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Title	Prevalence and predictors of facing a legal obligation to disclose HIV serostatus to sexual partners among a cohort of people living with HIV who inject drugs in a Canadian setting: a cross-sectional analysis
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Reviewer 1	Richard Elliott
Institution	Canadian HIV/AIDS Legal Network, Toronto
General comments (author response in bold)	<p>Thanks for this important piece of work adding to our understanding of the shadow cast by the state of the criminal law in Canada regarding HIV non-disclosure. Congratulations to the authors for adding the growing literature documenting this impact.</p> <p>Response: Thank you very much for these kind comments.</p> <p>We have revised our wording throughout the paper to reflect the recommendation from Reviewer 1 to softening the interpretation of the Supreme Court ruling. Particularly we have revised the wording of our study aim to the following (page 5):</p> <p>We estimated the proportion of participants who would face a legal obligation to disclose their HIV status before penile-vaginal intercourse if both condom use and a low viral load were required to remove the realistic possibility of HIV transmission, and avoid criminal liability for HIV non-disclosure.</p> <p>We also acknowledged that the interpretation of the Supreme Court ruling may differ within the provincial courts, within the introduction (page 4):</p> <p>Establishing the absence of a realistic possibility of HIV transmission may be possible for circumstances other than condom protected penile-vaginal sex with a low viral load, depending on the evidence presented during criminal trials. Indeed, the Supreme Court indicated that differing circumstances and treatment advances could lead to future adaptations of this legal position. Lower courts may find greater flexibility in their interpretation of the realistic possibility of HIV transmission. After the 2012 Supreme Court rulings, a teenage boy was acquitted of aggravated sexual assault in the Nova Scotia Youth Justice Court after allegedly failing to disclose his HIV status prior to an episode of penile-vaginal intercourse. Based on evidence presented during the trial, the presiding judge deemed that there was no realistic possibility of HIV transmission in the context of an undetectable viral load, regardless of whether or not a condom was used. However, in the absence of consistency in the application of the Supreme Court's legal test by the lower courts, it is prudent to assume the strictest interpretation of this ruling.</p> <p>2. You may wish to add, following a conviction for aggravated sexual assault, mandatory registration as a sex offender is presumptively for life.</p> <p>Response: Thank you for this suggestion. We have included this detail in the introduction of the manuscript (page 3).</p> <p>Most people accused of HIV non-disclosure in Canada have faced charges of aggravated sexual assault, based on the judicial interpretation that non-disclosure of HIV status represents fraud, vitiating consent to an otherwise consensual sexual encounter. This charge carries a maximum life imprisonment sentence and mandatory life-long registration as a sexual offender, even in the absence of HIV transmission.</p> <p>3. In section on "eligibility criteria," perhaps a simpler way to refer to participants "with non-missing condom use data" would be to say that these are participants "for whom data on condom use was available"?</p> <p>Response: Thank you for drawing this to our attention. We have changed the wording of this sentence, as suggested (page 7).</p> <p>4. The description of the results, and how it correlates to Table 2, was a bit confusing.</p> <p>Response: Thank you for this comment. We have revised our description of these results, and also modified how these data are presented in Table 2 (page 10-11).</p> <p>Of the 176 participants included in this analysis, 10 (6%) failed to achieve a viral load consistently <1500 copies/mL, and 70 (40%) self-reported <100% condom use during penile-vaginal intercourse within the six month period before the study interview. Among the 166 participants who consistently achieved a viral load <1500 copies/mL, 67 reported <100% condom use. If both condom use and a viral load <1500 copies/mL were required to negate the realistic possibility of HIV transmission and avoid criminal liability for HIV non-disclosure, 77 (44%) participants would face a legal obligation to proactively disclose their HIV status to sexual partners (Table 2).</p> <p>5. There is a very hard-to-follow sentence: "Only 2% of participants neither consistently used a condom nor consistently achieved a VL <1500 copies/mL." I lost track of how many negatives and qualifiers were in the sentence. Is there possibly a way to word this more clearly?</p> <p>Response: Thank you for this suggestion. We have revised our description of these results to the following (page 11):</p>

	<p>If either consistent condom use or a viral load <1500 copies/mL was sufficient to negate the realistic possibility of HIV transmission, only 3 (2%) participants would face a legal obligation to disclose (0% of males, 4% of females).</p> <p>6. "Based on the Variance Inflation Factor, we did not detect any multicollinearity issues among the variables in this model." Perhaps this could be translated into some language that the ordinary reader could understand? Response: Thank you for this comment. We added the following description to the methods section of the paper (page 10). We computed the Variance Inflation Factor to quantify the degree of collinearity present in the regression analysis on the basis that a strong correlation between variables would increase the variance of the coefficients, rendering them unstable and complicating interpretation of the model output. The Variance Inflation Factor was <1.2 for all variables in the final model, meaning no collinearity was present.</p> <p>7. Comment relating to the interpretation section, regarding what public health advocates have argued. Response: Thank you for this comment. We have incorporated the suggested changes identified by Reviewer 1 into the interpretation section of our manuscript (page 14): "Notably, if either condom use or a low viral load during penile-vaginal sex were sufficient to negate the realistic possibility of HIV transmission, and avoid criminal liability for non-disclosure, 98% participants in our cohort would face no legal obligation to disclose to sexual partners. Public health and human rights advocates have argued that, at a minimum, either condom use or a suppressed viral load during vaginal or anal sex should be sufficient to remove the legal obligation to disclose (emphasizing that additional factors might also be relevant in determining HIV transmission risk on a case-by-case basis). Further, they maintain that the legal obligation to disclose should be removed in cases where there is very low risk of transmission, such as in cases of oral sex."</p> <p>8. In the wrap-up of the Interpretation section some comment is warranted that juxtaposes one of the assumptions driving the application of the law of aggravated sexual assault to HIV non-disclosure - i.e., that it is intended to protect women and their sexual autonomy vis-à-vis partners -- with the evidence shown by this study that fact the potential for criminal accusation, prosecution and conviction for HIV non-disclosure was disproportionately borne by women in this study. Response: Thank you for this important comment. We have incorporated these suggested changes into the interpretation section of our manuscript (page 16): "Among this highly marginalized and criminalized cohort, women were at increased risk of prosecution if they did not disclose their HIV status. Our findings contravene the belief that HIV criminalization is a means of protecting women; a rationale previously used to support the expansion of the use of criminal law against people living with HIV. While women are underrepresented among defendants in Canadian non-disclosure prosecutions to date, marginalized women feature prominently among those who have faced criminal charges; including women living with addiction, survivors of abuse, and Indigenous women. Our findings suggest that current case law may disproportionately impact the most marginalized and vulnerable women living with HIV in Canada, and may accentuate gendered barriers to healthcare engagement, and autonomous sexual decision-making. Future work should evaluate the awareness and impact of HIV criminalization among women living with HIV in Canada who are disproportionately affected by HIV or underserved by health services, and who encounter considerable barriers to safe disclosure."</p>
Reviewer 2	Eric Mykhalovskiy
Institution	Department of Sociology, York University, Toronto
General comments (author response in bold)	<p>1. I think this is an extremely important paper that makes a timely empirical contribution to debates and discussions occurring among multiple stakeholders in Canada about the potential social consequences and differential impact of the Supreme Court of Canada decision in R v Mabior. I have no doubt that the paper will be widely read by practitioners, lawyers, public health personnel, advocates, researchers, people living with HIV and others involved with HIV/AIDS in Canada and beyond. The paper also addresses the application of the realistic possibility of HIV transmission test among people who inject drugs which is a novel contribution. Response: Thank you very much for these kind comments.</p> <p>1. The one main concern I have is with how the disclosure obligation was operationalized. I would suggest that the authors choose a way of describing their research-based operationalization of the requirement to disclose that is more homologous with how that obligation is presented in R v Mabior. Response: Thank you for this important comment. We have revised our language throughout the manuscript in relation to the disclosure obligation under investigation. Specifically, we now include the following description of our main outcome variable in our methods section (page 7-8): We sought to identify participants who would face a legal obligation to disclose their HIV status to</p>

sexual partners if condom-protected penile-vaginal intercourse in the context of a low viral load (<1500 copies/mL) was sufficient to negate the realistic possibility of HIV transmission, and thus avoid criminal liability for HIV non-disclosure. Participants who self-reported 100% condom use during all episodes of penile-vaginal intercourse, and who also achieved viral load measurements consistently <1500 copies/mL within six months before the study interview were assumed to face no legal obligation to disclose their HIV status to sexual partners (Figure 1). We assumed that participants would face a legal obligation to disclose if they self-reported <100% condom use (regardless of viral load), or if they failed to achieve a viral load consistently <1500 copies/mL (regardless of condom use).

2. Please also consider my comments about how the data for Table 2 are presented in the paper.
Response: Thank you for this comment. We have revised Table 2 and feel it is now much clearer and easier to interpret.
We have also addressed comments from reviewer 2 presented as track changes in the revised manuscript.