COVID-19 and Sexual and Reproductive Health Services in King County, Washington

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Abstract

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Background: Lack of continuous access to high-quality sexual and reproductive health (SRH) services endangers individual- and population-level health. Understanding how the COVID-19 pandemic impacted SRH services will inform public health practices that guarantee access to SRH resources during times of future pandemics. The objective of this study was to investigate SRH prior to and during COVID-19 in Seattle and King County.

Methods: This study was conducted using clinical records from the University of Washington Healthcare System and data from U.S. Census Bureau American Community Survey and Public Health Seattle and King County (Participants=52,974). Prevalence of the number of SRH appointments accessed, as well as prevalence of the number of distinct SRH services provided, among King County residents aged 15-49 were determined using information from clinical records and Census data. Prevalence ratios and corresponding 95% confidence intervals (CI) were used to compare prevalence pre- and post-pandemic onset (March 24, 2019-November 30, 2019 and March 24, 2020-November 30, 2020, respectively). In addition, prevalence ratios for groups stratified by sex, age groups, and periods of the pandemic (Early Pandemic, Post Stay-at-Home, and Third Wave) were estimated.

Results: Among the total study participants, 84% were female, 57% were White, and 76% used private insurance. There was a 13% reduction (95% CI: 12%, 15%) in the number of SRH

service appointments accessed in 2020 compared to 2019, and a similar 14% reduction (95% CI: 12%, 15%) in the number of distinct services. Impact varied by age and sex, with a decrease of 40% (95% CI: 35%, 45%) among 15–19-year-olds compared to a 7% decrease (95% CI: 3%, 10%) among 30–34-year-olds. An 11% (95% CI: 10%, 13%) reduction in appointments was observed among females, and a 23% (95% CI: 20%, 26%) reduction among males was observed. Difference by period of the pandemic was also observed, with a decrease in appointments of 53% (95% CI: 54%, 51%) in the Early Pandemic period compared to an increase of 5% (95% CI: 1%, 8%) in the Third Wave period. The pandemic affected types of SRH services variably, with a decrease of 26% (95% CI: 17%, 34%) in HPV vaccination services, compared to an increase of 15% (95% CI: 7%, 24%) in HIV screening services.

Conclusion: SRH service provision was significantly affected by the onset of the pandemic, particularly among 15–19-year-olds, males, and during the Early Pandemic.

Introduction

Sexual and reproductive health (SRH) is a human right and foundational component of overall health and wellness at both the individual and population levels. Services such as sexually transmitted infection (STI) screening, counseling, and treatment, Human Papillomavirus (HPV) vaccination and screening, comprehensive abortion care, and contraception/family planning management are essential health services to prevent adverse health outcomes related to unplanned pregnancy, untreated STIs, and unsafe abortion.[1,2] Lack of access to safe abortion increases maternal mortality and morbidity, and inadequate access to modern and affordable contraception results in increased adolescent and unplanned pregnancy.[10,11] Further, lack of access to STI prevention and screening services reduces early detection and treatment of sometimes life-threatening diseases. For example, HPV vaccination has been associated with reduced risk of invasive cervical cancer, implying that a reduction in population-level vaccination coverage can result in increased cervical cancer incidence.[12]

Historically, major social/economic disruptions have impacted SRH behaviors and needs.[5,7,8] The SARS-CoV-2 pandemic (hereon referred to as the COVID-19 pandemic) is a health crisis that has affected diverse components of both clinical care and public health beyond those directly related to SARS-CoV-2 infection. Strain on health systems, re-direction of health resources, policy responses such as point of care closures, and the societal and economic consequences related to wide-scale closures and supply chain disruptions have all impacted SRH resources, service provision, and outcomes.[3,4,5]

The full implications of the ongoing COVID-19 pandemic on SRH outcomes remain scientifically unclear as the pandemic continues to progress globally, partially due to the longitudinal/delayed nature of SRH outcomes. An emerging body of scientific evidence suggests reduced availability and accessibility of contraceptive commodities, increased unsafe abortion incidence, and reduced essential pregnancy-related and newborn care in Low- and Middle-Income Countries related to the COVID-19 pandemic.[3,4,6] However, consequences on SRH services in developed countries and at the local level are less clear.[9]

This thesis project aims to describe and compare SRH provision (STI/HIV/HPV screening and counseling, HPV vaccination, abortion, and contraception/family planning services) by the University of Washington (UW) Healthcare System among King County, Washington (King County) residents aged 15-49 before (March 24, 2019-November 30, 2019) and after (March 24, 2020-November 30, 2020) the onset of the pandemic.

We hypothesized that the strain on health systems and policy/societal impacts of the pandemic have resulted in reduced accessibility and availability of SRH services and resources at the community level. In addition, we assessed whether the difference in SRH services before and after the onset of the pandemic varied by age, sex, or period (defined by policy restrictions and COVID-19 incidence rates in King County/Washington) of the pandemic. Findings of this study will inform planning for SRH service provision, including traditional and alternative approaches such as telehealth, self-testing, and medication abortion during future pandemics and other large-scale societal upheavals.

Methods

Study Design and Setting*:* This was a cross-sectional study that used UW Healthcare System clinical records, as well as U.S. Census Bureau American Community Survey and Public Health Seattle and King County public-use data to address all aims. All information on SRH services provided to King County residents between March 24, 2019-November 30, 2019 and March 24, 2020-November 30, 2020 at any UW Healthcare site (N=15) that offered these services was examined for this study. These sites include: Hall Health Primary Care Center, UW Medical Center Northwest, Montlake Medical Center, Harborview Medical Center, Seattle Cancer Care Alliance, and all UW Healthcare neighborhood clinics.

Study Population*:* All females and males aged 15-49 years old with a residential address in King County who received the following SRH services at any UW Healthcare site during the periods described above were included in the study. The services of interest, categorized by ICD-10 codes, were:

Contraception management, including: contraception counseling, contraception replacement, surveillance, or removal, unspecified contraception services;
Initial procedure or prescription for contraception;
Screening for infections with a predominantly sexual mode of transmission, including: STI screening, HIV screening, HPV screening;
Counseling on sexually transmitted infections, including: HIV counseling, other STI counseling;
HPV vaccination, and/or
Abortion (defined by ICD-10 codes in clinical records as elective termination of pregnancy).

The number of individuals who received services during either of the two periods described above was 52,974. The number of distinct services provided, as many individuals received multiple services in one visit, was 57,837. All King County residents aged 15-49 in 2019 were included as the denominator for calculation of SRH service prevalence and prevalence ratios (N=1,162,891).[13] This study was approved by the University of Washington Institutional Review Board.

Data Collection*:* Data from all UW Healthcare sites that provide the SRH services of interest in Washington state were used for the current study. All study subjects were identified and their data accessed through the UW Healthcare EPIC database. The UW Institute of Translational Health Sciences' data services team extracted all clinical records data. Clinical records for all eligible UW Healthcare patients who received the SRH services defined above from March 24, 2019-November 30, 2019 (control period) and/or March 24, 2020-November 30, 2020 (study period) were analyzed in aggregate form as well as stratified by category of service.

Specific study periods were defined based on policies restricting in-person activities as well as COVID-19 incidence rates in King County (collected from the Seattle King County Public Health COVID-19 data dashboard),[14] including: (1) the initial Washington State stay-at-home order imposed on March 23, 2020, (2) the end of the Washington State stay-at-home order on May 31, 2020 and (3) the period of the rapid rise of confirmed cases in King County during the 'third wave' from October 1, 2020 to November 30, 2020. Based on these, the pandemic was categorized into three periods: (1) Early Pandemic (March 24th-May 31st), (2) Post Stay-at-Home (June 1st-September 30th) and (3) Third Wave (October 1st-November 30th).

Demographic data of King County residents aged 15-49 were identified via the U.S. Census Bureau American Community Survey for the year of 2019 in order to estimate prevalence and calculate prevalence ratios for SRH appointments and services. Census data for King County categorized race differently than the racial categories provided in UW Healthcare clinical records. Therefore, it was not possible to estimate and compare the prevalence of service provision among all eligible King County residents by racial category using data available through UW Healthcare clinical records.

Statistical Analysis*:* Sociodemographic characteristics of the study population in 2019 and 2020 separately were described. Outcomes of interest for analysis included: the number and prevalence of SRH appointments among King County residents aged 15-49; the number and prevalence of SRH services provided by service category, and the number and prevalence of

SRH appointments by: (1) period of the pandemic; (2) age category, and (3) sex. All prevalence calculations used King County Census data of residents aged 15-49 as the denominator.

The number of SRH appointments and distinct services provided were compared between 2019 and 2020 during the aforementioned timeframes. All distinct services provided in each year were categorized by service and sub-categorized by specific service within each category. Prevalence ratios of SRH appointments and distinct SRH services with 95% CIs were estimated.

SRH appointments accessed in both control and study timeframes were categorized separately by age (5-year categories) and periods of the pandemic (determined by the date of appointment). Prevalence ratios with 95% CIs for each 5-year age category and period of the pandemic were estimated.

SRH appointments accessed were also categorized and reported by sex of the patient. Differences by sex in prevalence estimates of SRH appointments were calculated using King County Census data stratified by sex (Male=600,114; Female=562,759) as denominators and calculation of prevalence ratios with 95% CIs comparing SRH appointments accessed in 2019 against those accessed in 2020.

RStudio was used for all data analyses.

Results

Sociodemographic characteristics of the study population, stratified by year of SRH appointment, are shown in **Table 1**. Among 52,974 study participants that accessed SRH appointments in 2019 and/or 2020, 84% were female. The majority of patients were 25-29 (22%) or 30-34 (23%). Nine percent of all eligible patients were Hispanic or Latinx, 57% were White, 95% communicated in English, and 76% used private insurance. Although prevalence of SRH appointments and prevalence ratios comparing 2019 to 2020 were unable to be calculated by racial category, the count data do not suggest differences in race composition of participants who accessed SRH appointments in 2019 and 2020.

Overall, there was a 14% reduction (95% CI: 12%, 15%) in the number of distinct SRH services provided through the UW Healthcare System in 2020 compared to 2019 (**Table 2**). A similar reduction (13%, 95% CI: 12%, 15%) was observed when comparing the number of SRH appointments (**Table 3**).

Differences observed when comparing the two study periods of interest varied by category of SRH service (**Table 2, Figure 1**). For instance, there was a 15% increase (95% CI: 7%, 24%) in HIV screening services in 2020 compared to 2019, but HPV vaccination services

were 26% lower (95% CI: 17%, 34%). Difference in impact by service was observed within subcategories of service as well (**Table 2**). For example, while there was a 70% reduction in prescription of emergency contraception (95% CI: 50%, 82%) comparing 2020 to 2019, there was only a 20% reduction in initial long-acting reversible contraception procedures (95% CI: 14%, 25%).

The period of the pandemic influenced the number of patients who accessed SRH appointments among eligible King County residents (**Table 3, Figure 2**). Whereas a reduction of 53% (95% CI: 54%, 51%) in prevalence of SRH appointments accessed was observed in the Early Pandemic period, the prevalence of SRH appointments accessed in the Post Stay-at-Home period was nearly equal when comparing 2019 to 2020 (0% reduction, 95% CI: 2% increase, 3% reduction). An increase of 5% (95% CI: 1%, 8%) in the prevalence of SRH appointments accessed comparing 2019 to 2020 was observed in the Third Wave period.

The data suggest that the prevalence of SRH appointments in 2020 relative to 2019 varied by age of the patient (**Table 4).** There was a 40% reduction (95% CI: 35%, 45%) in the prevalence of appointments accessed among 15–19-year-olds in 2020, while only a 7% (95% CI: 3%, 10%) reduction was observed among 30–34-year-olds.

We found that the prevalence of SRH appointments in 2020 relative to 2019 varied by sex of the patient (**Table 5**)**.** A decrease of 11% (95% CI: 10%, 13%) was observed among females in 2020, while a 23% (95% CI: 20%, 26%) reduction was observed among males.

Discussion

Our study findings suggest that the COVID-19 pandemic affected SRH service provision by the UW Healthcare system among King County residents aged 15-49 years, and that the magnitude of the difference between pre- vs post-pandemic varied by type of SRH service provided, period of the pandemic, age of the patient, and sex of the patient.

Overall, there were fewer SRH appointments and services provided in the first seven months of the local COVID-19 pandemic compared to the same seven-month period in the year prior. Prescription of emergency contraception, HPV vaccination, and STI screening were the services with the largest reductions, whereas contraception surveillance and HIV screening increased comparing 2020 to 2019.

The magnitude of the effect of the pandemic on SRH appointments varied considerably by period of the pandemic. Whereas the number of SRH appointments accessed decreased substantially during the Early Pandemic period, an increase in the number of appointments accessed was observed during the Third Wave period. These results suggest a re-entry into

SRH medical systems as the pandemic progressed, despite the overall reduction in appointments accessed comparing 2020 to 2019.

Adolescents (15-19) were observed to be the most severely impacted by the pandemic, whereas 30-34-year-olds experienced relative stability in SRH appointments accessed. Males were also observed to have been disproportionately affected compared to female individuals. This has implications for targeted efforts to increase access to SRH services among adolescents and males.

The results of this study align with prior research on the effects of previous crises, such as economic recessions, and the effect of COVID-19 on SRH services in other populations. Previous large-scale upheavals such as the 2008 recession threatened secure access to contraception, confidential SRH services, and safe/legal abortion in the United States; similar barriers to SRH have already become apparent in the wake of the COVID-19 pandemic.[5,7,8,9]

In May of 2020, 33% of U.S. women reported having had to delay/cancel an SRH service visit, or having experienced difficulty in accessing their contraceptive method of choice.[5] Similar findings have emerged on the global scale reporting SRH clinic closures, as well as shortages in contraception and reduced HIV testing, abortion care, and contraceptive care services.[3] Early estimates of the impact of the pandemic in low- and middle-income countries include a 10% decline in use of short- and long-acting reversible contraception, as well as service coverage of essential pregnancy-related and newborn care. An equivalent 10% shift in abortions from safe to unsafe has been projected as well.[6]

This study's findings indicate that the period of the pandemic was a considerable factor in accessing SRH appointments. Whereas the number of SRH appointments accessed decreased substantially during the Early Pandemic period, an increase in the number of appointments accessed was observed during the Third Wave period. These results suggest a re-entry into SRH medical systems as the pandemic progressed, despite the overall reduction in appointments accessed comparing 2020 to 2019. The results that indicate both adolescents and males were disproportionately impacted by the pandemic have implications for targeted efforts to increase access to SRH services among these populations.

This study had several strengths, including the high quality of the clinical data from the UW Medicine EPIC database and the utilization of the UW ITHS data services team, which ensured data quality. Furthermore, Census data and King County public-use COVID-19 data are scientifically trusted data sources. The sample size was large, and sufficient for precise estimates of prevalence and prevalence ratios.

This study was also subject to a few limitations. First, the pandemic has caused shifts in sexual and reproductive health behaviors and goals. Fertility preferences have changed, with overall reductions in desire to get pregnant as of May 2020.[2] This could increase the demand of contraception. However, lack of regular social interaction and the requirements surrounding social distancing may result in decreased sexual interaction, which would subsequently reduce the demand for contraception. Disentangling the associations of interest is therefore challenging.

Second, patient data was strictly clinical records data, and only came from one healthcare system database. There are inherent limitations to clinical records data, including missingness, which was observed when reporting sociodemographic characteristics of patients. In this study, however, a major limitation is under-ascertainment of SRH services provided to King County residents due to all data used in the current study being from within the UW Healthcare system. It is possible that King County residents have continued to seek and receive SRH services outside of the UW Healthcare system at an equal or increased rate to that of 2019.

Lastly, generalizability of this study's findings is limited. The demographics and health landscape of King County are not representative of the United States or global populations. Washington and King County have public health policies and programs that aim to ensure access to SRH services, including the Public Health Seattle and King County Family Planning Program and Washington state legislation that requires most health insurance plans to cover abortion services.[15,16] As these public health efforts are not uniform throughout the nation or globe, generalizability beyond Washington is limited.

Despite the limitations, the results of this study have implications for future research, policy, and public health practice. Further research is necessary to understand how SRH services and outcomes are being impacted as the pandemic continues to evolve. With rapidly changing policy landscapes oftentimes unique to counties, states, and countries, the need for research remains on how policies surrounding social distancing, closures, travel limitations, and classification of health services have affected and will continue to affect SRH outcomes.

For future recessions, pandemics, natural disaster crises, and other potential large-scale disruptions to policy and health systems, practices to ensure the continued availability and accessibility of SRH commodities and services will be necessary. These practices can and should include expanded availability and accessibility of family planning services and resources. Strengthening and expansion of global supply chains for a full range of contraceptive methods is necessary to avoid shortages of safe and effective contraception. Extension of pharmaceutical

privileges to directly administer contraception and medication abortion supplies is essential for ensuring continued access to comprehensive family planning methods. Increasing availability and accessibility of medication abortion and emergency contraception within and outside of medical systems is another strategy to guarantee continued access to safe family planning options.

Finally, provision of SRH services via telehealth must be expanded. The use of telehealth services generally has substantially increased as a result of the COVID-19 pandemic.[20] This overall increase indicates the feasibility of providing health services virtually, and SRH services must be included in evolving telehealth infrastructure. Services such as contraception and STI counseling can and should be available via telehealth for all of those in need. For STI screenings, telehealth can supplement at-home STI testing kits to increase the accessibility and quality of STI screening. Medication abortion and contraception that requires a prescription can and must also be made widely available via telehealth services.

The full burden of the pandemic on health systems is still impossible to quantify, as the world remains in crisis. Despite decreased COVID-19 incidence, hospitalizations, and deaths, evidence around health outcomes unrelated to SARS-CoV-2 infection, but related to the consequences of the pandemic, will emerge. Further research that focuses on SRH outcomes will be needed in order to understand the full impact of the pandemic on, among other issues, unintended pregnancy, abortion access, and STI incidence and outcomes. This study's findings of overall decreases in SRH appointments accessed and distinct services provided indicate that legislative action and health system infrastructural reform to guarantee the availability and accessibility of SRH services is needed to prevent similar outcomes in future crises.

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Table 1: Characteristics of UW Healthcare System Patients that Accessed Sexual and Reproductive Health Appointments from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020

	2019 (N=28385)	2020 (N=24589)	Total (N=52974)
Sex			
Female	23494 (82.8%)	20823 (84.7%)	44317 (83.7%)
Male	4882 (17.2%)	3757 (15.3%)	8639 (16.3%)
Unknown	9.00 (0.0%)	9.00 (0.0%)	18.0 (0.0%)
Age			
15-19	1473 (5.2%)	878 (3.6%)	2351 (4.4%)
20-24	4984 (17.6%)	3970 (16.1%)	8954 (16.9%)
25-29	6179 (21.8%)	5608 (22.8%)	11787 (22.3%)
30-34	6224 (21.9%)	5813 (23.6%)	12037 (22.7%)
35-39	4459 (15.7%)	4001 (16.3%)	8460 (16.0%)
40-44	2944 (10.4%)	2531 (10.3%)	5475 (10.3%)
45-49	2122 (7.5%)	1788 (7.3%)	3910 (7.4%)
Ethnicity			
Hispanic or Latino	2456 (8.7%)	2086 (8.5%)	4542 (8.6%)
Not Hispanic or Latino	22083 (77.8%)	19028 (77.4%)	41111 (77.6%)
Unknown	3846 (13.5%)	3475 (14.1%)	7321 (13.8%)
Race			
White	16075 (56.6%)	13907 (56.6%)	29982 (56.6%)
Black or African American	2261 (8.0%)	2000 (8.1%)	4261 (8.0%)
Asian	5302 (18.7%)	4564 (18.6%)	9866 (18.6%)
Native Hawaiian or Other Pacific Islander	221 (0.8%)	178 (0.7%)	399 (0.8%)
American Indian or Alaska Native	378 (1.3%)	274 (1.1%)	652 (1.2%)
Unknown/Unavailable	4148 (14.6%)	3666 (14.9%)	7814 (14.8%)
Native Language			
English	26812 (94.5%)	23531 (95.7%)	50343 (95.0%)
Spanish	588 (2.1%)	343 (1.4%)	931 (1.8%)
All Other	920 (3.2%)	640 (2.6%)	1560 (2.9%)
Unknown/Unavailable	65.0 (0.2%)	75.0 (0.3%)	140 (0.3%)
Insurance Type			
No Insurance	2071 (7.3%)	2342 (9.5%)	4413 (8.3%)
Public	4263 (15.0%)	3881 (15.8%)	8144 (15.4%)
Private	22051 (77.7%)	18366 (74.7%)	40417 (76.3%)

Table 2: Number and Prevalence (per 10,000) of Distinct Sexual and Reproductive Health Services Provided by UW Healthcare Systems from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020

	2019 (N=31045)	2020 (N=26792)	Prevalence 2019 (95% CI)	Prevalence 2020 (95% CI)	PR (95% CI)
HPV Vaccination	685 (2.2%)	506 (1.9%)	5.89 (5.46, 6.35)	4.35 (3.98, 4.75)	0.74 (0.66, 0.83)
Abortion	163 (0.5%)	141 (0.5%)	1.40 (1.19, 1.63)	1.21 (1.02, 1.43)	0.87 (0.69, 1.08)
Initial Contraception Prescription/Procedure	3631 (11.7%)	3088 (11.5%)	31.32 (30.31, 32.36)	26.62 (25.70, 27.58)	0.85 (0.81, 0.89)
LARC*	1904 (6.1%)	1524 (5.7%)	16.40 (15.67, 17.15)	13.12 (12.47, 13.40)	0.80 (0.75, 0.86)
Emergency Contraception	63 (0.2%)	19 (0.1%)	0.54 (0.42, 0.69)	0.16 (0.10, 0.26)	0.30 (0.18, 0.50)
Other Contraceptive Methods	1664 (5.4%)	1545 (5.8%)	14.33 (13.65, 15.03)	13.30 (12.65, 13.98)	0.93 (0.87, 1.00)
Contraception Management	9578 (30.9%)	8804 (32.9%)	83.05 (81.40, 84.72)	76.29 (74.71, 77.89)	0.92 (0.89, 0.95)
Surveillance	4521 (14.6%)	4596 (17.2%)	39.03 (37.90, 40.18)	39.68 (38.55, 40.84)	1.02 (0.98, 1.06)
Counseling	2526 (8.1%)	2329 (8.7%)	21.77 (20.93, 22.63)	20.07 (19.26, 20.90)	0.92 (0.87, 0.98)
Unspecified Service	2531 (8.2%)	1879 (7.0%)	21.81 (20.97, 22.68)	16.18 (15.46, 16.93)	0.74 (0.70, 0.79)
STI Screening	16914 (54.5%)	14208 (53.0%)	147.60 (145.40, 149.82)	123.69 (121.68, 125.73)	0.84 (0.82, 0.86)
HPV	5022 (16.2%)	4897 (18.3%)	43.37 (42.18, 44.59)	42.29 (41.11, 43.49)	0.98 (0.94, 1.01)
HIV	1405 (4.5%)	1618 (6.0%)	12.10 (11.47, 12.75)	13.93 (13.26, 14.63)	1.15 (1.07, 1.24)
Other STI	10487 (33.8%)	7693 (28.7%)	91.00 (89.28, 92.75)	66.59 (65.12, 68.09)	0.73 (0.71, 0.76)
STI Counseling	74 (0.2%)	45 (0.2%)	0.64 (0.50, 0.80)	0.39 (0.28, 0.52)	0.61 (0.42, 0.88)
HIV	15 (0.0%)	12 (0.0%)	0.13 (0.07, 0.21)	0.10 (0.05, 0.18)	0.80 (0.37, 1.71)
Other STI	59 (0.2%)	33 (0.1%)	147.59 (145.39, 149.82)	123.69 (121.68, 125.73)	0.84 (0.82, 0.86)
Total	31045	26792	250.20 (247.33, 253.09)	216.01 (213.35, 218.70)	0.86 (0.85, 0.88)

***Long-Acting Reversible Contraception

TABLE 3: Number and Prevalence (per 10,000) of Sexual and Reproductive Health Services Provided by UW Healthcare Systems from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020 by Period of the Pandemic

	2019 (N=28385)	2020 (N=24589)	Prevalence 2019 (95% CI)	Prevalence 2020 (95% CI)	PR (95% CI)
Early Pandemic *(March 24th-May 31st)*	7746 (27.3%)	3669 (14.9%)	67.06 (65.58, 68.56)	31.65 (30.63, 32.69)	0.47 (0.46, 0.49)
Post Stay-at-Home *(June 1st-September 30th)*	13393 (47.2%)	13330 (54.2%)	116.51 (114.56, 118.49)	115.96 (114.01, 117.93)	1.00 (0.97, 1.02)
Third Wave *(October 1st-November 30th)*	7246 (25.5%)	7590 (30.9%)	62.70 (61.27, 64.16)	65.70 (64.23, 67.19)	1.05 (1.01, 1.08)
Total	28385	24589	250.20 (247.33, 253.09)	216.01 (213.35, 218.70)	0.87 (0.85, 0.88)

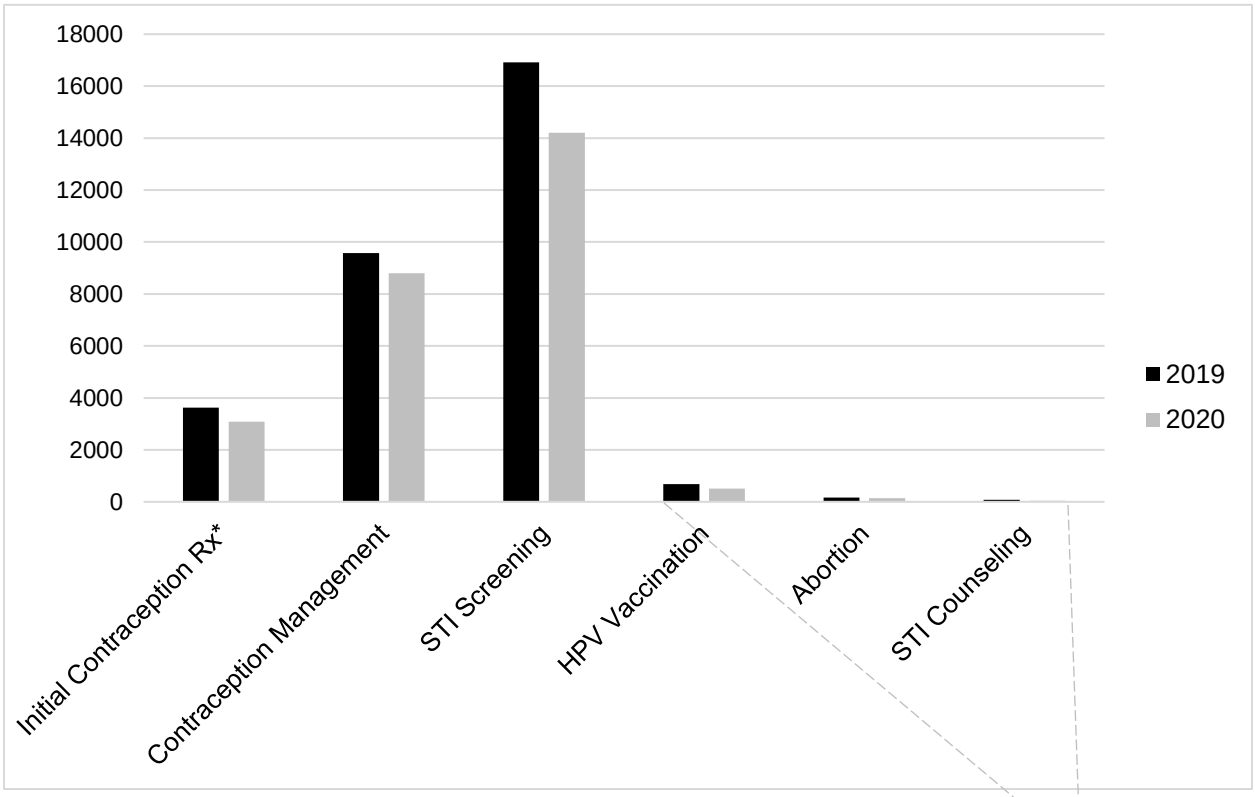
TABLE 4: Number and Prevalence (per 10,000) of Sexual and Reproductive Health Appointments Accessed through UW Healthcare Systems from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020 by Age Category of Patient

	2019 (N=28385)	2020 (N=24589)	Total (N=52974)	Prevalence 2019 (95% CI)	Prevalence 2020 (95% CI)	PR (95% CI)
15-19	1473 (5.2%)	878 (3.6%)	2351 (4.4%)	12.68 (12.04, 13.35)	7.56 (7.06, 8.07)	0.60 (0.55, 0.65)
20-24	4984 (17.6%)	3970 (16.1%)	8954 (16.9%)	43.04 (41.84, 44.25)	34.26 (33.20, 35.34)	0.80 (0.76, 0.83)
25-29	6179 (21.8%)	5608 (22.8%)	11787 (22.3%)	53.42 (52.10, 54.76)	48.46 (47.20, 49.74)	0.91 (0.88, 0.94)
30-34	6224 (21.9%)	5813 (23.6%)	12037 (22.7%)	53.81 (52.48, 55.16)	50.24 (48.96, 51.54)	0.93 (0.90, 0.97)
35-39	4459 (1 5.7%)	4001 (16.3%)	8460 (16.0%)	38.49 (37.37, 39.64)	34.52 (33.46, 35.61)	0.90 (0.86, 0.94)
40-44	2944 (10.4%)	2531 (10.3%)	5475 (10.3%)	12.68 (12.04, 13.35)	7.56 (7.06, 8.07)	0.86 (0.82, 0.91)
45-49	2122 (7.5%)	1788 (7.3%)	3910 (7.4%)	18.28 (17.51, 19.07)	15.40 (14.69, 16.13)	0.84 (0.79, 0.90)

TABLE 5: Number and Prevalence (per 10,000) of Sexual and Reproductive Health Appointments Accessed through UW Healthcare Systems from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020 by Sex of Patient

	2019 (N=28385)	2020 (N=24589)	Prevalence 2019 (95% CI)	Prevalence 2020 (95% CI)	PR (95% CI)
Female	23494 (82.8%)	20823 (84.7%)	435.67 (430.23, 441.15)	384.23 (379.13, 389.39)	0.89 (0.87, 0.90)
Male	4882 (17.2%)	3757 (15.3%)	82.02 (79.74, 84.34)	63.00 (61.01, 65.04)	0.77 (0.74, 0.80)

FIGURE 1: Sexual and Reproductive Health Services Provided by UW Healthcare Systems from March 24, 2019-November 30, 2019 and March 24, 2020-November 30, 2020



* Initial Contraception Prescription/Procedure

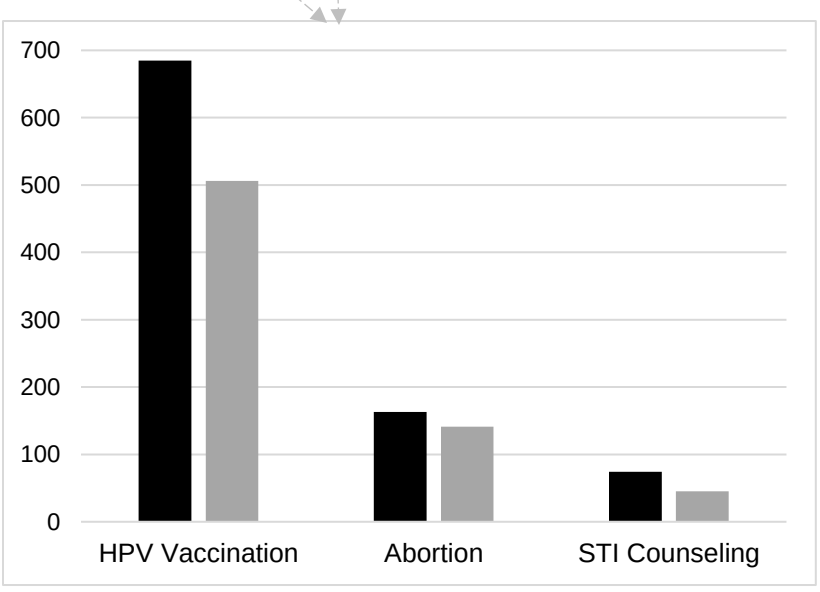


FIGURE 2: Sexual and Reproductive Health Appointments Provided by UW Healthcare Systems from March 24, 2019-November 30, 2019 and/or March 24, 2020-November 30, 2020 by Period of the Pandemic