Examination of a Canadian provincial prenatal HIV screening program: 2010 to 2014

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Abstract

Objectives Universal prenatal screening in the Canadian province of Alberta employs an ‘opt-out’ HIV screening strategy. We examined all women giving birth in the province and determined the frequency and characteristics of women having and not having HIV screening.

Methods All livebirths in Alberta from January 1, 2010 to December 31, 2014 were compiled from the Vital Statistics database and linked to HIV screening data to determine maternal demographic and prenatal care characteristics. Correlates associated with prenatal HIV screening, opting out of HIV screening, and not having any prenatal communicable disease screening were determined by multivariable statistics.

Results Of the 256,280 live births, 94.2% had prenatal HIV screening, 1.9% declined prenatal HIV screening, and 3.9% had no record of any prenatal communicable disease testing. Compared with those who had HIV screening, those who opted out of prenatal HIV screening were more likely to be over 40 years of age (adjusted odds ratio (AOR), 2.83 [2.12–3.78]) and less likely to be single (AOR, 0.67 [0.62–0.73]) and First Nations (AOR, 0.67 [0.56–0.82]). Those who received no prenatal communicable disease screening were less likely to be over 40 years of age (AOR, 0.81 [0.69–0.95]) and more likely to be single (AOR, 1.27 [1.21–1.33]) and have received no prenatal care (AOR, 6.78 [6.40–7.19]). Both the HIV decliners and prenatal non-testers were more likely to have used a midwife (AOR, 4.52 [3.83–5.35] and AOR, 2.44 [2.03–2.92], respectively).

Conclusion Demographic and prenatal care characteristics differ by a pregnant woman’s prenatal screening status. Policies to improve HIV screening coverage should take these variations into account.

Résumé

Objectifs Le dépistage prénatal universel dans la province canadienne de l’Alberta emploie une stratégie de « consentement présumé » au dépistage du VIH. Nous avons examiné toutes les femmes ayant donné naissance dans la province et déterminé la fréquence du dépistage du VIH et les caractéristiques des femmes ayant subi ou non ce type de dépistage.

Méthode Toutes les naissances vivantes en Alberta entre le 1er janvier 2010 et le 31 décembre 2014 ont été compilées à partir de la Base de données sur l’état civil et jumelées aux données sur le dépistage du VIH pour déterminer le profil démographique et les soins prénatals reçus par les mères. Les corrélats associés au dépistage prénatal du VIH, le refus du dépistage du VIH et l’absence de tout dépistage prénatal de maladies transmissibles ont été déterminés par analyses statistiques multivariées.

Résultats Pour 256 280 naissances d’enfants vivants, 94,2 % des mères ont subi un dépistage prénatal du VIH, 1,9 % ont refusé le dépistage prénatal du VIH, et dans 3,9 % des cas, il n’y avait aucun dossier de dépistage prénatal de maladies transmissibles. Comparativement aux mères ayant subi un dépistage du VIH, celles qui ont refusé le dépistage prénatal du VIH étaient plus

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susceptibles d'avoir plus de 40 ans (rapport de cotes ajusté [RCa] : 2,83 [2,12–3,78]) et moins susceptibles d'être célibataires (RCa : 0,67 [0,62–0,73]) et membres d'une Première Nation (RCa : 0,67 [0,56–0,82]). Celles qui n'ont subi aucun dépistage prénatal de maladies transmissibles étaient moins susceptibles d'avoir plus de 40 ans (RCa : 0,81 [0,69–0,95]) et plus susceptibles d'être célibataires (RCa : 1,27 [1,21–1,33]) et de n'avoir reçu aucuns soins prénatals (RCa : 6,78 [6,40–7,19]). Les mères ayant refusé le dépistage du VIH et celles n'ayant subi aucun dépistage prénatal étaient plus susceptibles d'avoir fait appel à une sage-femme (RCa : 4,52 [3,83–5,35] et RCa : 2,44 [2,03–2,92], respectivement).

Conclusion Le profil démographique et les soins prénatals reçus diffèrent selon le statut de dépistage prénatal d'une femme enceinte. Les politiques qui visent à améliorer la couverture du dépistage du VIH devraient tenir compte de ces écarts.

Keywords HIV · Prenatal screening · Pregnancy · Canada

Mots-clés VIH · Dépistage prénatal · Grossesse · Canada

Introduction

Universal prenatal human immunodeficiency virus (HIV) screening is a vital public health intervention to identify pregnant women unknowingly infected with HIV and prevent transmission to their infant. Identification of maternal HIV infection during pregnancy is crucial for timely implementation of antiretroviral prophylaxis, which can both improve the health of the mother and reduce the risk of vertical transmission from 25% (without prophylaxis) to < 5% (Forbes et al. 2012; Whitmore et al. 2012; Peters et al. 2017; Mandelbrot et al. 2015; Kimberlin et al. 2015; World Health Organization (WHO) 2016). A recent national study reported that 14 vertical HIV transmission events occurred between 2011 and 2016 in Canada; however, only five of these pregnant women were diagnosed prior to the onset of labour, indicating that Canadian prenatal care and HIV screening can still be improved (Bitnun et al. 2018).

Currently, in the Canadian province of Alberta, opt-out prenatal HIV testing is one component of the Provincial Prenatal Communicable Disease Screening Program whereby all pregnant women are to be screened for markers for HIV, hepatitis B virus (HBV), syphilis, varicella, and rubella at the time of their first prenatal visit. All testing through this program is performed centrally at the Public Health Laboratory (ProvLab). A positive HIV test stimulates a public health cascade which includes notification to regional public health and referral to an HIV specialist and obstetrician with experience in HIV care.

Previous studies have examined the demographics of pregnant women who did not have HIV testing or chose to opt out of HIV testing. In previous literature, lack of prenatal HIV screening has been associated with factors such as older age and being married (Kuo et al. 2014; Koumans et al. 2018; Wang et al. 2005). Two previous Canadian papers specifically examining women opting out of HIV screening reported correlates related to ethnicity, lack of fluency in English, older age, and using a midwife (Wang et al. 2005; Yudin et al. 2007). These previous studies were limited to women who

received prenatal care, and little is known about women who do not receive any prenatal testing prior to delivery. Limited access to prenatal care has been associated with poor health outcomes for both mother and child (Chen et al. 2007), and women without prenatal HIV testing may be more likely to test positive for HIV (Plitt et al. 2007; Remis et al. 2012).

We examined prenatal screening patterns for all pregnant women in the province of Alberta and report the proportion of women delivering infants in Alberta who (1) had prenatal HIV testing, (2) had prenatal screening but opted out of prenatal HIV testing, and (3) received no prenatal communicable disease testing. Demographic and prenatal care characteristics of women in these three testing groups were reported and correlates were described.

Materials and methods

Database creation

Demographic data from women who gave birth to live infants in Alberta between January 1, 2010 and December 31, 2014 were obtained from the Alberta Vital Statistics Registry, including maternal age, marital status, postal code, and birth attendant (e.g., physician or midwife). Single pregnancies resulting in multiple infant births were counted as one event. Demographic data were merged using unique patient identifiers (personal health number (PHN)). Data on HIV testing performed through the prenatal screening program were extracted from the ProvLab laboratory information systems. In addition, any other HIV testing performed in the gestational period was also captured (i.e., non-prenatal testing). HIV infection status was extracted from the Alberta Health Communicable Disease Reporting System (CDRS) to identify all known HIV-positive cases. Residence area (rural/urban) and income quintile were determined via postal code using standard Alberta Health methodologies. For the residence area variable, an individual's postal code was used to determine geographic boundaries, population densities, and

time to travel to a variety of health services. Physician billing code 03.03B, obtained from the provincial Supplemental Enhanced Service Event System (SESE), was used to determine the timing and frequency of prenatal care by a physician. Prenatal care was defined as having at least one medical visit billed as a prenatal care visit or having a midwife as the birth attendant (assuming that the midwife involved would have provided prenatal care during the pregnancy). Medical care from a family doctor or obstetrician during the gestational period, but without a prenatal care visit designation, was also extracted from the SESE database and was labelled as non-prenatal GP or OB visit.

Women having any HIV screening during pregnancy were defined as ‘testers’. Those who had prenatal screening performed but specifically opted out of HIV screening and had received no other HIV screening during pregnancy were classified as ‘decliners’. Pregnant women with no record of any prenatal screening during pregnancy and no HIV screening during pregnancy or women whose only HIV screening was at the time of delivery were classified as ‘non-testers’.

HIV testing

HIV testing was performed using a fourth-generation HIV antigen/antibody combination enzyme immunoassay (Architect, Abbott Laboratories, Lake Forrest, IL), and for samples that test positive by the screening assay, confirmatory testing was performed by western blot (Bio-Rad Laboratories, Hercules, CA). All confirmed HIV-positive prenatal specimens were reported to Alberta Health for appropriate follow-up and linkage to care.

Analysis

Categorical variables were compared using chi-square tests and Z-tests of proportion. Multivariable logistic regression with generalized estimating equation (GEE) method for estimation was used to compare factors independently associated with women who had prenatal HIV testing compared with decliners and non-testers. Multivariable logistic regression with GEE method for estimation was used to account for repeated measures of individual women with multiple pregnancies during the study period. Although QIC (Quasi-likelihood under the Independence model Criterion) method (Cui and Qian 2007) was used for inclusion of variables in the final model, all the variables were included in the final model in order to have the same variables in both decliners and non-testers. All data sets were merged using SAS 9.3 (SAS Institute, Cary, NC) and statistical analysis was performed using Stata 15 (StataCorp, College Station, TX).

Results

In Alberta from 2010 to 2014, there were 256,280 live births from 203,220 women. Overall, 94.2% ($n = 241,415$) of pregnancies had HIV testing during their pregnancy (testers), 1.9% ($n = 4786$) declined HIV prenatal testing (decliners), and 3.9% ($n = 10,079$) did not have any prenatal screening prior to delivery (non-testers). Of the women who received HIV testing during pregnancy, 98.7% (238,242) received testing through the provincial prenatal screening program. The other 1.3% (3173) received their HIV serology testing via routine serology requisitions while pregnant (‘non-prenatal testers’).

Of all pregnancies where the woman had prenatal HIV testing performed through the provincial prenatal screening program, 69.3% ($n = 165,104$) were tested in the first trimester and 96.8% ($n = 230,689$) received their first test before the third trimester. There were 324 pregnancies where the woman had her first prenatal HIV test at the time of delivery. The median maternal age was 29 years (IQR, 26–33 years); most women gave birth in a hospital (97.8%), and the majority with a physician (93.1%). There was a total of 24 new HIV cases identified, 17 through the provincial prenatal screening program and 7 through non-prenatal screening.

Age was significantly associated with HIV testing status; women over 40 years of age had the highest proportion of decliners (3.1%) compared with women under 20 years of age (0.7%, $p < 0.001$) (Table 1). Younger age was associated with non-testers; women under 20 years had had a higher proportion of non-testers than women over 40 years (5.2% vs. 3.9% respectively, $p < 0.001$). There was a significant association between residency area and testing pattern; metropolitan areas had the highest proportion of decliners and the lowest proportion of non-testers. The proportion of decliners increased with increasing income quintile while the proportion of non-testers decreased. Both First Nations status and single marital status were associated with higher proportion of non-testers (5.0% vs. 3.9%, $p < 0.0001$ and 4.8% vs. 3.5%, $p < 0.0001$, respectively) but a lower proportion of decliners (0.79% vs. 1.9%, $p < 0.0001$ and 1.1% vs. 2.2%, $p < 0.0001$, respectively).

Compared with women who had care only from a physician, those who had midwifery care had a higher proportion of HIV decliners (11.4% vs 1.7%, $p < 0.001$) and non-testers (11.1% vs. 3.3%, $p < 0.001$). Among those women who sought prenatal care from a physician only, timing of first prenatal visits and the number of prenatal physician visits were associated with being a non-tester. When care was

Table 1 Maternal and clinical characteristics of live births by HIV testing status, Alberta, Canada, 2010–2014

	Live births, <i>N</i>	Prenatally tested (%)	Declined (%)	Not tested (%) ^a	<i>p</i> value ^b
Overall	256,280 (100)	241,415 (94.2)	4786 (1.9)	10,079 (3.9)	
Year					< 0.001
2010	49,374	46,379 (93.9)	882 (1.8)	2113 (4.3)	
2011	49,607	46,842 (94.3)	839 (1.7)	1926 (3.9)	
2012	51,131	48,339 (94.5)	862 (1.7)	2463 (3.8)	
2013	51,866	49,136 (94.7)	957 (1.9)	1773 (3.4)	
2014	54,320	50,719 (93.4)	1246 (2.3)	2337 (4.3)	
Age group (years)					< 0.001
< 20	9327	8781 (94.2)	62 (0.67)	484 (5.2)	
20–29	119,603	112,685 (94.2)	1746 (1.5)	5172 (4.3)	
30–39	119,945	113,058 (94.3)	2751 (2.3)	4136 (3.5)	
≥ 40	7405	6891 (93.1)	227 (3.1)	287 (3.9)	
Residence area					< 0.001
Remote rural	8406	7960 (94.7)	93 (1.1)	353 (4.2)	
Rural	47,037	44,015 (93.6)	833 (1.8)	2189 (4.7)	
Urban	35,074	32,960 (94.0)	547 (1.6)	1567 (4.5)	
Metro	165,713	156,436 (94.4)	3313 (2.0)	5964 (3.6)	
Income quintile					< 0.001
Q1 (lowest)	54,249	51,096 (94.2)	817 (1.5)	2336 (4.3)	
Q2	46,924	44,143 (94.1)	801 (1.7)	1980 (4.2)	
Q3	43,917	41,367 (94.2)	841 (1.9)	1709 (3.9)	
Q4	52,685	49,807 (94.5)	1074 (2.0)	1804 (3.4)	
Q5 (highest)	58,455	54,958 (94.0)	1253 (2.1)	2244 (3.8)	
First Nations					< 0.001
Yes	17,014	16,022 (94.2)	135 (0.8)	857 (5.0)	
No	239,266	225,393 (94.2)	4651 (1.9)	9222 (3.9)	
Not married					< 0.001
Yes	75,716	71,207 (94.0)	857 (1.1)	3652 (4.8)	
No	179,842	169,563 (94.3)	3918 (2.2)	6361 (3.5)	
Previously tested HIV-positive	126	91 (72.2)	14 (11.1)	21 (16.7)	< 0.0001
Location of delivery					< 0.001
Hospital	250,707	236,899 (94.5)	4295 (1.7)	9513 (3.8)	
At home	4452	3524 (79.2)	423 (9.5)	505 (11.3)	
Other ^c	1121	992 (88.5)	68 (6.1)	61 (5.4)	
Type of prenatal care received					< 0.001
None	9309	7426 (79.8)	146 (1.6)	1737 (18.7)	
Physician prenatal care only	238,667	226,903 (95.1)	3990 (1.7)	7774 (3.3)	
Midwife prenatal care only	3550	2749 (77.4)	406 (11.4)	395 (11.1)	
Both physician and midwife care	4754	4337 (91.2)	244 (5.1)	173 (3.6)	
Any non-prenatal GP or OB visit during pregnancy?	253,310	236,434 (99.2)	5356 (97.2)	11,520 (92.0)	
Timing of first physician prenatal visit ^d					< 0.001
No visits	9309	7426 (79.8)	146 (1.6)	1737 (18.7)	
1st trimester	178,692	172,053 (96.3)	3051 (1.7)	3588 (2.0)	
2nd trimester	49,897	46,971 (94.1)	783 (1.6)	2143 (4.3)	
3rd trimester	10,078	7879 (78.2)	156 (1.6)	2043 (20.3)	
Total number of physician prenatal visits ^d					< 0.001
0 visits	9309	7426 (79.8)	146 (1.6)	1737 (18.7)	
1–6 visits	39,832	36,243 (91.0)	654 (1.6)	2935 (7.4)	
7–13 visits	152,263	145,742 (95.7)	2568 (1.7)	3953 (2.6)	
14+ visits	46,572	44,918 (96.5)	768 (1.7)	886 (1.9)	

^a Not tested includes 324 women with HIV testing done at delivery only^b *p* value comparing all 3 groups (tested, decliners, non-testers) by chi-square^c Other represents deliveries taking place en route to hospital and at unknown or other locations^d Timing and total number of prenatal visit variables only available for women seeking care from a physician only

initiated in the first trimester, 2.0% of women were non-testers. This increased to 4.3% when care was initiated in the second trimester and to 20.3% when initiated in the third trimester ($p < 0.001$). Among women who had between 1 and 6 physician prenatal visits, 7.4% were non-testers, compared with the 1.9% of non-testers among those with 14 or more

prenatal care visits ($p < 0.001$). The number of decliners was relatively stable no matter the number of visits or timing of first prenatal visit. Delivery at non-hospital locations was associated with higher proportions of decliners (8.8% vs. 1.7%, $p < 0.001$) and non-testers (10.2% vs. 3.8%, $p < 0.001$) than those who delivered at hospitals.

In regression modelling, declining prenatal HIV testing (compared with women accepting HIV testing) was independently associated with later calendar year (adjusted odds ratio (AOR) 2014 vs. 2010, 1.4; 95% CI 1.2–1.5) and older age (e.g., women > 40 years of age vs < 20) (AOR 2.8; 95% CI 2.1–3.8) (Table 2). Residence area was not associated with declining

Table 2 Adjusted odds ratios (AOR) from logistics regression analysis comparing women who declined prenatal HIV testing and women who had no prenatal testing to women accepting prenatal HIV testing, Alberta 2010–2014

	Declined (opted out)		No testing	
	AOR	(95% CI)	AOR	(95% CI)
Year				
2010	1.00		1.00	
2011	0.94	(0.86–1.04)	0.90	(0.85–0.96)
2012	0.96	(0.87–1.04)	0.87	(0.82–0.93)
2013	1.05	(0.96–1.15)	0.78	(0.73–0.83)
2014	1.36	(1.25–1.48)	1.01	(0.95–1.07)
Age group (years)				
< 20	1.00		1.00	
20–29	1.45	(1.12–1.87)	0.95	(0.86–1.05)
30–39	2.02	(1.56–2.62)	0.78	(0.70–0.87)
≥ 40	2.83	(2.12–3.78)	0.81	(0.69–0.95)
Residence area				
Remote rural	0.90	(0.73–1.12)	1.05	(0.93–1.18)
Rural	1.14	(1.05–1.24)	1.32	(1.25–1.39)
Urban	0.96	(0.88–1.06)	1.28	(1.20–1.36)
Metro	1.00		1.00	
Income quintile				
Q1 (lowest)	0.85	(0.78–0.94)	0.96	(0.90–1.02)
Q2	0.89	(0.82–0.98)	1.00	(0.94–1.07)
Q3	0.95	(0.87–1.04)	0.94	(0.88–1.01)
Q4	0.97	(0.89–1.05)	0.86	(0.81–0.92)
Q5 (highest)	1.00		1.00	
First Nations	0.67	(0.56–0.82)	0.96	(0.89–1.05)
Unmarried	0.67	(0.62–0.73)	1.27	(1.21–1.33)
Previous tested HIV positive	9.14	(5.03–16.61)	3.78	(2.04–6.98)
Prenatal care category				
Physician care only	1.00		1.00	
No prenatal care	1.08	(0.92–1.28)	6.78	(6.40–7.19)
Midwife care only	4.52	(3.83–5.35)	2.44	(2.03–2.92)
Physician and midwife care	2.06	(1.75–2.43)	0.77	(0.63–0.94)
Location of delivery				
Hospital	1.00		1.00	
Home	1.98	(1.67–2.35)	2.80	(2.36–3.32)
Other ^a	1.38	(1.05–1.81)	1.26	(0.94–1.68)

^a Other represents deliveries taking place en route to hospital and at unknown or other locations

^b Regression model was controlled for all variables listed

prenatal HIV screening. Lower income quintiles (e.g., AOR, 0.85; 95% CI, 0.78–0.94 for lowest income quintile), being First Nations (AOR, 0.67; 95% CI 0.56–0.82) and being unmarried (AOR, 0.67; 95% CI 0.62–0.73) were protective for declining prenatal HIV testing. Women who previously tested positive for HIV were more likely to decline prenatal HIV testing (AOR, 9.1; 95% CI 5.0–16.6). Women who sought care from a midwife were more likely to be decliners than those with physician-only care (AOR, 4.5; 95% CI 3.8–5.4), even if they also received prenatal care from a physician (AOR, 2.1; 95% CI 1.8–2.4). Women who delivered their children at home (AOR, 2.0; 95% CI 1.7–2.4) had a higher proportion of decliners compared with those who gave birth in a hospital.

In multivariable analysis comparing non-testers with testers (Table 2), a higher proportion of younger aged women were non-testers; compared with younger women, women aged 30 to 39 years old (AOR, 0.78; 95% CI 0.70–0.87) and women over 40 years of age (AOR, 0.81; 95% CI 0.69–0.95) were significantly more likely to be screened. Compared with women in metropolitan areas, women in rural areas or urban areas were significantly more likely to have no testing (AOR, 1.3; 95% CI 1.3–1.4; AOR, 1.3; 95% CI 1.2–1.4, respectively). Unmarried women (AOR, 1.3; 95% CI 1.2–1.4) and women who had previously tested positive for HIV (AOR, 3.8; 95% CI 2.0–7.0) were significantly more likely to be non-testers. Women receiving prenatal care from a midwife only had higher odds of being non-testers (AOR, 2.4; 95% CI 2.0–2.9) when compared with those who sought care from a physician only. Those who received no prenatal care had the highest odds of being a non-tester (AOR, 6.8; 95% CI 6.4–7.2).

Discussion

In Alberta, the vast majority of women receive HIV testing during pregnancy. Maternal and clinical care characteristics of the 1.9% of pregnancies where HIV testing was declined were different than those from the 3.9% of pregnancies where women did not receive any prenatal communicable disease screening. However, both decliners and non-testers were more likely to have had a previous positive HIV test, given birth at home, and received care from a midwife.

The trend of variables such as older maternal age and being married being associated with opting out of prenatal HIV testing may reflect a low perceived maternal risk of HIV infection. This may be a motivating factor for pregnant women to decline testing for HIV. In contrast, those women perceived as being at higher risk may be more likely to be counselled to accept HIV testing (MacDonald et al. 2001). In this study, lower proportions of decliners were seen among younger ages, unmarried women, and First Nations women.

Women receiving no prenatal screening in this cohort tended to be younger, unmarried and, not surprisingly, were

less likely to have received prenatal care than those women who had prenatal screening during their pregnancy. This population may represent a group at higher risk for HIV and other sexually transmitted infections who should be receiving screening for HIV as well as other communicable diseases during pregnancy. Recent congenital syphilis cases in Alberta support this need to have all mothers screened for infectious disease markers during pregnancy (Smyczek 2017).

Overall, 30.3% of women in our study did not receive prenatal care within the first trimester (with prenatal care being defined in our study methodology as having a physician billing for prenatal care or having a midwife as the birth attendant) and 3.6% did not receive any prenatal care at all during their pregnancy. As would be anticipated, a higher proportion of non-testers did not receive any prenatal care (17.2%) compared with women who received HIV screening (3.1%) or opted out of HIV screening (3.1%). However, in 92% of pregnancies with no documented prenatal screening, the woman had seen a general practice physician or obstetrician during her pregnancy. As the timing and reason for these visits are not known, some visits may have been prior to a woman knowing she was pregnant, or for issues outside the scope of the pregnancy itself. However, ensuring that unscreened women interacting with the health care system are offered prenatal screening is of public health importance, especially for higher risk women who may not seek prenatal care directly, but may come into contact with the medical system for unrelated issues. Identifying missed opportunities for earlier or any prenatal screening would be of interest.

In this study and others, midwifery care was associated with an increased proportion of women who did not have HIV testing during their pregnancy (Wang et al. 2005; Guenter et al. 2003). Midwifery practice philosophy promotes patient choice (Alberta Association of Midwives 2017), and in a 2003 Canadian paper using self-reported data, midwives self-reported the lowest HIV prenatal screening rates, while the highest were among family physicians (Guenter et al. 2003). However, in our study population, the proportion of both decliners and non-testers decreased over the study period for women receiving midwifery care (decliners decreased from 10.2% to 8.3%, non-testers from 10.2% to 5.7%), suggesting that midwives and their patients may be becoming more aligned with current prenatal screening guidelines.

By using total provincial births as the study denominator and controlling for repeated measures, we were able to provide an accurate description of women who did not receive HIV prenatal testing in Alberta; however, there are some limitations to our study. There is a risk of misclassification of the prenatal care variable due to errors in physician billings, which was our method of determining type of care. In addition, women could have been misclassified as non-testers rather than decliners if they had refused HIV testing but received screening for the other prenatal markers outside of the

provincial prenatal program. We did examine non-prenatal programming HIV testing and identified 1.3% of women who fell into this category, indicating that the potential for this type of misclassification is low. Finally, pregnant women migrating to Alberta may have had prenatal screening performed elsewhere, which was not captured by our study methods. However, separate work examining prenatal screening in Alberta found that missing prenatal screening tests only affected a very small proportion of these migrant women (Plitt et al. 2016).

Conclusion

Prenatal HIV screening is a key tool to prevent vertical HIV transmission; however, proper medical intervention can only be implemented if HIV infection is identified prior to labour and delivery. Our findings build on previous Canadian studies examining pregnant women who opt out of prenatal HIV testing, and we provide novel insight into the demographics and care characteristics of women who do not receive any prenatal infectious disease screening prior to delivery. Women who decline prenatal HIV testing differ in their demographic and prenatal care characteristics from women who do not get any prenatal testing for communicable diseases. The information provided here may help to identify barriers to prenatal HIV screening and improve health outcomes for infants born in Alberta.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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