Published in final edited form as:
J Obstet Gynecol Neonatal Nurs. 2011 November ; 40(6): 782–793. doi:10.1111/j.1552-6909.2011.01296.x.

An Evidence-Based Guideline for Unintended Pregnancy Prevention

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Abstract

Despite the frequency of and significant costs related to unintended pregnancy, it has received less attention in research and prevention guidelines development than other important health threats. This lack of attention has resulted in a system-wide failure to provide care to reproductive aged women who are at risk of unintended pregnancy. An evidenced-based blueprint for a coordinated system of primary, secondary and tertiary prevention is proposed for health professionals who provide care for patients at risk for unintended pregnancy.

Keywords

Unintended pregnancy; prevention services; primary care; reproductive health services; health professionals; advanced practice nurses; nurses; prevention model

Unlike in other developed countries, reducing unintended pregnancy in the United States has been an elusive national health goal. As described by Levi and Dau (2011), in spite of its frequency and the associated significant costs, unintended pregnancy, defined as mistimed or unplanned pregnancy (National Center for Health Statistics, 2010), has received less attention in research and the development of clinical and preventive care strategies than other similarly important health threats (Levi & Dau). This oversight can be attributed to the general fragmentation of health care services coupled with the politicization of reproductive health surrounding abortion in particular. In addition to a fragmented system for preventing and managing unintended pregnancies, an overall lack of sexuality education persists in the United State. As a result, many people do not fully understand how the reproductive system works, causing an underestimation of their true risk of pregnancy. Because of this lack of knowledge, limited time for health care appointments, and the lack of a coordinated system of clinical guidelines, essential competencies and strategies for unintended pregnancy prevention are nonexistent. These missing strategies result in a system-wide failure to successfully provide coordinated care to patient populations who are also at risk of unintended pregnancy (Taylor, Levi, & Simmonds, 2010). The purpose of this article is to outline an evidence-based blueprint that addresses reproductive health planning and care from a coordinated, public health prevention framework.

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Disclosure: The authors report no conflict of interest or relevant financial relationships.

National Prevention Policies Do Not Adequately Address Unintended Pregnancy

With the release of the *Healthy People 2020* national goals and the importance of disease prevention and health promotion emphasized in the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act (known together as the Affordable Care Act or ACA), health care in the United States is shifting toward a renewed focus on the goal of prevention of health problems (Koh, 2010; U.S. Department of Health and Human Services [DHHS], 2010a, 2010b, 2010c). Included within the ACA is the creation of a new National Prevention, Health Promotion, and Public Health Council with the stated goal of transforming the current U.S. health system away from one that only treats illness to one that promotes health (DHHS, 2010c). Additionally, the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry named research focusing on prevention as an important area of need for the United States from 2006 until 2015 (CDC, 2006).

Both the CDC and the Agency for Toxic Substances and Disease Registry research goals and the *Healthy People 2020* goals specifically note the importance of promoting healthy outcomes of pregnancies by preventing unintended conception (CDC, 2006; DHHS, 2010b). *Healthy People 2020* established a goal of increasing the proportion of intended pregnancies from 51% to 56% (DHHS, 2010a). Considering the potentially negative sequelae for unintended pregnancies that are continued, including an increased likelihood that mothers will continue to smoke during their pregnancies, enter prenatal care late, and have infants whose birth weight is low, this aim seems depressingly low (Chandra, Martinez, Mosher, Abma, & Jones, 2005).

In 1995, the U.S. Preventive Services Task Force (USPSTF) included counseling as a recommended intervention to prevent unintended pregnancy. However, this recommendation was glaringly absent from subsequent published recommendations despite the high rate of unintended pregnancy (approximately 50%) in the United States (Finer & Henshaw, 2006; USPSTF, 1995, 2009). While counseling alone to prevent unintended pregnancy may not be the most effective intervention, building evidence demonstrates that unintended pregnancy can be addressed using a preventive strategy that includes a combination of risk screening and multimodal interventions that involve coordinated, focused education and increased access to contraceptives (Oringanje et al., 2010). In California, a concerted effort to provide accurate sexual health education and increased access to family planning services was credited and subsequently decreased the state adolescent pregnancy rate by more than half between 1992 and 2005 (Boonstra, 2010). Using statistical modeling, estimates indicate that if Oregon were to adopt a similar program, the number of women at risk for unintended pregnancy due to non-use of contraceptives would drop from more than 58,000 to less than 6,000 (Burlone, Edelman, Dantas, & Trussell, 2010).

Although not exclusively focused on unintended pregnancy prevention, a number of government agencies and national science organizations have reported the need for research and performance measures on a variety of women's health conditions to provide guidance for advocates, policymakers, clinicians and researchers working to improve the health of women in the United States. In a recent report, the Institute of Medicine (IOM)in conjunction with the National Institute of Health (NIH) Office of Research on Women's Health reviewed conditions where research has contributed to major progress, such as breast and cervical cancer and cardiovascular disease; conditions where research has contributed some progress, such as depression, HIV/AIDS and osteoporosis; or conditions where research has contributed little progress, such as unintended pregnancy and autoimmune

disease (IOM, 2010a).aThe IOM Report (2010a) indicated that while the risk factors for unintended pregnancy are known and effective contraceptives are available to prevent pregnancy, expanded research on innovative clinical, social and community-level interventions to decrease unintended pregnancy is needed. The Committee emphasized that research results must be applied more quickly to public health and clinical care (IOM, 2010a). An on-going committee of the IOM (begun in late 2010) will determine preventive services necessary for women's health and well-being as the foundation for comprehensive guidelines for women's preventive services (IOM, 2010b). Sponsored by the DHHS, Office of Assistant Secretary for Planning and Evaluation, the IOM Preventive Services for Women Committee will consider a number of questions, most importantly what services and delivery models are needed to fill gaps in evidence-based preventive services for women (IOM, 2010b).

While limited in scope, *Healthy People 2020* presents goals that focus on increasing access to contraception, sexual health education and preconception care with an updated overview of the potential benefits presented in the *Family Planning Overview* of *Healthy People 2020* (DHHS, 2010b). Additionally, a preconception visit has been recommended by the CDC to avoid poor perinatal outcomes and to promote healthy behaviors prior to conception (CDC, 2006; Chandra et al., 2005; Moos, 2003a).

These national goals and recommendations bring into focus the realization that prevention of unintended pregnancy, although essential to reproductive health care, has received less attention than other national health goals. The tendency to separate reproductive and non-reproductive care and a failure to provide for coordination between the two goals are the hallmarks of the fragmentation within both primary care and women's health care and policy (Clancy & Massion, 1992; Weisman, 1997). While prenatal care has been more successfully integrated into women's primary care, preconception care has not, even though the importance of preconception health, including the prevention of unintended pregnancy in achieving a positive birth outcome is well-established (Moos, 2004). Reproductive health care for men who are at risk for unintended pregnancy receives even less attention (Frey, Navarros, Kotelchuck, & Lu, 2008). The fragmentation of reproductive health services for women, men and adolescents is also reflected in the lack of comprehensive, coordinated practice guidelines for reproductive health promotion and prevention of conditions that impact sexual and reproductive health status for all genders across their lifespan.

Unintended Pregnancy Prevention as Essential Health Care

Although current fragmentation of reproductive and gender-based health care may be ubiquitous, established evidence shows that an organized effort, combining federal resources, public health awareness and established clinical guidelines can lead to health behavior improvements for women (Boonstra, 2010). Both the impressive reduction in California's teen pregnancy rate and successful national improvement in women's smoking rates and colorectal screening are evidence of the success of an organized approach (Boonstra, 2010; National Women's Law Center, 2010). With the passage of the ACA in July 2010, the National Prevention Council was formed and tasked to develop and implement the first-ever national prevention strategy to promote evidence-based interventions to improve health and wellness (National Prevention Council, 2011). Integrating access to quality, evidence-based reproductive health care, including unintended pregnancy prevention interventions, into the proposed national strategic directions, specifically the elimination of health disparities, improving prevention and public health capacity, and advancing quality clinical preventive services would support both the vision and goals of the National Prevention Strategy (National Prevention Council).

Historically, a number of initiatives with recommendations for preconception health promotion have been introduced. More than 20 years ago, both the IOM (1985) and the Public Health Service (1989) recommended pregnancy planning and recognition of the importance of pre-pregnancy health as essential to the improvement of perinatal outcomes. The American College of Obstetricians and Gynecologists (ACOG) previously agreed that routine care would provide greater benefit if it focused on health promotion and disease prevention directed to each woman's health risks (2000). Subsequently, a call for a "continuum model" of prevention for women's health recommended that assessment of women's health status occur at any episodic health encounter, inclusive of reproductive health status and incorporated into a health plan (Moos, 2003b). In 2006, the CDC recommended that providers discuss a reproductive life plan with patients to encourage their involvement and consideration of pregnancy planning (CDC, 2006). These life plans aid providers in their evaluation of each patient's reproductive health needs and further may help providers determine the most appropriate interventions for each patient.

For the goals of *Healthy People 2020* to be achieved, this view of the preconception period as a time to intervene to improve health and prevent poor outcomes must be expanded to include the reproductive health of men and women throughout their lifespans and adolescents of both sexes. Reproductive health services, such as maternal child health, family planning, abortion services, preconception care, and fertility protection should be delivered as a collection of integrated or coordinated treatment and prevention services that address the full range of sexual and reproductive health needs and acknowledges sociocultural factors, gender roles and the respect and protection of human rights (World Health Organization, 2004, 2009). To meet the *Healthy People 2020* goal, the inclusion of all health professionals who care for populations with reproductive potential is needed. Nurses along with other primary care providers are uniquely positioned to engender this change (Pender, Murdaugh, & Parsons, 2006). In particular, since nurses practice in many settings and at many levels, they are well-positioned to aid in the integration of reproductive health assessment and planning into all levels of care (Levi, Simmonds, & Taylor, 2009).

However, missing from many of these reports is a coordinating strategy or roadmap for integrating the full range of reproductive health needs and prevention strategies into primary care and specifically the strategies for reducing unintended pregnancy. A public health prevention model that addresses the prevention of unintended pregnancy as a way to promote reproductive health for use by health professionals caring for populations with reproductive potential is critically needed.

A Blueprint for Unintended Pregnancy Prevention

As there are no comprehensive clinical practice guidelines established for the specific goal of reducing unintended pregnancy to serve as a guide for primary care providers, a model that applies accepted public health concepts to effective prevention strategies is presented. See Table 1 for an overview of the components of the proposed model.

Primary Prevention of Unintended Pregnancy

Definition and associated health goals—Primary prevention consists of efforts aimed at preventing the onset of a specific condition (Oberg, 2010). As discussed by Moos, preconception interventions would be incorporated as an aspect of women's primary care, such as an evaluation of every woman's current pregnancy intentions (2003a). The goal of primary prevention of unintended pregnancy is to aid individuals in the achievement of their pregnancy intentions and to improve maternal, child and family outcomes by increasing the likelihood that every pregnancy is one that is both desired and planned (Taylor et al., 2010).

Many of the recommendations for preconception health are well-known. Appropriate testing for sexually transmitted infections to protect future fertility, the encouragement of folic acid supplementation prior to conception to prevent neural tube defects, and the importance of healthy lifestyle changes such as smoking and alcohol cessation, regular exercise and a healthy diet are all examples of these interventions (Moos, 2003a; Postlethwaite, 2003). Teratogenic exposure presents significant risk to a fetus in the first three weeks after conception, a period during which many women may not realize they are pregnant (Moos, 2003a; Postlethwaite, 2003). As with women, a clinical orientation toward the importance of men's reproductive health status and decisions may result in higher levels of wellness for men of reproductive potential regardless of eventual conceptions (Frey et al., 2008).

Assessment and appropriate screening as essential primary prevention services—An evaluation of preconception health and unintended pregnancy risk is also an opportunity to address lifestyle choices that affect other important areas of reproductive health. Being at high risk for an unintended pregnancy is linked to other significant health concerns including obesity, smoking, and binge drinking, especially in minority and low-income women (Xaverius, Tenkku, Salas, & Morris, 2009). Preconception counseling should not be limited to only a discussion of ways to optimize pregnancy outcome and prevent unintended pregnancy, but also provide a way to address other preventive health concerns such as those identified in *Healthy People 2020*.

Every health care encounter is an opportunity to discuss a patient's reproductive health and pregnancy intentions (Cullum, 2003; Moos, 2003a). Evidence exists that preconception preventive care is not routinely provided to men and women of reproductive age by primary care providers (Ewing, Selassie, Lopez, & McCutcheon, 1999). A recent study investigating the use of an example of a reproductive life plan questionnaire, an intervention suggested by the CDC(2006), among low-income, minority women and men visiting a primary care clinic reported that the majority of the patients, both men and women, found the plan helpful (Dunlop, Logue, Miranda, & Narayan, 2010). In this study, many participants reported that the plan enabled them to bring up preconception concerns with their health provider.

Knowledge of a patient's contraceptive use is an essential component of primary prevention. The routine evaluation of a patient's contraceptive use has the potential to improve patient care and normalize the primary prevention of unintended pregnancy within any health care visit. A recent randomized controlled trial demonstrated that primary care providers who incorporated the intervention of routine evaluations of their female patients' contraceptive use and pregnancy intentions improved their prescribing practices (Schwarz, Parisi, Fischer, Handler, & Hess, 2010). They were more likely to document effective contraceptive use when prescribing a potentially teratogenic medication than before the intervention (Schwarz et al., 2010). The authors called this routine evaluation a "contraceptive vital sign" (pp. 214).

Primary prevention of unintended pregnancy also includes an evaluation of a patient's satisfaction with her contraceptive method at subsequent visits. A recent study found that at subsequent visits after a birth control method was started, providers were less likely to discuss method satisfaction, consistent and correct use, or take a subsequent sexual history than at initial family planning visits (Landry, Wei, & Frost, 2008). Over a one-year period, as many as a one fourth of all women will experience a gap in contraceptive use and approximately two out of five women may use their oral contraceptives inconsistently, contributing significantly to the risk for unintended pregnancy (Guttmacher Institute, 2008). This highlights an area of primary prevention of unintended pregnancy that is amenable to continuity and coordination of nursing and primary care. For example, nurses are adept at coordinating with pharmacies or health insurers regarding provision and cost of supplies,

coordinating with other prevention interventions, or with other health professionals when further evaluation is needed..

Reproductive life plans and primary prevention strategies to address unintended pregnancy will be less effective if aimed exclusively at women. While the majority of the research and interventions discussed in this article have been directed towards women, primary care providers may also indirectly affect unintended pregnancy rates through reproductive counseling of male patients. New research suggests that women are aware of their male partners' pregnancy goals and they value their partners' views (Kraft et al., 2010). Further, women whose male partners were very supportive of contraceptive use were more likely to use their contraception effectively (Kraft, et al.). Alternately, intimate partner violence (IPV) is associated with an increase in unintended pregnancies and poor perinatal outcomes (Chambliss, 2008). Recent evidence suggests that the link between IPV and unintended pregnancy may be related not only to a decreased ability of women in abusive relationships to negotiate safer sex practices, but also to direct reproductive control by partners such as contraceptive sabotage (Miller et al., 2010). These studies highlight the importance of including the role of male partners in the discussion of unintended pregnancy prevention as well as assessing IPV risk in all patients of reproductive capacity.

Essential primary prevention strategies and services

Counseling strategies—Moos proposed counseling methods for involving patients in contraceptive decision making as well as guidelines for health professionals to help individuals achieve their contraceptive goals (Moos, 2003c). She proposed four questions to engage patients in considering a plan for preventing an unintended or mistimed pregnancy: 1) How many children, if any, do you hope to have? 2) How long would you like to wait until you become pregnant (again)? 3) What do you plan to do to delay becoming pregnant until then? 4) What can I do to help you achieve your plan? (p. 27)

Other techniques to aid providers in introducing preconception prevention into a primary care visit have been suggested in the literature. Recently, the Oregon Foundation for Reproductive Health (2010) proposed that all primary care providers ask a single question of their female patients, "Do you plan to become pregnant in the next year?" (p.1) Techniques such as these can allow the provider and patient to develop a plan for optimizing the overall health potential of each client, contributing to disease prevention and health promotion (Moos, 2003c; Oregon Foundation for Reproductive Health).

Contraception failure strategies—Primary prevention should include a plan to prevent contraceptive method failure. More than half of the unintended pregnancies in the United States are to women who were using a form of birth control, often inconsistently, in the month that they conceived (Guttmacher Institute, 2010). Researchers have established that there are primary prevention strategies that may aid in the successful use of a birth control method. Providing patients with a greater number of oral contraceptive packs is associated with higher continuation rates and a decrease in both unintended pregnancies and abortions (Foster, Hulett, Bradsberry, Darney, & Policar, 2010; O'Connell White, Roca, & Westhoff, 2010). The use of long acting, reversible contraceptives such as contraceptive implants or intrauterine contraceptives combine an ease of use and very high efficacy rates to create improved continuation rates over oral contraceptives (Speidel, Harper, & Shields, 2008). These methods are also options for women who may have difficulty consistently using either barrier methods or oral contraceptives (Speidel et al.). By discussing a patient's reproductive plan and evaluating the methods that are available, clinicians may be more effectively providing primary prevention of unintended pregnancy.

Primary prevention of unintended pregnancy has the potential to be beneficial as a cost-saving method in addition to improving perinatal outcomes. Using a statistical simulation model, researchers estimated that if universal access to contraception were provided in the state of Oregon, it would save the state more than $75 million per year (Burlone et al., 2010). Researchers studying the cost-savings achieved in 2004 by publicly funded family planning clinics in the United States through the prevention of unintended pregnancy estimated the savings at $4.3 billion (Frost, Finer, & Tapales, 2008). As many women receive their contraceptive care from private, primary care providers instead of publicly funded clinics, the incorporation of primary prevention of unintended pregnancy into the primary care setting could only increase these cost-savings (Landry et al., 2008).

Secondary Prevention of Unintended Pregnancy

Definition and associated health goals—In the public health sector, secondary prevention is aimed at the detection of disease before a patient is symptomatic, and usually involves screening tests (Oberg, 2010). Applying public health definitions to secondary prevention of unintended pregnancy would include interventions to enable early detection of pregnancy and to aid in the provision of care as early in an unintended pregnancy as possible. As secondary prevention also includes the goal of intervening to avoid a recurrence of the diagnosed medical condition, care would also be directed at the prevention of a repeat unintended pregnancy (Oberg). Another example of secondary prevention is the early diagnosis of an ectopic pregnancy. Beyond disease prevention, secondary prevention is also important in promoting health through adequate unintended pregnancy options counseling and care coordination.

Assessment as an essential secondary prevention service—As with any application of a public health model of prevention, if a patient is screened, then resources for all testing outcomes should be available to that patient. For a woman who is screened for pregnancy, if the result is positive, then she will need to understand her options. Pregnancy options care and coordination is an essential core competency of the nurse caring for women and men of reproductive age (Levi et al., 2009). However, this skill is generally not taught in nursing or primary care training programs (Foster et al., 2006) Nurses, as guided by the *Code of Ethics for Nurses*, have a mandatory obligation to care for their patients, regardless of their health concern or problem, in a way that respects each patient's dignity (American Nurses Association, 2001). Therefore, the responsibility of any nurse is to either provide a patient experiencing an unintended pregnancy with accurate information about her options or to offer a prompt, accessible and coordinated referral to a provider who can provide care (Levi et al., 2009). Additionally, Cappiello, Beal and Hudson-Gallogly (2011) and other authors suggest some providers are uncomfortable due to their religious or moral beliefs, and some states have laws that allow health care providers to refuse to participate in care involving reproductive health care delivery (Sonfield, 2009; Weitz & Fogel, 2010).

Essential secondary prevention strategies and services

Early pregnancy detection strategies—Secondary prevention with a goal of early detection of unintended pregnancy is important for women regardless of their choice for the outcome of their pregnancy. If a woman is uncertain of her decision, early detection of pregnancy grants her time to consider the important information provided during options counseling. Early detection of an unintended pregnancy and thorough, prompt options counseling affords each woman the opportunity to consider and choose an outcome (e.g., continuing pregnancy, adoption, or pregnancy termination) that is best for her and her family or situation. Early detection of unintended pregnancy allows a woman to receive appropriate early screening for preconception risks or exposures or allows a woman to access abortion, a

safe, common procedure that has especially fewer risks when performed early in a pregnancy (Guttmacher Institute, 2010).

Recent research on the factors that may contribute to a delay in seeking abortion has demonstrated that women often have to coordinate payment for their procedure (Kiley, Yee, Niemi, Feinglass, & Simon, 2010). As a first-trimester abortion is always safer than a later term abortion, the early detection of an unintended pregnancy may offer women time to coordinate payment and allow them the earliest and safest termination possible. Other reasons for delay in seeking pregnancy termination including fear of the procedure, difficulty locating an abortion provider, and lack of recognition of the need for pregnancy testing, are all factors that could be at least partially alleviated through early detection, accurate information, and non-judgmental decision-making support (Foster et al., 2008; Kiley et al., 2010).

Increasing repeat pregnancy interval strategies—Effective secondary prevention of unintended pregnancy is not limited to diagnosis, options counseling, and coordination of care. In a recent meta-analysis of research on teenage parenting programs and their effect on preventing a second unintended pregnancy, a short-term improvement of at least 19 months in the rate of repeat unintended adolescent pregnancy was reported (Corcoran & Pillai, 2007). Importantly, decreasing the likelihood that the adolescents in these studies will have a second pregnancy in the 19 months following the birth of their first child increases the chance that a second pregnancy will be healthy by creating a safe interconceptional length (Moos, 2003a). While this effect was undetectable by the second follow-up period, creative interventions as secondary prevention strategies may positively influence the health of women and their children (Corcoran & Pillai). Specific secondary prevention guidelines for unintended pregnancy options care are described by Simmonds and Likis in this issue (2011).

The recognition of the need for pregnancy screening, regardless of whether the test result is positive or negative, presents the primary care provider with an opportunity for education to discuss risk factors for unintended pregnancy, the reproductive life plan, and contraceptive options. (Levi et al., 2009). Acknowledging the fact that primary care providers are managing co-morbid chronic conditions such as diabetes, hypertension, and pregnancy, the incorporation of preconception preventive care, both primary and secondary prevention, is appropriate (Levi et al.).

Tertiary Prevention of Unintended Pregnancy Prevention

Definition and associated health goals—Tertiary prevention is generally defined as interventions to alleviate the symptoms of a clinical illness and preventive measures aimed at decreasing the likelihood of sequelae from a disease or illness (Oberg, 2010; Taylor et al., 2010). When applied to unintended pregnancy, tertiary prevention would include diagnosing and managing later unintended pregnancies (Taylor et al.). Tertiary prevention is the least developed area of prevention for unintended pregnancy, and perhaps the most challenging to all providers.

Psychosocial risk assessment and care coordination as essential tertiary prevention services—An unintended pregnancy that is unwanted and not merely mistimed has been found to be at greater risk of poor perinatal outcomes such as maternal depression and infant neglect (Brown & Eisenberg, 1995; Moos, 2003a). Women with a later term unintended pregnancy are likely to be in need of psychosocial assessment, crisis counseling and/or care coordination to cope with carrying an unwanted pregnancy to term. For women who do not wish to continue their pregnancy, referrals and options regarding

termination should be presented in a timely manner as delay in care is associated with increased maternal risk. Evidence exists that a main cause of delayed abortion is difficulty arranging payment and finding a provider, therefore providers who may diagnose a late unintended pregnancy need to have resources and a developed care coordination strategy (Finer, Frohwirth, Dauphinee, Singh, & Moore, 2006; Foster et al., 2008; Kiley et al., 2010). As nurses are adept at health education, psychosocial care, and care coordination, tertiary prevention of unintended pregnancy is an area where nursing care could make a critical difference in a patient's outcome.

The work of tertiary prevention is therefore not complete once a woman has chosen an outcome for an unintended pregnancy. First, coordinating and ensuring appropriate care and/or referral is essential. Efforts to address a return to primary prevention such as the need of contraception immediately after delivery or abortion are the domain of both specialists in reproductive health and primary care providers. Immediate placement of intrauterine contraceptives and discussion of contraceptive options with a provider in post-operative or postpartum period increases the likelihood that a woman will choose a highly effective contraceptive and use it correctly (Cremer, Bullard, McDonald-Mosley, Alonzo, & Molaei, 2010; Kottke, Goedken, Gidvani, & Cwiak, 2010; Shimoni, Davis, Westhoff, Ramos, & Rosario, 2010).

Putting Unintended Pregnancy Prevention into Practice

Prevention, if focused and coordinated, is a viable way to reduce the rate of unintended pregnancy in the United States. Primary care providers are strategically placed to begin the development and initiation of prevention strategies for unintended pregnancies aimed at all patients of reproductive potential. While many providers may not be able to provide prenatal, adoption or abortion care, a coordinated, evidence-based approach that includes early detection, risk assessment, options counseling, appropriate referrals with return back to primary prevention is necessary to ensure the physical and emotional safety of each patient as well as to evaluate outcomes. Nurses who function as care coordinators and case managers across all health care settings are the obvious choice to develop these networks and coordinated referrals.

A Look to the Future: Mobilization toward Reproductive Health Promotion

The incorporation of primary, secondary and tertiary prevention of unintended pregnancy into primary care is consistent with currently established national health goals and advances health promotion for all individuals of reproductive potential (Taylor, et al., 2010). However, for the model to be integrated within the broader health system, all three levels of unintended pregnancy prevention services require coordination and continuity among individual providers and across settings and specialty types of care (Moos, 2010).

The proposed blueprint to coordinate primary, secondary and tertiary interventions within primary care for the prevention of unintended pregnancy is not without its limitations. While the model has not been tested, evidence has demonstrated that prevention can be effective at reducing the number of unintended pregnancies. Primary prevention strategies may have the best empirical evidence, but there is also evidence indicating that a coordinated system of secondary prevention has the potential to improve outcomes through the removal of barriers and the quick return of patients to primary prevention. Additional research aimed at demonstrating improvements in outcomes is an important next step.

Effective utilization of the model blueprint will depend on medical, nursing, and allied health professionals' opportunity to access unintended pregnancy prevention knowledge and training, including secondary and tertiary prevention, during their education. Reproductive

health, including unintended pregnancy prevention, is connected to many other health promotion goals and should be included in all health-related education and training programs. However, without coordinated clinical practice guidelines, a demonstrated knowledge base, and competency delineation, the ability to incorporate this into educational programs as evidence-based care may be limited. Cooperation among health professional organizations to develop practice bulletins and competency expectations is essential. The development of core competencies that are patient-focused and evidence-based are also important aspects of a coordinated movement to address unintended pregnancy as a preventable health outcome. With the establishment of these core competencies, educational programs can begin to incorporate directed knowledge and skills that enable clinicians to address the prevention of unintended pregnancy in ways that are evidenced-based and culturally competent (Taylor et al., 2010).

Acknowledgments

Funded by National Institute for General Medical Sciences Grant # R25, GM56847.

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CALL-OUTS

1. The *U.S. Healthy People 2020* goal to increase intended pregnancies from 51% to 56% is low compared to the rate in many other nations.
2. Evaluation of unintended pregnancy risk is an opportunity to address lifestyle choices and behaviors that affect other important health risks.
3. Evidence exists that unintended pregnancy can be prevented using a coordinated system of primary, secondary and tertiary prevention focused on reproductive health outcomes.

Table 1

An Overview of a Coordinated Public Health Model of Unintended Pregnancy Prevention

Prevention Type	Goals	Essential Prevention Services
Primary Prevention	Intended, Healthy Pregnancies with Healthy Mothers and Infants Reduction of Personal Perinatal, Neonatal and Family Complications	Assessment of Personal and Family Health Risk Factors • Intimate Partner Violence • Substance Use • Teratogen Exposure Appropriate Screening Tests • Reproductive Life Plan Evaluation • Sexually Transmitted Infection Testing • Genetic/Chronic Disease Evaluation Prevention Strategies • Nutrition, Behavioral and Contraceptive Counseling • Contraceptive and Emergency Contraceptive Dispensing or Prescription
Secondary Prevention	Identification of Unintended Pregnancies Early to Improve Reproductive Health Outcomes	Assessment of pregnancy status and gestational age • Pregnancy Diagnostics (urine, blood tests; ultrasound) • Screening for Early Pregnancy Loss, Ectopic Pregnancy Prevention Strategies • Unintended Pregnancy Options Counseling • Support to Continue Pregnancy if Desired – Prenatal Care, Identification of Social Support Systems – Provision of prenatal care or coordinated referral – Adoption Counseling and Coordinated Referral if Desired • Early Abortion Care – Provision of early abortion care or coordinated referral to assure positive outcomes – Counseling, referral and/or provision of early abortion by use of medications or uterine aspiration procedures
Tertiary Prevention	Prevention of Complications Associated with Later Unintended Pregnancy Support for Women and Families Experiencing Later Unintended Pregnancy	Assessment of pregnancy status and psychosocial risk factors • Pregnancy diagnostics (see above) • Assess need for crisis counseling and coordinated referrals Prevention Strategies

Prevention Type	Goals	Essential Prevention Services
		• Unintended Pregnancy Options Counseling • Support for Continued Pregnancy if Desired – Psychosocial Support or coordinated referral – Prenatal Care, Identification of Social Support Systems – Adoption Counseling and Referrals • Pregnancy Termination Referral Coordination