crown prosecutors resulting in an increase in the number of decisions to prosecute individuals deserves careful exploration in order to better understand the temporal trend we have identified.

Provincial distribution of HIV non-disclosure cases

Our data on the geographic distribution of HIV non-disclosure criminal cases demonstrate that Ontario is the focal point for the use of the criminal law to regulate the risk of the sexual transmission of HIV in Canada. The overall provincial distribution of criminal cases roughly parallels the overall distribution of positive HIV test reports for Canadian provinces and territories. The three provinces with the highest proportion of criminal cases—Ontario (47%), Quebec (14%), and British Columbia (11%)—are the three

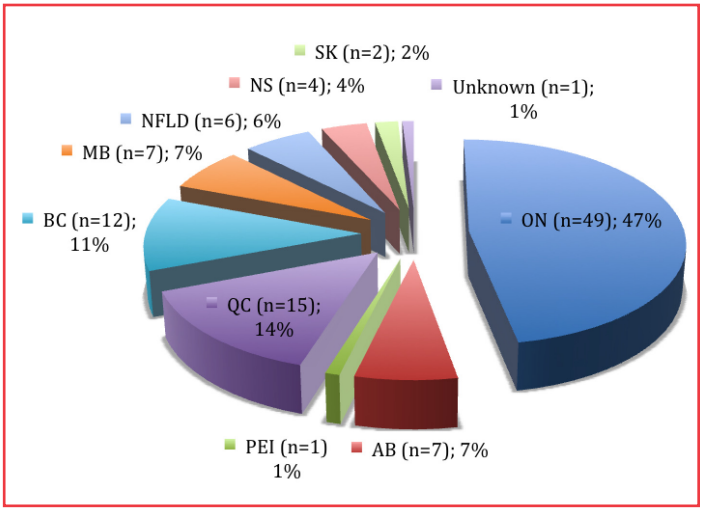

Figure 3
HIV non-disclosure cases by province, Canada, 1989 to 2009 (n=104)

provinces with the highest proportion of positive HIV test reports. According to the most recent Public Health Agency of Canada data, Ontario accounts for 44.2% of all positive HIV test reports followed by Quebec at 22.6% and British Columbia at 19.8%.[8]

Demographic patterns of HIV non-disclosure cases

Our data demonstrate that criminal charges related to HIV non-disclosure in Ontario and Canada are strongly patterned by gender, race and sexual orientation. As Figures 4 and 5 show, gender is a strong predictor of whether someone faces criminal charges related to HIV non-disclosure. In Canada over 90% of individuals who have been criminally charged for failing to disclose their HIV-positive status in a sexual relationship have been men. In Ontario, 89% of all those who have faced charges are men.

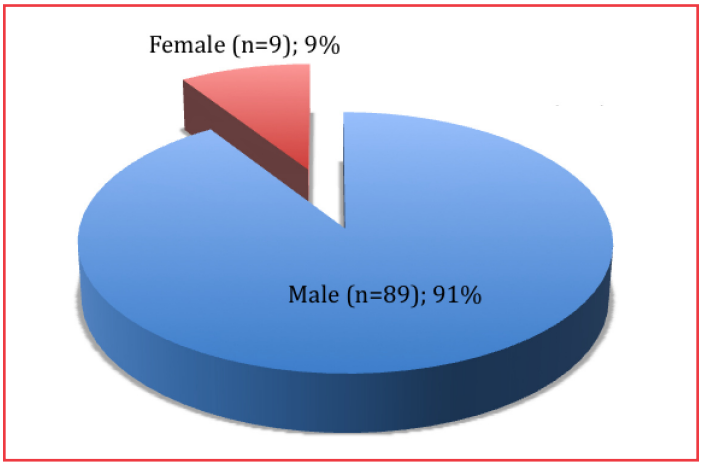

Figure 4
HIV non-disclosure cases, gender of person charged, Canada, 1989 to 2009 (n=98)

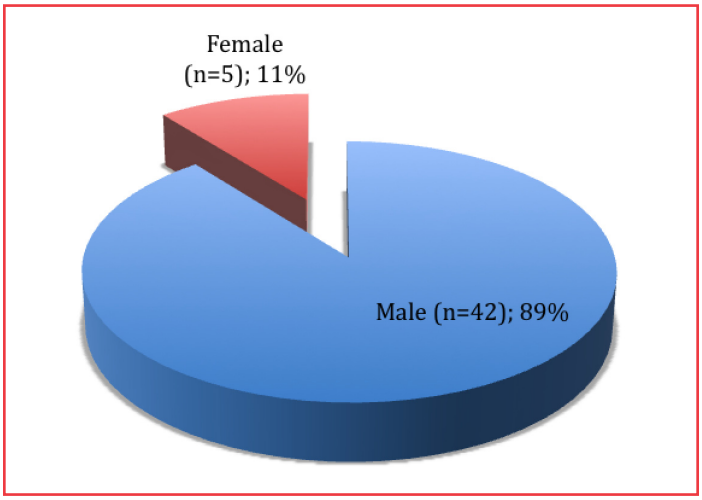

Figure 5
HIV non-disclosure cases, gender of person charged, Ontario, 1998 to 2009 (n=47)

A closer look at the population of men who have been charged offers further insight into the demographic patterns that characterize the use of the criminal law to regulate HIV non-disclosure. As Tables 1 and 2 indicate, the majority of criminal cases in both Canada and Ontario arise out of a context of heterosexual sexual relations in which men are HIV-positive. For Canada, 64 of 89 or just under 72% of men charged have been heterosexual. In Ontario, 30 of 42 or 71.4% of men charged have been heterosexual.[a]

Heterosexual	Gay/MSM	Bisexual	Unknown	All
64	16	2	7	89
71.9%	18%	2.2%	7.9%	100%

Table 1
HIV non-disclosure, sexual orientation of men charged, Canada 1989 to 2009 (n=89)

Heterosexual	Gay/MSM	Bisexual	Unknown	All
30	9	1	2	42
71.4%	21.4%	2.4%	4.8%	100%

Table 2
HIV non-disclosure, sexual orientation of men charged, Ontario 1989 to 2009 (n=42)

Heterosexual men are the single largest demographic category represented among people who have faced criminal charges for HIV non-disclosure in Canada. They account for 65% of all Canadians and 64% of all Ontarians who have been charged. While our data clearly show that criminal charges for HIV non-disclosure arise primarily out of heterosexual relations, they also suggest that charges may be increasing among men who have sex with men (MSM). For example, in Ontario, 10 of 42 men have faced criminal charges for not disclosing their HIV-positive status in sexual relations with men. However, 9 of these 10 men were charged within the last four years for which data are available. They further represent 41% (9/22) of the men charged in Ontario from 2006 to 2009.

Further insight into the demographic patterns of criminal charges for HIV non-disclosure in Ontario and Canada can be gained by taking into account the race of individuals facing charges. Due to their potential stigmatizing effects, race crime statistics have long been a controversial feature of Canadian public policy discussion.[9-11] In presenting race-based data, our intention, of course, is not to further contribute to stereotypical conceptions about the relationship between race and crime. Rather, we hope to enhance discussions about racialization and criminal law regulation of HIV non-disclosure by bringing forward empirical data that have thus far been unavailable.

The race of individuals facing criminal charges for HIV non-disclosure was not uniformly reported in our information sources. Particularly for earlier criminal cases, data were often missing, resulting in a high proportion of individuals for whom race is unknown. For this reason, we do not present data on race for Canada as a whole. Fortunately, data for Ontario are more complete.

Of the five women who have been charged in Ontario, two are White, one is Thai and the race/ethnic background of the remaining two is unknown. The race/ethnicity of men charged in Ontario is presented in Figure 6 below. As the figure indicates, White men account for the majority of men charged, followed closely by Black men.

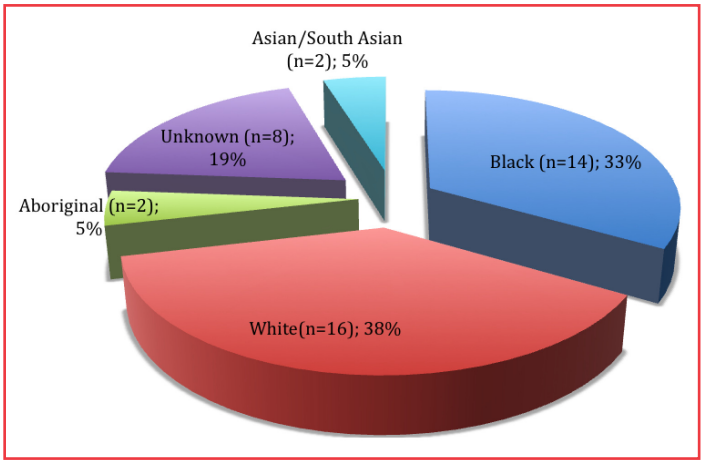

Figure 6
HIV non-disclosure, race/ethnicity of men charged, Ontario, 1989 to 2009 (n=42)

When attention is focused on heterosexual men who have been charged since 2004, that is, on the group most represented in criminal cases during the most intensive period of criminal law application, this pattern is reversed. As Table 3 indicates, Black men account for a higher proportion of heterosexual men charged than do White men from 2004 to 2009. The proportion of heterosexual men charged who are Black is higher in recent years than for the complete period of data collection. They account for a full 50% of cases among heterosexual men from 2004 to 2009. A potential centering of criminal charges on Black heterosexual men is further suggested by yearly data which show that Black men represent the majority of cases among heterosexual men for all years since 2004 with the exception of 2004 and 2007.

Race/ethnicity	2004	2005	2006	2007	2008	2009	04-09	% all cases
Black	0	3	4	0	2	3	12	50
White	5	1	2	1	1	0	10	41.7
Aboriginal	0	0	0	0	0	1	1	4.2
Other	0	0	0	0	0	0	0	0
Unknown	0	1	0	0	0	0	1	4.2
	5	5	6	1	3	4	24	

Table 3
HIV non-disclosure, race/ethnicity of heterosexual men charged, Ontario, by year, 2004 to 2009 (n=24)

Demographic patterns associated with the criminalization of HIV non-disclosure are complex and arise through an interplay of multiple factors and conditions. The key patterns we have identified—the overwhelming representation of heterosexual men among defendants, a recent increase of cases involving accused men who are gay or bisexual and the large proportion of cases involving Black heterosexual men in recent years—require further research and exploration to fully understand.

Gay and bisexual men are underrepresented among people facing criminal charges for HIV non-disclosure relative to their overall proportion of HIV-positive individuals in Canada (20.2% of criminal cases vs. 58.5% of HIV test reports among adults from 1985 to 2008).[8] This may be partly explained by a greater acceptance of HIV-related sexual risks among gay and bisexual men than is the case among female complainants who have brought forward charges against their male sexual partners. HIV incidence is high in gay male communities and sexual activity between HIV-positive and HIV-negative men is not uncommon. Gay male communities have also been the focus of decades of HIV prevention education, which has created an awareness of HIV infection, safer sex and the risks of HIV transmission. These factors have helped create sexual cultures within gay communities that "protect" against criminalization, to the extent that the participating sexual actors have a consciousness that their partners may be HIV-positive, safer sex is a normative or a common practice and HIV disclosure is not routinely expected or demanded.

For a variety of additional individual and structural reasons, gay men may also be less inclined than female complainants to understand themselves to have been "victimized" or to proceed with complaints to the police in circumstances in which non-disclosure has occurred. Police officers may also respond differently to complaints about HIV non-disclosure received from gay men as opposed to women.

The recent increase in cases among men who have sex with men suggests a potential change in the relationship between gay male communities and criminal justice responses to HIV non-disclosure. The demographic patterns associated with future criminal cases will help shed light on this question.

The over-representation of heterosexual men among defendants relative to their share of overall HIV-positive cases in Ontario and Canada should be understood in terms of the organization of heterosexual sexual cultures and activity and its relationship to perceptions of criminal justice and criminal justice practices. Such an understanding would require a careful analysis of the power and interpersonal dynamics of HIV non-disclosure in sexual relationships

involving HIV-positive men and their female partners. It would also require an analysis of the gendered construction of victimhood and its relationship to the activities of police and Crown prosecutors. We lack careful research that explores how women experience exposure to HIV in circumstances of HIV non-disclosure and what they perceive their options and possible responses to be.[17] At the same time, there is no available research exploring how actors in the criminal justice system may differently respond to complainants in HIV non-disclosure cases from different sexual orientations and gender, race and class backgrounds.

The large number of recent criminal cases of HIV non-disclosure involving Black male defendants is a particular concern given research evidence documenting discrimination against Blacks that operates at all levels of Ontario's criminal justice system including prison admissions, imprisonment before trial, charge management, within court proceedings, imprisonment after conviction and community policing.[12-14] Whether Black men are over-represented in these cases relative to their proportion of all HIV-positive heterosexual men is difficult to determine given differences in available data.[b] Understanding the large number of recent cases involving Black male defendants requires careful consideration of the sexual cultures in which they participate and the organization of HIV non-disclosure therein. It also requires a deeper understanding of how police and Crown prosecutors respond to Black male defendants. Mainstream media representation of criminal cases of HIV non-disclosure contributes to stigmatizing conceptions of Black men as sexual predators.[15-16] Criminological research on racial profiling by police suggests that actors within the criminal justice system can be influenced by such stereotypical conceptions of race and criminality.[12]

Disposition of HIV non-disclosure cases

A majority of HIV non-disclosure cases result in convictions, both across Canada (63%) and in Ontario (68%), as shown in Figures 7 and 8, respectively. While in Canada the number of cases in which a person is convicted after trial (32%) is roughly the same as convictions resulting from guilty pleas (31%), in Ontario markedly more convictions flow from guilty pleas (41%) than from trials (27%). Ten% of Canadian and 10% of Ontario cases resulted in acquittals. There is a higher percentage of cases with unknown outcomes in Canada (15%) than in Ontario (6%).

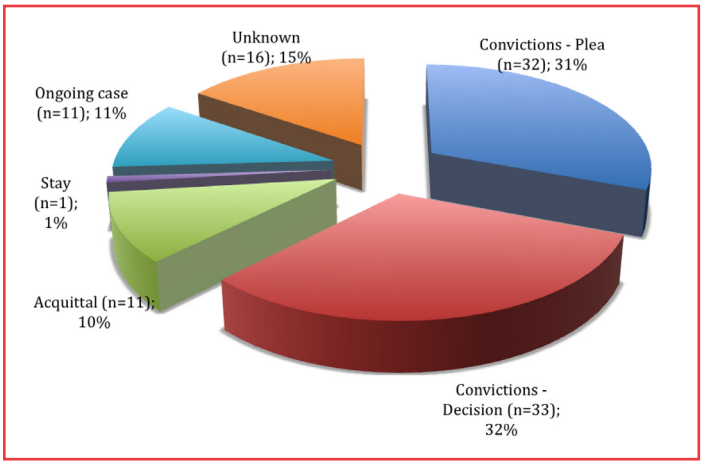

Figure 7
Disposition of HIV non-disclosure cases, Canada, 1989 to 2009 (n=104)

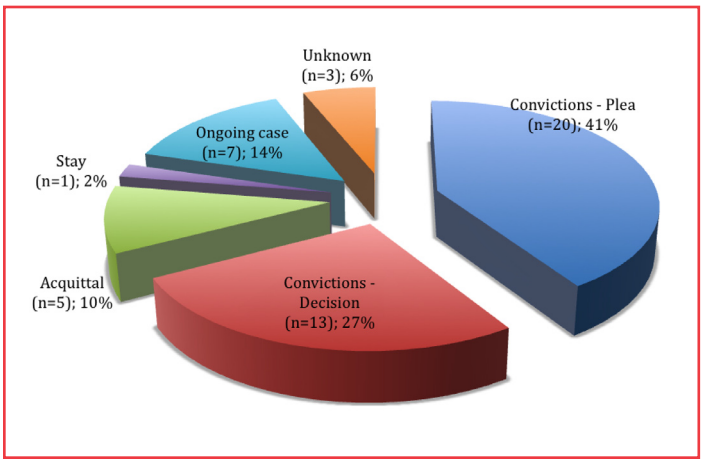

Figure 8
Disposition of HIV non-disclosure cases, Ontario, 1989 to 2009 (n=49)

Under the assault-based offences in the Criminal Code, Crown Counsel are not required to prove that the accused transmitted HIV to the complainant(s). (Obviously, Crown Counsel would have to prove HIV transmission as an essential element in order to secure a conviction for murder.) Across Canada, as shown in Figure 9, in 38% of convictions there was no allegation of HIV transmission; in 22% of convictions HIV transmission was alleged. In Ontario, as shown in

Figure 10, in 34% of convictions there was no allegation of HIV transmission; in 18% of convictions HIV transmission was alleged. In a number of cases, it was alleged that at least one of the complainants was HIV-negative and at least one was HIV-positive, indicated in Figures 9 and 10 by the notation "HIV Transmission + No HIV Transmission." This situation arises when the accused is charged with multiple offences in relation to multiple complainants. Across Canada 18% of convictions fall into this category; in Ontario the rate is 21%. Finally, we were unable to obtain information about the HIV status of the complainant(s) in roughly one-quarter of cases that resulted in convictions; 22% of cases across Canada and 27% of cases in Ontario.

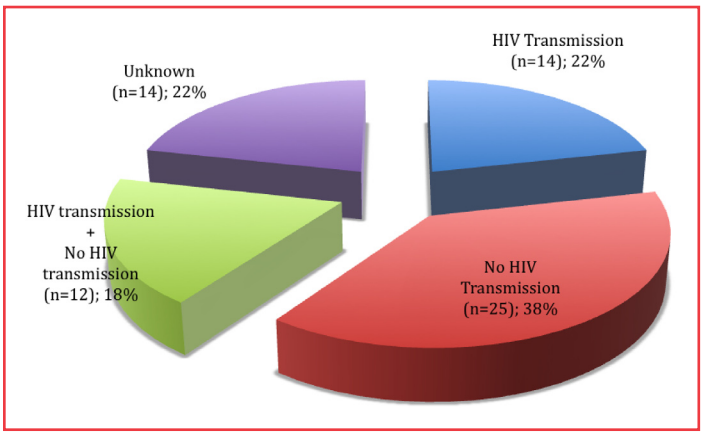

Figure 9
Convictions in HIV non-disclosure cases according to whether HIV transmission alleged, Canada, 1989 to 2009 (n=65)

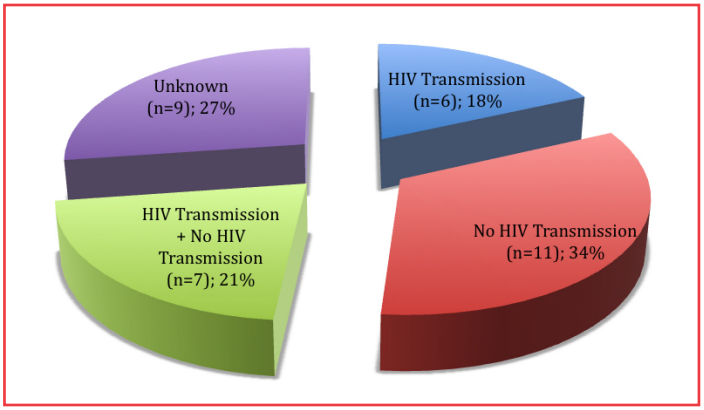

Figure 10
Convictions in HIV non-disclosure cases according to whether HIV transmission alleged, Ontario, 1989 to 2009 (n=33)

Sentencing in HIV non-disclosure cases

Sentencing is the phase of a criminal trial that follows a conviction. While we collected data on sentencing, we were able to obtain the court's reasons for sentencing in only a handful of cases. Most of our data on sentencing comes from media reports, which rarely provide a thorough review of the factors considered by the court in arriving at a sentence in a particular case. Thus, we were unable to rigorously analyze the data in ways that might have suggested patterns. Nor did the project resources permit us to compare sentences for HIV-related convictions with non-HIV-related convictions for the same, or analogous, Criminal Code offences.

Moreover, sentencing does not easily lend itself to the type of analysis that would reveal associations and patterns. Courts exercise a great deal of discretion when imposing a sentence upon someone convicted of a criminal offence, within the dictates set out in the Criminal Code. According to section 718.1 of the Criminal Code, "[a] sentence must be proportionate to the gravity of the offence and the degree of responsibility of the offender." Section 718.2 requires courts to take into account, when arriving at a fit sentence, aggravating and mitigating factors relating to the offence or the offender. The Criminal Code offences under which people living with HIV have commonly been convicted—namely assault- and negligence-based offences and common nuisance—carry maximum sentences but no mandatory minimum sentence.

There is a great degree of variation in the circumstances of people living with HIV convicted of offences related to HIV non-disclosure, and in the circumstances of their offences. As a result, there has been a great deal of variation in the sentences handed down by courts. Two cases illustrate this significant variation: Mr. Leone was charged with 20 counts of aggravated sexual assault related to multiple female complainants, many of whom were young and five of whom were allegedly infected with HIV as a result of HIV unprotected intercourse with Leone. In contrast, Ms. Wanderingspirit, a 28 year-old Aboriginal woman, faced one charge of aggravated sexual assault for failure to disclose her HIV-positive status to her

male sexual partner, who had allegedly molested her since she was 13 years old. Both Mr. Leone and Ms. Wanderingspirit pleaded guilty to reduced charges. He was sentenced to 216 months in jail; she received an 18-month suspended sentence.

Despite the inherent limitations of gathering and meaningfully analyzing aggregate empirical data on sentencing, one aspect of sentencing in HIV non-disclosure cases stood out. A significant majority of cases resulted in incarceration (as opposed to suspended or conditional sentences) across Canada (83%) and in Ontario (73%). The high rate of sentences of incarceration is explained in part by the fact that courts have not been permitted since 1 December 2007 to hand down conditional sentences under sections 742.1 and 752 of the Criminal Code for "serious personal injury offences," including sexual assault and aggravated sexual assault.

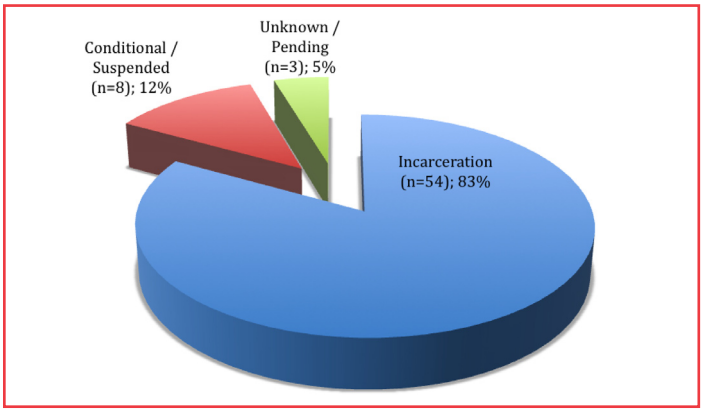

Figure 11
Sentence upon conviction in HIV non-disclosure cases: incarceration vs. other sentences, Canada, 1989 to 2009 (n=65)

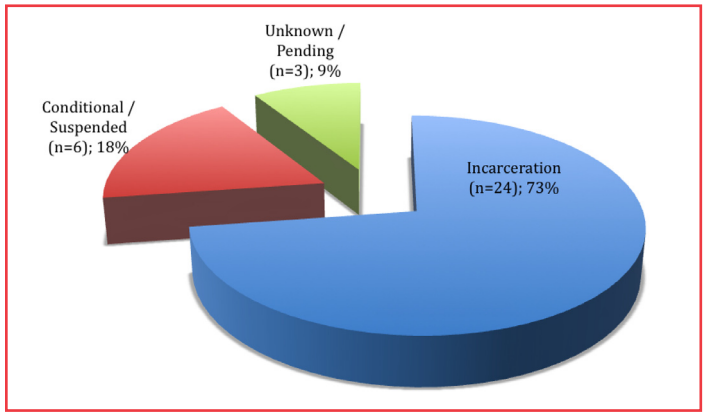

Figure 12
Sentence upon conviction in HIV non-disclosure cases: incarceration vs. other sentences, Ontario, 1989 to 2009 (n=33)

Endnotes

a. Unless otherwise specified we used the reported nature of sexual activity out of which charges arose (heterosexual or homosexual) as an indicator of the defendant's sexual orientation.
b. We received two estimates of the proportion of HIV-positive men in Ontario who are Black. One estimate of 57.8% from Robert Remis, Ontario HIV Epidemiological Monitoring Unit, University of Toronto, was based on modeled HIV prevalence using 2007 surveillance data. A second estimate of 22.6% from the Ontario HIV Treatment Network was based on data from the Ontario Cohort Study.

References

1. Symington A. (2009). Criminalization confusion and concerns: the decade since the *Cuerrier* decision. *HIV/AIDS Policy & Law Review*. 14(1): 4-10.
2. Adam B, Elliott R, Husbands W, Murray J, and Maxwell J. (2008). Effects of the criminalization of HIV transmission in *Cuerrier* on men reporting unprotected sex with men. *Canadian Journal of Law and Society*. 23(1-2):143-159.
3. Grant I. (2008). The Boundaries of the criminal law: The criminalization of the non-disclosure of HIV. Dalhousie Law Journal. 31(123-180).
4. Smith D. (2009). Canada's record of

criminalization creep. *Xtra! Canada's Gay and Lesbian News*. August 20, 2009. Available: http://www.xtra.ca/public/Vancouver/Canadas_record_of_criminalization_creep-7326.aspx Accessed May 18, 2010.

5. Canadian HIV/AIDS Legal Network. (2007). Criminalization creep. *Legal Network News*. 27:8.
6. McKinnon N. (2010). Blowjob does not represent a criminal risk of HIV transmission. *Xtra! Canada's Gay and Lesbian News*. April 23, 2010. Available: http://www.xtra.ca/public/Toronto/Blowjob_does_not_represent_a_criminal_risk_of_HIV_transmission-8567.aspx Accessed May 18, 2010.
7. Elliott R. (2009). Criminalization creep: Legal developments and community responses to criminal prosecutions for HIV exposure. Paper presented at the Annual Ontario HIV Treatment Network Research Conference. November 16, 2009.
8. Public Health Agency of Canada. (2009). *HIV and AIDS in Canada. Surveillance report to December 31, 2008*. Available at www.phac-aspc.gc.ca/aids-sida/publication/index-eng.php#surveillance.
9. Wortley S. (1999). A northern taboo: Research on race, crime and criminal justice in Canada. *Canadian Journal of Criminology*. 41(2): 261-274.
10. Roberts JV. (1994). Crime and race statistics: Toward a Canadian solution. *Canadian Journal of Criminology*. 36:175-85.
11. Gabor T. (1994). The suppression of crime statistics on race and ethnicity: The price of political correctness. *Canadian Journal of Criminology*. 36:153-165.
12. Wortley S. (2003). Hidden intersections: research on race, crime and criminal justice in Canada. *Canadian Ethnic Studies*. 35(3):99-113.
13. Roberts JV and Doob AN. (1997). Race, ethnicity and criminal justice in Canada. In Tonry, M. (Ed.) *Ethnicity, crime, and immigration: Comparative and cross-national perspectives*. Chicago and London: University of Chicago Press. Pp. 469-522.
14. Commission on Systemic Racism. (1995). *Report of the Commission on Systemic Racism in the Ontario Criminal Justice System*. Toronto: Queen's Printer for Ontario.
15. Mykhalovskiy E and Sanders C. (2008). There is no excuse for this wanton, reckless, self-indulgent behavior. A critical analysis of media representation of the criminalization of HIV non-disclosure in Canada. Presented at the November 2008 Ontario HIV Treatment Network Annual Conference. Toronto, Ontario.
16. Miller J. (2005). African immigrant damnation syndrome: The case of Charles Ssenyonga. *Sexuality Research & Social Policy*. 2(2):31-50.
17. Adam B and Sears A. (1996). *Experiencing HIV*. New York: Columbia University Press. (See especially chapter 3).

SECTION 2

THE PROBLEM

The criminal law regarding HIV disclosure to sexual partners lacks clarity. The legal test established by the Supreme Court in 1998 is based on the phrase "significant risk of serious bodily harm." The Supreme Court did not establish clear parameters for assessing the level of risk and concluded without citing scientific or medical evidence that unprotected sexual intercourse with an HIV-positive male represented a significant risk of HIV transmission to his female partners. The science regarding the risk of HIV transmission during sex is complex and we understand HIV transmission better today than we did when *Cuerrier* was decided. However, scientific evidence regarding HIV transmission risk has not been consistently presented to, understood by or applied by Ontario courts. Moreover, the body of scientific evidence concerning the risk of sexual HIV transmission has grown since *Cuerrier* was decided, such that we are aware of various factors that decrease the risk. Lower courts have not clarified the legal test and have issued conflicting decisions. Apparent inconsistency in police charging practices and in Crown counsel charge screening have likely contributed to the climate of legal uncertainty.

As a result, Ontarians living with HIV, of whom there are an estimated 26,630 as of 2008,[1] cannot determine with any certainty their legal obligations regarding HIV disclosure to sexual partners under the Criminal Code. This legal uncertainty has hampered the ability of front-line public health, medical, social service and community agency staff to provide accurate up-to-date information and other services to PHAs.

We explore the lack of clarity in the criminal law related to HIV non-disclosure, and the associated problem that people living with HIV cannot reasonably know with certainty their legal obligations, by considering the:

1. legal and public policy rationale relied upon by courts to criminalize HIV non-disclosure;
2. legal test for the duty to disclose established by the Supreme Court in *Cuerrier*;
3. interpretation and application of that test by lower courts, including the role played by medical and scientific evidence of HIV transmission risk;
4. Supreme Court's decision in *Cuerrier* in light of prosecutions and lower court decisions; and
5. relevance of the findings and recommendations of the Goudge Inquiry[37] to the prosecution of criminal charges related to HIV non-disclosure.

The legal and public policy rationale for criminalizing HIV non-disclosure

Since the late 1960s in Canada it has often been said that the state has no place in the bedrooms of our nation. Under the Canadian Charter of Rights and Freedoms, the Supreme Court has held that it is inimical to the exercise and enjoyment of individual freedoms to use the criminal law to impose a certain standard of public and sexual morality solely because it reflects the conventions of a given community.[2] Moreover, a "legitimate public purpose" must underlie a criminal prohibition.[3] The scope of Parliament's power to enact criminal law includes safeguarding public peace, order, security, health and morality. In cases about morally charged issues such as pornography,[4] possession of marijuana[5] and sex clubs,[6] the Supreme Court has articulated the principle that the Criminal Code can limit fundamental freedoms in order to prevent harm, in particular harm to vulnerable groups in Canadian society. The recent criminalization of otherwise consensual sex on the basis of HIV non-disclosure can be understood in this context.

Canadian courts, including the Supreme Court of Canada, have extended existing Criminal Code offences to include the crime of HIV non-disclosure prior to sex. The 1998 Supreme Court decision in *Cuerrier*[7] definitively changed the law related to sexual assault, and the central concepts of "consent" and "fraud," to include HIV non-disclosure (or a lie as to HIV status) as a factor that may vitiate a partner's consent to sex. The principal public policy rationale upon which the Supreme Court based the extension of the criminal law to sexual HIV non-disclosure is the prevention of the harm, or risk of harm, associated with HIV infection. The Supreme Court did not cite

any evidence to support the specific deterrent function of the criminal law in relation to sexual behaviour that risks HIV transmission.

The legal test—"significant risk of serious bodily harm"

The climate of legal uncertainty regarding HIV disclosure is a direct result of the lack of clarity in the legal test used to determine when the duty to disclose HIV status arises under the assault-based offences in the Criminal Code. The obligation to disclose HIV status prior to sex arises for people living with HIV if there will be a significant risk of HIV transmission during sex—the duty depends upon the significance of the risk. In establishing this test, the Supreme Court did not define with any certainty the concept of "significant risk." Nor did the court provide specific guidance as to the factors lower courts should take into account when assessing the risk in a specific factual situation. We now have 12 years of experience with lower court decisions applying the test and can assess whether the test has provided sufficient guidance to lower courts.

The majority judgment of the Supreme Court in *Cuerrier* (Justice Cory, writing for himself and three other Justices on the seven-Justice panel) sets out the test: Fraud will vitiate consent to sex where the HIV-positive person committed a dishonest act (lied about or did not disclose to their sex partner their HIV status before sex) and this dishonest act resulted in a deprivation (actual harm or simply a risk of harm). Justice Cory applied this test to the circumstances of the case:

> In my view, the Crown will have to establish that the dishonest act (either falsehoods or the failure to disclose) had the effect of exposing the person consenting to *a significant risk of serious bodily harm*. The risk of contracting AIDS [sic] as a result of engaging in unprotected intercourse would clearly meet that test. In this case the complainants were exposed to a significant risk of serious harm to their health. Indeed their very survival was placed in jeopardy. It is difficult to imagine a more significant risk or a more grievous bodily harm.[8] [Emphasis added.]

Thus, a person living with HIV will have a positive duty to disclose his or her status to a prospective sexual partner if the sexual activity he or she will engage in will expose the partner to a significant risk of becoming infected with HIV.

The majority in *Cuerrier* did not define the phrase "significant risk of serious harm" or provide concrete criteria for assessing the significance of the risk or the seriousness of the harm. Justice Cory directed trial courts to undertake a case-by-case assessment:

- "The phrase 'significant risk of serious harm' must be applied to the facts of each case in order to determine if the consent given in the particular circumstances was vitiated."[9]
- "The nature and extent of the duty to disclose, if any, will always have to be considered in the context of the particular facts presented."[10]
- "The proposed test may be helpful to courts in achieving a proper balance when considering whether on the facts presented, the consent given to the sexual act should be vitiated."[11]

Justice Cory also cautioned lower courts against too readily reaching the conclusion that consent to an otherwise consensual sexual activity had been vitiated in a particular case, given the seriousness of the offence of aggravated assault and the seriousness of the consequences of a finding of guilt.[12]

Finally, the majority decided that the test could be applied not only to the risk of HIV infection but also other sexually transmitted infections that constitute a significant risk of serious harm.[13] The Court did not provide specific guidance regarding the application of the test in the circumstances of sexually transmitted infections beyond HIV.

Almost 12 years have passed since the Supreme Court decided *Cuerrier*. It is appropriate to inquire whether the "significant risk of serious harm" test has been helpful to lower courts. It is also appropriate to assess whether lower courts have exercised due caution in applying the test, as instructed to by the Supreme Court, given the seriousness of the criminal charges and consequences.

Lower court decisions interpreting and applying *Cuerrier*

We have identified 104 criminal prosecutions for HIV non-disclosure over the period 1989 to the end of December 2009. Forty-nine of these prosecutions have been brought in Ontario. Lower courts have held that HIV non-disclosure may be a criminal offence under a number of Criminal Code offences: administering a noxious thing, common nuisance, assault (sexual assault, aggravated assault, aggravated sexual assault, assault causing bodily harm), criminal negligence causing bodily harm, murder (attempted murder).

Since the Supreme Court decision in *Cuerrier*, in the vast majority of prosecutions, Crown counsel have proceeded on the basis of aggravated assault or aggravated sexual assault charges. Accordingly, the Crown has the burden of proving beyond a reasonable doubt that the sexual relations put the complainant at a significant risk of serious bodily harm (i.e., HIV infection).

A review of the cases reveals three main forms of inconsistency in the application of the significant risk test: (1) inconsistencies in evidence used to establish whether the sexual relation involved a significant risk of HIV transmission; (2) inconsistencies in how courts have interpreted the legal test; and (3) inconsistencies in actual decisions.

Inconsistencies in evidence

There has been a great deal of inconsistency in the evidence related to the risk of HIV transmission adduced before lower courts. When one compares across cases, it appears that experts have given different risk estimates for the same sexual activities. The extent to which the testimony of witnesses is grounded in actual scientific research also varies across cases. The following cases illustrate examples of such inconsistencies. The excerpts are taken from court decisions or trial transcripts and reproduce, either verbatim or in summary, the evidence given by medical/scientific experts in the proceeding.

R v DC.[14] Transcript of evidence of Dr. Marina Klein, a Crown witness (24 May 2007).

- Can never say the risk is absolutely zero but it approaches zero when the HIV viral load (VL) is undetectable, especially if protection is used (transcript page 51).
- Risk during a single sexual act, of female to male transmission, is one in one thousand, thus it is not usual…. And if the VL is undetectable, the risk is reduced by a further 80 to 85%. It falls to less than one in ten thousand, so very, very, very small (transcript page 65, 76).
- Regarding risk of female to male transmission, where undetectable VL and a condom is used, roughly one in fifty thousand (transcript page 76); one in one hundred thousand (transcript page 84).

R v Edwards.[15] Reasons for decision of Goodfellow J, referring to evidence of Dr. Schlech.

- With respect to oral intercourse one in ten thousand, vaginal intercourse one in one thousand and anal intercourse one in five hundred but he also expressed the view that the risk is lower if there is no ejaculation (paragraph 22).
- He indicated that the proper use of a condom reduces or renders the risk low, however, no statistical information or in-depth assistance was given to the Court that would provide specific scientific or medical conclusions as to the degree of risk that remains when protected sex is engaged in (paragraph 22).

R v Mabior.[16] Transcript of evidence of Dr. John Smith, a Crown witness (26 May 2008).

- Evidence that it's extremely unusual to transmit with a viral load of less than 1,500 copies (transcript page 60).
- "(Q) So if you had—if an HIV infected person had intercourse with one individual on one particular day, sex with that person only one time, the odds of that individual getting it, condom was being properly used, the odds would be very close to zero? (A) Yes. Yes, very close. (Q) Now, on any times that condoms were then being properly used, on those particular instances, on each individual instance when a condom was being used,

you would agree with me that the risk of infection or the risk of exposure of the individual would be almost zero, correct? (A) Well, it would be an 80 percent reduction or a very, very low risk if someone's viral load remained undetectable. (Q) So if we're looking in that range of one from one in a hundred thousand to one in a million for unprotected sex, now we're looking at one in 500,000 to one in five million? (A) Yes, that would be I mean, as I say, it's early days yet on the Swiss. They're saying one in a hundred thousand. It may not. It may be higher than that, we don't know for sure, but it certainly is going to be of a very, very low magnitude" (transcript page 84 to 86).

R v Nduwayo.[17] Transcript of jury charge by Truscott J (12 & 13 December 2005), referring to evidence of Dr. David Patrick, a Crown witness.

- "The HIV virus can be transmitted after only one incident of unprotected sexual intercourse, or never transmitted. The broad average is that the chance of infection with unprotected intercourse is 10 percent a year" (page 634).

R v Trott.[18] Reasons for decision of Donald JA, referring to evidence of Dr. Richard Mathias, a Crown witness.

- For unprotected anal intercourse insertive-HIV-positive and receptive-negative combination rate of between 5 and 8 per 1,000 individual acts of intercourse (paragraph 10).
- For unprotected anal intercourse receptive-HIV-positive and insertive-negative combination rate of 6 per 10,000 individual acts of intercourse. (para. 10). In general, this is the same risk level where condom used, insertive-HIV-positive and receptive-negative combination (paragraph 13).
- With Trott's VL of 11,100 to 32,000 during the relevant time period, estimated a rate of HIV transmission of 1.5 in 10,000.

R v Wright.[19] Transcript of evidence of Dr. Brian Conway, a Crown witness (7 February 2008).

- "So we talk of anal sex carrying a risk of somewhere between one to three percent and vaginal sex carrying a risk of somewhere between .1 and one percent per each—for each type of contact. So we say .5 percent, just to pick a number in the middle. Could be higher or lower, depending on some individual circumstances. And two percent for anal sex, again with the qualifications that I've pointed out… Oral sex is probably more like one in a thousand or less" (transcript page 75).
- "… what the information suggests to us from the medical literature is that the risk of transmission, instead of the .5 percent, is more like .01 percent, is something like one in 10,000… If you're using latex condoms and you tell me that it did not break, then it is unlikely—and it was used properly, applied properly, put on before penetration occurred, taken off immediately, if all those things happened, then it does protect very, very significantly" (transcript page 79).

Inconsistencies in how courts have interpreted the legal test

The interpretation and application by lower courts of the legal test from *Cuerrier* also demonstrates a great deal of inconsistency. The inconsistency centres on what a court can assume and what courts have required the Crown to prove beyond a reasonable doubt.

A number of lower court decisions have interpreted the *Cuerrier* majority decision to stand for the legal proposition that unprotected sexual intercourse with a person living with HIV necessarily fulfills the legal test for "significant risk of serious bodily harm." (Recall that, when it decided *Cuerrier* in 1998, the Supreme Court did not consider any evidence related to HIV transmission risk.) Accordingly, in some of the lower court cases listed below the Crown has not been required to prove beyond a reasonable doubt, based on evidence, that there was a "significant risk." In other cases, based on an agreed statement of facts arrived at by the parties, courts have accepted that unprotected intercourse necessarily presents a significant risk of HIV transmission.

- R v Agnatuk-Mercier[20]
- R v Aziga[21]
- R v Charron[22]
- R v DC[23] (Court canvasses expert evidence and other factors, but sticks to *Cuerrier*.)
- R v ND[24]

- R v Iamkhong[25] (Based on defence admission.)
- R v Imona-Russel[26]
- R v Williams[27] (Based on accepted statement of facts.)

A number of lower court decisions have explicitly characterized an essential element of the crime of aggravated (sexual) assault as "unprotected" sexual intercourse. Three implications follow: (a) all unprotected sexual intercourse amounts to a legally significant risk; (b) if a condom was used there is no criminal liability for non-disclosure; and (c) if there was a reasonable doubt about whether the sex was unprotected, a person could not be criminally convicted for failure to disclose his or her HIV-positive status prior to sex.

- Agnatuk-Mercier ("unprotected")
- Aziga ("penetrative unprotected sexual activity")
- Edwards (Legal obligation is to disclose or practice safer sex; Crown has to establish "unprotected" anal intercourse.)
- Imona-Russel ("unprotected sex")
- R v Smith[28] ("unprotected sex")
- Williams ("unprotected sex")

A number of lower courts have explicitly stated that if a condom is used during sexual intercourse, the person living with HIV does not have a legal duty to disclose his or her HIV status prior to sex.

- DC
- Edwards (Crown has to establish unprotected anal intercourse; obligation to disclose or practice safer sex.)
- Imona-Russel (Sexual intercourse without the use of a condom.)
- R v Napora[29] (Common nuisance charge. Court held that the accused had a legal duty to use a condom; accused did not practice "safer sex" by using condoms.)
- R v Nduwayo[30] (No legal duty if condoms used.)
- ND (Trial judge seems to accept, as implied in the Court of Appeal discussion.)
- R v Trott[31] ("The law is that condoms and safe sex must govern sexual activity.")

One court decided that vaginal intercourse with a condom but without HIV disclosure is an aggravated sexual assault, without considering any evidence regarding the risk of HIV transmission.

- R v Mekonnen[32] (Court accepts that condoms were used for vaginal intercourse; no evidence before the court or discussion about HIV transmission risk.)

Two appeal court decisions have stated that "significant risk" is a question of fact to be determined on a case-by-case basis in light of the evidence before the court.

- Trott
- R v Wright[33]

Inconsistencies in actual decisions

Not surprisingly, the decisions of lower courts have, at times, been inconsistent with one another and cannot be reconciled based on the evidence, or lack thereof, related to risk that was before the courts. In particular, different courts have reached different conclusions in cases that had similar facts related to condoms or to oral sex. Some courts have decided that there will be no criminal liability for HIV non-disclosure where a condom was used for intercourse; others have not. Some courts have convicted HIV-positive people for not disclosing their HIV status prior to oral sex; other courts have not.

Conviction where condom used for sexual intercourse, no evidence or analysis of risk:

- R v Mekonnen (No. 2)[34]

Conviction where condom used for sexual intercourse and detectable HIV viral load (VL):

- R v Mabior[35]

Conviction where no condom used for intercourse and undetectable VL:

- Mabior
- DC

Acquittal where condom used for sexual intercourse and undetectable VL:

- Mabior (acquittal on 3 charges)

Acquittal based on use of condom for sexual intercourse:

- ND
- Edwards

Conviction for oral sex without condom:

- Aziga (2 convictions)

Acquittal for oral sex without a condom:

- Charron (Crown did not lead evidence of risk arising from oral sex.)
- Edwards (Crown did not proceed with charge based on unprotected oral sex, as noted in decision.)

In light of these inconsistent decisions, it is arguable that the "significant risk" test as set out by the Supreme Court in *Cuerrier* has not provided sufficient guidance to lower courts. Moreover, in light of the uncertainty and lack of clarity in the criminal trial and appeal decisions related to HIV non-disclosure, PHAs cannot reasonably know with certainty their legal obligations, a central theme raised in our focus group interviews (see Section 4). Physicians, public health nurses and front-line staff from ASOs who work to prevent HIV and also provide treatment care and support to people living with HIV, face an extremely daunting task when trying to make people aware of the criminal law obligations regarding HIV disclosure and sex. Section 4 describes these and other problems posed by the criminalization of HIV non-disclosure as experienced by our key informant interview participants.

Revisiting *Cuerrier* in light of trial and Appeal Court decisions

The passage of time and accumulation of trial and appellate decisions often begs us to revisit the reasons for decision in Supreme Court cases. In *Cuerrier*, in her concurring reasons, Justice McLachlin (writing for Justice Gonthier) commented on the "significant risk of serious bodily harm" test set out by Justice Cory in the majority reasons:

Cory J., recognizing the overbreadth of the theory

Phylogenetic evidence and prosecutions for murder

In 2009 a jury convicted Johnson Aziga on two counts of first-degree murder. In the wake of the Aziga murder convictions, two people have been charged with attempted murder for allegedly failing to disclose their HIV status to their respective sex partners prior to engaging in sex. In order to secure a murder conviction Crown counsel must prove beyond a reasonable doubt, among other essential elements of the crime, that the accused transmitted HIV to the complainant/deceased. In the sole Canadian prosecution involving murder charges, Crown counsel called a scientific expert to establish HIV transmission between Aziga and the women he was alleged to have infected with HIV, based on the new science of phylogenetics.

Phylogenetic analysis:

- is a complex scientific process undertaken by HIV virologists that examines small differences in HIV's genes using computational methods to calculate the genetic distance between strains.
- can only determine the degree of relatedness of two samples of HIV. It cannot create a definitive "match."
- has recently been used in criminal trials as evidence of responsibility for HIV transmission. In these trials, the expert opinion of virologists has been found to be of critical importance.
- cannot by itself prove that transmission occurred directly between two individuals and does not, in and of itself, provide any information on the direction of HIV transmission.

Phylogenetic analysis must include the right controls (comparison samples) otherwise the relatedness between the two viruses (of complainant and defendant) can be over-exaggerated. Given the complexity and limitations of phylogenetic analysis, "expert witnesses should acknowledge the limitations of the inferences that might be made and choose the correct language in both written and verbal testimony."

Bernard, E., Azad, Y., Vandammec, A-M., Weait, D., Geretti, AM. (2007) *The use of phylogenetic analysis as evidence in criminal investigation of HIV transmission*. London: National AIDS Trust.

> upon which he founds his reasons, attempts to limit it by introducing an ad hoc qualifier: there must be a 'significant risk of serious bodily harm' before consent is vitiated. This limitation, far from solving the problem, introduces new difficulties. First, it contradicts the general theory that deception coupled with risk of deprivation suffices to vitiate consent. A new theory is required to explain why some, but not all kinds of fraud, convert consensual sex into assault. Yet none is offered. Second, it introduces uncertainty. When is a risk significant enough to qualify conduct as criminal? In whose eyes is 'significance' to be determined—the victim's, the accused's or the judge's? What is the ambit of 'serious bodily harm'? Can a bright line be drawn between psychological harm and bodily harm, when the former may lead to depression, self-destructive behaviour and in extreme cases suicide? The criminal law must be certain. If it is uncertain, it cannot deter inappropriate conduct and loses its raison d'être. Equally serious, it becomes unfair. People who believe they are acting within the law may find themselves prosecuted, convicted, imprisoned and branded as criminals. Consequences as serious as these should not turn on the interpretation of vague terms like 'significant' and 'serious.' Finally, Cory J.'s limitation of the new crime to significant and serious risk of harm amounts to making an ad hoc choice of where the line between lawful conduct and unlawful conduct should be drawn. This Court, per Lamer C.J., has warned that making ad hoc choices is properly the task of the legislatures, not the courts: Schachter v. Canada, [1992] 2 S.C.R. 679, at p. 707.[36]

In retrospect, more than a decade after they were written, Justice McLachlin's comments appear prescient—the "significant risk" test has resulted in a great deal of uncertainty in the law. There have been substantial variations in lower courts' interpretations of the "significant risk" test articulated by the majority in *Cuerrier*. Lower court decisions, as set out in the previous section, have been ad hoc. As a result it is impossible for PHAs to determine with certainty their legal obligation to disclose their HIV status prior to sex, whether the legal duty to disclose persists when a condom is used for intercourse, whether oral sex in the absence of HIV non-disclosure will attract criminal liability, and whether HIV viral load is relevant to the determination of whether a PHA has a legal duty to disclose his or her HIV status prior to sexual relations. Arguably, the uncertainty fueled by ad hoc lower court decisions has significantly undermined any potential for the criminal law to have a deterrent effect upon behaviours that risk transmitting HIV.

Relevance of systemic issues addressed in the Inquiry into Pediatric Forensic Pathology In Ontario (the Goudge Inquiry)

There are significant parallels between the role played by HIV medical/scientific experts in HIV non-disclosure cases and the role of forensic pathologists in the investigation and prosecution arising out of the unexpected death of an infant. The Goudge Inquiry recognized the potentially decisive role played by the forensic pathologist. Forensic pathologists' expert opinions can determine whether someone is charged and convicted in the premature death of an infant. Forensic pathology is an evolving science in which controversies exist, and where findings and opinions often require interpretation. The Goudge Inquiry focused specific attention on the development of, and controversy surrounding, diagnosis of Shaken Baby Syndrome.

Similarly, HIV transmission is a complex, controversial and evolving area of scientific inquiry, and one that requires interpretation to properly apply existing knowledge to the facts of a particular case. Recent controversy has focused on HIV transmission risk and the factors affecting risk, in particular, the association between successful HIV treatment, HIV viral load, and risk of sexual HIV transmission. (See Section 3.) In many recent HIV non-disclosure prosecutions, medical experts have provided written reports to Crown counsel and testified in court, usually as a Crown witness, regarding the nature of HIV/AIDS and HIV transmission risk. In those cases judges and juries have taken into account this expert evidence in applying the "significant risk of serious bodily harm" test, and in determining whether an accused infected a complainant with HIV. And in HIV non-disclosure

prosecutions involving murder charges the Crown must prove beyond a reasonable doubt that the accused transmitted HIV to the complainant, and that HIV infection was a contributing factor in the death of the complainant. Phylogenetic evidence has been adduced in the one HIV-related murder case. In the context of HIV, phylogenetic analysis examines small differences in HIV's genes using computational methods to calculate the genetic distance between strains of HIV. It is a relatively recent, complex scientific process undertaken by HIV virologists.

The Goudge Inquiry examined, among other issues, forensic pathologists' interactions with other participants in the criminal justice system and their role as expert witnesses, and identified three systemic issues: (1) the need for expert witnesses to communicate opinions in ways that are accurate, clear and evidence-based so that all stakeholders in the criminal justice system can understand, evaluate and potentially challenge them; (2) the need for expert witnesses to express the level of confidence or certainty they have in their opinions, recognizing the distinction between scientific standards of evidence and the legal standard of "proof beyond a reasonable doubt"; and (3) the need to establish the basis upon which courts should assess the reliability of scientific evidence, when deciding whether to admit evidence, and if so the weight to attach to it, in criminal proceedings.

These systemic issues associated with expert medical evidence find strong parallels in HIV non-disclosure prosecutions. Thus, the Goudge Inquiry's recommendations in relation to these systemic issues are highly relevant to the role played by medical/scientific experts and evidence in the investigation and prosecution of HIV non-disclosure cases.

Numerous recommendations made by Justice Goudge are generally applicable to the role of medical/scientific experts in HIV non-disclosure criminal prosecutions (Goudge Report, Vol. 3):

Effective Communication within the Criminal Justice System

- 84—general principles regarding communication of expert opinions
- 87—educate and train experts not to think in terms of "proof beyond reasonable doubt"
- 88—educate and train experts on level of confidence and certainty in opinions
- 91—experts should clearly communicate areas of controversy and limits of science
- 92—experts' positive obligation to recognize and identify limits of their expertise
- 95—need for transparency in articulation of expert opinion
- 96—need for plain language, glossary and supporting material in expert opinions
- 100—regular continuing education for experts to enhance effective communication with the criminal justice system

Goudge Inquiry Recommendation 91: Drawing parallels with prosecutions for HIV non-disclosure

- Forensic pathologists [HIV experts] should clearly communicate, where applicable, areas of controversy that may be relevant to their opinions and place their opinion in that context.
- They should also clearly communicate, where applicable, the limits of the science relevant to the particular opinions they express.
- They should remain mindful of both the limits and the controversies surrounding forensic pathology [HIV transmission] as they form their opinions and as they analyze the level of confidence they have in those opinions.
- These obligations extend to the content of [post-mortem or] consultation reports, to verbal communications, and to testimony.

Roles of Coroner, Police, Crown, and Defence

- 103—case conferences should be recorded in notes and form part of disclosure
- 117—Crown counsel should properly prepare experts for giving evidence
- 118—principles for conduct of Crown and

defence counsel in relation to expert evidence
- 124—experts called by Crown counsel should make themselves available to defence counsel

Role of the court
- 129—Court to clearly delineate expertise and confine expert to it
- 136—code of conduct for experts giving evidence in criminal proceedings
- 139—meeting of experts before trial to discuss and clarify differences

References

1. Remis RS, Swantee C, Liu J. *Report on HIV/AIDS in Ontario 2008*. April 2010. Available at: http://www.phs.utoronto.ca/ohemu/doc/PHERO2008_report_final.pdf
2. *R* v *Butler*, [1992] SCR 452 at para 79 (*"Butler"*).
3. *RJR MacDonald Inc*. v *Canada (Attorney General)*, [1995] 2 SCR 199.
4. Butler.
5. *R* v *Malmo Levine; R* v *Caine*, 2003 SCC 74.
6. *R* v *Labaye*, 2005 SCC 80.
7. *R* v *Cuerrier*, [1998] 2 SCR 371.
8. *Cuerrier* at paragraph 128.
9. *Cuerrier* at paragraph 139.
10. *Cuerrier* at paragraph 127.
11. *Cuerrier* at paragraph 139.
12. *Cuerrier* at paragraphs 132, 139.
13. *Cuerrier* at paragraph 137.
14. (Cour du quebec, Longueuil, 505-01-058007-051).
15. 2001 NSSC 80. (*"Edwards"*)
16. (Manitoba Queen's Bench, Winnipeg Centre, CR 07-01-27848).
17. (BC Supreme Court, New Westminster, X066089-8). (*"Nduwayo"*)
18. 2008 BCCA 463. (*"Trott"*)
19. (BC Supreme Court, Vancouver Docket 24288). ("*Wright*")
20. [2001] OJ 4729 (OSCJ) (QL). (*"Agnatuk-Mercier"*)
21. (Ontario Superior Court of Justice, Hamilton, CR-08-1735). (*"Aziga"*) See transcript of jury charge by Lofchik J (1 & 2 April 2009)).
22. (Cour du Quebec, Longueuil, 765-01-010423-024, 1 Mai 2008, reasons for decision of Noel, JCQ). (*"Charron"*)
23. 2008 QCCQ 629. (*"DC"*)
24. (Cour du Québec, district de Montréal, 28 avril 2004, Garneau J); 2006 QCCA 14. (*"ND"*)
25. 2009 ONCA 478. (*"Iamkhong"*)
26. (SCJ, Toronto Region, 23 February 2009, transcript of reasons of McMahon J). (*"Imona-Russel"*)
27. 2003 SCC 41. (*"Williams"*)
28. [2007] SJ 116 (Sask Prov Ct) (QL). (*"Smith"*)
29. [1995] AJ 1294 (ACQB) (QL). (*"Napora"*)
30. (BCSC, New Westminster, X066089-8, transcript of jury charge by Truscott J (12 & 13 December 2005)).
31. (BCSC, Vancouver, Doc. 24402, 10 January 2008, transcript of reasons for decision of Silverman J).
32. 2009 ONCJ 643. ("*Mekonnen*")
33. 2009 BCCA 514. ("*Wright*")
34. (OCJ, Brampton File No. 08-7087, 26 January 2010, reasons for decision of Keaney J).
35. 2008 MBQB 201. (*"Mabior"*)
36. *Cuerrier* at paragraph 48.
37. Goudge ST. (2008). *Inquiry into pediatric forensic pathology in Ontario*. *Report*. Ontario Ministry of the Attorney General.

SECTION 3

SCIENTIFIC RESEARCH ON THE RISK OF THE SEXUAL TRANSMISSION OF HIV INFECTION AND ON HIV AS A CHRONIC MANAGEABLE INFECTION

As set out in the previous section, Canadian courts have yet to clarify the legal meaning of the central element of assault-based HIV non-disclosure offences, namely "significant risk." The inconsistency in the interpretation and application of the "significant risk" test is attributable in part to the complex and rapidly evolving nature of scientific research on HIV sexual transmission risks. Counsel and courts have struggled to adequately take into account this science. They have not firmly established the role that scientific knowledge regarding HIV transmission should play in the interpretation of the significant risk test or in the application of that test to the evidence in the particular circumstances of a case.

Principled development in areas of the criminal law that involve scientific controversy depends upon counsel and scientific expert witnesses providing context and clarity, and recognizing areas where consensus does and does not exist. This point was emphasized in the Goudge Report. In the context of HIV non-disclosure, such an approach will promote fairness in the criminal justice system. It will help clarify for people living with HIV the scope of their legal duties under the criminal law. It will encourage consistent exercise of discretion, based on current knowledge about HIV transmission risk, among police and Crown Counsel and help to alleviate concerns about inaccurate understandings of the risk of HIV transmission. Finally it will help respond to concerns that stigma and ignorance of HIV influence decision-making in HIV non-disclosure prosecutions.

This section of the report reviews scientific research on the risk of transmitting HIV through sexual activities. The goal of the review is to bring context and clarity to the literature, while highlighting areas where consensus exists and where knowledge is uncertain and still developing. This section also reviews the literature on HIV as a chronic manageable infection. As our discussion indicates, with the advent of HIV antiretroviral therapy, HIV infection is no longer, in the words used by the Supreme Court in *Cuerrier*, "a devastating illness with fatal consequences." (paragraph 127, per Cory J).

Introduction

There have been considerable advances in our understanding of HIV since the beginning of the epidemic over 25 years ago. In the early 1980s, when little was known about the virus or how it was transmitted, this lack of knowledge led to a widespread fear of HIV and those living with it. However, we now know that HIV is difficult to transmit. Common forms of social contact, for example, swimming in the same pool, sharing a glass or mug, or everyday hugs and kisses carry no risk of transmission. Even those activities considered risky, such as unprotected sexual intercourse, carry a risk of transmission much lower than is often commonly believed. Indeed, most unprotected vaginal or anal intercourse[a] involving an HIV-positive person and his or her HIV-negative partner does not result in transmission.[1, 2]

Furthermore, advances in the treatment of HIV mean that the disease is no longer considered an inevitable death sentence. With the advent of effective therapy in the mid-1990s, life expectancy for people living with HIV has steadily increased. The World Health Organization and other leading health authorities consider that, with proper medical care, HIV is a chronic manageable condition, similar in many ways to other chronic conditions such as diabetes or cardiovascular disease.[3]

In the context of sex, only four bodily fluids—blood, semen (including pre-ejaculate), and vaginal and anal fluids—contain enough HIV to potentially infect another person.[b] Transmission can only occur when HIV contained in one of these bodily fluids enters the body of another person. This generally occurs when the virus comes in contact with the other person's mucosal membranes, for example the membranes that line the vagina or rectum, though it can also occur through breaks in the skin. However, even then transmission is not guaranteed, as the virus must infect a sufficient number of target cells to establish an infection. If the amount of virus in the fluid from the HIV-positive

person is low, the risk of infection is lower. Because HIV is a fragile virus and able to survive outside the body for only minutes, transmission usually requires intimate contact. During sex, this most often means unprotected anal or vaginal intercourse. HIV can also be transmitted by sharing equipment used to inject drugs, by transfusing blood products infected with HIV, and through vertical transmission between mother and child.

For sexual transmission of HIV, the risk of transmission is not constant for all sexual encounters. In understanding the risk of the sexual transmission of HIV, researchers often consider two broad categories: 1) the type of sex act, namely oral versus vaginal versus anal sex, and 2) biological and other factors, such as the level of virus in the HIV-positive partner or the presence of other sexually transmitted infections (STIs), that can decrease or increase risk.

The risk of sexual transmission of HIV depends, among other factors, on the type of sexual activity. Experts generally agree that our ability to precisely or accurately quantify the per-act risk of HIV transmission during any sexual activity is limited. Research has identified the potential for HIV transmission through oral sex (fellatio, cunnilingus, analingus), vaginal sex and anal sex. Unprotected oral sex is considered to carry the lowest risk of transmission—the risk is so low that researchers have had difficulty quantifying it. The probability of HIV transmission during one act of unprotected vaginal intercourse is often stated to be approximately 0.1%, or 1 in 1,000.[1,2,4] Unprotected anal intercourse is considered more risky, with an estimated per-act risk of 1 in 100 to 1 in 50, which is a risk that is 10 to 20 times higher than for unprotected vaginal intercourse.[1,5]

Reductions in the risk of transmission during unprotected vaginal or anal sex have been associated with three factors: condom use, male circumcision and lower amounts of HIV in the blood of the infected partner. Using condoms properly greatly reduces the risk of HIV transmission.[23] Studies have shown that circumcision provides some protection to an HIV-negative man who has unprotected vaginal intercourse with an HIV-positive woman.[27] Relatively lower amounts of virus in the blood of the HIV-positive partner (also known as blood viral load) have been associated with decreased HIV transmission during sex.[29-31] Anti-HIV therapy, called antiretroviral therapy, is effective at reducing blood viral load to levels undetectable by current assays, and there is considerable scientific and public health interest in the extent to which antiretroviral therapy reduces the risk of HIV transmission during sex.

There are a number of factors associated with increased risk of HIV transmission through sex. Transmission risk increases as the number of sex acts increases. Direct contact between ejaculate or other genital secretions and an open wound in or on the genitals or the mouth also increases the probability of transmission. Other factors known to increase the risk of transmission include being in the early phase of HIV infection and the presence of other sexually transmitted infections.

Viral load

Viral load testing measures the amount of HIV genetic material (viral RNA) in a bodily fluid. In the clinic, viral load is measured in the blood plasma; in research settings viral load can also be measured in fluids such as semen or cerebrospinal fluid. Viral load measurements are reported as copies of HIV per milliliter (copies/mL), and values can range from a few hundred to over a million copies/mL in people not receiving treatment. Assays currently used in Canada can measure blood plasma viral loads as low as 20 to 50 copies/mL. (Assays used to measure viral loads in other fluids are generally not as sensitive and measure down to 300 copies/mL.) Below this level, viral load is said to be undetectable. This does not mean that HIV has been eliminated from the body, but rather that it is below the level of detection of the test. The goal of antiretroviral therapy is to render viral load undetectable.

The sexual transmission of HIV

The sexual transmission of HIV from one person to another requires four conditions:

- a fluid known to transmit HIV—in the case of sex, the fluids are blood, semen (including pre-ejaculate) and vaginal and anal fluids;
- the fluid makes contact with an area of the body—a mucosal membrane lining the vagina or rectum, a lesion or a break in the skin—through which transmission can occur;
- entry into the body of sufficient virus to establish infection; and
- an initial infection within immune cells of the mucosal membranes is established and a subsequent spread of the infection to other immune cells in the body.

While unprotected vaginal or anal intercourse may be the most risky sexual activity for HIV transmission, extensive research clearly confirms that not every unprotected act between an HIV-positive person and his or her HIV-negative partner leads to transmission of the virus. In fact, the per-act risk of transmission is low, commonly quoted as 0.1% (i.e., 1 transmission in 1000 sex acts) for unprotected heterosexual intercourse.[1,2,4]

Many other sexual activities carry little to no risk of transmission. Sweat, saliva and tears do not contain enough HIV to transmit the virus. So, for example, kissing and even deep kissing (in the absence of oral sores or bleeding) pose virtually no risk of transmission.[6,8,9] Masturbation and any other activity that does not expose the uninfected partner to an HIV-carrying fluid also carry no risk. HIV is fragile and able to persist outside the body only for minutes. Unbroken skin is an effective barrier to the virus and so contact between an HIV-containing fluid and healthy, intact skin is considered safe.[7] Note, however, that lesions, even if microscopic, can provide an entry point for HIV. As well, HIV can pass through the mucosal membrane lining the rectum, vagina, urethra and in uncircumcised men, the inside of the foreskin, even if the membrane is intact. Thus, the sexual activities that carry the greatest risk of transmission are unprotected vaginal and anal intercourse.

Table 4 (see page 37) summarizes data on the per-act risk of HIV transmission associated with different types of sexual acts. This per-act risk is expressed as a percentage. The percentage reflects the probability of HIV transmission during one sexual act or the percentage of a population of HIV-negative people that could be expected to be infected by HIV during one sexual act with an HIV-positive sex partner. These are the best estimates to date (July 2010), though experts agree that there is room for improvement in the quality and quantity of data supporting them, and variation in the per-act risk estimates.

Heterosexual sex

Estimates of the risk of HIV transmission come from four types of studies.[1,2] (See "Reading medical science," page 29, for more information on different types of medical studies and considerations for interpreting study results.)

- The first type involves "serodiscordant couples" cohorts (couples in which, at the outset of the study, one partner is infected with HIV and the other is not). Generally, the couples in these studies report that they were monogamous and engaged in vaginal sex as their only form of sexual intercourse. The couples were followed over time to find out if the HIV-negative partner became infected with HIV during the study. Using data on frequency of intercourse, per-risk estimates can be calculated.

  Serodiscordant cohort studies provide the advantage of controlling many variables, which permits a better estimation of the per-act risk. One criticism of these studies is that they likely miss transmissions that occur during the early phase of HIV infection during which HIV is more easily transmitted (because couples for which this happened would no longer be serodiscordant and thus not eligible for the study). Therefore, these studies may underestimate the overall per-act risk of transmission.
- The second type follows a cohort of HIV-negative individuals, for example, sex workers, who do not have steady HIV-positive partners but are presumed to be at risk of exposure to HIV, and tracks seroconversion over time.

- The third type, cross-sectional partner studies, tests the HIV status of the partners of a group of people who are known to be HIV-positive.
- The fourth type of study is also cross-sectional, but assesses the HIV status of a group of people presumed to have been exposed to HIV.

All four study types are included in the following discussion.

The value of 0.1% per act is commonly cited as the risk of HIV transmission during unprotected vaginal intercourse. However, a recent analysis of existing published studies provided a slightly lower, and perhaps more precise, estimate of 0.08% per act.[2] In other words, if 10,000 serodiscordant heterosexual couples had unprotected sex once, there would be 8 transmissions of HIV among them. This figure represents the average transmission risk per act of unprotected vaginal intercourse, and according to the Canadian researchers who published the estimate, indicates "a low risk of infection in the absence of antiretrovirals."[2]

Taken together, the literature is equivocal about whether the probability of transmitting HIV from a man to a woman is higher than the probability of transmitting HIV from a woman to a man. Some studies have found no difference, while others suggest that the probability of HIV passing from a man to a woman is about twice that of it passing from a woman to a man.[1,2,8] A number of biological factors, such as increased surface area of the vaginal lining and greater degree of disruption of the lining during intercourse, could support a difference in the risk based on direction of transmission.[9] Other factors known to influence transmission risk, such as being uncircumcised (which increases the risk for HIV-negative male partners), may have influenced results in studies that did not show a significant difference in risk of transmission.

Oral sex

Oral sex has been associated with a much lower HIV transmission risk than unprotected vaginal or anal intercourse.[7,11,12] A lack of sufficient data has made it impossible to calculate a statistically sound estimate

Reading medical science

The findings from medical research involving people as subjects can often seem difficult to understand and interpret. There are a number of different study designs and research methods, all of which are have particular intricacies and limitations. Let's review the salient points for this discussion.

Studies include at least one group of participants, who usually share certain characteristics, though they can also be a random group of people.

Types of studies

Observational studies do not try to influence the group in any way, but rather simply measure (or "observe") a certain variable. **Comparative studies** compare a certain measure between two groups (or study arms) that differ in some pre-determined way.

A study that collects data at only one time point is called a **cross-sectional study**. If data is collected over time, it is considered a **longitudinal study**. In this latter case, the group of people who are being studied is called a cohort. If the study is designed first and then the data are collected, the study is called a **prospective study**. If the study used data that was already collected for another reason, it is called a **retrospective study**. Prospective studies are less susceptible to various sources of possible bias.

Interventional studies apply some sort of intervention (a drug treatment, for example) and look for a resulting change in some measure among participants. A study that contains two very similar groups, one that receives the intervention and one that does not, is commonly used to assess the effect of the intervention. By keeping as many variables (e.g. age, gender, HIV status) as possible the same between the groups, any difference between the groups can be ascribed to the intervention. Great care is taken to ensure all known variables are kept the same between the groups to minimize the potential that an unknown variable differs between the two groups and is the cause of the observed difference. The **randomized, double-blind, placebo controlled trial** is the gold standard for interventional studies.

Modelling studies attempt to develop a theoretical statistical model to explain observed data, often using data collected through epidemiological studies of large populations. Modelling studies are intended to

generate hypotheses and do not provide experimental proof. These studies are difficult to interpret because they are based on many assumptions: often there are many variables that have not been identified or controlled for, which calls into question the validity of the explanations offered.

A systematic review is a scientific method for synthesizing findings from a number of separately conducted scientific studies.[10] A systematic review starts with an exhaustive search of published data using a well-defined search strategy. Appropriate studies are selected based on pre-determined criteria of study quality. When the studies included in a systematic review are similar enough to one another, it is possible to combine and analyze the studies' data or results using a process of statistical synthesis called meta-analysis.[10] While meta-analyses provide a single best estimate based on several studies, they may conceal variability between results of different studies.

Caveats when reading studies

There are several caveats when considering the interpretation of studies and their broader application. First, in strict terms, the results of a study can only be applied to the study population in question. However, people may seek to apply results from one study cohort to another population. When doing so, it is important to know the characteristics of each study cohort, to take that information into account when relying on the results and conclusions from specific studies. For example, HIV transmission data from studies of people in high-income countries may be different from studies of people in low-income countries. In our review we have focused on studies of people in high-income countries, since Canada is a high-income country.

Second, a scientific question is often repeatedly addressed in several similar studies. Obtaining a similar result over several studies confirms the finding and gives more confidence in its validity. In our review, when possible, we have used systematic reviews and meta-analyses, which take into account findings from multiple studies.

Third, it is important to distinguish between what is being studied and the population that is being studied. Differences in findings may be due to true differences in what is being studied, or to differences attributable to the population studied. For example, how does one compare estimates of the risk of HIV transmission during anal sex with risk during vaginal sex? Ideally, it is best to compare anal and vaginal sex risk estimates from a study of one heterosexual population. If that is not possible, one could compare estimates for anal sex among men who have sex with men (MSM) with estimates for vaginal sex among heterosexuals, realizing that the difference in risk between anal and vaginal sex in the second study scenario may actually be due to differences in the populations (MSM and heterosexual) rather than the type of sex.

Fourth, results are often expressed as a single quantified result accompanied by a range within which the true value likely falls. Think of poll results reported in the media: they are often reported as being accurate within X percentage points, 19 times out of 20. This means that the true answer is most likely somewhere in that range. These statistical ranges indicate how confident we are of the estimate. The smaller the range, the more confidence we can have in the result. We have not included ranges in our discussion, but it is important to remember that each estimate of per-act risk carries a degree of uncertainty.

Fifth, human behaviour is complex. Studies of human behaviour face the challenge of accounting for multiple, interacting variables. It is impossible to fully identify, capture and quantify all the relevant variables in a given study, including one that attempts to calculate the per-act risk of the sexual transmission of HIV. For example, condom use is often collected using subjective terms such as "always," "occasionally" or "never." To integrate this information into a calculation, these subjective terms must be given numerical values, and this "translation" introduces imprecision into the calculation and weakens our confidence in the result. Recall bias (how well people remember their sexual activities over a period of time) and social desirability bias (the potential for people to answer questions about their sexual activities in a way that appears more socially acceptable) can also lead to imprecision in the collected data.

Finally, there remains the question of how to apply findings from a study involving a group of people to one person in one particular situation. When

facing this issue, one question to ask is whether the study addressed a situation similar to the one in the individual case. For example, transmission estimates for studies of anal sex with a condom should not be applied to a situation of a person who engaged in unprotected oral sex. Another consideration is whether the study used a population similar to the one that applies to the person in question. The results should be from a population as similar as possible to the one to which the particular person belongs. Practically speaking, results from studies should be applied with an awareness of known differences (and the possibility of unknown ones) between the study population and the person in question.

of the risk. However, a scientific consensus has developed that the risk of HIV transmission during oral sex is extremely low, albeit non-zero.[88]

A systematic review of the literature identified three estimates of per-act risk based on results from three studies involving 2,497 people. Two studies reported no new HIV infections resulting from oral sex. The 0.04% value quoted in Table 4 is from a single study of almost 2,200 men who have sex with men (MSM) and involved oral sex where a man who is HIV-positive or of unknown status ejaculated in the mouth of the HIV-negative partner.[13] However, the value of 0.04% per act may misrepresent the risk of transmission from oral sex. It is derived from applying complex data to a statistical model in order to estimate per-contact risk for each type of sex. This modelling may have resulted in an overestimation of the risk associated with oral sex alone since there were no seroconversions among study participants who reported only performing unprotected fellatio to ejaculation.[13]

Anal intercourse

Studies show that unprotected anal intercourse is associated with a higher HIV transmission risk than unprotected vaginal intercourse[5, 14] and that the risk is higher when the HIV-positive person is the insertive rather than receptive partner.[13, 15, 16]

While anal intercourse is part of both heterosexual and homosexual sexual activity, much of the data on HIV transmission risk during anal intercourse comes from studies of MSM. Estimates of the per-act risk of HIV transmission for unprotected anal sex among MSM derive from individual studies and range widely, from 0.01% to over 3%.[13, 16-18] For heterosexual couples, a recent study by Canadian researchers included an estimate of 1.69% per act.[2]

Two studies of MSM (one in Australia and one in the U.S.) have reported risks of transmission to an HIV-negative receptive partner in the range of 0.65% to 1.43% per contact.[13, 16] For an HIV-negative man who is the insertive partner, the range was 0.06% to 0.62%. The US study of MSM found that the risk of infection for the receptive HIV-negative partner was about ten-fold higher than for the insertive partner (0.82% versus 0.06%).[13] The Australian study found that withdrawal before ejaculation reduced the risk to the receptive HIV-negative partner by over 50%, from 1.43% with ejaculation to 0.65% if withdrawal occurred before ejaculation.[16]

Factors modifying the risk of transmission

Researchers have identified several factors, such as condom use and concurrent STIs, that can affect the risk of HIV transmission during a sexual act. The transmission risk is dependent upon the interaction among these factors, some of which lower the risk of transmission and others of which increase the risk. While it is extremely difficult to quantify the HIV transmission risk for a single sex act between two people at one particular moment given the many contributing and interacting factors, it is important to recognize that certain factors are known to reduce HIV transmission risk.

Factors that reduce the risk of transmission

The factors associated with a reduction in the risk of transmission are condom use, circumcision and lower viral load in the HIV-positive partner.

Condoms

There is significant data supporting the role of condoms in reducing the risk of HIV transmission during sex, and health organizations worldwide promote condom use as a primary means of reducing HIV

transmission.[19-22] When used consistently[c] for vaginal intercourse, condoms reduce the transmission of HIV by an estimated 80%, on average.[23]

A finding of an 80% reduction in HIV transmission does not mean that 80% of people using condoms are protected from HIV while 20% of people using condoms will become infected. Rather, it means that condoms prevent 80% of the transmissions that would have occurred if a condom had not been used. For example, assume a per-act risk of 0.08% for receptive vaginal sex and no other HIV risk factors, in a group of 10,000 women who had unprotected vaginal intercourse once with an HIV-positive man. If all 10,000 did not use a condom, about 8 women would become infected with HIV. If all 10,000 used a condom, 1 or 2 women would become infected with HIV.

Condoms are also generally considered effective in reducing transmission of HIV during anal intercourse, though there are considerably less data supporting this claim.[24] Unprotected receptive anal intercourse has been associated with increased risk of HIV transmission compared with intercourse with a condom.[15, 25] As well, among a cohort of 2,915 MSM in the U.S. followed in the 1980s, consistent condom use was associated with decreased risk of HIV transmission.[26] In a separate study, the per-act risk of transmission to an HIV-negative receptive partner during protected anal sex was 0.2%, about one-quarter the risk during unprotected anal sex (0.8%).[13]

Circumcision

Male circumcision is a well-studied factor that reduces HIV acquisition among men who have sex with women. Trials in Africa have validated the effectiveness of circumcision in reducing HIV acquisition by men from their HIV-positive female partners, with an approximately 60% reduction in risk for circumcised men compared to their uncircumcised counterparts.[27]

The impact of circumcision on sexual transmission of HIV among MSM remains unclear. A recent observational study of 1,136 MSM in Australia reported a more than 80% reduction in the per-contact risk of transmission to the HIV-negative insertive partner if the insertive partner was circumcised versus uncircumcised (0.11% versus 0.62%).[16] However, other observational studies have produced conflicting results.[28]

Antiretroviral therapy and undetectable viral load

Early studies showed an association between viral load and sexual HIV transmission risk. Among people who were not on therapy, lower levels of HIV in the blood were associated with lower rates of sexual HIV transmission.[29-31] Since antiretroviral drugs lower blood viral load, it was postulated that HIV-positive people on therapy might also be less sexually infectious. Using antiretroviral treatment to inhibit transmission of HIV has been borne out by the use of antiretroviral therapy during pregnancy and delivery. Antiretroviral therapy has been shown to reduce the risk of HIV passing between mother and baby to less than 2%.[32-34] In Canada from 1997 to 2004, only 15 infants (1.6%) were born HIV-positive to 931 HIV-positive mothers who received antiretroviral therapy.[35]

It is now generally accepted that effective antiretroviral therapy, which reduces HIV viral load in the blood and slows disease progression, reduces the risk of sexual transmission of HIV. The exact magnitude of the reduction in the risk of sexual transmission of HIV during unprotected sex with people on antiretroviral therapy including those with an undetectable viral load remains unknown. This is an area of intense study among researchers and, at this time, there is insufficient data to make definitive statements about the full extent of risk reduction. (See "The evidence behind viral load, antiretroviral therapy and transmission," page 33, for a more detailed discussion.)

In late 2009, a European team published the first systematic review and meta-analysis of data on the relationship between antiretroviral therapy, blood viral load and the sexual transmission of HIV.[36] This analysis included 11 cohorts comprising 5,021 serodiscordant heterosexual couples. The individual studies used different ways of defining their cohorts. Some studies only evaluated whether the participants were on antiretroviral therapy, while others evaluated whether participants on therapy had an undetectable viral load. Overall, the analysis found that antiretroviral therapy (without considering viral load) reduced heterosexual transmission by 92%.

To better understand this 92% reduction in risk, let us return to our group of 10,000 serodiscordant

heterosexual couples who have no other risk factors and a per act transmission risk of 0.08% for unprotected vaginal intercourse. If all 10,000 HIV-positive partners were ***not*** on antiretroviral therapy, about 8 of the HIV-negative partners would become infected with HIV. If all HIV-positive partners were on antiretroviral therapy, 1 or 2 people would become infected with HIV. This reduction is associated with being on antiretroviral therapy, irrespective of whether the HIV-positive person had an undetectable viral load.

One would expect an undetectable viral load to be associated with at least an equal and, perhaps, a greater reduction in the risk of HIV transmission. However, the data regarding the effect of an undetectable viral load on HIV transmission are incomplete and therefore must be viewed with caution. The European team notes that studies have found no transmission of HIV when blood viral load has been kept below 400 copies/mL by antiretroviral therapy. However, they also note that the two studies that did report transmission in the presence of antiretroviral therapy did not report viral load.[36] Also, information about other factors that can increase the risk of transmission, such as STIs, was not consistently reported across the studies examined in the systematic review and meta-analysis.

Due to the limited statistical power of the numerous studies involving a small number of participants, members of the European team stated they could not confidently conclude that sexual transmission is impossible when viral load is undetectable. They go on to state that the amount and statistical power of published data do not permit an accurate estimation of the per-act risk of transmission for people with an undetectable viral load.[36-37] Based on current data and the studies' statistical limitations, the HIV transmission risk estimate could be as high as 0.013% per act of sexual intercourse, or about 1.3 seroconversions among 10,000 acts.[36]

A group in the U.S. is undertaking a large-scale, prospective, randomized, controlled study of the role of antiretroviral therapy in heterosexual HIV transmission.[38] It is expected that the results of this study will provide the most solid information to date on the extent to which taking antiretroviral therapy reduces

The evidence behind viral load, antiretroviral therapy and transmission

Evidence of the effect of antiretroviral therapy on sexual transmission of HIV comes from two principal sources: cohort studies involving serodiscordant couples (early and more recent studies), and epidemiologic modeling studies. (Please see explanation of study types in section on risk estimates for heterosexual sex, pages 29 to 31.)

Early observational cohort studies found either that blood viral load was on average lower among couples who did not transmit HIV or that the number of transmissions decreased with decreasing blood viral load.[29-31] These studies were completed before the introduction of antiretroviral therapy, and it is not clear whether a naturally low viral load has the same characteristics as a low viral load achieved through antiretroviral therapy.

Scientists have found that antiretroviral therapy may lead to undetectable blood viral loads but incomplete suppression of HIV in genital fluids, which arguably play a greater role than blood in the sexual transmission of the virus. Several studies have found that in a significant proportion of people with no detectable virus in their blood, detectable levels of HIV can be found in semen,[41-43] cervicovaginal fluids [44-46] and in the lining of the anal cavity.[47] Studies estimate between 5 to 15% of men who have an undetectable blood viral load as a result of antiretroviral therapy still have detectable virus in semen samples.[42, 48-50] This raises questions about whether a person with undetectable viral load in the blood may still possess sufficient levels of virus in the genital fluids to transmit HIV infection to another person during sex. As yet there have been no studies assessing the relationship of this residual seminal virus to the risk of HIV transmission.

More recent cohort studies have compared the HIV transmission rates in heterosexual couples where the HIV-positive person was receiving antiretroviral therapy with transmission rates among couples where the HIV-positive partner was not receiving therapy, and have found lower transmission rates in the presence of therapy. Three cohort studies involving 762 couples found no heterosexual transmission

from people on antiretroviral therapy—two of the studies evaluated viral load and found it undetectable in the majority of participants.[51-53] Two other studies reported 79% and 92% reductions in the estimated risk of transmission where the HIV-positive person in the couple was receiving antiretroviral therapy.[54, 55] Another study of nearly 3,400 couples observed a 92% reduction in new infections in couples who started antiretroviral therapy and a final study noted an approximately 80% reduction in transmission after the introduction of antiretroviral therapy in a Spanish population.[56, 57]

These studies have two principal limitations. First, they did not control for, and thus their results may not exclude, the influence of other factors known to have an impact on HIV transmission. For example, in the Spanish study, 50% of the participants reported always using condoms during intercourse.[57] It is therefore difficult to determine whether the reduction in transmission was due to condom use or antiretroviral therapy. Second, the studies were of a short duration.

Epidemiologic modeling studies are studies in which researchers try to explain changes in the incidence of HIV within a population with models based on social or biological change. These studies were initially used as a second line of evidence used to support the role of antiretroviral therapy in reducing the risk of HIV transmission. Two studies, one in San Francisco[58] and another in Taiwan,[59] observed drops in new HIV cases after the introduction of antiretroviral therapy in the late 1990s. However, both of these studies have been criticized for serious flaws in their design. A separate San Francisco study found no change in HIV incidence,[60] while a fourth study, in Amsterdam, found that a decrease in HIV incidence preceded rather than followed the introduction of antiretroviral therapy.[61] These results are conflicting and are based on modeling studies with known design flaws. The cohort studies discussed above provide more reliable data to support the role of antiretroviral therapy in reducing sexual transmission of HIV.

the risk of passing HIV during sex. As of early 2010, the trial was still enrolling its target of 1750 couples, and final results are not expected for several years.

The association between viral load and the risk of sexual transmission of HIV among MSM populations has been difficult to determine. Designing transmission risk studies in this population has proven difficult (see section on oral sex, page 29).[39-40]

Factors increasing the risk of transmission

Any factor that increases one of the required conditions of HIV transmission potentially increases the risk of transmission. For example, ejaculation by an HIV-positive partner who is the insertive partner during penetrative intercourse likely increases the risk of transmission because of the introduction of a larger volume of HIV-containing fluid than would otherwise be the case. Having lesions or abrasions at the site of exposure would also increase risk. Two other factors known to increase the risk of transmission are stage of HIV infection and the presence of other sexually transmitted infections.

Stage of infection

It is generally agreed that the risk of sexual HIV transmission is higher during "primary infection," defined as the first two to three months of infection. Estimates range from an eight- to 43-fold increase in per-act risk of HIV transmission during primary infection when compared with the chronic phase of infection.[2, 14, 62-64] Advanced HIV disease has also been associated with a seven- to 20-fold increase in risk of HIV transmission.[2, 14, 63] These periods of high blood viral load may partly explain the increased infectivity, though the level of infectivity is higher than would be expected for a given viral load versus other factors that increase the risk of HIV infection, such as STIs.[63]

Sexually transmitted infections (STIs)

There is considerable evidence that having an STI or another infection of the genitourinary tract increases the risk of transmission of HIV, regardless of whether the STI is in the HIV-positive or HIV-negative

partner.[1, 65] Several infections have been implicated, including herpes simplex virus (HSV), bacterial vaginosis, gonorrhea, Chlamydia and vaginal candidiasis.[39, 65-68] The risk is generally in the range of one and one-half to five times higher than that seen in the absence of STIs.[2, 39, 66-69]

Rates of STIs vary with time, over geographic areas and among populations. In groups with increasing rates of STIs, such as rates of syphilis among MSM in some urban centres in Ontario and southern Quebec during the early to mid 2000s,[91] STIs may play an important role in increasing the risk of sexual transmission of HIV.

Living with HIV, a chronic manageable infection

Thanks to advances in therapy, HIV infection has changed from a terminal disease to a chronic, manageable condition in the eyes of many experts and people living with the virus.[3, 70] Antiretroviral therapy blocks the virus's ability to reproduce, which lessens the deleterious effect on the immune system. While the virus is not eliminated, it is controlled. When HIV is under control, the progression to the more serious stages of HIV disease, including AIDS, is slowed if not halted. Combination antiretroviral therapy has been available only since 1996. There is no reason to suspect that it will not continue to suppress the virus in the decades to come.

This shift to an understanding of HIV as a chronic, manageable infection is supported by scientific research focused on changes in the rate of death, the cause of death and the life expectancy of people living with HIV. The introduction of effective combination antiretroviral therapies in 1996 was associated with a dramatic decrease in death due to HIV/AIDS.[71-75] Data collected by the Public Health Agency of Canada show that the reported deaths due to AIDS dropped from 1063 in 1996 to 473 in 1997. In 2008, 45 people died of AIDS in Canada, representing 3% of the 1,501 deaths in 1995, the peak of AIDS deaths in the Canadian epidemic.[76] Two large U.S. studies have reported a rate of 7 to 10 deaths per 100 person-years in the pre-1996 era. By the mid-2000s, that rate had dropped to less than 2 deaths per 100 person-years.[74, 75] Recent studies suggest that the death rate among some groups of people with HIV may be approaching that of the general population.[77]

HIV, HIV therapy and AIDS

People with HIV have a chronic infection that is incurable but manageable. Without treatment, HIV infection generally leads to the slow dismantling of the immune system. This process of immune decline takes many years during which people remain relatively healthy. AIDS, the most advanced stage of HIV disease, is characterized by the presence of certain infections and cancers that only appear in people with weakened immune systems.

AIDS was once considered the inevitable and irreversible outcome of living with HIV. However, thanks to effective antiretroviral therapy, people with AIDS can be treated, their immune systems can be rebuilt and their health returned.

In addition to fewer deaths among people with HIV, there has also been a shift in the causes of death away from the traditional AIDS-defining illnesses—infections such as pneumocystis pneumonia (PCP), or cancers, such as Kaposi's sarcoma—towards non-HIV-related causes. In one U.S. study, deaths at least partially attributable to AIDS-related causes decreased 10-fold, from 3.79 per 100 person-years in 1996 to 0.32 per 100 person-years in 2004. At the same time, the proportion of people with HIV dying from non-HIV-related causes rose from 13% in 1996 to over 40% in 2004.[74] Similar figures have been obtained in another U.S. study.[75] These non-HIV-related causes of death are very similar to those affecting the general population and include heart, liver and lung disease and non-AIDS-related cancers, although the incidence of these conditions is greater among people with HIV than among the general population. Both HIV infection and the long-term toxicities associated with antiretroviral therapy may be involved in this increased incidence.[74, 78]

Life expectancy for people living with HIV has greatly increased with the introduction of effective antiretroviral therapy. A 2007 Canadian study found that average life expectancy for someone who became infected with HIV at age 20 increased from 9 years

Weighing the data on sexual transmission risk

The data provided in Table 4 are drawn from published peer-reviewed sources providing the most comprehensive and up-to-date analyses available in early 2010. Risk estimates use a variety of different terms to describe HIV transmission associated with the same sexual activity in a similar cohort of people—for example, studies use the terms heterosexual intercourse, penile-vaginal intercourse and male to female transmission. This variation is based on the fact that, when designing individual studies, researchers may have used different definitions of sexual intercourse or designed their study to capture only particular data. We use the most precise term possible when describing the data. The risk estimates presented in the table are derived from studies undertaken in high-income countries, which parallels the reality of HIV in Canada.

The data concerning heterosexual transmission are drawn from two recent systematic reviews and meta-analyses[1,2] and one older review published in 1996.[4]

- The two systematic reviews with meta-analyses, completed by a Canadian group (Boily et al.)[2] and an American group (Power et al.)[1] were included in this table because they provide a current, comprehensive overview of published literature. The estimates quoted from the Canadian group, while based on fewer studies, were shown statistically not to be heterogeneous, that is to say that the meta-analysis did not conceal variability among the studies used to derive the estimates.
- The 1996 review included here was chosen because it represents the first published attempt to seriously evaluate literature on sexual transmission of HIV, providing a historical perspective on the evolution of the data. It is also the review that gave rise to the commonly quoted value of 0.1% per-act risk of transmission for unprotected vaginal intercourse.

Data for the HIV transmission risk associated with unprotected anal sex are reported from individual studies and one combined analysis of two studies. These studies represent the best published attempts to quantify per-act transmission risks. Given the paucity of data, these estimates must be viewed with caution.

Data for the HIV transmission risk associated with oral sex are reported from the single systematic review published on the topic (Baggaley et al.)[88] This review could not provide a statistical analysis of the data and so the estimate is reported as a range.

in 1993-1995 to 23.6 years in 2002-2004. This means that in 2004, a person who was 20 years old and newly infected with HIV could have expected to live another 23.6 years on average, or to the age of about 44.79. A 2008 study estimated the average life expectancy for someone infected with HIV at age 20 to be almost 50 years, while preliminary results from a 2010 modeling study suggest that life expectancy for people with HIV in Holland who receive proper care could match that of the general population.[70, 80]

With increased life expectancy, people with HIV are facing opportunities and challenges associated with long life. The medical community has increasingly recognized the importance of managing both HIV and health issues associated with aging, from menopause to cardiovascular disease.[74, 75, 81-83] As well, with the prospect of a long life and the knowledge that it is possible to prevent mother-to-child transmission, HIV-positive people are having children.[84, 85] Some are also accessing fertility services if they have trouble conceiving.[86] A 2009 study of HIV-positive women of reproductive age in Ontario reported that 69% desired to give birth and 57% intended to give birth in the future.[87]

Table 4:
Summary of per-act risk estimates for transmission of HIV during different types of sexual intercourse

Type of intercourse	*Risk per act*	*Comments*
Heterosexual (no distinction made in direction of transmission)	0.077%	*Author/date*: Boily et al., 2009 *Study type*: systematic review and meta-analysis of 33 publications from 25 heterosexual cohorts *Estimate derivation*: 4 estimates from studies involving 116 couples in high-income countries
	0.056%	*Author/date*: Powers et al., 2008 *Study type*: systematic review and meta-analysis of 27 publications from 15 heterosexual cohorts *Estimate derivation*: 8 estimates from studies involving 1,402 couples in high-income countries
	0.05 – 0.1%	*Author/date*: Mastro and de Vincenzi, 1996 *Study type*: review including 11 studies reporting per-act risks for sexual transmission of HIV *Estimate derivation*: range from 3 reports involving over 550 couples from high-income countries *Comments*: one of the first reviews on the topic and the source of the oft-quoted per-risk estimate of 0.1%
Male to female (predominantly penile-vaginal sex, but may include other acts [anal and oral])	0.08%	*Author/date*: Boily et al., 2009 *Study type*: systematic review and meta-analysis of 33 publications from 25 heterosexual cohorts *Estimate derivation*: 10 estimates from studies involving 1,744 couples in high-income countries
	0.064%	*Author/date*: Powers et al., 2008 *Study type*: systematic review and meta-analysis of 27 publications from 15 heterosexual cohorts *Estimate derivation*: 10 estimates from studies involving 4,088 susceptible participants in high- and low-income countries
	0.08-0.14%	*Author/date*: Mastro and de Vincenzi, 1996 *Study type*: review including 11 studies reporting per-act risks for sexual transmission of HIV *Estimate derivation*: 3 reports involving over 226 couples from high-income countries *Comments*: one of the first reviews on the topic
Male to female, vaginal intercourse only	0.076%	*Author/date*: Boily et al., 2009 *Study type*: systematic review and meta-analysis of 33 publications from 25 heterosexual cohort *Estimate derivation*: 5 estimates from studies involving 755 couples and 499 individuals in high-income countries

Type of intercourse	*Risk per act*	*Comments*
Female to male (predominantly penile-vaginal sex, but may include other forms (anal and oral)	0.04%	*Author/date*: Boily et al., 2009 *Study type*: systematic review and meta-analysis of 33 publications from 25 heterosexual cohorts *Estimate derivation*: 3 estimates from studies involving 221 couples in high-income countries
	0.064%	*Author/date*: Powers et al., 2008 Study type: systematic review and meta-analysis of 27 publications from 15 heterosexual cohorts *Estimate derivation*: 6 estimates from studies involving 1,037 susceptible participants, including commercial sex workers, in both high- and low-income countries *Comments*: sex work is associated with a higher risk of HIV transmission
Anal (combined)	0.8 – 3.2%	*Author/date*: DeGruttola et al., 1989 *Study type*: prospective, cross-sectional cohort study *Participants*: 287 MSM in the US *Comments*: a range is given because this study fits different models of behaviour and infectivity to the observed prevalence of HIV among the partners of a group of men already know to be HIV-positive
	0.01 – 0.1%	*Author/date*: Jacquez et al., 1994 *Study type*: retrospective modelling study *Participants*: 2 MSM cohorts in the US *Comments*: estimates derived as part of a model explaining epidemiological trends in HIV prevalence early in the epidemic
Receptive (when the HIV-negative person is the receptive partner)	1.69% (heterosexual)	*Author/date*: Boily et al., 2009 *Study type*: systematic review and meta-analysis of 33 publications from 25 heterosexual cohorts *Estimate derivation*: 2 estimates from studies with over 500 participants in high-income countries
	0.65%, 1.43% (MSM)	*Author/date*: Jin et al., 2010 *Study type*: prospective, cohort study *Participants*: 1,136 MSM in Australia *Comments*: The lower figure for withdrawal before ejaculation and the higher figure is for ejaculation in the rectum
	0.82% (MSM)	*Author/date*: Vittinghoff et al., 1999 *Study type*: prospective, cohort study *Participants*: 2,189 MSM in the US
Insertive (when the HIV-negative person is the insertive partner)	0.11%, 0.62% (MSM)	*Author/date*: Jin et al., 2010 *Study type*: prospective, cohort study *Participants*: 1,136 MSM in Australia *Comments*: The lower figure is for circumcised men, the higher figure is for uncircumcised men

Type of intercourse	*Risk per act*	*Comments*
	0.06% (MSM)	*Author/date*: Vittinghoff et al., 1999 *Study type*: prospective, cohort study *Participants*: 2,189 MSM in the US *Comments*: the insertive partner is HIV-negative, the receptive partner is HIV-positive or of unknown status, meaning this estimate may under-represent the true risk of infection
Oral (receptive)	0 – 0.04%	*Author/date*: Baggaley et al., 2008 *Study type*: systematic review (no meta-analysis due to the small number of studies) of 10 studies and 14 estimates, including both per-act estimates and per-partner estimates (not shown here); studies included penile-oral sex and vaginal-oral sex (but not anal-oral sex) involving heterosexual, gay and lesbian participants Estimate derivation: range based on three studies and three estimates; two studies (one involving 135 heterosexual couples and one, 38 lesbian participants) from Europe reported no seroconversions (of all 10 studies, 6 reported no seroconversions); the third study included 1,583 MSM from the U.S. *Comments*: the 0.04% estimate is from MSM and involves oral sex with ejaculation by a person who is HIV-positive or of unknown status into the mouth of the HIV-negative partner

Endnotes

a. By vaginal or anal intercourse we mean sexual activity involving the insertion of the penis into the vagina or anus. We use the term "unprotected" to refer to sexual activity without the use of a condom.

b. Other fluids considered infectious or potentially infectious are breast milk and several internal body fluids (including cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluids).[90]

c. Consistent use implies use of a condom for all acts of penetrative vaginal intercourse. It does not imply correct use of a condom during all of those acts.

References

1. Powers KA, Poole C, Pettifor AE and Cohen MS. (2008). Rethinking the heterosexual infectivity of HIV-1: a systematic review and meta-analysis. *Lancet Infect Dis*. Sep;8(9):553-63.
2. Boily MC, Baggaley RF, Wang L, Masse B, White RG, Hayes RJ and Alary M. (2009). Heterosexual risk of HIV-1 infection per sexual act: systematic review and meta-analysis of observational studies. *Lancet Infect Dis*. Feb;9(2):118-29.
3. Dieffenbach CW and Fauci AS. (2009). Universal voluntary testing and treatment for prevention of HIV transmission. *JAMA*. Jun 10;301(22):2380-2.
4. Mastro TD and de Vincenzi I. (1996). Probabilities of sexual HIV-1 transmission. *AIDS*.10 Suppl A:S75-82.
5. Halperin DT, Shiboski SC, Palefsky JM and Padian NS. (2002). High level of HIV-1 infection from anal intercourse: a neglected risk factor in heterosexual AIDS prevention. Poster Exhibition: The XIV International AIDS Conference: Abstract no. ThPeC7438.
6. Joint United Nations Programme on HIV/AIDS. *HIV Prevention Fast Facts*. UNAIDS website, www.unaids.org/en/KnowledgeCentre/Resources/FastFacts/. Accessed February 2010.
7. Morrow G, Vachot L, Vagenas P and Robbiani M. (2007). Current concepts of HIV transmission. *Curr HIV/AIDS Rep*. Feb;4(1):29-35.
8. European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male and male to female transmission of HIV in 563 stable couples. *BMJ*. Mar

28;304(6830):809-13.
9. Fox J, and Fidler S. (2010). Sexual transmission of HIV-1. *Antiviral Res*. Jan;85(1):276-85.
10. Higgins JPT and Green S (editors). (updated 2009). *Cochrane Handbook for Systematic Reviews of Interventions Version 5.0*. The Cochrane Collaboration, 2009. Available from www.cochrane-handbook.org. Accessed January 2010.
11. Centers for Disease Control and Prevention. (2010). Oral sex and HIV Risk. CDC HIV/AIDS Facts, June 2009. www.cdc.gov/hiv/resources/factsheets/oralsex.htm. Accessed January 2010.
12. National AIDS Trust. (2010). HIV The Basics. National AIDS Trust, UK website, www.nat.org.uk/HIV-Facts/The-basics.aspx. Accessed January 2010.
13. Vittinghoff E, Douglas J, Judson F, McKirnan D, MacQueen K and Buchbinder SP. (1999). Per-contact risk of human immunodeficiency virus transmission between male sexual partners. *Am J Epidemiol*. Aug 1;150(3):306-11.
14. Leynaert B, Downs AM and de Vincenzi I. (1998). Heterosexual transmission of human immunodeficiency virus: variability of infectivity throughout the course of infection. European Study Group on Heterosexual Transmission of HIV. *Am J Epidemiol*. Jul 1;148(1):88-96.
15. Macdonald N, Elam G, Hickson F, Imrie J, McGarrigle CA, Fenton KA, Baster K, Ward H, Gilbart VL, Power RM and Evans BG. (2008). Factors associated with HIV seroconversion in gay men in England at the start of the 21st century. *Sex Transm Infect*. Feb;84(1):8-13.
16. Jin F, Jansson J, Law M, Prestage GP, Zablotska I, Imrie JC, Kippax SC, Kaldor JM, Grulich AE and Wilson DP. (2010). Per-contact probability of HIV transmission in homosexual men in Sydney in the era of HAART. *AIDS*. Mar 27;24(6):907-13.
17. DeGruttola V, Seage GR 3rd, Mayer KH and Horsburgh CR Jr. (1989). Infectiousness of HIV between male homosexual partners. *J Clin Epidemiol*. 42(9):849-56.
18. Jacquez JA, Koopman JS, Simon CP and Longini IM Jr. (1994). Role of the primary infection in epidemics of HIV infection in gay cohorts. *J Acquir Immune Defic Syndr*. Nov;7(11):1169-84.
19. AIDS Bureau. (2008). Guidelines for HIV Counseling and Testing. AIDS Bureau, Ontario Ministry of Health and Long-Term Care.
20. Public Health Agency of Canada. (2007). Protect yourself. Public Health Agency of Canada web site, www.phac-aspc.gc.ca/aids-sida/info/3-eng.php. Accessed January 2010.
21. Centers for Disease Control and Prevention. (2010). Condoms and STDs: Fact Sheet for Public Health Personnel. US Centers for Disease Control website, www.cdc.gov/condomeffectiveness/latex.htm. Accessed January 2010.
22. Joint United Nations Programme on HIV/AIDS. Condoms. UNAIDS website, www.unaids.org/en/PolicyAndPractice/Prevention/Condoms. Accessed January 2010.
23. Weller S and Davis K. (2002). Condom effectiveness in reducing heterosexual HIV transmission. *Cochrane Database Syst Rev*. 1:CD003255.
24. Silverman BG, Gross TP. (1997). Use and effectiveness of condoms during anal intercourse. A review. *Sex Transm Dis*. Jan;24(1):11-7.
25. Lavoie E, Alary M, Remis RS, Otis J, Vincelette J, Turmel B, Lavoie R, Masse BR and Le Clerc R. (2008). Determinants of HIV seroconversion among men who have sex with men living in a low HIV incidence population in the era of highly active antiretroviral therapies. *Sex Transm Dis*. Jan;35(1):25-9.
26. Detels R, Munoz A, McFarlane G, Kingsley LA, Margolick JB, Giorgi J, Schrager LK and Phair JP. (1998). Effectiveness of potent antiretroviral therapy on time to AIDS and death in men with known HIV infection duration. Multicenter AIDS Cohort Study Investigators. *JAMA*. Nov 4;280(17):1497-503.
27. Mills E, Cooper C, Anema A and Guyatt G. (2008). Male circumcision for the prevention of heterosexually acquired HIV infection: a meta-analysis of randomized trials involving 11,050 men. *HIV Med*. Jul;9(6):332-5.
28. Millett GA, Flores SA, Marks G, Reed JB and Herbst JH. (2008). Circumcision status and risk of HIV and sexually transmitted infections among men who have sex with men: a meta-analysis. *JAMA*. 2008 Oct 8;300(14):1674-84. Erratum in: *JAMA*. 2009 Mar 18;301(11):1126-9.

29. Quinn TC, Wawer MJ, Sewankambo N, Serwadda D, Li C, Wabwire-Mangen F, Meehan MO, Lutalo T and Gray RH. (2000). Viral load and heterosexual transmission of human immunodeficiency virus type 1. Rakai Project Study Group. *N Engl J Med*. Mar 30;342(13):921-9.
30. Tovanabutra S, Robison V, Wongtrakul J, Sennum S, Suriyanon V, Kingkeow D, Kawichai S, Tanan P, Duerr A and Nelson KE. (2002). Male viral load and heterosexual transmission of HIV-1 subtype E in northern Thailand. *J Acquir Immune Defic Syndr*. Mar 1;29(3):275-83.
31. Fideli US, Allen SA, Musonda R, Trask S, Hahn BH, Weiss H, Mulenga J, Kasolo F, Vermund SH and Aldrovandi GM. (2001). Virologic and immunologic determinants of heterosexual transmission of human immunodeficiency virus type 1 in Africa. *AIDS Res Hum Retroviruses*. Jul 1;17(10):901-10.
32. Cooper ER, Charurat M, Mofenson L, Hanson IC, Pitt J, Diaz C, Hayani K, Handelsman E, Smeriglio V, Hoff R and Blattner W; Women and Infants' Transmission Study Group. (2002). Combination antiretroviral strategies for the treatment of pregnant HIV-1-infected women and prevention of perinatal HIV-1 transmission. J *Acquir Immune Defic Syndr*. Apr 15;29(5):484-94.
33. Burdge DR, Money DM, Forbes JC, Walmsley SL, Smaill FM, Boucher M, Samson LM and Steben M; Canadian HIV Trials Network Working Group on Vertical HIV Transmission. (2003). Canadian consensus guidelines for the care of HIV-positive pregnant women: putting recommendations into practice. *CMAJ*. Jun 24;168(13):1683-8.
34. Department of Health and Human Services. Panel on Antiretroviral Guidelines for Adults and Adolescents. (2009). Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. December 1, 1-161. Available at http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf. Accessed January 2010.
35. Forbes J, Samson L, Alimenti A, Singer J, Money D and Lapointe N. (2006). Perinatal HIV transmission seen in the Canadian Perinatal HIV Surveillance Project (CPHSP) from 1990. Canadian Association of HIV Research Annual Conference. Abstract 302.
36. Attia S, Egger M, Muller M, Zwahlen M and Low N. (2009). Sexual transmission of HIV according to viral loa d and antiretroviral therapy: systematic review and meta-analysis. *AIDS*. Jul 17;23(11):1397-404.
37. Wilson DP. (2009). Data are lacking for quantifying HIV transmission risk in the presence of effective antiretroviral therapy. *AIDS*. Jul 17;23(11):1431-3.
38. HIV Prevention Trials Network. (2009). A Randomized Trial to Evaluate the Effectiveness of Antiretroviral Therapy Plus HIV Primary Care versus HIV Primary Care Alone to Prevent the Sexual Transmission of HIV-1 in Serodiscordant Couples. HIV Prevention Trials Network website www.hptn.org/research_studies/hptn052.asp Accessed December 2009.
39. Johnson LF and Lewis DA. (2008). The effect of genital tract infections on HIV-1 shedding in the genital tract: a systematic review and meta-analysis. *Sex Transm Dis*. Nov; 35(11):946-59.
40. McCormick AW, Walensky RP, Lipsitch M, Losina E, Hsu H, Weinstein MC, Paltiel AD, Freedberg KA and Seage GR 3rd. (2007). The effect of antiretroviral therapy on secondary transmission of HIV among men who have sex with men. *Clin Infect Dis*. Apr 15;44(8):1115-22.
41. Sheth PM, Kovacs C, Kemal KS, Jones RB, Raboud JM, Pilon R, la Porte C, Ostrowski M, Loutfy M, Burger H, Weiser B and Kaul R; Toronto Mucosal Immunology Group. (2009). Persistent HIV RNA shedding in semen despite effective antiretroviral therapy. *AIDS*. Sep 24;23(15):2050-4.
42. Lorello G, la Porte C, Pilon R, Zhang G, Karnauchow T and MacPherson P. (2009). Discordance in HIV-1 viral loads and antiretroviral drug concentrations comparing semen and blood plasma. *HIV Med*. Oct;10(9):548-54.
43. Pasquier C, Sauné K, Raymond S, Moinard N, Daudin M, Bujan L and Izopet J. (2009). Determining seminal plasma human immunodeficiency virus type 1 load in the context of efficient highly active antiretroviral therapy. *J Clin*

Microbiol. Sep;47(9):2883-7.
44. Cu-Uvin S, Snyder B, Harwell JI, Hogan J, Chibwesha C, Hanley D, Ingersoll J, Kurpewski J, Mayer KH and Caliendo AM. (2006). Association between paired plasma and cervicovaginal lavage fluid HIV-1 RNA levels during 36 months. J *Acquir Immune Defic Syndr*. Aug 15;42(5):584-7.
45. Fiore JR, Suligoi B, Saracino A, Di Stefano M, Bugarini R, Lepera A, Favia A, Monno L, Angarano G and Pastore G. (2003). Correlates of HIV-1 shedding in cervicovaginal secretions and effects of antiretroviral therapies. *AIDS*. Oct 17;17(15):2169-76.
46. Nagot N, Ouedraogo A, Weiss HA, Konate I, Sanon A, Defer MC, Sawadogo A, Andonaba JB, Vallo R, Becquart P, Segondy M, Mayaud P, and Van de Perre P; Yerelon Study Group. (2008). Longitudinal effect following initiation of highly active antiretroviral therapy on plasma and cervi-co-vaginal HIV-1 RNA among women in Burkina Faso. *Sex Transm Infect*. Jun;84(3):167-70.
47. Lampinen TM, Critchlow CW, Kuypers JM, Hurt CS, Nelson PJ, Hawes SE, Coombs RW, Holmes KK and Kiviat NB. (2000). Association of antiretroviral therapy with detection of HIV-1 RNA and DNA in the anorectal mucosa of homosexual men. *AIDS*. Mar 31;14(5):F69-75.
48. Lafeuillade A, Solas C, Chadapaud S, Hittinger G, Poggi C and Lacarelle B. (2003). HIV-1 RNA levels, resistance, and drug diffusion in semen versus blood in patients receiving a lopinavir-containing regimen. *J Acquir Immune Defic Syndr*. Apr 1;32(4):462-4.
49. Eron JJ Jr, Smeaton LM, Fiscus SA, Gulick RM, Currier JS, Lennox JL, D'Aquila RT, Rogers MD, Tung R and Murphy RL. (2000). The effects of protease inhibitor therapy on human immunodeficiency virus type 1 levels in semen (AIDS clinical trials group protocol 850). *J Infect Dis*. May;181(5):1622-8.
50. Barroso PF, Schechter M, Gupta P, Bressan C, Bomfim A and Harrison LH. (2003). Adherence to antiretroviral therapy and persistence of HIV RNA in semen. *J Acquir Immune Defic Syndr.* Apr 1;32(4):435-40.
51. Del Romero J, Castilla J, Hernando V, Rodriguez C, and Garcia S. (2010). Combined antiretroviral treatment and heterosexual transmission of HIV-1: cross sectional and prospective cohort study. *BMJ*. January 1; 340: c2205.
52. Melo MG, Santos BR, De Cassia Lira R, Varella IS, Turella ML, Rocha TM and Nielsen-Saines K. (2008). Sexual transmission of HIV-1 among serodiscordant couples in Porto Alegre, southern Brazil. *Sex Transm Dis*. Nov;35(11):912-5.
53. Reynolds S, Makumbi F, Kagaayi J, Nakigozi G, Galiwongo R, Quinn T, Wawer M, Gray R, and Serwadda D. (2009). ART reduced the rate of sexual transmission of HIV among HIV-discordant couples in rural Rakai, Uganda. 16th Conference on Retroviruses and Opportunistic Infections: Abstract 52a.
54. Bunnell R, Ekwaru J, King R, Bechange S, Moore D, Khana K, Were W, Coutinho A, Tappero J and Mermin J. (2008). 3-Year follow-up of sexual behavior and HIV transmission risk of persons taking ART in rural Uganda. 15th Conference on Retroviruses and Opportunistic Infections: Abstract 29.
55. Sullivan P, Kayitenkore K, Chomba E, Karita E, Mwananyanda L, Vwalika C, Conkling M, Luisi1 N, Tichacek A and Allen S. (2009). Reduction of HIV transmission risk and high risk sex while prescribed ART: Results from discordant couples in Rwanda and Zambia. 16th Conference on Retroviruses and Opportunistic Infections: Abstract 52bLB.
56. Donnell D, Baeten JM, Kiarie J, Thomas KK, Stevens W, Cohen CR, McIntyre J, Lingappa JR, Celum C, for the Partners in Prevention HSV/HIV Transmission Study Team (2010). Heterosexual HIV-1 transmission after initiation of antiretroviral therapy: a prospective cohort analysis. *Lancet*. Jun 12;375: 2092–98.
57. Castilla J, Del Romero J, Hernando V, Marincovich B, Garcia S and Rodriguez C. (2005). Effectiveness of highly active antiretroviral therapy in reducing heterosexual transmission of HIV. *J Acquir Immune Defic Syndr*. Sep 1;40(1):96-101.
58. Porco TC, Martin JN, Page-Shafer KA, Cheng A, Charlebois E, Grant RM and Osmond DH. (2004). Decline in HIV infectivity following the introduction of highly active antiretroviral therapy. *AIDS*.

Jan 2;18(1):81-8.
59. Fang CT, Hsu HM, Twu SJ, Chen MY, Chang YY, Hwang JS, Wang JD and Chuang CY; Division of AIDS and STD, Center for Disease Control. Department of Health, Executive Yuan (2004). Decreased HIV transmission after a policy of providing free access to highly active antiretroviral therapy in Taiwan. *J Infect Dis*. Sep 1;190(5):879-85.
60. Katz MH, Schwarcz SK, Kellogg TA, Klausner JD, Dilley JW, Gibson S and McFarland W. (2002). Impact of highly active antiretroviral treatment on HIV seroincidence among men who have sex with men: San Francisco. *Am J Public Health*. Mar;92(3):388-94.
61. Dukers NH, Spaargaren J, Geskus RB, Beijnen J, Coutinho RA and Fennema HS. (2002). HIV incidence on the increase among homosexual men attending an Amsterdam sexually transmitted disease clinic: using a novel approach for detecting recent infections. *AIDS*. Jul 5;16(10):F19-24.
62. Wawer MJ, Gray RH, Sewankambo NK, Serwadda D, Li X, Laeyendecker O, Kiwanuka N, Kigozi G, Kiddugavu M, Lutalo T, Nalugoda F, Wabwire-Mangen F, Meehan MP and Quinn TC. (2005). Rates of HIV-1 transmission per coital act, by stage of HIV-1 infection, in Rakai, Uganda. J *Infect Dis*. May 1;191(9):1403-9.
63. Hollingsworth TD, Anderson RM and Fraser C. (2008). HIV-1 transmission, by stage of infection. *J Infect Dis*. Sep 1;198(5):687-93.
64. Pinkerton SD. (2008). Probability of HIV transmission during acute infection in Rakai, Uganda. *AIDS Behav*. Sep;12(5):677-84.
65. Galvin SR, and Cohen MS. (2004). The role of sexually transmitted diseases in HIV transmission. *Nat Rev Microbiol*. Jan;2(1):33-42.
66. Royce RA, Sena A, Cates W Jr and Cohen MS. (1997). Sexual transmission of HIV. *N Engl J Med*. Apr 10;336(15):1072-8.
67. Freeman EE, Weiss HA, Glynn JR, Cross PL, Whitworth JA and Hayes RJ. (2006). Herpes simplex virus 2 infection increases HIV acquisition in men and women: systematic review and meta-analysis of longitudinal studies. *AIDS*. Jan 2;20(1):73-83.
68. Atashili J, Poole C, Ndumbe PM, Adimora AA and Smith JS (2008). Bacterial vaginosis and HIV acquisition: a meta-analysis of published studies. *AIDS*. Jul 31;22(12):1493-501.
69. Wald A and Link K. (2002). Risk of human immunodeficiency virus infection in herpes simplex virus type 2-seropositive persons: a meta-analysis. *J Infect Dis*. Jan 1;185(1):45-52.
70. Antiretroviral Therapy Cohort Collaboration. (2008). Life expectancy of individuals on combination antiretroviral therapy in high-income countries: a collaborative analysis of 14 cohort studies. *Lancet*. Jul 26;372(9635):293-9.
71. Bhaskaran K, Hamouda O, Sannes M, Boufassa F, Johnson AM, Lambert PC and Porter K; CASCADE Collaboration. (2008). Changes in the risk of death after HIV seroconversion compared with mortality in the general population. *JAMA*. Jul 2;300(1):51-9.
72. Keiser O, Taffe P, Zwahlen M, Battegay M, Bernasconi E, Weber R, Rickenbach M; and the Swiss HIV Cohort Study. (2004). All cause mortality in the Swiss HIV Cohort Study from 1990 to 2001 in comparison with the Swiss population. *AIDS*. Sep 3;18(13):1835-43.
73. Ewings FM, Bhaskaran K, McLean K, Hawkins D, Fisher M, Fidler S, Gilson R, Nock D, Brettle R, Johnson M, Phillips A and Porter K; UK Register of HIV Seroconverters. (2008). Survival following HIV infection of a cohort followed up from seroconversion in the UK. *AIDS*. Jan 2;22(1):89-95.
74. Palella FJ Jr, Baker RK, Moorman AC, Chmiel JS, Wood KC, Brooks JT and Holmberg SD; HIV Outpatient Study Investigators. (2006). Mortality in the highly active antiretroviral therapy era: changing causes of death and disease in the HIV outpatient study. *J Acquir Immune Defic Syndr*. Sep;43(1):27-34.
75. Crum NF, Riffenburgh RH, Wegner S, Agan BK, Tasker SA, Spooner KM, Armstrong AW, Fraser S and Wallace MR; Triservice AIDS Clinical Consortium. (2006). Comparisons of causes of death and mortality rates among HIV-infected persons: analysis of the pre-, early, and late HAART (highly active antiretroviral therapy) eras. J *Acquir Immune Defic Syndr*. Feb 1;41(2):194-200.
76. Public Health Agency of Canada. (2009). HIV and

AIDS in Canada. Surveillance report to December 31, 2008. Available at www.phac-aspc.gc.ca/aids-sida/publication/index-eng.php#surveillance.
77. Lewden C and the Mortality Working Group of COHERE. (2010). Time with CD4 cell count above 500 cells/mm3 allows HIV-infected men, but not women, to reach similar mortality rates to those of the general population: A seven-year analysis. 17th Conference on Retroviruses and Opportunistic Infections: Abstract 527.
78. Deeks SG and Phillips AN. (2009). HIV infection, antiretroviral treatment, ageing, and non-AIDS related morbidity. *BMJ*. Jan 31;338:288-292.
79. Lima VD, Hogg RS, Harrigan PR, Moore D, Yip B, Wood E and Montaner JS. (2007). Continued improvement in survival among HIV-infected individuals with newer forms of highly active antiretroviral therapy. *AIDS*. Mar 30;21(6): 685-92.
80. van Sighem A, Gras L, Reiss P, Brinkman K and de Wolf F, ATHENA Natl Observational Cohort Study. (2010). Life expectancy of recently diagnosed asymptomatic HIV-infected patients approaches that of uninfected individuals. 17th Conference on Retroviruses and Opportunistic Infections: Abstract 526.
81. Kojic EM, Wang CC and Cu-Uvin S. (2007). HIV and menopause: a review. *J Womens Health* (Larchmt). Dec;16(10):1402-11.
82. Manfredi R. (2002). HIV disease and advanced age: an increasing therapeutic challenge. *Drugs Aging*. 19(9):647-69.
83. Manfredi R. (2004). HIV infection and advanced age emerging epidemiological, clinical, and management issues. *Ageing Res Rev*. Jan;3(1):31-54.
84. Semprini AE and Fiore S. (2004). HIV and reproduction. *Curr Opin Obstet Gynecol*. Jun;16(3):257-62.
85. Bendikson KA, Anderson D, and Hornstein MD. (2002). Fertility options for HIV patients. *Curr Opin Obstet Gynecol*. Oct;14(5):453-7.
86. van Leeuwen E, Prins JM,.Jurriaans S, Boer K, Reiss P, Repping S and van der Veen F. (2007). Reproduction and fertility in human immunodeficiency virus type-1 infection. *Human Reproduction Update*. 13(2):197–206.
87. Loutfy MR, Hart TA, Mohammed SS, Su D, Ralph ED, Walmsley SL, Soje LC, Muchenje M, Rachlis AR, Smaill FM, Angel JB, Raboud JM, Silverman MS, Tharao WE, Gough K and Yudin MH; Ontario HIV Fertility Research Team. (2009). Fertility desires and intentions of HIV-positive women of reproductive age in Ontario, Canada: a cross-sectional study. *PLoS One*. Dec 7;4(12):e7925.
88. Baggaley RF, White RG and Boily MC. (2008). Systematic review of orogenital HIV 1 transmission probabilities. *Int J Epidemiol*. Dec;37(6):1255-65.
89. Canadian AIDS Society. (2004). HIV Transmission: Guidelines for Assessing Risk. Fifth edition. Canadian AIDS Society, Ottawa. Available at www.cdnaids.ca.
90. Centers for Disease Control and Prevention. (2005). Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for Postexposure Prophylaxis. *MMWR* 54(No. RR-9):1-8.
91. Leber A, MacPherson P and Lee BC. (2008). Epidemiology of infectious syphilis in Ottawa. Recurring themes revisited. *Can J Public Health*. Sep-Oct;99(5):401-5.

SECTION 4

SOCIAL RESEARCH ON THE USE OF THE CRIMINAL LAW TO ADDRESS HIV NON-DISCLOSURE IN ONTARIO: FINDINGS FROM A QUALITATIVE RESEARCH STUDY

Introduction

Exposing or transmitting HIV to sexual partners is subject to criminal prosecution throughout the world either under HIV-specific or general criminal laws, and prosecutions have been reported in 41 countries.[1] This development has generated considerable discussion in the international criminal law and pubic health policy literatures.[2-8, 27-32] At the heart of the discussion are concerns about the unintended effects of the use of criminal law. Public health researchers, legal scholars, social scientists and others have cautioned that criminalizing HIV exposure/transmission may undermine established public health and community-based approaches to preventing the spread of HIV infection.[9-13]

They have voiced a range of concerns about the potential impact of the use of criminal law on the sexual activities of people living with HIV and those at risk of HIV infection. Some have argued that criminal laws fail to discourage sexual risk-taking among people living with HIV and do little to promote HIV disclosure.[10] Others have suggested that criminal laws work against their stated aims by actually discouraging HIV disclosure among PHAs who fear that disclosing will place their sexual activities under legal scrutiny.[11] Still others voice concern that the criminalization of HIV exposure and/or transmission erodes long-standing public health messages about safer sex being a shared responsibility of both HIV-positive and HIV-negative sexual partners.[14, 15] Finally, concerns have been raised that criminalization heightens HIV-related stigma which, it is argued, discourages people living with HIV and those at risk of HIV infection from accessing HIV education, testing and treatment services.[16]

While the public health and criminal law policy literatures caution that the criminalization of HIV exposure/transmission may negatively affect HIV prevention efforts, empirical research exploring this claim is in the early stages of development. We have been able to identify 10 English language peer-reviewed publications reporting findings from empirical research on the relationship between the criminalization of HIV exposure/transmission and activities relevant to the prevention of HIV transmission. Six of the reported studies were conducted in the United States, three were from the United Kingdom and one was conducted in Canada.

Two of the U.S. studies systematically searched news aggregators and legal databases to identify, describe and analyze state laws and criminal cases related to HIV exposure/transmission.[11,17] The remaining studies drew on a range of social science methods. All of the studies focused on HIV-positive or at-risk populations including MSM, injection drug users, women and African-Americans, among others. In one U.S. study, researchers administered a quantitative survey to assess the awareness and understanding of a state HIV non-disclosure law among a sample of HIV-positive men and women.[18] Two studies conducted in the U.K. and the U.S. used a combination of quantitative and qualitative data from a structured interview[10] and a survey[19] to explore the relationship between criminal laws and the sexual behaviours of PHAs and those at risk of HIV infection. In two studies with broader topical foci—the sexual practices of MSM[20] and state policies regulating sexual conduct[21]—the authors reported on subsets of qualitative data that explored respondents' perspectives on the criminalization of HIV non-disclosure. The remaining three studies were based on qualitative data from individual or focus group interviews with PHAs. Dodds, Bourne and Weait[22] and Galletly and Dickson-Gomez[14] have explored PHAs' understandings of and concerns with criminal laws regulating HIV transmission/exposure, while Dodds and Keogh[16] have examined the potential impact of criminal laws on their sexual behaviour.

Within this existing corpus some of the most empirically rigorous research has been done by Burris and colleagues. In a recent study they drew on structured interviews with PHAs and people at risk of HIV infection to explore the null hypothesis that differences

in criminal laws and beliefs about those laws do not influence sexual risk-taking.[10] The study was comparative in design with 248 participants interviewed in a state which had an HIV-specific law regulating HIV disclosure and 242 interviewed in a state without an HIV-specific law. The authors found very few differences in the self-reported sexual activities of participants from the two states. They also found that believing that the law requires HIV-positive people to use condoms or disclose had no effect on sexual risk-taking. On the basis of their findings the authors were unable to refute the null hypothesis. They argue that the criminal law does not promote disclosure among people living with HIV, and urge caution in its use given concerns about its potential negative consequences such as heightening the stigmatization of HIV-positive people.

The sole Canadian publication reports findings from a Toronto-based interview study involving 34 men of mixed HIV status who regularly engaged in unprotected sexual intercourse.[20] The study addressed the criminalization of HIV non-disclosure as part of a main focus on the forms of reasoning and decision-making that men who have sex with men engage in during sexual encounters. The authors' findings emphasize the conflict between legal standards of behaviour related to disclosure and the practical realities of sexual decision-making and activity. The authors also question the potential social consequences of criminal law policy in Canada. They argue that its emphasis on disclosure is at odds with established community-based HIV prevention policies as well as current epidemiological research that suggests a substantial proportion of onward HIV transmission

Our research process

A total of 53 individuals participated in our research. We interviewed 25 individuals who had dealt with the issue of HIV non-disclosure in their work: five case managers or counselors in AIDS service organizations, four lawyers, eight physicians of various sorts (family physicians, public health physicians, research scientists), five public health nurses (from two public health units) and three staff at an HIV clinic. In addition, we interviewed 28 people living with HIV. Twenty-six of them participated in four focus groups of which three were conducted in Toronto and one in Hamilton. Two people, who could not participate in the scheduled focus groups, were interviewed individually. The age range of HIV-positive participants was 20 to 63. Eleven of the participants were women. Seventeen identified as White, six as Black, two as Aboriginal and one each as biracial, Asian and South Asian. Fourteen identified as homosexual, two as bisexual and nine as heterosexual. Three individuals did not identify a sexual orientation.

Our research does not include the perspectives of HIV-positive people who have been prosecuted for failing to disclose their HIV-positive status to sexual partners. It also does not include the perspectives of individuals who have been complainants in court proceedings related to HIV non-disclosure or who have made complaints to the police. While we made efforts to include individuals in these circumstances in our interviews, we were unsuccessful.

All interviews followed a "focused conversation" approach described by Devault.[23] The central topics of discussion were: knowledge of the criminal law obligation to disclose HIV, perspectives on the use of the criminal law to address the risk of HIV transmission, work or day-to-day experiences with HIV non-disclosure and the use of the criminal law to address it, concerns about the use of the criminal law, and suggestions for addressing those concerns.

Recruitment of participants was based on principles of purposive sampling. Individuals who participated in the study because of their work experience were treated as key informants.[24] They were selected on the basis of having: specialized knowledge, training and/or expertise and first-hand experiences relevant to the topic of interest. [25, 26] People living with HIV were recruited through a flyer distributed to AIDS service organizations inviting individuals with an interest in the criminalization of HIV non-disclosure to participate. Individual interviews ranged from 30 to 90 minutes. Two individual interviews were conducted by telephone, the remainder were conducted face-to-face. Focus group interviews were conducted face-to-face and lasted from 70 to 90 minutes. All interviews were tape-recorded and transcribed. Data was tagged topically with the assistance of HyperRESEARCH software. Ethics approval for the study was secured through York University.

is accounted for by people who may not know their HIV status. The lead author of this study recently presented preliminary findings from a second mixed-methods study focused on the views of HIV-positive people on the criminalization of HIV non-disclosure.[33] The publication of this data is eagerly awaited.

Given the absence of a robust empirical literature on the public health impacts of criminal laws regulating HIV exposure/transmission, we undertook original research on the topic. Our goal was to better understand how people living with HIV and those working in the HIV/AIDS sector experience the use of the criminal law to address HIV non-disclosure in Ontario. We sought to learn about their concerns with the law and how it affected their lives and, in the case of service and health providers, their work. Our research was qualitative in nature and involved individual and focus group interviews with people living with HIV as well as individual interviews with those who work with them including physicians, HIV clinic staff, public health nurses and officials, lawyers and front-line AIDS service workers. In total 53 individuals participated in our interview research.

Our research contributes to the existing literature in two central ways. First, it offers the first report of research that is exclusively focused on people's experiences of and concerns with the specific formulation of the criminal law obligation to disclose HIV-positive status in Canada. Second it develops the existing literature by incorporating the perspectives of health-care providers, front-line workers, public health nurses and others who work with PHAs within a body of work that has, thus far, focused only on PHAs and those at risk of HIV infection.

Below we report on the key findings of our research. We begin with participants' perspectives on what role the criminal law should play. We then explore their concerns about using the criminal law to regulate HIV non-disclosure, including their concerns about how the significant risk test has been formulated and used. The discussion closes by considering participants' suggestions for addressing their concerns about the criminalization of HIV non-disclosure.

What role for the criminal law?

A central topic of discussion arising in our interview research was the role that the criminal law should have in addressing the risks of HIV transmission in sexual relationships. Our participants felt that the criminal law does have a role to play in regulating sexual conduct that risks HIV transmission. However, they did not generally understand that role in terms that supported the criminal law's current formulation of a disclosure obligation triggered by the concept of significant risk. They tended to view the criminal law as a coercive power, the use of which should be tempered and formally restricted in ways that they felt it currently is not. Participants had various thoughts about the bases upon which the criminal law's application might be delimited. Most importantly, they viewed the criminal law as a power of "last resort" to be used only after the failure of traditional public health responses.

With the exception of one focus group participant who categorically rejected criminal law involvement in the regulation of sexual activity, all our participants felt that the criminal law had some type of role to play in addressing the risk of sexually transmitting HIV. A small minority favoured criminal law regulation of HIV non-disclosure either as it is currently formulated or in terms that actually broadened the requirement for disclosure. For example, some participants in a focus group of HIV-positive men drew on a sense that moral and criminal law obligations were equivalent to assert that disclosure should be a criminal law requirement for any and all forms of sexual interaction:

If you're HIV-positive and you're going to have sex with someone it's your responsibility to tell that person you have HIV. Period. Always.

(Focus Group 2)

For me you have to tell the person right away if you have a sexual relation. That's what the law should be, it's not like you're catching a cold.

(Focus Group 2)

Most others viewed the role of the criminal law in less absolute terms. Many were ambivalent about the current emphasis on non-disclosure as a form of criminal

liability, citing concerns about the complexity and difficulty of achieving disclosure and the highly variable nature of the transmission risks associated with particular sexual acts. While participants felt that the use of the criminal law should be more carefully tempered, many held open views on the topic, suggesting the importance of and need for broad public discussion and debate on the issue.

One common way that research participants spoke about the role of the criminal law involved drawing on a range of qualifiers that, in their view, should moderate its reach in circumstances of HIV non-disclosure in sexual interaction. For example, a number of participants felt that the criminal law should only be applied in circumstances of actual HIV transmission:

If you don't become infected, right, as a complainant, then how did the crime actually occur? I don't know. That's how I feel and I think a lot of other people feel that no infection, no crime.

(ASO Case Manager—Interview 21)

Others felt that the criminal law should not apply in contexts of sexual activity where, they understood, the risks of HIV transmission are or should be widely understood, such as in bathhouses. For other participants, "one night stands" and/or anonymous sexual encounters were, in contrast to long-term intimate relationships, sites of ambiguity with respect to the application of the criminal law.

The most common way that participants qualified the criminal law's role in addressing the risks of sexually transmitting HIV infection was by positioning it as an instrument of "last resort." This often involved an understanding that the criminal law should be used only in extreme cases and after alternative measures, such as public health mechanisms for addressing non-disclosure and high-risk sexual behaviour, have failed:

Do I think that charging people for not disclosing is a great use of the criminal justice system? Probably not. Do I think there are some circumstances where given someone's behaviour that it's warranted or it could be the only way to stop the person? It would seem that sometimes there are cases that come up where someone has been counseled and again, from what you glean from the media, that the person was not unaware and was not just not disclosing but actually was not practicing safer sex, while being aware of the potential consequences of that. I think there's room for criminal justice to be involved in something like that.

(Social Worker, HIV Clinic—Interview 3)

Understanding the criminal law as an instrument of last resort also involved a construction of the culpable person living with HIV as someone with extraordinary moral failings. Participants emphasized that most people living with HIV take great care to protect their sexual partners from HIV infection. In their view, the criminal law should be reserved for those who are particularly morally objectionable:

Most patients that I know, the vast majority—99%, maybe all—would actually sit in horror at the possibility of even accidently infecting someone else… I do believe that it is appropriate to use the criminal justice system. Not a specific law because that would stigmatize HIV, but the general criminal justice system in cases of deliberate, if you can define that, and maybe even reckless HIV transmission. I'm a little bit uncertain of that, but for sure in situations of deliberate transmission. I don't think most reasonable fair Canadians… can ever accept that if someone deliberately and viciously and maliciously goes out and knowingly infects someone else that somehow their behaviour should be excused.

(Family Physician—Interview 18)

Among our participants, framing the role of the criminal law as an instrument of last resort involved recasting the terms of criminal liability. Rather than focusing on HIV non-disclosure in the face of the significant risk test, they argued that the threshold for the use of the criminal law should be the intention to transmit HIV:

I think that if you receive your positive test and you go out there and intentionally expose somebody to the virus, I think you should be charged.

(Focus Group 4)

I think the role of the criminal law—it's very clear we need to try. I think there's no question that the criminal law has a role to play in dealing with situations where someone is actually trying to cause harm to someone else. Where there's a malicious intent to cause harm… I don't think there's any good reason why the criminal law should not apply in those circumstances, in the HIV context, as it does in some other contexts. Beyond that I think it gets a lot fuzzier. And I think sort of the brightest line test would be to draw the line there and say we're going to prosecute people who've got malicious intent.

(Lawyer—Interview 5)

As these quotes suggest, in our research, the most common way of thinking about what the role of the criminal law should be, involved a departure from the criminal law's formulation in relation to HIV non-disclosure. Our participants were most supportive of a role for the criminal law when its use was restricted by a vision of criminal liability closely tied to the mental element of crime, rather than the significant risk test. In this sense they closely mirror the dominant international policy discourse which argues that criminal law should only be used when HIV-positive people deliberately or maliciously transmit HIV with the intention to harm others.[2,7]

Concerns with the criminal law

The perspectives our research participants held about what role the criminal law should play were accompanied by a number of concerns about the criminal law as it is currently formulated. At the most general level, many people living with HIV and front-line AIDS service workers were distressed by the abstract and universal nature of the criminal law. They were concerned about its inability to adequately take into account the complex social context and life circumstances that can prevent disclosure from occurring.

Participants also expressed more specific concerns about how the criminal law related to HIV non-disclosure is formulated and administered. Some were troubled by what they experienced as the criminal justice system's near exclusive focus on HIV to the neglect of other sexually transmitted infections subject to criminal prosecution. Others worried that the disclosure obligation had unintended consequences for HIV prevention and spoke about how disclosure did not necessarily protect people living with HIV from prosecution. Finally, participants were concerned that the criminal justice system was unable to stay current with current scientific research on the risks of HIV transmission resulting in decisions about significant risk that were not properly informed by science.

Singling out HIV Infection

Some participants were concerned about what they perceived as a discordance between non-specific disclosure obligations under the criminal law and the practical reality that, to date, criminal cases in Canada have been almost exclusively focused on HIV infection. One participant expressed a kind of faux enthusiasm at recent criminal charges for non-disclosure of herpes for how it might begin to redress the balance. Others were frustrated and angry at what they saw as an undue prosecutorial focus on HIV infection:

You know, what's happening with hepatitis C? Are people getting charged for transmitting hepatitis C?

(HIV Primary Care Physician—Interview 8)

What about SARS? What about the nurse who had a section 22 against her and caused death?

(Focus Group 4)

If you're not charging someone for giving you hepatitis then don't charge them for giving you HIV.

(Focus Group 1)

Why are we treating HIV so differently from other diseases when HIV is so manageable? When your viral load is undetectable the risks are so low to transmit it to somebody else. And syphilis, gonorrhea, hepatitis, I mean everything is out there and they are not putting so much attention to it.

(Focus Group 1)

Participants' ambivalences about the use of the criminal law meant that few explicitly called for more prosecutorial attention to be paid to other sexually transmitted infections. For the most part, they were simply concerned and unclear about why prosecutions focused so narrowly on HIV infection. Some felt this

was evidence of a kind of "discrimination." Others felt that it had damaging public consequence by creating the public impression that people living with HIV are uniquely sexually irresponsible.

Problems associated with the disclosure obligation

A second set of concerns was centred on the criminal law's focus on HIV non-disclosure. Some participants felt that criminalizing HIV non-disclosure posed potential negative consequences for HIV prevention. Some people living with HIV felt that the criminal law's focus on disclosure had the potential to disrupt established public health approaches to HIV prevention focused on safer sex and condom use.

One poignant exchange on this question took place in a focus group of gay male youth. All of the participants had become recently HIV-infected through unprotected sex with partners who did not disclose or who had lied about their HIV status. Our conversation had turned to the topic of the responsibility that HIV-negative people have to protect their health in sexal encounters. The men felt that their own experiences demonstrated that making sexual decisions on the basis of whether someone discloses was a risky proposition, something far less advisable than following conventional public health advice, such as using condoms. Rather than relying on disclosure, one participant noted:

They (HIV-negative people) have to assume that everyone that they are sleeping with is HIV-positive or has an STI and they have to take it upon themselves to protect themselves from those risks. It's like riding a bike and not wearing a helmet—you are taking a chance. If you don't do that you're taking a risk.

(Focus Group 3)

Reflecting on the consequences of using disclosure as a guide in his own decisions about unprotected sex, another participant remarked:

Well from my own personal experience I can tell you that I asked and, basically, if you want to tell me you want to tell me. Some people can lie and say that they don't have HIV. And I did ask beforehand. And after we had unprotected sex I fully asked them again and they were just like 'No, no, no it's okay' and now I just think as though yes it's the responsibility of the negative person to ask but there are plenty of people out there who lie or don't know. I think there is more responsibility for the person who has it to say that they have it. Like it is the responsibility of the person to ask but in my situation I asked and it got me nowhere.

(Focus Group 3)

Front-line counselors and health-care providers raised a different concern about the impact of the criminalization of HIV non-disclosure on HIV prevention. They described how the prospect of facing criminal charges discouraged some of their HIV-positive clients from being forthcoming about challenges they may be facing around disclosure and, thus, from receiving the counseling support they need. The possibility of case files being subpoenaed for court proceedings or of being required to otherwise breach the confidentiality of counseling relationships was cited as a major contributor to their client's anxieties about speaking freely about situations where disclosure did or might not occur. Some participants spoke about the difficulty of balancing their efforts to make clear the limits of client confidentiality to the PHAs with whom they worked with their efforts to create a trusting relationship with them:

What I want to, forefront in my head is 'I don't want to shut this person down and make them feel like I'm some big, bad worker that they can't say anything to.' I want them to see us as a place of support where I'm working for them, no matter what they're doing. So I'm also going to say that. So I'm hopefully going to balance the message of what my clinical responsibilities may be with regards to the law, with where my positioning is, which is: 'I operate within the boundaries of the law, but for our conversation here, this is going to be about you and how I can help you make better decisions.' So, absolutely, it's key in my head, around how is this going to impact our future conversations.

(ASO Worker—Interview 16)

Despite their better efforts to create trust, the front-line counselors and health-care providers we

interviewed remained concerned about how the criminal law operates in a perverse way to discourage open dialogue and support about precisely the behaviour that it seeks to regulate. While most felt they were able to work effectively with their HIV-positive clients, concerns about being able to reach those most in need of support for potential non-disclosure was an ongoing concern. For example, a case manager spoke about her concerns that criminalizing non-disclosure can lead to isolation among clients and create limits on what they feel able to communicate in counseling relationships.

That they feel like they're being centred out, that they're being, their whole sexuality is being policed, that they almost, you know, don't even want to go out and have relations with anybody. Some people want to isolate themselves. And we have to, like I'm going to admit here that I think the counseling relationship and the total disclosure you know is impeded by the criminalization. I think there are things that might be hidden from me that otherwise wouldn't be. I think it does impede how open clients are and I have a feeling that they really want to talk about more but they take a step back because of criminalization.

(ASO Case Manager—Interview 21)

A physician echoed her concerns, noting the likelihood that some of his patients do not seek out needed support because of concerns about the legal consequences of being open about the limits of their own disclosure:

Every now and then somebody will say to me 'Can I ask you a question off the record,' that things don't get written down on the chart… I think the reason why somebody would say something like that is concern around you know legal ramifications to questions they're asking… I can't say that's happened a lot… But if it's happened a couple of times people have asked that, then has it happened a few times people haven't told me things because of legal worries? I would imagine yes. And, again, if I was in the same situation would that have implications on what I would say to my doctor and not say to my doctor? Yes absolutely it would.

(Physician Researcher—Interview 4)

In a different vein, some people living with HIV felt that the criminal justice system left them vulnerable to being charged and possibly prosecuted despite having disclosed their HIV-positive status to sexual partners. In a mixed focus group involving HIV-positive men and women, one participant described her experiences of being charged by police even though she had disclosed to the partner who brought forward the complaint. As she explained the circumstances, her ex-boyfriend approached the police following her termination of their relationship. She and a friend who had been with her at the time of the investigation who was also a focus group participant expressed their relief that the police investigation was subsequently dropped, but emphasized their frustration at having her experience dismissed by the investigating officers:

They didn't want to hear anything we said. Even when we tried to tell them that she had disclosed prior and the sister to the guy knew about everything. So we didn't know then what to do. Here we are… we have HALCO [HIV & AIDS Legal Clinic (Ontario)], the guy was taken to so many places but still it was our words against them.

They didn't even want to listen to whatever I was saying. Because like me, at that point in time, I was the monster. And they were just listening to what he was saying because me they said 'I'm putting him at risk' whereas I was trying to explain… they didn't just take anything I was saying.

(Focus Group 1)

The women quoted above point to an important unintended consequence of criminalizing HIV non-disclosure. They suggest how the legal requirement to disclose can be used to threaten or control people living with HIV who are in troubled serodiscordant relationships. A case manager at an ASO described the social context of fear within which such manipulation can occur. Her remarks indicate how in the real world of interpersonal relationships, the fact of disclosure provides no simple security against potentially serious legal entanglements for some people living with HIV:

People who are at risk of prosecution are terrified. I mean really scared… They get scared when there's

been a messy breakup. They get scared about various things… I've had a lot of people just afraid that they're going to be manipulated. That this breakup isn't going well and so what's the best tool someone can use to make their life miserable is to pick up the phone and lay a charge against them. And you know, even if nothing comes of that charge, well, they're going to be raked through the courts… It can really get ugly. I mean it can be somebody maybe sponsored by either a same-sex partner or an opposite-sex partner and their sponsorship depends on this person, things aren't going well and then we see these individuals threatening you know various things, sometimes it's about disclosure of HIV, sometimes it's about them disclosing their HIV status to other people, but it gets messy right? And yeah definitely other people too who aren't even new to the country, they're being threatened as well… I've had probably four or five clients who have said that somebody has threatened them that they will press charges.

(ASO Case Manager—Interview 15)

Some people living with HIV are concerned about how false claims that they have not disclosed to a sexual partner can have damaging personal consequences, regardless of the results of any legal proceedings. Our interviews suggest that this concern arises within a context of ongoing stigmatization of people living with HIV and of sensational media reporting of criminal cases of HIV non-disclosure. Participants made clear that the loss of friends, estrangement from family members, community rejection and unjust job loss remain a reality for some people whose HIV-positive status becomes publicly known.

In one focus group, a woman living with HIV shared her experiences of disclosing to her boyfriend. She described circumstances of ongoing mistreatment by him, rejection by his friends, and an inability to control public knowledge about her HIV-positive status following her initial disclosure.

Before I came to this meeting, I had a huge fight. I've been up since four o'clock, 'cause my boyfriend said that his family and his friends all say, 'How can you be dating that girl?' So, I've been up all night, fighting about that… I've known this person since I was 17 years old, we've been dating off and on for 23 years. And he'll say, 'I'm not going to eat supper.' I'll cook a big meal for us, and he'll say 'I'm not going to eat it cause it's contaminated.' [He's] had people come up to him, that know about me, and have told him, 'How can you be with her. Do you know that she has HIV?' and he says 'Yes, I know. That's one of the first things she told me.' But he has people come up to him and tell him. And I don't think it's anybody's responsibility except my own to tell people. Like if I've told you, that's something I've told 'cause I wanted you to know, not for you to go and tell other people.

(Focus Group 4)

A number of participants argued that media coverage of criminal cases of HIV non-disclosure contributes to public ignorance and fear of people living with HIV.

I just think it plays on fear. It perpetuates stigma. I feel that it actually increases people's ignorance… The media is actually a horrible nightmare sometimes. I think their language is outdated. It brings it back to the Dark Ages. Like what are you talking about? 'Man with AIDS attacks women.' And it's always, not always but a lot of time it's some dude and all these poor young White women for the most part.

(HIV-positive woman—Interview 26)

Sensational media coverage was described as a particular issue for Black Caribbean and African people living with HIV:

A lot of the time people don't get the whole story. They just see… well mostly Black men on TV that they infected so many people, right?… People are saying 'You know I don't want, what if I end up there?' They're so scared… 'How do they get my picture? How do they put it on the TV? Where do they get it from?'… So it really, it's negative, it has a lot of negative impact on our community. Because people see, I think for what people see, every time they see a story and it's just somebody says that they're HIV they just think that all of you guys are just infecting everybody in the community... Even me, I get the media, when I see X and all that, I have my own stereotypic judgment in my head. So why would somebody who sees

a Black man on TV like every two months charged with criminalization not think that everybody who is HIV-positive is out there infecting everybody? I mean it's just… you go to the hospital, you go to your doctor, you go to wherever you go and you disclose, and some people say 'Oh my God, you're one of those people who infects everybody.'… Our clients say to us that the media don't help. They don't help the stigma. They don't help how we are stigmatized, especially as Black people because that's mostly who you see on TV.

(ASO Worker—Interview 22)

The stigmatization of people living with HIV and their vilification in media coverage of non-disclosure cases heightened concerns about false non-disclosure claims among the people living with HIV that we interviewed. Many of them understood disclosure to be a vulnerable act. It was something that was difficult to prove had occurred and was subject to disavowal, particularly by disgruntled ex-partners. Mindful of the considerable personal costs of any potential claim that they had not disclosed, our interview participants suggested some of the ways people living with HIV have begun to take matters into their own hands. For example, some simply avoided sexual relationships or sexual relationships with HIV-negative individuals. Others have considered turning to creative strategies that make disclosure a public act and/or create a documentary record of its occurrence in order to protect against manipulation or the consequences of a false non-disclosure claim:

I think that it is very difficult for people today. I think people are concerned about what constitutes a significant risk and what adequate disclosure is. Patients have raised the concern that unless they have their sexual partners sign a document it's difficult for them to actually prove that they have provided disclosure. And some people who are very worried about this have stopped being sexually active because they don't really know what reasonable disclosure is.

(HIV Primary Care Physician—Interview 27)

Do I need to get written consent that basically I've disclosed this to you and basically you acknowledge that I've disclosed it to you? It seems humorous but is it getting to that point?

(Focus Group 1)

Science, significant risk and the criminal law

The final concern voiced by our research participants about the use of the criminal law to address HIV non-disclosure focused on the concept of significant risk. All our participants—people living with HIV, health-care providers, lawyers, public health staff and officials and front-line ASO workers—spoke about problems arising from how the obligation to disclose one's HIV-positive status under the Criminal Code is triggered by the concept of "significant risk." Participants spoke repeatedly about the vagueness and uncertainty of the concept. They noted how the lack of clarity associated with the significant risk concept gives rise to unclear and often contradictory counseling advice to people living with HIV about their disclosure obligations. Finally, some participants raised concerns about the limited extent to which interpretations of what constitutes a significant risk within the criminal justice system have been informed by current scientific research.

The vagueness of significant risk

The single, most common concern about the criminal law raised in our interview research centered on the vagueness of significant risk. A lawyer we interviewed traced the problem to the Supreme Court's failure, in the *Cuerrier* decision, to clearly establish the parameters of the significant risk test. His comments suggest how the principle of judicial parsimony has resulted in a concept that leads to uncertainty, while providing little practical direction to people living with HIV about the specific sexual activities for which disclosure is or is not required:

The way the Supreme Court went about clarifying that the offence of assault gets applied to non-disclosure has left a lot of things unclear. And so while, on the one hand, I think there is a good impulse on the part of the Supreme Court to recognize that there have to be some limits placed around how far we go in criminalizing people for not disclosing that they have HIV to a sexual partner, they still left too many things unanswered in the test that the majority crafted of a significant risk of transmitting HIV being the threshold for triggering that you need to disclose. But without really answering in any particularly careful

way what falls within that category of significant risk, of course, has provided a whole bunch of questions and created a bunch of confusion for people with HIV and for others. And so it's only through the accumulation of court decisions applying that test to fact pattern after fact pattern that we can start to discern the contours of criminal law. And that really, in a way, is practicing the law on the backs of people with HIV who may not have had much clarity ahead of time about what was actually prohibited or not prohibited.

(Lawyer—Interview 5)

A number of HIV-positive participants echoed the lawyer's concerns. Their accounts made clear that while they sought to learn about their legal obligations, their efforts to do so were seriously encumbered by the vagueness of the significant risk concept. Many of them experienced the concept as ambiguous and lacking a stable referent. As people facing potential criminal liability for non-disclosure, the failure of the significant risk concept to offer a clear legal test often left them frustrated and angry:

What's significant risk? That's what I never understand. Like it's significant risk but what necessarily is significant risk? ... The whole haziness of the law around HIV I find it, it kind of makes you a little bit angry, especially being an HIV-positive person.

(HIV-positive Man—Interview 25)

What is significant? This is too ambiguous. What is significant risk?

(Focus Group 2)

Others underscored that the concept failed to provide meaningful guidance about which sexual practices required disclosure. They were confused, uncertain and anxious about being held to a legal test that could not be translated into the terms of everyday sexual practice:

The significant risk is too ambiguous and it doesn't set up any proper guidelines for people to follow.

(Focus Group 2)

It's pretty scary because you don't know what you can do and what you can't do.

(Focus Group 3)

What is significant risk in just everyday life?

(Focus Group 1)

It's a very hazy, it's very hazy the way a lot of people look at it right now. I mean we had our big court case here and I mean, personally, I think he deserved what he kind of got. And I mean, people have this hazy picture of what should and should not be done, when to disclose and when not to disclose. Like some of my friends it's 'When do you disclose, when do you not, when don't you disclose?'

(HIV-positive Man—Interview 25)

Counseling about significant risk

The vagueness of the significant risk concept also posed problems for the health-care providers, public health staff and ASO workers we interviewed:

Working on the front-line there is a lack of clarity and you can write three-million [ASO] policies but they're still not going to be clear because the law's not clear. So it makes my work sometimes and the things I can say or can't say unclear.

(ASO Case Manager—Interview 21)

My HIV-positive patients are extremely anxious because we don't know where the line is.

(HIV Primary Care Physician—Interview 8)

A central concern was their inability to respond with any clarity to the questions and concerns their HIV-positive clients had about their obligations to disclose under the criminal law. In the extended quote that appears below, a hospital social worker describes the challenge of responding to the burden of uncertainty that the concept of significant risk poses for some people living with HIV:

They're looking for some kind of certainty. 'Is that significant risk or is it not?' And I don't feel that I have certainty on that… So there is, in some ways, an ongoing murkiness around what, like all you can say is 'This is what is considered significant risk based on what has happened in cases so far'... It's not a certain answer. It's a murky answer… I think it, it takes people back to, I think again it depends on the person. Some people are able to navigate uncertainty

better than others, but there's a whole group of people who it's very destabilizing and… and I can't provide certain answers to those kinds of questions. They will become very focused on the uncertainty, and it's generalized, and it can be debilitating in terms of just kind of functioning. I mean being so focused on trying to get a certain answer and a guarantee of safety, if you will, and for some of the folks who I work with, you know their whole experience of HIV has been an assault to the myth of certainty. Because their experience has been about having to actually confront uncertainty a lot more as a result of their HIV diagnosis, and then… something like criminalization and a term like significant risk and then you… all I can say is 'It's not the most precise term' and I will explore with them what does that bring up for them. It actually gives direction in some ways, but it can raise a spectrum of uncertainty in the unknown, 'Am I doing enough or am I not?' And the whole spectrum of mixed messages and confusion.

(Hospital Social Worker—Interview 3)

Our research suggests that the uncertainty of the significant risk concept has resulted in service providers offering inconsistent information to people living with HIV about their disclosure obligations. This was evidenced in the range of interpretations of the parameters of the significant risk test which they expressed in our interviews. Some felt that protected anal or vaginal intercourse did not pose a significant risk of HIV transmission. Others emphasized that unprotected oral intercourse was not a significant risk. Still others refused to draw parameters of any kind. The public health nurses we interviewed were concerned about the resulting mixed messages about PHA's legal disclosure obligations. They noted, in particular, the tendency for problematic variations of approach across public health units:

We are so close to Toronto, we have clients coming in and out of the region and crossing jurisdictions all the time and so if you have one person interpreting it this way and we're interpreting it this way, it really sends mixed messages and it creates a lot of confusion. People aren't really sure what they need to do and what their responsibility is.

(Public Health Nurse—Interview 20)

There's a lot of anxiety with clients that I deal with, and there's a lot of grey areas that haven't been covered around these [court] decisions, right. I think it's very important for people to know exactly. They want to know 'Okay when do I need to tell a partner?' So public health says one thing, your doctor says another and there's so many variables. People tell me 'Well I have an undetectable viral load,' all these sort of things, 'I'm a slow progressor' or 'I'm only a top,' people think there's less risk for them. All these sort of scenarios. So some of it's HIV education as well. But there's just different messages getting out from different people, right. In [public health unit] doctors, all that sort of stuff. So I think it's up to, I don't know if it would make it worse if there was an actual law, right, or if it would make it better. But certainly as it stands right now I think there are a lot of areas that aren't covered, a lot of misinformation, and every health unit treats it differently according to the Medical Officer of Health.

(Public Health Nurse—Interview 13)

Our research also suggests that in the face of ongoing uncertainty about the parameters of the significant risk test, many public health nurses, physicians and ASO front-line staff have begun to counsel their clients to disclose their HIV-positive status before all sexual encounters, regardless of the risk involved. The following quotes suggest the range of this practice.

If the [public] health officers call you… what they tell you is, 'make sure that you disclose your status to whomever.' They don't tell you if it's significant risk or whatever. They're just like 'you have to disclose it.' So that's why we don't know.

(Focus Group 4)

I tell them about the Cuerrier *decision, about unprotected sex and some of the areas that are not clear... But I say, generally, I say there's a legal view, there's a legal obligation to disclose to prospective sexual partners, period. It's not completely true 'cause I don't know if the legal obligation is ultimately that if it's been defined for using condoms, not using condoms, or particular acts.*

(HIV Primary Care Physician—Interview 18)

INT: We counsel people to always inform prior to any penetrative sex.
EM: What do you mean by penetrative sex?
INT: Any oral sex, any anal sex, any vaginal sex with or without a condom.

(Public Health Nurse—Interview 13)

We don't know what significant risk is, right? Because it means different things to different people or different judges, right? So how, I cannot interpret what it means for somebody else. So what we usually say, what I usually say is that in Canada if you have sex, protected or otherwise, without disclosing, I used to say unprotected but now I say protected, once you have sex without disclosing your HIV status to somebody, you could go to jail. You could be charged.

(ASO Worker—Interview 22)

I would say we're generally a fairly conservative health department and our information is that you know as an HIV-infected person you're obligated to disclose your status before entering into any sexual contact or needle sharing where there would be a risk of transmission. And we talk about the fact that there is sort of a grey area with the law around significant risk, so you know some places will say oral sex is not a significant risk and therefore you're not required to use condoms, where I think our approach is more conservative in saying your best approach would be to disclose and use condoms all the time and that way in terms of how the law would see you they would see that as being sort of the most proactive approach to managing that.

(Public Health Nurse—Interview 17)

Our research participants explained this broad approach to counseling about disclosure obligations as a response to uncertainty and as an attempt to protect their clients and organizations from potential legal scrutiny. It is thus an understandable response. But it suggests a potentially troubling effect of the criminal law on HIV prevention—the emergence of counseling strategies within multiple sites of HIV prevention in which people living with HIV are being advised to disclose in ways that exceed their criminal law obligations. An obvious concern, noted by the lawyers we interviewed, is that when entered into evidence in court proceedings, public health advice to disclose one's HIV-positive status regardless of the magnitude of the risk of HIV transmission involved has the potential to further broaden the criminal law standard for disclosure.

Significant risk and science

Finally, our participants expressed concerns that interpretations of the significant risk test in the criminal justice system have not been adequately informed by scientific research. This was most often expressed in terms of questions about the role played by condom use and viral load in determining what constitutes a significant risk and by questions about oral sex and significant risk.

Most of our participants did not have an intimate knowledge of the proceedings of particular court cases related to HIV non-disclosure. Still, they wondered why current scientific debates about reduced HIV transmission in the context of undetectable viral load—so central to their experience of recent public discourse about HIV—had not figured more prominently in what they did know or hear about HIV non-disclosure criminal cases. For others, the criminal justice system's inattention to scientific research in determining significant risk was expressed through comments about what they experienced as the test's overly broad reach. Participants' remarks point to a conflict between PHAs' presumed disclosure obligations and established scientific and expert knowledge that associate oral sex and protected intercourse with a minimal risk of transmission:

I don't think people should be charged for non-disclosure when it comes to oral sex, with or without protection. Because I think the level of risk is negligible. And I think it's ridiculous.

(ASO Case Manager—Interview 21)

I don't know what is it I have to disclose for if I'm using condoms.

(Focus Group 1)

But around possibilities of repercussions around not informing around say something low risk like oral sex, there's always the concern that some bizarre sort

of case could go before, you know, it wouldn't happen in Toronto, but go before a judge where someone has charged someone with assault around a low risk scenario.

(Public Health Nurse—Interview 13)

For some participants, concerns that significant risk was not being understood on the basis of current scientific research gave way to broader questions about the level of preparedness with which courts routinely handled HIV non-disclosure assault charges. Participants with direct experiences of cases that had gone forward in the court system noted their surprise at the lack of understanding of HIV they encountered among the judges and lawyers involved in those cases. In one example, a physician researcher spoke about how he had been subpoenaed to give testimony about a patient's medical records. As the trial progressed it became clear to him that the court proceedings had been organized without any prior attempt to ensure that scientific research was central to the court's decision about significant risk:

I was subpoenaed to come into court to go over the medical records that I had made… I was there to testify regarding what I had written in the charts. So not for my expert opinion, although this was my sort of initial exposure to the courts and the lack of information that people had around HIV transmission… So I did wind up, the whole thing took quite a long time… And I was involved in coming in on all these things and a lot of the time was spent educating the lawyers on both sides and the judge as to the nature of HIV transmission and the probability of HIV transmission and things around this which nobody seemed to have any concept of at all… It was very clear that the judge knew nothing about this at all.

(Physician Researcher—Interview 4)

A criminal lawyer we interviewed spoke in similar terms about his experience of the understanding of HIV among police officers, lawyers and judges involved with criminal cases related to HIV non-disclosure. Earlier in our interview he had expressed a concern that lawyers and judges often had antiquated understandings of HIV as an immediate "death sentence." He went on to critique a system-wide vacuum of knowledge about HIV which, in his view, resulted in a sequence of uninformed decisions:

I think it's become a public issue in the sense that there seems to be a lot of public fear and concern without the corresponding degree of knowledge about the issue. So what's happening is there's a fair bit of public hysteria, I would say, about the issue of the transmission of HIV or exposure to HIV and as a result the police seem to be laying charges more and more frequently, cases are being prosecuted more viciously and all of this is occurring in a vacuum of knowledge about the issue. So what happens as a result is we have often uninformed police officers charging people, uninformed crown attorneys prosecuting the cases and unfortunately, sometimes, uninformed defence lawyers defending the cases. And to be frank, uninformed judges or juries deciding on the cases. And I don't say that in any critical way to suggest that anybody has any malicious motives or vindictive motives but, rather, my concern is that when people are making such critical decisions about prosecutions, about cases that result almost inevitably in jail time, that all of the participants in the criminal justice system have a good foundation and education about the issues connected to the case.

(Criminal Lawyer—Interview 2)

Our interviews further suggest that the absence of a rigorous and systemic presence for scientific knowledge in the determination of significant risk has left the criminal justice system vulnerable to public anxiety and overestimation of the risk of HIV transmission. One physician we interviewed argued that recent court decisions were moving in the direction of prosecuting people for HIV non-disclosure in circumstances where the risk posed is no greater than that assumed as part of daily living, with the potential result of "putting people in jail all over the country." Another participant suggested that the criminal justice system has failed to set the risk of HIV transmission within the context of scientific research, the results of which support much narrower risk parameters than those imagined by the public:

Our situation is very unique to Canada and we just need to reset because it's a little crazy. I think that

if people actually begin to learn about risk and they begin to learn and it was said by [an infectious disease specialist] even 'high risk' activities are 'low risk.' And people don't get that. People come in all the time and say 'You know what? I had sex with this guy, I was wasted, he was positive, we didn't use a condom.' And I'm like, 'What do you think is your risk of getting infected?' And I'll tell them it's between, maybe from .5 to 2 per cent depending on the type of sex. And people are shocked at how low risk that is. And I think I'm hoping that this issue will be put to rest when people begin to realize that they're just wrong on the risk factor, that it's not a, you really do need to look at the risk of practicing safer sex and transmitting HIV as what it is, which is incredibly, incredibly small. It's incredibly small. It's probably more theoretic. They need to get that in context.

(HIV Primary Care Physician—Interview 8)

Addressing the problems posed by the criminalization of HIV non-disclosure

Our research participants offered a number of suggestions about how to respond to the problems they experienced with the criminalization of HIV non-disclosure. Some argued that the public health and criminal justice systems needed to be better coordinated. Others suggested ways to respond to the ambiguity of the significant risk test. Finally, our research participants felt that the administration of the criminal justice system would be enhanced by developing prosecutorial guidelines for criminal charges related to the non-disclosure of sexually transmitted infections to sexual partners.

Coordinating public health and criminal justice responses

Our respondents generally understood HIV non-disclosure to be a public health problem in the first instance. In Ontario, under the Heath Protection and Promotion Act, public health authorities are empowered to prevent the spread of communicable diseases, including HIV. In suggesting responses to the criminalization of HIV non-disclosure, respondents imagined enhancing public health's role and wondered about possibilities for developing a more coordinated response to HIV non-disclosure and the risk of HIV transmission across the public health and criminal justice systems. The underlying assumption would appear to be that an enhanced public health response would lead to fewer instances of non-disclosure in situations that present a significant risk of transmission and, thus, fewer complaints to police and fewer prosecutions. Suggestions about system coordination were a point of controversy in our interviews. Public health officials, such as the one quoted below, tended to view such collaboration with caution, citing concerns about the autonomy of public health and the specificity of its mandate:

My concern is that with the criminal justice system there's a punitive aspect that somehow puts that person's needs as somehow lesser or lower than everybody else has, you know? There's something about the system that just concerns me a little bit. So I'm not totally precluding it but I would suggest that that has to be approached with very careful consideration. And what's the message right? What do we do, are we going to say that we're going try to take care of the public health aspect as much as possible and at a certain point say 'Well, you know, manage it in the public health system' and then when it doesn't work throw our hands up and say 'Ok over to you?' Or you know I don't know, it's a difficult transition to make, I don't know. Which is why, in some ways, it's easier when it's 'That's their realm,' 'We do ours.' How much interaction do we have with them? I don't want to be seen as an extension or an arm of that system. That's not our role. Our role is public health.

(Public Health Physician—Interview 12)

In making the suggestion, participants typically imagined a form of collaboration that would preserve public health approaches as a first order of response to managing the risk of HIV transmission, while ensuring that only those cases warranting criminal justice attention actually reached the criminal justice system. Many were aware of the political sensitivities associated with such potential collaboration:

I think there is also an opportunity… to make sure that the way in which the actors of the criminal justice system are dealing with situations, often admittedly difficult situations, are in some way coordinated with

how public health authorities are dealing with those situations… We may be able… to make sure those two entities work in a way not so that public health is acting as an agent of the criminal justice system because that would be completely inappropriate and damaging to the role of public health... But so that we minimize the possibility of situations sort of jumping right to the stage of criminal prosecutions when there may in fact be alternative ways to intervene.

(Lawyer—Interview 5)

Most participants were unable to offer particular suggestions about what form collaboration between the public health and criminal justice systems might take. The general nature of their comments suggests the complexity and difficulty of the issue, while pointing to an issue deserving of further discussion, research and consultation:

I don't know exactly how this would look. There are, I think that public health also has a role to play in this situation and whether or not public health could possibly take a stronger stance before it has to go through criminal proceedings? I don't know exactly how that would look, I'd have to sit down and take time to really think about it and know the ins and outs of the police and public health. But it would be nice if the two could somehow maybe collaborate a little more so that this wasn't such a criminal and more of a health issue.

(ASO case manager—Interview 21)

Responding to the vagueness of the significant risk test

Other participants offered suggestions for change that more closely focused on addressing the ambiguity of the significant risk test. Some participants spoke primarily in terms of assertions about the need to establish greater clarity about significant risk. The person quoted below offers one example in which clarity is obtained by translating the concept into terms that are meaningful for everyday decision-making about specific sexual activities:

I think it needs to be more clearly defined as to what a significant risk is. Like it should say a significant risk is having anal unprotected sex with a male or female or vaginal unprotected sex with a female or whatever, those kinds of things. I think it should be really clearly defined… That's the thing with law, there shouldn't be any grey areas. It should be very defined as to what the law says or what the rules are.

(Focus Group 3)

While specific mechanisms or institutional routes for establishing greater clarity about significant risk were rarely discussed in detail by our research participants, almost all called for a more robust and prominent role for scientific research in its determination. In one interview, a criminal lawyer reflected widely on his experience of defending criminal cases in which testimony from scientific experts was a critical factor. He viewed legal controversies about what constitutes a significant risk of HIV transmission as part of a broader, systemic issue facing the criminal justice system: how to manage, make available and best use complex, rapidly changing scientific information in criminal cases that require expert scientific testimony. He argued that scientific evidence should be drawn upon as early as possible in criminal investigations related to HIV non-disclosure and that standards of evidence should be created for experts giving testimony about the risk of sexual transmission of HIV in criminal cases. One can additionally imagine a series of educational initiatives that would create a more accurate understanding of HIV and its transmission among all actors in the criminal justice system to help realize his vision of a justice system that "gets it right":

So the key for me is ensuring that all of the parties within the system, the police who are charging, the Crowns who are prosecuting, the defence lawyers who are defending and the judges, have a very strong understanding about HIV, about the virus, about the manner in which it's transmitted or in which people are exposed to it, and the real scientific risk that particular acts represent for people to ensure that the justice system gets it right.

(Criminal Lawyer—Interview 3)

Multiple participants argued that science should take a stronger role in helping to resolve the question of what constitutes a significant risk. Some saw that role operating primarily in terms of the court system, with

scientific research helping to make decisions about whether a given sexual encounter constitutes a significant risk on a case-by-case basis:

I think addressing the significant risk issue is a huge part of it because it seems to be the pivotal point for a lot of the cases. What is it and what isn't it? And having someone who's up-to-date with that information… I haven't actually seen a court proceeding and how much information is presented to argue one way or another but just having accurate information for each case… something that is accurate, as accurate as possible.

(Focus Group #3)

Others emphasized, either explicitly or implicitly, a more corporate or communal role for scientific research in addressing uncertainty about the significant risk concept. Their comments suggest using science to develop a broad consensus about a reasonable threshold for significant risk and the disclosure obligations of people living with HIV that would hold both within and beyond the criminal justice system. One HIV-positive participant saw this approach as an important check on what he viewed as unacceptable variations in how criminal courts have interpreted the significant risk test:

There should be a definite, like this is what we consider significant even if I don't necessarily agree with it. But they should have 'this is significant, this is not significant,' whatever. But I don't think it should be left up to the individual judges or individual cases… 'Hmm, I'm going to say that's not significant' or 'I'm gonna say that it is.' It's a bit wishy washy to kind of criminally prosecute someone on what may be some judge's mood that day.

(Focus Group #2)

A physician spoke about the use of medical information to establish a consensus on the limits to the criminal, if not moral, obligation to disclose one's HIV status:

I do think at a certain point… that there can be certain sexual acts in relation to scientific evidence of transmission determined by viral load and immune status and one might say, look, that falls under the realm of, look, it's just too bad, those are the risks of living life… I just can't see the criminal justice system suddenly enveloping all sexual activities and scrutinizing each individual act, it'd be crazy… It's impossible, it's unrealistic. So I think one could say morally there may be an obligation if you have an undetectable viral load and all you're doing is sucking somebody off but the risk might be next to zero. Might be pretty close to zero even for vaginal or anal intercourse with an undetectable viral load. So there might be consensus that under certain circumstances these are the risks that people take if they're going to have unprotected sex and it relieves the person legally of the obligation to disclose, but not necessarily morally, and they're not the same thing.

(HIV Primary Care Physician—Interview 18)

Another physician spoke about the role of science in establishing clarity in the form of a consensus that would align criminal justice and public health messaging about significant risk and HIV transmission:

The clarity would look like having the certainty that intercourse with a condom does not pose significant risk of transmission. That would be really helpful. The clarity would look like oral sex without ejaculation does not pose a significant risk. So that the clarity would be that what we tell people from a scientific point of view is what you need to prevent transmitting to your sex partners is congruent with what the law agrees with as well. That's really the clarity that I hope we'll be getting soon.

(HIV Primary Care Physician—Interview 8)

In general, our research participants were enthusiastic about the potential for scientific research to move the criminal justice system in the direction of greater clarity about the parameters of the significant risk test. However, those most close to the scientific enterprise—the physician researchers we interviewed—offered something of a cautionary note. They pointed out that any area of complex scientific research is associated with uncertainty. They also had qualified reservations about attempts to precisely quantify the risks associated with the sexual transmission of HIV. For example, in the quote below, the speaker opens with enthusiasm about forthcoming results from a

clinical trial investigating, at the time of our writing, HIV transmission risk in the context of antiretroviral therapy use. Overall, he emphasizes how those results might temper exaggerated assessments of transmission risk and establish the basis of a more evidence-informed public discussion of HIV, risk and disclosure. He cautions, however, that any quantified risk result is associated with a measure of uncertainty:

Well I mean I think it'll quantify risk for us… The chief thing to my mind is how much did you reduce risk by going on an antiretroviral? Clearly that's the biggest question that's out there around this, and so I don't think it's going to find it's zero, you know the risk isn't zero for any of these things. I've said to you already, do I personally feel as if the risk is significant from, for instance, if I'm the receptive oral partner am I putting my partner at risk? No, I'm not putting my partners at substantial risk to be honest. Now is there a quorum out there that that's the case? I don't know that there's a quorum out there that that's the case. So we have our own thresholds for where we would set risk. I think it will give us a number, a relatively hard and fast number to factor into that so that we can actually say 'Well, you know, the chance isn't zero, but jeez, it's a hell of a lot lower than people generally think, and here is the number.' And so, if somebody is doing this and if they don't, you know, have any STDs that are clinically apparent then is disclosure necessary? And you have a concrete number that you can work around. I think there is always going to be some uncertainty around that number, there's no question there always will be. But I think it will move us a big step towards you know being able to come up with what the public out there who are the people who are bringing these charges against people in the community, well what does the public think about this? And here's a precise number for you. And that would be good.

(Physician Researcher—Interview 4)

Prosecutorial Guidelines

A final set of suggestions focused on enhancing the administration of the criminal justice system and, in particular, on the value of introducing, in Ontario, prosecutorial guidelines for criminal charges related to the non-disclosure of HIV and other sexually transmitted infections. Some participants viewed prosecutorial guidelines as an opportunity for the Ministry of the Attorney General to show leadership on a complex issue of concern to people living with HIV and those working on the prevention and treatment of HIV infection. Most participants recognized in prosecutorial guidelines, a mechanism for enhancing fairness and reducing inconsistencies in the application of the criminal law. For example, the physician quoted below viewed guidelines as a way to address unfair variations in how the criminal law has been applied. He also saw them as a mechanism for preventing potential overzealous prosecution fuelled by public anxiety about HIV transmission risks:

I think guidelines should be there to bring some standardization and uniformity. Right now it's all over the map, which is not fair. The law's got to be applied uniformly in a standard fashion, which is why you have guidelines. I think there should be, as a matter of fairness in application of law, standards, as uniform as one can make them. It won't account for all the cases but there should be some type of standards to make sure the application of criminal law is not becoming totally out of control and is reflecting paranoia in society.

(HIV Primary Care Physician—Interview 18)

The lawyer quoted below also viewed guidelines as a way to establish fairness and consistency in the application of the criminal law. Like others we interviewed, he thought about guidelines as a tool for streamlining and rationalizing criminal prosecutions for HIV non-disclosure. Citing the concerns of one of the minority judgments in the *Cuerrier* case, he suggested that prosecutorial guidelines have a role to play in clarifying the parameters of significant risk, with the potential effect of preventing unwarranted prosecutions:

Guidelines would also, I think, reduce the potential for unfairness in the application of the criminal law which, incidentally, the justice, who is now the Chief Justice of the Supreme Court of Canada, in the Cuerrier *case alluded to quite directly. One of the chief concerns with the significant risk test would be that it would be left open to the interpretation of particular police officers, particular prosecutors, as*

to what they considered to be a significant risk. And that was going to lead to unfairness in the application of the criminal law. There would not be a consistent, even application of the law of a legal standard across the board. Prosecutorial guidelines could help redress to some degree that problem. If they're properly interpreted and followed they would certainly, I think, help prevent prosecutions in some cases and would provide more consistency in the application of the law.

(Lawyer—Interview 5)

Finally, a public health official also viewed prosecutorial guidelines as a potential source of fairness in the use of the criminal law. She offered her own thoughts on when to turn to the criminal law in responding to HIV non-disclosure and suggested a role for guidelines in clarifying the reasoning behind why criminal charges are or are not pursued:

I think there is a need for some kind of guidelines for the most serious cases, that perhaps the criminal law makes the most sense because public health has not been able to have any effect on those individuals. And again they're so few and far between that I think that you know that if we can have sort of clear guidelines for the police and the Crowns about when it makes sense and when it doesn't make sense.

(Public Health Physician—Interview 7)

In our interviews, participants had a range of thoughts about the issues and questions that prosecutorial guidelines related to HIV non-disclosure might address. A number of participants, including the two quoted below, hoped that guidelines might address the use of science in criminal cases of HIV non-disclosure as well as the role that condoms, viral load and others factors play in determining the legal obligation to disclose one's HIV-positive status:

I don't know exactly what they would say, but… the guidelines could at the very least acknowledge that there are problems or there are controversies within science and I don't know how it would flow in Canada… I'm not sure how exactly that would play out. But there would, it would hopefully provide some guidance… to the Crowns on what kind of cases are significant enough to proceed.

(Lawyer—Interview 1)

There absolutely needs to be more guidelines… Did the person have an intention of infecting the person? Because there are people that do that… Did you know your status? Did you not know your status? So I think that also needs to be considered. What was your viral load like? What was your CD4 like? Were you on meds? Were you not on meds? You know, is it a man to woman transfer or is it a woman to man transfer? I think the most important piece is did you use a condom every time? And are you being charged because the condom broke, right? The intent wasn't to infect the person at all, the condom broke, that's completely out of your hands. Do you deserve to be charged for that? No, my opinion it would be not. So all those things need to be considered.

(ASO case manager—Interview 19)

Others hoped that prosecutorial guidelines and/or the process through which they might be generated would entertain questions related to the role of intent in criminal charges, the conduct of police investigations including the public use of photos and release of names of people living with HIV, sentencing issues, the nature of evidence that would establish that disclosure has occurred, and potential mechanisms of coordination with the public health system.

Our interviews suggest wide support for prosecutorial guidelines as a policy response to the criminalization of HIV non-disclosure in Ontario. People living with HIV, health professionals, public health practitioners and people working in AIDS service organizations generally favoured the development of prosecutorial guidelines as a means to promote fairness and uniformity within the criminal justice system as well as a more evidence-informed application of the criminal law. The many suggestions they offered for responding to the problems they experience with the criminalization of HIV non-disclosure further point to a willingness to engage in policy development processes related to the use of criminal law.
The potential value of their collective experience and expertise was acknowledged by the following participant:

I think there is a fairly rich body of expertise obviously that's going to be found outside of the Ministry

of the Attorney General that could and should be tapped. And that's scientific expertise, legal expertise, community expertise, and by that I mean the informed perspectives of people living with HIV who are directly affected by the application of the law and how far it's going to go, and service providers including community-based AIDS organizations who see the effects of the criminal law on a regular basis in the lives of the people they work with.

(Lawyer—Interview 5)

References

1. Personal correspondence with E Bernard (13 May 2010); data based on Global Network of People Living with HIV (GNP+), The Criminalisation Scan, online resources, available at: www.gnpplus.net/criminalisation. Also, forthcoming in Bernard E. *HIV and the criminal law*, NAM, 2010.
2. Burris S and Cameron E. (2008). The case against criminalization of HIV transmission. *Journal of the American Medical Association*. 300(5): 578-580.
3. Wolf LE and Vezina R. (2004). Crime and punishment: is there a role for criminal law in HIV prevention policy? *Whittier Law Review*. 25:821-886.
4. Elliott R. (1999). After *Cuerrier*: Canadian criminal law and the non-disclosure of HIV-positive status. Canadian HIV/AIDS Legal Network: Toronto, Canada.
5. Cameron S and Rule J. (Eds). (2009). *The criminalization of HIV transmission in Australia: Legality, morality and reality*. National Association of People Living with HIV/AIDS: Newtown, Australia.
6. Open Society Institute. (2008). *10 reasons why criminalization of HIV exposure or transmission is bad public policy*. Available: http://www.soros.org/initiatives/health/focus/law/articles_publications/publications/10reasons_20080918
7. UNAIDS (2008). *Criminalization of HIV transmission. Policy brief*. Available: http://data.unaids.org/pub/BaseDocument/2008/20080731_jc1513_policy_criminalization_en.pdf
8. Galletly CL and Pinkerton SD. (2004). Toward rational HIV disclosure laws *Journal of Law, Medicine and Ethics*. 32:327-337.
9. Weait M. (2007). *Intimacy and responsibility: The criminalisation of HIV transmission*. Abingdon: Routledge-Cavendish. Weait book
10. Burris S, Beletsky L, Burleson J, Case P and Lazzarini Z. (2007). Do criminal laws influence HIV risk behavior? An empirical trial. *Arizona State Law Journal*. 39:467-517.
11. Galletly CL and Pinkerton SD. (2006). Conflicting messages: how criminal HIV disclosure laws undermine public health efforts to control the spread of HIV. *AIDS and Behavior*. 10:451-61.
12. World Health Organization (2006). *WHO technical consultation in collaboration with the European AIDS Treatment Group and AIDS Action Europe on the criminalization of HIV and other sexually transmitted infections*. Copenhagen: WHO.
13. Elliott R. (2002). *Criminal law, public health and HIV transmission: a policy options paper*. Geneva: UNAIDS.
14. Galletly CL and Dickson-Gomez J. (2009). HIV seropositive status disclosure to prospective sex partners and criminal laws that require it: perspectives of persons living with HIV. *International Journal of STD & AIDS*. 20:613-18.
15. Dodds C, Weatherburn P, Bourne A, Hammond G, Weaitt M, Hickson F, Reid D and Jessup K. (2009). *Sexually charged. The views of gay and bisexual men on criminal prosecutions for sexual HIV transmission*. Sigma Research: London.
16. Dodds C and Keogh P. (2006). Criminal prosecutions for HIV transmission: people living with HIV respond. *International Journal of STD & AIDS*. 17:315-318.
17. Lazzarini Z, Bray S, and Burris S. (2002). Evaluating the impact of criminal law on HIV risk behavior. *The Journal of Law, Medicine & Ethics*. 2002(30): 239-253.
18. Galletly C, DiFranceisco W, and Pinkerton S. (2009). HIV-Positive person's awareness and understanding of their state's criminal HIV disclosure law. *AIDS and Behavior*. 13:1262-69.
19. Dodds C. (2008). Homosexually active men's views on criminal prosecutions for HIV transmission are related to HIV prevention need. *AIDS Care*. 20(5):509-514.

20. Adam B, Elliott R, Husbands W, Murray J and Maxwell J. (2008). Effects of the criminalization of HIV transmission in *Cuerrier* on men reporting unprotected sex with men. *Canadian Journal of Law and Society*. 23(1-2):143-159.
21. Klitzman R, Kirshenbaum S, Kitte L, Morin S, Daya S, Mastrogiacomo M and Rotheram-Borus M. (2004). Naming names: perceptions of name-based HIV reporting, partner notification , and criminalization of non-disclosure among persons living with HIV. *Sexuality Research & Social Policy*. 1(3):38-57.
22. Dodds C, Bourne A, and Weait M. (2009). Responses to criminal prosecutions for HIV transmission among gay men with HIV in England and Wales. *Reproductive Health Matters*: 17(34): 135-145.
23. DeVault ML. (1990). Talking and listening from women's standpoint: feminist strategies for interviewing and analysis. *Social Problems*. 37:96-116.
24. Patton, Michael, Q. 2002. *Designing qualitative studies*. *Qualitative research and evaluation methods*. Pp. 209-258. Thousand Oaks: Sage Publications.
25. Spradley J. (1979). *The ethnographic interview*. New York and Montreal: Holt, Rinehart and Winston.
26. Kumar K. (1986). *Conducting key informant interviews in developing countries*. *AID Program Design and Evaluation Methodology Report* No.13 December (PN-AAX-226).
27. Worth H, Patton C and McGehee M. (2005). Legislating the pandemic; A global survey of HIV/AIDS in criminal law. *Sexuality Research & Social Policy*. 2(2):15-22.
28. Grant I. (2009). Rethinking risk: The relevance of condoms and viral load in HIV nondisclosure prosecutions. *McGill Law Journal*. 54:389-404.
29. Grant I. (2008). The Boundaries of the criminal law: The criminalization of the non-disclosure of HIV. *Dalhousie Law Journal*. 31(123-180).
30. Symington A. (2009). Criminalization confusion and concern: The decade since the *Cuerrier* decision. *HIV/AIDS Policy & Law Review*. 14(1):1, 5-10. Available: http://www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1485
31. Cameron E. (2009). The criminalization of HIV transmission and exposure. Key note lecture, 1st Annual Symposium on HIV, Law and Human rights. June 12-13, Canadian HIV/AIDS Legal Network. Toronto.
32. Schuklenk U. (2009). Should we use the criminal law to punish HIV transmission? *International Journal of Law in Context*. 4(3): 277-84.
33. Adam B. (2010). Drawing the line: Views of HIV+ people on the criminalization of HIV transmission. Presented at the 2nd Annual Symposium on HIV, Law and Human Rights, Canadian HIV/AIDS Legal Network, June 11, 2010.

SECTION 5

OPTIONS FOR ADDRESSING THE PROBLEM

There are a limited number of options available to address the problem that, given the current state of the law, Ontarians living with HIV cannot determine with any certainty their sexual HIV disclosure obligations under the Criminal Code. In our view, there are three options for addressing the problem: (1) continue with the status quo, namely, case-by-case interpretation and application of the *Cuerrier* decision by police, Crown counsel and trial and Appeal Courts; (2) advocate for an amendment to the Criminal Code; and (3) establish a process to develop policy and a practice memorandum to guide Crown counsel in Ontario (i.e., address the issue through an addition to the Crown Policy Manual). It is our view that the third option is most appropriate and should be pursued. For each option we will examine what is known, barriers to adoption and implementation, and possible strategies to address the barriers.

Regardless of the option(s) pursued, addressing this problem of uncertainty will necessarily require changes in the current approach of the criminal justice system to cases of alleged HIV non-disclosure. A reformed approach should clarify the uncertainty in the legal definition of "significant risk" and the inconsistent application of the law by police, Crown counsel and courts.

This report has identified the foundations for bringing certainty, and by extension fairness, to the law and its application. Section 2 provided a comprehensive review of the "significant risk of serious bodily harm" test from *Cuerrier* and its application in subsequent cases. *Cuerrier* stands for the proposition that the criminal law must be applied in a principled and restrained manner given the seriousness of the offence of aggravated (sexual) assault and seriousness of the consequences of a finding of guilt. In light of cases decided since *Cuerrier*, the minority reasons for decision in *Cuerrier* should be revisited since, arguably, they set out a more realistic, principled and just approach to the use of the criminal law than the reasons of the majority of the Supreme Court.

Section 3 provided a comprehensive review of the literature related to the risk of HIV transmission, and an up-to-date understanding of the seriousness of HIV infection for people infected today. Given the centrality of the "significant risk of serious bodily harm" test, this scientific and medial literature must inform the development of the law. Section 4 detailed our original research, which supports the need for clarity in the law. People living with HIV and those providing care, treatment and support to them and those at risk of HIV, suggest that the current climate of legal uncertainty is having unintended, detrimental consequences for HIV prevention and for PHAs. Based on the information presented in Sections 2, 3 and 4, it would be inconsistent with *Cuerrier* to impose upon people living with HIV a blanket obligation to disclose their HIV status without regard to the circumstances, and HIV transmission risk, of the sexual relations. The purported deterrent effect of the criminal law—i.e., promoting full and frank conversations about HIV and other sexually transmitted infection, disclosure of infections to partners prior to sex, and the use of condoms—will be best promoted through a clear, principled and restrained use of the criminal law.

Option 1—Continue with case-by-case interpretation and application of the law

The case-by-case interpretation and application of the *Cuerrier* decision by police, Crown counsel, and trial and appeal courts has not clarified the law regarding the sexual HIV disclosure obligations of PHAs. Our analysis of prosecutions for sexual HIV non-disclosure reveals three main forms of inconsistency in the application of the significant risk test: (1) inconsistencies in evidence used to establish whether the sexual relation involved a significant risk of HIV transmission; (2) inconsistencies in how courts have interpreted the legal test; and (3) inconsistencies in actual decisions.

The principal barrier to clarifying the law through prosecutions and court decisions is uncertainty as to the time this might take. Only two cases have reached the Supreme Court, in 1998 and 2003. The process of arriving at clarity in the law for Ontarians would likely involve an appeal (or a succession of

appeals involving distinct aspects of the legal test, and the range of facts covering various types of sexual activities that carry a risk of transmitting HIV under different circumstances) to the Court of Appeal for Ontario and potentially the Supreme Court of Canada. Reaching an Appeal Court can take many years from the time a criminal charge is laid. And there is no certainty that a greater number of prosecutions will have the effect of clarifying the law and no way to determine how long it will be before a case is heard and decided by the Court of Appeal or the Supreme Court.

There is no viable strategy to address this barrier.

Option 2—Amend the Criminal Code

The federal parliament routinely passes legislation to amend the Criminal Code. For example, since April 2006 (39th Parliament, 1st Session) the current federal government has introduced 35 bills to amend the Criminal Code and related criminal laws. Most of these bills, some of which have been passed by Parliament, are intended to promote the federal government's "tough-on-crime" agenda, and include measures designed to decrease judicial discretion in sentencing (e.g., increasing the number of mandatory minimum sentences, decreasing "credit" for pre-trial custody, restricting conditional sentences) and to intensify the criminal sanctions for certain activities that have been widely reported upon in the media (e.g., crimes involving guns, street racing, driving under the influence of illicit drugs, crimes involving the sexual exploitation of children).

There are four significant barriers to amending the Criminal Code as a way to bring clarity to the law regarding sexual HIV non-disclosure. First, it is essential that the law regarding HIV non-disclosure be clarified in a way that takes into account the complex medical and scientific evidence related to the risk of HIV transmission. However, the federal government's agenda in the criminal justice sphere has not been informed by evidence. For example, the current government has brought forward legislation to provide for mandatory minimum sentences for numerous offences, despite the fact that the overall crime rate is decreasing in Canada and the fact that there is no evidence that mandatory minimum sentences decrease crime or recidivism among people previously convicted to jail time. To give another example, the federal government continues to oppose, principally on ideological grounds and despite significant peer-reviewed evidence of its success, the supervised injection site in Vancouver that operates under an exemption under the Controlled Drugs and Substances Act.[1] Second, the federal government has not shown any inclination to amend the Criminal Code to limit the reach of the law—quite the contrary. The government has enacted and sought to enact legislation that would result in higher rates of incarceration, and more onerous sentences upon conviction, across a range of violent and non-violent offences for both adults and youth.

From a strategic point of view, PHAs and people who provide services to them and advocate on their behalf are extremely apprehensive about advocating for an amendment to the Criminal Code. They fear that the current federal government's "tough on crime" orientation would be likely to result in legislative initiatives, and publicity, which would further stigmatize PHAs and communities of people affected by HIV. Simply put, in all likelihood, even if the federal government could be persuaded to take up the issue, the resulting amendment to the Criminal Code would not achieve the objective of clarifying the law in ways that respond to the complexity of the medical/scientific issues and public policy concerns. Third, it is highly unlikely that a private member's bill could be introduced into the House of Commons or the Senate, or passed by Parliament if such a bill were to be introduced. Fourth, drafting, debating, passing and enacting a law can take years.

Even assuming the Ontario attorney general's willingness to advocate with his federal counterpart for a Criminal Code amendment, the barriers outlined above would still exist. It is difficult to imagine that advocacy by the attorney general (or PHAs, lawyers and community advocates who have worked on this issue) could effectively overcome these inherently political barriers.

Option 3—Develop Crown policy and a practice memorandum

Role of Crown Policy Manual

Under the Canadian Constitution,[2] the federal parliament has exclusive legislative authority to enact criminal law, including procedure in criminal matters. However, the Constitution assigns to the provinces the exclusive jurisdiction for the administration of justice, including the administration of civil and criminal courts in the province.[3]

Crown counsel play a pivotal role in the administration of criminal justice. Provincial attorneys general have put in place policy and procedures to guide Crown counsel when prosecuting Criminal Code charges laid by police. In Ontario, this policy and guidance is contained in the Revised Crown Policy Manual. The Manual's purpose is twofold: to assist Crown counsel in making decisions when prosecuting charges; and, to promote high standards and consistency in how Crown counsel conduct criminal prosecutions. The Manual conveys to Crown counsel the attorney general's priorities and instructions as well as the rationale for them through two types of documents: policy statements; and, practice memoranda, which contain detailed guidance.

The Manual covers a range of foundational criminal justice, case management, victim, fairness and procedural issues, and provides guidance for specific types of prosecutions. Guidance for specific types of prosecutions includes hate crimes and discrimination, impaired driving and road safety offences, sexual offences and spouse/partner offences. The Manual does not contain guidance specific to sexual HIV non-disclosure related prosecutions, or prosecutions involving allegations of non-disclosure of other sexually transmitted infections.

The uniformity, fairness and transparency that the Manual can bring to prosecutions are essential to public confidence in the administration of criminal justice. Ministerial guidance for Crown counsel is especially important in new areas of criminal law, criminal laws that promote fundamental legal and social values such as equality and the protection of historically vulnerable members of society, and in prosecutions where Crown and defence counsel seek to admit into evidence expert opinion from complex, controversial and evolving areas of scientific inquiry. It is not surprising that numerous recommendations arising out of the Goudge Inquiry, reviewed above, will likely be incorporated in the Crown Policy Manual.

Potential role for Crown policy in HIV non-disclosure prosecutions

The criminal law and prosecutions regarding allegations of sexual HIV non-disclosure lack uniformity and transparency. And among PHAs and their advocates there is a pervasive sense that unfairness surrounds such prosecutions. Adding to the Manual a section about sexual HIV non-disclosure could help address these issues.

Policy and a practice memorandum could:

- Provide a basis upon which lawyers and other service providers could help people living with HIV clearly understand their legal obligations, and the factors that Crowns should consider when screening charges;
- Help ensure that decisions to investigate and prosecute allegations are informed by a complete and accurate understanding of current medical and scientific research about HIV and take into account the social contexts of living with HIV;
- Help ensure that police and Crown counsel handle sexual HIV non-disclosure complaints and prosecutions, respectively, in a fair and non-discriminatory manner;
- Clarify that the criminal law can be applied to all sexually transmitted infections, so that HIV will not continue to be singled out and stigmatized.

The Ontario Advisory Committee on HIV/AIDS (OACHA) has twice called for guidance for Crown counsel, first in 1997 and later in 2002. OACHA provides broad social and health policy advice to the minister of Health and Long-Term Care on all aspects of HIV/AIDS. Membership consists of one-third people who are living with HIV/AIDS; one-third health-care providers; and one-third community representatives:

> Recommendation 8: Directives for Crown Prosecutors: The working group recommends developing directives for Crown prosecutors across the province. The directives should require consultation with public health before criminal charges are laid (e.g., ensure counselling has occurred, examine strategies other than criminal charges, educate about HIV/AIDS, share appropriate information).[4]
>
> Recommendation 6 (Non-Legislative Changes): Directives for Crown Prosecutors: The working group recommends developing directives for Crown prosecutors across the province. The directives should include a strong recommendation to consult with public health before criminal charges are laid (e.g., ensure counselling has occurred, examine strategies other than criminal charges, educate about HIV/AIDS, share appropriate information).[5]

UNAIDS has called on states to establish prosecutorial guidelines to prevent the misuse of the criminal law in cases of alleged HIV exposure/transmission:

> States should establish guidelines for prosecutors to prevent inappropriate criminal prosecutions and to guide prosecutorial conduct during proceedings, so as to avoid publicity that may prejudice a trial, breach the confidentiality of the accused's HIV status, expose the accused to stigma and discrimination before having been convicted of any offence, and undermine public health efforts by contributing to widespread misconceptions about how HIV may be transmitted.[6]

Policy in other jurisdictions

One provincial attorney general has published guidance for Crown counsel. Since 2007, the British Columbia Crown counsel Policy Manual has included a Sexually Transmitted Diseases policy (ARCS/ORCS file number 57140-01; effective 16 May 2007). It applies to HIV/AIDS and other sexually transmitted infections. It provides guidance in relation to two topics: (1) communication and reporting between Crown counsel and the medical health officer; and (2) who should review, and be made aware of, the decision of Crown counsel to proceed with a charge involving the possible transmission of a sexually transmitted disease. Regarding the second point, the policy states: "Where a charge is proposed involving the possible transmission of a sexually transmitted disease, including the HIV virus, the decision should be reviewed by Regional or Deputy Regional Crown counsel. The Director, Legal Services, should be advised of any decision to charge."

In 2008, the Crown Prosecution Service for England and Wales (CPS) developed legal guidance on Intentional Or Reckless Transmission of Sexual Infection.[7] (Note that, unlike the assault-based offences of Canadian criminal law, the relevant criminal offences in England and Wales require proof of HIV transmission.) After significant advocacy and awareness raising, the HIV community sector and relevant professions convinced the CPS to engage in a process of public consultation. The CPS formed a working group of key community stakeholders. A draft of the policy and guidelines was produced and publicly circulated for feedback. Based on the responses, another draft was produced for further discussion between the CPS and the working group. The final policy and legal guidance were published in 2008.

The CPS documents provide guidance regarding:

- offences under U.K. criminal law that can be applied to HIV transmission;
- what is meant by "transmission";
- the weight and nature of scientific, medical and factual evidence required to be adduced by the prosecution;
- the situation where the accused used safeguards against transmitting infection, and medical advice the accused was given about this;
- the public interest considerations Crown prosecutors should take into account in these type of cases; and
- care for the interests of complainants and witnesses.

Although the law in England and Wales is distinct from the law in Canada, the underlying policy rationale for and the approach mandated by the CPS legal guidance are highly relevant to the current application of the criminal law to cases of alleged HIV non-

disclosure in Ontario. Moreover, the basic approach of CPS legal guidance is consistent with the Canadian Supreme Court's view that Canadian courts should not too readily find that a person's consent to sex had been vitiated by HIV non-disclosure, considering the gravity of the consequences of a conviction for sexual assault and the aim of avoiding the trivialization of the criminal law.[8]

The introductory section of the CPS legal guidance recognizes that this area of the criminal law is "exceptionally complex."[9] The CPS legal guidance establishes an internal review process for cases involving allegations of sexual transmission of infectious disease, and aims to:

- instill in prosecutors a measured and cautious approach to the exercise of prosecutorial powers;
- minimize unnecessary and protracted investigations and distress to all parties concerned;
- focus prosecutors on the task of determining whether there is a reasonable prospect of conviction in light of the legal test and the various types of evidence that should be sought out, properly understood and assessed; and
- minimize the possibility of convicting innocent people.

The CPS legal guidance requires that prosecutors seek out evidence at an early stage in order to determine the likelihood that transmission occurred from the accused to defendant in a given case (under the Canadian criminal law of assault the evidence would relate to the significance of the risk of serious bodily harm). The guidance defines circumstances that are unlikely to result in a successful prosecution[10] and identifies activities that prosecutors must undertake in advance of proceeding with a prosecution.[11]

The CPS conducted a review of the legal guidance after it had been in effect for one year.[12] The resulting report summarizes the cases during that period and sets out key learning points. It goes on to identify future work, as follows:

- Reviewing lawyers should liaise with Group Complex Casework Unit Heads in order to ensure timely decision making in cases of this nature.

I think guidelines should be there to bring some standardization and uniformity. Right now it's all over the map, which is not fair. The law's got to be applied uniformly in a standard fashion, which is why you have guidelines. I think there should be, as a matter of fairness in application of law, standards, as uniform as one can make them. It won't account for all the cases but there should be some type of standards to make sure the application of criminal law is not becoming totally out of control and is reflecting paranoia in society.

(HIV Primary Care Physician—Interview # 18)

Guidelines would also, I think, reduce the potential for unfairness in the application of the criminal law… Incidentally, the justice, who is now the chief justice of the Supreme Court of Canada, in the *Cuerrier* case alluded to quite directly one of the chief concerns with the significant-risk test—that it would be left open to the interpretation of particular police officers, particular prosecutors, as to what they considered to be a significant risk. And that was going to lead to unfairness in the application of the criminal law; there would not be a consistent even application of the law of a legal standard across the board. Prosecutorial guidelines could help redress to some degree that problem. If they're properly interpreted and followed they would certainly I think help prevent prosecutions in some cases and would provide more consistency in the application of the law.

(Lawyer—Interview # 5)

- Chief Crown Prosecutors are reminded to ensure that all such cases are notified to the PLA either by them or through the Head of their Group Complex Casework Unit.
- The CPS will continue to work with stakeholders and partner agencies to develop case studies for training and guidance purposes. These studies will also be made available for wider distribution as a learning tool.
- The CPS will continue to contribute to the Association of Chief Police Officers' Steering Group on offences involving the intentional or reckless sexual transmission of infection.

Finally, the report concludes that the "CPS policy and legal guidance to prosecutors on the sexual transmission of infection has proved to be broadly effective during the first 12 months following its publication."

We believe that the CPS legal guidance, and the process that led to its publication, is an important precedent that should be seriously considered by Ontario's attorney general.

For more information about the process and outcome, and an initial assessment of the U.K. guidelines, go to: www.aidslaw.ca/publications/publicationsdocEN.php?ref=866 and www.cps.gov.uk/Publications/research/sti_one_year_on.html.

Barriers to option 3

The Ontario attorney general and staff within the Ministry of the Attorney General are in the best position to identify barriers to option 3.

Strategy to address barriers

The Ontario attorney general and staff within the Ministry of the Attorney General, in concert with stakeholders, are in the best position to develop strategy to address barriers to option 3.

Considerations for implementing option 3

The complex problems posed by the criminalization of HIV non-disclosure in Ontario call for a thorough, formal response on the part of the Ministry of the Attorney General—the addition of a policy statement and related practice memorandum to the Crown Policy Manual. A central theme of our interview research was a concern that the Ministry should show leadership on the issue by clarifying through guidance the policy and practice considerations Crown counsel should follow when determining whether (and if so, how) to proceed with charges related to alleged HIV non-disclosure. Interviews show strong support for a process of engagement around developing such guidance.

We recommend that the Ministry of the Attorney General establish a consultation process to inform the development of policy and a practice memorandum regarding cases involving allegations of non-disclosure of sexually transmitted infections, including HIV.

Representatives from the following sectors should be included in the consultation process:

- People living with HIV/AIDS, representative of the diversity of PHAs in Ontario
- AIDS service organizations
- Ontario Advisory Committee on HIV/AIDS (OACHA)
- Ontario Ministry of Health and Long-Term Care, including the AIDS Bureau
- Ontario Ministry of Community Safety and Correctional Services
- Criminal defence bar
- Health, human rights and civil liberties bars
- Local public health units
- Health-care providers
- Research community (university-based, not-for-profit sector)

We recommend that the consultation encompass the following issues:

- Policy statement regarding criminal prosecutions of allegations of non-disclosure of sexually transmitted infections
- Relevance of existing Crown Policy Manual (e.g., physical scientific evidence, charge screening, sexual offences, spouse/partner offences)
- Treatment and perspectives of complainants, in light of relevant existing Crown Policy Manual
- Use of personal information held by public health units in criminal investigations and prosecutions
- Role of medical and scientific evidence and experts in prosecutions (from charge screening through trial and sentencing), including Goudge Inquiry considerations
- Bail considerations
- Screening of charges related to alleged non-disclosure of a sexually transmitted infection

  - Considerations when applying the threshold test (reasonable prospect of conviction)
  - Considerations when applying the public interest test
  - Other considerations
- Resolution discussions and standards/considerations for plea bargains
- Levels of authority, supervision and approval of Crown counsel decision to proceed with charges
- Publication bans to protect the identity (and personal health information) of the complainant(s) and accused
- Considerations in sentencing/post-conviction (e.g., DNA databank orders, sex offender registration)
- Complainant and witness issues
- Publication of the policy and practice memorandum to Crown counsel, criminal defence bar, and affected communities
- Training for Crown counsel
- Collection of statistical information related to HIV non-disclosure charges and prosecutions, including demographic information on accused and complainants, that might inform research regarding the application of the criminal law in marginalized populations and populations that have historically faced systemic discrimination in the criminal justice system in Ontario (e.g., Black males).[13]
- Periodic review of the Policy and Practice Memorandum and its implementation/application

We recommend that the Ministry of the Attorney General circulate widely for comment a draft policy and draft practice memorandum—developed through consultation—for cases involving allegations of non-disclosure of sexually transmitted infections, including HIV.

References

1. *PHS Community Services Society* v *Canada (Attorney General)*, 2010 BCCA 15.
2. *The Constitution Act*, 1867, 30 & 31 Victoria, c. 3. (U.K.), s. 91(27).
3. *The Constitution Act*, 1867, s. 92(14).
4. *Reducing HIV transmission by people with HIV who are unwilling or unable to take appropriate precautions*. (Ontario Advisory Committee on HIV/AIDS, September 1997), recommendation 8.
5. *Reducing HIV transmission by people with HIV who are unwilling or unable to take appropriate precautions: An update*. (Ontario Advisory Committee on HIV and AIDS, May 2002), conclusion 6.
6. UNAIDS. (2002). *Criminal law, public health and HIV transmission: A policy options paper*, at page 40.
7. www.cps.gov.uk/legal/h_to_k/intentional_or_reckless_sexual_transmission_of_infection_guidance/
8. *Cuerrier* at paragraph 139.
9. S 1.4.
10. See for example, ss. 5.2, 6.19.
11. See for example, ss. 5.3, 6.7, 6.11,
12. Crown Prosecution Service of England and Wales (2009). *A review of the CPS policy and guidance to prosecutors on the sexual transmission of infection—One year on*. www.cps.gov.uk/Publications/research/sti_one_year_on.html.
13. Ontario Human Rights Commission. (2009 rev.). Collection and analysis of numerical data. In *Policy and guidelines on racism and racial discrimination*. Pages 42-46.

APPENDIX 1

KNOWLEDGE AND TRANSLATION ACTIVITIES (planned or delivered, as of 23 July 2010)

Conference Posters/Presentations

- Mykhalovskiy E. HIV non-disclosure and the criminal law: Effects of Canada´s "significant risk" test on people living with HIV/AIDS and health and social service providers. Oral Presentation. XVII International AIDS Society, 18-23 July 2010.
- Mykhalovskiy E. et al. The Criminalization of HIV non-disclosure in Canada: An analysis of trends and patterns. Poster. XVIII International AIDS Society, 18-23 July 2010.
- Mykhalovskiy E. et al. Using research evidence to influence criminal law policy: Contributions from a law reform project on HIV non-disclosure in Ontario, Canada. Poster. XVIII International AIDS Society, 18-23 July 2010.
- Mykhalovskiy E. et al. HIV non-disclosure and the criminal law: Promoting an evidence-based policy response. Poster. CAHR Conference, 14-16 May 2010.
- Mykhalovskiy E. et al. Criminalization of HIV non-disclosure in Ontario: Using research and knowledge translation and exchange (KTE) to promote and inform sound public policy. Poster. Leading Together 2010, 6th Canadian HIV/AIDS Skills Building Symposium, 4-7 March 2010.
- Mykhalovskiy E. and Betteridge G. The criminalization of HIV non-disclosure in Canada: A preliminary analysis of trends and patterns. Oral Presentation. Ontario HIV Treatment Network Research Conference. 16 November 2009.

Consultations

- Canadian AIDS Society, HIV/HCV Transmission: Guidelines for Assessing Risk. Mykhalovskiy E. 13 January 2010.
- Ontario Advisory Committee on HIV/AIDS, Mykhalovskiy E. and Betteridge G., 28 June 2010.
- AIDS Bureau, Ministry of Health and Long-Term Care, Mykhalovskiy E. and Betteridge G. 13 January 2010.
- AIDS Committee of Toronto, All candidates meeting, Mykhalovskiy E. and Betteridge G. 18 January 2010.

Meetings

- Andrea Horvath, MPP, Leader Ontario New Democratic Party, 29 March 2010.
- Glenn Murray, MPP, 10 May 2010.
- Helena Jackek, MPP, 21 June 2010.
- Erin Winocur, Counsel, Criminal Law Division, Ontario Ministry of the Attorney General, 22 June 2010.

Invited Presentations

- Mykhalovskiy E. HIV Non-disclosure and the criminal law: Establishing policy options for Ontario, Paper presented at Criminalization of HIV Non-disclosure: New Developments and Community Responses 2nd Annual Symposium on HIV, Law and Human Rights, Canadian HIV/AIDS Legal Network, 11 June 2010.
- Peck R. Mark S. Bonham Centre for Sexual Diversity Studies, University of Toronto.
- Peck R. Positive Prevention Training Course, AIDS Committee of Guelph, 24 February 2010.
- Peck R. Central Opening Doors Conference, 17-18 February 2010.
- Peck R. Gay Men's Sexual Health Summit, 17-19 February 2010 Toronto.
- Peck R. Ontario AIDS Network annual Executive Director/Board Chair Retreat. 4 February 2010.
- Mykhalovskiy E. Research evidence and the debate on the criminalization of HIV non-disclosure. Department of Community Health Sciences, University of Calgary. December 2009.

Workshops

- Betteridge G. HIV disclosure & the law. CATIE-sponsored workshops. St. John's, Fredericton, Moncton, Charlottetown, London, Hamilton, Kitchener, Saskatoon, Lethbridge, Red Deer, Nelson, Kelowna, Victoria, February – March 2010.
- Parks A. Criminalization of HIV non-disclosure: A community response. ACT Community Health Forum, 11 November 2009.
- Peck R. Criminalization of HIV non-disclosure:

Arresting developments. Satellite session at the 6th Canadian HIV/AIDS Skills Building Symposium, 4-7 March 2010.

Media Interviews

- Canada Extra, Neil Amrstrong, November 2009.
- CBC Radio, Maureen Brosnahan, November 2009.
- XTRA! Ottawa, Noreen Fagin, May 2010.

Documents

- McLay D, Mykhalovskiy E and Betteridge G. *A review and analysis of scientific research on the sexual risk of HIV transmission and HIV as a chronic, manageable infection*. 5 March 2010. Prepared for National Judicial Institute, Training Workshop on the criminalization of HIV non-disclosure, 24 March 2010.
- McLay D, Mykhalovskiy E and Betteridge, G. *A review and analysis of scientific research on the sexual risk of HIV transmission and HIV as a chronic, manageable infection*. Prepared for Canadian HIV/AIDS Legal Network, Resource Kit for Lawyers Handling Criminal Cases related to HIV non-disclosure, 18 March 2010.
- Betteridge G. *Sex & HIV-Related Criminal Charges: Summary of Significant Dispositions and Legal Interpretations*. February 2010.
- Betteridge G. *Sex & HIV-Related Criminal Charges: Analysis of Reasons for Decision, Transcripts of Medical Evidence and Jury Charges*. January 2010.

Findings from our research were included in the following presentations

- Kazatchkine C. Legal developments and community responses to criminal prosecutions for HIV non-disclosure in Canada, CAHR Conference 14-16 May 2010.
- Elliott R. Ministerial Advisory Council on the Federal Initiative to Address HIV/AIDS, 28 January 2010.
- HIV/AIDS and Criminalization in Toronto's Black Communities, Black CAP Community Forum, 19 November 2009.