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Improving Patient Satisfaction, Wait Times, and Access to Care in a College Health Setting; Expanding the RN Role as Prescribing Agent With Standardized Procedures

Kimberly D. Perris
University of San Francisco School of Nursing and Health Professions, kdperris66@gmail.com

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Clinical Leadership Theme

The focus of this project aims to instill comfort and proficiency by training a registered nurse (RN) to provide safe patient care independently with the use of standardized procedures with a goal of zero errors in transmitting prescriptions. The Clinical Nurse Leader (CNL) role is that of Nursing Leadership, Advocate for the Profession. This is a new role for the RN in our student health center and therefore as a CNL, it will be imperative to provide clear communication and leadership as well as to establish a standardized process for training future RNs.

Statement of the Problem

The role and scope of practice of the registered nurse in ambulatory settings has been misunderstood and often underutilized. With current primary care shortages in the United States, registered nurses who are highly skilled are being looked at as a solution to independently meet the needs of patients (Bodenheimer, Bauer, Syers, & Olayiwola, 2015). While the student health center has been challenged with a growing demand for care, the RN role in the student health center has been an overlooked resource to improve patient flow and access to care, up to now.

Long wait times have historically been a problem at the student health center. Currently a visit with a provider may take several hours if the health issue is acute, or several weeks if an appointment is required. In an effort to address patient satisfaction, wait times, and access to care for our student population, the student health center has implemented an RN visit model with one RN seeing patients by appointment. A major component to RN visits is the collaborative development of evidence-based RN protocols and standardized procedures that allow the RN to

function independently once they have gone through protocol specific training. In this role the RN is able to provide consultation, education, resources, referrals and even medication such as birth control or antibiotics once proficiency has been established. Standardized procedures must be developed in accordance with guidelines set forth by the California Board of Registered Nursing (BRN). The BRN recognizes that nursing is a dynamic field and that overlapping functions between registered nurses and physicians exist (Bailey, 2011). (see Appendix A, figure 1. for BRN standardized procedure guidelines). In order to develop a credible nursing program, support from the BRN is crucial. Since it is out of the RNs scope of practice to prescribe medication, the RN works under a standardized procedure, approved by the medical director that authorizes the nurse to do so. Additionally, the Pharmacy Law Book (2015) states the RN may act as a prescribing agent and dispense, phone in, or transmit a prescription under the name of the supervising physician (California Board of Pharmacy [CBOP], 2015).

Project Overview

During spring semester 2015 one RN protocol was fully implemented and evaluated. Failure Mode and Effects Analysis (FMEA) was used to dissect the protocol for providing hormonal contraception. FMEA is a systematic method of identifying and preventing errors or failures before they occur (McDermott, Mikulak, & Beauregard, 2009). The FMEA was created using the Institute for Healthcare Improvement's (IHI) FMEA interactive tool found on the IHI website (2015). Based on the results from the FMEA an audit tool was created to evaluate RN proficiency. This audit revealed areas for improvement, specifically with the medication transmission process. While there were no failures that would cause harm, it became clear that the medication process needed to be evaluated with a separate audit tool.

Beginning fall semester 2015, an FMEA was conducted to specifically analyze all of the steps of the medication process in order to identify where errors might occur, and to prevent them from occurring. *Sure Scripts* is the name of the electronic prescribing program the student health center utilizes to transmit prescriptions to an outside pharmacy. A visual "*Sure Scripts"* checklist was created to address all fields that needed to be filled in on the electronic prescription. Additionally, a medication formulary with all medications the trained RN can provide and a section for "favorites" within the electronic medical record was generated. Creating a clear process and eliminating unnecessary steps helped to minimize confusion, streamlined the process, and further decreased the chance of error.

With the groundwork laid out from the pilot project, the student health center is moving forward with training another RN in the process of using standardized procedures. This will secure backup when the primary RN is away as well as ensure flexibility and facilitate collaboration with student health center RNs. A recent interview with the RN trainee revealed apprehension with using the protocols due to lack of time for training and distractions in acute care while working in triage. In order to instill confidence and proficiency, it became be vital to dedicate time for training and to have a safe and foolproof system in place, as well as routine peer review and monitoring.

This CNL sought to improve RN comfort and proficiency through an intensive two-week, one-to-one training session and with ongoing consultation and feedback over a period of twelve weeks. The goal for the project was to demonstrate RN confidence working independently, and proficiency in using one RN protocol (Hormonal Contraception-Initiate, Refill, Change); this would be demonstrated through encounter audits and an end-of-project survey. Plan, Do, Study, Act (PDSA) was the model for improvement we used to accomplish successful training of

another RN, thereby decreasing wait times for patients who would otherwise be seen by a provider (see Appendix B, figure 1. for PDSA cycles).

RN visits require specialized protocol specific training and tools to aide in decision-making. The RN trainee was provided with a binder of all of the standardized procedures (see Appendix C figure 1. for sample protocol) as well as specific tools to simplify the medication process, such as a checklist of "rights" to follow when ordering a medication (see Appendix C, figure 2. for Sure Scripts Demonstration), a Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use (see Appendix C, figure 3.), the medication formulary (See Appendix C, figure 4.) and a copy of a health history required annually (see Appendix C, figure 5.). Training followed "see one-do one-and teach one" model that included demonstration, dialogue, and feedback.

A nurse practitioner and I were assigned to audit the process of medication transmittals and patient encounters performed by the RN. We used a modified version of the original audit tool that evaluated adherence to the standardized procedure, along with the new audit tool specific to the medication process (see Appendix D. figures 1 & 2 for samples of the audit tools). The RN was provided feedback at the end of each training session and an opportunity to discuss achievements and weaknesses. The overall aim of this project is to improve patient satisfaction, wait times, and access to care for the student population; this will be reflected in a patient survey conducted at the end of the project as well as in the annual satisfaction survey and annual report for May 2016.

Rationale

Ongoing satisfaction surveys at the student health center revealed a consistent plea for shorter wait times and more available appointment times. Having RNs empowered to meet the

needs of students at the point of care, including providing medication, will help to address this need. A recent provider survey disclosed that overall, providers agree that having nurses prepared to take care of a patient's needs using a standardized procedure would be beneficial towards increasing available appointment times, decreasing the workload for providers, and in decreasing patient wait times. According to the results from this survey, providers showed little concern with risk for error, or with increased consultation time with regard to RNs providing medication when using a standardized procedure. The nurse reported she could provide care independently once trained to work under specific standardized procedure; her only concern was having adequate time for training (see Appendix E. figures 1 & 2, for pre and post nursing and provider survey results).

Initial steps to justify the need for the project involved an assessment of the microsystem. This began with a process map of patient flow, an eye opening step that visually demonstrated multiple wait times when a patient sees a provider compared to an RN visit (see Appendix F, figure 1.). A fishbone diagram was instrumental in demonstrating cause of long wait times in the acute care clinic (Please see Appendix G, figure 1. for fishbone diagram). A strengths, weaknesses, opportunities, and threats (SWOT) analysis was also key towards demonstrating the need for the project and potential for sustainability (see appendix H. figure 1. for SWOT diagram)**.**

Strengths have been demonstrated in the success of the RN visit project over the past year as well as growing support and trust from providers. Intensive one-to-one support and ongoing feedback that allowed the RN time to feel confident working independently was key to the success of the pilot program. Ultimately, the number of available appointments increased for students (the RN saw 1,123 RN-only visits during the 2014/2015 academic year), students

gained quicker access to appointments with the RN, and provider time was opened for more complex patients. Additionally, when the RN saw patients for a visit an initial evaluation and consultation, appointments for well-woman exams were cut from 40 minutes to 20 minutes, further increasing the number of appointments available for the provider.

Weaknesses within the microsystem are seen in an imbalance in clinical staff. The clinic is provider heavy, with only 1.75 permanent RNs to 6.5 permanent providers; little energy has been put into expanding the RN role. The clinic operates on a downstream model where acute care needs have historically been prioritized. Currently, the expectation is to have four providers on staff in acute care and two RNs (1 permanent RN and one pool RN) to triage patients and assist providers with procedures. Adding to the imbalance, front office staff are not authorized to make clinical decisions and available appointment times are limited; patients who request to be seen and cannot be accommodated with a timely appointment are sent to the RN, who triages all walk-in patients. In triage the RN may treat, schedule, or refer the patient to an acute care provider. The volume of patients and imbalance in staff promotes the need for RNs to move patients through the triage process quickly, leaving little time for other duties or for training that would allow the RN to provide care independently. Additional weaknesses and potential threats include limited availability from pool RN staff to cover for training, and low confidence level of the RNs, who are interested in expanding their role.

There is an opportunity to expand the RN visit program that will include training other nurses to use standardized procedures, allowing them to provide medication for students, and addressing the patient's needs at the point of care. By developing a thoughtful and standardized process, we can create a sustainable program that will improve access to care for the student population. As mentioned, the primary role for RNs in the student health center is to triage

patients. So much time is spent in triage that there is little time to focus energy on learning and mastering protocols that would empower the RN to take care of the needs of many patients; the value of the RN's knowledge and skills has not yet been fully recognized or prioritized.

Budget has been the argument and threat for bringing in pool staff to cover one-to-one-training however, having RNs trained to fill the role of a provider for lower acuity patients represents a significant cost-savings for the student health center, approximately 50% savings in provider time. When replacing a clinician and medical assistant with an RN, in the first year a projected savings of $58,740 would be realized. Thereafter, if one RN continued to see patients independently, an annual savings of $52,000 would be seen. (see Appendix I, figure 1. for cost analysis). Note this analysis does not take into account reimbursement rates accrued from Family Pact visits. Family Pact is a California state funding program that covers family planning services. The clinic does receive reimbursement from Family Pact for RN services, however provider visits are reimbursed at a higher rate.

Higher rates of provider reimbursement could be used as an argument against RN-only visits. Nevertheless, while the nurse is reimbursed at a lower rate than a provider, available appointment time for providers is limited. When providers see lower acuity visits (such as contraceptive consults and birth control starts), appointment slots fill up quickly increasing the demand on acute care. This shift causes a downstream effect on clinic flow, creates false urgency in acute care, and increases the need for staff. As a result it becomes necessary to bring in costly pool providers and medical assistants to accommodate the volume of patients. This contributes to the ongoing burden for the acute care clinic and the RN who is not currently empowered to care for patients independently at the point of care. While the RN costs less to employ, it is up to

administration to adopt this model as a fiscally sustainable option to meet the increasing volume and acuity of the student population (see Appendix I, figure 1. for Stakeholder Analysis).

Methodology

Theoretical Framework for Change

The student health center is the primary medical and mental health resource for our 8,600 students. A growing student population and rising acuity further supports the need for this project. In fall 2015, our campus welcomed over 1,400 new freshmen, the largest class in the history of the university. Additionally, mental health needs for the student population have dramatically increased by approximately 40% over the past few years (see appendix K, figure 1. for a diagram showing this trend). Meanwhile, staffing in the student health center remains virtually the same, with the exception of increased use of pool staff.

Because the university is located in a rural area there are limited resources in the community to refer students. Additionally, the county is suffering from a mental health crisis due to lack of providers. Having all student health center staff prepared to work to the maximum scope of practice will help to accommodate the growing demands of the population more efficiently and more cost effectively. There is opportunity here to fill the gap by further expanding the RN visit program.

Despite urgency to meet the demands of the students, there were barriers to expanding the RN visit model. Time for training and the impact of bringing in pool staff to cover triage was reported as one of them; training would require additional staff for a time. Reluctance from the RN trainee, who was not yet secure with the idea of working independently, posed another barrier. Kotter's 8-steps-to-change was chosen as the theoretical framework to address the

urgency of the project (see appendix L. figure 1.). This process is most appropriate because it includes a vision, team approach, collaboration, and a step to sustain acceleration.

While this model for change has shown success with the initial RN visit proposal presented to administration in August 2014, one year later, there continues to be urgency in meeting the needs of our growing student population. Using Kotter's 8-steps we have created a vision that looks towards improved access to care and patient satisfaction by having an organization where all staff has the tools to work to the maximum scope of their practice, and who are supportive and collegial in creating policies that support the mission of the Student Health Center.

As mentioned, success of the RN visit model implemented in 2014/2015 was attributed to intensive training and collaboration. An RN visit team that included interdisciplinary members, each with their own unique lens to view the process, was instrumental in creating an infrastructure for incorporating RN visits into our current system. Team members included, the medical director, a nurse practitioner, two RNs, a medical assistant, a front office supervisor and an IT analyst. This coalition helped to build a solid framework for the program going forward.

Process and Data Collection

Prior to launching this project we collected data from the initial pilot, including the audit results, and the number of RN-only visits that took place during spring 2015. The purpose of this initial step was to demonstrate that the RN is a valuable resource for safely expanding access to care. This data provided us with evidence to support the proposal to begin training another RN who could further address the patient's needs at the point of care in triage, and also to allow for flexibility in staffing when the primary RN is away. With the go-ahead from the medical director, the next steps were to begin evaluating provider and RN readiness.

The first step was to survey the providers to determine the level of support for the project and to survey the RN to determine her comfort level with each of the protocols and with transmitting a prescription using *Sure Scripts*. A 5-Point-Likert survey was sent to all regularly staffed providers and addressed key issues such as their comfort with RNs providing medication safely under standardized procedure. The survey asked if they felt the model would successfully open more appointment time, decrease the burden on providers, and if they felt that the initial consultation time would be an imposition to their practice. Another 5-Point-Likert survey was sent to the RN that addressed her comfort and proficiency with each of the standardized procedures and with transmitting a prescription via *Sure Scripts.*

Overall providers were supportive of the process however, according to the survey, the RN only felt proficient in only one out of nine of the protocols. She had concerns about learning a new process and risk for error working under the pressure of a busy acute clinic. These findings were encouraging yet also concerning. It became apparent that we needed to work towards developing a very clear and supportive training process, one that would be sustainable for future RNs.

The results of the survey were helpful in justifying the need for the project and prompted a proposal requesting designated one-to-one training time. In order to overcome the barrier of time for training and cost of bringing in pool staff, a cost-benefit analysis was submitted that demonstrated significant savings when RNs saw a population of patients historically seen by providers. Having RNs trained to work to the top of their license, will improve patient flow and patient satisfaction and represents a cost-effective model of care.

There were multiple phases toward helping ensure that another RN would become proficient in providing care independently using newly approved nursing protocols. In order to

mitigate threats that could ultimately affect patient safety, training another RN would require direct supervision and support. This semester the location for nursing visits was moved to the acute care clinic, the office, positioned directly across from the triage room allowed for ongoing consultation and feedback. Careful attention was paid to transmission of prescriptions with intensive training, reference tools, and frequent EMR audits. During the planning phase of the PDSA tools were created that would assist the RN in providing medication safely (see Appendix C, figures 1-5). An FMEA was conducted, evaluating each step of the medication process and a Sure Scripts audit tool was created based on the result. The original Hormonal Contraception audit tool was modified to capture the medication process as well as documentation on the patient encounter. In the Do-phase of the PDSA cycle the RN was introduced to the tools, one-to-one training allowed the trainee to shadow the trainer for two days that provided exposure to contraceptive counseling and the medication transmittal process. Next, the RN demonstrated learning with trainer, who shadowed her and provided feedback for the remainder of the two-week session; this was followed by solo training for the remainder of the project, with consultation as needed.

Proficiency was monitored using the two audit tools, one tool to evaluate use of the protocol and one that demonstrated Sure Scripts proficiency with a goal of becoming 100% proficient with zero errors. During the Study-phase we conducted the first audit, 100% was required to pass. In the Act-phase the RN would demonstrate proficiency, would be comfortable transmitting medication and providing essential education points, and would begin to see patients independently, consulting with this RN as needed. Upon evaluation of the results (which I predicted would not be 100% initially), the next cycle of cycle of PDSA was launched.

At the end of the project another survey was submitted to determine if the RN's perceived comfort and proficiency level had improved with any of the protocols with a goal of feeling "very proficient" and "very comfortable." For the purpose of this project, the goal was to become fully proficient and comfortable using one protocol and with transmitting medication via Sure Scripts. A final audit would demonstrate 100% proficiency in delivering hormonal contraception and in providing medication via Sure Scripts with zero errors.

Data Source/Literature Review

In order to demonstrate the effectiveness of the RN visit model, post-intervention surveys were conducted as well as patient encounter audits demonstrating safety and proficiency. The project was based on use of standardized procedures that have been created collaboratively using evidence based research and are written in accordance with the California Board of Registered Nursing (BRN). Recent literature supports the need to transform the health care system and to expanding the RN role in primary care settings in order to meet current health care demands.

Bailey, L. (2011) *An Explanation of the Scope of RN Practice Including Standardized Procedures,* asserted that nursing is a dynamic field and recognizes that overlapping functions between registered nurses and physicians exist. All standardized procedures must be written to address criteria put forth by the Board of Registered Nursing (BRN) (Bailey, 2011). This article provides guidance for allowing the RN to function independently in accordance with the framework provided by the BRN and further supports having RNs practice as partners to the top of their license to help improve access to care. An interdisciplinary team that promotes accountability on several levels must develop standardized procedures. In order to develop a credible nursing program, support from the BRN is crucial. This report provides background to

address the purpose and need for standardized procedures that are intended to allow nurses to work beyond normal scope of practice as guided be the standardized procedure.

Barnsteiner, J., (2012) *Teaching a Culture of Safety*, demonstrated how high reliability organizations instill external drivers of safety, and presented strategies for integrating a culture of safety into a curriculum. Alternatively, the author pointed out that a "culture of blame" encourages hiding errors. Rather, a culture of safety is a balance between not blaming individuals for errors and not tolerating egregious behavior. Barnsteiner further recommended putting systems in place, such as alerts and alarms to prevent human error from occurring. One way of doing this is with Failure Mode Effects Analysis (FMEA), a proactive step used in developing new processes designed to prevent error. This project used FMEA to analyze every step involved in e-prescribing and to further dissect the RN protocol. The project aimed to instill confidence and proficiency, with transparency and support.

Bodenheimer, et. al. (2015) *RN Role Reimagined: How Empowering Registered Nurses can Improve Primary Care,* asserted that empowering the RN and providing them with tools and training to practice independently demonstrated a model of care with great potential to improve healthcare systems, build on a team approach, improve the patient care experience, and as they said, restore joy and satisfaction in the practice of primary care. Authors from California Healthcare Foundation, a research and policy center within the University of San Francisco, Department of Family and Community Medicine, studied primary care clinics that are taking innovative steps to expand access to care. The growing student population has higher acuity needs than in previous years, thus finding ways to accommodate the demand requires a shift from physician-centered models of care to a model of teamwork that includes a multidisciplinary approach.

Willard & Bodenheimer (2012) *The Building Blocks of High-Performing Primary Care: Lessons From the Field,* noted that primary care is undergoing a transformation from physician-centered care to focused teams. In this paper, researchers identified building blocks for a new model of care that included: data-driven improvement, panel size management, team-based care, population management, continuity of care, and prompt access to care. Additionally, authors pointed out that RNs working in primary care settings are an underutilized role and that much of their time is spent in triage. Attempts to divide RN time between triage and chronic care (or other duties) became overshadowed by urgent needs. High performing practices explored ways to free the RN from triage and to empower the RN to address, rather than simply triage, through standing orders. In recent years the RN role in the student health center has been mostly limited to triage, and very little energy has been put into expanding the RN role up to now.

Wilkinson, J. (2015). *Nurses' Reported use of Standing Orders in Primary Health Care Settings,* noted a significant relationship between undertaking the stated professional development requirement and confidence in clinical decision-making. The researcher conducted a non-probability sample of RNs in New Zealand, working in primary care in order to determine their understanding of standing orders. More than half of the nurses in the study would like to use standing orders more often. This article is significant because RNs in the student health center lack training with standardized procedures and therefore confidence in using them to provide safe care was low. With training, as the article notes, RNs can improve their confidence and proficiency with providing independent care.

The Institute of Medicine (2010), *The Future of Nursing, Leading Change Advancing Health,* calls for a transformation of the profession of nursing to meet the objectives set forth by the Affordable Care Act. This paper addresses the barriers nurses face in meeting the current

healthcare demands and delivers four key messages to guide the profession; nurses should practice to the full extent of their education and training, nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression, nurses should be full partners with physicians and other health care professionals in redesigning health care in the United States, and effective workforce planning and policy making require better data collection and improved information infrastructures (The Institute of Medicine [IOM], 2010).

The California Board of Pharmacy [CBOP] (2015), *Law Book for Pharmacy*, provides explanations for all of the business and professional codes. For the purposes of this paper business and professional codes 4071-4072 are cited to support having RNs act as a prescribing agent under the aegis of an authorized prescriber, and to allay misconceptions about the legality of nurses providing medications under standardized procedure when designated as such (CBOP, 2015).

Oelke, D. N., Besner, J., Carter, R., (2014) *The Evolving Role of Nurses in Primary Care Medical Settings*, asserted that the role of nurses in primary care is understudied, and as a result primary care nurses have been an underutilized resource. The authors noted that lack of interdisciplinary support creates role ambiguity. While nurses felt they could play a major role in promoting population health, they did not feel supported in doing so. Lack of defined roles, fragmentation, and duplication of services between nurses and providers contributed to role ambiguity and stagnation for nurses in primary care. Creating systems that support an autonomous role, within their scope of practice, and where there is direct access, the RN will further help to establish the value of RNs in outpatient settings. This work represented the need

for improving interdisciplinary knowledge with regards to RN scope of practice and in creating more streamlined and cost-effective systems by doing so.

Smolowitz et al., (2015), *Role of the Registered Nurse in Primary Health Care: Meeting Health Care Needs in the 21st Century*, acknowledge that Registered nurses, based on their understanding of patient, family and system priorities, are well positioned to assume direct care and leadership roles. Authors also noted that the Affordable Care Act (ACA) has created a need to reinvent health care services. This report sought to optimize the scope of practice for RNs in primary care in order to address a rapidly expanding health care crisis, with an overall goal to generate new knowledge about the role and contributions of RNs in primary care settings.

In studying various primary care settings, one physician reported that his practice transitioned from a mostly medical assistant (MA) model, to a nursing model, noting that this model was very productive. Independent licensure, self-governing professional practice, and professional accountability to patients and physician colleagues were attributed to the success. Financial savings with the new model were also identified along with improved patient outcomes, freeing up provider time, and improving and expanding patient volume and flow. Despite reimbursement rates for nurses being a barrier to expanding the RN role, this practice noted that in some instances care-management services offered higher reimbursement for the RN. One could also argue that while the RN is more costly than an MA or LPN, they are far less costly than Advanced Practice Nurses and Physicians, this point directly relates to the RN visit model project and was used in a cost analysis breakdown to justify the need for this project.

PICO statement: Ambulatory Care Patients-Affordable Care Act; Expanding registered nurse role, standardized procedures, and scope of practice; Competency training, pre and post testing; Improving Access to care, decreased waits times. Using the CINAHL search database

and the preceding PICO statement, multiple articles were found to support the need for improved access to care by better utilizing registered nurses in primary care. The literature supports use of standardized procedures and the legality of doing so. Moreover, the articles chosen address the need for training RNs to become comfortable and proficient and developing standardized processes, such as internships to foster and strengthen the role for nurses working in ambulatory care settings.

Timeline

This project began in August 24, 2015 with a proposal describing the need and objective for the project to the medical director and ended the week of November 20-27, 2015 with a final proficiency audit and compilation of the results. Challenges with the adhering to the timeline are addressed in the final discussion and conclusion (see Appendix M, figure 1. for a copy of the Gannt timeline).

Expected Results

My prediction was that there would be areas of the project that would require adjusting and further clarification as the weeks went by. At the end of twelve weeks, the RN would demonstrate comfort and proficiency delivering one protocol and hopefully would feel more confident and inspired to use other RN protocols. Ultimately, the expectation was that this project would demonstrate the value of having RNs prepared to see patients independently as a cost-effective alternative for evaluating and treating patients with low acuity needs, for improving safe access to care, and over time patient satisfaction, with regard to wait times would improve.

Nursing Relevance

All nurses should practice to the full extent of their license and training (IOM, 2010, p. 2). In 2010, the affordable care act (ACA) was signed into law requiring all individuals to have health insurance; as a result 32 million people acquired access to primary care (Kunic & Jackson, 2013). There is an urgent need to transform our health care system, barriers need to come down that prevent nurses from reaching their full potential and from being seen as partners in designing new health care systems (Kunic & Jackson, 2013).

This project builds on the IOM, Future of Nursing report and is supported by literature that demonstrates improved practice and access to care by moving toward team-based models where all staff is empowered to work to the top of their license. By expanding opportunities to provide care, and by removing scope of practice barriers, nurses are in a position to strengthen healthcare by improving preventive care and screening programs. In ambulatory care settings, standardized procedures can improve access by having the RN treat and care for low acuity patients, opening up valuable appointment time for providers to see more complex patients.

Health promotion, disease prevention and population health are at the heart of nursing practice (Oelke, Besner, & Carter, 2014). College health and primary care nurses represent a small portion of nurses; they have been an overlooked and underutilized resource supporting the myth that ambulatory nurses are less knowledgeable and skilled then inpatient nurses (American Academy of Ambulatory Care Nursing [AAACN], 2014). The AAACN recognizes that in order to overcome barriers for nurses in ambulatory care, a radical transformation in education needs to take place; the organization has taken steps to develop residency programs for ambulatory care nurses. The initiative from AAACN to foster nursing education, satisfaction, and retention further support the relevance of this project.

The student health center has expanded the RN role in recent years to include that of triage as well as treatments, such as splinting, urgent care and IV therapy. While this role is crucial in supporting clinic flow and volume, having nurses prepared to care for patients independently, fully addresses the IOM's call to nurses and represents an innovative, cost-saving and team-based model of care.

Summary Report

The goal for this CNL project was to demonstrate RN confidence working independently, and proficiency using one RN protocol (Hormonal Contraception-Initiate, Refill, Change), with an overall aim of improving patient satisfaction, wait times, and access to care for the student population. This project took place in a rural university student health center that is the primary source of health care for a student population of approximately 8,600 students. According to the student health centers annual report 2013/2014 family planning and contraception services are the number one service provided at the student health center, followed by anxiety and depression. Since this report, mental health needs at the student health center have steadily increased by approximately 40% since 2011. A higher patient acuity has increased the demand for access to appointments with providers. Having all staff prepared to work to the top of their license with all patient visits will help to address this need.

Decreasing wait times, improving access and meeting the needs of higher acuity patients have been an ongoing challenge and goal for the student health center. Having RNs proficient in providing care independently benefits clients by improving wait times and access to care and frees up appointment time for providers to see more complex patients. A major component to the success of the program is having a standardized system in place that relies on evidence-based practice as well as ongoing supervision, support and oversight. Nurses however, have historically

been an overlooked resource; there has been little guidance or interest to expand the position beyond that of triage or to hire another RN. While it is clear that nurses can become competent seeing patients independently with support and training, a pre-intervention survey of one experienced RN reflected low confidence in using standardized procedures and with electronically transmitting medication.

A cause-and-effect (Fishbone Analysis) was conducted in order to demonstrate the cause of long wait times in acute care. This analysis highlights the process for patient flow and acuity as well as the role of the RN in facilitating patient care. A process flow chart was created to provide a visual map of all the steps and wait times reflected in a particular patient visit. The process map clearly demonstrates the need to prevent unnecessary wait times wherever possible. This RN visit model is represented in the process map as a streamlined model for patients requiring low acuity care to receive expedited services with an RN-only visit.

Kotter's eight steps for change was used as a theoretical framework to draft a proposal that addressed an urgent need to train another RN. A cost analysis was conducted demonstrating projected savings to support pool coverage for one-to-one training. Once the project was approved, plan-do-study-act (PDSA) was used to begin the training process. Multiple steps were taken to provide support in order to guarantee successful training and improve the RNs confidence with providing care independently. FMEA was effectively utilized to create two audit tools to monitor each encounter. Additionally, the steps involved in dissecting the protocol and medication process were key toward developing tools and identifying weaknesses that would assist the RN in her success. Examples of these tools are the Sure Scripts demonstration screenshot that identified each of the steps that need to be addressed when transmitting a medication. This demonstration tool expanded on the five-rights for providing medication. A

formulary with all of the medications the RN is authorized to provide was included in a binder with all of the RN protocols. The formulary provided clear guidance for the RN when ordering medication and eliminated guesswork when presented with multiple options for medication directions in the EMR. An added safety feature within the EMR is the ability to create “user favorites” for frequently ordered medications. When a medication is ordered it can be saved as a favorite and fields such as the medication directions, quantity and units will be prefilled on the prescription template for future use.

Results and Conclusion

This semester one additional RN has become proficient using the protocol authorizing provision of hormonal contraception. Proficiency has been demonstrated through specific encounter audits. Thirty-seven medications for hormonal contraception were transmitted to an outside pharmacy with zero errors. A follow up survey submitted to the RN revealed significant improvement in the RN’s personal perception of confidence and proficiency with providing medication independently using several protocols and with transmitting medications using *Sure Scripts*. When the project began the RN felt proficient using only one protocol, after the training she felt very proficient in six of the nine protocols, including Hormonal Contraception Including Depo-Provera. The RN found the one-to-one training and having a clearly written protocol available to be most helpful towards feeling proficient in several protocols. She further commented that she was excited about using other protocols to improve patient flow.

Implementation began with one-to-one training on October 5, 2015 and was approved for pool coverage for a two-week period, set to end on October 16, 2015. PDSA has been useful in identifying when and where improvements needed to be made. PDSA began with the RN trainee shadowing this RN while conducting RN visits. For two full days, the RN had the opportunity to

observe, take notes and ask questions. We anticipated that there might be a barrier with having patients consent to having an observer, however students were gracious, and even appreciated the extra attention. This time was invaluable for the RN who admitted to feeling overwhelmed initially with all of the details that needed to be covered in the visit. Her transparency and made it clear that she needed further support to feel confident. In the next PDSA phase this RN shadowed the trainee. The RN felt this was extremely helpful when reviewing an extensive health history, which addresses sensitive issues related to medical and sexual health, or when needing assistance with a counseling point or EMR question.

These sessions revealed some minor flaws written into the standardized procedure (SP), and an error in unit type for EVRA (contraceptive patch) in the newly created formulary. So much attention was given to the Sure Scripts process (transmitting medication to the pharmacy) that the RN felt quite comfortable with this step. Other, issues came with the RN feeling that one of the standardized procedures (Depo-Provera) was not clear and that it would be confusing when training future nurses. These concerns prompted a revision of the formulary and standardized procedure for Depo-Provera and instigated the next PDSA cycle (Please see Appendix N. figure 1. for an updated Depo-Provera procedure). Delays in beginning solo training came with lack of availability of pool staff to cover for one-to-one training for the full two weeks. Ultimately the time for one-to-one training was shorter than originally planned, however with the two RN offices located side by side, the RN felt comfortable going forward as long as she could consult when needed.

One-to-one training requires a tremendous amount of patience, however, taking the time to listen for weak points has inspired improvements in our current process such as those previously mentioned and with revising outdated patient education handouts (Please see

Appendix N, figure 2. for updated Depo-Provera patient education handout). The patient handouts are teaching tools that the RN relies on to highlight pertinent teaching points and also helps to reinforce the RN's knowledge. When RNs or other staff members use these tools consistently, eventually the counseling message becomes second nature. While one will incorporate their individual personality and style in delivering the information, patient education becomes standardized and consistent.

Sustainability

The mission of the student health center is to promote student success through education and prevention. Decreasing wait times, improving access and meeting the needs of higher acuity patients have been an ongoing challenge and goal for the student health center. Having RNs proficient in providing care independently benefits clients by improving wait times and access to care and also frees up provider time. A major component to the success of the program is having a standardized system in place that relies on evidence-based practice as well as ongoing supervision, support and oversight.

The RN visit project represents a cost-effective use of staff resources that continues to see growth and success. Over the past three years, nurses in the student health center have demonstrated autonomy through a rising trend in seeing a higher volume and complexity of independent patient visits. These visits are more detailed and require higher skillset and training. Since 2012 the number of family planning visits seen by RNs have risen from 18.75% to 53.82% (see Appendix O, figures 1 & 2 for examples of RN visit trends). These statistics demonstrate the value of maximizing nursing skill and utilizing nursing knowledge to improve access to care.

The vision is an organization where all staff are empowered to work to their maximum scope of practice, and who are collaborative in creating policies that support the mission of the

organization. The Institute of Medicine (IOM) has called for all nurses to work to the maximum scope of their practice. In order to meet this call, barriers need to come down that prevent them from doing so; nurses should be seen as partners in the delivery of health care. With the nurse visit project, we have identified a cost-saving model to improve patient care and access, one that also provides the nurse with a more fulfilling role in college health.

Because the program is patient-centered, interdisciplinary, collaborative, and based on standardized procedures guided by California Board of Nursing and the California Board of Pharmacy, there is great potential for this model to reach other student health centers and to transcend other organizations, such as outpatient primary care. While there are multiple strengths to support the RN visit project, sustainability of the project will be dependent on stakeholders from all system levels to see the value, and be willing to invest in this model as a viable option for meeting the growing demands of the student population throughout university health centers.

Advocate for the Profession is the recurring CNL theme for this project. In this role the CNL effects change working with an interdisciplinary team, advocates for the RN profession and scope of practice, and evaluates interventions based on patient outcomes (American Association of Colleges of Nursing [AACN], 2013).

Discussion

Overall the project was successful in meeting the specific aim for improving RN proficiency and comfort using one RN protocol and with electronically providing medication using standardized procedures. Ideally, this project would have had a larger test group; this will be our projected goal for expanding the RN role in student health. Other limitations came with availability of pool staff to cover for training. Additionally two providers resigned this semester, limiting responses for the provider survey, four of five staff providers responded to the survey

monkey, pool providers were not included in the survey. A follow up survey of the providers is pending presentation of the results from this report. A formal patient satisfaction survey was not conducted as planned due to time constraints, however students verbally reported gratitude for the comprehensive services they were provided. One student acknowledged a change in the system, noting that the appointment process was streamlined and that she had less wait time. This evaluation was formally submitted on a patient feedback form to administration. Spring 2016 an annual benchmarking survey of all CSUs will take place. This will provide an opportunity to add a section for nurse visits, and will set a baseline for patient satisfaction with regard to service and wait times going forward.

Acknowledgements

I would like to thank the university student health center for allowing me to conduct my project on site, and for their support in facilitating my practicum rotation. This project could not have taken place without the engagement and advocacy from our medical director, who endured multiple revisions of protocols and standardized procedures and stood behind expanding the RN role in the face of resistance from other disciplines. I will be forever grateful to my preceptor for her countless hours of consultation and support throughout the entire process, and to the nurse in the study, who stepped out of her comfort zone, provided invaluable feedback and excelled in advancing her skills.

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Appendix A

RN Protocols/ Standardized Procedures Overview

Purpose of this document: To define above terms, to clarify the rationale for their use, and to set forth a proposed framework for developing & implementing RN Standardized Procedures for selected common health problems at -SHC.

Background & Rationale: The Student Health Center ("SHC") operates within guidelines from the Chancellor, on a limited budget based on Health Center fees charged to students carrying a defined unit load; the fees are collected each semester. Historically, demand for services and hence utilization rates are high, and we have struggled to meet that demand given a finite amount of human and physical resources. In addition, students often have demanding schedules and limited time, making prompt and efficient delivery of services a worthwhile goal. Since SHC staff consists of individuals with several levels of licensure and capabilities, it seems clear that utilizing staff members to the fullest extent allowed by their training and licensure is one way to optimize patient care. We thus have and continue to develop and implement innovative methods for doing so, consistent with legal and ethical restrictions, and with close attention to maintaining a high quality of care.

Current California law enables RNs to deliver services outside of their customary roles via a mechanism called Standardized Procedures, provided certain requirements are met. These requirements are set forth in California Nursing Practice Act of 1975 (California Administrative Code, Title XVI, Chapter 14, Article 7, section 1470-4), available online here: http://www.rn.ca.gov/pdfs/regulations/npr-i-19.pdf .

Definitions:

RN Protocol: A detailed set of instructions designed to guide a qualified RN in dealing with a defined health problem. RN Protocols can involve functions which are customarily performed by RNs, or can involve less traditional functions which overlap the practice of medicine; the latter requires development of a Standardized Procedure.

Standardized Procedure: A defined procedure, developed through collaboration among registered nurses, physicians and administrators in the organized health care system in which it is to be used, which authorizes performance of a medical function by a registered nurse. Such functions overlap the practice of medicine, and are permitted under state law, as indicated in the above – referenced Board of Registered Nurses document.

Framework for Developing RN Standardized Procedures:

1. Identify & state need for SP as succinctly & clearly as possible;
2. Specify purpose of SP
    a. Written description
    b. Wherever possible, should be evidence based
        i. Main sources of evidence cited
3. Identify personnel (RN, MD, Admin, IT) on Development Team;
    a. Makeup of team must be approved by Medical Director and Executive Director or their designees.
    b. If additional personnel are added to the Development Team, add to document.
        i. May add to SP prior to initial approval as needed;
        ii. May add to updated SP as mentioned in 7a below
4. Write Protocol, ensuring that:
    a. The eleven Guidelines in section 1474 numbered (1)– (11) are addressed
    b. The RN Functions ("who/what/where/when/why") in SP are specified.
    c. The Protocol is as brief, clear & "user friendly" as possible
    d. Information Technology input is elicited.
5. Review and editing by Development Team members
    a. May be facilitated by tools such as Sharepoint
    b. Providers should be informed of progress and their input solicited via Provider Meetings, email, or similar.
    c. Final approval by Team Members should be clearly recorded and dated.
6. Finalization of SP:
    a. Hard copy of Final Version should be signed by Development Team members.
    b. Copy should be placed in Policy & Procedure Manual(s)
    c. Date of implementation should be stated.
7. Additions or changes to SP
    a. If changes or additions become necessary, the composition of the Development Team should be reviewed and updated by Medical Director and Executive Director or their designees;
    b. Changes or additions to SP should be reviewed & edited by the Development Team as above, put in the form of an updated policy, approved by Development Team members, and placed in Policy & Procedure Manual
        i. Replace previous version in P&P Manual.

(Continued)

Implementation

c. Inform pertinent Student Health Center Staff of new SP
    i. Such information may be done via email and presentation at General Staff meeting.
        1. Document the time date and place of presentation
d. A copy of the current version of the SP should be available for reference in Clinical Areas such as Green and Gold Clinics.
e. Periodic review of SP should be performed and documented as specified in the SP

Figure 1. Explanation of Standardized procedures and BRN guidelines for developing them.

Appendix B

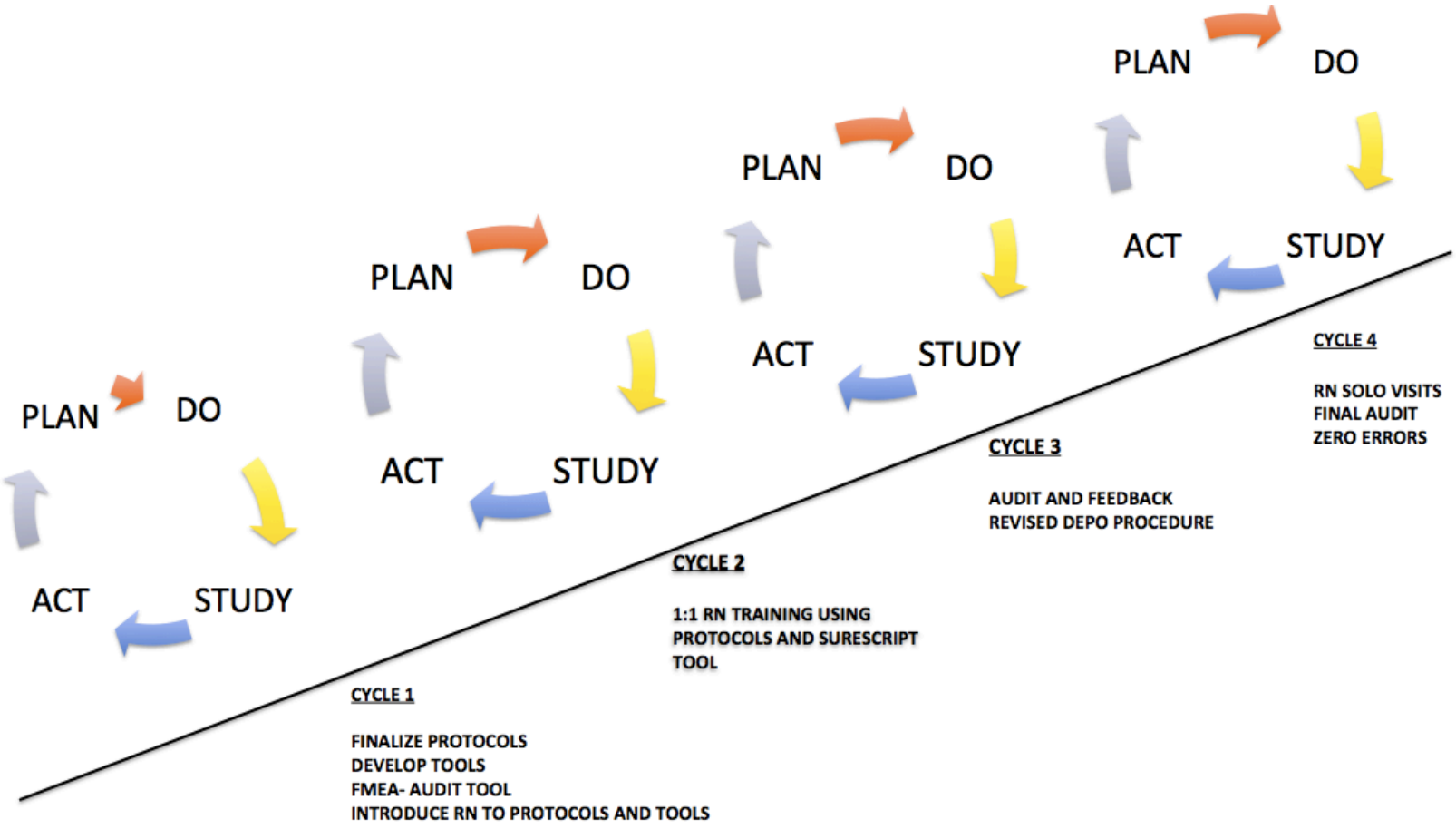

Figure 1. PDSA cycles for RN training

Appendix C

Policy:	**HORMONAL CONTRACEPTIVE INITIATION/CHANGE/CONTINUE**	
History:	Date of original: 01/2013	Date of revision: 8/20/15 Date reviewed: 8/20/15
Approval:	Title: Signature: Title: Nurse Practitioner Signature Title: Registered Nurse Signature:	Title: Signature:

PROTOCOL: *In accordance with guidelines established by the California Nursing Practice Act of 1975 (California Administrative Code, Title XVI, Chapter 14, Article 7, § 1470-4), standardized procedures have been developed through collaboration among physicians, registered nurses and administrators.*

As per California Bill AB 2348, appropriately trained Registered Nurses (RNs) will utilize this Standardized Procedure to furnish certain contraceptive methods to women not desiring pregnancy. The RN may see the patient exclusively for up to two years consecutively, after which time a clinician appointment/exam will be required. Further birth control providing can occur via RNs after that, as long as at least every third yearly contraceptive consult is done or reviewed by a Provider. Under AB 2348, RNs may provide birth control in the form of a prescription with the Medical Director specified as the prescribing party, as long as conditions of the Protocol are observed.

Minimum Training Requirements:

The RN must successfully complete facility orientation and demonstrate competency in using Standardized Procedures. Competency specific to this Standardized procedure includes educating patients on medical standards for ongoing women's preventive health, contraception options education and counseling, properly eliciting, documenting, and assessing patient and family health history, and utilization of the United States Medical Eligibility Criteria for Contraceptive Use. Must also demonstrate competency in providing the

appropriate prior examination comprised of checking blood pressure, weight, and patient and family health history, including medications taken by the patient. Competency may be proved through direct clinician supervision and/or chart review.

This protocol shall be updated whenever the United States Medical Eligibility Criteria for Contraceptive Use is updated, or reviewed a minimum of every three years if no changes have been made.

PROCEDURE: The approved RN will initiate or continue approved Combination Hormonal Contraceptives (CHCs) including pills, Ortho Evra "The Patch", and NuvaRing vaginal ring; Progestin-Only Pills (POPs); and Depo-Provera based on this Standardized procedure. At the time of the visit the RN will:

1. Take a complete patient and family health history, including medications taken by the patient. Women's health exams/tests, history of sexual activity, pregnancy history, and contraceptive history.
2. Blood pressure and weight will be measured and documented. Patients with a blood pressure measuring > 140/90 on repeated measurements will be referred to clinician.
3. Educate patient on contraceptive options, and help patient choose the best option for their lifestyle, taking the factors above into account.
4. A patient who is not continuing a previous birth control prescription will be provided a 3 month supply of birth control with refills sufficient for one year by approved RN.
5. The RN will review recommended STI screening and Well Woman Exam (WWE) guidelines with patient and advise appropriately.

The RN will follow The United States Selected Practice Recommendations and Medical Eligibility Criteria (MEC) for Contraceptive Use, established by the Center for Disease Control and Prevention (CDC). RNs may only initiate or continue a contraceptive method if the patient falls under two categories in the MEC: category 1, in which patient has no restriction, or MEC category 2, in which the advantages of using the method generally outweigh the theoretical or proven risks. The RN will consult with a provider for patients that have more than one MEC category 2 risk, or for other individual concerns.

The RN will educate patient and advise Quick Start initiation. See Figure 1 – Quick Start Guidelines (attached).

Experience, Training and/or Education

- Current RN license
- CSU RN II Classification
- Successful completion of Student Health Center orientation specific to this procedure.

Initial Evaluation of Competency

Initial Competency

- Trainee RN observes experienced RN/clinician implementing this procedure.
- Trainee RN then demonstrates successful use of this procedure under direct supervision at least 10 encounters, with periodic review after that.
- Submits a minimum of 10 chart notes demonstrating use of the procedure to the supervising RN for review.

On-going Competency Assessment

Chart reviews of this procedure occur as part of the on-going Quality Assurance program of the Student Health Center. Documentation and training of RNs who are trained in specific procedures will be kept in "SHC Staff" shared folder on the Student Health Center computer server with other approved RN protocols.

Scope of Supervision

- No direct supervision required once trainee RN's competency has been assessed and approved.
- Clinician will be available as needed for questions or clarifications.

Consultation/Referral will be obtained if:

1. Patient with blood pressure reading > 140/90, after at least one repeat measurement.
2. Patient meeting any category 3, or 4 criteria based on The United States Medical Eligibility Criteria for Contraceptive Use chart.
3. If the patient is age 35 or > and/or smoker, she will be referred to a medical provider.
4. If the patient answers "yes" to headaches with visual, sensory or motor changes, the patient should be warned about increased risk of stroke with estrogen-containing methods and advised to discontinue estrogen-containing methods. Then counsel patient on progestin only, or non-hormonal methods. If patient wishes to continue estrogen method, she will

be referred to a provider

5. RN will also consult with clinician to answer questions posed by the patient which the RN is not prepared to answer.

REFERENCES:

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2. Center for Disease Control and Prevention. (2010). United States Medical Eligibility Criteria (USMEC) for Contraceptive Use. *Morbidity and Mortality Weekly Report, 59*(RR04), 1–85.
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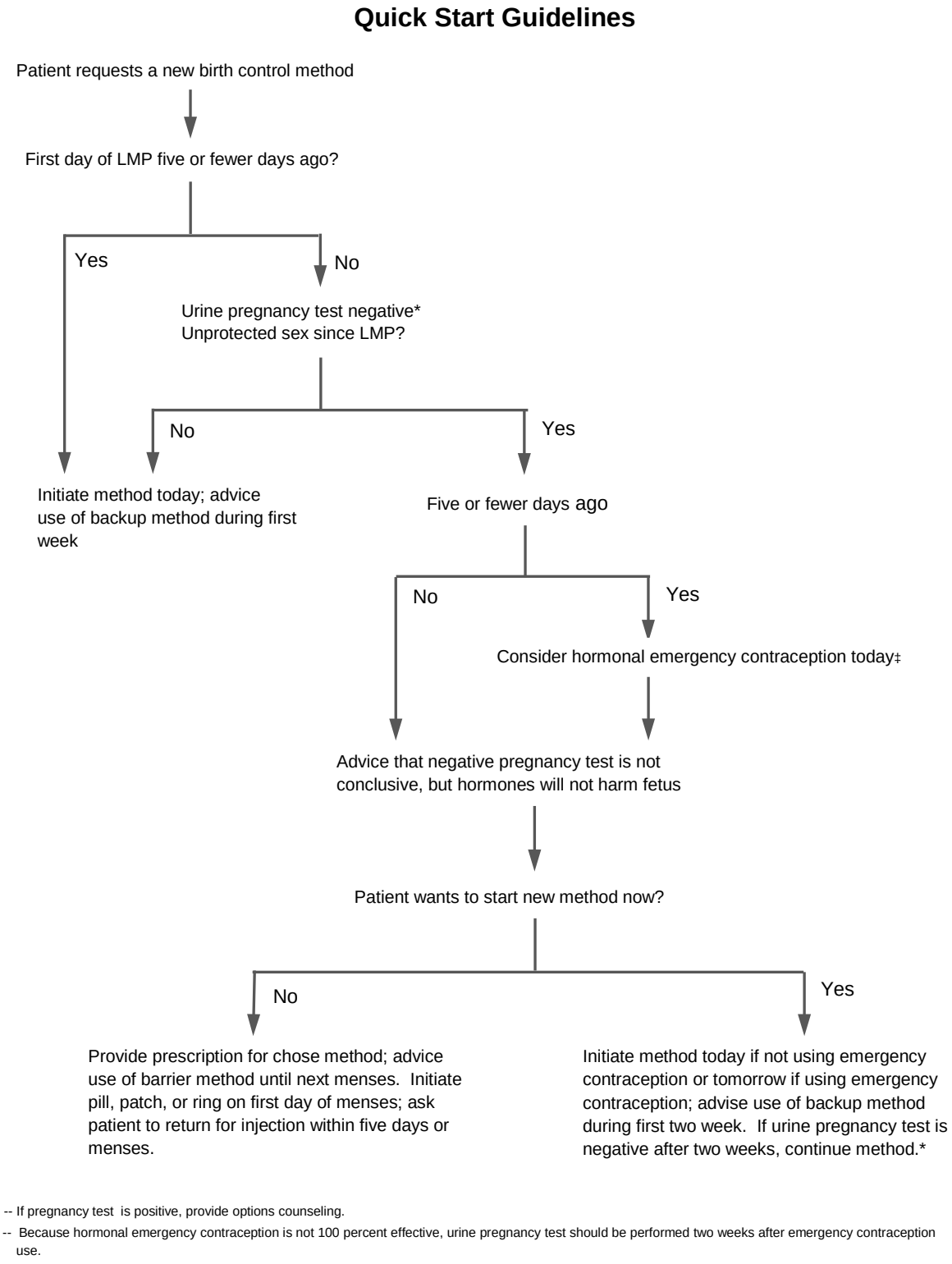
4. Contraceptive Technology, 20th ed, 2011

Figure 1. Example of protocol used at SHC.



* -- If pregnancy test is positive, provide options counseling.

‡ -- Because hormonal emergency contraception is not 100 percent effective, urine pregnancy test should be performed two weeks after emergency contraception use.

Figure 1. Example of protocol used at SHC.

Appendix C

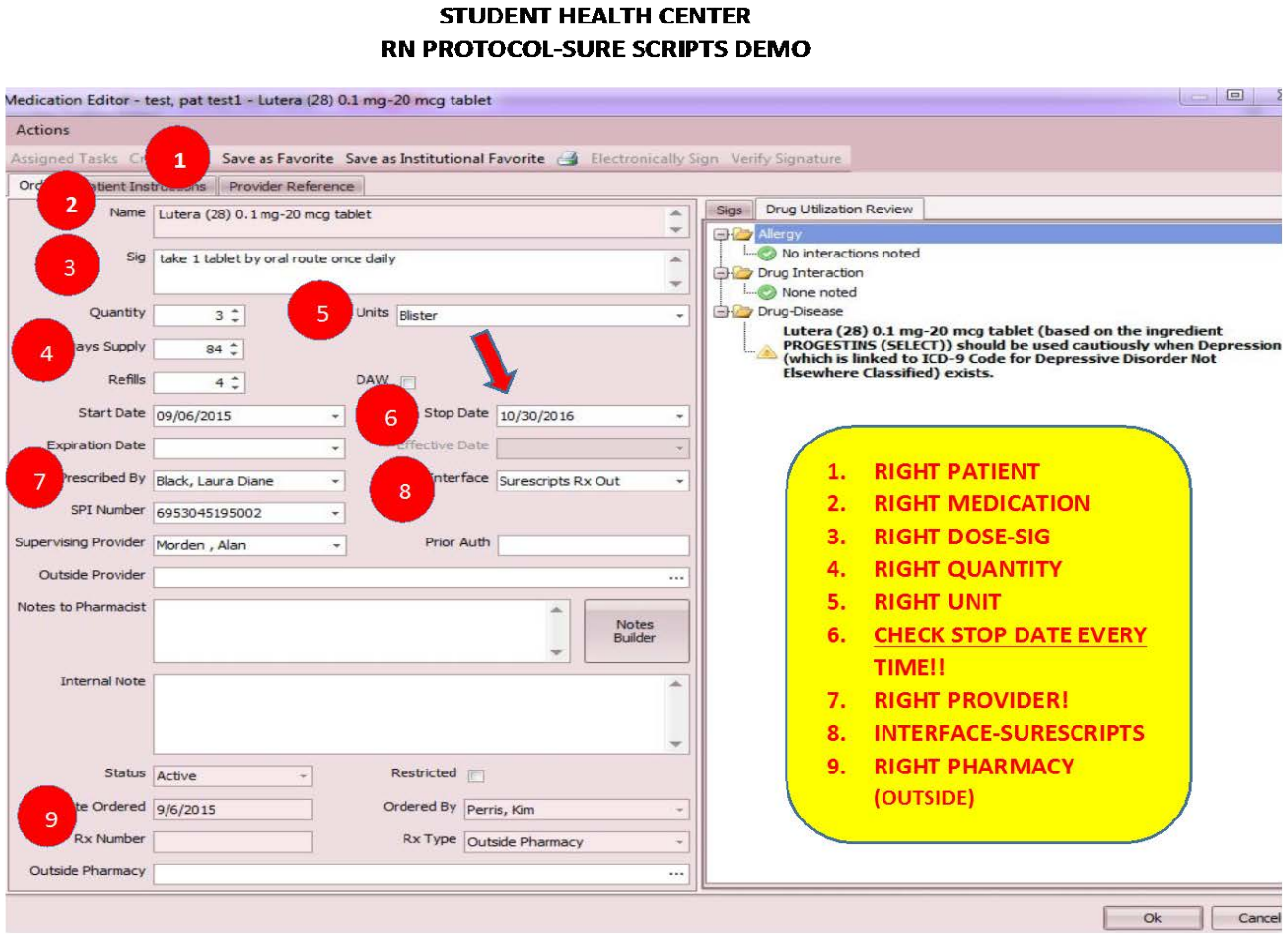


Figure 2. Sure scripts demonstration training tool used for e-prescribing.

Appendix C.
STUDENT HEALTH CENTER

RN STANDARDIZED PROCEDURE MEDICATION LIST

MEDICATION	DOSEAGE	SIG	QUANTITY	DAYS SUPPLY	REFILLS	UNITS
CONTRACEPTIVES						
Combined Oral Contraceptives		Take one tablet by oral route daily	3	84	4	BLISTER
Progestin only pill		Take one tablet by oral route at the same time daily	3	84	4	BLISTER
NuvaRing		Insert 1 vaginal ring by vaginal route once per month-leave in place for 3 weeks, remove for 7 days	3	84	4	RING
Evra Patch		Apply 1 patch by transdermal route weekly x 3 weeks, remove patch 4th week x 7 days	3	84	4	BOX
Dep-Provera (Medroxyprogesterone	150 mg	Inject 1 ml by IM route every 3 mos.	1	90	4	SYRINGE
Plan B		Take one tablet by oral route once as soon as possible within 72 hours after unprotected intercourse. **BMI >25 use ELLA**	1	1	6	TABLET
Ella		Take one tablet as soon as possible with in 120 hrs after unprotected intercourse. Use for BMI >26	1	1	6	TABLET
ANTIVIRAL						
Oseltamivir	75 mg	1 tablet twice daily	10	5	0	TABLET
STREP THROAT						
PenVK (Penicillin V w/Potassium)	500mg	One tablet 3 times per day x 10 days	30	10	0	TABLET
PRN PCN OR CEPHARLOSPORIN ALLERGY Azithromycin	250 mg	2 tablets by oral route daily for 1 day, then 1 tablet by oral route for 4 days	6	5	0	TABLET

11/2015 KP

ASYMPTOMATIC STI TREATMENT						
CHLAMYDIA						
Azithromycin	500 mg	Take 2 tablets by mouth x 1	2	1	0	TABLET
PRN ALLERGY TO AZITHROMYCIN Doxycycline	*100 mg*	Take 2 tablets twice a day	*14*	*7*	0	TABLET
GONORRHEA						
Rocephin	250 mg	Administer x 1 IM, Ventrogluteal site	1 dose	1	0	VIAL
		AND				
Azithromycin	500 mg	Take 2 tablets by mouth x 1	2	1	0	TABLET
SCABIES						
Permethrin 5%	60 grams	Apply (thoroughly massage into skin from head to soles of feet) by topical route once, leave on for 8-14 hrs, then remove by thorough washing	1-2 tubes prn pt plans to retreat	1	0	CREAM

11/2015 KP

Figure 3. RN Medication formulary.

Appendix C.

Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use

Key:	
1	No restriction (method can be used)
2	Advantages generally outweigh theoretical or proven risks
3	Theoretical or proven risks usually outweigh the advantages
4	Unacceptable health risk (method not to be used)

Updated June 2012. This summary sheet only contains a subset of the recommendations from the US MEC. For complete guidance, see: http://www.cdc.gov/reproductivehealth/unintendedpregnancy/USMEC.htm

Most contraceptive methods do not protect against sexually transmitted infections (STIs). Consistent and correct use of the male latex condom reduces the risk of STIs and HIV.

Condition	Sub-condition	Combined pill, patch, ring		Progestin-only pill		Injection		Implant		LNG--IUD		Copper-IUD	
		I	C	I	C	I	C	I	C	I	C	I	C
e		Menarche to <40=1		Menarche to <18=1		Menarche to <18=2		Menarche to <18=1		Menarche to <20=2		Menarche to <20=2	
		≥40=2		18-45=1		18-45=1		18-45=1		≥20=1		≥20=1	
				>45=1		>45=2		>45=1					
atomic	a) Distorted uterine cavity									4		4	
malities	b) Other abnormalities									2		2	
emias	a) Thalassemia	1		1		1		1		1		2	
	b) Sickle cell disease‡	2		1		1		1		1		2	
	c) Iron-deficiency anemia	1		1		1		1		1		2	
nign ovarian ors	(including cysts)	1		1		1		1		1		1	
ast disease	a) Undiagnosed mass	2*		2*		2*		2*		2		1	
	b) Benign breast disease	1		1		1		1		1		1	
	c) Family history of cancer	1		1		1		1		1		1	
	d) Breast cancer‡												
	i) current	4		4		4		4		4		1	
	ii) past and no evidence of current disease for 5 years	3		3		3		3		3		1	
rsefeeding; e also rpartum)	a) < 1 month postpartum	3*		2*		2*		2*					
	b) 1 month or more postpartum	2*		1*		1*		1*					
rvical cancer	Awaiting treatment	2		1		2		2		4	2	4	2
rvical ectropion		1		1		1		1		1		1	
rvical neoplastic plasia		2		1		2		2		2		1	
rhosis	a) Mild (compensated)	1		1		1		1		1		1	
	b) Severe‡ (decompensated)	4		3		3		3		3		1	
ep venous mbosis VT) lmonary bolism (PE)	a) History of DVT/PE, not on anticoagulant therapy												
	i) higher risk for recurrent DVT/PE	4		2		2		2		2		1	
	ii) lower risk for recurrent DVT/PE	3		2		2		2		2		1	
	b) Acute DVT/PE	4		2		2		2		2		2	
	c) DVT/PE and established on anticoagulant therapy for at least 3 months												
	i) higher risk for recurrent DVT/PE	4*		2		2		2		2		2	
	ii) lower risk for recurrent DVT/PE	3*		2		2		2		2		2	
	d) Family history (first-degree relatives)	2		1		1		1		1		1	
	e) Major surgery												
	(i) with prolonged immobilization	4		2		2		2		2		1	
	(ii) without prolonged immobilization	2		1		1		1		1		1	
	f) Minor surgery without immobilization	1		1		1		1		1		1	
pressive orders		1*		1*		1*		1*		1*		1*	
abetes mellitus M)	a) History of gestational DM only	1		1		1		1		1		1	
	b) Non-vascular disease												

Condition	Sub-condition	Combined pill, patch, ring		Progestin-only pill		Injection		Implant		LNG--IUD		Copper-IUD	
		I	C	I	C	I	C	I	C	I	C	I	C
Diabetes mellitus (cont.)	(i) non-insulin dependent	2		2		2		2		2		1	
	(ii) insulin dependent‡	2		2		2		2		2		1	
	c) Nephropathy/ retinopathy/ neuropathy‡	3/4*		2		3		2		2		1	
	d) Other vascular disease or diabetes of >20 years' duration‡	3/4*		2		3		2		2		1	
Endometrial cancer‡		1		1		1		1		4	2	4	
Endometrial hyperplasia		1		1		1		1		1		1	
Endometriosis		1		1		1		1		1		2	
Epilepsy‡	(see also Drug Interactions)	1*		1*		1*		1*		1		1	
Gallbladder disease	a) Symptomatic												
	(i) treated by cholecystectomy	2		2		2		2		2		1	
	(ii) medically treated	3		2		2		2		2		1	
	(iii) current	3		2		2		2		2		1	
	b) Asymptomatic	2		2		2		2		2		1	
Gestational trophoblastic disease	a) Decreasing or undetectable ß-hCG levels	1		1		1		1		3		3	
	b) Persistently elevated ß-hCG levels or malignant disease‡	1		1		1		1		4		4	
Headaches	a) Non-migrainous	1*	2*	1*	1*	1*	1*	1*	1*	1*	1*	1*	
	b) Migraine												
	i) without aura, age <35	2*	3*	1*	2*	2*	2*	2*	2*	2*	2*	1*	
	ii) without aura, age ≥35	3*	4*	1*	2*	2*	2*	2*	2*	2*	2*	1*	
	iii) with aura, any age	4*	4*	2*	3*	2*	3*	2*	3*	2*	3*	1*	
History of bariatric surgery‡	a) Restrictive procedures	1		1		1		1		1		1	
	b) Malabsorptive procedures	COCs: 3 P/R: 1		3		1		1		1		1	
History of cholestasis	a) Pregnancy-related	2		1		1		1		1		1	
	b) Past COC-related	3		2		2		2		2		1	
History of high blood pressure during pregnancy		2		1		1		1		1		1	
History of pelvic surgery		1		1		1		1		1		1	
HIV	High risk	1		1		1*		1		2	2	2	
	HIV infected (see also Drug Interactions)‡	1*		1*		1*		1*		2	2	2	
	AIDS (see also Drug Interactions) ‡	1*		1*		1*		1*		3	2*	3	2
	Clinically well on therapy	If on treatment, see Drug Interactions								2	2	2	
Hyperlipidemias		2/3*		2*		2*		2*		2*		1*	
Hypertension	a) Adequately controlled hypertension	3*		1*		2*		1*		1		1	
	b) Elevated blood pressure levels (properly taken measurements)												
	(i) systolic 140-159 or diastolic 90-99	3		1		2		1		1		1	
	(ii) systolic ≥160 or diastolic ≥100‡	4		2		3		2		2		1	
	c) Vascular disease	4		2		3		2		2		1	

A

Appendix C.

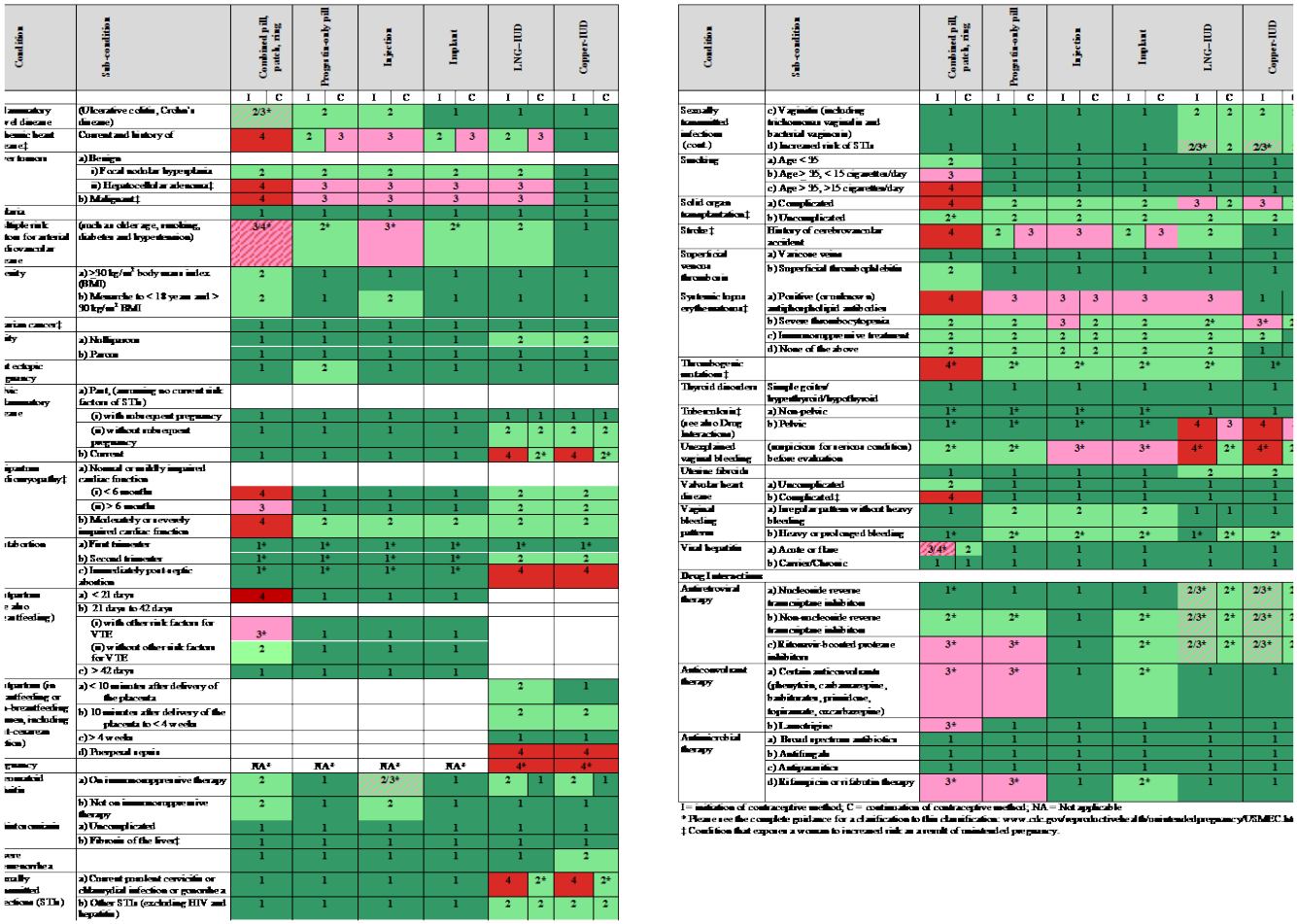


Figure 4. Example of CDC Medical Eligibility Chart using for providing contraception

Appendix C

Name **Age** **Date of Birth** **Date**

FEMALE MEDICAL HISTORY

This information is confidential and will be used by your medical provider to make sure you get proper care.

❑ Yes ❑ No Are you allergic to any medications? List here:

❑ Yes ❑ No Do you take any over the counter medicines, prescription medicines, vitamins, supplements, or home remedies? List here:

❑ Yes ❑ No Do you have a usual source of primary care? If yes, who?

A. Family Medical History:

Has anyone in your family (mother, father, brother, sister) ever had:

1. ❑ Heart attack/disease
2. ❑ Stroke
3. ❑ Blood clot in legs/lungs
4. ❑ High blood pressure
5. ❑ High cholesterol
6. ❑ Diabetes
7. ❑ Alcohol or drug abuse
8. ❑ Birth defects/genetic problems
9. ❑ Mental illness
10. ❑ Maternal DES exposure
11. ❑ Cancer
12. ❑ I do not know my family medical history

B. Personal Medical History:

1. Have YOU ever had problems with any of these? Check all that apply.

A. ❑ Heart disease
B. ❑ High blood pressure
C. ❑ Stroke
D. ❑ Diabetes
E. ❑ High cholesterol
F. ❑ Tuberculosis (TB)
G. ❑ Asthma
H. ❑ Blood clot in legs/lungs
I. ❑ Bleed/bruise easily
J. ❑ Anemia
K. ❑ Sickle cell disease
L. ❑ Kidney/bladder problems
M. ❑ Seizures or epilepsy
N. ❑ Depression
O. ❑ Suicidal thoughts
P. ❑ Mental illness
Q. ❑ Severe headaches or migraines
R. ❑ Liver problems or hepatitis
S. ❑ Gall bladder disease
T. ❑ Eating disorder
U. ❑ Cancer Type: _____
V. ❑ Thyroid disease
W. ❑ Fibroids
X. ❑ Ovarian cyst/abnormality
Y. ❑ Endometriosis
Z. ❑ Infertility

2. ❑ Yes ❑ No Have you ever been hospitalized or had any surgery? If yes, when and why? _____
3. ❑ Yes ❑ No Have you ever had a transfusion or blood exposure?
4. ❑ Yes ❑ No Have you been immunized against rubella? ❑ I do not know
5. ❑ Yes ❑ No Have you been immunized against hepatitis B? ❑ I do not know
6. When was your last Pap smear? _____ ❑ I never had a Pap smear
   ❑ Yes ❑ No Have you ever had an abnormal Pap smear? If yes, when? _____
7. ❑ Yes ❑ No Have you ever had an HIV test? If yes, when was your last one? _____ Was it: ❑ Positive ❑ Negative?
8. ❑ Yes ❑ No Have you ever had a mammogram? If yes, when was your last one? _____ Was it normal? _____

C. Menstrual History:

1. Age period started: _____
2. Periods come every _____ days and last _____ days.
3. Periods are: ❑ Regular ❑ Irregular ❑ Painful ❑ Light ❑ Moderate ❑ Heavy
4. ❑ Yes ❑ No Do you have bleeding or spotting in between your periods?

D. Pregnancy History: (If you have never been pregnant, skip to next section)

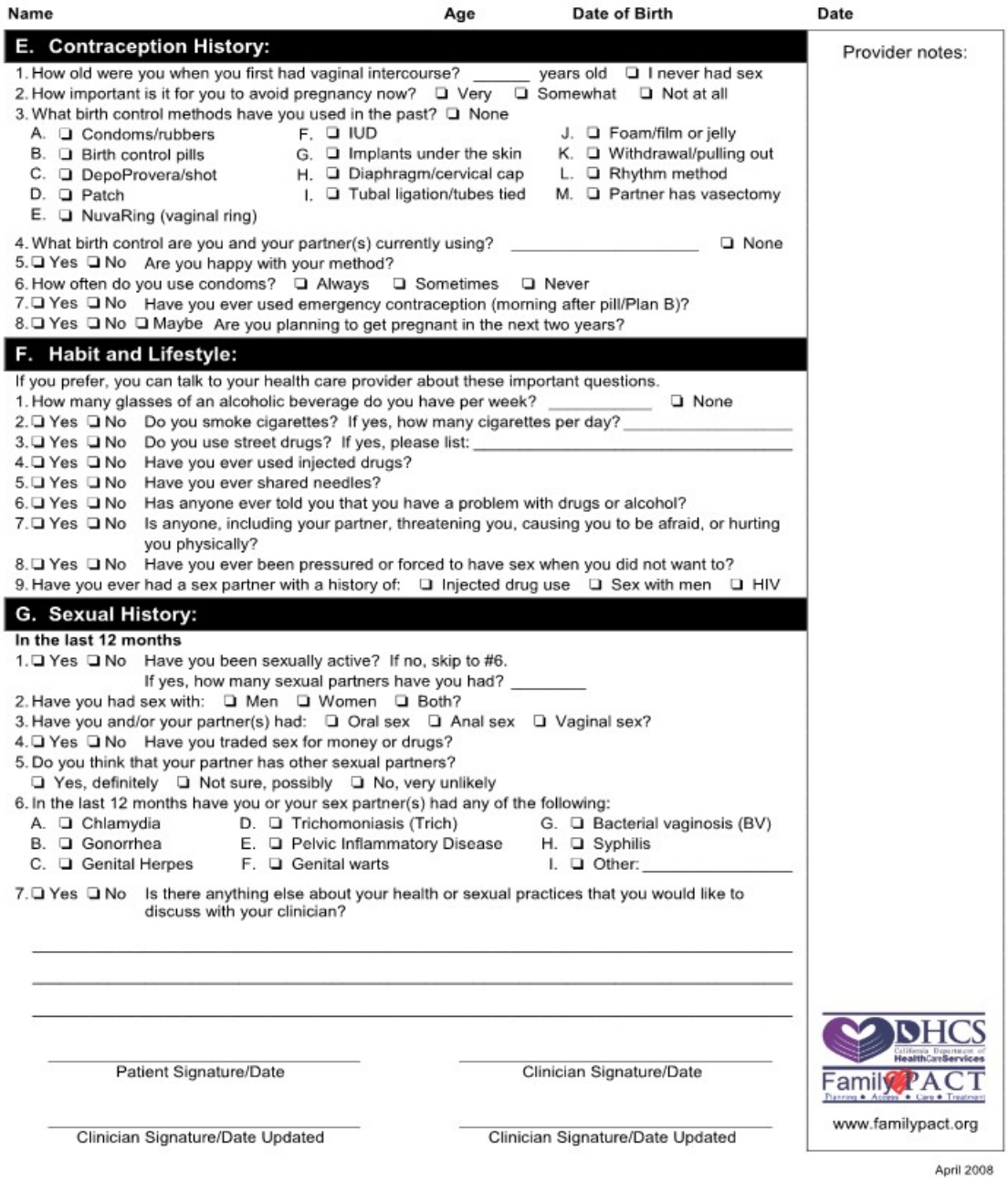
1. Please list the number of the following: _____ Pregnancies _____ Live births _____ Abortions _____ Miscarriages _____ Ectopic (tubal) pregnancies
2. How long ago was your last pregnancy? _____ month(s), _____ year(s)
3. ❑ Yes ❑ No Are you currently breastfeeding?

Provider notes:

DHCS California Department of Health Care Services
Family PACT Planning • Access • Care • Treatment
www.familypact.org

April 2008

Appendix C



Name Age Date of Birth Date

E. Contraception History:

1. How old were you when you first had vaginal intercourse? _____ years old ❑ I never had sex
2. How important is it for you to avoid pregnancy now? ❑ Very ❑ Somewhat ❑ Not at all
3. What birth control methods have you used in the past? ❑ None

A. ❑ Condoms/rubbers	F. ❑ IUD	J. ❑ Foam/film or jelly
B. ❑ Birth control pills	G. ❑ Implants under the skin	K. ❑ Withdrawal/pulling out
C. ❑ DepoProvera/shot	H. ❑ Diaphragm/cervical cap	L. ❑ Rhythm method
D. ❑ Patch	I. ❑ Tubal ligation/tubes tied	M. ❑ Partner has vasectomy
E. ❑ NuvaRing (vaginal ring)		

4. What birth control are you and your partner(s) currently using? _____ ❑ None
5. ❑ Yes ❑ No Are you happy with your method?
6. How often do you use condoms? ❑ Always ❑ Sometimes ❑ Never
7. ❑ Yes ❑ No Have you ever used emergency contraception (morning after pill/Plan B)?
8. ❑ Yes ❑ No ❑ Maybe Are you planning to get pregnant in the next two years?

F. Habit and Lifestyle:

If you prefer, you can talk to your health care provider about these important questions.

1. How many glasses of an alcoholic beverage do you have per week? _____ ❑ None
2. ❑ Yes ❑ No Do you smoke cigarettes? If yes, how many cigarettes per day? _____
3. ❑ Yes ❑ No Do you use street drugs? If yes, please list: _____
4. ❑ Yes ❑ No Have you ever used injected drugs?
5. ❑ Yes ❑ No Have you ever shared needles?
6. ❑ Yes ❑ No Has anyone ever told you that you have a problem with drugs or alcohol?
7. ❑ Yes ❑ No Is anyone, including your partner, threatening you, causing you to be afraid, or hurting you physically?
8. ❑ Yes ❑ No Have you ever been pressured or forced to have sex when you did not want to?
9. Have you ever had a sex partner with a history of: ❑ Injected drug use ❑ Sex with men ❑ HIV

G. Sexual History:

In the last 12 months

1. ❑ Yes ❑ No Have you been sexually active? If no, skip to #6.
   If yes, how many sexual partners have you had? _____
2. Have you had sex with: ❑ Men ❑ Women ❑ Both?
3. Have you and/or your partner(s) had: ❑ Oral sex ❑ Anal sex ❑ Vaginal sex?
4. ❑ Yes ❑ No Have you traded sex for money or drugs?
5. Do you think that your partner has other sexual partners?
   ❑ Yes, definitely ❑ Not sure, possibly ❑ No, very unlikely
6. In the last 12 months have you or your sex partner(s) had any of the following:

A. ❑ Chlamydia	D. ❑ Trichomoniasis (Trich)	G. ❑ Bacterial vaginosis (BV)
B. ❑ Gonorrhea	E. ❑ Pelvic Inflammatory Disease	H. ❑ Syphilis
C. ❑ Genital Herpes	F. ❑ Genital warts	I. ❑ Other: _____

7. ❑ Yes ❑ No Is there anything else about your health or sexual practices that you would like to discuss with your clinician?

_____

_____

_____

_____ Patient Signature/Date

_____ Clinician Signature/Date

_____ Clinician Signature/Date Updated

_____ Clinician Signature/Date Updated

Provider notes:

DHCS California Department of Health Care Services

Family PACT Planning • Access • Care • Treatment

www.familypact.org

April 2008

Figure 5. Example to health history form

Appendix D

RN Protocol Audit

Contraception-Initiate/Refill/Depo

Complete Female Hx<1year Positives addressed on Blue Form Significant on Prob list Ie: Migraine w/Aura or other contraindication for BC	Vital Signs if appropriate Initial and q semester, LMP every visit	GYN Subjective complete Positives addressed-ie UPI, Risky sex, STI screening	Problem list updated Initial and Annual	Chlamydia <1yr all female under 25 addressed and Documented in Prob list	Documented medication transmission MED/PHARM in Plan Section	Method Use , risk, benefits, side effects documented	Correct Sure Scripts process followed	Patient Score	Notes

(Figure 1. Hormonal Contraception RN protocol audit tool)

Appendix D

Sure Scripts Audit Tool

Patient	Step 1: Appropriate Pharmacy/dispensary Selected (Outside, Local Inventory)	Step 2: Right Patient	Step 3: Right Medication	Step 4: Right Sig	Step 5: Right Quantity	Step 6: Right Unit	Step 7: Right time/ Stop date	Step 8: Right Prescriber	Step 9: Sure Scripts selected	Step 10: Right Pharmacy	Pt Score	Comments

(Table 2. Sure Scripts medication audit tool)

Appendix E.
Provider Survey
9/2015

PROVIDERS (MD=3, NP=2)	1	2	3	4	5
On a scale of 1-5 (1= not concerned and 5=very concerned) how concerned are you with regards to patient safety when RNs are authorized to provide a medication using a standardized procedure?	2	1	2	2	
On a scale of 1-5 (1 = not concerned and 5 = very concerned) how concerned are you with regards to the impact of consultation needs on your practice when RNs are authorized to provide a medication using a standardized procedure?	2	1	2	3	
On a scale of 1-5 (1=not concerned and 5= very concerned) how concerned are you with regards to the RN working outside her scope of practice when RNs are authorized to provide a medication using a standardized procedure?	1	1	2	2	
On a scale of 1-5 (1= not concerned and 5= very concerned) how concerned are you with regards to an RN making a serious medication error when RNs are authorized to provide a medication using a standardized procedure?	1	1	2	1	
On a scale of 1-5 (1= not helpful to 5= very helpful) how helpful will it be to have RNs authorized to provide a medication using a standardized procedure on decreasing patient wait times?	3	5	5	5	
On a scale of 1-5 (1 = not helpful to 5 = very helpful) how helpful will it be to have RNs authorized to provide a medication using a standardized procedure on increasing available appointment times?	3	5	5	5	
On a scale of 1-5 (1= not helpful to 5 = very helpful) How helpful will it be to have RNs authorized to provide a medication using a standardized procedure on decreasing the workload for providers?	3	5	5	4	
What concerns do you have regarding having RNs trained to provide or transmit a medication using a standardized procedure?	skipped	I've answered this questionnaire based on the two nurses currently doing the job. I cannot say how I'd feel if others were doing the job.	skipped	skipped	

(Figure 1 Pre RN training provider survey)

Appendix E.
RN Survey
9/2015 and 11/20/15

Registered Nurse II	**Survey 1**	**Survey 2**
On a scale of 1-5 (1=not proficient and 5 = very proficient), Please rate your proficiency using the following standardized procedures to provide medication (call, transmit, dispense). # 8 is specific to Sure Scripts.		
Hormonal Contraception, including Depo-Provera	3	5
Antiviral/Tamiflu	2	3
Strep Throat treatment	3	5
Asymptomatic STI treatment	1	3
Partner Treatment for positive STI	2	3
Plan B/EOC	5	5
Scabies exposure/ prophylaxis	3	5
Use of Sure Scripts to transmit a prescription	3	5
Please rate your comfort level using standardized procedures to provide medication independently or with minimal consultation. (1 not comfortable and 5 being very comfortable).	2	5
Survey 1 **What barriers to you see in becoming proficient with protocols that allow the RN to provide an Rx?**	Demands of acute care pt flow interferes with time needed to get trained and proficient	
Survey 2 **What would you say worked to help you become proficient? What did not work?**	The number 3's marked above, I did not have the opportunity to prescribe in those situations so I don't feel fully proficient. What helped me feel fully proficient with the other protocols was to have a clear protocol available to me, to watch the other RN order the meds and then to have the opportunity to begin ordering meds myself with the other RN checking my technique the first few times. I am quite excited to be able to help improve clinic flow and pt services with these protocols.	

Figure 2. Pre and post RN II survey results

APPENDIX F.

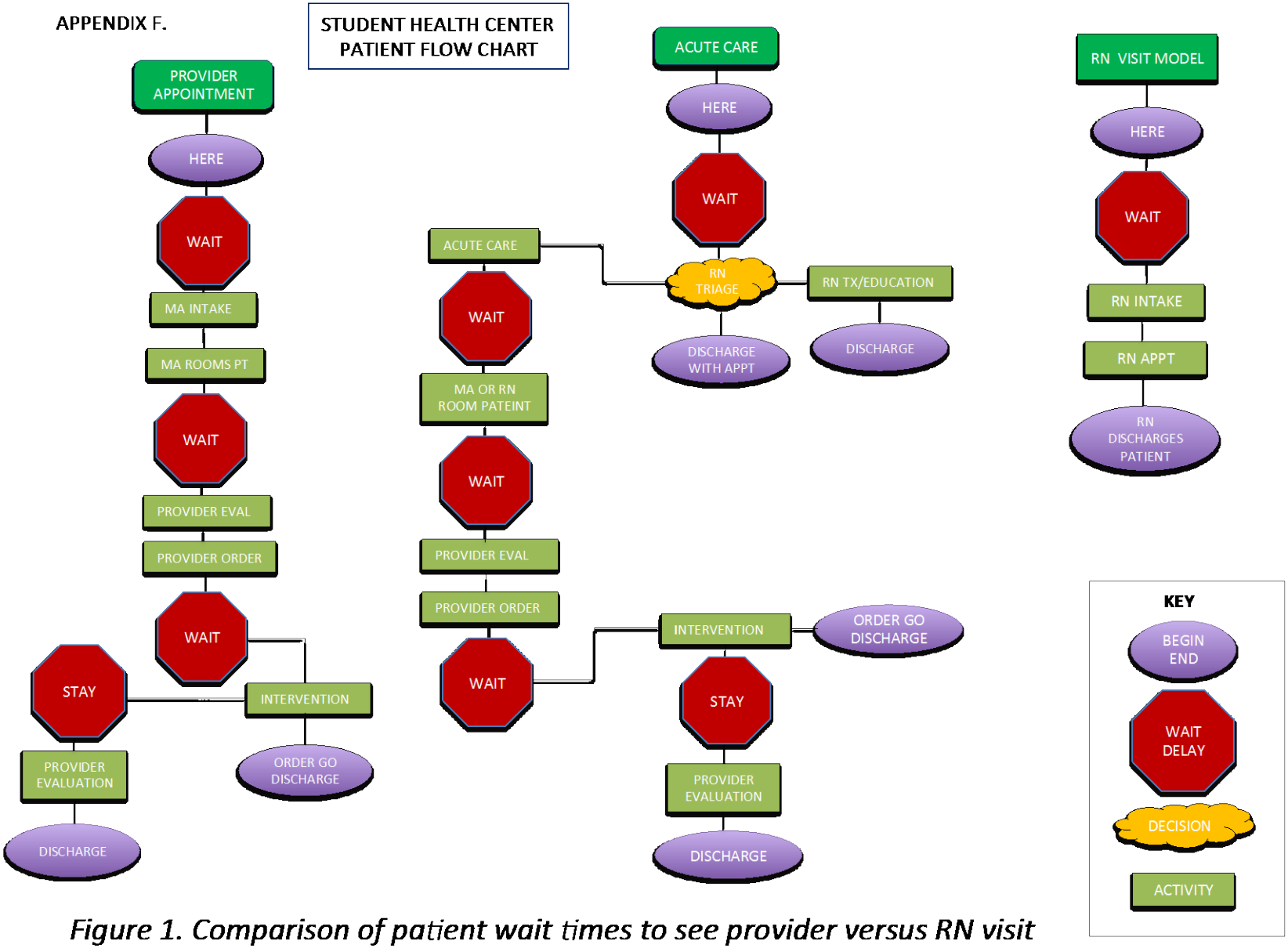


Figure 1. Comparison of patient wait times to see provider versus RN visit

Appendix G.

PATIENT FLOW IN STUDENT HEALTH CENTER

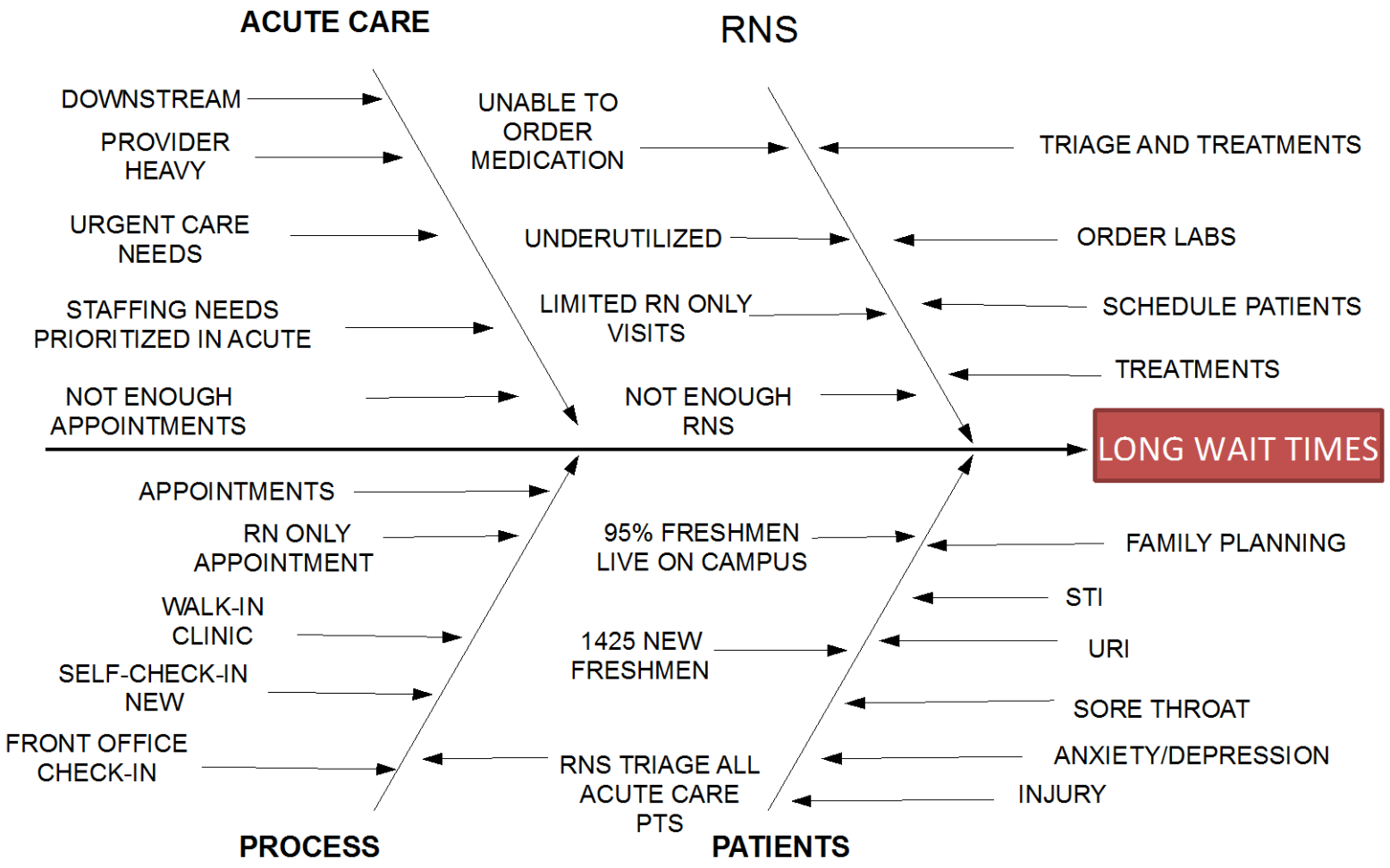


Figure 1. Fishbone diagram demonstrating cause of long wait times

Appendix H

SWOT Analysis

STRENGTHS	WEAKNESSES
Pilot RN visit program successful Supported by providers 1:1 Support from Nurse Practitioner Increased access to appoints Providers saw more complex patients Well Women Appointment times cut when RN saw patient Newly approved RN protocols	Disproportionate staffing (6.5 Staff clinicians, 6 Pool, 1.75 Staff RNs, 2 Pool RNs) Downstream model Acute care is prioritized Front office limited in making medical judgment Acute Care RNs see all patients initially-little time for other duties Time for training
OPPORTUNITES	**THREATS**
Expand RN visit Model Demonstrate cost effectiveness Demonstrate value and improved outcomes Improve patient satisfactions Decrease patient wait times Improve RN satisfaction Create safe process for e prescribing	Budget-Cost to bring in pool RN for training Medication Error RN confidence Administration may not see value Sustainability of program with current RN ratios Pool RN not available for training

Appendix I.

STAKEHOLDER ANALYSIS

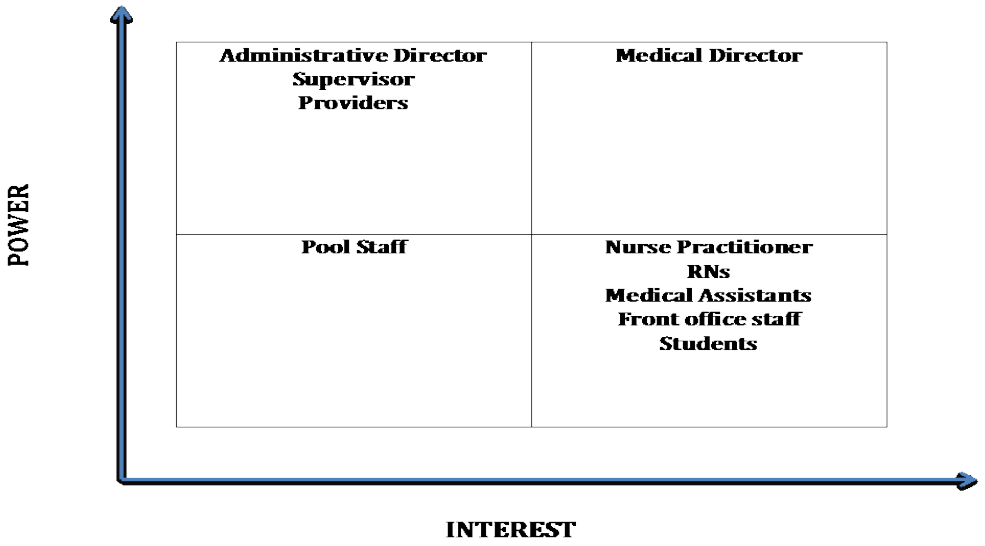


Figure 1. Demonstrates stakeholder interest versus power to influence success and sustainability of the project.

Appendix J.

Cost Analysis

RN Visit Model-Business Case

Step 1

Cost-RN II

Annual salary $56,000 (10 mos.)

Hours spent on project 220 x $35/hr. =7,700

$56,000-$7,700

=48,300 Annual cost 1st year

Step 2

Benefits to Employer:

- Improved patient flow
- Decreased patient wait times
- More available appointments for providers to see higher complexity patients
- Improved Contraceptive program-facilitate Long Acting and Reversible Contraceptive (LARC) procedures (IUD, Nexplanon).
- Decreased workload for providers when RN sees new patient (completes health history and problem list, addresses STI screening and contraceptive needs=Decreased Pap exam from 40 min to 20 minutes.

Step 3

Net Benefit RN-only visits

- Pool RN $32/hr./15 hrs. Wk. x 2weeks (30 hrs.)= $960 **(Pool coverage for 1:1 training)**
- Employee Cost (salary-project time) =$48,300
- Employee cost + Pool RN for cross-training = $49,260

NP/ MA

NP Salary $78,000/40 hr. week/10 mos.

MA Salary $30,000/40 hr. week/10 mos.= ($108,000)- $49,260

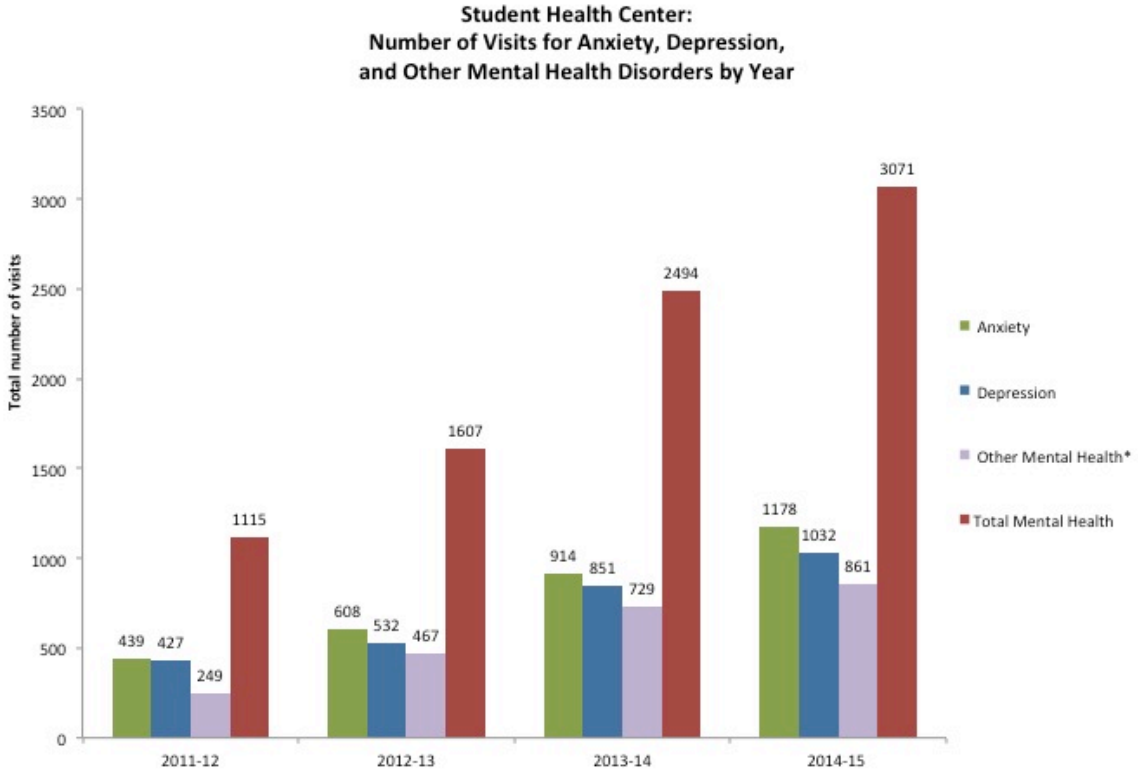
Net savings 1st year=$58,740

Step 4

Discussion

Having RNs trained to fill the role of a provider for lower acuity patients represents a significant cost savings for the student health center. In the first year a projected savings of $58,740 would be realized. Thereafter, if one RN continued to see patients independently, an annual savings of $52,000 would be seen. These figures do not take into account reimbursement rates accrued from Family Pact visits. While the nurse is reimbursed at a lower rate than a provider, available appointment time for providers is limited. When providers see lower acuity visits (such as contraceptive consults and birth control starts), appointment slots fill up quickly and increase the demand on acute care. This shift causes a downstream effect on clinic flow, creates false urgency in acute care, and increases the need for staff. As a result it becomes necessary to bring in costly pool providers and medical assistants to accommodate the volume of patients.

Appendix K.



(Figure 1. Figures demonstrate rising acuity and mental health trends since 2011)

Appendix L

Kotter's 8-Steps to Change

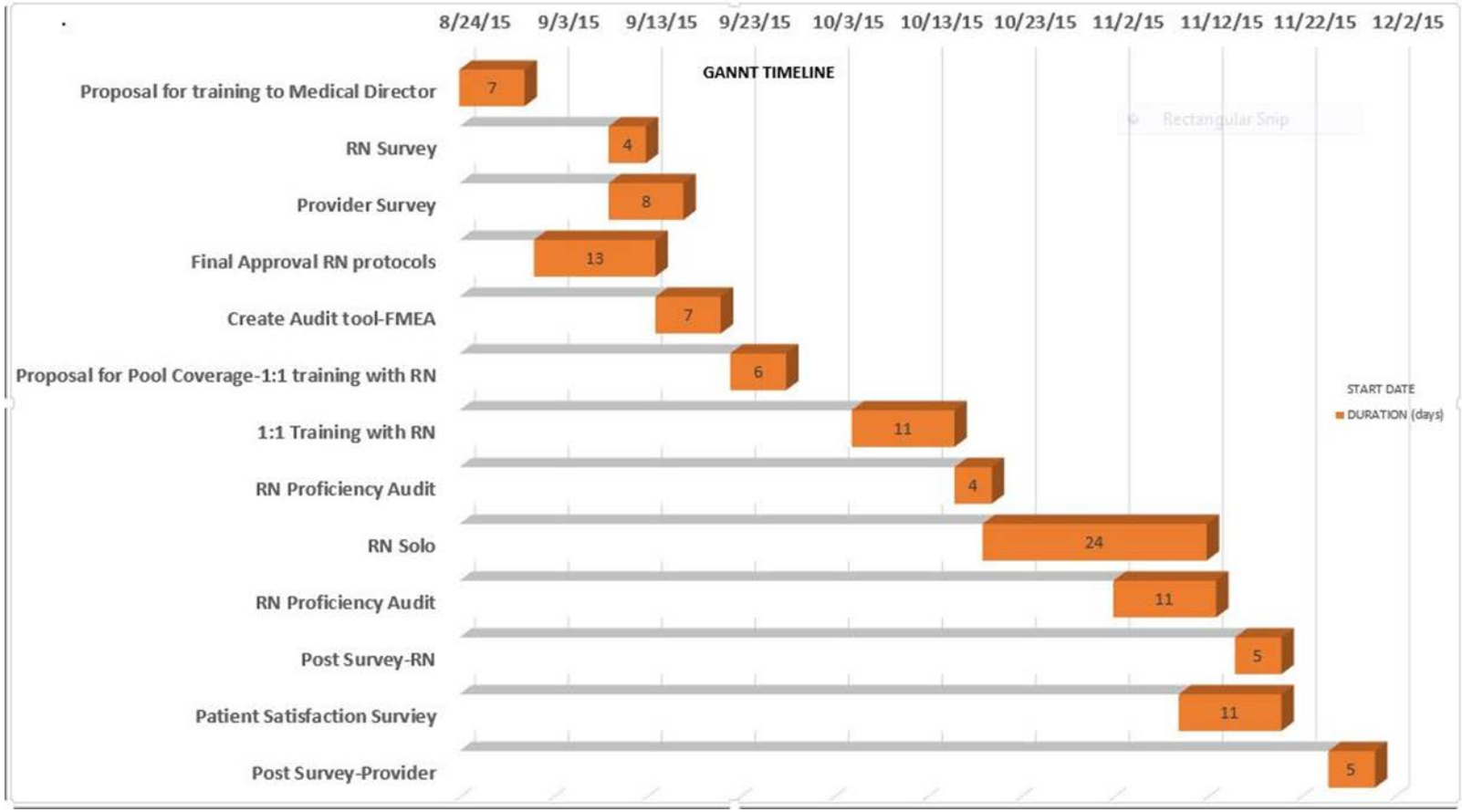
- **Step 1- Create a sense of urgency:** The student health center is the primary medical and mental health resource for our 8,600 students. There continues to be urgency in meeting the needs of our growing student population. During fall 2015 our campus welcomed over 1,400 new freshmen, the largest class in the history. While the amount of staff remains the same, patient acuity has risen including mental health needs, which have increased by 40% over the past few years. Because the university is located in a remote area there are limited resources in the community to refer students, this has created a mental health and health center crisis.
- **Step 2-*Create a guiding coalition*:** The RN visit team has been instrumental to the success of the RN visit program because it is multidisciplinary, thus there are multiple lenses to view the process. The health center has seen success with RN-visits over the past year for example, the RN saw over 1,100 patients that would have otherwise seen a provider. 1:1 training with another RN will further address the needs of our students in a timely manner.
- **Step 3- Form a strategic vision*:*** The vision is improved access to care and patient satisfaction by having an organization where all staff has the tools to work to the maximum scope of practice and who are supportive and collegial in creating policies that support the mission of the Student Health Center which strives to promote student success through education and prevention.
- **Step 4- Enlist a volunteer army:** Create a volunteer army by engaging providers, RNs and IT in a supportive process, from referral to the RN to consultation on individual

patients and through guidance and feedback. Work closely with IT analyst to create queries for data collection.

- **Step 5- Enable action by removing barriers**: Request pool coverage for training period (2 weeks). Provide intensive one-to-one training for the RN in order to instill comfort and proficiency with providing medication under standardized procedures. Share this success with providers and staff. Report statistics and survey results that validate improved access to care and patient satisfaction as well as audit results.
- **Step 6- Generate short term wins:** Training and collaboration will build confidence for the RN who will be able to care for a population of patients at the point of care, including triage-decreasing patient wait times and improving access to care and patient satisfaction.
- **Step 7- Sustain Acceleration:** Provide feedback daily, review accomplishments and identify areas for improvement. Validate Success with feedback from audits. Provide frequent updates for staff and providers and public recognition for the RN of accomplishments.

Step 8- Institute change: Having the RN trained and proficient in providing medication under standardized procedure, ultimately working to the top of their license will improve patient flow and patient satisfaction.

Appendix M



(Figure 1. Gantt RN visit training project timeline)

Appendix N

Standardized Procedure for Administration of Depo Provera (DMPA)

PROCEDURE: The approved RN will take a patient history and perform diagnostics tests if needed per the following protocol. The approved RN will administer treatment on a case by case basis as defined in the specific electronic medical record (EMR) template and per HSU SHC

SUBJECTIVE:

- Patient who desires DMPA over all other methods.
- Patient may not tolerate estrogen, or have a contraindication to its use.

OBJECTIVE:

- No contraindications for method
- Well Woman Exam and STI screening based on risk factors and current guidelines accepted by HSU/SHC.
- Pt is not pregnant. Pt with questionable menstrual history who has been sexually active should have a pregnancy test.

ASSESSMENT: Non-pregnant healthy female without contraindication to the use of DMPA.

PLAN: RN will provide 150 mg DMPA IM, with refills for one year. RN will complete the EMR and consult with a provider if any contraindications for DMPA apply.

Timing of Initiation: **The first DMPA injection can be given at any time if it is reasonably certain that the woman is not pregnant.** (See end of section)

Need for Back-Up Contraception

- If DMPA is started within the first 7 days since menstrual bleeding started, no additional contraceptive protection is needed
- If DMPA is started >7 days since menstrual bleeding started, the woman needs to abstain from sexual intercourse or use additional contraceptive protection for the next 7 days.

Special Considerations

Amenorrhea (not postpartum)

- **Timing:** The first DMPA injection can be given at any time if it is reasonably certain that the woman is not pregnant.
- **Need for Back-Up Contraception:** the woman needs to abstain from sexual intercourse or use additional contraceptive protection for the next 7 days.

Switching from Another Contraceptive Method

- **Timing:** The first DMPA injection can be given immediately if it is reasonably certain that the woman is not pregnant. Waiting for her next menstrual period is unnecessary.
- **Need for Back-Up Contraception:** If it has been >7 days since menstrual bleeding started, the woman needs to abstain from sexual intercourse or use additional contraceptive protection for the next 7 days

Timing of Repeat Injections

Reinjection Interval

- Provide repeat DMPA every 3 months (12 weeks)

Early Injections:

- Repeat DMPA can be given early when necessary

Late Injections:

- Repeat injection can be given up to 2 weeks late (15 weeks from last injection) without requiring additional contraceptive protection.
- If the woman is >2 weeks late (>15 weeks from the last injection), she can have the injection if it is reasonably certain she is not pregnant. She needs to abstain from sexual intercourse or use additional contraceptive protection for the next 7 days. Consider EC.

1. Patient education:
   a. Patient issued the printed patient information/package insert.
   b. If Depo is given within 5-7 days of normal LMP or when switching from another effective contraceptive method, Depo is effective within 24 hrs and no back-up method is needed, otherwise advise back-up x 7 days and offer condoms.
   c. Medication is an injectable and cannot be removed for three months, so if side effects develop, they may persist the entire three months.
   d. Break-through bleeding and weight gain are among potential side effects.
   e. Risk of shots in general, including anaphylaxis, discomfort, skin changes, discoloration, or sterile abscess.
2. Complications:
   a. See adverse reactions under follow-up, and information sheet.
   b. Accidental pregnancy or ectopic pregnancy.
3. Consultation/Referral:
   a. Adverse reactions.
   b. 17 or more weeks since last Depo-Provera injection.

How To Be Reasonably Certain that a Woman Is Not Pregnant

A health care provider can be reasonably certain that a woman is not pregnant if she has no symptoms or signs of pregnancy and meets any **one** of the following criteria:

- Is ≤7 days after the start of normal menses
- Has not had sexual intercourse since the start of last normal menses
- Has been correctly and consistently using a reliable method of contraception
- Is ≤7 days after spontaneous or induced abortion
- Is within 4 weeks postpartum
- Is fully or nearly fully breastfeeding (exclusively breastfeeding or the vast majority [≥85%] of feeds are breastfeeds), amenorrheic, and <6 months postpartum

REFERENCES:

1. Depo-Provera package insert, June 2002
2. Contraceptive Technology, 20th ed, 2011
3. US Selected Practice Recommendations for Contraceptive Use, 2013
4. US Medical Eligibility Criteria for Contraceptive Use, 2010

(Figure 1. Updated Depo-Provera Standardize procedure)

Appendix N.

Student Health Center
DEPO-PROVERA®

What is Depo-Provera®?
Depo-Provera® is a long acting hormonal form of birth control. It contains medroxyprogesterone acetate (DMPA), which is similar to the natural progesterone produced by the ovaries during the second half of the menstrual cycle. It is given by injection (shot) in the buttock or upper arm muscle. Injections must be received on a regular basis every 11-13 weeks. It is one of the most effective methods of birth control available. When injections are received every 11-13 weeks, the effectiveness rate is over 99%. This means the average annual pregnancy rate is less than 1 per 100 women. This effectiveness rate with typical use is equal to that of tubal ligation and the IUD and more effective than birth control pills.

How does Depo-Provera® work?
Depo-Provera® works because it prevents the release of an egg from the ovary. Thus, there is nothing to be fertilized by the sperm and a pregnancy cannot occur. Also, cervical mucus is thickened which interferes with sperm transport and the lining of the uterus is thinned, making it less hospitable to a fertilized egg should ovulation occur.

Who Cannot Use Depo-Provera®?
Each woman should be evaluated individually. Determining factors include past medical history, family history, and findings of a physical exam. A woman should not receive a DMPA injection if she:

- thinks she might be pregnant
- has had vaginal bleeding without a known cause and has not been medically evaluated
- is actively receiving treatment for or has a history of breast cancer or cancer of the cervix, vagina, or uterus
- has a known allergy to medroxyprogesterone acetate or any of its ingredients

Advantages	**Disadvantages**
Safe, long acting, highly effective contraception	No protection against sexually transmitted infections
No pills to take	Menstrual Changes
Does not contain estrogen	May cause moodiness or depression
Reversible	May experience an increased appetite
Decreased risk of anemia	May be a delay in return to fertility
Can be used by nursing mothers without impacting milk supply	Cannot discontinue immediately
May decrease pain associated with ovulation, menstruation, and endometriosis	Changes in bone density
Decreases risk of endometrial cancer and ovarian cancer	You have to go to a health care provider every 12 weeks to get another shot
You can use it without others knowing	
Reduced risk for tubal pregnancy and pelvic inflammatory disease	

Appendix N.

Student Health Center
DEPO-PROVERA®

NOTE: DMPA does not provide any protection against sexually transmitted infections. Women are urged to use condoms consistently to decrease risk of STI transmission.

STARTING DEPO-PROVERA®

If Depo Provera is started within the first 5-7 days of the menstrual cycle, no back up contraception is needed. Depo can be started anytime during cycle as long as the woman is reasonably certain she is not pregnant. If Depo Provera is given after the first week of the menstrual cycle, back up contraception is needed for one week and a pregnancy test a few weeks later to diagnose pregnancy in a timely fashion.

Repeat Injections
When you receive the first injection, you will be given a date 11-13 weeks later. This is the date your next injection is due. You may receive your injection earlier if necessary, consult with your provider or nurse. However if you have not received your injection within 13 weeks after the last injection, you must immediately begin using an alternative method of birth control or abstain from intercourse. Pregnancy testing will be required before you can receive another Depo-Provera® injection. To schedule an appointment, call the Student Health Center at 826-3146.

SIDE EFFECTS

Depo-Provera® has several potential side effects. Each women's response to the medication will differ, depending on her own body chemistry. It is important to remember that once the medication is injected, side effects cannot be neutralized or reversed.

Side effects include:

- **Menstrual Changes** – This is the most common side effect experienced. The amount of bleeding may vary from irregular or unpredicted spotting to no bleeding at all. With increased duration of use, frequency and length of bleeding episodes will decrease. In clinical frequency studies, 55% of the women reported no menstrual bleeding after one year of use. Occasionally women will experience daily bleeding or bleeding may be heavier than a usual period – this should be reported to the healthcare clinician.
- **Bone Density** – Changes in the bone density may occur due to a decreased amount of calcium stored in the bones. Studies have shown that these changes are reversible and do not increase risk for fractures in healthy individuals. Smoking may further decrease the levels of calcium stored in the bones. It is very important that your diet contain adequate calcium intake (1200-1500mg per day). Calcium supplements may be used if one cannot attain the recommended dietary intake.
- **Depression** - Depo-Provera® may cause moodiness and feelings of depression. This may worsen in women who have had depression in the past and may make it more difficult to actively treat depression. If a women is on antidepressant medication, she should discuss this carefully with all of her healthcare providers.
- **Weight Gain** – Depo-Provera® users may experience an increased appetite. The average

Appendix N.

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weight gain is approximately five pounds in the first year and eight pounds after two years of use. A healthy diet and regular exercise will help decrease weight gain.

Other side effects may include:

- Increased headaches
- Decreased sex drive
- Breast tenderness
- Acne
- Abdominal/pelvic cramps
- Bloating
- Hair loss or slowed hair growth
- Vaginal dryness
- Fatigue
- Insomnia

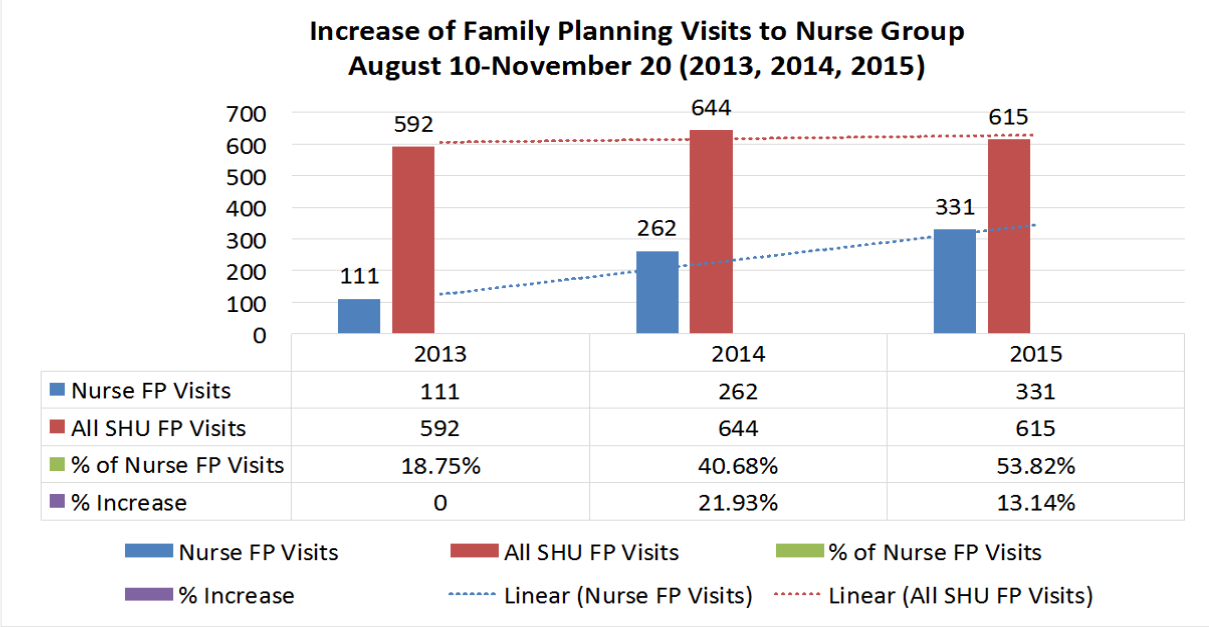
See your healthcare provider right way if you have any of the following symptoms:

- Prolonged, heavy vaginal bleeding
- Severe lower abdominal pain
- Chest pain, shortness of breath
- Repeated, painful headaches
- Unusual swelling or pain in the leg
- Breast lumps
- Depression

These symptoms need to be evaluated, although they may or may not be related to the use of DMPA

(Figure 2. Updated patient education handout)

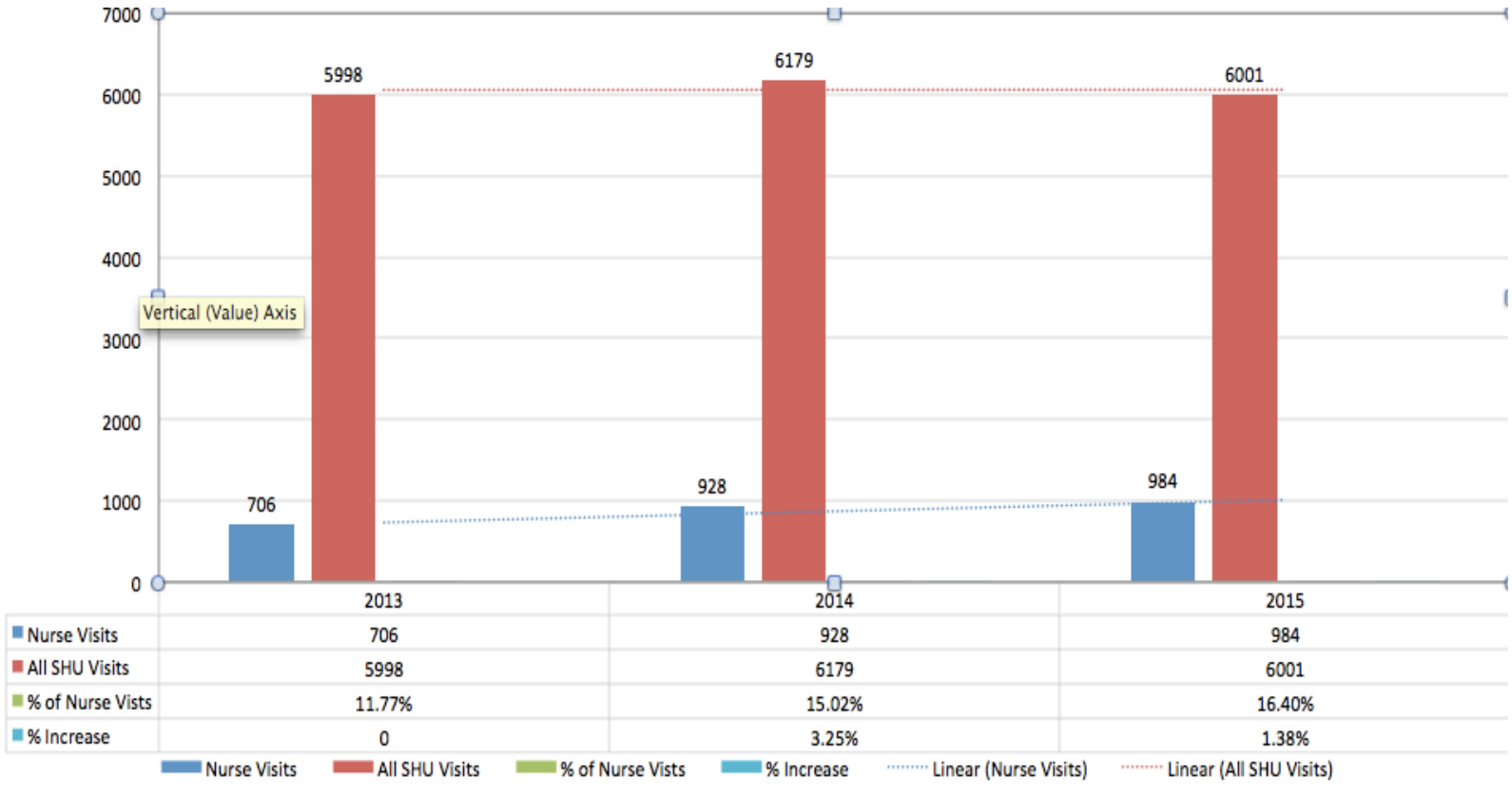
Appendix O



(Figure 1. Data showing rising trend in RN only visits for family planning services)

Appendix O

Total RN only visits August 10-November 20 (2013, 3014, 2015)



(Figure 2. Diagram demonstrating rise in total Nurse Visits for the past three years)