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Implementation of a Pregnancy Intention Screening Question at a Federally Qualified Health Center

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Executive Summary

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Problem

The rate for unintended pregnancy in El Paso County, Colorado ranges from 33-50% of pregnancies depending on the women's age group. Research supports the use of a screening tool to assess a women's desires for pregnancy and facilitate a discussion regarding contraception options and needs. The PICO question developed for investigation is P: providers in the Women's Clinic, I: implementation of a pregnancy intention screening question, C: compared to no screening question, O: increase in contraceptive counseling and/or provision of a contraceptive method.

Purpose

This process improvement project idea was examined due to the need to fulfill a requirement within a grant implemented by the FQHC and championed by the Women's Clinic. The focus of the grant was to expand contraceptive services to women. One of these measures was a pregnancy intention screening question asked of women during their visits. The Women's Clinic currently has no formal pregnancy intention screening question (PISQ) that was easily accessible or in current workflow within the electronic health record.

Goals

The goals of the project are to establish a standard of care for the FQHC regarding pregnancy intention screening question in women of childbearing age while increasing compliance with contraceptive counseling and use as desired by the patient.

Objectives

The proposed primary outcomes for this project are to measure effects of the addition of the pregnancy intention screening question on the provision of contraceptive counseling and/or contraceptive methods.

Plan

The project was identified to help fulfill the need of an existing grant. A complete literature review was completed to identify gap or needs in research. The project proposal and Institutional Review Board approval was received. The implementation phase, staff was educated on the new process the end of October 2020. Data was collected for 3 months prior to implementation (August-October) and three months after (November- January).

Outcomes and Results

The analysis of data showed the SPSS different in the means score as statistically difference ($x^2 = 14.619$, $p = 0.012$). Results show that the contraceptive counseling and/or provision of a contraceptive method was worse after the implementation of the PISQ. The precent change noted from the pre-intervention to post-intervention on all methods of contraception (counseling and methods) was a -13.87%. That was a -13.91% change in contraceptive counseling, a -0.59% change in contraceptive method given and a -6.92% change in IUD. Results show that the contraceptive counseling and/or provision of a contraceptive method was worse after the implementation of the PISQ.

Acknowledgements

I would like to thank my loving husband, John, for always pushing me to be better and encouraging me to reach for new heights. My children, Emily, and John, for inspiring me to make this world a better place for their future and to be my best for them.

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Implementation of a Pregnancy Intention Screening Question at a Federally Qualified Health Center

This paper will outline a process improvement (PI) project that entailed the implementation of a pregnancy intention screening question (PISQ). The project was conducted in the Women's Clinic at Peak Vista Community Health Center a Federally Qualified Health Center (FQHC) in El Paso County, Colorado.

Problem Recognition and Definition

Statement of Purpose

The examination of this PI project was due to a need in fulfilling a requirement within a grant implemented by the FQHC and championed by the Women's Clinic. The focus of the grant was to expand contraceptive services to women ages 15-44 and outlined measures to be evaluated throughout the duration of the 18-month grant. One of the measures included that a PISQ be asked of women during their visits. The Women's Clinic currently has no formal PISQ that was easily accessible or within the current workflow in the electronic health record (EHR).

Problem Statement and PICO Question

The Women's Clinic has no standard workflow in place for the assessment of women's pregnancy intentions. Current assessments are based off medical assistant and provider preferences in screening. The PICO question developed for investigation is:

P: providers in the Women's Clinic

I: implementation of a PISQ

C: compared to no screening question

O: increase in contraceptive counseling and/or provision of a contraceptive method

Making the PICO question: Does the implementation of a PISQ increase compliance of the

providers, in the Women's Clinic, for the provision of contraception counseling and/or a contraception method compared to not having a screening question?

Project Significance, Scope, and Rationale

It is the belief of the primary investigator that women should be able to choose when and if they desire pregnancy. For the population seen within the Women's Clinic, this does not always come as a realized possibility. Researching this project has helped to bring the realization that women who have more control over the timing of their pregnancy can have an impact on their health and the health of their unborn child. The FQHC is responsible for reporting patient outcomes or Uniform Data System (UDS) measures. The measures for pregnancy include which trimester prenatal care is established; infants born at low birth weight (less than 2500 grams); and preterm deliveries (before 37 weeks). Many factors that contribute to theses outcomes have to do with unplanned pregnancies. A project on assessing reproductive age women's intentions for pregnancy, counseling on contraceptive options and provision of contraceptive methods supports a Doctor of Nursing Practice (DNP) role as an advocate for healthcare through use of healthcare policy (Terry, 2018). Healthcare policies need to focus on prevention of illness not just on treatment of disease. If this project could help support a UDS measure for routine screening of pregnancy intentions, then possibly, we could see a decrease in unplanned pregnancy, a rate which currently hovers around 50% in the United States (Finer & Zolna, 2016).

Theoretical Foundation

The use of theory to support a project framework is set forth by The Essentials of Doctoral Education for Advanced Nursing Practice (American Association of Colleges of Nursing, 2006). This project includes three theories: a nursing theory, a change theory, and an

education theory to provide the needed support. Cultural Negotiation, Planned Change Theory and Learning Style, respectively.

The middle-range nursing theory Engebretson and Littleton (2001) developed, Cultural Negotiation, focuses on clarifying this theory to unite the abstract concepts of holism with the nursing process. The theory describes the need for viewing patients thru a holistic approach with their personal experiences, formal and informal knowledge, cultural heritage, and personal knowing applied to how care is provided. An additional factor is the nurse's cultural heritage, personal knowledge, personal and professional experience, and formal and informal knowledge. All this set within the Health Care System. Then a Health Care System existing within the larger Ecological Context of global economics, technology, and scientific advances, politics, intellectual ideologies aesthetics and religious and cultural values (Engebretson & Littleton, 2001, p. 226); (see Appendix A).

This theory was chosen as the framework for this project because it gives a great example of how each participant brings with them their own history, and outlook on the topic of concern. It provides the basis for shared discussion and even more important, with what can be sensitive topics, shared decision making. As we move forward in a multi-cultural world, nurses must be able to identify their cultural beliefs and understand that a client's view of health and illness are influenced by their own story, build on by culture, knowledge, and experience.

Lewin's Planned Change Theory identifies that change has three phases before it becomes part of a system. The three phases are identified as unfreezing, moving, and refreezing. Lewin (1951) describes the change model as: unfreezing; examining the normal processes and increasing the driving forces for change, moving; action taken and refreezing; making the changes permanent, the new normal process.

This theory was chosen as the framework for this project because the project is based in the need for a process change. The driving force of change will lead the new process. (see Appendix B).

Fleming and Mills (1992) developed a theory on learning styles based on how learning materials were presented. Four areas were identified to help promote learning for all ages: visual, read/written, aural and kinesthetic. Visual learning takes place when learning is presented in graphical and symbolic ways of representing the information. Read/written learning is materials are presented as printed words. Aural or heard information is presented in the form of lectures, tutorials, and discussion with others. In kinesthetic learning, materials are presented with an experience, practice, or simulation as the focus of receiving information. The leaner is encouraged to identify the way they best take in information.

The Learning Style theory was chosen as the framework for this project because a new process is to be learned by staff. The education of the staff ranges for a basic education history to those who have advance degrees. In developing the education of the process each of the learning styles will be represented to help facilitate the learning of every member of the team.

Literature Selection

A review of literature consisted of an examination of research on topics related to the problem statement. Scholarly databases included: Medline, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINHAL) and Google Scholar were used. Topics searched included pregnancy intention, contraception, fertility intentions, reproductive life planning, and contraceptive counseling. The results were over 10,000 articles. This was then narrowed down to forty-five, from there articles were reviewed in greater detail for relevance and applicability to a final thirty. All articled were published in the last 10 years.

Scope of Evidence

The articles were then evaluated for level of evidence using Melnyk & Fineout-Overholt; Level I: systematic review or meta-analysis of randomized control trials, evidence-based practice (1 article), Level II: well-designed randomized control trials (3 articles), Level III: well-designed control trials without randomization (13 articles), Level IV: well-designed case-control or cohort studies (7 articles), Level V: systematic review of descriptive and qualitative studies (1 article) Level VI: single descriptive study or qualitative study (5 articles) and Level VII: expert opinion, regulatory opinion and/or reports of expert committees (0 articles) (Houser & Oman, 2011). A systematic review table was completed for the thirty articles (see Appendix C).

Review of Evidence

Background of the Problem

Examination of data regarding desires of pregnancy and contraception use was completed comparing United States, Colorado, and El Paso County, Colorado to determine a need for addressing this issue. The Pregnancy Risk Assessment Monitoring System (PRAMS) data compiled from 37 participating States (including Colorado) and New York City gives rates for mistimed pregnancy at 19.5%, unwanted pregnancy of 6.1%, and unsure about pregnancy intention 15.5% (PRAMS Data, 2019). Colorado's PRAMS' data shows roughly the same data at 19.4% mistimed and equivalent data for unwanted and unsure (PRAMS Data, 2019). The 2014 El Paso County, CO data shows 33% of pregnancies were unintended. The group reporting the largest number of unintended pregnancies (50%) are 15-19-year-old and 20-24-year-old females. Women over the age of 35 report a 14% rate of unintended pregnancy (El Paso County Health Indicator 2017 Report, 2017).

United States data on contraception use in women 15-44 from 2015-2017 showed that 36.5% of women used no method of contraception, while 63.5% used some form of a contraception method. The breakdown of methods are as follows: pills 13.9%, female sterilization 14.2%, male condom 9.7%, male sterilization 4.9%, intrauterine device 8.6%, withdrawal 6.6% and injection (Depo-Provera) 2.3% (Daniels & Abma, 2018). Colorado data for contraception use comes from the PRAMS data on what women used before they became pregnant. Withdrawal was the highest at 36.7%, followed by condom use at 36.4%, pills at 28.1%, rhythm method/natural family planning 11.6%, injection (Depo Provera) 7%, other listed at 5.1%, IUD (Mirena and Paragard) 4.4%, the patch/ring at 1.6% and the subdermal implant (Nexplanon) 1.2% (PRAMS Data, 2019). It is important to note that the PRAMS data is collected from women who have a delivery of an infant greater than 24 weeks. No data was available for El Paso county, CO.

Most data for El Paso County, CO are comparative to Colorado and United States data. Analysis of the data brings to light the concerning factor that 33% of pregnancies are reported as unintended, with 50% of women age 15-24 reporting that the pregnancy was unintended. This is the key problem identified with the analysis of community data. The contraception use and pregnancy intention data were reviewed. It was identified that contraception use data was lacking and pregnancy intention in association with unintended pregnancies was higher for El Paso County, CO. This supports the need for a further investigation of both contraception use and pregnancy intention within the county, and the project need.

Systematic Review of the Literature

The literature was reviewed for overall themes in research. The major themes found included pregnancy intention question, counseling on contraception, and use of a contraception method.

A pregnancy intention screening tool was supported in research. Many variations in the wording and when the questions were asked was identified. A variation included the term "reproductive life planning" (Kransdorf, et al., 2016) and (Nelson, et al., 2016). Other research just describes pregnancy intention screening as "would you like to become pregnant in the next year?" (Kvach, et al. 2017). Research supports the integration of a pregnancy screening tool into workflow (Kvach, et al. 2017), it supports counseling (Simons & Kohn, 2019) and providers find it helpful (Srinivasulu, et al., 2019).

The integration of structured contraceptive counseling (Madden, et al., 2019) and the incorporation of assessment of medical risk associated with pregnancy for a patient (Nelson, et al., 2016) does increase the use of contraception. Structured contraceptive counseling was also found to increase consistency with staff and improved patient satisfaction (Simons, et al., 2020) and (Madden, et al., 2019).

Another theme identified was regarding use of contraceptive methods. Research showed that women who were ambivalent to pregnancy were less likely to engage in contraceptive use (Kavanaugh & Schwarz, 2009). Contraception use is based on may factors including cost of method (Weisman, et al., 2015), pregnancy timing goals (Geist, et al., 2019), and consistent assessment supports the provision of contraception in the clinical settings (Simons & Kohn, 2019)

This literature review provides support for the integration of a PISQ. In conducting the literature review there appears to be a gap in research regarding pregnancy intention on provider

provision of contraceptive counseling. So, the decision to include both the contraceptive counseling and provision of a contraceptive method was determined on the research supporting contraceptive use based solely on pregnancy intention.

Project Plan and Evaluation

Market/Risk Analyses

The analysis of the project's strengths, weaknesses, opportunities, and threats allow for a balanced approach to project implementation (see Appendix D). The strengths of this project are reflected in the location and staff because they are experienced in offering contraception options to women and perform this task daily. The familiarity with contraception options will ease the incorporation of screening every woman regardless of the primary reason for visit. In addition, women frequently seek care for contraception and with this comes an opportunity for an easy discussion between the provider and patient about contraception.

Identified weaknesses of the project are mostly related to potential biases. Provider and staff may be "stuck" in old ways and resistant to change. Patients' may be uncomfortable discussing pregnancy intentions, and/or contraception with their provider. Women may be unaware of the services offered by the clinic. Also, the Women's Clinic is a large clinic with many providers and staff to train and maintain training with potential turnover.

Noted opportunities for the project include expansion of knowledge to other clinics within the FQHC. Marketing of contraceptive services in correlation with the grant. Reduction of unplanned pregnancies within the community.

Identified threats to the project are contraceptive services offered by the primary care provider and others in the community. The loss of funding for grant due to shortened timeframe impacted by COVID 19.

Driving and Restraining Forces

The driving and restraining forces are those factors that help move the project forward or possibly hinder the project or at least need to be considered as helping promote the change. The identified driving forces include the provider and staff of the Women's Clinic, as they are familiar with contraception options and frequently have conversations with patients regarding contraceptive counseling and methods. The organizational leadership is also a driving factor in the project as they are in support of the grant and the grant metrics require a PISQ to be incorporated into practice. Restraining forces include fear of change and training fatigue. Ways to combat restraining forces would be to add incentives such as offering lunch during training and offer support for the change.

Needs, Resources, and Sustainability

The need for this workflow was to improve identification of patient's need for contraception counseling and/or method of contraception. If this workflow is found to be effective at increasing women counseled and/or provided a contraception option, it will be rolled out into the other clinics within the organization.

Resources for the project would include buy in of the project by the staff and leadership of the Women's Clinic, the support the Business Intelligence (BI) department for data collection, the EHR for documentation and data collection, time and cost of training the staff and cost of educational handouts.

The sustainability of the project is supported by the organization. The organization was interested in expanding contraceptive services with the acquisition of the grant and is in support of a full company role out of an improved workflow. It is common for the organization to update workflows to include new screenings as needed.

Feasibility, Risks and Unintended Consequences

This project was highly feasible. The primary investigator chose this project because of the work already being completed to fulfill obligations to the grant. The grant required that the EHR have a PISQ added or an existing one used. A workflow was needed to incorporate the question into practice, so the correlation of the project and the needs of the grant coincided quite well. Approval was obtained for clinic leadership regarding the project and training was approved as a necessity of the grant. The primary investigator worked in the clinic of planned implementation, so was familiar with staff and had an established relationship. The PISQ was available in the EHR, the placement was modified to accommodate a better workflow, but this was completed because of the grant.

There were minimal risks identified with the project. The training of the workflow was one training session offered on multiply occasions to accommodate COVID 19 gathering restrictions in place at the time of training. Staff was taught the workflow but was informed that their participation in the project was completely voluntary.

Unintended consequences can alter the projects outcomes. Difficulties that occurred were scheduling conflicts with training session, staff members missing their training day and make-up sessions being offered. Staff's adaptation to the new workflow change takes time to implement.

Stakeholders and Project Team

Stakeholders are those who have a vested interest in the outcome of the project (Zaccagnini & White, 2017). Stakeholders of the project includes all staff of the Women's Clinic, the leadership within the clinic, leadership at the Vice President and Chief level. Project team includes: the primary investigator, the Clinical Operations Director of the Women's Clinic, two clinical Women's Health Nurse Practitioners (WHNP), the Clinic Manager, the Clinical

Coordinator, three medical assistants (MA), the clinical mentor, the faculty chair, and a research statistics faculty.

Cost-benefit Analysis.

The costs associated with this project included salary for staff time for planning and training of the workflow, training materials, time spent developing the training presentation and analysis of data. The planning costs for two hours of work for three WHNP and three MA was $639. One hour training costs for sixteen providers; including five Obstetric/Gynecological physicians (OBGYN), five Certified Nurse Midwives (CNM), six WHNP, two Behavioral Health Providers (BHP), thirteen MAs and three Registered Nurses (RN) was $1,693. Additional non-clinical staff of the Women's Clinic were included in training the cost increased by $215 and included: three Receptionists, two Resource Navigators, two Prenatal Plus staff, the Clinical Operations Director, Clinic Manager and Clinic Coordinator. Training materials cost included the printing of handouts at $0.11 per page, a five-page document for 45 participants total cost of $24.75. The researcher's cost for the development of training (two hours), and data analysis (five hours) at $58 an hour was $406. The total cost would be $2,977.75. With actual costs at $2,571.75 (see Appendix E). The benefits are unmeasurable when measured by women who are given the opportunity to prevent an unwanted or ill-timed pregnancy.

Mission and Vision

The mission of this project is to implement a screening question that will facilitate a discussion with female patients regarding their intentions surrounding pregnancy.

Goals, Process and Outcomes Objectives

The goals of the project are to establish a standard of care for the FQHC regarding PISQ in women of childbearing age while increasing compliance with contraceptive counseling and use as desired by the patient.

The primary outcome for this project is to measure effects on the provision of contraceptive counseling and/or contraceptive methods. These outcomes were measured by the documentation of the International Classification of Disease (ICD-10) and Current Procedural Terminology (CPT) in the EHR. The documentation of ICD-10 codes includes codes for contraceptive and pre-conception counseling. Contraceptive method will be documented with either a CPT code or an associated ICD-10 code. Contraceptive methods to be included are intrauterine device (IUD) (Lilletta, Mirena, ParaGard and Kylena), subdermal implant (Nexplanon), injectable contraception (Depo Provera), oral contraceptive, contraceptive patch (Xulane), contraceptive vaginal ring (NuvaRing) and barrier methods. The ICD-10 and CPT codes will be collected for insertion and surveillance of devices (IUD and implant), and initial prescription and surveillance of other methods.

The purpose of the proposed outcome is to measure if a change occurs in the implementation of the new process. The outcome measure was identified to help bring awareness to the provider, staff, and patients regarding pregnancy intention. The outcome is identified as patient and organization sensitive. The patient potentially benefits from the improved process by participating in a screening that they may not have received without first seeking the care. The organization potentially finds a method to incorporate screening of women regarding pregnancy intention and help promote health lifestyle to aid in theses women's health decisions. If this PISQ ever becomes a UDS reportable outcome, the organization will have a process in place to collect and report the data.

Logic Model

The logic model was developed to explore the benchmark targets in this project, as well as the outcome measures (see Appendix F). The targets identified in the development of the model were the major resources needed to complete that project including, the Women's Clinic support staff and providers, an EHR and BI department staff. The Women's Clinic support staff and providers were identified because of their role in the implementation of the process, and they will be implementing the change associated with the project. The BI staff will aid in the collection of data, they will generate the computer reports to collect data from the EHR. The resources in the form of cost associated with the project have been identified as the time spent training staff, monitoring the data and materials for training and patient resources.

Outcome measures were also identified with use of the logic model. Outcomes were categorized into three columns, output, short- and long-term outcomes, and the impact. The outputs are the immediate results, the PISQ is answered, provider and staff express comfort with asking the PISQ and providing contraceptive counseling and providers express comfort with the provision of contraception methods. The short- and long-term outcomes identified focus on the patient reception of contraceptive counseling and/or method of contraception and the staff and provider change in practice to incorporate this screen into practice outside the project timeframe. Theses outcomes look at the larger impact of the project. The impact outcomes are identified as larger healthcare impacts to the project, lower rate of unintended pregnancy, increased compliance with contraceptive use, health pregnancies and a standard of care established for FQHC in screening for pregnancy intention.

A timeline was created to outline the project. The DNP model developed by Zaccagnini & White (2017) was used as a basis for the timeline. This model breaks the project down into ten

steps, nine of those were used in the timeline. The needs assessment and goals/objectives were completed January thru April 2020. Theoretical underpinnings and work planning completed in June -August 2020. Implementation, September thru December 2020. Interpretation of data, January thru March 2021. The final step utilization and reporting of results will be completed April 2021(See Appendix G).

Population and Sampling Parameters

Population included all medical providers in the Women's Clinic including five OBGYN Physicians, five CNM and six WHNP. The sampling parameters included all female patients seen by theses providers in the six-month timeframe within the Women's Clinic. The type of sample for this project has been identified as a nonrandom convenience sample of the women age 15-44 who seek care in the Women's Clinic over a three-month period before and after the implementation of the process improvement, totaling 6 months of data collection. This sample type was chosen as "Convenience sampling…wise choice(s) for the doctor of nursing practice (DNP) researcher who has access to a continuous source of patients" (Terry, 2018, p. 120). The Women's Clinic averages about 2400 visits per month and 6600 women are seen in the age group annually. With the population of 6600 women, if a desired 95% confidence level with a 5% margin for error yields a sample size of 364 would be needed. This was determined using the online sample size calculator on the website Creative Research Systems (Sample Size Calculator, 2012). The plan would be to sample as many women as possible in the six-month data collection phase. The 364 would be a minimum sample size needed to compare the findings to the population of the Women's Clinic. As the sample size increased, it would be more supportive of the independent variable's relationship with the dependent variables. With further examination of the methods that are to be used in the analysis of the data, it was identified that a power analysis

was needed to further determine an adequate sample size. A power analysis is completed with the use of an estimated sample size table (Polit, 2010). This table uses the parameters of $\alpha = .05$ and $\beta = .80$. Meaning that a 5% change that results are due to random chance and 20% chance that there is no difference in in the outcomes are acceptable in this study (Cullen). An estimated sample size of 190 in each group, if there is less than a 0.05 difference in the size of the samples, so a total of 380 is needed (Polit, 2010, p. 178).

The setting for this project was the Women's Clinic within a Federally Qualified Health Center in Colorado Springs, Colorado.

Methodology and Measurement

The methodology was to use evidence-based practice to create a PI project thru the implementation of a new workflow. The results of this project were to assess the change in care based on the location and setting of the project. The project was developed using the PICO acronym verses a research question. The population (P), intervention (I), comparison (C) and outcome (O) set the bases for the project (Zaccagnini & White, 2017). P: providers in the Women's Clinic, I: implementation of a PISQ, C: compared to no screening question, O: increase in contraceptive counseling and/or provision of a contraceptive method. Making the PICO question: Does the implementation of a PISQ increase compliance of the providers, in the Women's Clinic, for the provision of contraception counseling and/or a contraception method compared to not having a screening question?

The methodology for the project was based on a PI project to update the workflow of the clinic in include a PISQ. This was placed in the EHR. The MAs and providers were instructed on asking and documenting the PISQ along with instructions on the diagnosis codes for contraceptive counseling and methods of contraception. The data was pulled from the EHR

during the pre-implementation(3-motnhs) and post implementation (3-months) timeframe. This data included if the PISQ was documented, diagnosis codes for contraceptive counseling, contraceptive methods, and the billing codes for long acting reversable contraceptive methods.

This PI project was designed to look at the before and after implementation of the new workflow. After receiving Regis University Institutional Review Board approval (IRB). The project was completed by:

- Step 1: The assessment of the current workflow for both medical assistant and provider was completed.
- Step 2: Identifying the most reasonable location to add the PISQ that had the least impact to current navigation of the EHR for workflow.
- Step 3: The development of training for staff on the new workflow including a PowerPoint presentation, handouts, and the opportunity for hands on practice.
- Step 4: Education of staff member on the new workflow and best documentation in the EHR.
- Step 5: Data for the pre-implementation and post-implementation were collected and analyzed for change.

Protection of Human Rights

This project received IRB approval from Regis University (see Appendix H) and an approval letter from the Chief Medical Officer (CMO) at the clinical site (see Appendix I). The project did not need informed consent (see Appendix J).

Instrumentation Reliability and Validity and Intended Statistics

The project did not rely on a tool for implementation. The project used the Cronbach Alpha to test for validity within the data.

This project used a combination of descriptive statistics, to describe and summarize data and inferential statistics, to examine relationships between variables (Polit, 2010). Descriptive statistics were used to describe data's averages over the 3-month pre- and post-intervention of number of women seen, documented PISQ, documented contraception counseling and methods given. Standard deviations were used to measure the amount of variation in the data. The inferential statistics used were the Friedman test and correlation. The Friedman test is used when there a three or more sets of observation for the same subject and dependent variable is measured on an ordinal scale (Polit, 2010). Correlation is the examination of the association of two variables, done in this project by comparison of the means.

Data Collection and Protocol

The BI department of the organization was used to extract data from the EHR. The data collection included women age 15-44 seen in the Women's Clinic during the determined 6-month timeframe, 3-month pre-intervention and 3-month post- intervention. The data included the number of women who have documented answers to the PISQ and the number of women who have documented contraceptive counseling and/or contraceptive method provided.

The protocol consisted of the workflow around the PISQ. Education outline consisted of an overview of purpose, an overview of project, a review of workflow for PISQ, a review of ICD-10 and CPT codes and question/answer session. Education materials were presented in a power point and handouts were distributed (see Appendix K and Appendix L). The same content was presented in three 1-hour sessions to assigned groups of staff to keep in compliance with COVID 19 restrictions.

Project Findings and Results

Findings and Results

The projects findings and results are discussed by objective. The objective was to measure the impact of the PISQ on the outcome of contraceptive counseling and provision of a contraception method.

The level of data collected is ordinal because the number of patients seen can be ranked. With ordinal level data, the test run in Statistical Product and Service Solution (SPSS) was the Friedman test which was the best test for this data. As seen in Table 1, the Friedman test indicated that the means score between the pre-and post-interventions was different and that difference was statistically significant ($x^2 = 14.619$, $p = .012$). This would support that contraceptive counseling and/or provision of contraception method was not equal in the pre- and post-intervention. The examination of the mean score then explains the direction of the change in the mean score between the pre- and post-tests.

Table 1

Test Statistics[a]

N	3
Chi-Square	14.619
Df	5
Asymp. Sig.	.012

a. Friedman Test

Note. This table is from SPSS

The mean score was calculated on the total number of patients in the 3-month timeframe and then averaged per month to calculate: the number of patients seen, received contraception counseling, a method of contraception, and IUD, all methods of counseling and contraception and had a documented answer to the PISQ. As shown in Table 2, the mean score of patients who had a documented PISQ in the pre-intervention timeframe was 23 and the post-intervention timeframe was 168.33. The increase of the mean supports the change in the number of patients with documented answers of the PISQ.

Table 2

Mean Score of Patients

Mean Score	Pre	Post
Number of patients	2040.33	1902
Contraceptive Counseling	124.67	100
Contraceptives Methods	172.33	159.67
IUD	355.33	308.33
All Methods	640.33	568
Pregnancy Intention	23	168.33

Note. This table was created by the primary investigator

The descriptive statistics used in the analysis of the data included the percentage of women seen who answered the PISQ, received contraceptive counseling, a method of contraception or an intrauterine device (IUD). The precent was calculated by taking the number of patients seen and dividing it by each of the categories. As shown in Table 3, the total percentage of patients in the pre-intervention timeframe who received contraception counseling was 6.11% and in the post-intervention timeframe was 5.26%. This was a -13.91% change in patients receiving contraception counseling pre vs post intervention. The total percentage of patients in the pre-intervention timeframe who had a documented PISQ answer was 1.13% and in the post-intervention timeframe was 8.85%. This was a 685% change in patients who had a documented answer to the PISQ pre vs post intervention.

Table 3

Percent of Patients

	Counseling	Methods	IUD	All	PISQ
August	6.35%	7.01%	16.75%	28.40%	0
September	6.78%	9.58%	18.55%	34.91%	0
October	5.23%	8.82%	17.00%	31.33%	3.34%
Total Pre	6.11%	8.44%	17.42%	34.67%	1.13%
November	5.18%	8.29%	15.83%	29.30%	3.45%
December	5.20%	8.44%	16.23%	29.87%	4.77%
January	5.37%	8.45%	16.51%	30.32%	17.03%
Total Post	5.26%	8.39%	16.21%	29.86%	8.85%
Percent Change	-13.91%	-0.59%	-6.92%	-13.87%	685%

Note. This table was created by the primary investigator

Results show that the contraceptive counseling and/or provision of a contraceptive method was worse after the implementation of the PISQ. The results were different than expected. It was expected that with the implementation of the PISQ the numbers of contraception counseling and/or method of contraception would increase.

Limitations, Recommendations, Implications for Change

Limitations

Reasons for the data discrepancies may include patient, staff, and time variations. When asked, patients may intend to become pregnant, therefore, not in need of contraception counseling and/or method of contraception. Providers may have provided counseling but not

completed the documentation with the needed ICD-10 codes correctly in the EHR. Staff may have not felt comfortable with asking the question to patients. The time of year the project was completed was during the winter holidays. During that time, the clinics prioritize pregnant patients for visits over any other type. Pregnant patients were not excluded from the data collection, nor would they need contraception at these visits.

Recommendations

Recommendations based on analysis include extending the data collection timeframe. If the collection of data was extended, then the extraneous variable of the time of year and prioritization of pregnant patient would be accounted for. The extension of data collection would also allow for follow up training on workflow and the adaptation to practice. This could allow for a large percentage of patient being asked the PISQ and that could account for those who would like to become pregnant. The exclusion of pregnant patients and those who plan on becoming pregnant could be done in future studies. Data collection is ongoing due to obligations related to the grant. The data for the months following the project show that an increased number of women are asked the PISQ. Further analysis of this data may support a change in results.

Implications for Change

Implications to practice would include more studies examining the use of a PISQ. The evaluation of staff, providers, and patient's attitudes towards the PISQ. This evaluation might include the usefulness of the question in facilitating conversations regrading fertility needs. One thing to consider for practice is not the contraceptive outcomes of a patient, but that a PISQ may start a conversation between patient and provider that may not have been discussed without the question. This conversation could be invaluable to a patient and further exploration of patients perceived value in the conversation should be explored.

Summary

This project was created as a fulfillment of the requirements of a Doctorate of Nursing Practice degree. The process improvement project explored the need for, the support in research, design and implementation of a workflow, and examination of data of a pregnancy intention screening question. The project looked at the effect of a pregnancy intention screening question on the provision of contraception counseling and contraception method. It was found that the rates of contraception counseling and provision of contraception methods decreased with the implementation of the new workflow. This was not the intended results but opens the door for further exploration of this topic.

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Appendix A

Conceptual Diagram-Cultural Negotiation

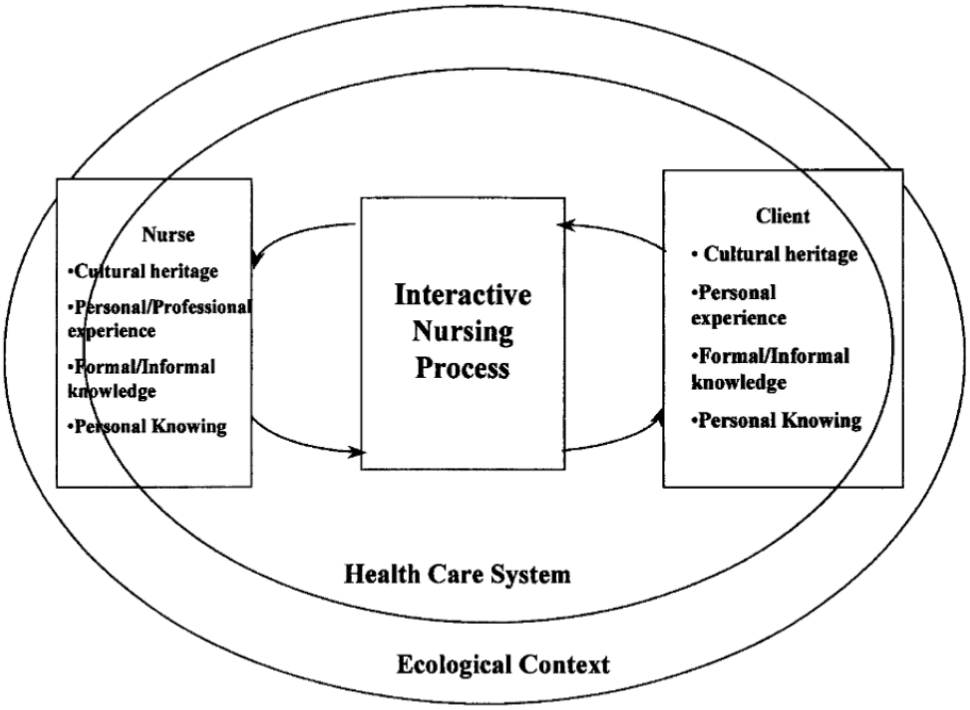
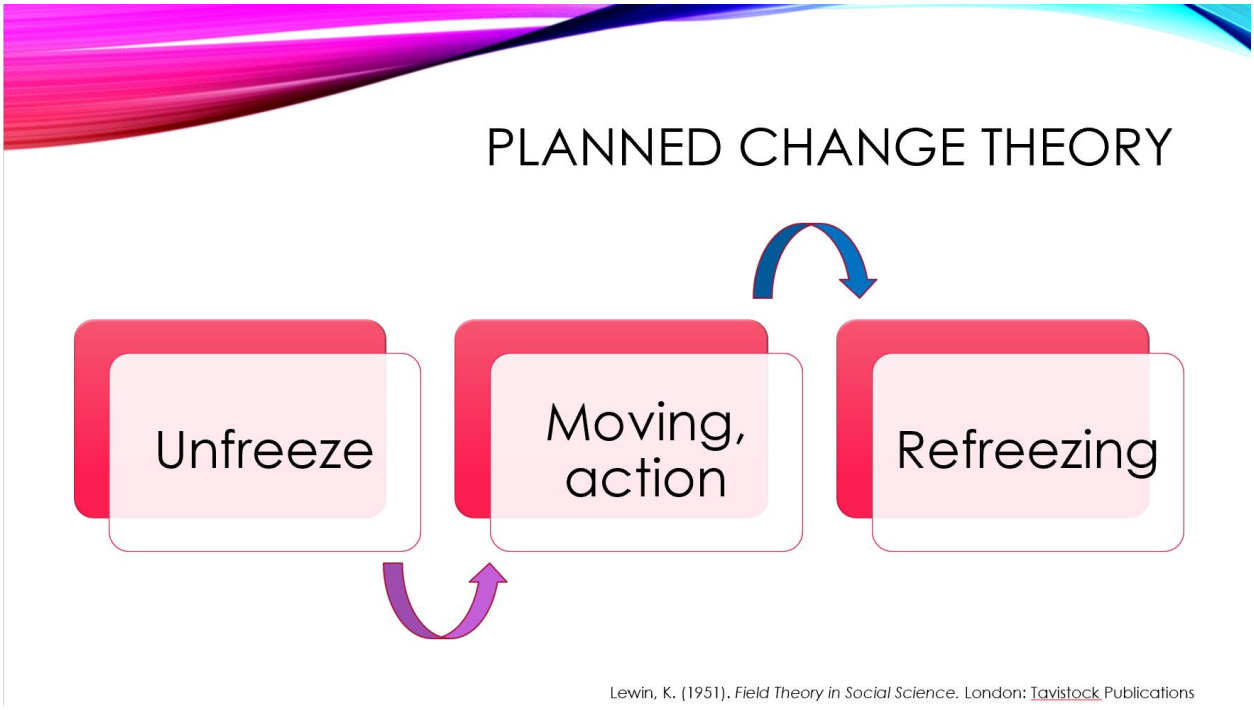


Figure 1. Cultural Negotiations Model for nursing practice.

(Engebretson & Littleton, 2001, p. 226)

Appendix B

Conceptual Diagram-Planned Change Theory



Appendix C

Systematic Review of the Literature

Article/Journal 1 & 2	Routine screening for pregnancy intentions to address unmet reproductive health needs in two urban Federally Quailfied Health Centers Journal of Health Care for the Poor and Inderserved. 28:1477-1486	"It just happens" A qualitative study exploring low-income women's perspective on pregnancy intention and planning. Contraception 95(2) 150-156
Author/Year	Kvach, Lose, Marcus, & Loomis (2017)	Borrero, Sonya; Nikolajski, Cara; Steinberg, Julia R.; Freedman, Lori; Akers, Aletha Y.; Ibrahim, Said; Schwarz, Eleanor Bimla (2015)
Database/Keywords	Medline/ Pregnancy Intention, screening, primary care, contraception, preventive reproductive health	PubMed/pregnancy intention, race, pregnancy planning, reproductive coercion
Research Design	Quality Improvement Project	Qualitative Study
Level of Evidence	Level VI	Level III
Study Aim/Purpose	Examine results of a quality improvement pilot program at two FQHCs to implement and increase universal screening for pregnancy intention to address unmet reproductive health needs among women of reproductive age	Typologize pregnancy intention, understand the relationship between pregnancy intention and contraceptive use, and identify the contextual factors that shape pregnancy intention and contraceptive behavior.
Population/Sample size Criteria/Power	Two urban federally qualified health centers/ women 12-45 without history of sterilization/553 & 2145	ages of 18–45; self-identified as either AA or white; and were either currently pregnant, had an abortion within the prior 2 weeks, or were not pregnant but had been sexually active with a man in the previous 12 months. We excluded women who were not fluent in English and who had a household income above 200% of the federal poverty level
Methods/Study Appraisal Synthesis Methods	Medical assistants asked, "Would you like to become pregnant in the next year?" recording in the EMR	Semi structured interviews
Study tool/instrument validity/reliability	P-value for statistical significance were calculated with a two-proportion z-test	Coding of transcripts using Atlas.ti qualitative coding software

Primary Outcome Measures/Results	Screening rates increased. Both clinical sites saw lower rates of asking of question in adolescent population	Four overall themes: 1. Women do not always formulate pregnancy intentions 2. Pregnancy planning was described as an unattainable ideal by many women 3. Pregnancy intendedness, happiness about pregnancy, and acceptability of pregnancy are distinct constructs 4. The relationship between desire to avoid pregnancy and contraceptive behavior was often unclear
Conclusions/Implications	It is feasibly to include routine screening for pregnancy intentions	Our findings suggest that the current conceptual framework that views pregnancy-related behaviors from a strict planned behavior perspective may be limited, particularly among low-income populations.
Strengths/Limitations	Strengths: allows for provider to address unmet reproductive needs, transformed practice culture for providers to reinforce the importance of routine preconception care and contraception counseling Challenges: questions raised about universal applicability of the screening questions to all female patients	Challenges: small sample size, half of whom were pregnant
Funding Source	Non identified	This study was made possible by Dr. Borrero's grant (1 R21 HD068736-01) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICH
Comments		We also found that a substantial number of women in our study reported experiences with reproductive coercion.
Article/Journal 3 & 4	Prospective Assessment of Pregnancy Intentions Using a Single-Versus a Multi-Item Measure. Perspective Sex Reproductive Health. 41(4): 238–243	Pregnancy intentions and use of contraception among Hispanic women in the United States: Data from the national survey of family growth 2006-2010. Journal of Women's Health 22(10) 862-869
Author/Year	Kavanaugh, Megan L.; Schwarz, Eleanor Bimla (2009)	Masinter, Lisa; Feinglass, Joe; Simon, Melissa (2013)

Database/Keywords	Google Scholar/Pregnancy intention	Medline/pregnancy intention
Research Design	Cross-sectional survey	Retrospective
Level of Evidence	Level III	Level IV
Study Aim/Purpose	Our goal was to prospectively assess pregnancy intentions in a population of women at high risk for unintended pregnancy using two measurement strategies, and to describe the relationship between these measures, decisions regarding the outcome of the potential pregnancy and the women's pregnancy test results.	Expand upon the descriptive data provided in reports from the National Survey of Family Growth and perform a detailed analysis of pregnancy intention and risk for unintended pregnancy among Hispanic American women. Examine contraceptive behaviors prior to unintended pregnancies in this population
Population/Sample size Criteria/Power	English-speaking women aged 15–44 who sought walk-in pregnancy testing services at one of four clinics in Pittsburgh were eligible for the study.	Self-reported ethnicity of Hispanic, age 15-44 NSFG data
Methods/Study Appraisal Synthesis Methods	The 41-item quantitative survey instrument	Pregnancy intention, pregnancy outcome and contraception
Study tool/instrument validity/reliability	Survey question adapted from the LMUP	Survey question adapted from the LMUP
Primary Outcome Measures/Results	Women aged 15–24 were more likely than older women to be categorized as not planning for pregnancy. Cohabiting women were less likely than others to be classified as not planning and more likely to be classified as being ambivalent about pregnancy. Women who were employed full-time were more likely to be categorized as planning a pregnancy than were women who were working part-time or not working. Interestingly, women with public health insurance were less likely to be categorized as planning for pregnancy than were those who had either no health insurance or private health insurance. Women identified as ambivalent by the pLMUP were less likely than women who were not planning for pregnancy to report having used any form of birth control	70% of Hispanic women have had at least 1 unintended pregnancy and over held of the pregnancies to Hispanic women are unintended Young and multigravida women are at a higher risk for unintended pregnancy

	since their last period (37% vs. 72	
Conclusions/Implications	Our study indicates that these populations have high rates of ambivalence toward pregnancy and concurrent low use of effective contraceptives. Prospective assessment of pregnancy intentions to identify ambivalent women, especially with multidimensional measures, may prove a valuable tool that provides the opportunity for clinicians to address these women's concerns and needs for future contraception and healthy pregnancies.	Broken link between pregnancy intention and contraceptive use in the Hispanic population. Continued need to better educate and empower Hispanic women and girls about their reproductive capacity and their contraceptive practices.
Strengths/Limitations	Limitations: Our sample focused on women at high risk for unintended pregnancy in a narrow geographic area; as a result, generalizability to other populations is limited.	Strength: generalizability Limitation: recall bias, underreporting on unintended pregnancies, bias in survey questions
Funding Source	RAND–University of Pittsburgh Health Institute/Magee Women's Research Institute Pilot Grant Program	Supported by an institutional award for postdoctoral training to the Northwestern University Feinberg School of Medicine for Healthcare Studies from the Agency for Healthcare Research and Quality
Comments		
Article/Journal 5 & 6	Assessing pregnancy intention and associated risks in pregnant adolescents Maternal Child Health Journal 16:1820-1827	Effects of two educational posters on contraception knowledge and intentions. Obstetrics & Gynecology 133:53-62
Author/Year	Phipps, M.G. & Nunes, A.P. (2012)	Anderson, S., Frerichs, L., Kaysin, A., Wheeler, S.B., Tucker Halpern, C., & Hassmiller, K. (2019)
Database/Keywords	Medline/pregnancy intention, adolescent, pregnancy in adolescence, pregnancy unplanned, pregnancy unwanted	Medline/pregnancy intention, contraception
Research Design	cohort	Randomized controlled trial
Level of Evidence	Level V	Level II
Study Aim/Purpose	Evaluate multiple constructs of pregnancy intention in a group of pregnant adolescents attending their first prenatal care visit, examine association between measures of pregnancy intentions and demographic, health	Women who view the patient-centered poster will immediately show greater increases in their contraception knowledge, greater accuracy in their perceived pregnancy risk and greater effectiveness in their

	behavior and pregnancy history characteristics	contraceptive intentions than women who view the CDC poster.
Population/Sample size Criteria/Power	300 pregnant adolescent women age 12-19	Amazon mechanical Turk selected convenience sample of U.S. women aged 18-44, spoke and read English, not trying to conceive, and engaged in vaginal intercourse with a man in the past 3 months/ 990 randomized
Methods/Study Appraisal Synthesis Methods	30 min structured interview	Women were shown either the CDC educational poster or that developed for the study
Study tool/instrument validity/reliability	SAS Proc LCA	Contraception knowledge measured using 25-item Contraceptive Knowledge Assessment
Primary Outcome Measures/Results	Regardless of pregnancy planning or emotional readiness, the majority of adolescents included in this study were not using contraception at the time of pregnancy	Found that patient-centered poster was only significantly more effective that the CDC poster at improving contraceptive knowledge. No statistically difference between CDC and patient-centered poster on perceived risk of pregnancy, and the score measuring effectiveness of the most likely contraception intended for the next year. Both posters improved contraceptive knowledge. Increase knowledge were attributable to the posters themselves
Conclusions/Implications	Emotional readiness identified as a significant predictor of risk factors related to prenatal care, social behaviors, and mental health	Using posters in practice could allow doctors to spend more of their time answering questions about the patient's specific contraceptive needs rather that educating them on the basics of how each method works and how effective it is.
Strengths/Limitations	Limitation: not representative of all adolescents at risk for pregnancy, unmeasurable confounds hindered association with pregnancy intent and adverse pregnancy outcomes	Strengths: significant effects on women's intended contraceptive, which the Health Belief Model suggests is likely to be more strongly associated with contraceptive behavior that contraceptive knowledge., Limitations-not generalizable,
Funding Source	Partially funded through grant from the Brown University Office of the Vice President of Research and the Rhode Island Foundation	No reported conflicts
Comments		
Article/Journal 7 & 8	Variation in pregnancy intendedness across U.S.	Associations between pregnancy intention, attitudes, and contraceptive

	women's pregnancies. Maternal Child Health Journal 19:932-938	use among women veterans in the ECUUN study. Women's Health Issues 28:480-487
Author/Year	Shreffler, K.M., Greil, A.L., Stamps Mitchell, K., & McQuillan, J. (2015)	Wolgemuth, T., Judge-Golden, C., Callegari, L., Zhao, A., Mor, M., & Borrero, S. (2018)
Database/Keywords	CINAHL/pregnancy intention, pregnancy planning, fertility intentions, life course, reproductive career	Medline/Pregnancy intention, contraception
Research Design	Detailed retrospective	Cross-sectional survey
Level of Evidence	Level III	Level III
Study Aim/Purpose	Investigate the extent to which women intend their pregnancies over time and what distinguishes women who consistently intend their pregnancies from women who are ambivalent about their pregnancies, from those whose pregnancies are always unintended and from those who plan some pregnancies and not others.	Aimed to evaluate the relationship between pregnancy intention and attitude toward a hypothetical pregnancy and the association of these factors with current contraceptive use, using data from a national sample of women veterans who use the VA for primary care.
Population/Sample size Criteria/Power	4712 women, restricted data to women with at least two pregnancies, regardless of how the ended, 25-45, representative sample from the National Survey of Fertility Barriers	Secondary analysis of data from the Examining Contraceptive Use and Unmet need among Women Veterans (ECUUN) study. 18-44-year-old women, primary care 12 months before in VA/858. Limited to women at risk for unintended pregnancy, sexually active within last 3 months with men, not currently pregnant or trying to become pregnant, no history of hysterectomy or infertility, sterilization procedures
Methods/Study Appraisal Synthesis Methods	Phone surveys	Telephone survey
Study tool/instrument validity/reliability	Distinct pregnancy intendedness pattern groups and generated descriptive statistics for all variables in the analyses while testing for significant differences	Bivariate relationships between pregnancy intention or attitudes with contraceptive use

Primary Outcome Measures/Results	Quantitatively examine patterns of women's pregnancy intendedness over time and across multiple pregnancies. Pregnancy intentions depended upon circumstances of specific pregnancies. Pregnancy intention patterns are significantly associated with social and economic factors	Pregnancy intention and attitude towards hypothetical pregnancy were each independently associated with contraceptive use and method effectiveness
Conclusions/Implications	Highlight the need for future inquiries into predictor of pregnancy and birth intendedness patterns	Contraceptive counseling that relies solely on the assessment of pregnancy intention may not appropriately evoke the full range of women's attitudes toward pregnancy therefore limiting providers' ability to best guide patients in contraceptive decision making
Strengths/Limitations	Limitations:analyses do not establish a causal link between women's economic and social characteristics or attitudes and pregnancy intention patterns. Intentions for each pregnancy relied on retrospective reports, investigated intendedness with all pregnancies not just those that resulted in live births	Strengths:large and represented sample of reproductive age female VA users LIMITATIONS:not generalizable, many women use contraception for reasons beyond pregnancy prevention
Funding Source	Funding for the NSFB received from Eunice Kennedy Shriver National Institute of Child Health and Human Development	No funding source noted
Comments		
Article/Journal 9 & 10	Reproductive life planning: A cross-sectional study of what college students know and believe. Maternal & Child Health Journal 20:1161-1169	Reproductive life planning and preconception care 2015: Attitudes of English-speaking family planning patients. Journal of Women's Health 25:832-839
Author/Year	Kransdorf, L.N., Rahgu, T.S., Kling, J.M., David, P.S., Vegunta, S., Knatz, J., Markus, A., Frwy, K.A., Chang, Y.H., Mayer, A.P., & Flies, J.A. (2016)	Nelson, A.L., Shabaik, S., Xandre, P., & Awaida, J.Y. (2016)
Database/Keywords	CINAHL/reproductive life planning, preconception care, reproductive health, family planning	CINAHL/reproductive life planning
Research Design	Cross-sectional survey study	Convenience survey
Level of Evidence	Level IV	Level VI

Study Aim/Purpose	To identify existing awareness about reproductive life planning in a cohort of young adults attending a large American public university	To determine what percent of a convenience sample of English-speaking women attended a family planning clinic serving indigent patients has well developed reproductive life plans and what they knew about preconception care
Population/Sample size Criteria/Power	Patients seen at the student health center of a large public university in the Southwestern United States April 23, 2013 to November 4, 2013/ All persons 18-40 years/559	Women were excluded from the study if they declined participation, were menopausal or younger than 18, did not speak English or had undergone a procedure that provided permanent contraception/274
Methods/Study Appraisal Synthesis Methods	Online questionnaire	Survey asked on a one-on-one basis
Study tool/instrument validity/reliability	Adapted from a previous instrument utilized by Frey et al.	Survey was beta tested
Primary Outcome Measures/Results	¼ of respondents were familiar with the concept of an RLP, most aggress that it was important and should be discussed with their partner.	Most pregnancy plans focused on social and financial preparations. Majority of women sis not seen any role for medical preparation for pregnancy. Most women believed that birth control pills were at least as hazardous to a woman's health as pregnancy
Conclusions/Implications	We propose that if young adults could be educated about RLPs they could think actively about when in their lives they might want to have children and about when they do not.	Few subjects have a well-defined reproductive life plans, the effectiveness of a women's contraceptive method usually did not match even their short-term pregnancy intentions
Strengths/Limitations	STRENGHTS: unique in that we addressed RLPs specifically, not just general preconception health LIMITATIONS: may not be generalizable, healthier subset of population,	LIMITATIONS: may limit generalizability
Funding Source	Resources provided by the Mayo Clinic Robert D. and Patricia E Kern Center for the Science of Health Care Delivery in Scottsdale, Arizona	Author Nelson received honoraria from promotional talks and participation in advisory boards from Allergan, Inc, Aspen Parmacare, Bayer Healthcare, Merck &Co. Inc., Microchips Biotech and Pfizer, Inc.

Comments		
Article/Journal 11 & 12	How do pregnancy intentions affect contraceptive choices when cost is not a factor? A study of privately insured women. Contraception 92:501-507	Pregnancy intentions among expectant adolescent couples. North American Society of Pediatric and Adolescent Gynecology 27:172-176
Author/Year	Weisman, C.S., Lehman, E.B., Legro, R.S., Velott, D.L., & Chuang, C.H. (2015)	Lewin, A., Mitchell, S. J., Hodgkinson, S., & Gilmore, J. (2014)
Database/Keywords	Medline/contraception, health care reform, pregnancy intention, LARCs	Medline/ Adolescent pregnancy, pregnancy intentions, contraceptive use
Research Design	Randomized controlled trial	Randomized pilot study
Level of Evidence	Level II	Level II
Study Aim/Purpose	Contraceptive use by privately insured adult women who wish to avoid pregnancy for at least 12 months and have access to contraceptive coverage without cost-sharing. That in the context of access to contraception without cost-sharing using prescription contraception will be a function primarily of pregnancy intention	Asking both pregnant adolescents and their male partners about their pregnancy intentions
Population/Sample size Criteria/Power	987 women age 19-40, randomly sampled from the member database of Highmark Health plans in Pennsylvania, exclusion criteria were being surgically sterile or having a current partner with a vasectomy	mothers 15-18 years old, between 15-32 weeks pregnant with first child, mothers wanted to have the father of her child regularly involved in the child's life, the father was available, both parents spoke English/ 35 couples
Methods/Study Appraisal Synthesis Methods	Internet survey, three-arm RCT	Baseline interview questions to each parent independently, structure survey
Study tool/instrument validity/reliability	Variables were summarized with frequencies and percentages for categorical variables or with means, medians, and standard deviations for continuous variables	Survey questions adopted from the Center for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System Questionnaire

Primary Outcome Measures/Results	Pregnancy intentions were not the strongest predictor of using prescription contraceptives that are covered without cost-sharing, current pregnancy risk exposure variables were more strongly associated with using LARC and other prescription contraception compared with no contraception.	Majority of fathers either wanted to be pregnant or being ambivalent about pregnancy int eh months before they conceived. Mothers' and fathers' pregnancy intentions often differed, and parents were often not aware of each other's intentions. Very low rate of hormonal contraceptive use. Mothers' poor predictors of fathers' pregnancy intentions, larges use of contraception was condoms or withdrawal
Conclusions/Implications	Greater frequency of sexual intercourse was associated with greatly increase odds of using all types of contraception	Providers should not assume that adolescent, either male or female have clear attitudes about their pregnancy intentions when providing contraceptive counseling and or planning pregnancy prevention interventions. Discuss pregnancy intentions with both male and female adolescents
Strengths/Limitations	Limitations: causality cannot be ascertained, may not be generalizable, independent variables were limited	Limitations: small data set including only youth who have already conceived, may not be representative of all sexually active adolescent couples, not generalizable
Funding Source	No funding source noted	No funding source noted
Comments		
Article/Journal 13 & 14	Healthcare access, pregnancy intention, and contraceptive practices among reproductive-aged women receiving opioid agonist therapy in northeast Tennessee. The Southern Medical Association 112:382-386	Examining temporal trends in documentation of pregnancy intentions in family planning health centers using electronic health records. Maternal and Child Health Journal 23:47-53
Author/Year	Leinaar, E., Johnson, L., Yadav, R., Rahman, A., & Alamian, A. (2019)	Simons, H. R., and Kohn, J. E. (2019)
Database/Keywords	Medline/ contraception, neonatal abstinence syndrome, opioid agonist, opioid use, reproductive health	Medline/ pregnancy intention, reproductive life plan, family planning, title X, electronic health records
Research Design	Cross-sectional study	Retrospective observational study
Level of Evidence	Level IV	Level III
Study Aim/Purpose	Pilot study was to describe access to reproductive health care, pregnancy intentions and contraceptive use among women	Assess temporal trends in documentation of patients' pregnancy intentions, examine alignment of documented patient intentions with

	receiving OAT in northeast Tennessee and the generate hypotheses for future research	contraceptive use, Patients not planning pregnancy in the next year would be more likely to use a effective contraceptive method than those who were planning a pregnancy
Population/Sample size Criteria/Power	Convenience sample women age 18-55, / 91	Non-pregnant females 15-49 who present for family planning or well-woman visits
Methods/Study Appraisal Synthesis Methods	Self-administered survey packet with clinic intake materials	Data extracted from a structured EHR data field capturing response to prompt "planning a pregnancy in the next year?
Study tool/instrument validity/reliability	SAS software version 9.4	Chi square
Primary Outcome Measures/Results	Participants expressed a nearly ubiquitous desire to avoid pregnancy, only 59% use regular contraception	Documentation of patient pregnancy intentions increased from the end of 2012 to the midpoint of 2013 and increase only slightly to the midpoint of 2014.
Conclusions/Implications	Incorporation of family planning services in OAT facilities	Consistent assessment of pregnancy intentions in clinical settings can support the provision of contraceptive and or pre-pregnancy care. Suggests that considerable proportion of women who are planning a pregnancy in the next year have dual needs for pre-pregnancy counseling and contraceptive counseling and management until they are actively seeking pregnancy
Strengths/Limitations	LIMITATIONS: low response, possible reporting bias, less generalizable, low statistical power to identify significant associations	Strengths: importance of aligning services with patients' reproductive needs and desires, found greater use of most/moderately effective methods among patients not planning pregnancy LIMITATIONS: single data field for data collection, limited response to question either yes or no, study does not tell what happened at clinical visit, conducted in family planning setting may not be generalizable
Funding Source	No funding source noted	No external funding noted by author
Comments		
Article/Journal 15 & 16	Patient characteristics associated with pregnancy ambivalence.	A checklist approach to caring for women seeking pregnancy testing:

	Journal of Women's Health 24:37-41	Effects on contraceptive knowledge and use. Contraception 91:143-149
Author/Year	Patel, P.R., Laz, T.H., and Berenson, A.B. (2015)	Lee, J., Papic, M., Baldauf, E., Updike, G., & Schwarz, E.B. (2015)
Database/Keywords	Medline/ Pregnancy intention, contraception	Medline/pregnancy testing, checklist, contraceptive counseling, emergency contraception, intrauterine contraception, pregnancy intentions, contraception
Research Design	Cross-sectional survey	Bundled intervention, pre/post design
Level of Evidence	Level IV	Level III
Study Aim/Purpose	To determine demographic characteristics, health and sexual behaviors and psychological health associated with pregnancy ambivalence	To examine how a checklist which reminded clinic staff caring for women seeking pregnancy testing to, assess pregnancy intention, provide structured contraceptive counseling, and offer same day contraceptive initiation to women wishing to avoid pregnancy affected women's subsequent contraceptive knowledge and use
Population/Sample size Criteria/Power	Non-pregnant 16-40-year-old females, 1388, 529 were classified as ambivalent about pregnancy	403
Methods/Study Appraisal Synthesis Methods	Survey questions related to pregnancy ambivalences	Complete survey date of service and again at 3 months
Study tool/instrument validity/reliability	Bivariate analyses	Chi-square tests and fisher exact tests when cells were small
Primary Outcome Measures/Results	Just over 1/3 of reproductive-age woman in our study stated that they were ambivalent about becoming pregnant, women ambivalent toward pregnancy were significantly less likely to use contraception	Women appear more likely to reports receipt of contraceptive counseling and have greater knowledge regarding the effectiveness, duration of use and reversibility of intrauterine and intradermal contraception immediately after clinic visit
Conclusions/Implications	Women that are unsure about pregnancy are less likely to use adequate contraception and have a number of unhealth behaviors and psychological risk factors that would place an unborn child at risk	Short checklist that reminds clinic staff appears to improve women's contraceptive knowledge and use three months after clinic visit
Strengths/Limitations	LIMITATIONS: single geographical area, limited to low-income population, limits	LIMITATIONS: recall and social desirability bias, no formal measure of how often clinical staff used the counseling script

	ability to establish causal relationships	
Funding Source	No competing financial interests exist	No funding source noted
Comments		
Article/Journal 17 & 18	Pregnancy intention and contraceptive use among women by class of obesity: Results from the 2006-2010 and 2011-2013 national survey of family growth. Women's Health Issues 28:51-58.	A qualitative study of pregnancy intention and the use of contraception among homeless women and children. Journal of Health Care for the Por and Underserved 25: 757-770
Author/Year	Nguyen, B.T., Elia, J.L., Ha, C.Y., & Kaneshiro, B.E. (2018)	Kennedy, S., Grewal, M., Roberts, E.M., Steinauer, J., & Dehlendorf, C. (2014)
Database/Keywords	Medline/pregnancy intentions, contraception	CINAHL/homeless people, women's health, contraception, health care access, reproductive health
Research Design	Cross-sectional survey	Qualitative study
Level of Evidence	Level IV	Level VI
Study Aim/Purpose	Its combination with data from 2006 through 2010 provides a larger population of women with class 3 obesity such that variations in the occurrence of unintended (mistimed or unwanted) pregnancies and women's contraceptive use can be determined	Understand potential barriers to using contraception and accessing reproductive health care, inform future interventions to assist homeless women to achieve better reproductive health
Population/Sample size Criteria/Power	NSFG/ living in the United States, 20-44 years, with self-reported BMI, women who were not sexually active in the last 3 months were excluded also women who were pregnant or planned on becoming pregnant, women with history of surgical sterility/9848	18-45-year-old English or Spanish speaking patients, seeking housing in a family shelter, custody of at least one minor child and were sexually active with at least one man in the past year/ 22
Methods/Study Appraisal Synthesis Methods	Use of publicly available populations database	Semi-structured interviews
Study tool/instrument validity/reliability	STATA's	Grounded theory, repeated s themes then formed basis of theories

Primary Outcome Measures/Results	Association between women with class 3 obesity and their report of mistimed and unwanted pregnancy. Association class 2 and 3 obesity continued to be linked to greater odds of not using contraception	Strong desires to avoid pregnancy while homeless, inconsistent use of contraception, barriers to contraceptive use and reproductive health,
Conclusions/Implications	Health care providers should consider the clinical experience of obese women as it influences their contraceptive uptake	Critical changes in agencies that provide care to homeless women. Easier access to services for reproductive health
Strengths/Limitations	LIMITATIONS: BMI data was self-reported, response bias possible giving socially acceptable answers	STRENGHTS: significant information about reproductive experiences of homeless women LIMITATIONS: may not be generalizable to all homeless women and children
Funding Source	No funding was use in this study	Developed with Dr. Dehlendorf's K23 award
Comments		
Article/Journal 19 & 20	Beyond intent: exploring the association of contraceptive choice with questions about pregnancy attitudes, timing and how important is pregnancy prevention (PATH) questions. Contraception 99:22-26	Pregnancy intentionality in relation to non-planning impulsivity. Journal of Psychosomatic Obstetrics & Gynecology 37:130-136
Author/Year	Geist, C., Aiken, A.RA., Sanders, J.N., Everett, B.G., Myers, K., Cason, P., Simmons, R.G., & Turok, D.K. (2019)	Godiwala, P., Appelthans, B.M., Moore Simas, T.A., Xiao, R.S., Liziewski, K.E., Pagoto, S.L., &Waring, M.E. (2016)
Database/Keywords	CINAHL/ pregnancy intentions, contraceptive methods choice, emotions about pregnancy, cost barrier, LARC, PATH questions	CINAHL/impulsivity, long active reversable contraceptives, pregnancy intention
Research Design	Prospective cohort study	Prospective cohort study
Level of Evidence	Level III	Level III
Study Aim/Purpose	Explore women's response to the survey-adapted PATH questions about attitudes towards a hypothetical pregnancy, pregnancy timing and importance of pregnancy prevention and test associations with contraceptive method selection	To examine pregnancy intentionality in relation to the three impulsivity dimensions among pregnant women
Population/Sample size Criteria/Power	18-45, fluent in English or Spanish desiring to prevent	>_18, singleton gestation between 14-16 weeks, 18.5kg/m2 <_ pre-

	pregnancy for at least 1 year and possession of a functional mobile phone	pregnancy BMI <40kg/m2, plans to deliver at UMMHC, feeling comfortable with reading and writing in English, Exclusion, cholinic medical condition, use of current medication that could affect weight, medication to treat opioid dependence, previous weight loss surgery/ 116
Methods/Study Appraisal Synthesis Methods	Collected survey at baseline and again 8 additional time over 36 months	Self-reported measure via secure web form.
Study tool/instrument validity/reliability	PATH questions,	15-item Barratt Impulsiveness Scale (BIS). Used crude and multivariable-adjusted logistic regression models to estimate the association between impulsivity and pregnancy intention
Primary Outcome Measures/Results	Majority selected either IUD or implant, lower importance of pregnancy prevention for those with short-term 2-5 years pregnancy timing goals	Non-planning impulsivity was associated with 15% higher odds of unplanned pregnancy in crude model, but not statistically significant after adjustments for education, marital status, financial strain, and other variables
Conclusions/Implications	Chance of using LARC was less in women seeking pregnancy in 2-5 years compared to those who were either not desiring pregnancy or in 5-10 years	Found that women with high non-planning impulsivity were significantly more likely to report unplanned pregnancy. Providers may wish to encourage women to consider their personal characteristics including impulsivity as part of contraceptive decision-making
Strengths/Limitations	STRENGHTS: identified predictors of contraceptive method choice our study is prospective and tests the independent effect of the different PATH dimensions LIMITATIONS: population was limited to those seen in Family planning clinics, may not be generalizable	STRENGHTS: sample diverse with respect to race/ethnicity, educational attainment, and financial strain LIMITATIONS: sample size modest, lacked knowledge of contraception choice at time of conception
Funding Source	Funded by Society of Family Planning Research Fund, the William and Flora Hewlett Foundation and an anonymous foundation	Supported by the University of Massachusetts Center for Clinical and Translational Science via Pilot Project Program grant to Dr. Waring and via the Clinical Research Center NIH grant

Comments		
Article/Journal 21 & 22	Choice of emergency contraceptive and decision making regarding subsequent unintended pregnancy. Journal of Women's Health 25:1038-1043	Racial differences in pregnancy intention, reproductive coercion and partner violence among family planning clients: A qualitative exploration. Women's Health 28:205-211
Author/Year	Royer, P.A., Turok, D.K., Sanders, J.N., and Saltzman, H.M. (2016)	Holliday, C.N., Miller, E. Decker, M.R., Burke, J.G., Document, P.I., Borrero, S.B., Sliverman, J.G., Tancredi, D.J., Ricci, E., & McCauley, H.L. (2018)
Database/Keywords	CINAHL/pregnancy intentions, emergency contraception, unintended pregnancy	CINAHL/pregnancy intention
Research Design	Prospective study	Qualitative Study
Level of Evidence	Level III	Level IV
Study Aim/Purpose	Data regarding associations between EC choice, desire to avoid pregnancy, hypothetical pregnancy intent, and action after unintended pregnancy among women who presented for EC and had a subsequent pregnancy within 1 year.	Explores and compare narrative of low-income black and white women ages 18-29 from family planning clinics in Western Pennsylvania all with history of IPV, regarding contraceptive use reproductive decision making and other relevant factors surrounding pregnancy and sexual health
Population/Sample size Criteria/Power	Women aged 18-30, presenting for EC 120 hours after unprotected intercourse, exclusion any documentation of infection with gonorrhea or chlamydia n the 60 days before EC presentation or uterine infection within the past 90 days. /548/218 choose CuIUD for EC and 330 chose oral LNG for EC	low-income black and white women ages 18-29, with history of IPV/ 50
Methods/Study Appraisal Synthesis Methods	Survey assessing demographics, verbally asked questions	Semi structured interviews, nested within a larger randomized controlled trial
Study tool/instrument validity/reliability	Visual analogue scale (VAS) 0-tryig hard not to get pregnant, 10-trying hard to get pregnant	Themes are discussed in turn with illustrative quotes
Primary Outcome Measures/Results	More than 1/3 of women were not using any method of contraception when they presented for EC,	White women describe IPV and RC as more commonly physical, Black women focuses on various types of RC including condom refusal, male-dominated contraceptive decision making and intentional impregnation

Conclusions/Implications	Associations did not exist between degree of desire to avoid pregnancy and choice of the more effective EC method, even when cost barriers were completely removed. Correlations did not exist between effective method choice and hypothetical pregnancy intention.	Highlights key racial differences in experiences of IPV and RC as well as childhood abuse and different pathways to UIP
Strengths/Limitations	STRENGHTS: prospective query of hypothetical pregnancy plans before confirmed positive pregnancy test LIMITATIONS: intentions asked a baseline may not equal intention over the course of the year	LIMITATIONS: may not be generalizable
Funding Source	Grants from the Society of Family Planning, the Eunice Kennedy Shriver NICHD and the University of Utah Study Design and Biostatistics Center, with funding from the Public Health Services research grant	National Institute of Child Health and Human Development
Comments		
Article/Journal 23 & 24	Stability of retrospective pregnancy intention reporting among women with unwanted pregnancies in the United States Maternal and Child Health Journal 23:1547-1555	Beyond the surface: Care seeking among patients' initiation contraceptive implant in an urban federally qualified health center network. Journal of Primary Care & Community Health 8:20-25
Author/Year	Roccs, C.H., Wilson, M.R., Jeon, M. and Foster, D.G. (2019)	Ravi, A., Prine, L., deFiebre, G., and Rubin, S.E. (2017)
Database/Keywords	CINAHL/abortion, pregnancy intention, reliability, retrospective measurement, stability, unintended pregnancy	CINAHL/pregnancy intentions, community health center, primary care, contraception, implantable contraception, FQHC, adolescent
Research Design	retrospective	Retrospective study
Level of Evidence	Level III	Level III
Study Aim/Purpose	Hypotheses were that reports of the intendedness of the pregnancy would become "more intended" over time for women who were denied abortions and gave birth but would remain stable over time among women receiving abortions, with the	To describe an urban family medicine staffed FQHC network's experience providing post-implant insertion care. Examined the rates of and reasons for patient-initiated follow-up during the first 6 months following implant insertion in an FOHC

	pregnancy outcome matching women's desires	
Population/Sample size Criteria/Power	956 women average age 24	Female patient younger than 36 who had implants inserted between 1/1/11 and 6/30/13, 264 patients
Methods/Study Appraisal Synthesis Methods	3 groups-women who received abortions within 2 weeks prior to the facility's gestational limit, women who were denied abortions because they presented within 3 weeks over the gestational limit, women receiving first trimester procedures	Retrospective chart review, ICD-9 and CPT codes
Study tool/instrument validity/reliability	London Measure of Unplanned Pregnancy (LMUP)	STATA 13
Primary Outcome Measures/Results	19% of women reported consistently using contraception at time of conception and 45% used a method inconsistency	40% of adolescents and 26% of adults, initiated follow-up care in the 6 months postinsertion
Conclusions/Implications	Suggest that some women with unwanted pregnancy who are unable to terminate may-consciously or subconsciously-revise their perceptions of their intentions at the time of pregnancy aster abortion seeking as they carry the pregnancy to term and after giving birth	Majority of patients continued their method and that patients younger than 21 were more likely than older patients to initiate follow-up
Strengths/Limitations	LIMITATIONS: did not include conventional measurement of pregnancy intentions unable to compare directly	LIMITATIONS: unable to determine whether those women who did not have follow-up with the clinic after insertion, initiated follow-up care or removal elsewhere
Funding Source	Supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development	No external funding noted
Comments		
Article/Journal 25 & 26	Contraceptive counseling practices and patient experience: Results from a cluster randomized controlled trial at	Perceived partner fertility desires and influence on contraceptive use. The European Journal of Contraception & Reproductive Health Care 22:310-315

	Planned Parenthood. Contraception 101:4-20	
Author/Year	Simons, H.R., Leon-Atkins, J., Kohn, J.E., Spector, H., Hilley, J.F., Fager, G., and Kantor, L.M. (2020)	Gibbs, S.E., and Moreau, C. (2017)
Database/Keywords	reviewing online Journal	CINAHL/couples, fertility desires, contraceptive use, France
Research Design	Cluster randomized controlled trial	Survey
Level of Evidence	Level I	Level VI
Study Aim/Purpose	Evaluate a replication of the 10 best practices CCP training with the aim of examining patient outcomes at baseline. Patient experience at visit, selection of most and moderately effective methods, same day provision of contraception and contraceptive behaviors	Understating the relationship between a more holistic measure of fertility intentions and contraceptive behaviors can help identify individuals who are at risk of unintended pregnancy
Population/Sample size Criteria/Power	10 health centers in 3 southeastern states, 5 intervention CCP training and 5 control usual care	Data from the national sexual and reproductive health survey, women (5272) and men (3373) 15-49 years, excluded sterile and trying to conceive
Methods/Study Appraisal Synthesis Methods	Staff training in person 8-hour training and structured follow up/patients recruited at end of visits, self-identified female patients of any age who received contraceptive counseling and could understand written/spoken English were eligible	sample of phone numbers, Pregnancy intention categorized along with contraceptive method used.
Study tool/instrument validity/reliability	Bonferroni correction for multiple testing (corrected <0.003)	STATA 14.0 software
Primary Outcome Measures/Results	Effects in patients' perceptions of counseling experience, greater satisfaction. No difference in contraceptive behaviors. Training-higher use of counseling practices in intervention group, positively affected patients' satisfaction immediately after visit with sustained effects on health center satisfaction 3 months post visit	92% of men indicated concordance with their partners, partner discordance did not vary according to the sex of the participants. 80% of women reports use of very effective method of contraception.

Conclusions/Implications	10 Best Practices contraceptive counseling protocol training intervention offers a tool for increasing consistency in counseling practices across health centers and improving patient satisfaction	Discordance in fertility desires was related to several sociodemographic trends. Independent effects of perceived partner fertility desires on contraceptive methods use for both men and women
Strengths/Limitations	LIMITATIONS: generalizability of study setting small number of health centers impact statistical power	LIMITATIONS: may not be generalizable
Funding Source	No funding source noted	No Funding source noted
Comments		
Article/Journal 27 & 28	Contraceptive use by women across different sexual orientation groups. Contraception 100:202-208	Comparison of unintended pregnancy at 12 months between two contraceptive care programs; a controlled time-trend design. Contraception 100:196-201
Author/Year	Charlton, B.M., Janiak, E., Gaskins, A.J. DiVasta, A.M., Jones, R.K., Missmer, S.A., Chavarro, J.E., Sarda, V., Rosario, M., Austin, S.B. (2019)	Madden, T., Paul, R., Maddipati, R., Buckel, C., Goodman, M., and Peipert, J.F. (2019)
Database/Keywords	Reviewing online journal	CINAHL/ contraceptive counseling, long-acting reversible contraception, intrauterine device, contraceptive implant, unintended pregnancy
Research Design	Data analysis of 3 longitudinal cohort studies	Non-randomized Controlled time-trend design
Level of Evidence	Level IV	Level III
Study Aim/Purpose	Documenting the full range of contraceptive methods use across sexual orientation groups	A program which includes structured contraceptive counseling plus healthcare provider education and funds to purchase LARC methods would have a greater reduction in unintended pregnancy by 12 months compare to a program which includes only structures contraceptive counseling addition to the usual contraceptive care
Population/Sample size Criteria/Power	Nurses' health study (NHS), NHS2 and NHS3 used 118,462	Enrolled-1008, Enhanced care-502, Complete care-506, women age 14-45, English or Spanish speaking, not currently pregnant, sexually active with male partner or planning on becoming sexually active in the next 3 months, did not desire pregnancy in the next 12 months, at risk for unintended pregnancy. Ineligible-sterilization, hysterectomy

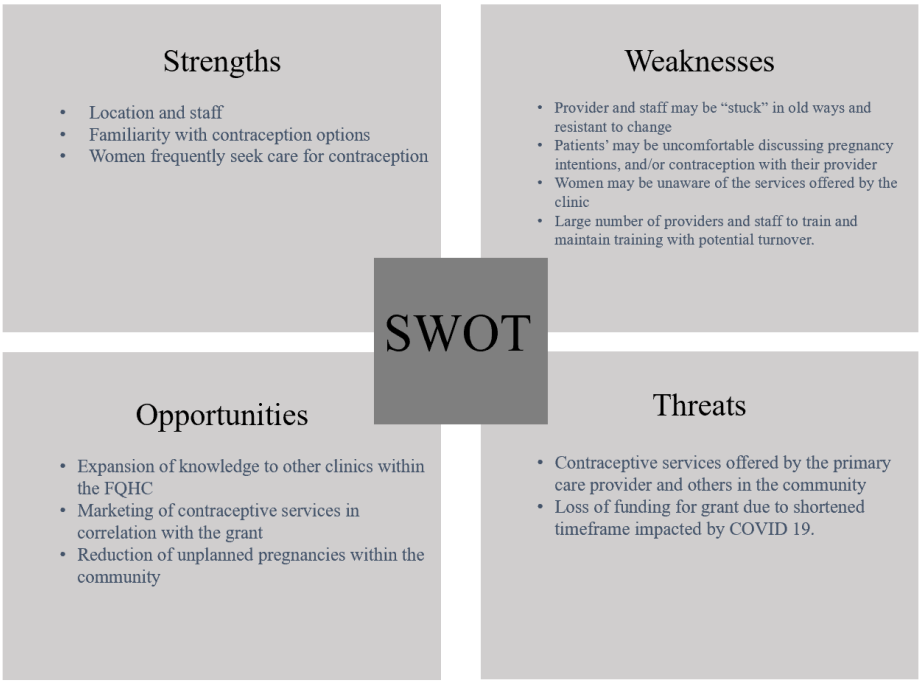
Methods/Study Appraisal Synthesis Methods	Questionnaire-sexually orientation or identity Contraceptive use	Interviewer-administered baseline questionnaire and follow-up survey by telephone at 3, 6, and 12 months.
Study tool/instrument validity/reliability	log-binomial models	London Measure of Unplanned Pregnancy. Kaplan-Meier
Primary Outcome Measures/Results	Lesbians were the least likely of all sexual orientation groups to use any contraceptive methods, LARC was especially striking across groups-	The unintended pregnancy rates in "enhanced care" 8.4 vs "complete CHOICE" 4.2 per 100
Conclusions/Implications	LARC use was high is all sexual minority women with the exception of lesbians compared to heterosexuals	Study showed that the CHOICE program of contraceptive care cam reduces unintended pregnancy when implemented in an FQHC setting
Strengths/Limitations	LIMITATIONS: included only nurses and was limited in terms of racial/ethnic diversity	LIMITATIONS: lack of randomized controlled trial design, participation loss to follow up
Funding Source	No funding source noted	Patient Centered Outcomes Research Institute, Eunice Kennedy Shriver National Institute of Child Health & Human Development
Comments		
Article/Journal 29 & 30	Primary care providers' responses to pregnancy intention screening challenges: community based participatory research at an urban community health centre. Family Practice 36:797-803	The link between reproductive life planning assessment and provision of preconception care at publicly funded health centers. Perspectives on Sexual and Reproductive Health 49:167-172
Author/Year	Srinivasulu, S., Falletta, K.A., Bermude., D., Almonte, Y., Baum, R., Coriano, M., Grosso, A., Iglehart, K., Mota, C., Rodriguez, L., Taveras, J., Tobier, N., & Garbers, S.V. (2019)	Robbins, C.L., Gavin, L., Carter, M.W., and Moskosky, S.B. (2017)
Database/Keywords	CINAHL/community-based participatory research, pregnancy intention, primary care, primary care providers, qualitative research, screening	CINAHL/pregnancy intention, FQHC
Research Design	Qualitative study	Surveyed
Level of Evidence	Level III	Level VI
Study Aim/Purpose	To study opportunities and barriers to pregnancy intention screening, including the intrapersonal and interpersonal,	Were to describe the reported existence of written protocols for reproductive life plan assessment and of frequent assessment of

	culture and institutional factors affecting patients and providers.	reproductive life plans in publicly funded health centers that provider family planning care to describe health center characteristics associated with reporting such protocols and assessments, to examine associations between reports of written protocols and of frequent assessment and to explore associations between reports of frequent assessments and frequent provision of preconception care
Population/Sample size Criteria/Power	Multisite FQHC in New York, convenience sampling, providers who see at least 20 reproductive age women in the last year	4,000 publicly funded U.S health center that provider family planning services
Methods/Study Appraisal Synthesis Methods	Semi-structured in-depth interviews with 10 primary care providers	RLP was defined as asking about client's intention regarding the number and timing of pregnancies in the context of personal belief. Frequency how often were you asked, preconception care based on question in the past 3 months about how often your health care provider provided preconception health care
Study tool/instrument validity/reliability	Transcripts, PhD-trained Principal Investigator	Person chi-square, STATA 13
Primary Outcome Measures/Results	Themes: Health concerns as competing priority, balancing informed decisions-making and implicit pressure, providers' responses to patients' sexual and reproductive health intentions and experiences	Roughly half of the health centers had reproductive health focus and served mostly rural areas, 58% reports written protocols, presences significantly lower in Community Health Centers. 87% or providers frequently reports providing RLP, 55% reports preconception health care
Conclusions/Implications	Respondents believed that pregnancy intention screening was useful and utilize strategies to incorporate it when relevant and possible to promote informed decision-making and respect patients' experience and preferences	Unrealized potential that community health centers and primary care providers represent for increasing provision of preconception care and integrating it into routine health care visits.
Strengths/Limitations	LIMITATIONS: explored perspectives of 10 PCP's, may not be generalizable	LIMITATIONS: finding should be interpreted with caution as results are self-reported,
Funding Source	Society of Family Planning Research fund	No funding source noted
Comments		

STUDENT NAME: Diana Gue Systematic Review Evidence Table Format [adapted with permission

Appendix D

SWOT Analysis Diagram



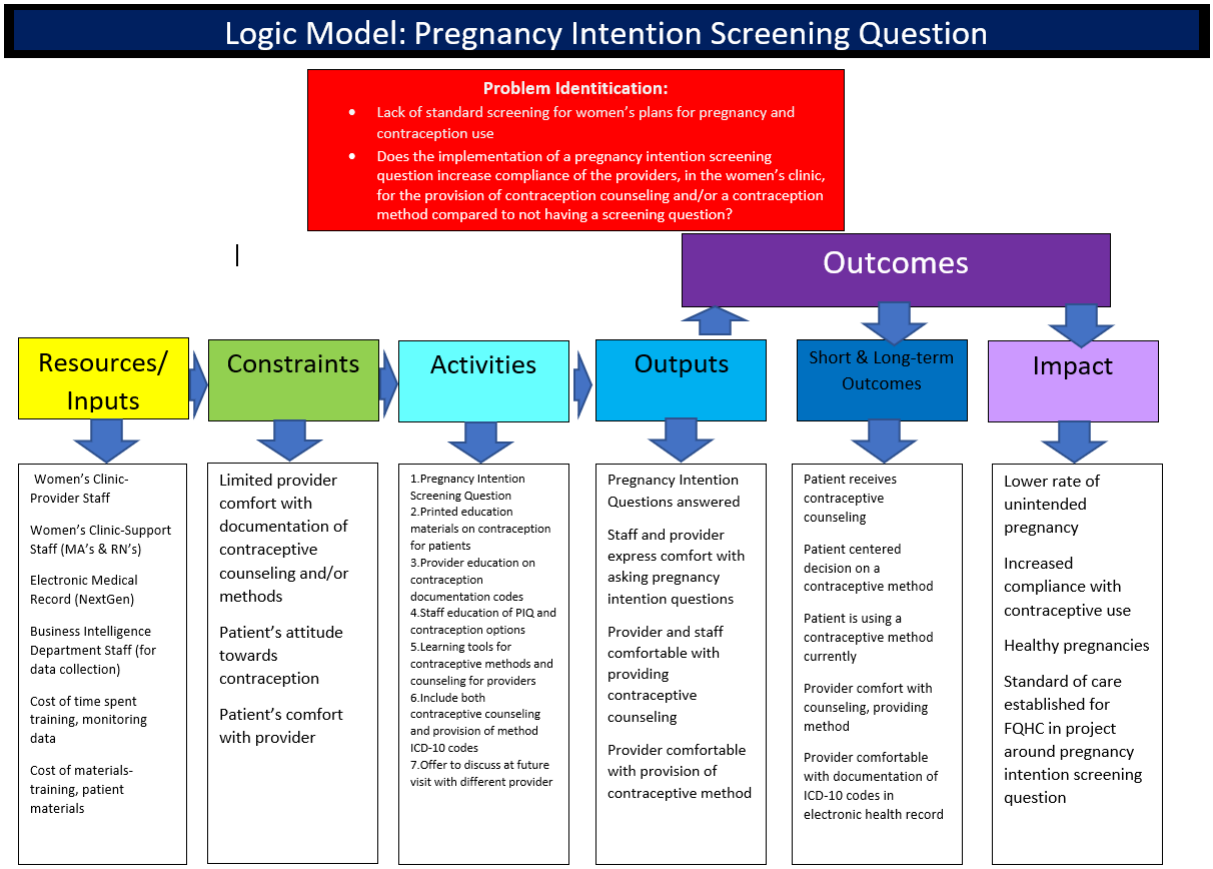
Appendix E

Budget

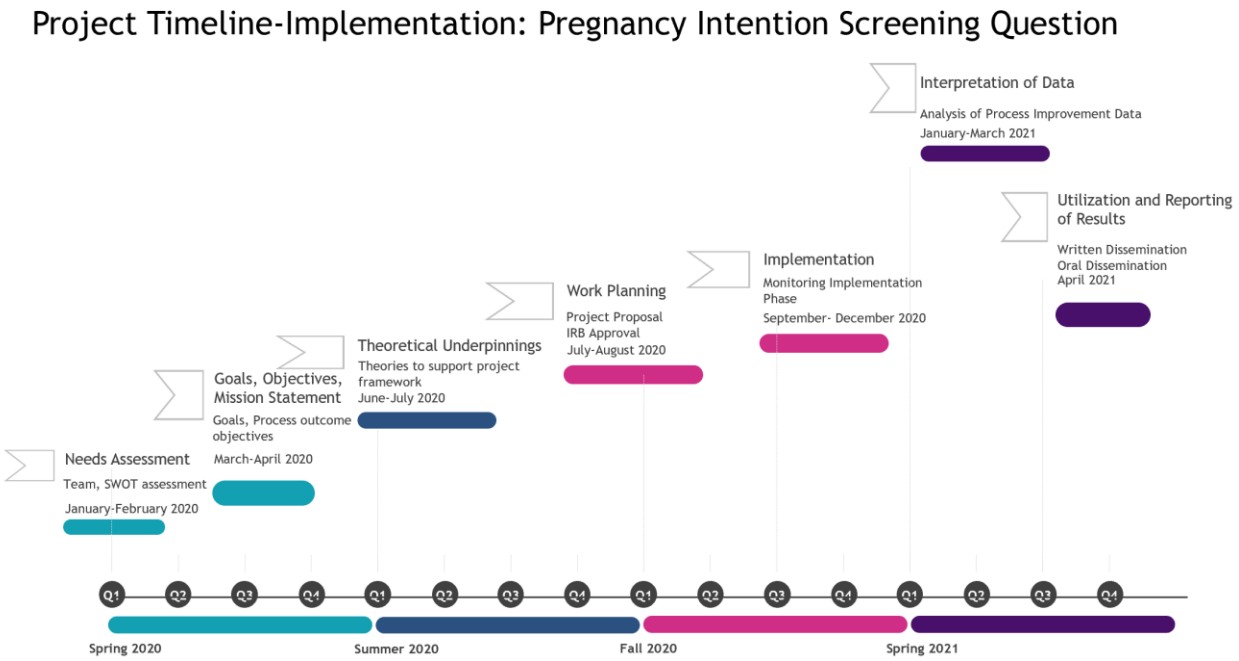
Project Budget			
		Description	Cost
	Planning	3 WHNP, 3 MA	$639
	Materials	45 copies of 5-page document @ .11 per page	$24.75
	Training Clinical	5 OBGYN, 5 CNM, 6 WHNP, 2 BHP, 13 MA, 3 RN	$1,693
	Training Non-Clinical	3 Receptionist, 2 Resource Navigators, 2 Prenatal Plus Coordinator, Ops Director, Clinic Manager, Clinic Coordinator	$215
	Researcher	Training Development, Data Analysis	$406
		Total Cost	$2,977.75
		Actual Cost	$2,571.75

Appendix F

Logic Model



Appendix G
Timeline



Appendix H
IRB Approval Letters

REGIS UNIVERSITY

REGIS.EDU

Institutional Review Board

DATE: October 7, 2020

TO: Diana Gue
FROM: Regis University Human Subjects IRB

PROJECT TITLE: [1640713-2] Implementation of a Pregnancy Intention Screening Questions
SUBMISSION TYPE: Amendment/Modification

ACTION: DETERMINATION OF NOT RESEARCH
DECISION DATE: October 7, 2020

Thank you for your submission of Amendment/Modification materials for this project. The Regis University Human Subjects IRB has determined this project does not meet the definition of human subject research under the purview of the IRB according to federal regulations.

The project has been reviewed by a different faculty advisor due to the original one going out on sabbatical. The project has also been determined to qualify as a quality improvement project and may proceed as written.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the Institutional Review Board at irb@regis.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Regis University Human Subjects IRB's records.

Appendix I
Site Approval Letter

Letter of Agreement

August 5, 2020

To Regis University Institutional Review Board (IRB):

I am familiar with Diana Gue's quality improvement project entitled *Implementation of a Pregnancy Screening Question* I understand Peak Vista Community Health Center's involvement to be allowing employees of the Women's clinic to attend a training on new workflow/process, documentation of pregnancy intention questions (PIQ) and coding to support contraceptive counseling and methods provided. Allowing access to data, collected in the past and into the future regarding this documentation in the electronic health record. Allowing for collaboration with staff of the Women's clinic to develop, pilot and implement the new workflows.

I understand that this quality improvement project will be carried out following sound ethical principles and provides confidentiality of project data, as described in the proposal.

Therefore, as a representative of Peak Vista Community Health Center I agree that Diana Gue's quality improvement project may be conducted at our agency/institution.

Sincerely,

Lisa Ramey, DO
Chief Medical & Dental Officer
Peak Vista Community Health Centers

Appendix J

CITI Training Certificate

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Diana Gue (ID: 8911609)
- **Institution Affiliation:** Regis University (ID: 745)
- **Institution Email:** dgue@regis.edu
- **Institution Unit:** Loretto Heights School of Nursing

- **Curriculum Group:** Human Research
- **Course Learner Group:** Social Behavioral Research Investigators
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35328068
- **Completion Date:** 14-Feb-2020
- **Expiration Date:** 13-Feb-2023
- **Minimum Passing:** 80
- **Reported Score*:** 93

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	09-Feb-2020	5/5 (100%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	09-Feb-2020	5/5 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	11-Feb-2020	4/5 (80%)
History and Ethical Principles - SBE (ID: 490)	11-Feb-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	11-Feb-2020	4/5 (80%)
Assessing Risk - SBE (ID: 503)	14-Feb-2020	4/5 (80%)
Informed Consent - SBE (ID: 504)	14-Feb-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	14-Feb-2020	4/5 (80%)
Defining Research with Human Subjects - SBE (ID: 491)	14-Feb-2020	5/5 (100%)
Research with Persons who are Socially or Economically Disadvantaged (ID: 16539)	14-Feb-2020	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	14-Feb-2020	4/4 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?kcc068dc9-41d6-438d-9199-54830f0aef44-35328068

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Diana Gue (ID: 8911609)
- **Institution Affiliation:** Regis University (ID: 745)
- **Institution Email:** dgue@regis.edu
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- **Course Learner Group:** Social Behavioral Research Investigators
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35328068
- **Report Date:** 14-Feb-2020
- **Current Score**:** 93

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Defining Research with Human Subjects - SBE (ID: 491)	14-Feb-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	11-Feb-2020	4/5 (80%)
Assessing Risk - SBE (ID: 503)	14-Feb-2020	4/5 (80%)
Informed Consent - SBE (ID: 504)	14-Feb-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	14-Feb-2020	4/5 (80%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	09-Feb-2020	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	11-Feb-2020	5/5 (100%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	09-Feb-2020	5/5 (100%)
Research with Persons who are Socially or Economically Disadvantaged (ID: 16539)	14-Feb-2020	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	14-Feb-2020	4/4 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	11-Feb-2020	4/5 (80%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?kcc068dc9-41d6-438d-9199-54830f0aef44-35328068

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

Appendix K
Educational Outline

Appendix L

Educational Handouts

Electronic Health Records
TRAINING
PEAK VISTA COMMUNITY HEALTH CENTERS

NextGen EHR Nugget – Family Planning

Release Date: 1/7/2020

Staff Affected: **Clinical Staff**

Release Type: New Process

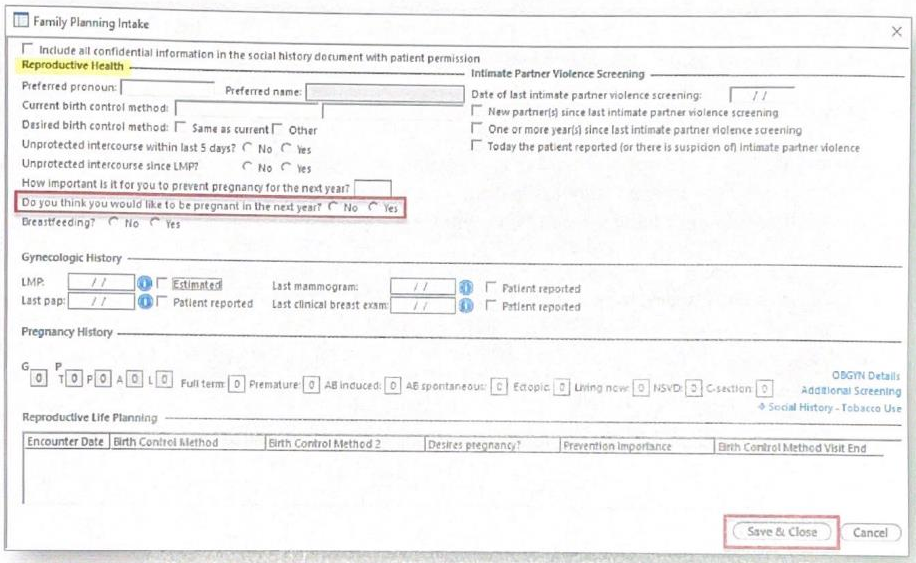
Application: This Nugget provides the user with instructions regarding the Contraceptive grant that will help to improve access to contraception for female patients. This workflow is designed for Family Practice and Women's Health clinical staff, but is accessible on any Specialty template.

1. In the patient's chart, the **Family Planning** hyperlink will now display below Care Guidelines.
2. Click the **Family Planning** hyperlink.

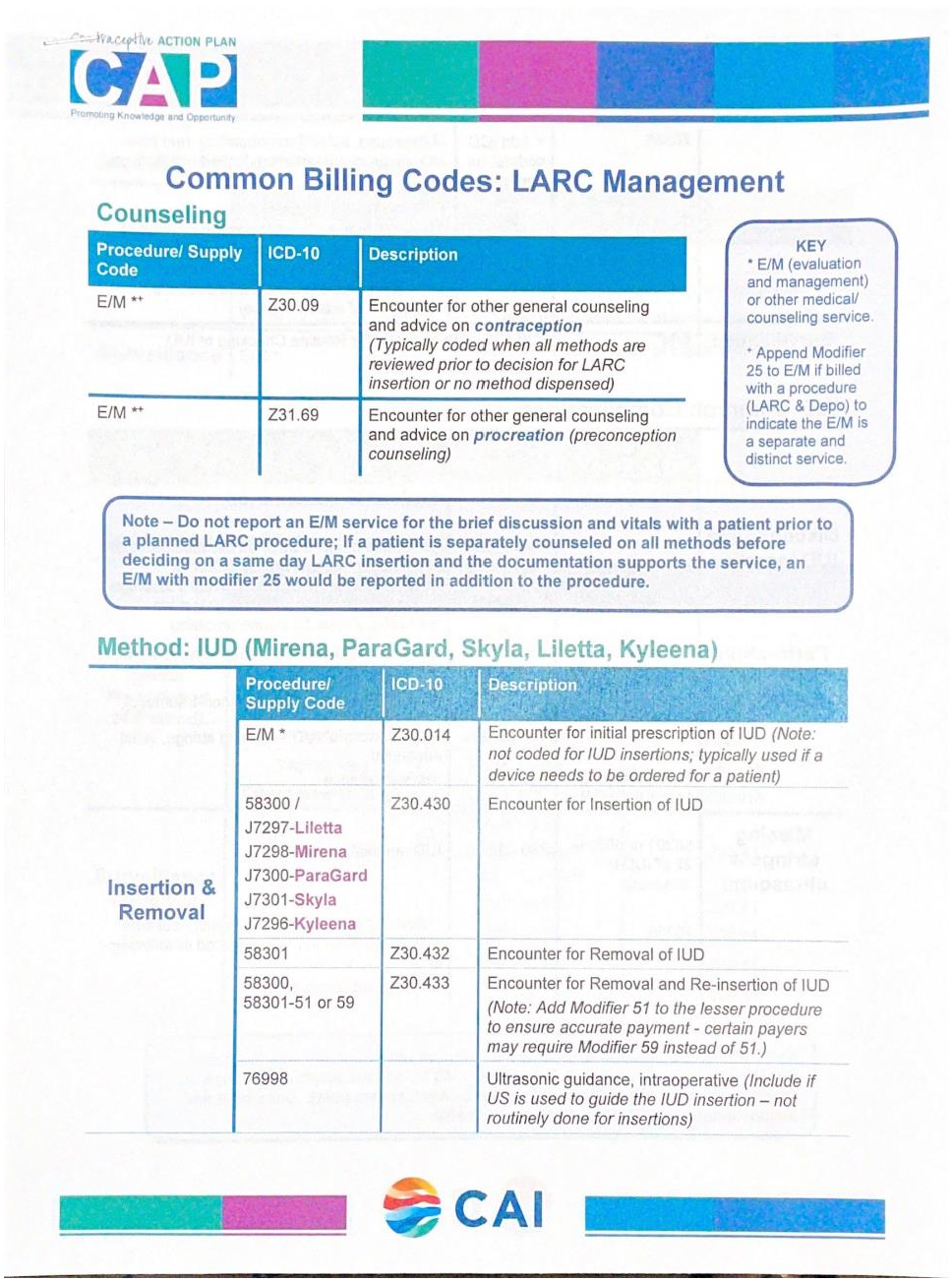
Questions? Contact x7700, option 4, option 2.

NextGen EHR Nugget – Family Planning

3. In the **Family Planning Intake** template, in the **Reproductive Health** section, ask the patient, *"Do you think you would like to be pregnant in the next year?"*.
    a. Click the radio button that matches the patient's response:
        i. **No:** the patient would not like to be pregnant in the next year.
        ii. **Yes:** the patient would like to be pregnant in the next year.
    b. Document any additional fields in the template, as required by regular workflows.
4. Click **Save & Close**.



Questions? Contact x7700, option 4, option 2.



Contraceptive ACTION PLAN
CAP
Promoting Knowledge and Opportunity

Common Billing Codes: LARC Management

Counseling

Procedure/ Supply Code	ICD-10	Description
E/M *+	Z30.09	Encounter for other general counseling and advice on ***contraception*** *(Typically coded when all methods are reviewed prior to decision for LARC insertion or no method dispensed)*
E/M *+	Z31.69	Encounter for other general counseling and advice on ***procreation*** *(preconception counseling)*

KEY
* E/M (evaluation and management) or other medical/ counseling service.

+ Append Modifier 25 to E/M if billed with a procedure (LARC & Depo) to indicate the E/M is a separate and distinct service.

Note – Do not report an E/M service for the brief discussion and vitals with a patient prior to a planned LARC procedure; If a patient is separately counseled on all methods before deciding on a same day LARC insertion and the documentation supports the service, an E/M with modifier 25 would be reported in addition to the procedure.

Method: IUD (Mirena, ParaGard, Skyla, Liletta, Kyleena)

	Procedure/ Supply Code	ICD-10	Description
Insertion & Removal	E/M *	Z30.014	Encounter for initial prescription of IUD *(Note: not coded for IUD insertions; typically used if a device needs to be ordered for a patient)*
	58300 / J7297-Liletta J7298-Mirena J7300-ParaGard J7301-Skyla J7296-Kyleena	Z30.430	Encounter for Insertion of IUD
	58301	Z30.432	Encounter for Removal of IUD
	58300, 58301-51 or 59	Z30.433	Encounter for Removal and Re-insertion of IUD *(Note: Add Modifier 51 to the lesser procedure to ensure accurate payment - certain payers may require Modifier 59 instead of 51.)*
	76998		Ultrasonic guidance, intraoperative *(Include if US is used to guide the IUD insertion – not routinely done for insertions)*

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	76856 76830	+ Add ICD code(s) as applicable	- Ultrasound, pelvic [non-obstetric], real time with image documentation; limited or follow-up, or - Ultrasound, transvaginal *(Note: US may be used to confirm location of the IUD when physician incurs a difficult IUD placement such as severe pain, uterine perforation, etc.; Document and code the justification of added service)*
Surveillance	E/M*	Z30.431	Encounter for Routine Checking of IUD

IUD Common Complications

	Procedure/ Supply Code	ICD-10	Description
Discontinued IUD insertion	58300-52 or 53	Z30.430 + Add ICD code to support complication	Encounter for Insertion of IUD *(Note: add modifier 52 or 53 per modifier note / chart below; Contact manufacturer for replacement device to avoid denial if insertion is re-attempted at a later date or include applicable J code for device on claim)*
Perforation (during insertion)	58300-53	Z30.430 T83.39XA	Encounter for Insertion of IUD Perforation of uterus by IUD (non-traumatic)
Missing strings w ultrasound		T83.39XA Z30.431 Z30.432	Displacement of IUD – missing strings, initial encounter IUD surveillance IUD removal
	E/M* *(if patient keeps IUD) OR* 58301 or 58301-22 *(if IUD is removed)* 76856 76830		- Ultrasound, pelvic [non-obstetric], real time with image documentation; limited or follow-up, or - Ultrasound, transvaginal

Use modifier -52 to report an attempted insertion but procedure was incomplete due to anatomical factors (e.g. Stenosis) or -53 to indicate stopping because of concerns for patient's well-being (e.g. vaso-vagal, severe pain). Document and include additional ICD-10 code(s) as applicable.

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Method: Implant (Nexplanon)

	Procedure/ Supply Code	ICD-10	Description
Insertion & Removal	11981 / J7307	Z30.017	Encounter for insertion of implant
	11982	Z30.46	Encounter for surveillance of implant (removal)
	11983 / J7307	Z30.46	Encounter for surveillance of implant (reinsertion)
Surveillance	E/M *	Z30.46	Encounter for surveillance of implant (routine checking)

Common Billing Codes: Contraceptive Management

Contraceptive Methods (non-LARC)

	Method	Procedure/ Supply Code	ICD- 10
Initiation *(Initial Prescription of Method)*	Depo Provera	E/M*+ – 25 96372 – Injection J1050 – 150 Units	Z30.013
	Oral Contraceptive	E/M* / S4993	Z30.011
	Hormone Patch	E/M* / J7304	Z30.016
	Vaginal Ring	E/M* / J7303	Z30.015
	Other Barrier Methods	E/M*	Z30.018
Surveillance *(Including Refills of Method)*	Depo Provera	E/M*+ – 25 96372 – Injection J1050 – 150 Units	Z30.42
	Oral Contraceptive	E/M* / S4993	Z30.41
	Hormone Patch	E/M* / J7304	Z30.45
	Vaginal Ring	E/M* / J7303	Z30.44
	Other Barrier Methods	E/M*	Z30.49

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Method: Emergency Contraceptives (EC)

Procedure/ Supply Code	ICD- 10	Description
E/M* S4993	Z30.012	Encounter for prescription of EC
58300 J7300 – ParaGard Copper IUD	Z30.430 Z30.012	Encounter for IUD Insertion Encounter for prescription of EC

Best-Practice
Dispense/prescribe EC prior to a contraceptive emergency. The Copper IUD is the most effective EC method currently available.

Common Modifiers for Family Planning and LARCS

Modifier	Description
22	Increased Procedural Services *(Note: not reported on E/M; Add to LARC procedure code to note a difficult insertion/ removal (more work was required than usual))*
25	Significant, Separately Identifiable E/M by Same Physician or QHCP on Same Day as Other Procedure or Service *(e.g. General contraceptive options counseling with same day LARC insertion)*
51	Multiple Procedures – same session and clinician *(e.g. 58300, 58301-51; Note: some payers do not recognize this modifier – check with payer and if necessary, use Modifier 59)*
59	Distinct procedure *(Note - some payers may require documentation of reason for reinsertion (e.g. expired device), is also used to report for an immediate postpartum IUD insertion 58300-59)*
52	Reduced Service *(Note: incomplete procedure due to anatomical factors (e.g. Stenosis)*
53	Discontinued Service *(Note: incomplete procedure due to concerns for patient's well-being (e.g. severe pain)*
76	Repeat procedure same physician / QHCP *(e.g. successful insertion but IUD is expelled followed by repeat insertion)*
77	Repeat procedure different physician / QHCP
79	Unrelated procedure by the same physician or QHCP during the post-operative period; *(Note: Use for post partum LARC insertions starting the day after delivery)*

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Do-It-Yourself Methods:

These options are available to you without needing a prescription or a visit to your provider.

METHOD Options	External Condom	Withdrawal	Internal Condom	Sponge	FAM Fertility Awareness Based Methods	Spermicides
TYPICAL USE Effectiveness	87% effective	80% effective	79% effective	76-88% effective	76% effective	72% effective
	13 out of 100 become pregnant	20 out of 100 become pregnant	21 out of 100 become pregnant	12-24 out of 100 become pregnant	24 out of 100 become pregnant	28 out of 100 become pregnant
HOW LONG Does It Last	For 1 sex act	For 1 sex act	For 1 sex act	For 1 sex act	1 menstrual cycle	For 1 sex act
HOW DO YOU Get Started	Buy over the counter	Discuss with partner prior to sex	Buy over the counter	Buy over the counter	Learn about your menstrual cycle & determine which FAM to use	Buy over the counter
WHAT DO YOU Need To Do	Use condom for each sex act	Pull penis out of the vagina before ejaculation	Put inside vagina	Put inside vagina	Monitor fertility signs & abstain from sex/use condoms during fertile days	Put inside vagina
POSSIBLE Bleeding Changes	None	None	None	None	None	None
POSSIBLE Side Effects	Allergic reaction to latex	None	Allergic reaction, irritation	Allergic reaction, irritation	None	Allergic reaction, irritation
IF STOPPED When Can You Get Pregnant	Immediately	Immediately	Immediately	Immediately	Immediately	Immediately

PERMANENT METHODS

Female & Male Sterilization involve safe & effective surgical procedures that permanently prevent pregnancies. These procedures are over 99% effective at preventing pregnancy, and are usually covered by insurance. There is some risk of infection with the procedures, and sometimes pain and discomfort during and after the procedures. Sterilization does not prevent STIs.

Female Sterilization: There are several types of tubal ligation that either permanently block or close the fallopian tubes. Many hospitals, doctors & clinics do tubal ligations.

Male Sterilization: Vasectomy is a simple surgery is performed in a doctor's office or hospital, and prevents sperm from leaving the body and causing pregnancy.

USE OF EMERGENCY CONTRACEPTION

Keeping up with your birth control can be challenging at times. If you forget your birth control or have an emergency, there may still be time to prevent a pregnancy. Emergency contraception is a safe and effective way to prevent a pregnancy after having unprotected sex. If you feel that you need added protection against pregnancy, talk to your local pharmacist or healthcare provider about emergency contraception.

CAP CAI-CHOICE Contraceptive ACTION PLAN
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For more information about the CAP project, please visit www.contraceptiveactionplan.org.

The information in this tool is informed by findings from leading public health institutions, academic studies and community-based participatory research. Efficacy rates are consistent with those endorsed by the Family Planning National Training Center.

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Your Body. Your Birth Control.

Review all available methods with your provider and understand which one best meets your priorities & preferences.

METHOD **Options**	IUD (Non-hormonal)	IUD (Hormonal)	Implant	Shot	Pill	Vaginal Ring	Patch	Diaphragm
TYPICAL USE **Effectiveness**	99% effective	99% effective	99% effective	96% effective	92% effective	91% effective	91% effective	88% effective
	Less than 1 out of 100 become pregnant			4 out of 100 become pregnant	8 out of 100 become pregnant	9 out of 100 become pregnant		12 out of 100 become pregnant
HOW LONG **Does It Last**	Up to 3 - 12 years	Up to 3 or 5 years	Up to 3 years	Up to 3 months	For 1 day	Up to 1 month	Up to 1 week	For 1 sex act
HOW DO YOU **Get Started**	Inserted by your provider	Inserted by your provider	Inserted by your provider	Shot given by your provider	Prescription from provider	Prescription from provider	Prescription from provider	Provided by provider
WHAT DO YOU **Need To Do**	No action required	No action required	No action required	Get shot from provider every 3 months	Take pill every day	Insert ring into vagina and replace every month	Place patch on body and replace every week	Use with spermicide & put inside vagina
POSSIBLE **Bleeding Changes**	Heavier periods that may return to normal after 3-6 months	Irregular, lighter, or no period at all	Infrequent, irregular, prolonged, or no period	Irregular or no period	Shorter, lighter, more predictable periods	Shorter, lighter, more predictable periods	Shorter, lighter, more predictable periods	None
POSSIBLE **Side Effects**	Cramping, that usually improves after 3-6 months, spotting	Cramping, during and after insertion, spotting	Insertion site pain	Weight changes	Nausea or breast tenderness	Nausea or breast tenderness	Nausea, breast tenderness, application site reaction	Allergic reaction, irritation
IF STOPPED **When Can You Get Pregnant**	Immediately, schedule removal with provider	Immediately, schedule removal with provider	Immediately, schedule removal with provider	Immediately, but may have 6-12 month delay. No action required	Immediately, stop taking pills	Immediately, must remove ring from body	Immediately, must remove patch from body	Immediately

Only the condom protects against STIs and HIV.

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