

**REDUCING UNINTENDED PREGNANCIES IN PENNSYLVIA: INCREASING
ACCESS TO LONG-ACTING REVERSIBLE CONTRACEPTIVES IN TITLE X
CLINICS**

by

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ABSTRACT

INTRODUCTION: Long-acting reversible contraceptives (LARCs) can significantly reduce incidence of teen pregnancy and unintended pregnancy and indirectly reducing the rate of abortion, preterm birth, and low birthweight. A cohort study and two statewide interventions in the United States have demonstrated the impact LARCs have, yet uptake in the United States remains relatively slow, particularly among 15 to 24-year-olds, who have the highest rates of unintended pregnancy. Access to effective forms of birth control is an issue of public health significance as it is linked to negative maternal and neonatal health outcomes. One of the causes of low LARC use is that fewer family planning clinics provide them. The purpose of this work is to examine the reasons why disparities in LARC access persist as well as the ways in which Pennsylvania, and in particular rural communities, could benefit from a statewide initiative to increase LARC access.

METHODOLOGY: Statewide data from the 2017 Family Planning Annual Report was obtained from each of the four organizations responsible for distributing Title X funding in Pennsylvania. Each organization provided reports on the insurance status and primary birth control method of female patients at Title X clinics in their respective region of the state.

RESULTS: Title X clinics in Pennsylvania primarily serve uninsured and publicly insured individuals as compared to statewide insurance proportions. Fewer Title X patients in

Pennsylvania use LARCs than patients nationwide, and high disparities exist between rural and urban Pennsylvania counties. The organizations that oversaw Pittsburgh's two largest cities, Philadelphia and Pittsburgh, had higher rates of LARC use than the organizations that did not include a large urban area.

CONCLUSION: Findings suggest a disparity in LARC access between urban and rural communities, and a clinic-by-clinic assessment of birth control methods offered is a recommended next step. As low-income women are at an increased risk of unintended pregnancy, Title X clinics need to be capable of providing patients with the most effective methods of birth control.

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1.0 INTRODUCTION

Approximately 45% of pregnancies in the United States (U.S.) are unintended as of 2011 (Finer & Zolna, 2016). While this is a decrease from 51% in 2008, research in 2012 shows North America, defined as the U.S. and Canada, lags behind the western and northern regions of Europe, which report rates of 34% and 38%, respectively (Sedgh, Singh, & Hussain, 2014). Some research indicates that jointly, unintended, teen, and “rapid repeat” pregnancies have been tied to multiple negative health outcomes, including increased rates of maternal depression, low birth weight, low breastfeeding rates, and intimate partner violence (Parks & Peipert, 2016).

In the past ten years numerous programs have advocated the use of long-acting reversible contraceptives (LARCs). The Contraceptive CHOICE Project, a St. Louis-based study, encouraged women to use LARCs by removing barriers such as cost, access, and patient knowledge. The study recruited women at increased risk for unintended pregnancy, including women under 25, with low socioeconomic status, or from a minority background. Women using non-LARC methods were over 22 times more likely to experience an unintended pregnancy compared to LARC users (McNicholas 2014).

The Colorado Family Planning Initiative (CFPI) was established in 2009 by the Colorado Department of Public Health and Environment (CDPHE) (Dube 2015). The goal was to provide training, outreach, and assistance to family planning clinics that received Title X funding; the initiative also provided funds to clinics to offer free long-acting reversible contraceptives

(LARCs), vasectomies, and tubal ligations. Over 100 public health centers received funds through CFPI (Dube 2017).

Every year the Department of Health and Human Services' Office of Population Affairs publishes a Family Planning Annual Report (FPAR) that summarizes the services and capabilities of Title X grantees on a national level. Four Title X grantees in Pennsylvania are responsible for tracking and submitting data: AccessMatters, Adagio Health, Maternal and Family Health Services, Inc., and Family Health Council of Central Pennsylvania, Inc. The data submitted in these reports include family planning user demographics, income and insurance status, and contraceptive method use. Using these data, which have previously only been presented on a national or multi-state scale, a statewide snapshot of Title X family planning clients will be constructed to illustrate the number of Pennsylvania using LARCs as compared to other methods.

This thesis highlights statewide social and economic benefits to Pennsylvania launching its own version of the CFPI. This will provide a basis for policy makers at the state level to argue that funds be allocated to such a program.

This paper will begin with a background of unintended pregnancies, including literature regarding disparities between racial, economic, and geographic groups in the United States and Pennsylvania; the impact of unintended pregnancies on maternal and child health; the state and federal costs incurred by unintended pregnancies; policy and access issues around contraception and abortion; and background on long-acting reversible contraceptives. Additionally, three interventions that demonstrated the impact of increasing access to long-acting reversible contraceptives will be reviewed: the Contraceptive CHOICE Project, the Colorado Family Planning Initiative, and Delaware Contraceptive Access Now. Next, data collection methods

will be described, followed by a summary of the data. Then, findings will be discussed and compared to national level data and to outcomes in the aforementioned interventions. This discussion will also include suggestions of community partners that could aid in the proposed intervention as well as the potential impact of such an intervention. Finally, the paper will end with next steps that should be taken to pursue support for a statewide intervention.

2.0 BACKGROUND

Unintended pregnancies (UIPs) are defined as pregnancies that are either unwanted, which make up 27% of all pregnancies, or mistimed, which make up 18% of all pregnancies (Guttmacher Institute, 2016). A pregnancy is defined as mistimed if the woman has become pregnant earlier than she intended while a pregnancy is unwanted if the woman had no intention of becoming pregnant (D'Angelo, Gilbert, Rochat, Santelli, & Herold, 2004). Unintended and teen pregnancy rates vary by demographics, including race and geographic classification, and can increase the risk of negative maternal and infant health outcomes. Recent interventions have shown that increasing access to highly effective forms of contraception can reduce unintended and mistimed pregnancies and decrease the need for state and federal funded services such as Medicaid.

2.1 DEMOGRAPHICS OF UNINTENDED PREGNANCIES

Women ages 20 to 24-years-old have the highest rate of unintended pregnancies in the US, at 81 UIPs per 1,000 women. In 2011, this equated to 878,000 unintended pregnancies, 59% of all pregnancies for that age group. The next highest rate was among 18 to 19-year-olds at 71 per 1,000. Seventy-six percent of all pregnancies in this age group, 305,000 in 2011, were unintended.

By race, black non-Hispanic women are more likely than women of other races to have an unintended pregnancy: 79 for every 1,000, compared to 33 for non-Hispanic white women. Out of all pregnancies among black non-Hispanic women, 69% were unintended, compared to only 38% for white non-Hispanic women. Hispanic women experience UIPs at a rate of 58 per 1,000, and 50% of all pregnancies are classified as unintended. Differences also exist by education level: women who have not completed high school or received a GED have a rate of 73 UIPs per of 1,000, making up 45% of all pregnancies in that group. High school graduates experience a lower rate of unintended pregnancies, 59, but 54% of pregnancies are unintended. As education increases, the rate and percentage of UIPs decrease, with 46% of pregnancies being unintended among those with some college and 27% among college graduates.

Low-income women disproportionately experience unintended pregnancy. In 2011, there were 112 UIPs for every 1,000 women with incomes below 100% of the federal poverty level (FPL). At 100-199% of the FPL 58 UIPs per 1,000 women occurred. In contrast, women at or above 200% of the federal poverty level had a rate of 20 UIPs per 1,000.

2.2 IMPACT OF UNINTENDED PREGNANCIES

2.2.1 Maternal and Child Health

Per the Guttmacher Institute, U.S. women spend an average of three decades trying to avoid an unintended pregnancy (Guttmacher Institute, 2016). Women shoulder the financial, physical, and emotional burden of the most effective types of contraception as well as the consequences of unplanned pregnancies, such as poverty, stigma, and the struggle to obtain an abortion.

Women who experience an UIP can be at an increased risk for negative social, economic and health outcomes. Adolescents who become pregnant are less likely to finish high school or receive a GED, relative to similar adolescents who do not become pregnant, leading to limited economic opportunities (Perper, 2010). Additionally, women without a high school diploma or GED have been found to have worse health outcomes than women who completed high school, including decreased life expectancy (Kaplan, Fang, & Kirby, 2017). Adolescents are at an increased risk of rapid repeat pregnancies, or pregnancies occurring within two years of a previous pregnancy, and these pregnancies are more likely to result in stillbirth or premature birth (Baldwin & Edelman, 2013). UIPs are linked to higher rates of maternal depression, low birthweight, lower breastfeeding rates, and intimate partner violence. Long-term outcomes for children resulting from UIPs include poorer mental, physical, and behavioral health (Parks & Peipert, 2016).

2.2.2 State and federal costs

In 2010, unintended pregnancies cost the United States \$21 billion in public expenditures. In Pennsylvania, \$726.8 million were spent on UIPs, with \$248.2 million of that paid by the state. This covered the 31,000 unplanned births that were publicly funded, 53.5% of all births in Pennsylvania that year. Per woman, UIPs cost \$298 in Pennsylvania, compared to \$201 nationally. Without current funding for family planning programs, \$434.4 million more state and federal funds would have been spent on childbirth costs, Medicaid, WIC, and CHIP because of two million additional unintended pregnancies (Guttmacher Institute, 2017).

2.3 CONTRACEPTION AND ABORTION

2.3.1 Contraception in the United States

Sixty-eight percent of women at risk for pregnancy (i.e. cisgender, sexually-active premenopausal women) consistently use contraception and account for just 5% of UIPs. Eighteen percent of women at risk of pregnancy use birth control either inconsistently or incorrectly and account for 41% of UIPs. Fourteen percent of women at risk use no birth control or have gaps of one month or more and account for 54% of UIPs (almost 1.7 million pregnancies in 2008) (Guttmacher Institute, 2016). Multi-state surveys showed 45.2% of girls between 15 and 19 who gave birth had at some point used “moderate or very effective” birth control, indicating that adherence is an issue for adolescents (Yoost, 2014).

Oral contraceptives (“the pill”), which require daily compliance, are the most commonly used method. As of 2014, 25.3% of contraceptive users between the ages of 15 and 44 use the pill (Guttmacher Institute, 2018), and 20.7% of sexually active adolescents use the pill. The pill has a 7% failure rate, but among adolescents, it has a failure rate of 10% to 15% (Davtyan, 2000). The patch and shot are also commonly used by adolescents. One Centers for Disease Control and Prevention (CDC) report estimated that in 2011-2013, 2% of teenagers had previously used a transdermal contraceptive patch, 15% used Depo-Provera (the shot), 3% used an intrauterine device (IUD), and 2% had used a hormonal implant. The patch and shot are both more popular among adolescents than other age groups; in 2014 0.1% of women aged 15 to 44 used the patch and 2.4% used the shot.

Condoms are the most accessible form of birth control; however, they are categorized as “less effective” and have a typical use failure rate of 18%. The 2017 Youth Risk Behavior

Survey found that among sexually active high school students, only 53.8% reported using a condom during their last sexual encounter (CDC, 2017).

2.3.2 Abortion in the United States

Forty-two percent of unintended pregnancies are aborted, and in 2014, 75% of abortion patients had incomes at or below 199% of the FPL. However, due to the Hyde Amendment, abortion is disproportionately inaccessible to low-income women (Guttmacher Institute, 2016). Under the amendment, abortion is not covered by publicly funded insurance in a majority of states except in cases of rape, incest, or to save the life of the mother (Boonstra, 2016), and can cost up to \$950 out-of-pocket (Planned Parenthood, 2014). This does not include costs due to travel, childcare, or lost income.

2.4 UNINTENDED PREGNANCIES IN PENNSYLVANIA

Per the Pregnancy Risk Assessment Monitoring Survey (PRAMS) Pennsylvania report, in 2016 34.3% of pregnancies were “mistimed or unwanted” while 19.5% of respondents were “unsure about pregnancy” (CDC, 2018). However, the PRAMS surveys only women who experience live births, excluding women who experience miscarriage, stillbirth, and abortion. Per the Guttmacher Institute, in 2010, 53% of all Pennsylvania pregnancies, regardless of outcome, were classified as unintended. Of those, 66% were mistimed while 34% were unwanted. Thirty-five percent of Pennsylvania UIPs ended in abortion, 52% ended in birth, and 13% were miscarried

(Kost, 2015). As of 2014, 1,523,010 Pennsylvania women and girls needed family planning services, and 745,550 of those were in need of publicly-funded services (Frost, 2016).

In 2013, the adolescent pregnancy rate (APR) for Pennsylvania was 35 per 1,000 women aged 15-19; the national rate was 43 per 1,000. Seventy-five percent of adolescent pregnancies are unintended (Guttmacher Institute, 2017). Although state and age-specific pregnancy rates are unavailable, in 2015, the adolescent birth rate (ABR) for 15-19-year-old Pennsylvanian women was 17.6 per 1,000 (Pennsylvania Department of Health, 2018) while the rate for the United States was 22.3 (National Vital Statistics System, 2017). Overall, Pennsylvania experiences significantly lower rates of adolescent birth than the rest of the country; however, county level data show significant differences within the state (Table 1). The below table presents the crude age-specific birth rate for girls aged 15 to 19 by county.

Table 1. Pennsylvania Births: Crude/Age-Specific Birth Rates per 1,000 females 15-19 years old

County/State	Count	Population	Crude/Age-Specific Birth Rate	Lower Bound	Upper Bound
Pennsylvania	7,172	407,629	17.6	17.2	18
Venango	49	1,446	33.9	24.4	43.4
Bradford	59	1,758	33.6	25	42.1
Fayette	122	3,642	33.5	27.6	39.4
Elk	28	867	32.3	20.3	44.3
Philadelphia	1,598	49,909	32	30.4	33.6
Fulton	13	437	29.7	13.6	45.9
Jefferson	37	1,296	28.5	19.4	37.7
Mifflin	38	1,344	28.3	19.3	37.3
Northumberland	63	2,276	27.7	20.8	34.5
Potter	13	475	27.4	12.5	42.2
Franklin	120	4,712	25.5	20.9	30
Somerset	49	1,940	25.3	18.2	32.3
Luzerne	240	9,572	25.1	21.9	28.2
Lawrence	66	2,657	24.8	18.8	30.8
Greene	26	1,124	23.1	14.2	32
Blair	84	3,651	23	18.1	27.9
Bedford	31	1,372	22.6	14.6	30.5
Clearfield	47	2,083	22.6	16.1	29

Table 1 Continued					
Lehigh	266	11,966	22.2	19.6	24.9
McKean	30	1,354	22.2	14.2	30.1
Lebanon	93	4,213	22.1	17.6	26.6
Dauphin	176	8,023	21.9	18.7	25.2
Lycoming	76	3,470	21.9	17	26.8
Armstrong	38	1,743	21.8	14.9	28.7
Cambria	92	4,216	21.8	17.4	26.3
Lackawanna	147	6,749	21.8	18.3	25.3
Erie	210	9,702	21.6	18.7	24.6
Montour	10	467	21.4	8.1	34.7
Tioga	32	1,494	21.4	14	28.8
Berks	309	14,554	21.2	18.9	23.6
Carbon	36	1,698	21.2	14.3	28.1
Warren	23	1,097	21	12.4	29.5
York	277	13,554	20.4	18	22.8
Perry	25	1,292	19.3	11.8	26.9
Crawford	57	2,967	19.2	14.2	24.2
Adams	65	3,461	18.8	14.2	23.3
Schuylkill	69	3,700	18.6	14.2	23
Beaver	83	4,491	18.5	14.5	22.5
Huntingdon	27	1,457	18.5	11.5	25.5
Mercer	69	3,738	18.5	14.1	22.8
Clinton	29	1,606	18.1	11.5	24.6
Lancaster	292	17,955	16.3	14.4	18.1
Susquehanna	18	1,178	15.3	8.2	22.3
Juniata	11	756	14.6	6	23.1
Columbia	43	3,030	14.2	9.9	18.4
Westmoreland	136	9,920	13.7	11.4	16
Washington	85	6,289	13.5	10.6	16.4
Snyder	20	1,570	12.7	7.2	18.3
Allegheny	455	36,121	12.6	11.4	13.8
Northampton	126	9,961	12.6	10.4	14.9
Pike	21	1,761	11.9	6.8	17
Monroe	76	6,528	11.6	9	14.3
Delaware	226	19,688	11.5	10	13
Butler	72	6,455	11.2	8.6	13.7
Union	18	1,751	10.3	5.5	15
Cumberland	85	8,449	10.1	7.9	12.2
Indiana	37	3,829	9.7	6.5	12.8
Wayne	11	1,390	7.9	3.2	12.6

While Pennsylvania has the 15th lowest ABR among U.S. states, three counties have ABR rates on par with Arkansas, which has the highest ABR, 34.6 births per 1,000 teens (Martin, 2018).

2.5 URBAN-RURAL DISPARITIES

From 2007 to 2015, teen births decreased 50% in urban counties nationally, from 38.1 births per 1,000 to 18.9 (Hamilton, Rossen, & Branum, 2016). In medium and small urban counties teen births dropped 44% (43.1 to 24.3). Meanwhile in rural counties the teen birth rate dropped 37% from 49.1 births per 1,000 to 30.9 births per 1,000, higher than the national average (Romero et al., 2016).

Forty-eight out of 67 Pennsylvania counties are classified as rural by the Center for Rural Pennsylvania. By state, Pennsylvania (along with Alaska, Maryland, Montana, and North Dakota) reported the smallest decreases in rural county ABR, less than 30%. From 2007 to 2015, teen birth rates in urban Pennsylvania decreased 44.7% while the rate in rural areas decreased by only 24.8%. Of the 10 Pennsylvania counties with the highest ABRs (see Table 1), nine are rural. Among the counties with the lowest ABR, six are rural and four are urban.

Urban-rural differences exist across racial groups: the ABR for non-Hispanic white teens was 10.5 in urban counties, nationwide, and 26.8 in rural counties. For non-Hispanic black teens, the urban ABR was 29.1 while the rural ABR was 39.6, and for Hispanic teens the rate was 31.4 in urban areas and 47.0 in rural areas (Hamilton et al., 2016). Although fewer data are available for other racial groups, a 2013 report showed similar differences for Asian/Pacific Islander teens (8.7 in urban and 25.6 in rural counties) and Native American teens (17.6 in urban

and 65.7 in rural) (Ng & Kaye, 2015). State level data on the rural-urban difference among racial groups could not be found.

Rural teens are also less likely to be well-educated about birth control. Per the Guttmacher Institute, declines in formal education on contraception have been concentrated in rural areas (Lindberg, Maddow-Zimet, & Boonstra, 2016). From 2006 to 2013, formal instruction decreased from 71% to 48% for rural girls and 59% to 45% for rural boys. In a qualitative study of rural educators' attitudes towards in-school sex education, rural educators perceived two main barriers as compared to urban educators. Per respondents, rural schools faced more monitoring by churches, school boards, and community members as well as an overall increased level of religiosity (Blinn-Pike, 2008).

2.6 LONG-ACTING REVERSIBLE CONTRACEPTIVES

This thesis focuses on the uptake of long-acting reversible contraceptives (LARCs). LARCs are methods of contraceptives that require little or no user action to be effective. Two types of contraceptives are classified as LARCs by the American College of Obstetricians and Gynecologists (ACOG): intrauterine devices (IUDs) and hormonal implants. Once inserted by a physician, these methods last for long periods of time and are more than 99% effective. Unlike other contraceptives, their rates of typical use and perfect use are identical because after the initial insertion no follow-up action is required. LARCS were used by 16% of all female contraceptive users in 2017 (Fowler, 2018) and by 4.3% of adolescent contraceptive users (Coles & Shubkin, 2018).

IUDs come in hormonal and nonhormonal forms. There are four types of hormonal IUDs, all of which emit progestin. Depending on the type of hormonal IUD, it is effective for three to seven years. The nonhormonal IUD, Paragard, is made of copper and lasts for 12 years. The implant, which lasts four years, is placed under the skin of the arm.

Use of LARCs differs by region, and several studies have shown differences based on urban-rural classification. A survey of Title X family planning providers Texas in 2008-2009 found that urban clinics were more likely to provide LARCs than rural clinics (Vaaler, Kalanges, Fonseca, & Castrucci, 2012). Additionally, 75% of urban providers had “adequate” LARC training while only 57% of rural providers did. A 2016 survey on the attitudes of pediatricians towards LARCs found that severe knowledge deficits exist (Berlan, Pritt, & Norris, 2017). Most surveyed pediatricians held unfavorable views on IUDs for adolescents and did not include IUDs in birth control counseling. Concerns about safety persist, stemming largely from the Dalkon Shield, an IUD that was banned in 1983 following high rates of infertility, pelvic inflammatory disease (PID), and septic maternal death. IUD usage in the U.S. decreased following discontinuation of the Dalkon Shield, and “more than a generation of health care providers were instructed that IUDs should only be used by parous women in a monogamous relationship” (Berlan et al., 2017, p. 50). However, recent studies have shown that the risk of PID is no higher for IUD users than for the general population (Straub, Reynaud, & Yaron, 2018). There is an increase in risk (6.3 times greater) of PID in the first 20 days following insertion; however, this has been found to be due to bacterial contamination during the procedure (Yoost, 2014).

Dual-method contraception is the use of a moderately or highly effective contraceptive as well as a condom to prevent pregnancy and STI transmission. A concern with LARCs is that they do not prevent STI transmission. In the 2006-2008 National Survey of Family Growth only

3.3% of people with LARCs also used condoms compared to 21.7% of pill users, 16% of patch users, 16.7% of shot recipients, and 32.6% of ring users. Another study found that 15 to 19-year-olds using LARCs or the shot were almost twice as likely as women 20 years and older to use condoms (Williams & Fortenberry, 2013).

2.7 PREVIOUS INTERVENTIONS

As mentioned above, despite their high effectiveness in preventing pregnancy, LARCs are used by only a small percentage of contraceptive users. Recent interventions have shown the benefits of increasing LARC use, both for women and for state and federal social programs.

2.7.1 Contraceptive CHOICE Project

The Contraceptive CHOICE Project, launched in 2007, was a prospective cohort study conducted by Washington University in St. Louis, Missouri. Investigators estimated that less than 5% of St. Louis women were using LARC methods. CHOICE's purpose was to assess the change in LARC use rates if barriers of cost, patient knowledge, and access were removed. A representative cohort of 9,256 women was recruited to participate. Women were eligible if they were 14 to 45 years old, were sexually active with a man or planned to be, wanted to avoid pregnancy for at least one year, and were interested in starting a new contraceptive method (McNicholas, Madden, Secura, & Peipert, 2014).

Once enrolled, participants were counseled on different birth control methods using a script designed to provide accurate and unbiased information on all reversible contraceptive

methods and assist participants in choosing the best device for their needs. Participation in the study lasted two to three years, during which women were provided with their preferred method at no cost. Women were free to change their method as many times as they wanted. Demographic and medical histories were collected at baseline, and phone interviews were conducted at three and six months after enrollment and thereafter every six months for the remainder of the study period.

A baseline survey of contraceptive knowledge was conducted at the beginning of the study, during which it was revealed respondents that generally underestimated the effectiveness of LARCs. Sixty-five percent correctly identified the effectiveness of IUDs while 55% correctly identified the effectiveness of implants. Additionally, 45% of participants overestimated the effectiveness of the pill, patch, and ring methods. Following contraceptive counseling, 75% of participants chose a LARC method. Continuation rates were higher for LARC users than non-LARC users, with 86% continuation at 12 months and 77% at 24 months, compared to 55% and 41%, respectively. Among those who chose the pill, patch, or ring, the failure rate was 9.4% at the three-year mark while the failure rate for LARC users was less than 1%. Participants who chose non-LARC methods were over 22 times as likely to experience an unintended pregnancy compared to those who used LARCs. During the study, abortion rates among all participants was less than half the regional rate and the national rate. Among adolescent participants, pregnancy, birth, and abortion were all reduced by more than 75% (McNicholas et al., 2014).

2.7.2 Colorado Family Planning Initiative

The Colorado Family Planning Initiative (CFPI) was established in 2009 by the Colorado Department of Public Health and Environment (CDPHE). Its goal was to provide training,

outreach, and assistance to family planning clinics that received Title X funding; the initiative also provided funds to clinics to offer free LARCs, vasectomies, and tubal ligations. Over 100 public health centers received funds through CFPI to purchase LARCs. The CFPI also trained health care staff and provided operational support for clinics. Clinics were able to improve their billing practices, increase their hours of operation, hire additional staff, open new sites, and develop relationships with local community partners (CDPHE, 2017).

Between 2009 and 2015 the CFPI provided LARCs to more than 30,000 Colorado women (Dube, 2015). By 2015 the percent of Title X patients using LARCs had increased from 6.4% to 30.5%. Statewide, among adolescents the UIP rate decreased by 40%, and among women 20 to 24 it decreased by 20%. Using a decision-analytic model, CDPHE calculated that nearly half of the decline among adolescents and 39% of the decline among 20 to 24-year-olds was due to the CFPI.

Adolescent births decreased by 40%, and adolescent abortion declined by 35%. Repeat adolescent births decreased by 57% and repeat births among 20 to 24-year-olds decreased by 19%. At the start of the program, 19.8% of Colorado women giving birth did not have a high school diploma; by 2014 that was reduced to 12.2%. The CDPHE monitored the change in high risk births over the course of the initiative. High risk births in this instance are defined as births to mothers under 25 who are unmarried and have not completed high school; these factors increase the likelihood of poor infant health outcomes, living in poverty, and greater need of government assistance. Over the course of the initiative, high risk births in Colorado dropped from 6.4% to 3.4% (CDPHE, 2017). For rural Colorado counties, the adolescent birth rate decreased 50.7% from 2007 to 2015, compared to the national decrease of 37.1%. For urban

counties the adolescent birth rate decreased 53.8% compared to the national average of 47.6% (Hamilton et al., 2016).

CDPHE estimated that the CFPI was directly responsible for an overall reduction of 17% in pregnancies, births, miscarriages, and abortions among adolescents and a 7.8% reduction of the same outcomes for 20 to 24-year-olds. Because the time frame coincided with the rollout of the Affordable Care Act and a nationwide decrease in fertility rates, the CDPHE compared Colorado to control groups comprised of counties in other states with similar characteristics to Colorado counties. Thus adjusted trends were calculated to show the specific impact of the CFPI.

Costs avoided were calculated for Medicaid, Temporary Assistance for Needy Families, Supplemental Nutrition Assistance Program, and Special Supplemental Nutrition Program for Women and Children. Between \$66 million and \$69.6 million in costs were saved from 2010 to 2014 due to the CFPI. In comparison, the entire initiative was funded with a \$27.3 million grant, or a little over \$5 million a year.

Clinic training during the grant had a significant impact on the sustainability of the program. Title X clinics were encouraged to transition from operating as free clinics to businesses capable of generating income. At the start of the grant period, 20% of clinic revenue, totaling \$345,000, was from third-party payers like Medicaid and private insurance while 80% of revenue collected in Title X clinics was from clients. In 2014, 75% of revenue, more than \$4 million, was being collected from third-party payers while only 25% was paid by clients. This decreased the amount of funding needed to maintain the CFPI. When grant funding ended in 2015, the CDPHE was able to maintain the program on only \$2.5 million per year, rather than the \$5 million that had been required at the beginning of the initiative. Additionally, the CDPHE

established a formal referral system so that clinics that remained unable or unwilling to provide LARCs were prepared to refer patients who sought LARCs to the closest clinic that provided them (CDPHE, 2017).

2.7.3 Delaware CAN

In 2014, Upstream USA (Upstream), a healthcare non-profit, launched Delaware CAN (Contraceptive Access Now), a statewide initiative to provide all Delaware women with easy access to their preferred method of contraception. Upstream has partnered with the Delaware Division of Public Health and the governor to work with health centers to improve staff knowledge, counseling abilities, and confidence so that clinics are able to offer single-visit access to all forms of contraceptives. In its first four years, Upstream has worked with 41 agencies to improve 165 health care delivery sites (Welti, 2018).

Though Delaware CAN is ongoing, in 2018 Upstream commissioned Child Trends, a nonprofit research center, to analyze the impact of the program to date. This report looked at Title X family planning patients between the ages of 20 and 39, excluding 15 to 19-year-olds due to incorrect method categorization. Additionally, Child Trends excluded from the analysis women who were trying to become pregnant, reported they were abstinent, or had their contraceptive method listed as “unknown.” Among 20 to 39-year-olds, LARC use increased from 13.7% to 27% from 2014 to 2016. In comparison, nationally the rate increased from 13.6% to 17.6%. As LARC users increased, there was an accompanying decrease in the number of women using the pill, patch or ring; there was also a nearly 2% decrease in the number of patients using no method. Child Trends conducted simulations using a microsimulation tool called FamilyScape to estimate the impact Delaware CAN has had on Title X patients thus far.

Per the analysis, the unintended pregnancy rate dropped from 106 per 1,000 women to 89.7, a decrease of 15.4%. In the same time frame, the national rate decreased by 1.3%.

3.0 METHODS

The goal of this thesis is to demonstrate that Pennsylvanian women would benefit from a statewide LARC-focused intervention and that such an intervention would decrease unintended and teen pregnancies and decrease reproductive health disparities between rural and urban counties. To achieve this, aggregate level data were collected from Pennsylvania clinics that receive Title X funding. The Office of Family Planning, part of the Office of Population Affairs, collects data on the use of Title X funds annually and publishes the Family Planning Annual Report (FPAR). FPAR presents the collected data at a national level as well as by regions designated by the Department of Health and Human Services (HHS). These ten regions encompass multiple states; Pennsylvania is in Region III, which also includes Delaware, Maryland, Virginia, Washington, D.C., and West Virginia. Grantees within each region are granted Title X funding and are required to submit annual reports on the use of this funding (Office of Population Affairs, 2018a).

3.1 DATA COLLECTION

Four organizations in Pennsylvania receive Title X funding (Office of Population Affairs, 2018b) and are responsible for dispersing Title X funds to 164 subgrantees (see Appendix A), i.e. medical providers of family planning services, as well as collecting data from subgrantees for the

FPAR. The four Title X grantees in Pennsylvania are AccessMatters, Philadelphia, PA; Adagio Health, Pittsburgh, PA; Maternal and Family Health Services, Inc. (MFHS), Wilkes-Barre, PA; and Family Health Council of Central Pennsylvania, Inc. (FHCCPA), Camp Hill, PA. Each of these grantees is responsible for a discrete section of Pennsylvania (see Figure 1). Clinics send monthly reports compiled from electronic medical records to the organization that provides their Title X funding. These reports are compiled to create the annual FPAR report sent to HHS.

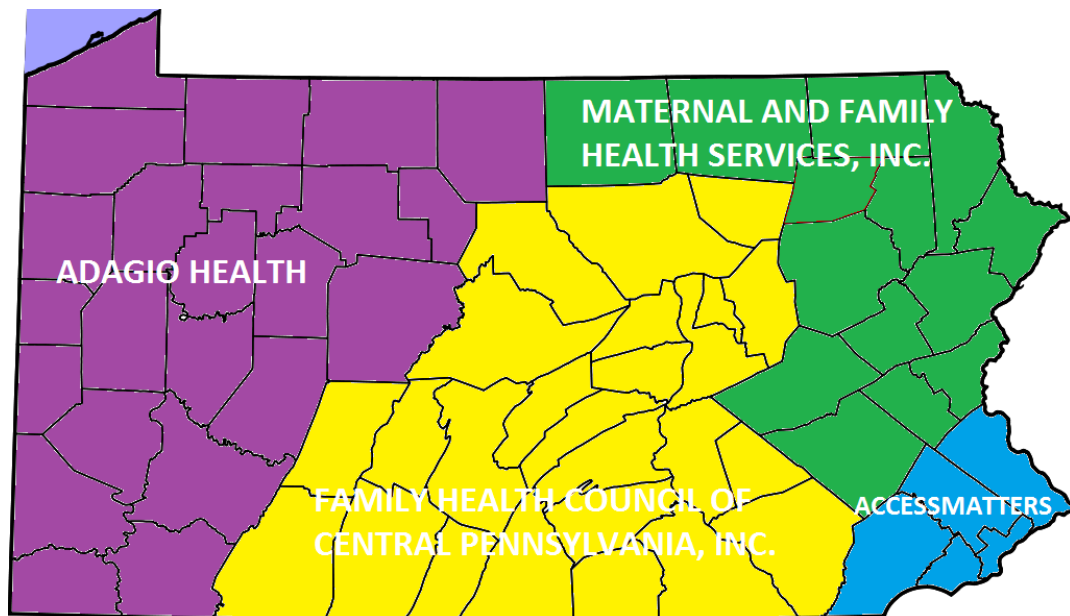


Figure 1. Title X Grantees of Pennsylvania

Stransky 2018

Each of the four organizations was contacted for Title X clinic data. Responses were received from Tamar Klaiman, Director of Research and Evaluation for AccessMatters; Linda Snyder, Director of Evaluation and Strategic Analysis for Adagio Health; John Kearney, Vice President of Program Services and Business Initiatives for MFHS; and Kacey Schneider, Director of Provider Relations for FHCCPA.

All four organizations provided aggregate data for two sections of the 2017 FPAR: “Table 5: Unduplicated Users by Principal Health Insurance Coverage Status” and “Table 7: Unduplicated Females by Primary Method and Age Group.” Table 5 includes data for all family planning users, regardless of gender, and Table 7 only includes information from patients who identify as female. Women who use more than one type of contraceptive (e.g. an implant and condoms or the patch and spermicide) are only counted for the most effective method they use to avoid duplication. The variables measured for insurance were the principal coverage status: private insurance, public insurance, uninsured, or coverage unknown. For primary method of family planning, counts were given by method and age group. LARC use measured by combining the counts of individuals using either a hormonal implant or an IUD, and percentages were calculated for each age group to show how primary method differed by age group.

4.0 RESULTS

Pennsylvania has 164 Title X-funded clinics (Figure 2) which, in 2017, provided family planning services to 175,036 women. Subgrantees, organizations which receive Title X funding through one of the four grantees, include Planned Parenthood clinics, pediatric offices, hospitals, university health centers, youth organizations, and community health centers.

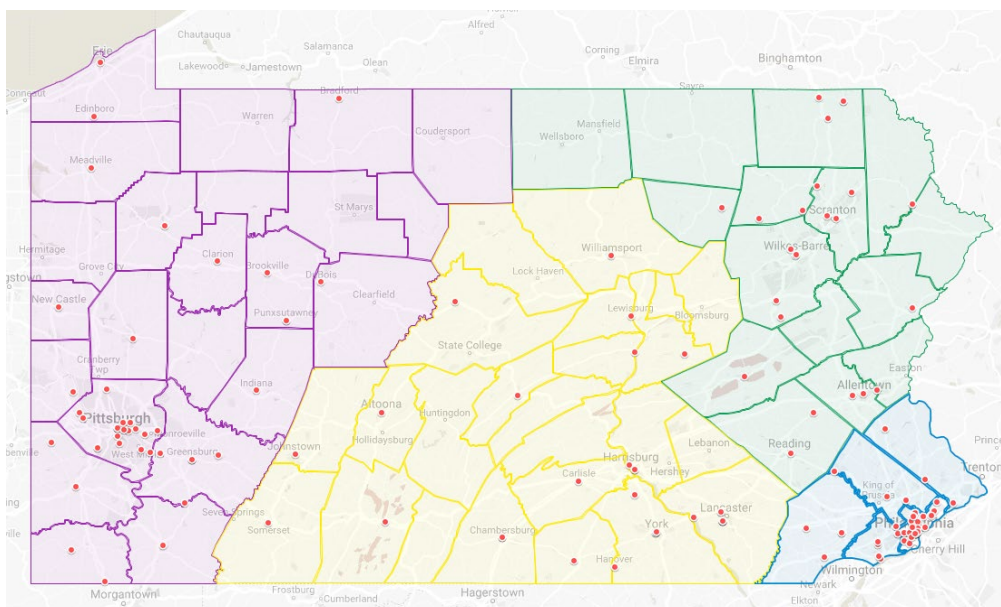


Figure 2. Locations of Title X Subgrantees, 2007

Made using Google Maps

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The southeastern five counties are covered by AccessMatters, the northeastern counties are covered by Maternal Family Health Services, the central and southern counties are covered

by the Family Health Council of Central Pennsylvania, and western Pennsylvania is covered by Adagio Health. Each dot is a clinic the organization lists as a recipient of Title X funding.

4.1 ACCESSMATTERS

AccessMatters serves Bucks, Chester, Delaware, Montgomery, and Philadelphia counties (see Figure 2); as of 2016 the combined population of these counties was just over four million in 2016, and 806,348 of these residents were women and girls between the ages of 15 and 44 (Pennsylvania Department of Health, 2018). Fifty-seven clinics, hospitals, and health centers receive Title X funds through AccessMatters: 41 in Philadelphia County, six in Delaware, four in Chester, four in Montgomery, and two in Bucks.

Table 2. AccessMatters Insurance Status

<u>Unduplicated Number of Family Planning Users by Principal Health Insurance Coverage Status</u>	
Principal Health Insurance Covering Primary Medical Care	AccessMatters
	N (%)
Public health insurance covering primary medical care	42,841 (41.68)
Private health insurance covering primary medical care	29,124 (28.34)
Uninsured (no public or private health insurance)	26,414 (25.7)
Unknown/not reported	4,392 (4.27)
Total Users	102,771

Forty-two percent of family planning patients at AccessMatters have public insurance such as Medicaid, and 26% are uninsured. Twenty-eight percent have private insurance while 4% of clients' coverage is unknown.

Table 3. AccessMatters Primary Method and Age Group

Primary Method	Under 15	15 to 17	18 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	Over 44	Total Female Users
Female sterilization	0	0	0	291	201	306	381	369	321	1,869
* IUD	11	194	418	1,516	1,685	1,103	688	319	147	6,081
* Hormonal implant	41	440	508	1,013	756	398	170	53	19	3,398
Rely on vasectomy	0	0	0	3	2	10	9	10	6	40
Hormonal injection	129	1,309	1,141	2,335	2,025	1,396	867	422	241	9,865
Oral contraceptive	179	1,725	2,432	6,133	4,615	2,478	1,270	598	350	19,780
Contraceptive patch	15	90	122	308	268	122	52	18	8	1,003
Vaginal ring	1	65	134	519	670	432	137	48	14	2,020
Cervical cap or diaphragm	7	64	65	73	63	38	19	22	16	367
Rely on male condom	132	1,331	1,802	5,097	4,136	2,377	1,500	875	829	18,079
Contraceptive sponge	0	0	0	0	0	0	1	0	0	1
Female condom	0	8	5	18	17	15	15	5	10	93
Spermicide	25	132	79	146	128	83	60	44	33	730
FAM or LAM	3	4	10	48	40	55	26	22	19	227
Withdrawal or other method	1	52	76	231	216	149	106	67	398	1,296
Abstinence	310	549	220	412	454	352	301	234	300	3,132
Unknown/not reported	306	1,523	1,159	1,586	1,629	1,172	875	598	785	9,633
No method										
Pregnant/seeking pregnancy	20	180	358	1,337	1,698	1,215	687	249	71	5,815
Other reason	66	243	355	1,109	1,014	682	530	382	450	4,831
Total Female Users	1,246	7,909	8,884	22,175	19,617	12,383	7,694	4,335	4,017	88,260

Birth control methods are categorized into three levels of efficacy by the CDC: highly effective (female sterilization, IUD, implant, vasectomy), moderately effective (oral contraceptive, shot, patch, ring), and less effective (male condom, internal condom, sponge, fertility awareness method, and spermicide) and are color-coded above to reflect this. Excluding patients who were seeking pregnancy, practicing abstinence, or were otherwise not using birth control, 14.36% used a highly effective method, 41.65% used a moderately effective method, and 25.75% used a less effective method. Note that these reports combine women using fertility awareness method (FAM) and lactational amenorrhea method (LAM) despite different levels of efficacy; for the purposes of this report they are categorized as less effective and are used by less than half a percent of clients.

Of the 16,793 patients aged 15 to 19, 9.29% use either an implant or an IUD. The most popular method for that age group is the pill, which is used by 24.75%. Twenty to 24-year-olds at AccessMatters also most commonly used the pill (27.6%) with only 11.41% using a LARC method.

4.2 ADAGIO HEALTH

Adagio Health serves Allegheny, Armstrong, Beaver, Butler, Clarion, Clearfield, Crawford, Erie, Fayette, Greene, Indiana, Jefferson, Lawrence, McKean, Venango, Warren, Washington, and Westmoreland counties (see Figure 2). As of 2016, the population of these counties was 3.2 million, 574,161 of whom are women and girls aged 15 to 44. Forty-seven organizations receive Title X funds through Adagio Health. Twenty-two of these subgrantees are in Allegheny County, six in Westmoreland, three in Jefferson, two in Erie, two in Greene, two in Washington,

and one in Butler, Clarion, Clearfield, Crawford, Fayette, Indiana, Lawrence, McKean, and Venango, respectively. No Title X subgrantees currently exist in Cameron, Elk, Forest, Mercer or Potter counties.

Table 4. Adagio Health Insurance Status

<u>Unduplicated Number of Family Planning Users by Principal Health Insurance Coverage Status</u>	
Principal Health Insurance Covering Primary Medical Care	Adagio Health N (%)
Public health insurance covering primary medical care	17,433 (41.54)
Private health insurance covering primary medical care	14,610 (34.81)
Uninsured (no public or private health insurance)	9,367 (22.32)
Unknown/not reported	561 (1.34)
Total Users	41,971

Forty-two percent of Adagio family planning clients have public insurance, and 22% are uninsured. Thirty-five percent of Adagio clients have private insurance.

Table 5. Adagio Health Primary Method and Age Group

Primary Method		Under 15	15 to 17	18 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	Over 44	Total Female Users
	Female sterilization	0	0	0	10	86	262	325	366	768	1,817
*	IUD	4	136	264	844	876	648	424	209	173	3,578
*	Hormonal implant	35	248	278	578	417	200	102	46	17	1,921
	Rely on vasectomy	0	0	1	1	14	26	65	43	94	244
	Hormonal injection	107	834	782	1,257	1,077	801	644	328	336	6,166
	Oral contraceptive	131	1,014	1,264	3,065	2,196	1,203	607	282	274	10,036
	Contraceptive patch	7	28	20	54	29	13	7	4	2	164
	Vaginal ring	0	44	77	311	302	179	57	22	16	1,008
	Cervical cap or diaphragm	0	0	0	1	4	3	6	0	2	16
	Rely on male condom	30	311	536	1,646	1,485	980	701	444	589	6,722
	Contraceptive sponge	0	0	0	0	0	0	0	1	0	1
	Female condom	0	1	1	1	1	0	0	1	0	5
	Spermicide	0	1	0	0	0	2	3	0	1	7
	FAM or LAM	0	0	7	20	25	26	26	14	25	143
	Withdrawal or other method	3	8	18	67	54	55	45	42	88	380
	Abstinence	139	281	94	149	123	90	73	62	130	1,141
	Unknown/not reported	19	89	76	227	186	153	127	111	338	1,326
No method											
	Pregnant/seeking pregnancy	4	26	72	442	448	342	112	38	11	1,495
	Other reason	64	250	257	589	554	450	298	162	337	2,961
	Total Female Users	543	3,271	3,747	9,262	7,877	5,433	3,622	2,175	3,201	39,131

Approximately 20.72% of sexually-active contraceptive users who received services funded by Adagio Health had a highly effective type of contraception, 47.65% had a moderately

effective type, and 19.89% used a less effective type. Just over 13% of 15 to 19-year olds used a LARC method, and the most popular method, at 32.46%, was the pill. Among 20 to 24-year olds, 15.35% used a LARC method, while the most popular method was the pill, used by 33.09%.

4.3 MATERNAL AND FAMILY HEALTH SERVICES, INC.

Maternal and Family Health Services, Inc. provides reproductive health care to residents of 16 northeastern counties (see Figure 2). As of 2016, 553,268 of the counties' three million residents were women and girls aged 15 to 44-years old. Five subgrantees are in Luzerne, four in Lackawanna, four in Susquehanna, two each in Berks, Lehigh, Pike, and Wyoming, and one each in Monroe, Northampton, Schuylkill, and Sullivan counties. Although MFHS serves Bradford, Carbon, Tioga, and Wayne counties, there are currently no Title X recipients there.

Table 6. MFHS Insurance Status

Unduplicated Number of Family Planning Users by Principal Health Insurance Coverage Status		
Principal Health Insurance Covering Primary Medical Care		MFHS
		N (%)
	Public health insurance covering primary medical care	13,580 (65.92)
	Private health insurance covering primary medical care	4,987 (24.21)
	Uninsured (no public or private health insurance)	2,034 (9.87)
	Unknown/not reported	0
	Total Users	20,601

Among family planning clients at MFHS, 66% were covered by public insurance, 10% were uninsured, and 24% had private insurance.

Table 7. MFHS Primary Method and Age Group

Primary Method		Under 15	15 to 17	18 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	Over 44	Total Female Users
	Female sterilization	0	0	0	3	21	34	53	20	50	181
*	IUD	0	27	57	238	226	182	106	44	31	911
*	Hormonal implant	10	98	127	246	182	100	34	14	7	818
	Rely on vasectomy	0	0	0	1	4	17	16	31	23	92
	Hormonal injection	28	328	363	667	503	295	198	148	91	2,621
	Oral contraceptive	54	621	1,028	2,226	1,258	729	370	178	107	6,571
	Contraceptive patch	2	4	11	27	22	10	9	5	0	90
	Vaginal ring	1	27	37	153	165	78	33	9	4	507
	Cervical cap or diaphragm	0	1	0	2	4	4	0	0	0	11
	Rely on male condom	15	211	489	972	619	340	226	162	158	3,192
	Contraceptive sponge	0	1	0	0	0	0	1	0	0	2
	Female condom	0	1	1	3	1	1	0	1	0	8
	Spermicide	0	0	0	1	0	1	0	0	1	3
	FAM or LAM	0	0	1	1	6	12	3	2	6	31
	Withdrawal or other method	0	2	5	12	15	10	9	8	6	67
	Abstinence	25	45	35	84	82	57	46	38	36	448
	Unknown/not reported	1	18	61	158	121	73	39	19	14	504
No method											
	Pregnant/seeking pregnancy	0	0	0	10	9	11	6	2	1	39
	Other reason	10	142	199	537	462	278	192	130	182	2,132
	Total Female Users	146	1,526	2,414	5,341	3,700	2,232	1,341	811	717	18,228

Among contraceptive users at MFHS, 11.28% used a highly effective method, 55.24% used a moderately effective method, and 18.62% used a less effective method. Only 7.84% of 15 to 19-year-old female patients used an IUD or implant, and the most popular method was again the pill at 41.85%. Nine point zero seven percent of 20 to 24-year olds used a LARC method, and 41.68 percent opted for the pill.

4.4 FAMILY HEALTH COUNCIL OF CENTRAL PENNSYLVANIA, INC.

Twenty-four counties are served by FHCCPA; of the three million residents in these counties, 553,727 are women and girls between 15 and 44-years old. Thirty-one health centers and clinics receive Title X funding through FHCCPA: eight in Lancaster, six in York, three in Dauphin, two in Franklin, and one each in Adams, Bedford, Blair, Cambria, Centre, Cumberland, Lycoming, Mifflin, Northumberland, Snyder, Somerset, and Union counties. No Title X funds are currently distributed in Clinton, Columbia, Fulton, Huntingdon, Juniata, Lebanon, Montour, or Perry counties.

Table 8. FHCCPA Insurance Status

Unduplicated Number of Family Planning Users by Principal Health Insurance Coverage Status	
Principal Health Insurance Covering Primary Medical Care	FHCCPA N (%)
Public health insurance covering primary medical care	17,379 (49.35)
Private health insurance covering primary medical care	9,779 (27.77)
Uninsured (no public or private health insurance)	8,061 (22.89)
Unknown/not reported	0
Total Users	35,219

Forty-nine percent of FHCCPA family planning patients had public insurance, 23% were uninsured, and 28% had private insurance.

Table 9. FHCCPA Primary Method and Age Group

Primary Method		Under 15	15 to 17	18 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	Over 44	Total Female Users
	Female sterilization	0	0	0	56	300	451	564	500	1,005	2,876
*	IUD	2	31	96	437	502	349	218	103	50	1,788
*	Hormonal implant	30	212	219	496	386	179	93	36	21	1,672
	Rely on vasectomy	1	10	18	53	52	50	37	26	54	301
	Hormonal injection	70	507	470	880	723	537	345	200	157	3,889
	Oral contraceptive	74	722	901	2,067	1,337	796	415	195	165	6,672
	Contraceptive patch	5	20	17	40	20	22	5	2	0	131
	Vaginal ring	0	26	33	135	136	81	25	5	2	443
	Cervical cap or diaphragm	0	0	0	2	0	4	3	1	3	13
	Rely on male condom	29	280	412	886	648	393	263	149	222	3,282
	Contraceptive sponge	0	0	0	0	0	0	0	0	1	1
	Female condom	0	5	7	21	16	12	11	11	58	141
	Spermicide	0	1	0	0	2	1	1	0	2	7
	FAM or LAM	0	0	1	12	10	20	6	4	10	63
	Withdrawal or other method	45	138	85	296	329	216	140	84	129	1,462
	Abstinence	164	248	85	136	116	88	101	71	311	1,320
	Unknown/not reported	0	0	0	0	2	0	0	1	0	3
No method											
	Pregnant/seeking pregnancy	6	44	121	519	488	259	130	47	17	1,631
	Other reason	41	199		749	740	562	391	271	769	3,722
	Total Female Users	467	2,443	2,465	6,785	5,807	4,020	2,748	1,706	2,976	29,417

About 25% of FHCCPA clients who used birth control chose a highly effective method while 42.12% used a moderately effective method, and 18.73% used a less effective method. Among 15 to 19-year-old patients, 11.37% used a LARC method while 33.07% of birth control users in that age group used the pill. LARCs were a slightly more popular choice among 20 to 24-year olds at 13.75%, and the pill was again the most popular option at 30.46%.

4.5 INSURANCE COVERAGE IN PENNSYLVANIA TITLE X CLINICS

Previous research has shown that clinics which primarily serve publicly-insured individuals face financial barriers to providing LARCs (Vela et al., 2018). The breakdown of insurance type among female family planning clients at Title X clinics differs from the insurance type among the general population of Pennsylvania. In Pennsylvania, 36% of residents are insured through a public program while 59% have private insurance, and 5% are uninsured (KFF 2017). In comparison, most Title X patients are publicly insured (Tables 2, 4, 6, 8), and about one quarter are uninsured.

Pennsylvania currently restricts Medicaid coverage of outpatient LARC insertion and removal; if women receive multiple family planning services in one year, they are not eligible for LARC coverage. Further, removal of a LARC is limited to once every three years. Given the high proportion of publicly-insured clients at Title X clinics, providers may be hesitant to stock or recommend LARCs due to the above coverage restrictions.

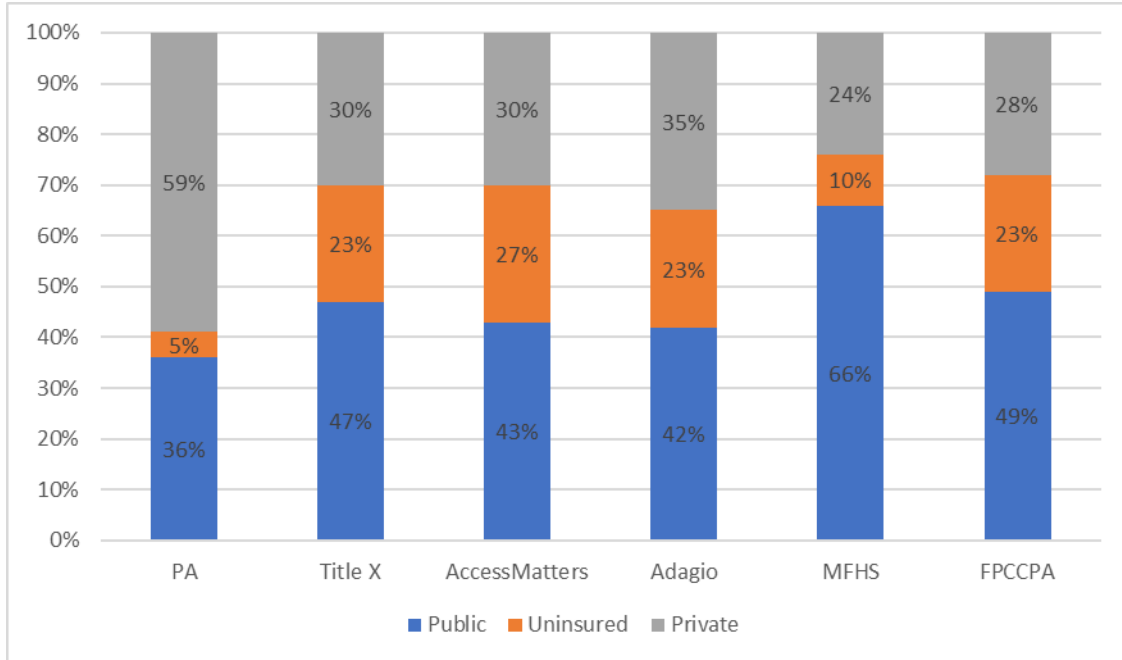


Figure 3. Insurance Types, Pennsylvania General Population vs. Title X Grantees, Excluding "Coverage Unknown"

Stransky 2018

Per Figure 3, most patients receiving family planning care through Title X clinics are either uninsured or on public insurance. Four percent of AccessMatters patients and 1% of Adagio clients were reported as “unknown/unreported.”

4.6 LARC USE IN PENNSYLVANIA TITLE X CLINICS

Oral contraceptives are the most popular method among all age groups for Title X clients using birth control, with 26.91% of women choosing them (see Figure 4). The second most-used method is the male condom, at 19.55%, followed by the three-month hormonal injection, which

is used by 14.09% of clients. IUDs are used by 7.72%, and the hormonal implant is used by 4.88%. By effectiveness, 17.23% use a highly effective method, 44.61% use a moderately effective method, and 22.46% use a less effective method; 8.53% use no method and are not seeking pregnancy, and method is unknown for 7.17% (see Figure 4).

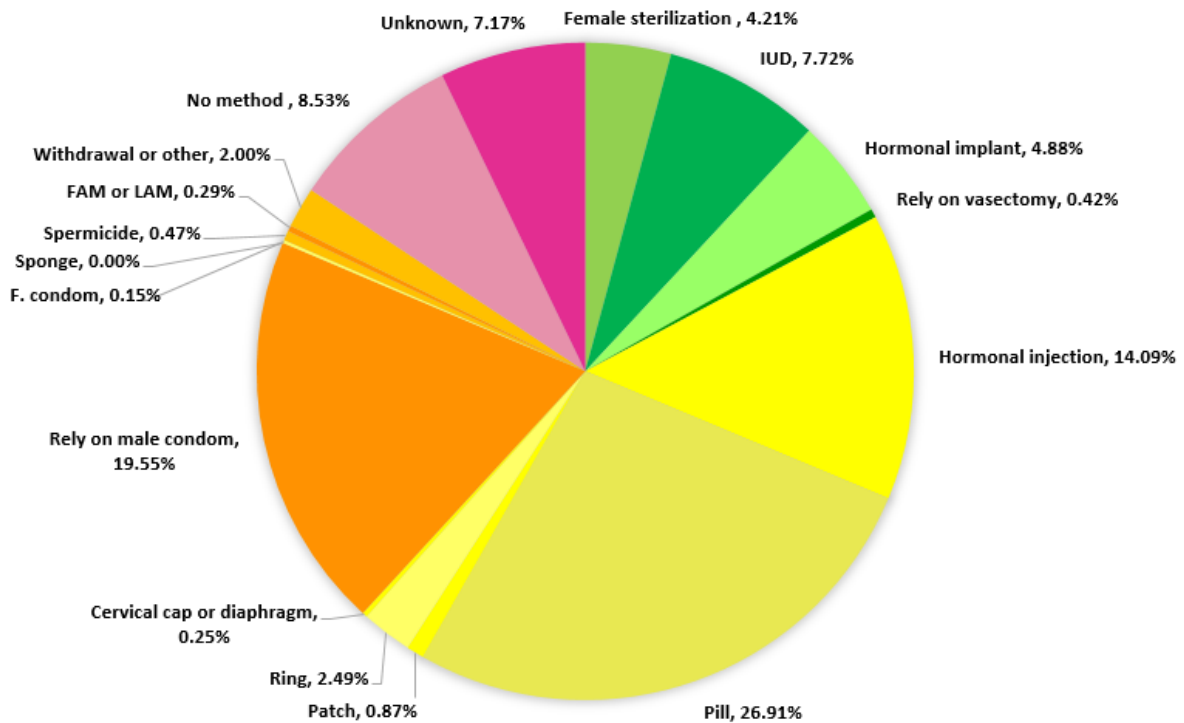


Figure 4. Primary Method Among all Age Groups, Title X Female Contraceptive Users, 2017

Stransky 2018

Of the four Title X grantees, Adagio Health, which covers Western Pennsylvania, has the largest proportion of patients choosing a LARC method, 15.06%, followed by FHCCPA at 13.08%, AccessMatters at 11.95%, and MFHS at 9.74%. Table 11 (below) shows the number and percent of women using LARCs by grantee.

Table 10. Pennsylvania Title X female family planning patients not seeking pregnancy or practicing abstinence, by grantee

Grantee	# of Patients	% of Patients
<i>AccessMatters</i>	9,479	11.95%
IUD	6,081	7.67%
Implant	3,398	4.28%
<i>Adagio Health</i>	5,499	15.06%
IUD	3,578	9.80%
Implant	1,921	5.26%
<i>MFHS</i>	1,729	9.74%
IUD	911	5.13%
Implant	818	4.61%
<i>FHCCPA</i>	3,460	13.08%
IUD	1,788	6.76%
Implant	1,672	6.32%
<i>Statewide</i>	20,167	12.60%
IUD	12,358	7.72%
Implant	7,809	4.88%

Women 20 to 24 years-old are at greatest risk of having an unintended pregnancy, followed by 15 to 19-year-olds. As discussed in Chapter 2, these groups may have less access to LARCS based on physician perceptions about LARC suitability (e.g. parity or relationship status). Data from the Pennsylvania Title X grantees reflect that, compared to other methods, IUD rates increase with age, reaching peak popularity among 30 to 34-year-olds (see Figure 5). Hormonal implants are most popular among adolescents who access family planning services, reaching a peak of 7.24% among girls 15 to 17-years old (Figure 5).

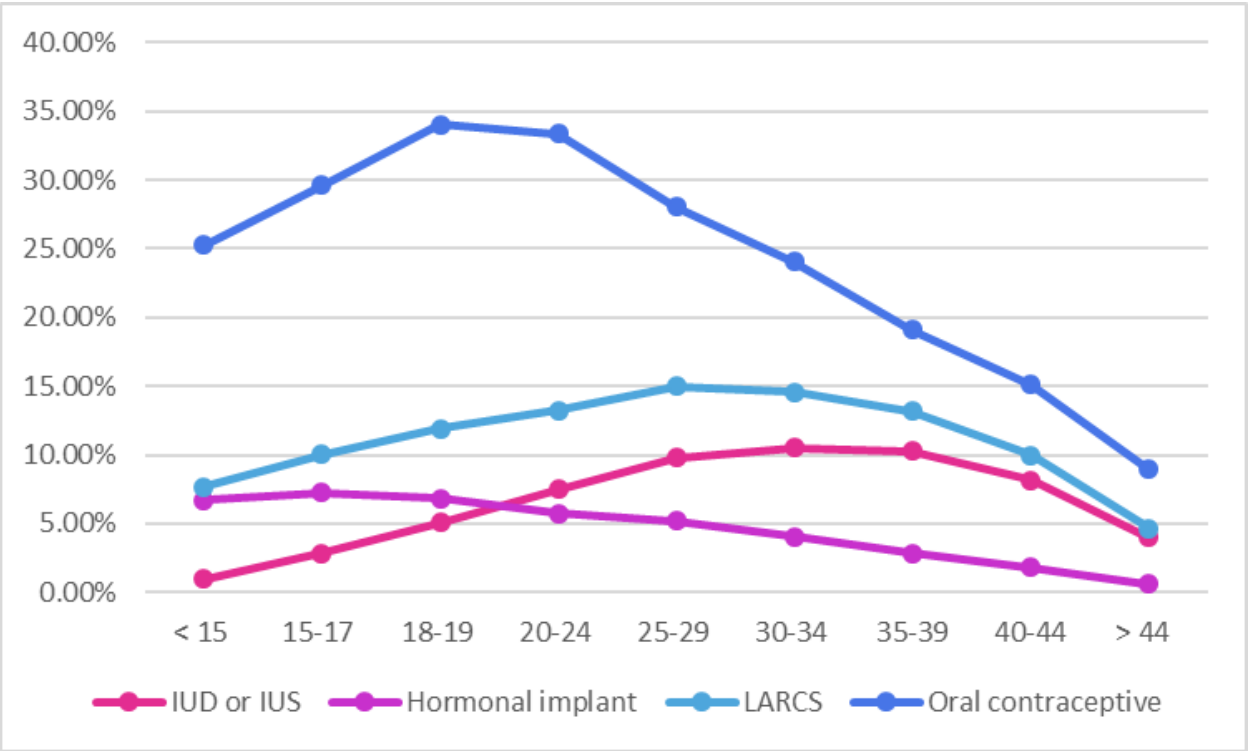


Figure 5. LARC Use Percentages by Age Group, Compared to Oral Contraceptives

Stransky 2018

It is important to note that the above data covers 164 clinics, and the counseling practices and variety of available methods between clinics likely vary greatly.

5.0 DISCUSSION

The data presented above demonstrate that Pennsylvania women and girls aged 15 to 25 use LARCs at a lower rate than other methods and at a lower rate than other age groups. In this section, the benefits of a statewide LARC intervention in Pennsylvania will be argued.

5.1 PENNSYLVANIA IN COMPARISON TO OTHER STATES

Among Pennsylvania Title X female family planning patients in 2017, 20,167 used a LARC method, with 12,358 women opting for an IUD and 7,809 opting for an implant. LARC users comprised 11.52% of all patients and 12.6% of sexually active female patients not seeking pregnancy.

In comparison, at the start of the Delaware CAN initiative in 2014, 13.7% of patients were using LARC methods; as of 2016 that had increased to 27% as a result of increased accessibility and affordability (Welti, 2018). Similarly, at the start of the CFPI, 9.7% of Colorado Title X female family planning patients were using LARCs. Within one year of the initiative, that increased to 14.7% and in 2015 had reached 30.5%. By 2014, 31% of Colorado women aged 18 to 25 who used contraception were using LARCs (CDPHE, 2017). During the Contraceptive CHOICE Project, when barriers of knowledge, cost, and access were removed, 75% of women chose a LARC method. Pennsylvania falls behind the national rate of LARC use

among Title X female family planning patients as well; per the 2017 FPAR, 16% of female patients were using either an IUD (9%) or an implant (7%) (Fowler, 2018).

5.2 NEXT STEPS

The data presented in Chapter 4 show contraceptive trends on multi-county and statewide levels. Clinic-level data can be constructed from the monthly reports submitted to the Title X grantees.

While the insurance data presented above show that, overall, clinics are serving individuals with private and public insurance as well as those who are uninsured, a clinic-by-clinic survey needs to be conducted to identify clinics that do not accept Medicaid and/or private insurance. These data are already submitted by each subgrantee to the four Pennsylvania grantees for the annual Family Planning Assessment Report and obtaining it will not require any new data collection. Once these clinics are identified, a survey will be conducted to determine the reasons any clinics do not bill public or private insurers. Because these clinics primarily serve publicly-insured individuals, they may be facing greater financial barriers to LARC-provision than clinics which primarily serve individuals with private insurance.

Surveys will also need to be conducted among clinics not dispensing LARCs to determine the barriers. A study of publicly-funded U.S. health providers that include family planning services found that 21% do not have any staff trained in providing LARCs (Bornstein, Carter, Zapata, Gavin, & Moskosky, 2018). Of clinics that did not provide LARCs onsite, 65% had no formal referral process in place for patients seeking IUDs and 76% had no formal referral process for implants. Training can be provided as needed in IUD and implant insertion and integrating LARCs into birth control counseling. FPAR data can be used to create formal

referral networks for clinics which are unable to provide LARCs. The cost of stocking LARCs has been cited as a barrier to providing them (Beeson et al., 2014). In 2016, the Pennsylvania Department of Health implemented policies to increase financial support to LARC provision (Kostelac, 2016); however, there has been no research to examine if clinics have taken advantage of this financial support. If costs are cited as a barrier, resources regarding state funding should be furnished to the clinics.

Following the lead of the CFPI, training will also include birth control counseling to ensure women are able to select the method of contraception that works best for them. Though the goal is to increase LARC use overall, it is essential to ensure that reproductive autonomy is respected above all else. Clinics will also be trained in doing single-visit LARC insertion so that women do not need to schedule multiple visits. Part of this will be helping clinics stock LARC devices so they do not need to order them each time a client wants one.

5.3 POTENTIAL IMPACT

Using the FamilyScape microsimulation tool, Child Trends conducted simulations to estimate the impact greater LARC use nationally would have on unintended pregnancy rates, abortion rates, and negative childhood health outcomes. The simulations used the 2006-2010 dataset from the National Survey for Family Growth, at which point 5.4% of sexually active women aged 15 to 39 used LARCs. If that was increased to 24.3%, the study predicted that the unintended pregnancy rate for that group would decrease by 64%, the unintended birth rate would drop by 63% and the abortion rate would decrease by 67%. Additionally, 23% fewer babies would be born with low birthweight and 24% fewer babies would be born prematurely. The child health

outcomes were calculated purely based on preexisting proportions and do not account for other factors that could affect the amount of negative health outcomes in children such as pregnancy intention and access to prenatal care.

Using 2010 data, a 64% decrease in Pennsylvania UIPs would mean 73,000 fewer UIPs. Similarly, using 2010 data and the above estimated decreases, there would be 26,968 fewer abortions and 37,674 fewer unintended births. The public costs of UIPs in Pennsylvania totaled \$727 million in 2010. A 64% decrease in UIPs would translate to \$465 million in public costs averted. The decreases in the FamilyScape simulation exceed the rates reported in Colorado as a result of the CFPI, which saw a 40% decrease in UIPs among teens and a 20% decrease among 20 to 24-year-olds. Even a 20% drop in UIPs among all Pennsylvania women would avert \$145 million in public spending.

5.4 COMMUNITY PARTNERS

Upstream USA is currently partnered with Delaware to run the Delaware CAN program and is working to launch similar programs in Maryland and Washington. Upstream provides training on contraceptive counseling, LARC insertion and removal, billing and coding, and single-visit LARC provision. Clinics in Pennsylvania would receive consistent, tried-and-true training were the state to partner with Upstream.

While Upstream is the ideal partner for a LARC initiative, other options are available. The Colorado Family Planning Initiative partnered with hospitals and medical facilities throughout the state. Taking advantage of the state's winter tourism industry, high-end medical facilities that catered to skiers and snowboarders helped provide training. If Pennsylvania did

not partner with an organization like Upstream, partnering with regional medical facilities may be another option. Family planning organizations operating in Pennsylvania, such as Planned Parenthood, may be able to facilitate LARC training for other clinics; however, it may be necessary to have additional medical partners capable of providing this training due to issues like distance, availability, and potential discomfort with Planned Parenthood. Pennsylvania is home to several large hospital networks that can be recruited to aid in training Title X clinics in Medicaid and insurance billing as well as LARC insertion training. The University of Pittsburgh Medical Center (UPMC) includes 35 hospitals and over 600 clinical locations across Pennsylvania. Penn State Health, which includes Pennsylvania State University's School of Medicine, has 78 clinical locations and is also a partner in the Pennsylvania Office of Rural Health (PORH). Because Pennsylvania has adopted a policy of increasing post-partum LARC insertion (Kostelac, 2016), hospitals with maternity wards located near Title X clinics may be able to provide training, if needed.

6.0 CONCLUSION

Based on the data received from AccessMatters, Adagio Health, MFHS, and FHCCPA, it is evident that Pennsylvania is falling behind other states in providing a full range of birth control methods. Recall from above that 12.6% of female contraceptive users at Pennsylvania Title X clinics use a LARC method, compared to 16% of Title X patients nationwide. In addition, while Pennsylvania has the fifteenth lowest adolescent birth rate in the country, rural counties have seen far less positive change than their urban counterparts.

The CFPI, Contraceptive CHOICE Project, and Delaware CAN have all shown that, when clinics are provided with education, training, and resources to supply LARCs and financial barriers are removed, patients overwhelmingly choose those methods. While the entire state of Pennsylvania experienced a reduction in teen pregnancies from 2007 to 2016, unintended pregnancies, and abortions, rural counties in particular had improved outcomes in these areas. By implementing a coordinated, statewide intervention, the CDPHE was able to increase the number of LARC providers, improve the financial viability and sustainability of clinics, and create a clinic-to-clinic referral system to ensure patient access.

While many states, including Colorado, Delaware, and California, have offices or divisions within their public health departments dedicated to family planning, Pennsylvania does not; however, the four organizations responsible for the receipt and distribution of Title X funds have the potential to form a coalition with each organization having familiarity and insight into

the respective clinics it oversees. Because of this as well as the numerous sophisticated medical networks that can serve as community partners, Pennsylvania is well prepared to take the next steps to implementing a statewide initiative to increase the reproductive health options of its citizens.

APPENDIX: TITLE X SUBGRANTEES IN PENNSYLVANIA

Below is a list of every health center that receives Title X funding from AccessMatters, Adagio Health, Maternal and Family Health Services, or Family Health Council of Central Pennsylvania. The list is grouped by which organization funds are received from and then listed alphabetically by county

Adagio Health Services

<i>County</i>	<i>Clinic Name</i>	<i>City, State, Zip</i>
Allegheny	Adagio Health Turtle Creek	Turtle Creek, PA 15145
Allegheny	412 Youth Zone	Pittsburgh, PA 15222
Allegheny	Children Community Pediatrics	Moon, PA 15018
Allegheny	Children Community Pediatrics	Pittsburgh, PA 15217
Allegheny	Children Community Pediatrics	White Oak, PA 15131
Allegheny	UPMC Children's Hospital	Pittsburgh, PA 15224
Allegheny	UPMC Children's Hospital North	Wexford, PA 15090
Allegheny	UPMC Children's Hospital South	Bridgeville, PA 15017
Allegheny	Magee-Womens Hospital of UPMC	Monroeville, PA 15146
Allegheny	Magee-Womens Hospital of UPMC Mt. Oliver	Pittsburgh, PA 15210
Allegheny	Magee-Womens Hospital of UPMC Wilkinsburg	Wilkinsburg, PA 15221
Allegheny	Magee-Womens Hospital of UPMC Outpatient	Pittsburgh, PA 15213
Allegheny	Planned Parenthood, Bridgeville	Bridgeville, PA 15017
Allegheny	Planned Parenthood, Moon	Moon Township, PA 15108
Allegheny	Planned Parenthood, Pittsburgh	Pittsburgh, PA 15222
Allegheny	South Hills Pediatric Associates Brentwood	Brentwood, PA 15227
Allegheny	Midwife Center	Pittsburgh, PA 15222
Allegheny	UPMC Matilda Theiss Health Center	Pittsburgh, PA 15213
Allegheny	UPMC McKeesport Latterman Family Health Center	McKeesport, PA 15132
Allegheny	UPMC St. Margaret Bloomfield-Garfield	Pittsburgh, PA 15206

Allegheny	UPMC St. Margaret Lawrenceville	Pittsburgh, PA 15201
Allegheny	Adagio Health Aliquippa	Aliquippa, PA 15001
Butler	Adagio Health Butler	Butler, PA 16001
Clarion	Women's Healthcare of Clarion	Clarion, PA 16241
Clearfield	Penn Highlands Life's Journey OB/GYN	DuBois, PA 15801
Crawford	Meadville Community Health Center	Meadville, PA 16335
Erie	Adagio Health Edinboro	Edinboro, PA 16412
Erie	Adagio Health Erie	Erie, PA 16501
Fayette	Adagio Health Uniontown	Uniontown, PA 15401
Greene	Cornerstone Care Mt. Morris	Mt. Morris, PA 15349
Greene	Cornerstone Care Roversville	Rogersville, PA 15359
Indiana	Adagio Health Indiana	Indiana, PA 15701
Jefferson	Penn Highlands Life's Journey OB/GYN	Punxsutawney, PA 15767
Jefferson	Punxsutawney Physicians Services	Punxsutawney, PA 15767
Jefferson	Women's Healthcare of Clarion-Brookville	Brookeville, PA 15825
Lawrence	Adagio Health New Castle	New Castle, PA 15101
McKean	Bradford Regional Medical Center	Bradford, PA 16701
Venango	Adagio Health Seneca	Seneca, PA 16346
Washington	Cornerstone Care Burgettstown	Burgettstown, PA 15021
Washington	Cornerstone Care Washington	Washington, PA 15301
Westmoreland	Excelsa Health Medical Group	Latrobe, PA 15650
Westmoreland	Excelsa Health/Westmoreland Women's Health	Scottsdale, PA 15683
Westmoreland	Excelsa Health OB/GYN Greensburg	Greensburg, PA 15601
Westmoreland	Excelsa Health OB/GYN Greensburg	Greensburg, PA 15601
Westmoreland	Excelsa Health OBGYN	North Huntingdon, PA 15642
Westmoreland	Planned Parenthood, Greensburg	Greensburg, PA 15601

NOT A
DUPLICATE

AccessMatters

<i>County</i>	<i>Clinic Name</i>	<i>City, State, Zip</i>
Bucks	Planned Parenthood, Bensalem	Bensalem, PA 19020
Bucks	Planned Parenthood, Quakertown	Quakertown, PA 18951
Bucks	Planned Parenthood, Warminster	Warminster, PA 18974
Chester	Chester County Youth Center	West Chester, PA 19382
Chester	PP Coatesville	Coatesville, PA 19320
Chester	La Comunidad Hispana	Kennett Square, PA 19348
Chester	Planned Parenthood, West Chester	West Chester, PA 19382
Delaware	Center for Family Health at Eastside	Chester, PA 19013
Delaware	Center for Family Health at Upper Darby	Upper Darby, PA 19082
Delaware	Crozer-Chester Medical Center	Upland, PA 19013
Delaware	Crozer-Chester at Lima Detention Center	Lima, PA 19037
Delaware	Planned Parenthood, Media	Media, PA 19063

Delaware	Planned Parenthood, of Upper Darby	Upper Darby, PA 19082
Montgomery	Lankenau Hospital Family Planning Service	Wynnewood, PA 19096
Montgomery	PHMC Carson Valley	Flourtown, PA 19031
Montgomery	Planned Parenthood, Norristown	Norristown, PA 19401
Montgomery	Planned Parenthood, Pottstown	Pottstown 19464
Philadelphia	African Family Health Organization	Philadelphia, PA 19104
Philadelphia	PDPH/Strawberry Mansion Health Center	Philadelphia, PA 19132
Philadelphia	Philadelphia Health and Education Corporation	Philadelphia, PA 19102
Philadelphia	Children's Hospital of Philadelphia, Karabots	Philadelphia, PA 19139
Philadelphia	Children's Hospital of Philadelphia, Cobbs Creek	Philadelphia, PA 19139
Philadelphia	CHOP Connection Covenant House	Philadelphia, PA 19144
Philadelphia	Congreso de Latinos Unidos Inc.	Philadelphia, PA 19133
Philadelphia	PHMC ACTS-II Woodstock	Philadelphia, PA 19121
Philadelphia	PHMC Care Clinic	Philadelphia, PA 19123
Philadelphia	PHMC Health Connections	Philadelphia, PA 19122
Philadelphia	PHMC Interim House West	Philadelphia, PA 19104
Philadelphia	PHMC Mary Howard	Philadelphia, PA 19107
Philadelphia	PHMC People's Emergency Center	Philadelphia, PA 19104
Philadelphia	PHMC Rising Sun Health Center	Philadelphia, PA 19120
Philadelphia	PHMC Stenton Manor	Philadelphia, PA 19138
Philadelphia	Family Practice and Counseling Network	Philadelphia, PA 19144
Philadelphia	FPCN/Abbottsford Falls	Philadelphia, PA 19144
Philadelphia	Planned Parenthood, Castor Avenue	Philadelphia, PA 19152
Philadelphia	FPCN/11th Street	Philadelphia, PA 19123
Philadelphia	PP Elizabeth Blackwell Center	Philadelphia, PA 19107
Philadelphia	FPCN/Health Annex	Philadelphia, PA 19142
Philadelphia	Planned Parenthood, Locust Street	Philadelphia, PA 19107
Philadelphia	FPCN/Qcare Clinic	Philadelphia, PA 19129
Philadelphia	Kensington Hospital Medical Center	Philadelphia, PA 19122
Philadelphia	St. Christopher's Hospital	Philadelphia, PA 19134
Philadelphia	Mazzoni Community Health Center	Philadelphia, PA 19107
Philadelphia	Spectrum Broad Street Health Center	Philadelphia, PA 19122
Philadelphia	Partnership Comprehensive Care Practice	Philadelphia, PA 19102
Philadelphia	Spectrum Health Center	Philadelphia, PA 19139
Philadelphia	Philadelphia Department of Public Health	Philadelphia, PA 19145
Philadelphia	Temple University	Philadelphia, PA 19140
Philadelphia	PDPH	Philadelphia, PA 10104
Philadelphia	Temple Student Health	Philadelphia, PA 19122
Philadelphia	PDPH	Philadelphia, PA 19104
Philadelphia	Thomas Jefferson University OBGYN Associates	Philadelphia, PA 19107
Philadelphia	PDPH	Philadelphia, PA 19121

Philadelphia	Urban Solutions	Philadelphia, PA 19146
Philadelphia	PDPH	Philadelphia, PA 19123
Philadelphia	Youth Health Empowerment Project	Philadelphia, PA 19102
Philadelphia	PDPH	Philadelphia, PA 19144
Philadelphia	PDPH	Philadelphia, PA 19149

Maternal and Family Health Services, Inc.

<i>County</i>	<i>Clinic Name</i>	<i>City, State, Zip</i>
Berks	Planned Parenthood, Reading	Reading, PA 19602
Berks	Kutztown University Health Services (students only)	Kutztown, PA 19530
Lackawanna	MFHS Circle of Care	Scranton, PA 18510
Lackawanna	Keystone College Health Services	LaPlume, PA 18840
Lackawanna	Wright Center Student Health Services	Scranton, PA 18504
Lackawanna	Wright Center Mid Valley	Jermyn, PA 18433
Lehigh	Planned Parenthood, Allentown	Allentown, PA 18104
Lehigh	Vida Nueva at Casa Guadalupe	Allentown, PA 18102
Luzerne	Planned Parenthood, Wilkes-Barre	Wilkes-Barre, PA 18701
Luzerne	MFHS Hazleton	Hazleton, PA 18201
Luzerne	Valley Pediatrics	Edwardsville, PA 18704
Luzerne	Volunteers in Medicine	Wilkes-Barre, PA 18702
Luzerne	Keystone Job Corps Family Planning Center	Drums, PA 18222
Monroe	Pocono Medical Center	East Stroudsburg, PA 18301
Northampton	Bethlehem Health Bureau FP Clinic	Bethlehem, PA 18018
Pike	Pike County Family Health Center	Hawley, PA 18428
Pike	MFHS Circle of Care Hawley	Hawley, PA 18428
Schuylkill	MFHS Pottsville Center	Pottsville, PA 17901
Sullivan	Red Rock Job Corps	Lopez, PA 18628
Susquehanna	Family Health Clinic of Barnes-Kasson	Susquehanna, PA 18847
Susquehanna	Family Health Center of Barnes-Kasson	New Milford, PA 18847
Susquehanna	NEPA Community Healthcare	Susquehanna, PA 18847
Susquehanna	NEPA Community Healthcare	Hallstead, PA 18822
Wyoming	Monroe-Noxen Rural Health Center	S. Monroe Township, PA 18636
Wyoming	Exeter Township Rural Health Center	Falls, PA 18615

Family Health Council of Central Pennsylvania, Inc.

<i>County</i>	<i>Clinic Name</i>	<i>City, State, Zip</i>
Adams	Family First Health	Gettysburg, PA 17325
Bedford	UPMC Family Health Services	Everett, PA 15537
Blair	Women's Health and Wellness Center	Altoona, PA 16601
Cambria	Planned Parenthood, Johnstown	Johnstown, PA 15901

Centre	Mountain Top Area Medical Center	Snow Shoe, PA 16874	NOT A DUPLICATE
Cumberland	Dickinson College Student Health Services	Carlisle, PA 17013	
Dauphin	Planned Parenthood, Keystone	Harrisburg, PA 17102	
Dauphin	Hamilton Health Center	Harrisburg, PA 17104	
Dauphin	Community Check-Up Center	Harrisburg, PA 17104	
Franklin	Keystone Health	Chambersburg, PA 17201	NOT A DUPLICATE
Franklin	Keystone Health	Chambersburg, PA 17201	NOT A DUPLICATE
Lancaster	Family First Health	Columbia, PA 17512	
Lancaster	Lancaster Health Center	Lancaster, PA 17603	NOT A DUPLICATE
Lancaster	Lancaster Health Center	Lancaster, PA 17603	
Lancaster	Lancaster Health Center	Lancaster, PA 17603	NOT A DUPLICATE
Lancaster	Lancaster General Health	Lancaster, PA 17604	
Lancaster	Lancaster Health Center	Lancaster, PA 17604	
Lancaster	Lancaster Health Center	Lancaster, PA 17603	
Lancaster	Lancaster Health Center	Lancaster, PA 17603	
Lycoming	River Valley Health & Dental Center	Williamsport, PA 17701	
Mifflin	Family Planning Plus	Lewistown, PA 17044	
Northumberland	Family Planning Plus	Shamokin, PA 17872	
Snyder	Family Planning Plus	Selinsgrove, PA 17870	
Somerset	Planned Parenthood, Somerset	Somerset, PA 15501	
Union	Family Planning Plus	Lewisburg, PA 17837	
York	Family First Health	Lewisberry, PA 17339	
York	Family First Health	Hanover, PA 17331	
York	Family First Health	York, PA 17401	
York	Planned Parenthood, Keystone	York, PA 17401	
York	Family First Health	York, PA 17403	
York	York Community Health Center	York, PA 17403	

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