


Trends in Pregnancy Rates in an Urban Adolescent Clinic Before and During the COVID-19 Pandemic

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Abstract

We examined COVID-19 pandemic-related changes on reproductive health care delivery and pregnancy rates in an adolescent clinic. Through a retrospective data collection as part of quality improvement project, we compared the number of pregnancies, visit percentages for newly diagnosed pregnancies, and number/percentage of long acting reversible contraception (LARC) visits. The percentage of visits for newly diagnosed pregnancies during the first 3 months of the COVID-19 pandemic (April-June 2020) increased significantly relative to pre-pandemic percentages while the absolute number of new pregnancies only trended upward. Over the same timeframe, the total number of LARC visits decreased, although they consisted of a higher percentage of all in-person visits than pre-pandemic. After the first few months of the pandemic, these values returned to pre-pandemic levels. The substantial increase in the rate of new pregnancies during the first 3 to 6 months of the COVID-19 pandemic demonstrates the importance of prioritizing access to reproductive health care services for adolescents and young adults.

Keywords

adolescents, pregnancy, COVID-19

Introduction

Although adolescents may be at lower risk for COVID-19-related hospitalization and death, the ongoing COVID-19 pandemic is significantly affecting their physical, mental, and reproductive health.¹ Reproductive health care is an essential component of care, and adolescents need consistent access to reliable contraception, including during a pandemic.² Unfortunately, the pandemic has negatively impacted adolescents' access to confidential care due to a lack of in-person appointments, difficulty traveling to appointments, fear of going into a medical office, and concern for privacy during telehealth visits.³ A Guttmacher survey from June 2020 showed that almost one-third of adult ciswomen have had to delay or cancel a visit related to sexual and reproductive health since the start of the pandemic.⁴ Providers may also have concerns for confidentiality and noted barriers to providing reproductive health care.⁵ Further studies estimate that this rate is likely even higher for adolescents and young adults, as they often have added concerns about confidentiality.^{1,4,6-8}

Prior to the pandemic, studies have demonstrated that adolescent pregnancy rates have been decreasing in the United States, which is thought to be due in part to a shift in the provision of more effective contraception, including long acting reversible contraception (LARC) such as the hormonal implant and intrauterine devices (IUDs).⁹ Previously, a decrease in sexual and reproductive health care access has been shown to lead to increased sexually transmitted infection and unintended pregnancy rates.³ Therefore, it is likely that similar

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increases would be seen during the height of the COVID-19 pandemic, when all aspects of health care were impacted.

In this retrospective study, we aimed to compare the rates of newly diagnosed pregnancies in our patient population during the COVID-19 pandemic to prior timeframes. We also examined whether there was a limitation of in-person appointments for LARC placement that may have contributed to an increase in pregnancy rates. Due to concern for decreased reproductive health care access, we hypothesized that there would be an increase in pregnancy rates in our clinic during the pandemic compared with the two prior years and that a decrease in our LARC appointment availability could have contributed to this trend.

Methods

We reviewed data from all pregnancy tests from April 1, 2018, through June 30, 2021, in the Boston Children's Hospital Adolescent/Young Adult Clinic. Data were collected as part of a quality improvement (QI) project. Throughout this project, a standard pregnancy intake form was completed by each provider upon providing care to patients newly diagnosed with pregnancy. A log was maintained by the program and weekly rounds were conducted to review cases and coordinate follow-up.

The rate of new diagnosis of pregnancy was calculated for each 3-month time interval over the past 2 years, where a year was defined as April 1 to March 30 to coincide with the start of the COVID-19 pandemic and "shelter in place" orders in Massachusetts in 2020. The positivity rate for pregnancy tests was calculated as the fraction of positive pregnancy tests among all tests (both positive and negative) performed in the Adolescent/Young Adult Clinic over those 3-month intervals. The percentage of visits with positive pregnancy tests out of all in-person visits for patients assigned as female in the medical record system was also calculated in same 3-month intervals. The percentage of visits for LARC (hormonal implant and IUD) procedures (including insertions, reinsertions, and removals) as a fraction of all in-person appointments was also computed within the same time periods. Our protocol was deemed exempt by the Boston Children's Hospital Institutional Review Board.

Results

The rate of pregnancy tests increased soon after the start of the pandemic ($P = .001$) with a positive pregnancy rate of 7.89% during April to June 2020, which was almost twice as high as the timeframe immediately

before (4.47% during January-March 2020) and more than twice as high as that 1 and 2 years prior (3.85% during April-June 2018 and 2.74% during April-June 2019). The percentage of in-person visits with a newly diagnosed pregnancy during April to June 2020 also increased considerably, with 4.31% of all females presenting for an in-person clinic visit having a newly diagnosed pregnancy during this timeframe. This pregnancy rate varied significantly over time ($P < .001$) as compared to 1.27% during January to March 2020, 1.17% during April to June 2018, and 0.81% during April to June 2019.

The absolute number of newly diagnosed pregnancies during these timeframes remained relatively stable, with 24 new pregnancies in April to June 2020, 23 new pregnancies in January to March 2020, 26 new pregnancies in April to June 2018, and 18 new pregnancies in April to June 2019 (Table 1; Supplemental Figure 1).

The absolute number of LARC appointments decreased considerably during the first 3 months of the pandemic (63 total appointments between April and June 2020). However, the percentage of LARC visits (out of all in-person visits) during that time increased noticeably to 11.31% during April to June 2020 compared with 6.07% during the previous 3 months, January to March 2020. We continued to have a higher percentage of LARC appointments (10.73%) over the following 3 months, as well, from July to September 2020, although the absolute number of appointments increased back to pre-pandemic times (139 total appointments between July and September 2020). We also calculated the percentage of visits that were for insertion/reinsertion and removals, which demonstrated similar trends (Supplemental Table 2).

Discussion

Prior to the COVID-19 pandemic, we found that there was a decrease in pregnancies from 2018 to 2019, which is consistent with national trends that are thought to reflect improved access to contraception.^{9,10} Our practice has established an active LARC Program and we surmise that the decreased pregnancy rate reflects increased access to LARC in our population. However, there was a substantial increase in percentage of positive pregnancy tests from April to June 2020, which coincided with the start of the COVID-19 pandemic and Massachusetts's "shelter in place" guidelines as compared with the same timeframe in 2019. The rates then started to decrease after the first few months of the pandemic and we were trending toward our baseline rate by June 2020. It is likely that this increase was secondary to the onset of the COVID-19 pandemic and associated

Table 1. Number of New Pregnancies Over 3-Month Intervals.

Timeframe	Number of newly diagnosed pregnancies	Total pregnancy tests completed	Positivity rate (%)	% of visits with positive pregnancy tests
April 2018-June 2018	26	676	3.85%	1.17%
July 2018-September 2018	14	655	2.14%	0.65%
October 2018-December 2018	19	650	2.92%	0.87%
January 2019-March 2019	17	672	2.53%	0.76%
April 2019-June 2019	18	658	2.74%	0.81%
July 2019-September 2019	10	654	1.53%	0.41%
October 2019-December 2019	14	605	2.31%	0.66%
January 2020-March 2020	23	514	4.47%	1.27%
April 2020-June 2020	24	304	7.89%	4.31%
July 2020-September 2020	15	499	3.01%	1.16%
October 2020-December 2020	14	508	2.76%	0.96%
January 2021-March 2021	13	513	2.53%	0.89%
April 2021-June 2021	23	544	4.23%	1.38%

decreased accessibility of in-person reproductive care. However, it is notable that the absolute number of new pregnancies only increased slightly, while our percentage of visits for newly diagnosed pregnancies increased significantly. Although it is unlikely this increase is related to the pandemic directly, the increase in pregnancy rates likely demonstrate the importance of maintaining in-person appointments for those who require it, such as those who are concerned for new pregnancy. Furthermore, these data exemplify the need for prioritizing reproductive health care access for adolescents and young adults, as this need has continued during the COVID-19 pandemic, including during the initiation of “shelter in place” guidelines.

Our clinic has been able to increase the provision of LARC over the past few years, although this was more difficult during the pandemic when virtual visits were prioritized, and only urgent care visits were scheduled in-person. However, although the total number of clinic visits decreased during the peak of the pandemic, we attempted to prioritize LARC appointments for those who desired them as early as possible when in-person clinical care was allowed. Our absolute numbers of LARC appointments did decrease over the first few months of the pandemic, but we were able to get them back to pre-pandemic values after a few months. This focus on access to reproductive health care may help to explain why the pregnancy rates decreased to pre-pandemic rates by September 2020.

In the context of the COVID-19 pandemic, it is important to remember that reproductive health care is an essential component of health care and should be prioritized, especially among vulnerable youth. In addition to the impact of the pandemic on their health care, many youths may be missing sexual education classes in

schools. Therefore, speaking with their providers about reproductive health becomes increasingly important.¹

All available contraceptive options can and should be discussed over telehealth, and many can even be started in a virtual visit, including the contraceptive pill, patch, and vaginal ring.¹¹ If an in-person appointment is required, such as for placement of an IUD or implant, a short-acting method can and should be prescribed in the interim. Additionally, emergency contraception can be prescribed and discussed through telehealth.^{2,12}

Although our study demonstrates the importance of continuing to provide reproductive health care, our study does have limitations. The results are only based on observational retrospective data. Additionally, we also only were able to compare the rates of pregnancy and rates of LARC usage, so it is unclear if overall contraceptive usage was down or just LARC usage. Further studies could be conducted to determine if adolescents were more likely to use short acting contraceptive methods instead of LARC during this time. Finally, data were also only collected at a single site, so it is difficult to assess if this is a broad trend seen in adolescents or just at our practice. Although our results demonstrate the importance of prioritizing reproductive health care within our population, broader studies should be completed before policy and practice changes should be considered.

We hope that through the continuation of both the adolescent pregnancy and LARC programs in our clinic, the rate of mistimed or unintended pregnancies will continue to stabilize. We continue to learn how to provide appropriate reproductive health care safely and feasibly to patients in the context of this pandemic. Our study highlights the importance of maintaining confidential and comprehensive reproductive health care services for

adolescents and young adults during a pandemic or in other settings in which in-person visits may be limited.

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Author Contributions

SF: Contributed to conception and design; contributed to acquisition, analysis, and interpretation; drafted manuscript; critically revised manuscript; gave final approval; Agrees to be accountable for all aspects of work ensuring integrity and accuracy.

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Supplemental Material

Supplemental material for this article is available online.

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