

DEVELOPING EDUCATIONAL MATERIALS ABOUT INTRAUTERINE DEVICES  
FOR A RURAL, FEDERALLY-QUALIFIED HEALTH CENTER

by

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April, 2012

DEDICATION

I dedicate this paper to my husband for aiding me on my journey through graduate school, both financially and emotionally, and to my daughter Clara, who has taught me the value of quality time management. Clara was born May 3, 2010 two semesters into the FNP program. I will never forget the final in pediatrics and women's health on May 2, 2010. Thanks to my parents Kim and Chris Kay for many late-night phone calls about the difficulties of graduate school, and for being proud of me for being the first in the family to pursue and complete a master's degree.

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## ABSTRACT

The author developed an educational brochure that compared two FDA-approved IUDs in the United States along with a flow sheet that provided information about insurance coverage. The flow sheet was designed to aid the nursing staff in obtaining optimal financial compensation for the IUD placement procedure. The FORCAST test and the Center for Disease Control publication "Simply Put" was used to obtain the readability level for this project. An appropriate readability level for the patients was established. The brochure and flow sheet were given to the rural Federally Qualified Health Center to be implemented as desired.



## CHAPTER 1: INTRODUCTION

Purpose of the Project

The purposes of this project were to: 1) design and implement an educational brochure for patients of a small Federally Qualified Health Center (FQHC) in rural southwestern Montana; and 2) develop a protocol for the nursing staff to follow when screening patients interested in using an intrauterine device for contraception.

Background Significance

The author met with the administrator, the pharmacist, and staff nurses at a rural FQHC in southwestern Montana. The purpose of the meeting was to identify educational needs of staff and patients. The representatives from the FQHC determined that one of the areas of need was a resource for staff to assist providers when a patient expresses interest in an intrauterine device (IUD). After further discussion it was determined that the nursing staff was unsure about how to respond to women's questions about cost of and use of an IUD for contraception. The components of the project included a complete literature review and the development of an educational brochure entitled *Patient Educational Brochure about IUDs* (Appendix A), utilizing principles of health literacy. Additionally, a flow sheet entitled *Health Care Provider Information Regarding IUD Insurance Coverage* was created for the staff nurses (Appendix B).

### Operational Definitions

Federally Qualified Health Center: The Federally Qualified Health Center (FQHC) is government designation for a health care facility and is defined as “.... an entity that serves a population that is medically underserved, or a special medically underserved population comprised of migratory and seasonal agricultural workers, the homeless, and residents of public housing, by providing services, either through the staff and supporting resources of the center or through contracts or cooperative arrangements (“About Health Centers”, 2011).” As a result of this designation the clinic must provide all available services to patients, regardless of the person’s ability to pay. This FQHC is located in southwestern Montana.

Service components of a FQHC include but are not limited to: basic health services, family medicine, internal medicine, pediatrics, obstetrics, and gynecology. Within these specialties are diagnostic laboratory and radiologic services, preventive health services, voluntary family planning services, emergency medical services, and pharmaceutical services (“Primary Care”, 2011). Other pertinent services to a FQHC, which may not necessarily be considered physical health, include referrals to substance abuse and mental health services. Case-management services designed to aid patients with obtaining access to local, state, and federal programs specific to their needs and educational programs are also important services. In addition, translator and transportation services are also to be provided if needed in a community (“Primary Care”, 2011).

Health literacy: “Health literacy is defined as the degree to which individuals have the capacity to obtain, process and understand basic health information needed to make appropriate health decisions and services needed to prevent or treat illness (“About Health Literacy”, 2011, para. 1).” Individuals who are most at risk for low health literacy: Older adults, Minority populations, those who have low socioeconomic status and medically underserved individuals (“About Health Literacy”, 2011, para. 2).

Problems for individuals with low health literacy include: “ Locating providers and services, filling out complex health forms, sharing their medical history with providers, seeking preventive health care, knowing the connection between risky behaviors and health, managing chronic health conditions and understanding directions on medicine” (“About Health Literacy”, 2011, para. 3).

Readability: In order to establish a reading level the author applied the FORCAST readability formula to the educational brochure. In addition to the FORCAST Test, the CDC publication *Simply Put* was utilized to aid in the readability of the text. *Simply Put* has guidelines on font size, sentence length and formatting; the goal of *Simply Put* is to ensure patient understanding of the presented information (“Simply put: A,” 2009).

Intrauterine Device: According to the article *The IUD: An Important Method with Potential* (2006), “The intrauterine device (IUD), a flexible frame that fits inside a woman’s uterus, provides very effective, safe, and long-term yet quickly reversible protection from pregnancy.” In the United States there are currently two FDA-approved

IUDs. They are: 1) Mirena, which is effective for 5 years, and 2) the copper T 380A, which is effective for 10 years (Mishell, 2004).

## CHAPTER TWO: LITERATURE REVIEW

A comprehensive literature search was conducted over the course of the project. The literature review addressed the following areas: the history of pregnancy prevention, the various methods of pregnancy prevention, including the benefits and contraindications for each method of pregnancy prevention and health literacy.

### History of Birth Control

#### Pre-Industrialization (pre-1900)

Throughout the generations, women have been using many different forms of birth control and contraceptives. For example, London (1982) states:

Contraceptive methods include: withdrawal by the male; melting suppositories designed to form an impenetrable coating over the cervix; diaphragms, caps, or other devices which are inserted into the vagina over the cervix and withdrawn after intercourse; intrauterine devices; douching after intercourse designed to kill or drive out the sperm; condoms; and varieties of the rhythm methods (para. 12).

Infanticide and abortifacient are forms of birth control mentioned in this period which would seem morally unacceptable in modern-day American society. 'Infanticide' is the act of putting infants to death just after birth. Infanticide occurred in many countries in the world for many years up until the eighteenth century, and beyond in many unindustrialized societies (London, 1982, para. 5). One reason was population control. There are a few examples in which female infants were killed and male infants were allowed to live as they were more desirable for the function of the society. There are no examples in which the opposite occurred (London, 1982). It is interesting to note that

societies this was not considered an immoral practice in pre-industrialized; in fact, infanticide was considered quite normal. In more recent times, there have been instances of infanticide; however, they have become the exception to the rule, as laws in industrialized nations prevented this practice (London, 1982).

‘Abortifacient’ is a method of inducing an abortion of the fetus in a pregnant woman. In 1765 it was thought that life began at quickening, or when the fetal moments are felt for the first time (McLaren, 1981). One such method is using, for example, a compound called Savine (or pennyroyal and myrrh); these compounds were meant to induce menses during the 17<sup>th</sup> and 18<sup>th</sup> centuries in England (McLaren, 1981). It was also thought that a woman taking a compound called Psysick would prevent pregnancy and, in the case example, it was, in fact, successful (McLaren, 1981).

#### Emergence of the IUD (Post-1900)

Sivin & Batar (2010) reported, “Richard Richter and Ernst Gafenburg pioneered the development of intrauterine devices (IUDs) as contraceptives....” They not only created the device; they also pioneered insertion methods and the troubleshooting of treatment problems. “... Gafenburg was the first to provide rates for key events following insertion such as pregnancy, expulsion and infection” (p. 97).

Sivin & Batar (2010) also report some of Gafenburg’s statistics: “Overall infection rate (2.9%), expulsion rate (8.9%). The pregnancy rates Gafenburg observed were noted for two types of IUDs. Pregnancy rate in the silk ring was 3.1% and the silver ring was 1.6%” (p. 97).

Between 1933-1934 Ota (a Japanese IUD researcher) further refined the IUD design by utilizing a solid disc in the center of a metallic ring connected with spokes. Research on the IUD was largely suspended after Ota's findings due to the start of World War II (Sivin and Batar, 2010, p. 97).

In 1959, momentum was once again achieved to continue research and development on IUDs following the publishing of Oppenheimer (1959) and Ishihama (1959) papers, which praised the silk ring and Ota's disk, respectively. Another major advancement was the development of strong, durable plastics in the post-war era. The new plastics allowed for experimenting with new shapes that could be flexed to fit through the cervical os and then resume their previous shape (Sivin and Batar, 2010).

In 1965 contraception was legalized in the United States, opening the door further for research and public demand. Sivin & Batar (2010) noted that Jack Lippes invented the Lippes Loop in the mid-1960s. The Lippes Loop was unique because it was connected to a monofilament thread, which served two purposes: first, to ease removal and second, to enhance the woman's knowledge that the IUD was still in place. The Lippes Loop was the most widely used IUD in the world outside of China at the time. Jack Lippes did not make a profit on his invention; he assigned it for public sector use instead (Sivin and Batar, 2010, p. 97).

The Lippes Loop was sold for \$0.08 a unit to the United States government. In turn the Lippes Loops were provided to international aid and nonprofit organizations for the next 20 years (Sivin and Batar, 2010).

Also during the 1960s Ernst Grafenberg's associates developed a stainless steel ring. The stainless steel IUD was the preferred IUD option in China. During this time, an undetermined incidence rate of pelvic infections were noted (Sivin and Batar, 2010, p. 98).

Sivin and Batar (2010) reported that Christopher Tietze studied plastic IUDs and found that the size of these was inversely proportional to the continuation rate, while directly proportional to the effectiveness. As the size of the IUD increased, overall effectiveness increased and, at the same time, the continuation rate decreased. Similarly, as the size of the IUD decreased, effectiveness decreased and discontinuation rates decreased (p. 98).

One of the reasons IUD use was low in the United States as compared to other countries is that during the 1970s the Dalkon Shield IUD was associated with birth defects, miscarriages, and higher infection rates. Bacteria traveled up the thread of the Dalkon Shield IUD, into the uterus. The Dalkon Shield was associated with 18 maternal deaths (Monchek, 2010, para. 5).

Howard Tatum developed a small, T-shaped, plastic device that fit both comfortably and effectively into the uterus. This IUD had a pregnancy rate of 18% (Sivin and Batar, 2010, p. 98). Howard Tatum, along with colleague Jamie Zipper, began experimenting with copper wire on the plastic IUD. They noticed that pregnancy rates decreased when this component was added. Ultimately the surface area of the IUD they developed ended at  $200 \text{ mm}^2$  with pregnancy rates of 2 or 3%, similar to the larger Lippes Loops (Sivin and Batar, 2010).



### Present-Day IUDs

Tatum, along with Harold Nash, continued experimenting with copper and IUD shapes. Tatum and Nash eventually invented the TCu220C and the TCu380C IUDs. These IUDs were then assessed in large, randomized trials and it was found that the TCu380C was most effective. It continues to be the non-hormonal IUD, against which new IUDs are tested to this day (Sivin and Batar, 2010, p. 98). The trade name for Paragard is T380A. The TCu380c has been on the market since 1988 (Monchek, 2010, para. 6).

Mirena IUD is currently the only FDA-approved IUD that uses levonorgestrel since 2001 (Monchek, 2010 para. 6). The Mirena IUD has a similar side effect profile to other progesterone contraceptives, such as the progesterone-only, oral contraceptive (Thomas, Porter & Winland-Brown, 2007, p. 655-656).

### Methods of Present-Day Birth Control

Birth control takes many forms. There are oral contraceptives, intra-vaginal rings, transdermal patches, barrier methods, various timing methods, sterilization, and intrauterine devices (IUD). IUDs are 99% effective for preventing pregnancy and have been shown to be protective against endometrial cancer (Monchek, 2010, para. 9). IUDs are as equally effective as taking oral contraceptives with 100% compliance. Of course because humans are imperfect, not all people take medications perfectly and so there is room for error. IUDs are used all over the world; in fact, many European countries have much higher use rates of IUDs than the United States, which has about a 2% usage rate.

In other countries the IUD use in fertile women is greater than twenty five percent (Monchek, 2010, para. 9).

To understand the scope of the benefits related to intrauterine devices one must first be familiar with birth control options as a whole. This section will outline the options for birth control by classification and the pros and cons for each classification of contraceptives.

### Barrier Contraception

Barrier methods include male and female condoms, diaphragms, cervical caps, sponges, and spermicide (nonoxynol-9). None of these methods contains hormones. These methods prevent fertilization by physically preventing sperm from entering the cervix. Spermicide immobilizes and kills sperm in the vagina (Thomas, Porter & Winland-Brown, 2007, p. 648-652).

Pregnancy rate in the first year of spermicide use is only 2 to 30%. Spermicides come in jellies, foams, creams, and suppositories. Spermicide can be used in conjunction with condoms, sponges, diaphragms, or caps (Thomas, Porter & Winland-Brown, 2007, p. 652). Drawbacks include a high incidence of pregnancy, vaginal or penile irritation, and allergic reactions. Spermicides provide limited to no protection against sexually-transmitted pathogens, such as Human Immunodeficiency Virus, Human Papilloma Virus, Neisseria gonorrhoea, and Chlamydia (Thomas, Porter & Winland-Brown, 2007, p. 652).

Male condoms are a single-use method and are the most commonly used barrier method (Thomas, Porter & Winland-Brown, 2007, p. 648). They are readily available in

various colors, flavors, constancies, and are easily utilized. Failure rate is 3 to 12% when used correctly. When used in conjunction with a spermicidal agent, failure rate decreases to less than 1% (Thomas, Porter & Winland-Brown, 2007, p. 648).

Female condoms can be purchased over the counter for one-time use and are made of seamless polyurethane. They are loosely fitted in the vagina; the material extends beyond the vaginal opening and covers the perineum. As a result of the physical barrier between the penis and the vagina, there is a decreased risk of obtaining a sexually transmitted disease. The failure rate is 5 to 21%. Many patients find this method cumbersome to use (Thomas, Porter & Winland-Brown, 2007, p. 649). Both male and female condoms, if used correctly, prevent transmission of sexually-transmitted pathogens. Drawbacks include allergic reactions, genital irritation, inconvenience, the possibility of the condom breaking, and the requirement that the motivation for use must be mutual between partners (Thomas, Porter & Winland-Brown, 2007, p. 649).

Diaphragms are made of flexible latex in a dome shape that fits over the cervix. Diaphragms are reusable, but must be rinsed after each use. If this method is used correctly and along with a spermicidal agent, it has a 2 to 20% failure rate. There is an increased chance of obtaining a urinary tract infection; as a result, women should be instructed to urinate before insertion and after removal. Some women find it difficult to place properly; additionally, allergic reactions, displacement, and genital irritation can occur. This method provides limited protection against sexually-transmitted pathogens (Thomas, Porter & Winland-Brown, 2007, p. 649).

Cervical caps are cup-shaped plastic or rubber devices that cover the cervix. Failure rate is 2 to 20%. Cervical caps are also used in combination with spermicide. The cons of cervical caps are similar to those associated with the diaphragm. Cervical caps should not be used longer than 12 to 18 hours at a time or during menstruation, due to a slightly increased risk of Toxic Shock Syndrome. This method is not to be used by women with abnormal pap smears. Three months after initial use of a cervical cap, a pap smear should be taken (Thomas, Porter & Winland-Brown, 2007, p. 652).

Sponges are spermicide-treated and are made of polyurethane. These only protect against pregnancy, and not against sexually-transmitted infections. A sponge is a one-size-fits-all item which needs to be rinsed under tap water prior to insertion. It is removed and disposed of after use. Negatives include possible displacement, irritation, inability to use during menses, and a slightly increased risk of toxic shock syndrome if worn in place for more than twenty-four hours (Thomas, Porter & Winland-Brown, 2007, p. 652).

### Hormonal Contraceptive Agents

There are several hormonal contraceptive agents available in various combinations and strengths. Hormonal contraceptives are obtained by prescription only. Administration methods include oral tablets, injections, implants, transdermal patches, and vaginal rings (Thomas, Porter & Winland-Brown, 2007, p. 652). This section will be divided into progesterone-only contraceptives and combination contraceptives (estrogen and progesterone).

Combination Contraceptives. Oral contraceptives are available in a combination of progestogen and estrogen, or as progestogen-only formulas. The most common oral contraceptive dispensed is a four-week cycle of combination pills. There are three weeks of tablets with hormones and one week of inert tablets. When a woman is taking the inert tablets, she would normally menstruate. There are also formulations where the woman only menstruates four times a year. These tablets are taken once a day, every day, for as long as a woman chooses to remain infertile. Oral contraceptives are largely influenced by patient adherence to taking the pills daily (Thomas, Porter & Winland-Brown, 2007, p. 652-653). If taken perfectly, the failure rate is less than 1%, making this a preferable option for women who are able to take the tablets every day. Factors that decrease effectiveness are concomitant use of certain medications, such as anticonvulsants and barbiturates. Drawbacks include an increased risk of thrombosis, increased blood pressure, headaches, cervical dysplasia, and weight gain. If a tablet is missed, a backup birth control method must be used to prevent pregnancy (Thomas, Porter & Winland-Brown, 2007, p. 652-653).

Patches are similar to the oral contraceptive; the only difference is the delivery system. Patches also utilize a combination of hormones. A patch is placed on the skin for one week, then removed and replaced with another for a total of three weeks, then the patch is removed, the woman has menses, and finally a patch is placed on the skin again the following week (Thomas, Porter & Winland-Brown, 2007, p. 653).

Contraceptives with Progesterone. Progesterone-only oral contraceptives are available for women who have migraines or severe headaches, hypertension, are over the age of forty, use tobacco, or are breastfeeding. Again the efficiency is based on the woman's adherence to taking the tablets regularly; if one or more tablets are missed, a backup birth control method must be used to prevent pregnancy (Thomas, Porter & Winland-Brown, 2007, pp. 652-654).

Depo-Provera injections are deep intramuscular deposits of synthetic progestogen-only hormone. These injections are to be given once every three months. This method is 99.7% effective. Patients using this treatment should know that they need to take 1200-1500 mg of calcium each day to prevent bone loss, which has been observed in patents using this treatment longer than five years. It may also take a patient eight to nine months to resume fertility after treatment has been discontinued (Thomas, Porter & Winland-Brown, 2007, p. 655).

#### Rhythm Method of Contraception

Freundl, Sivin, & Batár, (2010) described the calendar, or rhythm, method of contraception when the woman “documents the longest and shortest durations of her cycle over a period of 6-12 months so that the usual timing of ovulation within a cycle can be estimated” (p.113). Basal body temperature method is the method in which the woman “measures her temperature once a day, usually first thing in the morning, using a special thermometer. Elevated readings lasting for at least three days indicate that ovulation is likely to have occurred” (p.113). The ovulation method “assesses her cervical mucus secretion throughout the cycle. On the day she first notices cervical secretions that

are too wet, slippery, transparent, and stretchy, she should avoid intercourse. The day when this type of secretion is most abundant is the peak day. The woman is judged at risk of pregnancy until three full days have passed after the peak day” (Freundl, Sivin, & Batár, 2010, p.113). Post-coital control is considered to be when the penis does not ejaculate into the vagina (Thomas, Porter & Winland-Brown, 2007, p. 655).

### Surgical Sterilization

Surgical sterilization is available for males and females. These forms of birth control are intended to be permanent. In the case of male sterilization the Vas deferens is surgically severed, preventing a pathway for sperm to exit the testicles and enter the vagina during intercourse. Tubal ligation for females is a surgical procedure by which a woman’s fallopian tubes are surgically cut and then tied, disrupting the route of the egg to the uterus (Thomas, Porter & Winland-Brown, 2007 p.656).

### Intrauterine Devices

Pazol, Kramer & Hogue (2010) report that intrauterine devices are extremely effective in preventing pregnancy in fertile women. Condom use should be considered for adjunct use along with a highly effective method of birth control (such as an IUD or oral contraceptives), as IUDs do not prevent the spread of sexually-transmitted infections.

IUDs are appropriate for women who do not have an acute pelvic inflammatory disease, purulent cervicitis, or who are pregnant. Women with a history of pelvic inflammatory disease, menorrhagia or severe dysmenorrhea, cervical or uterine neoplasia, or who have an abnormal uterus will require close monitoring are recommended to use

an IUD for contraception. All other women, including nulliparous women, are most likely good candidates for an IUD (Thomas, Porter & Winland-Brown, 2007, p.655).

Two types of IUDs are currently available: Paragard, a copper-only IUD, and Mirena, which contains levonorgestrel. Neither of these IUDS have the serious adverse reactions associated with insertion and use. The inflammation caused by IUDs prevents fertilization. In the case of the Mirena, the levonorgestrel thickens cervical mucus, resulting in reduced sperm motility. The hormone also disrupts ovulation (Ferro & Mann, 2005).

IUDs can be placed after the delivery of a child during the same hospital stay as the delivery. Post-placental delivery insertion of an IUD has just over a 12% expulsion rate within the first year of use (Çelen, Möröy, Sucak, Aktulay, & Danişman, 2004). Placement of an IUD early on is considered safe and effective. Factors that influence postpartum use of contraceptive include advanced age and high gravida (Adegbola, & Okunowo, 2009).

### Emergency Contraception

The term 'emergency contraception' refers to taking a medication or initiating an IUD after unprotected intercourse has occurred and prior to implantation (Bastianelli, Farris & Benagiano, 2008, p. 9). An early method of emergency contraceptive was a combination of ethinyl estradiol and levogesterol in tablet form, taken two times at a 12-hour interval (Benagiano, Bastianelli and Ferris, 2006, p. 25). Mifepristone, another medication used for emergency contraception, may be initiated up to 120 hours after intercourse. Benagiano, Bastianelli and Ferris (2006) reported that 10 milligrams of Ru-



486 is considered to be as effective as the Mifepristone. When given immediately and repeated once in 12 hours 600 milligrams of levonorgestrel is also considered effective emergency contraception (Benagiano, Bastianelli and Ferris, 2006, p. 25).

Copper IUDs are also a method of emergency contraception; it is noteworthy that copper IUDs have been used for emergency contraception for the past 30 years.

Bastianelli, Farris & Benagiano (2008) reported that copper IUDs can be inserted up to five days after unprotected intercourse, at any time in the menstrual cycle, and the probability of pregnancy is reduced by 99% if a less than 300 mm<sup>2</sup> copper IUD is used (p.13).

Levonorgestrel IUDs are not appropriate for use as emergency contraception, as the amount of levonorgestrel released is not enough to prevent implantation (Ferro & Mann, 2005).

### Medication-Induced Abortions

Current medication-induced abortion practices in the United States include use of Mifepristone or methotrexate in early abortions. Jones and Kooistra (2011) reported:

The incidence of abortion in the United States declined for more than a decade, but this trend may be ending, or at least leveling off. Nationwide, the number of abortions peaked in 1990, at 1.61 million, and dropped 25%, to 1.21 million, by 2005 (p. 46).

Women who sought to obtain an abortion could do so at an abortion clinic or a non-specialized clinic. Jones and Kooistra reported that “Slightly more than half of early-medication abortions were administered at abortion clinics, and most of the rest by non-

specialized clinics. Physicians' offices averaged about two medication abortions per month and accounted for only 2% of all such procedures" (p.46).

### Health Literacy

Berkman et. al. (2011) defined health literacy as "a set of skills that people need to function effectively in a health environment" (p.97). Skills required to function effectively in a health environment include reading, the use of quantitative information, and understanding oral language as evidenced by being able to speak and listen effectively. This combination of skills is required for interpreting medical advice. Individuals with low health literacy may not understand and interpret medical advice as it is intended (Berkman et. al., 2011)

Berkman et. al. (2011) also reported:

Approximately 80 million U.S. adults are thought to have limited health literacy, which puts them at risk for poorer health outcomes. Rates of limited health literacy are higher among elderly, minority, and poor persons and those with less than a high school education (p. 97).

Additionally, Kutner, Greenberg, Jin & Paulson (2006) reported that:

Health literacy is a new component of the 2003 National Assessment of Adult Literacy (NAAL). NAAL assessed the English literacy of adults (ages 16 and older) in the United States. (p. 2).

The NAAL assesses adult comprehension of written information. Given that health literacy that only 12% of the United States population had a proficient health literacy level and 22% of adults had a basic health literacy level (Kutner, Greenberg, Jin & Paulson 2006). Many more individuals in the United States have a less than adequate

health literacy level, and now nationally the NAAL is attempting to measure the health literacy level to identify areas of weakness.

Kutner, Greenberg, Jin & Paulson (2006) reported that many factors were associated with higher or lower health literacy levels. “Women had higher average health literacy than men; 16 percent of men had *Below Basic* health literacy compared with 12 percent of women” (p. v.). Factors that correlated with increased health literacy level include adults who have private health insurance; another predictor of increased health literacy was self-reports of perceived health compared to individuals’ health literacy level scores. As self-assessments of health improved, health literacy level was assessed to be higher (p. 16). The only well-insured groups in which health literacy rates were significantly lower were “adults who received Medicare or Medicaid” (p. v).

Health literacy level greatly influences from where a person receives health information. Kutner, Greenberg, Jin & Paulson (2006) stated:

A lower percentage of adults with *Below Basic* health literacy than adults with *Basic*, *Intermediate*, or *Proficient* health literacy got information about health issues from any written sources, including newspapers, magazines, books or brochures, and the Internet. A higher percentage of adults with *Below Basic* and *Basic* health literacy than adults with *Intermediate* and *Proficient* health literacy received a lot of information about health issues from radio and television (p. v).

Understanding where a person receives health-related information and how they use it is useful when determining how to present information. A healthcare provider would not want to give a person with a below-basic health literacy level multiple pages of wordy, medical jargon-laden materials to educate the patient on his or her disease process.

Important themes emerge in the health literacy literature regarding patient education. It is important to limit messages per document, use visual aids whenever appropriate, test the complexity of the language, and know your target audience (“Simply Put,” 2009). Overcrowding a document with information is another way a person with low health literacy is likely to be confused. It is important to keep wording legible, concise and ordinal; the goal is to keep the patient’s interest without losing the patient in jargon and document length. These principles, as well as readability level, are crucial for communicating effectively with patients (“The Health Literacy,” 2005). Healthcare professionals can do many things to improve patient comprehension of health-related materials, including identifying patients with low literacy levels, from different ethnic backgrounds, different ages, and from different cultural groups. Using simple language and organizing the information so that important points stand out is helpful (Simply Put,” 2009). Asking open-ended questions, use of the teach-back method, using universal symbols in the clinic or office environment, and offering patients help when filling out complex forms are some simple solutions a healthcare provider can adopt which can improve patient comprehension (About Health Literacy, 2011, para.7).

### Readability

“About one third of Americans have trouble reading and acting on health related information (“Simply Put,” 2009, p. 3). Burke and Greenburg (2010) reported that “Readability formulas provide a quick, objective way to assess initial difficulty of text, and they offer a good starting point for matching readers with appropriate reading

material” (p.34). There are several tests that assess readability, and three frequently used assessments are the Gunning FOG test (Wise, 2002) the SMOG, Flesch Reading Ease test, and the Flesch-Kincaid test (Burke and Greenburg, 2010). Typically the readability tests look at sentence and vocabulary difficulty. “The majority of readability measures assess sentence and paragraph structure in printed materials that are presented in a narrative format (Burke and Greenburg, 2010).

FORECAST is a readability measure which was developed by John Caylor, Thomas Sticht, and Patrick Ford in 1973 for United States Army. In 1977 the Air Force began using this readability measure because of its relative ease of use (FORECAST Readability Formula, n.d., para. 1). The FORECAST formula is the only readability test designed for non-narrative text. Since a brochure format was used for the educational materials for this project, the author used the FORECAST to assess readability. Burke and Greenburg (2010) reported that:

[The FORECAST formula was] developed to assess the readability of U.S. Army technical manuals and forms; this formula focuses on functional literacy. It predicts 35% correct on a cloze measure of comprehension (for example, a passage where words have been systematically deleted for the student to The authors also reported there is 70% comprehension level associated with the FORECAST test (Burke & Greenburg, 2010, p. 37).

The FORECAST formula is  $GL=20-(N/10)$ . This function is performed by selecting a sample text of 150 words, then counting the number of words which are single-syllable.

This number is the variable ‘N’ in the equation (FORECAST Readability Formula, n.d.).

The educational brochure came out at a seventh-grade reading level. The elevated reading

level appears to mainly be the result of medical terms, like intrauterine device, pregnancy, and provider.

## CHAPTER 3: METHODOLOGY

Project Design

The purposes of this project were to: 1) design and implement an educational brochure for patients of a small Federally Qualified Health Center (FQHC) in southwestern Montana; and 2) develop a protocol for the nursing staff to follow when screening patients interested in using an Intrauterine device for contraception.

Background Information

The rural FQHC in southwestern Montana is a multifaceted clinic with a medical clinic, therapy offices for behavioral health, a rotating dental clinic, and a pharmacy. This FQHC hosts many local educational opportunities for the public as well as the local medical community. Further, it complies with federal guidelines by providing a sliding fee scale for patients. Many of the services provided by this clinic are in conjunction with the local hospital and a primary care clinic associated with the hospital. The agencies share physicians, lab facilities, and radiology services.

The FQHC is located in Park County which has a population of 15,636 people (check the format for this citation MT-Park County, 2010). Approximately half of the population is female and about one third of the female population is between the ages of 20 to 49 (MT-Park County, 2010). Approximately 1,303 females are the target audience for the IUD educational brochure.

### Assessment

The author participated in a regularly-scheduled meeting that included staff nurses, clinic director, and clinic pharmacist to discuss educational needs of the clinic staff and patients. The rural FQHC staff participants indicated that information about IUDs was an area of weakness. The rural, federally-qualified health center staff requested information about intrauterine devices and educational materials for the patients to distribute in the clinic.

### Planning and Development

Correspondence between the author and the clinic pharmacist began immediately after the initial meeting with the clinic staff. Prior to completing the *Patient Educational Brochure about IUDs*, several draft copies were created, reviewed, and edited. Following staff consensus concerning the format and content of the brochure, the clinic literacy expert assessed the information to ensure that the reading level was a sixth-grade reading level, used by the clinic for the majority of their educational materials. After the *Patient Educational Brochure about IUDs* brochure was complete, a flow sheet entitled *Health Care Provider Information Regarding IUD Insurance Coverage* was developed, and the websites for obtaining free or reduce cost IUDs were provided to the staff. These websites are specifically designed by drug companies to assist patients who need financial assistance. The website <http://arachfoundation.com> was provided to patients in need of information about financial assistance for Mirena. The website for Paragard, <http://www.pparx.org>, was provided to patients who selected Paragard as a contraceptive.



### Implementation

The brochure entitled *Patient Educational Brochure about IUDs* was developed by the author and was given to the clinic pharmacist for distribution to staff and patients. The brochures were placed in the patient waiting room and distributed as needed to women who expressed an interest in using an IUD. The healthcare provider discussed various options for contraception with the patients. The patient and the provider then determined whether an IUD would be a viable option for each individual woman. Should a patient desire an IUD, a clinic representative assisted that patient by using the Flow Sheet to assist in identifying insurance status. The websites for Marina and Paragard provide directions for the healthcare worker and the patient to use, so that patients may obtain an IUD at a reduced cost or, in some cases, for free, (as when a patient meets certain financial guidelines).

## CHAPTER 4

Project Outcome

This project initially began as a way to address a concern of a rural Federally Qualified Health Center. There were multiple areas that needed work; for the most part, the different projects had to do with contraception. According to the pharmacist, the area that the nursing staff needed the most help with was obtaining IUDs and directing information to patients effectively.

The goals of this project were to provide the clinic with patient educational materials and an organizational flow sheet, as well as supplemental information to aid the patients, providers, and nurses with streamlining the process of obtaining IUDs for qualified candidates. The author feels as though the goals were attained. Overall the project was completed and the educational materials were well received by the clinic staff.

Lessons LearnedIdentifying a Project

Originally, the project was going to be broader and was going to cover many other forms of birth control to aid the nursing and provider staff at the community health clinic. However, the amount time to investigate was beyond the scope of this project. It was then decided by the author and the advisor that a focused project could meet the

needs of the clinic. Educational materials about IUDs would address a need identified by the clinic staff.

One of the largest obstacles for the author was to provide educational materials at an appropriate reading level for the patient population, while simultaneously providing the needed and necessary safety information when using an IUD. The author used the FORCAST test and various references about health literacy and readability while developing the educational brochure. In addition, the author utilized advanced-practice nursing critical thinking skills to assess and design educational materials for a diverse target audience.

#### Collaboration and Communication

Communicating effectively among the interdisciplinary team of pharmacists, nurses, other healthcare providers, and clinic administrators proved to be somewhat challenging. The first step was to correspond with the clinic administrators; they, in turn, discussed the student needs with all the clinic employees. The administrator and the staff of the clinic determined what potential projects would benefit the clinic. The administrator then communicated various options for a project with the author. The primary request was initiated by the clinic pharmacist. Prior to designing the project the author then met with the clinic nurses and various other staff members.

The writing of an academic paper was also a learning process. This was the author's first experience working with a team of faculty and clinicians to produce something tangible for the clinic to use and writing about the process in a scholarly

manner. The project committee chair reviewed and ensured the potential project ideas were aligned with Montana State University standards.

### Conclusion

Meshing the University goals for an advanced-practice nursing student with the needs of the rural federally qualified health center in order to attain mutual benefit was certainly more complex than the author initially thought. It was easy to see the clinic's needs and have a desire to work toward meeting the goals of the clinics; however, it was also important to stay focused on the standards of Montana State University. Overall, the author learned a great deal about the role and scope of care provided by a rural FQHC. The university standard associated with scholarly writing will be applied to future educational, personal, and professional endeavors.

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APPENDICES

APPENDIX A

PATIENT EDUCATIONAL BROCHURE ABOUT IUDS

# What is an IUD?

Is it right for me?



IUD stands for “intrauterine device” and is a form of birth control.

There are 2 types:

1. Paragard
2. Mirena

<u>Paragard</u>	<u>Mirena</u>
Lasts up to 10 years	Lasts up to 5 years
Cost: Less than \$1,000	Cost: up to \$1,000
No hormones	Hormones
Can make period bleed more	Can make period bleed less

## Is an IUD right for me?

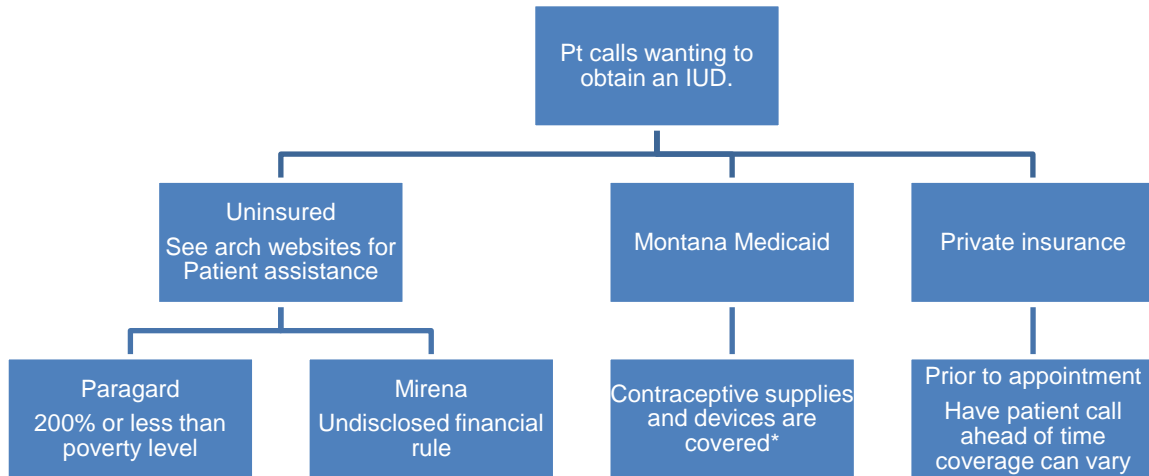
- IUDs decrease the chance of pregnancy by 99%.
- IUDs do not prevent sexually transmitted diseases, such as warts and Chlamydia.
- IUDs are for long-term use (5 to 10 years).
- When using an IUD you do not need to use any other form of birth control.
- Pregnancy can happen relatively soon after an IUD is taken out.

<p style="text-align: center;"><b>Before Use</b></p> <p>You must see a healthcare provider to determine whether an IUD is right for you. If you are able to use an IUD, you must talk to your healthcare provider about how to get the IUD before your next visit.</p> <p style="text-align: center;"><b>Placement</b></p> <p>A healthcare provider must insert the IUD in the uterus.</p> <p style="text-align: center;"><b>Removal</b></p> <p>A healthcare provider must remove the IUD. In rare cases, the IUD is not easy to take out and surgery may be needed. Pregnancy can occur any time after removal.</p>	<p style="text-align: center;"><b>For more information about IUDs and birth control:</b></p> <p style="text-align: center;"><a href="http://www.plannedparenthood.org">http://www.plannedparenthood.org</a></p> <p style="text-align: center;"><b>Websites for financial assistance:</b></p> <p><b>Mirena:</b> <a href="http://www.archfoundation.com">http://www.archfoundation.com</a></p> <p><b>Paragard:</b> <a href="http://www.pparx.org">http://www.pparx.org</a></p>	<p style="text-align: center;"><b>Obtaining an IUD</b></p> <ul style="list-style-type: none"> <li>•Talk to your healthcare provider to make sure this is a good option for you.</li> <li>•Private insurance may or may not cover the cost of an IUD.</li> <li>•Medicaid will pay for an IUD.</li> <li>•There are programs to help with cost for the uninsured.</li> </ul> <p style="text-align: center;"><b>CHP</b></p> <ul style="list-style-type: none"> <li>•CHP does have a fee scale that can lower the cost of office visits.</li> <li>•CHP can lower the cost of the IUD if you qualify.</li> </ul>
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APPENDIX B

HEALTH CARE PROVIDER INFORMATION REGARDING  
IUD INSURANCE COVERAGE

## Health Care Provider Information Regarding IUD Insurance Coverage



1. After discussing financial situation. Schedule an IUD/contraceptive consultation.
2. Patient must either bring IUD to clinic or have IUD sent to clinic prior to insertion.
3. If IUD is prescribed by the provider schedule an IUD insertion.
4. Follow up appointment at the provider's discretion.