

An Investigation of Early Syphilis Among Men Who Have Sex With Men—Alaska, 2018

Contributed by

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Executive Summary

During 2018, the Alaska Section of Epidemiology (SOE) noted a dramatic increase in early syphilis (primary, secondary, or early non-primary, non-secondary) cases in Alaska, predominantly among gay, bisexual, and other men who have sex with men (MSM). To address this public health threat, the Alaska Department of Health and Social Services requested assistance from the US Centers for Disease Control and Prevention (CDC) to further characterize the increase in early syphilis cases, assess perspectives among key stakeholders in healthcare and community-based organizations (CBOs), determine knowledge, attitudes, and practices of syphilis prevention and control among MSM and healthcare providers in Alaska, and to develop recommendations for further syphilis control and prevention measures.

In October 2018, the investigative team compiled demographic and clinical characteristic data of all early syphilis cases reported in Alaska from January 1, 2015 through November 2, 2018 and administered surveys to a convenience sample of MSM Alaska residents and a convenience sample of healthcare providers in Alaska who screen for STDs.

The findings from this investigation indicated that some MSM in Alaska are engaging in high-risk sexual activities often with people who are not Anchorage or Alaska residents and that meeting sex partners through online sites and/or geospatial mobile apps is common in Alaska. However, venue based engagement with the community and the success in recruiting survey participants suggests a motivated MSM community that is interested in learning more about syphilis and how to maintain a healthy sex life. Moreover, the findings suggested that there is a knowledge/practice gap amongst healthcare providers in Alaska: providers report knowledge of syphilis screening and clinical management, but sexual history taking is not a part of routine patient care and many providers report not screening at-risk men for syphilis at least annually. The findings also noted several important limitations of the current investigation and provided recommendations for further syphilis control and prevention measures in Alaska.

INTRODUCTION

The Alaska Section of Epidemiology (SOE) noted a dramatic increase in early syphilis (primary, secondary, or early non-primary, non-secondary) cases among Alaska residents in early 2018. By August 31, 2018, 58 cases of early syphilis had been reported to SOE, an increase of >500% when compared to the first 8 months of 2017. During 2018, 76% of cases occurred among gay, bisexual, and other men who have sex with men (MSM), and predominantly among MSM living in Anchorage.

To address this public health threat, the Alaska Department of Health and Social Services requested assistance from CDC's Division of STD Prevention to: (1) further characterize the increase in early syphilis cases, (2) assess perspectives among key stakeholders in healthcare and community-based organizations (CBOs), (3) determine knowledge, attitudes, and practices of syphilis prevention and control among MSM and healthcare providers in Alaska, and (4) develop recommendations for further syphilis control and prevention measures. This memo provides a summary of activities, findings, and recommendations for addressing this increase in early syphilis among MSM in Alaska.

METHODS

On October 10, 2018, the Epidemic Intelligence Service (EIS) office issued Epi-Aid 2019–002, the primary activities of which were:

1. a rapid ethnographic assessment (RAP) of key stakeholders;
2. compiling demographic and clinical characteristic data of all early syphilis cases reported in Alaska from January 1, 2015 through November 2, 2018; and
3. knowledge, attitudes, and practices (KAP) surveys of the MSM community and healthcare providers who screen for STDs in Alaska.

The 4-person Epi-Aid RAP team consisted of behavioral scientists who spent one week in Anchorage (October 15–19) and conducted 49 in-person, semi-structured qualitative interviews with 64 individuals in four primary categories: public health partners, healthcare providers providing care to MSM diagnosed with or at-risk for syphilis, staff at CBOs that provided services to MSM, and MSM from the community. The RAP team identified key informants through discussions with Alaska Division of Public Health (ADPH) leadership and STD/HIV program staff. The RAP team contacted healthcare providers who had diagnosed syphilis in an MSM in the previous year, and all public health staff and partners providing sexual health services in the Anchorage area. Key informants in the community were referred to the RAP team via ADPH leadership and STD/ HIV program staff. These key informants also assisted with the recruitment of members of the MSM community in Anchorage. Each contact was asked to recommend other possible contacts who might have information regarding the syphilis increases among MSM in the Anchorage area. Altogether, recommendations from leadership and staff for the STD and HIV programs along with participant referrals created the pool of

prospective participants contacted by the RAP team. The final results of the RAP are forthcoming.

The 4-person Epi-Aid EIS officer team spent three weeks in Anchorage (October 15–November 2). Early syphilis case data from 2015–2018 were extracted from Patient Reporting Investigation Surveillance Manager (PRISM) into an Excel database. EIS officers developed data collection instruments (paper and online-based) for the anonymous, self-administered KAP surveys in collaboration with ADPH STD/HIV program staff. Data collection instruments were developed based on known syphilis risk factors and STD prevention opportunities. Inclusion criteria for the MSM community survey were 1) ≥ 18 years of age, 2) identifying as non-female gender, and 3) reporting oral or anal sex with a man in the past 6 months. The MSM community paper-based survey was distributed in Anchorage venues, CBO events, and local clinics. Community members who completed the paper surveys in venues were provided with free condoms, lubricant, STD informational brochures, and the opportunity to enter a raffle to win a \$20 dollar gift card.

The online-based MSM community survey was developed using Epi Info™ Web Survey. The web link to this survey was printed and distributed on public health messaging cards in local venues, CBOs, and local clinics, and advertised on social media (e.g., Facebook) and geospatial mobile apps (e.g., Grindr, Scruff). The MSM community survey was available online from October 19, 2018–November 13, 2018. No incentives were offered to online participants.

The healthcare provider survey was online only and developed using Epi Info™ Web Survey. Any clinician who practices in Alaska and screens patients for STDs was eligible to participate in the survey; healthcare providers determined on their own if they met these inclusion criteria. The web link to the healthcare provider survey was distributed to healthcare providers in a Public Health Alert Network (PHAN) update on the syphilis outbreak (published October 23, 2018) by the Alaska Division of Public Health via the PHAN distribution list, as well as by key local healthcare providers via additional hospital/clinic distribution lists. The healthcare provider survey was available online October 23, 2018–November 13, 2018. No incentives were provided to healthcare providers for completion of surveys.

FINDINGS

Reported Early Syphilis Cases in Alaska, 2015–2018: Key Epidemiologic Findings from Surveillance and Case Investigation Data

During January 1–November 2, 2018, 76 people were diagnosed with early syphilis in Alaska. The majority of 2018 cases (87%; n = 66) lived in the Anchorage/Mat-Su region. Among all 2018 early syphilis cases, 88% (n = 67) were men and 12% (n = 9) were women; and 2 of these 9 women were pregnant.¹ Among men, 78% (n = 52) were men who had sex with men only, 9% (n = 6) were men who had sex with both men and women, and 3% (n = 9) were men who had sex with women only. Overall, MSM comprised 76% (n = 58) of cases. Key demographic, co-infection, and epidemiologic risk factor data for the 2015–2018 early syphilis cases among MSM are shown in **Table 1**.

Reported 2018 Early Syphilis Cases Among MSM (N = 58)

- 31% (n = 18) of early syphilis cases in MSM were between ages 25–34 and 31% (n = 18) were ≥ 45 years old.
- 95% (n = 55) self-reported male gender
- 53% (n = 31) reported being Non-Hispanic White
- 88% (n = 51) reported living in the Anchorage/Mat-Su region
- 31% (n = 18) had documentation of prior HIV diagnosis
 - 72% (13/18) of which were virally suppressed
- Sexual behavior risk factors in past 12 months
 - Median number of reported sex partners was 3 (IQR: 2–6)
 - 74% (n = 43) reported any unprotected anal sex with a male partner
 - 3% (n = 2) reported any transactional sex
 - 46% (n = 27) reported sex with anonymous partner
 - 46% (n = 27) reported sex with partner(s) met via Internet
 - >20% of MSM with early syphilis had missing data for past sexual behaviors (either coded as “Missing” or as “Did Not Ask”)
- History of drug use in the past 12 months
 - 19% (n = 11) reported any methamphetamine use
 - 7% (n = 4) reported any heroin use
 - 4% (n = 2) reported any cocaine use
 - 2% (n = 1) reported any crack cocaine use
 - 23% (n = 13) reported any “other drug” use
 - 9% (n = 5) reported intravenous drug use (IDU)
 - >50% of MSM with early syphilis had missing data for past drug use (either coded as “Missing” or as “Did Not Ask”)

¹ A probable case of congenital syphilis was diagnosed in an infant born in March 2018.

- 14% (n = 8) reported incarceration within the past 12 months
 - 9% of MSM with early syphilis had missing data for past incarceration (either coded as “Missing” or as “Did Not Ask”)
- HIV pre-exposure prophylaxis (PrEP) use and any travel out of state were not systemically collected, but data on these variables were extracted from partner services interview notes if available
 - 5% (n = 3) had documented history of PrEP use in the past 12 months
 - 29% (n = 17) reported history of travel outside of Alaska in the past 12 months

Trends in Reported Early Syphilis Case Data Among MSM — 2015–2018 (N = 102)

- During 2015–2016, no 12-month risk factor data were available for the following variables: unprotected anal sex with male partner, sex with anonymous partner, any transactional sex, drug use (methamphetamines, cocaine, crack, heroin, nitrates or poppers, or other drugs), intravenous drug use, or history of incarceration.
- 51% (n = 52) of cases were Non-Hispanic White
- 83% (n = 85) resided in Anchorage/Mat-Su
- The proportion of people living with HIV ranged from 23% (n = 3) in 2015 to 35% (n = 7) in 2017
- Sexual behavior risk factors in past 12 months
 - Only 2017 data (n = 20) were complete enough for comparison with 2018 data (n = 58)
 - During 2017, 50% (n = 10) reported unprotected anal sex with a male partner and 45% (n = 9) reported sex with an anonymous partner, compared to 74% (n = 43) and 46% (n = 27) in 2018, respectively
 - During 2017, 0% (n = 0) reported transactional sex compared to 3% (n = 2) in 2018
 - During 2017, 85% (n = 17) reported sex with partner(s) met via Internet, compared to 46% (n = 27) in 2018
 - 5% (n = 1) of cases were not asked this question (i.e., “Did Not Ask” response option used) in 2017 vs. 22% (n=13) of cases in 2018
- Drug use reported in past 12 months
 - During 2017, 0% (n = 0) reported methamphetamine use compared to 19% (n = 11) in 2018
 - 9% (n = 5) reported IDU in 2018 compared to 0% in 2017
 - During 2017, 30% of data on drug use (including IDU) were missing and approximately 20-25% of MSM with syphilis were not asked questions about drug use (including IDU), compared to 10% and over 40%, respectively, in 2018
- History of incarceration in past 12 months
 - 10% (n = 2) reported history of incarceration in 2017 compared to 14% (n = 8) in 2018
 - 30% of data was missing for history of incarceration during 2017, compared to approximately 10% missing during 2018

- 5% were not asked about history of incarceration in 2017 compared to 38% in 2018
- 50% (n = 10) of 2017 cases reported a history of travel outside of Alaska in the 12 months before diagnosis, compared with 29% (n = 17) in 2018

Community MSM KAP Survey Key Findings

Between October 19, 2018–November 13, 2018, 138 eligible MSM completed the community KAP survey, of which 86% (n = 119) of participants reported currently living in Alaska. Because the community KAP survey was advertised broadly online, and not just sent to specific individuals, response rates could not be calculated. Of the 119 Alaska resident participants, 50% (n = 60) took the paper version and 50% (n = 59) took the online version. Approximately, 40% (n = 48) of Alaska resident participants were between ages 25–34, 72% (n = 80) identified as Non-Hispanic White, and 76% (n = 90) currently live in the Anchorage/Mat-Su region. Alaska resident participants reported identifying as male gender (92%; n = 110); non-binary (3%; n = 3), other (3%; n = 3), transgender woman (2%; n = 2), and transgender man (1%; n = 1). Any prior HIV diagnosis or a 2018 syphilis diagnosis was reported by 12% (13/109) and 9% (10/112) of Alaska resident participants, respectively. Community MSM KAP survey results are shown in **Table 2**.

Behavioral Risk Factors Among MSM Alaska residents (N = 119)

- Participants reported median 3 (IQR: 1–6) sex partners in the last 6 months
- When asked about condom use during anal sex in the last month, of those who reported engaging in anal sex (n = 94):
 - 43% (40/94) reported never using condoms during anal sex
 - 85% (80/94) reported any condomless anal sex (i.e., did not always use condoms)
- Compared to one year ago, of those who reported currently engaging in anal sex:
 - 60% (61/101) reported no change in current condom use during anal sex
 - 20% (20/101) reported increased current condom use, and
 - 20% (20/101) reported decreased current condom use
 - Of those who reported decreased current condom use, reasons commonly reported included: HIV PrEP use (25%; 5/20) and regular or fewer sex partner(s) (40%; 8/20)
- 71% (84/119) reported meeting a partner online or on an app in the past 6 months
 - Of these 84, the most commonly reported online sites or geospatial apps used were Grindr (74%; n = 62), Scruff (51%; n = 43), and Growlr (24%; n = 20)
 - Others that were reported by at least 5 people include Tinder (19%; n = 16), Facebook (7%; n = 6), Adam4AdamRADAR (6%; n = 5), and Instagram (6%, n = 5).
- 3% (3/113) reported engaging in any transactional sex
- 29% (31/106) reported engaging in at least 1 episode of group sex in the past 6 months

- In the past 6 months, participants reported using alcohol (68%; n = 81), marijuana (46%; n = 55), crack/cocaine (9%; n = 10), sedatives (4%; n = 5), methamphetamines (3%; n = 3), prescription opiates (3%; n = 3), heroin (2%; n = 2), GHB (1%; n = 1), MDMA (i.e., ecstasy; <1%; n = 1), and psychedelic mushrooms (<1%; n = 1)
- Among Anchorage/Mat-Su residents (n = 90), 45% (n = 40) reported having a partner outside of Anchorage and 28% (n = 25) reported a partner outside of Alaska in the past 6 months

Healthcare Seeking Behavior Among MSM Alaska Residents (N = 119)

- 37% (43/115) reported they were not tested for syphilis in the past 12 months and 27% (30/110) reported their healthcare provider had not spoken to them about their risk for STDs in the past 12 months.
 - When those who did not undergo syphilis screening in the past 12 months (n = 43) were asked why they were not screened:
 - 31% (n = 13) reported “no particular reason”
 - 29% (n = 12) reported they perceived themselves to be at low risk for infection.
 - 14% (n = 6) did not go see a healthcare provider in the past 12 months
 - 10% (n = 4) saw a healthcare provider, but they did not ask patient to be (or if patient wanted to be) tested for syphilis
 - 7% (n = 3) did not know where to get tested for syphilis
 - 2% (n = 1) were afraid of finding out they had syphilis
- 69% (78/113) reported that their healthcare provider knows they have sex with men
 - For those whose healthcare provider knew they were MSM, 72% (56/78) were screened for syphilis in the past 12 months, compared to only 34% (12/35) amongst participants who reported their healthcare provider did not know their MSM status or if they were unsure if their healthcare provider knew

PrEP Use Among HIV-negative MSM Alaska Residents (N = 95)

- 36% (33/92) of HIV-negative MSM reported that their healthcare provider discussed HIV PrEP with them in the past 6 months
- 21% (19/90) of HIV-negative MSM reported taking HIV PrEP in the past 6 months

Syphilis Perceptions and Knowledge Among MSM Alaska Residents (N = 119)

- Majority of men (94%; 103/109) knew that syphilis could be transmitted during anal sex, however 19% (21/109) did not know they could get syphilis from oral sex
- 80% (87/109) knew that you could get syphilis multiple times
- 33% (36/109) did not know that condoms do not always prevent syphilis

Syphilis Attitudes Among MSM Alaska Residents (N = 119)

- When asked what the health department could do to protect the community from syphilis:

- 71% (54/76) reported that ADPH should provide education and community outreach to increase awareness of the syphilis epidemic
- 22% (17/76) reported that there should be free or low cost STD testing made available to the community

Healthcare Provider KAP Survey Key Findings

Between October 23, 2018–November 13, 2018, 55 healthcare providers completed the online-based healthcare provider KAP survey. Because the survey link was advertised broadly, and not solely distributed to specific healthcare providers, response rates could not be calculated. Of healthcare providers surveyed: 38% (n = 21) of healthcare providers were physicians, 22% (n = 12) nurses, 15% (n = 8) physician assistants, and 16% (n = 9) nurse practitioners and over half of healthcare providers (53%; n = 29) reported their primary specialty to be Family Practice (other specialties: 11% Emergency Medicine, 11% Infectious Diseases, 11% Ob/Gyn, and 7% no specialty). Additionally, 65% (n = 36) of healthcare providers practice in the Anchorage/Mat-Su region. Of healthcare providers, 28% (13/46) diagnosed a case of syphilis in 2018. Healthcare provider KAP survey results are shown in **Table 3**.

Syphilis Knowledge, Attitudes, and Practices Among Alaska Healthcare Providers (N = 55)

- Proportion of patients that are MSM:
 - 51% (28/44) reported that “A few (1-10%)” of their male patients report themselves to be gay, bisexual, or other MSM
 - 15% (8/44) reported that “None (0%)” of their patients are MSM
 - 13% (7/44) reported “Some (11-49%)” of their patients are MSM
 - 2% (1/44) reported “Most (50-90%)” of their patients are MSM
- Syphilis knowledge:
 - 76% (32/42) reported knowing syphilis screening guidelines
 - 88% (37/42) are comfortable with the signs and symptoms of syphilis
 - 85% (35/41) can interpret syphilis laboratory test results
 - Only 17% (7/42) are comfortable diagnosing neurological complications of syphilis
- Taking a Sexual History:
 - 33% (13/39) of healthcare providers take a sexual history on a male patient both at the annual exam and if they suspect an STD
 - 18% (7/39) reported taking a sexual history on male patients only at annual exam
 - 15% (6/39) reported taking a sexual history on male patients at every visit
 - However, 28% (11/39) of healthcare providers report that they take a sexual history only when they suspect a patient has an STD or if it is related to the “chief complaint”
- Screening At-Risk Men for Syphilis:

- 48% (19/40) screen for syphilis in men who report sexual risk behaviors (e.g., multiple sex partners) at least annually
- 35% (16/40) reported screening for syphilis only upon patient request or if the patient presents with symptoms

PrEP Prescribing Among Alaska Healthcare Providers (N = 55)

- Overall, 38% (14/37) of healthcare providers reported prescribing HIV PrEP in the past 6 months
- Of healthcare providers who diagnosed a case of syphilis in 2018 and completed survey questions pertaining to PrEP (n = 10):
 - 80% (n = 8) reported prescribing PrEP in the past 6 months
 - One healthcare provider reported not prescribing PrEP
 - One healthcare provider reported not prescribing PrEP, but referring patients to a PrEP provider

Investigation Limitations

This investigation was subject to several limitations. Analyses of the early syphilis case data trends from 2015–2018 were limited as risk behavior data were not available for cases reported during 2015–2016. Although we were able to compare data from 2017 to 2018, a substantial proportion of cases were missing data. As a result, the proportion identified with any risk behavior may be an under or overestimate and observed differences or similarities between years may not be valid. Additionally, the surveyed MSM community and healthcare providers for the KAP surveys were convenience samples and, therefore, may not be representative of the eligible populations. There were no denominator data available for either survey sample to calculate a response rate or identify non-response bias. The inclusion criteria for the healthcare provider survey was any healthcare provider who screens their patients for STDs, and healthcare providers could decide on their own if they met this inclusion criteria; therefore, the sample may include some providers that were not eligible. The MSM community survey was distributed in urban venues, as well as advertised on social media and geospatial mobile apps, such that MSM living in more remote areas or without internet access may be underrepresented. Incentives were not provided to healthcare providers who completed the survey, which may have resulted in more motivated healthcare providers, or those with more interest (and experience) in syphilis, responding to the survey request. Finally, as the healthcare provider survey was distributed via pre-existing listservs, the sample may be biased towards public health workers and nurses, or healthcare providers who are already in close communication and/or collaboration with ADPH.

Summary of Investigation

- 1.** Some MSM in Alaska are engaging in high-risk sexual activities often with people who are not Anchorage or Alaska residents.
- 2.** Meeting sex partners through online sites and/or geospatial mobile apps is common in Alaska, particularly Grindr, Scruff, and Growlr.
- 3.** Venue based engagement with the community and the success in recruiting survey participants suggests a motivated MSM community that is interested in learning more about syphilis and how to maintain a healthy sex life.
- 4.** Although many MSM reported using condoms at least some of the time, some surveyed MSM reported using condoms inconsistently or never at all for anal sex and this had not changed in the past one year.
- 5.** There is a knowledge/practice gap amongst healthcare providers in Alaska: healthcare providers report knowledge of syphilis screening and clinical management for uncomplicated diagnoses. However, some healthcare providers also report that sexual history taking is not part of routine care for all patients. Additionally, many healthcare providers reported that they do not screen at-risk men for syphilis at least annually and MSM reported that many healthcare providers did not offer syphilis screening according to CDC guidelines.
- 6.** There is a need for robust epidemiological infrastructure to collect and analyze STD data for public health action.

Table 1. Characteristics of early syphilis cases in men who have sex with men (MSM) — Alaska, 2015–2018*

	2015 (N = 11) n (%)	2016 (N = 13) n (%)	2017 (N = 20) n (%)	2018 (N = 58) n (%)
Age group				
15-24	1 (9)	3 (23)	5 (25)	8 (14)
25-34	2 (18)	8 (62)	6 (30)	18 (31)
35-44	3 (27)	1 (8)	4 (20)	14 (24)
≥45	5 (45)	1 (8)	5 (25)	18 (31)
Self-reported gender				
Male	6 (55)	3 (23)	17 (85)	55 (95)
Transgender woman (Transgender male to female)	0 (0)	0 (0)	2 (10)	1 (2)
Unknown	5 (45)	10 (77)	1 (5)	2 (3)
Race and Hispanic ethnicity				
Non-Hispanic White	7 (64)	5 (38)	9 (45)	31 (53)
American Indian/Alaskan Native	1 (9)	1 (8)	2 (10)	9 (16)
Native Hawaiian/Pacific Islander	0 (0)	0 (0)	1 (5)	1 (2)
Black/African American	1 (9)	4 (31)	3 (15)	5 (9)
Hispanic/Latino	1 (9)	2 (15)	3 (15)	4 (7)
Asian	1 (9)	1 (8)	1 (5)	4 (7)
Multiracial	0 (0)	0 (0)	0 (0)	2 (3)
Unknown	0 (0)	0 (0)	1 (5)	2 (3)
Geographic region				
Anchorage/Mat-Su	8 (73)	11 (84)	15 (75)	51 (88)
Gulf Coast Region	1 (9)	0 (0)	1 (5)	2 (3)
Interior	0 (0)	1 (8)	1 (5)	1 (2)
Northern	1 (9)	0 (0)	0 (0)	0 (0)
Southeast	1 (9)	1 (8)	3 (15)	3 (5)
Southwest	0 (0)	0 (0)	0 (0)	1 (2)
HIV Co-infection and Bacterial STI History				
HIV-positive	3 (27)	3 (23)	7 (35)	18 (31)
HIV viral load, at time of or within 6 months of syphilis diagnosis				
Suppressed (< 200 copies/mL)	2 (67)	1 (33)	4 (57)	13 (72)
Not suppressed (≥ 200 copies/mL)	1 (33)	2 (67)	3 (43)	4 (22)
Result Pending	0 (0)	0 (0)	0 (0)	1 (6)
Chlamydia diagnosis (at any anatomic site), past 12 months				
Yes	2 (18)	2 (15)	4 (20)	9 (16)
No	9 (82)	11 (85)	16 (80)	49 (84)
Gonorrhea diagnosis (at any anatomic site), past 12 months				
Yes	0 (0)	1 (8)	1 (5)	15 (26)
No	11 (100)	12 (92)	19 (95)	43 (74)
Sexual Behavioral Risk Factors				

Number of sex partners, past 12 months; median (IQR)	4 (2-5)	3 (2-6)	2 (1-3)	3 (2-6)
Unprotected anal sex with male partner, past 12 months				
Yes	0 (0)	0 (0)	10 (50)	43 (74)
No	0 (0)	0 (0)	2 (10)	4 (7)
Unknown	0 (0)	0 (0)	0 (0)	1 (1)
Did Not Ask	0 (0)	0 (0)	2 (10)	5 (9)
Refused to Answer	0 (0)	0 (0)	0 (0)	0 (0)
Missing	11 (100)	13 (100)	6 (30)	5 (9)
Sex with anonymous partner, past 12 months				
Yes	0 (0)	0 (0)	9 (45)	27 (46)
No	0 (0)	0 (0)	4 (20)	9 (15)
Unknown	0 (0)	0 (0)	0	1 (2)
Did Not Ask	0 (0)	0 (0)	1 (5)	15 (26)
Refused to Answer	0 (0)	0 (0)	0	1 (2)
Missing	11 (100)	13 (100)	6 (30)	5 (9)
Any transactional sex, past 12 months				
Yes	0 (0)	0 (0)	0 (0)	2 (3)
No	0 (0)	0 (0)	11 (85)	22 (38)
Unknown	0 (0)	0 (0)	0 (0)	1 (2)
Did Not Ask	0 (0)	0 (0)	2 (15)	27 (46)
Refused to Answer	0 (0)	0 (0)	0 (0)	1 (2)
Missing	11 (100)	13 (100)	0 (0)	5 (9)
Sex with partner(s) met via Internet, past 12 months				
Yes	1 (9)	4 (31)	17 (85)	27 (46)
No	0 (0)	0 (0)	0 (0)	10 (17)
Unknown	0 (0)	0 (0)	0 (0)	1 (2)
Did Not Ask	0 (0)	0 (0)	1 (5)	13 (22)
Refused to Answer	0 (0)	0 (0)	0 (0)	2 (4)
Missing	10 (91)	9 (69)	2 (10)	5 (8)
Other Risk Factors				
Reported drug use, past 12 months				
Methamphetamines				
Yes	0 (0)	0 (0)	0 (0)	11 (19)
No	0 (0)	0 (0)	9 (45)	15 (26)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	5 (25)	23 (40)
Refused to Answer	0 (0)	0 (0)	0 (0)	3 (5)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Cocaine				
Yes	0 (0)	0 (0)	0 (0)	2 (4)
No	0 (0)	0 (0)	9 (45)	20 (34)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	4 (20)	26 (45)
Refused to Answer	0 (0)	0 (0)	1 (5)	4 (7)

Missing	11 (100)	13 (100)	6 (30)	6 (10)
Crack cocaine				
Yes	0 (0)	0 (0)	0 (0)	1 (2)
No	0 (0)	0 (0)	9 (45)	21 (36)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	4 (20)	26 (45)
Refused to Answer	0 (0)	0 (0)	1 (5)	4 (7)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Heroin				
Yes	0 (0)	0 (0)	0 (0)	4 (7)
No	0 (0)	0 (0)	9 (45)	19 (33)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	4 (20)	26 (45)
Refused to Answer	0 (0)	0 (0)	1 (5)	3 (5)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Nitrates or poppers				
Yes	0 (0)	0 (0)	0 (0)	1 (2)
No	0 (0)	0 (0)	8 (40)	21 (36)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	5 (25)	27 (47)
Refused to Answer	0 (0)	0 (0)	1 (5)	3 (5)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Other drugs				
Yes	0 (0)	0 (0)	2 (10)	13 (23)
No	0 (0)	0 (0)	7 (35)	12 (21)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	4 (20)	24 (41)
Refused to Answer	0 (0)	0 (0)	1 (5)	3 (5)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Intravenous drug use, past 12 months				
Yes	0 (0)	0 (0)	0 (0)	5 (9)
No	0 (0)	0 (0)	9 (45)	20 (35)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)
Did Not Ask	0 (0)	0 (0)	4 (20)	24 (41)
Refused to Answer	0 (0)	0 (0)	1 (5)	3 (5)
Missing	11 (100)	13 (100)	6 (30)	6 (10)
Incarceration, past 12 months				
Yes	0 (0)	0 (0)	2 (10)	8 (14)
No	0 (0)	0 (0)	11 (55)	22 (38)
Unknown	0 (0)	0 (0)	0 (0)	1 (1)
Did Not Ask	0 (0)	0 (0)	1 (5)	22 (38)
Refused to Answer	0 (0)	0 (0)	0 (0)	0 (0)
Missing	11 (100)	13 (100)	6 (30)	5 (9)

PrEP use[#], past 12 months				
Yes	1 (9)	0 (8)	2 (10)	3 (5)
No	0 (0)	1 (7)	0 (0)	7 (12)
Unknown	6 (55)	9 (69)	10 (50)	30 (52)
Ineligible	4 (36)	3 (23)	8 (40)	18 (31)
Any travel out of state[#], past 12 months				
Yes	5 (45)	4 (31)	10 (50)	17 (29)
No, reports no travel	0 (0)	0 (0)	9 (0)	7 (12)
Unknown	6 (55)	9 (69)	10 (50)	34 (59)

*2018 cases through October 31, 2018

[#] Variables not systematically collected, but data extracted from partner services interview notes if available

Table 2. Community MSM KAP Survey Findings Among Alaska Resident Survey Participants (N = 119)	
	n (%)
Survey version (n = 119)	
Paper-based	60 (50)
Online-based	59 (50)
For online-based participants, how did you hear about the survey? (Check all that apply) (n = 47)	
On an app (e.g., Grindr, Scruff)	32 (68)
Online site (e.g., Facebook)	5 (11)
At a local venue (e.g., Mad Myrna's, The Raven, ACAL)	2 (4)
At a community-based organization (e.g., Identity, Four A's, TLFMC)	1 (2)
From a healthcare provider	3 (6)
From a friend	2 (4)
From the Alaska Division of Public Health/Department of Health and Social Services (DHSS)	5 (11)
Other	
<i>Example of write-in "Other" response included:</i>	
Random ad	1 (2)
Age group (n = 119)	
18-24	18 (15)
25-34	48 (40)
35-44	23 (19)
45 or older	30 (25)
Self-reported gender (n = 119)	
Male	110 (92)
Transgender woman (Transgender male to female)	2 (2)
Transgender man	1 (1)
Non-binary	3 (3)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Hermaphrodite	1 (1)
Queer	1 (1)
Other, not specified by participant	1 (1)
Geographic region (n = 119)	
Anchorage/Mat-Su	90 (76)
Gulf Coast	2 (2)
Interior	12 (10)
Northern	4 (3)
Southeast	6 (5)
Southwest	5 (4)
Race and Hispanic ethnicity (n = 111)	
Non-Hispanic White	80 (72)
American Indian/Alaskan Native	11 (10)
Non-Hispanic Black/African American	8 (7)
Hispanic/Latino	9 (8)
Asian	1 (1)
Other	

<i>Examples of write-in "Other" responses included:</i>	
Korean/White	1 (1)
Scottish/Jamaican/Indian	1 (1)
Sexual Orientation (n = 116)	
Homosexual, gay, or lesbian	94 (81)
Heterosexual or "Straight"	1 (1)
Bisexual	15 (13)
Queer	3 (3)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Heteroflexible	1 (1)
Other, not specified by participant	2 (2)
Marital Status (n = 115)	
Single	62 (54)
Married	22 (19)
In a committed relationship, living together	17 (15)
In a committed relationship, living apart	11 (10)
Other	
Other, not specified by participant	3 (3)
Healthcare-Seeking Behavior	
Where do you usually go for healthcare? (e.g., annual exam or when need medical advice) (Check one) (n = 106)	
Primary care clinic at ANMC, ANTHC, or Valley Native Primary Care Center	11 (10)
Primary care clinic at Anchorage Neighborhood Health Center	4 (4)
Private primary care clinic (e.g., Providence Family Medicine, Medical Park Family Care, or Primary Care Associates)	46 (43)
Infectious Disease specialists	5 (5)
Emergency room or urgent care	3 (3)
I don't have a place where I usually go	11 (10)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Full Spectrum Health	2 (2)
Planned Parenthood	3 (3)
Military health facility	4 (4)
University of Alaska – Anchorage Student Health	1 (1)
Other Alaska-based medical clinical or hospital (outside of Anchorage)	9 (8)
Primary care provider (PCP), not otherwise specified	3 (3)
Out-of-state practice	2 (2)
Other, not specified by participant	2 (2)
Your healthcare provider where you usually go knows you have sex with men (n = 113)	
Yes	78 (69)
No	18 (16)
Don't know	17 (15)
Any healthcare provider has talked to you about risk for STDs, past 12 months (n = 110)	
Yes	71 (65)

No	30 (27)
I haven't been to a healthcare provider in past 12 months	9 (8)
Where you would go for STD testing if you wanted or needed to be tested (Check one) (n = 70)*	
Primary care clinic at ANMC, ANTHC, or Valley Native Primary Care Center	8 (11)
Primary care clinic at Anchorage Neighborhood Health Center	5 (7)
Private primary care clinic (e.g., Providence Family Medicine, Medical Park Family Care, or Primary Care Associates)	25 (36)
Anchorage Municipality of Reproductive Health	9 (13)
Planned Parenthood	13 (19)
Infectious Disease specialists	5 (7)
Emergency room or urgent care	2 (3)
STD screening event coordinated by Community-Based Organization (e.g., PRIDE, Identity)	16 (23)
Mail order through iwantthekit.org or another website (e.g., STD express)	4 (6)
I don't have a place where I would go	10 (14)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Full Spectrum Health	1 (1)
Department of Health and Social Services	2 (3)
Military health facility	5 (7)
Other Alaska-based medical clinical or hospital (outside Anchorage)	8 (11)
Primary care provider (PCP), not otherwise specified	4 (6)
Out-of-state practice	1 (1)
Other, not specified by participant	3 (4)
Sexual Behavioral Risk Factors	
Sex (anal or oral) with a man, past 6 months (n = 119; inclusion criteria)	
Yes	119 (100)
No	0 (0)
Sex (vaginal, anal, or oral) with a woman, past 6 months (n = 119)	
Yes	24 (20)
No	95 (80)
Number of male sex partners, past 6 months (median, IQR) (n = 110)	
	3 (IQR: 1, 6)
Number of male sex partners you could contact again, past 6 months (median, IQR) (n = 109)	
	3 (IQR: 1, 4)
Number of new male sex partners, past 6 months (median, IQR) (n = 106)	
	1 (IQR: 0, 4)
Sex partners who live outside of Anchorage, past 6 months (n = 116)	
Yes	60 (52)
No	47 (41)
Don't know	9 (8)
Locations of sex partners who live outside of Anchorage, past 6 months (n = 54)	
Reported having only Alaska-based sex partner(s)	13 (11)
Reporting having any sex partner(s) outside Alaska (including international locations)	35 (30)
Unknown	6 (5)

Participated in 1 or more episodes of group sex, past 6 months (n = 119)	
Yes	31 (26)
No	88 (74)
Places where met male sex partners, past 6 months (Check all that apply) (n = 119)	
Online or on an app	84 (71)
Work	8 (7)
School	1 (1)
Gathering with friends	27 (23)
Gym	5 (4)
Massage parlor	0 (0)
Gay bars or clubs	26 (22)
Restaurant/bar	6 (5)
Bathhouses or sex clubs	15 (13)
Adult bookstores/video stores	1 (1)
Park or other public cruising place	10 (8)
Social event (e.g., wedding, etc.)	10 (8)
Private sex party	5 (4)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Bars	1 (1)
Home	1 (1)
Married	2 (2)
Other, not specified by participant	4 (3)
Online sites/apps used if met sex partner(s) via online sites/app, past 6 months (Check all that apply) (n = 84)	
Grindr	62 (74)
Adam4Adam RADAR	5 (6)
BarebackRT (BBRT)	2 (2)
Daddyhunt	0 (0)
Tinder	16 (19)
BlackGayChat	1 (1)
Recon	1 (1)
Scruff	44 (52)
Jack'd	1 (1)
Facebook	6 (7)
Instagram	5 (6)
Squirt	4 (5)
OKCupid	1 (1)
Manhunt	0 (0)
Gay.com	0 (0)
Hornet	0 (0)
Growlr	20 (24)
Asspig	1 (1)
Meet me	0 (0)
Other	
<i>Examples of write-in "Other" responses included:</i>	
BiggerCity	2 (2)
Adult Friend finders.com	1 (1)

Other, not specified by participant	1 (1)
Gave money, food/lodging, or drugs to men for sex, past 6 months (n = 113)	
Yes	1 (1)
No	112 (99)
Received money, food/lodging, or drugs from men for sex, past 6 months (n = 113)	
Yes	2 (2)
No	111 (98)
Used a condom (or partner used) during any anal sex, past one month (n = 113)	
Never (0%)	40 (35)
Rarely (1-20%)	14 (12)
Sometimes (21%-79%)	12 (11)
Most of the time (80-99%)	14 (12)
Always (100%)	14 (12)
Did not have anal sex	19 (17)
Compared to one year ago, condom use for anal sex is (n = 115):	
More	20 (17)
Less	20 (17)
The same	61 (53)
Do not have anal sex	14 (12)
Syphilis testing	
Received a blood test for syphilis, past 12 months (n = 115)	
Yes	69 (60)
No	43 (37)
Don't know	3 (3)
If NO syphilis blood test received, main reason why <u>not</u> tested for syphilis (n = 42)	
I think I'm at low risk for syphilis	13 (31)
I was afraid of finding out that I had syphilis	1 (2)
I was worried it would cost a lot	0 (0)
I don't know where to get tested	4 (10)
I did not go see a medical provider	6 (14)
I saw a medical provider, but they did not ask me to be (or if I wanted to be) tested for syphilis	5 (12)
I didn't have time	0 (0)
No particular reason	14 (33)
Other	
<i>Example of write-in "Other" response included:</i>	
Privacy concern	1 (2)
If YES, the main reason why you decided to get tested for syphilis (n = 66)*	
I had symptoms	3 (5)
I was told that one of my partners had syphilis	4 (6)
It's part of my regular screening	44 (67)
No particular reason	5 (8)
A healthcare provider recommended I should be tested	5 (8)

I was concerned about exposure through sexual contact	6 (9)
Other	
<i>Examples of write-in "Other" responses included:</i>	
False positive reading	1 (1)
Something wrong, lab results	1 (1)
Peace of mind	1 (1)
Other, not specified by participant	1 (1)
Diagnosed with syphilis, past 12 months (n = 112)	
Yes	10 (9)
No	100 (89)
Don't know	2 (2)
Health department staff talked to you because you were diagnosed with syphilis or were named as a partner by someone who was diagnosed with syphilis, past 12 months (n = 112)	
Yes	14 (13)
No	97 (87)
Don't know	1 (1)
Syphilis Attitudes (n = 110)	
I try hard to avoid becoming infected with syphilis.	
Strongly disagree	3 (3)
Disagree	4 (4)
Neither agree or disagree	16 (15)
Agree	26 (24)
Strongly agree	61 (55)
I am concerned about getting syphilis.	
Strongly disagree	13 (12)
Disagree	6 (6)
Neither agree or disagree	21 (19)
Agree	35 (32)
Strongly agree	34 (31)
If I was diagnosed with syphilis, it is important that I cooperate with the local health department in order to get all of my partners tested and treated.	
Strongly disagree	4 (4)
Disagree	4 (4)
Neither agree or disagree	5 (5)
Agree	19 (17)
Strongly agree	78 (71)
Compared to all of the things in my life, protecting myself from syphilis is a high priority.	
Strongly disagree	5 (5)
Disagree	7 (6)
Neither agree or disagree	25 (23)
Agree	37 (34)
Strongly agree	36 (33)

It is important for gay, bisexual, and other men who have sex with men to protect themselves from syphilis.	
Strongly disagree	4 (4)
Disagree	1 (1)
Neither agree or disagree	7 (6)
Agree	32 (29)
Strongly agree	66 (60)
<i>Syphilis knowledge (n = 109)</i>	
You can get syphilis from anal sex. (True)	
Correct	103 (95)
Incorrect	6 (5)
You can get syphilis from oral sex. (True)	
Correct	88 (81)
Incorrect	21 (19)
If you are infected with syphilis, you know you have it because you have a painful lesion on your penis. (False)	
Correct	59 (54)
Incorrect	50 (46)
You can get syphilis multiple times. (True)	
Correct	87 (80)
Incorrect	22 (20)
Condoms always prevent transmission of syphilis. (False)	
Correct	73 (67)
Incorrect	36 (33)
<i>HIV Status and Methods to Prevent HIV</i>	
Ever tested positive for HIV (n = 109)	
Yes	13 (12)
No	95 (87)
Don't know	1 (1)
If HIV positive, HIV viral load test performed in past 6 months? (n = 10)	
Yes	10 (100)
No	0 (0)
Don't know	0 (0)
If YES, what was viral load? (n = 9)	
High	1 (11)
Low	2 (22)
Undetectable	6 (67)
Healthcare provider discussed benefits of taking HIV PrEP, past 6 months (n = 102)	
Yes	36 (35)
No	43 (42)

Not applicable, I have been diagnosed with HIV	9 (9)
I have not talked to healthcare provider in past 6 months	14 (14)
Have taken HIV PrEP, past 6 months (n = 103)	
Yes	21 (20)
No	70 (68)
Not applicable, I have been diagnosed with HIV	8 (8)
I have not heard of PrEP	4 (4)
Drugs used recreationally, past 6 months (check all that apply) (n = 119)	
Alcohol	81 (68)
Marijuana	55 (46)
Methamphetamines (e.g., “crystal meth”, “Tina”, “meth”, “speed”, “goofballs”)	3 (3)
Heroin (including “speedballs” or “goofballs”)	2 (2)
Crack/cocaine (including “speedballs”)	10 (8)
GHB (e.g., “G”)	1 (1)
Other opioids including prescription painkillers (e.g., Oxycontin, Percocet, Vicodin, Dilaudid, Morphine, Fentanyl)	3 (3)
Sedatives/Tranquilizers (e.g., Klonopin, Xanax, Valium, Ativan)	5 (4)
Other	
<i>Examples of write-in “Other” responses included:</i>	
MDMA, psychedelic mushrooms	1 (1)
Caffeine	1 (1)
Prescription drugs	1 (1)
Other, not specified by participant	1 (1)
*Some participants who completed paper surveys checked off more than one response option; all checked responses are included	

Table 3. Healthcare Provider KAP Survey Findings Among Eligible Healthcare Providers (N = 55)

	n (%)
Current position/role in the clinic (n = 55)	
Community Health/Aide/Practitioner	1 (2)
Nurse	12 (22)
Nurse Practitioner	9 (16)
Physician	21 (38)
Physician assistant	9 (16)
Other	
Other, not specified by participant	3 (5)
Primary specialty (n = 55)	
Emergency Medicine	6 (11)
Family Practice	29 (53)
Internal Medicine	1 (2)
Ob/Gyn	6 (11)
Pediatrics	1 (2)
Infectious Diseases	6 (11)
No specialty	4 (7)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Public Health	1 (2)
STD	1 (2)
Primary practice setting (Check all that apply) (n = 55)	
Primary care clinic at ANMC, ANTHC, or Valley Native Primary Care Center	17 (31)
Anchorage Neighborhood Health Center	2 (4)
Private primary care clinic	13 (24)
State or Municipal Public Health Clinic	9 (16)
Anchorage Planned Parenthood	1 (2)
Emergency room or urgent care at any facility	7 (13)
Hospitalist, intensivist, or internist	1 (2)
Other (e.g., Alaska VA, inpatient hospital, Fairbanks)	
<i>Examples of write-in "Other" responses included:</i>	
Alaska VA	1 (2)
Hospital	1 (2)
Fairbanks Memorial Hospital	1 (2)
Split between hospital and private clinic	1 (2)
Other, not specified by participant	1 (2)
Number of years providing health care in Alaska (Median, IQR) (n = 55)	6 (IQR: 2, 20)
Region of Alaska where currently practice (Check all that apply) (n = 55)	
Anchorage/Mat-Su	36 (65)
Gulf Coast	1 (2)
Interior	8 (15)
Northern	4 (7)
Southeast	8 (15)
Southwest	1 (2)
Other	

<i>Examples of write-in "Other" responses included:</i>	
Kenai Peninsula - Seward	1 (2)
Clinical Practice/Patient Population	
Number of patients seen in a typical week, on average, at primary practice setting (Mean, range) (n = 47)	40 (IQR: 25, 60)
Number of patients you diagnose with syphilis, chlamydia, or gonorrhea in an average month (n = 47)	
None	15 (32)
1-10	28 (60)
More than 10	3 (6)
Don't know	1 (2)
Diagnosed case of syphilis in 2018 (n = 46)	
Yes	13 (28)
No	33 (71)
If YES, someone from Alaska Division of Public Health followed up with you to obtain more information (n = 13)	
Yes	8
No	4
Don't know	1
Percentage (approximately) of your male patients who are living with HIV (n = 44)	
None (0%)	18 (41)
A few (1-10%)	24 (55)
Some (11-49%)	1 (2)
Most (50-90%)	1 (2)
Almost all (91-100%)	0 (0)
Percentage (approximately) of your male patients who report themselves to be gay, bisexual, or other men who have sex with men (MSM) (n = 44)	
None (0%)	8 (18)
A few (1-10%)	28 (64)
Some (11-49%)	7 (16)
Most (50-90%)	1 (2)
Almost all (91-100%)	0 (0)
Patients request testing for syphilis or other STDs at their clinic visits, compared to one year ago (n = 42)	
More	7 (13)
Less	0 (0)
The same	35 (64)
Sexual Health and Syphilis Practices	
You or your office staff take a sexual history for your male patients: (Check all that apply) (n = 39)	
Never	1 (3)
At every visit	6 (15)
Only at their annual exam	7 (18)

Only if suspect STD	10 (26)
At annual exam and if suspect STD	13 (33)
Other	1 (3)
<i>Examples of write-in "Other" responses included:</i>	
As relevant to presenting concern in hospital	1 (3)
Don't see males	1 (3)
You screen male patients who report sexual risk behaviors (e.g., multiple sex partners) for syphilis: (Check all that apply) (n = 40)	
Only once a year	5 (13)
Every 6 months	3 (8)
Every 3 months	9 (23)
Only upon request	13 (33)
Once a year and upon request	4 (10)
Other	
<i>Examples of write-in "Other" responses included:</i>	
Only upon request or if presents with symptoms	3 (8)
I am primarily in hospital setting, screening is left to PCP; I have checked at least a few times in last year as relevant to hospital problem	1 (3)
I have no male sexual risk patients	1 (3)
Never	1 (3)
<i>Syphilis Attitudes and Knowledge</i>	
I feel comfortable counseling my patients on the signs and symptoms of syphilis (n = 42)	
Strongly disagree	1 (2)
Disagree	2 (5)
Unsure	2 (5)
Agree	25 (60)
Strongly agree	12 (29)
I have access to the most up to date syphilis epidemiological data for my geographic area (n = 41)	
Strongly disagree	0 (0)
Disagree	1 (2)
Unsure	7 (17)
Agree	22 (54)
Strongly agree	11 (27)
I know the current syphilis screening recommendations (n = 42)	
Strongly disagree	0 (0)
Disagree	3 (7)
Unsure	7 (17)
Agree	25 (60)
Strongly agree	7 (17)
I am able to interpret syphilis laboratory test results to make a diagnosis (n = 41)	
Strongly disagree	1 (3)
Disagree	1 (3)
Unsure	4 (10)
Agree	30 (73)
Strongly agree	5 (12)

I am comfortable diagnosing the neurological complications of syphilis (including ocular) (n = 42)	
Strongly disagree	4 (10)
Disagree	11 (26)
Unsure	20 (48)
Agree	6 (14)
Strongly agree	1 (2)
I know the recommended antibiotic regimens to treat different stages of syphilis (n = 41)	
Strongly disagree	1 (2)
Disagree	2 (5)
Unsure	7 (17)
Agree	24 (59)
Strongly agree	7 (17)
Bicillin (Penicillin G) is always available in our facility for same day syphilis treatment (n = 42)	
Strongly disagree	3 (7)
Disagree	6 (14)
Unsure	6 (14)
Agree	18 (43)
Strongly agree	9 (21)
I always have access to STD prevention materials for my patients (e.g., brochures, posters) (n = 41)	
Strongly disagree	0 (0)
Disagree	9 (22)
Unsure	2 (5)
Agree	22 (54)
Strongly agree	8 (20)
Members of the LGBTQI community feel comfortable seeking medical care at our facility (n = 41)	
Strongly disagree	1 (2)
Disagree	0 (0)
Unsure	14 (34)
Agree	23 (56)
Strongly agree	3 (7)
<i>HIV Pre-exposure Prophylaxis Knowledge and Practices</i>	
I know the eligibility criteria for prescribing HIV PrEP (n = 39)	
Strongly disagree	5 (13)
Disagree	8 (21)
Unsure	9 (23)
Agree	12 (31)
Strongly agree	5 (13)
I feel comfortable counseling my patients on the use of HIV PrEP for the prevention of HIV (n = 39)	
Strongly disagree	4 (10)
Disagree	11 (28)
Unsure	6 (15)
Agree	13 (33)

Strongly agree	5 (13)
I know how to get my patients started on HIV PrEP (I prescribe PrEP or refer my patients to PrEP providers) (n = 37)	
Strongly disagree	5 (14)
Disagree	8 (22)
Unsure	8 (22)
Agree	10 (27)
Strongly agree	6 (16)
Prescribed HIV PrEP to a patient, past 6 months (n = 37)	
Yes	14 (38)
No	20 (54)
No, but I have referred patient(s) to a PrEP provider	3 (8)
Communication Preference	
Preferred way to receive information on preventing and controlling syphilis in Alaska (n = 39)	
Newsletter/Bulletin	10 (26)
Webinar	4 (10)
In-person training	4 (10)
Brochures/pamphlets	1 (3)
General email	20 (51)
Fax	0 (0)
Other	0 (0)