



Proceedings of the Preconception Health and Health Care Clinical, Public Health, and Consumer Workgroup Meetings

June 27–28, 2006
Atlanta, Georgia



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I. Background on the Recommendations to Improve Preconception Health and Health Care

A meeting of the Centers for Disease Control and Prevention (CDC) Select Panel on Preconception Care was held on June 22 and 23, 2005, in conjunction with the first National Summit on Preconception Care. The Select Panel developed the Recommendations to Improve Preconception Health and Health Care, published in April 2006 in the Mortality and Morbidity Weekly Report Recommendations and Reports. In June 2006, three workgroups of clinical, public health, and consumer experts were convened to discuss how to translate the recommendations into action. The following proceedings summarize the strategies that emerged from this meeting.

Role of Preconception Health and Health Care in Improving the Nation's Birth Outcomes

Adverse pregnancy outcomes continue to be a major public health concern in the United States and around the world, and action is needed for improvement. An estimated 30% of U.S. women have complications during pregnancy. Currently, 12% of babies are born prematurely, 8% are born with low birth weight, and 3% have major birth defects. Adverse pregnancy outcomes may lead to serious health problems for the mother and/or the baby. The human and economic costs of poor pregnancy outcomes to families and society are enormous: each child born in the United States with a major disability leads to direct and indirect societal costs of more than \$1 million over his or her lifetime.

Despite efforts to improve prenatal care and advances in medical science and technology, maternal and infant health in the United States has improved very little in the last few decades. One factor that contributes to adverse pregnancy outcomes is the start of prenatal care late in the first trimester and sometimes after the first trimester. This delay in care allows little or no opportunity to prevent serious maternal and infant health problems, which often begin in the earliest stages of pregnancy.

There is evidence that improving women's health before pregnancy is important for optimizing pregnancy outcomes. However, many women continue to enter pregnancy in less than optimal health, which increases the risk of adverse pregnancy outcomes. Making preconception care services available to women and couples is expected to significantly improve maternal and infant outcomes, particularly for women at risk of adverse outcomes. Since nearly half of all pregnancies are unplanned, it is necessary to make education about preconception health and access to preconception health care services the norm for women and couples during their reproductive years.

The Select Panel on Preconception Care defined preconception care as a "set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management." Thus, preconception care includes the prevention and management of health risks and conditions, with an emphasis on health issues that require action before conception or very early in pregnancy for maximal impact. It also includes active management of fertility, including contraception, so that women can plan and prepare for pregnancies.

Preconception care should be an integral part of routine primary care and serves as an opportunity to screen for current and future health risks, to provide health promotion messages and education, and to offer interventions that address identified risks.

In addition to the clinical services that constitute preconception care, the Select Panel emphasized the importance of efforts to improve the overall health of women of childbearing age and their partners. Increasing awareness of reproductive health risks and enabling individuals to have reproductive life plans, for example, are as important as clinical services that can improve preconception health and pregnancy outcomes.

Improving preconception health for the approximately 62 million women of childbearing age in the United States will require multiple strategies and multilevel actions. Change is needed in consumer knowledge and demand for preconception services, in clinical practice and public health approaches, in health care coverage and financing, and in surveillance and research activities.

Recommendations to Improve Preconception Health and Health Care

The Select Panel on Preconception Care prepared the Recommendations to Improve Preconception Health and Health Care to serve as a strategic plan for change, outlining the vision, goals, recommendations, and action steps needed for success.

Four goals were set to achieve the vision of improved health and pregnancy outcomes in the United States. They are:

- Goal 1. To improve the knowledge, attitudes, and behaviors of men and women related to preconception health.
- Goal 2. To ensure that all U.S. women of childbearing age receive preconception care services screening, health promotion, and interventions—that will enable them to enter pregnancy in optimal health.
- Goal 3. To reduce risks indicated by a prior adverse pregnancy outcome through interventions in the interconception (inter-pregnancy) period that can prevent or minimize health problems for a mother and her future children.
- Goal 4. To reduce the disparities in adverse pregnancy outcomes.

Figure 1 illustrates how the elements of the strategic plan to improve preconception health and health care fit together. Recommendations are summarized in Table 1.

Figure 1. Strategic Plan for Improving Preconception Health and Health Care



Table 1. Summary of Recommendations to Improve Preconception Health and Health Care*

1.	Individual responsibility across the life span. Encourage each woman and every couple to have a reproductive life plan.
2.	Consumer awareness. Increase public awareness of the importance of preconception health behaviors, and increase individuals' use of preconception care services using information and tools appropriate across varying age, literacy, health literacy, and cultural/linguistic contexts.
3.	Preventive visits. As a part of primary care visits, provide risk assessment and counseling to all women of childbearing age to reduce risks related to the adverse outcomes of pregnancy.
4.	Interventions for identified risks. Increase the proportion of women who receive interventions as follow-up to preconception risk screening, focusing on high-priority interventions.
5.	Interconception care. Use the interconception period to provide intensive interventions to women who have had a prior pregnancy ending in adverse outcome (e.g., infant death, low birth weight or preterm birth).
6.	Pre-pregnancy check-ups. Offer, as a component of maternity care, one pre-pregnancy visit for couples planning pregnancy.
7.	Health coverage for low-income women. Increase Medicaid coverage among low-income women to improve access to preventive women's health, preconception, and interconception care.
8.	Public health programs and strategies. Infuse and integrate components of preconception health into existing local public health and related programs, including emphasis on women with prior adverse outcomes.
9.	Research. Augment research knowledge related to preconception health.
10.	Monitoring improvements. Maximize public health surveillance and related research mechanisms to monitor preconception health.

* CDC. *Recommendations to Improve Preconception Health and Health Care—United States. MMWR Recommendations and Reports 2006;55(RR-06):1-23.* And <http://www.cdc.gov/ncbddd/preconception/default.htm>

These recommendations are based on an extensive review of existing research, professional guidelines, and current practice in medicine, public health, and related fields. The CDC Select Panel on Preconception Care identified 14 risk factors for adverse pregnancy outcome for which good evidence supports the effectiveness of interventions before pregnancy (Table 2). This list indicates an array of missed opportunities in women's health care to reduce risks prior to pregnancy, from changing prescription medications, to treating chronic diseases, to assisting with behavioral changes. Each meets the following three criteria:

1. There is scientific evidence for interventions to improve pregnancy outcomes.
2. Interventions must be delivered before pregnancy or early in pregnancy to be effective.
3. Clinical practice guidelines have been issued to guide interventions.

Table 2. Selected Preconception Risk Factors for Adverse Pregnancy Outcomes*

<p>Alcohol misuse. It is not safe to drink alcohol at any time during pregnancy, and harm can occur early, before a woman realizes that she is or might be pregnant. Fetal alcohol syndrome and other alcohol-related birth defects can be prevented if women stop drinking alcohol before conception.</p>
<p>Anti-epileptic drugs. Certain anti-epileptic drugs (e.g., valproic acid) are known teratogens. Recommendations suggest that women who are on a regimen of these drugs and who are contemplating pregnancy should be prescribed a lower dosage of these drugs.</p>
<p>Diabetes (preconception). The threefold increase in the prevalence of birth defects among infants of women with type 1 and type 2 diabetes is substantially reduced through proper management of diabetes.</p>
<p>Folic acid. Daily use of vitamin supplements containing folic acid has been shown to reduce the occurrence of neural tube defects by as much as two thirds.</p>
<p>Hepatitis B. Vaccination is recommended for men and women who are at risk for acquiring hepatitis B virus (HBV) infection. Preventing HBV infection in women of childbearing age prevents transmission of infection to infants and eliminates risks to the women of HBV infection and sequelae, including hepatic failure, liver carcinoma, cirrhosis, and death.</p>
<p>HIV/AIDS. If HIV infection is identified before conception, timely antiretroviral treatment can be administered, and women (or couples) can be given additional information to help prevent mother-to-child transmission.</p>
<p>Hypothyroidism. The dosages of thyroxine (e.g., Levothyroxine) need to be adjusted for proper neurologic development of the fetus.</p>
<p>Isotretinoin. Use of isotretinoin (e.g., Accutane®) to treat acne during pregnancy can result in miscarriage and birth defects. Effective pregnancy prevention should be implemented to avoid unintended pregnancies among women with childbearing potential who use this medication.</p>
<p>Maternal phenylketonuria (PKU). Women diagnosed with PKU as infants have an increased risk for delivering infants with mental retardation or birth defects. However, this adverse outcome can be prevented when mothers adhere to a low-phenylalanine diet before conception and continue it throughout their pregnancy.</p>
<p>Rubella seronegativity. Rubella vaccination provides protective seropositivity and prevents congenital rubella syndrome.</p>
<p>Obesity. Adverse perinatal outcomes associated with maternal obesity include neural tube defects, preterm delivery, diabetes, cesarean delivery, and hypertensive and thromboembolic disease. Appropriate weight loss and nutritional intake before pregnancy reduces these risks.</p>

Oral anticoagulants. Warfarin, which is used to control blood clotting, has been shown to be a teratogen. To avoid exposure to warfarin during early pregnancy, medications can be changed to a nonteratogenic anticoagulant before conception.

Sexually transmitted infections (STIs). Chlamydia trachomatis and Neisseria gonorrhoeae have been strongly associated with ectopic pregnancy, infertility, and chronic pelvic pain. STIs during pregnancy might result in fetal death or substantial physical and developmental disabilities, including mental retardation and blindness. Early screening and treatment prevents these adverse outcomes.

Smoking. Preterm birth, low birth weight, and other adverse perinatal outcomes associated with maternal smoking in pregnancy can be prevented if a woman stops smoking before or during early pregnancy. Because only 20% of women successfully control tobacco dependence during pregnancy, cessation of smoking is recommended before pregnancy.

* CDC. *Recommendations to Improve Preconception Health and Health Care—United States. MMWR Recommendations and Reports 2006;55(RR-06):1-23. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5506a1.htm>.*

II. Moving Recommendations to Action with Guidance of Key Stakeholders

With publication of these new recommendations, leaders of the CDC Preconception Health and Health Care Initiative sought to go beyond the theoretical framework and advance more specific implementation strategies. To determine which strategies might be acceptable in the field, in June 2006, CDC convened three implementation workgroups—clinical, public health, and consumer—to discuss opportunities to implement the strategic plan and recommendations. These groups focused on core constituencies where changes in knowledge, attitudes, and practices could lead to improvements in preconception health and health care. Each workgroup was led by two co-chairs who worked closely with a CDC staff leader. See Appendix A for a list of workgroup participants.

Each of the workgroups involved practitioners in the field, beyond the experts on the Select Panel, and were designed to be representative of various professional fields. For example, the clinical workgroup included obstetrician-gynecologists, family practice physicians, nurse midwives, and nurse practitioners, as well as academic leaders with expertise in professional education. The public health workgroup participants included professionals working in state and local health departments, federally qualified health centers, and other publicly supported health programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The consumer workgroup consisted of a range of professionals, including outreach workers, researchers engaged in community action research, magazine editors, and experts in health communication.

The workgroups were charged with the following core tasks:

- Review the action steps related to their focal area, adding specificity as appropriate.
- Discuss opportunities and challenges related to proposed action steps.
- Set priorities for action steps (e.g., based on feasibility, potential impact, relative importance).

- Agree to take leadership for implementation of one or more action steps (e.g., develop a tool, conduct research, design a demonstration project, prepare consolidated practice guidelines, conduct consumer focus groups).
- Discuss next steps for moving forward and develop a work plan or timeline for the workgroup to complete these steps (e.g., meet again, convene others, develop a proposal for funding to support a research or demonstration project, develop a plan for focus groups, write a white paper).

Ten strategies emerged from these discussions (Table 3). Many strategies cut across all groups; some were more clearly associated with specific areas of expertise. The workgroup discussions also revealed that two other workgroups should be convened: one to consider issues related to health policy and finance, and another to discuss research.

1) **Workgroup priority areas**

- The **Clinical Workgroup** discussed ways to maximize existing clinical guidelines and tools, as well as opportunities to conduct health services research, apply quality improvement techniques, and improve professional education related to preconception health and health care.
- The **Public Health Workgroup** sought to foster the integration of public health practices and policies in public health programs, specifically to improve data collection and quality by enhancing monitoring and surveillance systems, creating models of practice, and developing the skills of the public health workforce.
- The **Consumer Workgroup** discussed consumer attitudes, demands, and education, and they looked at how the needs of women with resources and access to health care who need information about preconception health differ from low-income and minority women who face additional barriers to health care access and information.

2) **Policy and financing issues** were consistently raised by all of the workgroups. Each workgroup was asked to identify, but not focus on, policy and finance issues because a separate workgroup would be convened to address these areas. Issues to be addressed in this workgroup are found in Appendix B.

3) **Research issues** also emerged from each group. The recommendations made will be used to develop and prioritize research projects and to foster calls for project proposals related to preconception care. A sampling of the research recommendations developed by the clinical and consumer workgroups is included in Appendix C.

4) **Crosscutting strategies** identified by all groups included:

- **Professional education, training, and workforce development**
Educating the current and emerging clinical and public health workforce is essential if preconception care is to be integrated into standard practice.
- **Best practices**
Identifying, cataloging, and disseminating existing practices with proven effectiveness will assist in moving preconception care into standard and accepted health care practice.

- **Demonstration projects**
Promoting demonstration projects to test current theories and promote the discovery of more efficient methods to incorporate preconception care into existing practices is an essential strategy for implementing the 10 recommendations.
- **State and local initiatives**
Ongoing support for state and local initiatives related to preconception care will allow for the development and testing of practice models. The funding of clinical or public health practice collaborations in particular will likely lead to better integration and incorporation of preconception messages into existing practices and programs. In addition, state and local coalitions or action groups can help to guide implementation of the recommendations. Examples of state and local initiatives underway are found in Appendix D.

Table 3. Summary of Implementation Strategies

1	CLINICAL GUIDELINES AND TOOLS; Workgroup Lead – Clinical
a	Develop consolidated clinical guidelines for preconception care.
b	Assess and improve clinical screening tools for preconception care.
c	Disseminate clinical guidelines and screening tools to health care providers; develop a preconception care monograph.
d	Redesign the postpartum visit.
e	Implement demonstration projects seeking to modify clinical care practices, measure quality improvement results related to these efforts, and encourage clinically based research projects.
2	CONSUMER INFORMATION; Workgroup Lead – Consumer
a	Develop consumer messages for women who need information about preconception care and who currently have access to health care services and resources.
b	Conduct community-based, participatory research projects to assess self-perceived needs and appropriate actions about preconception care among low-income women, minority women, and all women at higher risk for adverse pregnancy outcomes.
c	Compile consumer self-assessment tools.
d	Develop social marketing portfolios for a wide range of audiences.
3	PUBLIC HEALTH PROGRAMS AND STRATEGIES; Workgroup Lead – Public Health
a	Seek federal and state agency support to encourage more integrated preconception health practices.
b	Support federal public health programs to develop, evaluate, and disseminate integrated approaches to promote preconception health.
c	Analyze and evaluate the preconception care activities used under the federal Healthy Start program.
d	Convene or use local task forces, coalitions, or committees at the community level.
e	Support a Preconception Health Practice Collaborative of selected state and local teams who, using a common framework, will work together and within their jurisdictions.

4	MONITORING AND SURVEILLANCE; Workgroup Lead – Public Health
a	Improve public health surveillance and monitoring of preconception health and health care services (Pregnancy Risk Assessment Monitoring System-PRAMS, Healthy People 2020, etc.).
b	Conduct needs assessments and define potential indicators and measures for preconception health care programs.
c	Create working links between public health laboratory leadership, clinical practitioners, and researchers to promote and develop bio-monitoring efforts for early identification of potential exposures and links to adverse pregnancy outcomes and women's health.
5	RESEARCH AGENDA; Workgroup Lead – Crosscutting
a	Develop a list of priority research projects.
b	Generate research project proposals.
6	PUBLIC POLICY AND FINANCE; Workgroup Lead – New Workgroup on Public Policy and Finance
a	Develop a menu of public policy options to facilitate access to and delivery of preconception care services.
b	Develop Medicaid preconception care demonstration projects in one to three states.
c	Develop pilot demonstration projects for preconception care in the context of private health care plans, paying particular attention to financial costs and benefits.
7	PROFESSIONAL EDUCATION AND TRAINING/WORKFORCE DEVELOPMENT; Workgroup Lead – Crosscutting
a	Develop and promote preconception care education and training programs for public health professionals.
	<ul style="list-style-type: none"> • Link with professional credentialing requirements. • Incorporate preconception health into curricula of schools of public health.
b	Develop and promote preconception care education and training programs for medical professionals/clinicians.
	<ul style="list-style-type: none"> • Develop online modules for CME/CEU credits. • Link educational or practice outcomes related to preconception care with professional credentialing requirements. • Develop clinically based tools or courses for use in formal educational settings.
c	Review and widely disseminate existing and newly developed preconception care modules that have demonstrable efficacy.

8	BEST PRACTICES; Workgroup Lead – Crosscutting
a	Develop a catalogue or compendium of promising practices.
b	[alternatively] Develop a clearinghouse for sharing promising practices.
c	Maintain linked Internet repositories/web portals at CDC and March of Dimes
d	Convene a national meeting in 2007.
9	DEMONSTRATION PROJECTS; Workgroup Lead – Crosscutting
a	Evaluate current demonstration projects.
b	Initiate new demonstration projects.
c	Identify opportunities for demonstration projects in public health settings.
10	STATE & LOCAL INITIATIVES; Workgroup Lead – Crosscutting
a	Monitor and support state and local initiatives (Appendix D).

Core Strategies at the State and Local Levels

Implementation strategies identified by the workgroups were further distilled into more specific elements that would be applicable at the state and local levels.

- **Information sharing.** Host local meetings, prepare and distribute publications, disseminate information through the media.
- **Guidelines, standards, and tools.** Disseminate existing guidelines and screening tools, develop new tools for clinical and public health practice.
- **Professional education.** Support professional education, create courses for students, host conferences and educational seminars.
- **Monitoring and surveillance.** Add measures related to preconception health to the Title V data and information set, add questions to PRAMS, conduct other consumer and professional surveys.
- **Health services research.** Support health services research, analyze existing state and local data, assess consumer knowledge and attitudes.
- **Demonstration projects.** Pilot test clinical screening tools, pilot test consumer information materials, operate clinical demonstration projects.
- **Learning collaboratives.** Create clinical/public health practice collaboratives for quality improvement.
- **Stakeholder groups or coalitions.** Create advisory groups and/or advocacy coalitions, build cross-agency workgroups and task forces, engage consumers.

III. Implementing the Strategies

Members of the three workgroups continued to work after the June 2006 meetings and have made progress in many areas. The following summarizes progress through the end of 2006.

The **Clinical Workgroup** addressed preconception recommendations associated with clinical care (preventive visits; interventions for identified risk, interconception care, and public policy and financing; and research). This workgroup is also taking the lead in implementing activities associated with clinical tools and guidelines and has divided into eight subcommittees to work more efficiently. All activities will take into consideration how to minimize disparities in the provision of preconception services.

In summary, the Clinical Workgroup will:

- Develop consolidated clinical guidelines for preconception care.
- Assess and improve clinical screening tools for preconception care.
- Disseminate clinical guidelines and screening tools to health care providers; develop a preconception care monograph.
- Redesign the postpartum visit.
- Implement demonstration projects seeking to modify clinical care practices, measure quality improvement results related to these efforts, and encourage clinically based research projects.

The **Public Health Workgroup** addressed recommendations associated with public health programs, as well as strategies to improve monitoring and surveillance. Experience from Healthy Communities initiatives, immunization campaigns, and similar efforts suggest that community organizations and local health agencies are essential for the implementation of even the best, evidenced-based efforts related to health. Public health programs, especially clinical programs that provide family planning or HIV/STD services, could play a far greater role in improving preconception health if they had the tools and resources to do so. A key strategy is engaging communities in the development of the best methods for implementing and evaluating local preconception care programs. Community-level work is particularly important because it is at that level that care and education are delivered. The priority for the monitoring and surveillance recommendation is to determine what measures are needed to show the effectiveness of preconception care. The group began with the identification of measures available from current data resources (PRAMS, BRFSS, etc.) and then will determine additional needs.

In summary, the Public Health Workgroup will:

- Seek federal and state agency support to encourage more integrated preconception health practices.
- Support CDC programs to develop, evaluate, and disseminate integrated approaches to promote preconception health.
- Analyze and evaluate the preconception care activities used under the federal Healthy Start infant mortality reduction program.
- Convene or use local task forces, coalitions, or committees at the community level.
- Support a Preconception Health Practice Collaborative of selected state and local teams who, using a common framework, will work together and within their jurisdictions.

- Improve public health surveillance and monitoring of preconception health and health care services (PRAMS, Healthy People 2020, etc.).
- Conduct needs assessments and define potential indicators and measures for preconception health care programs.
- Create linkages between public health laboratory leadership, clinical practitioners, and researchers to promote and develop bio-monitoring efforts for early identification of potential exposures and links to adverse pregnancy outcomes and women's health.

The **Consumer Workgroup** addressed the two Select Panel recommendations about individual responsibility and consumer awareness. This workgroup is taking leadership in implementing activities associated with consumer information. One main focus is on increasing awareness of reproductive risks and preconception health and health care. Key action steps address the development, evaluation, and dissemination of tools to help women and their partners make decisions about their reproductive health across the lifespan. The group recognized the need to identify tools that are age and culturally appropriate and that cover both general health topics and specific risk behaviors. The group also noted the need to integrate preconception health messages into existing health promotion activities. The needs of two broad groups of women are being addressed: 1) women with access to health care resources and services who need information, and 2) women with low incomes and limited resources who lack adequate access to health care and information and who may also experience racial and ethnic disparities.

In summary, the consumer workgroup will:

- Develop consumer messages for women who need information about preconception care and who currently have access to health care services and resources.
- Conduct a community-based, participatory research project to assess self-perceived needs and appropriate actions about preconception care among low-income women, minority women, and all women at higher risk for adverse pregnancy outcomes.
- Compile and catalog consumer self-assessment tools.
- Conduct research to determine what types of health promotion and education messages can be bundled effectively (e.g., messages about smoking, healthy weight, HIV/AIDS).
- Develop social marketing portfolios for a wide range of audiences.

Workgroup Activities Update

Table 4 includes an update of activities of the workgroups as of January 1, 2007, based on strategic approaches developed during the meetings in June 2006. Many activities are underway. The largest gap in implementation activities is in the area of demonstration projects.

Table 4. Workgroup Members' Activities to Implement the Recommendations

Strategic Approaches	Activities
Information sharing	<ul style="list-style-type: none"> • Publish monograph* • Update March of Dimes/CDC websites* • Make presentations at national, state, and local meetings* • Publish Maternal and Child Health Journal supplement* • Establish speakers' bureau* • Publish articles in mainstream women's magazines*
Guidelines, standards/tools	<ul style="list-style-type: none"> • Develop consolidated clinical guidelines* • Assess existing screening tools*
Professional education	<ul style="list-style-type: none"> • Develop model curriculum* • Update March of Dimes curriculum* • Promote use of the Maternal and Child Health Journal in schools of public health, medicine, and other health professions*
Monitoring and surveillance	<ul style="list-style-type: none"> • Study existing data and surveillance approaches to identify gaps* • Use HEDIS postpartum visit data for quality improvement • Develop Healthy People 2020 objective* • Modify PRAMS/Perinatal Periods of Risk
Research	<ul style="list-style-type: none"> • Convene a meeting on the research agenda* • Design new clinical research projects (preliminary work underway) • Study Healthy Start interconception activities* • Develop consumer messages with market research* • Conduct economic research and develop the business case
Demonstration projects	<ul style="list-style-type: none"> • Demonstrate effectiveness of PCC approaches in clinical settings • Demonstrate impact of PCC approaches in public health population efforts • Conduct participatory action research with women at risk* • Develop/revise Medicaid interconception care projects
Learning collaboratives	<ul style="list-style-type: none"> • Implement clinical quality improvement practice collaboratives • Implement public health practice collaboratives (state/local)*
Stakeholder groups or coalitions	<ul style="list-style-type: none"> • Encourage state advisory groups and local coalitions* • Convene Policy and Finance Workgroup*

*Activities completed or underway as of January 1, 2007, by CDC and its partners participating in the Select Panel and in the Clinical, Public Health, and Consumer Workgroups.

Appendix A: Preconception Care Workgroup Participants

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Appendix B: Policy and Finance Working Group

The fourth Preconception Care Initiative Working Group, convened March 9, 2007, focused on policy and finance topics. Policy and finance barriers limit the availability of preconception care and, reportedly, limit professional practice changes. Millions of women of childbearing age lack adequate health coverage, and others live in medically underserved areas. Fragmentation of health care service delivery only exacerbates existing problems and inequities in the system. Most low-income women lose Medicaid coverage following the postpartum period, but states have options to extend coverage. More than a dozen states have Medicaid family planning waivers, but few currently offer services to improve preconception and interconception health. Title V programs generally have not focused resources on preconception and interconception care, but innovative pilot and other projects are increasingly being launched by the states. Opportunities exist to use and improve existing health care coverage and financing options through public programs such as Medicaid, Medicaid waivers, the State Children's Health Insurance Program (SCHIP), and other state and federal efforts.

The Policy and Finance Working Group discussed the following questions:

- What are the health care financing principles that support action in the area of preconception care?
- What evidence is needed to advance policy (e.g., actuarial, clinical, cost-benefit, business case)?
- What state policy proposals and strategies are being discussed (e.g., CA, FL, WA)?
- What are states doing through Medicaid and family planning waivers relevant to preconception care? What are the barriers to doing more? How might the Deficit Reduction Act help or harm the potential for Medicaid policy developments?
- Can the lessons learned from Healthy Start interconception care projects be translated more broadly into Title V women and infant health program activities?
- What specific changes in health coverage and financing are needed to support changes in clinical practice?

Appendix C: Research Recommendations

Research Recommendations From the Clinical Workgroup

Although there is sufficient evidence to recommend the widespread implementation of preconception care, further research to expand the current knowledge base and effect appropriate clinical practice changes is needed. Implementing what is known while engaging in interdisciplinary research efforts is vital to improving maternal and child health. The Clinical Workgroup made the following suggestions:

- Develop a research agenda on preconception care to be carried out by multiple provider types and organizations. Encourage each provider organization to convene a group to develop a research agenda specific to their interests. Topics addressed may include:
 - o Evaluate how and to what extent preconception care reduces known health and pregnancy outcome risks.
 - o Identify how to best deliver preconception care. Develop sustainability models of various interventions within different delivery systems. Evaluate care delivery models to determine what contributes to sustainability within delivery systems
 - o Determine which quantity and quality outcome measures serve as the best benchmarks in evaluating the impact of preconception care efforts.
 - o Investigate how variations in the risk burden among women with and without preconception care affect pregnancy outcomes. Evaluate the impact of community-level interventions on pregnancy outcomes.
 - o Compare the provision of individual preconception care services versus the bundling of services.
 - o Determine what types of providers are most effective in the provision of preconception care.
 - o Quantify the strength of association between maternal risk factors and outcomes by using linked, longitudinal data sets, such as the Grady Interpregnancy Care Program study.
 - o Within the context of preconception care, determine the impact of disparities in access to care and how to minimize these impacts. Study disparities in access to and quality of care, as well as disparities that are practice-related (linguistic and cultural competency).
 - o Fund demonstration projects and use data to evaluate cost-effectiveness and cost-benefit.
 - o Support translational research, not just basic science, regarding interactions between environment, behavior, resiliency, and sociocultural influences on maternal and child health before, during, and after pregnancy.
 - o Develop economic analysis and evidence, such as cost-benefit, cost-savings, return on investment, and the business case, to meet the needs of different audiences (policy makers, business leaders, insurance companies, etc.)
 - o Address specific aspects of preconception care. What is the impact of changing male partners on the risk of adverse outcomes? When taking into account the impact of iatrogenic versus non-iatrogenic pathways to preterm birth, what is the role of advancing maternal age on subsequent birth outcomes?

Research Recommendations From the Consumer Workgroup

- Review theories and practices of social marketing and other research associated with the development of messages for various audiences.
- Conduct a literature review to assess what is known about health disparities and preconception care.
- Inventory and summarize what has been evaluated and what is being done. What do we know about preconception care and its impact on health disparities? Through writings, media contacts, and educational endeavors, share what we know about preconception care with the public and encourage replication of best and promising practices.
- Ensure that issues related to health disparities, social justice, and empowerment are woven into any preconception care research agenda.
- Support health systems and service delivery research that evaluates the cost and efficacy of bundling or packaging preconception care services for rural, low-income, or at-risk women.
- Develop a better understanding of how to communicate best with high-risk women.
- Support community-based, participatory research projects in preconception care.

Appendix D: Examples of State and Local Initiatives

A number of state and local areas have undertaken projects or initiatives designed to improve preconception health and health care; most are using the CDC recommendations as a framework.

State Initiatives

In California, a state-level group has been convened through the joint efforts of the March of Dimes and the state department of health. The Preconception Care Council of California consists of representatives from state agencies, provider organizations, county public health departments, university programs, and private health plans. This advisory committee worked in 2006 to determine its mission and to select, through group consensus, imperatives for their work. Priorities include action in the policy, program, and practice arenas, and the group aims to boost advocacy, social marketing, and community practice through its efforts. The Title V Maternal and Child Health Program sees enhancing preconception health and health care as another opportunity to reduce disparities in maternal and infant morbidity and mortality, particularly in light of a recently completed birth outcomes study that showed the impact of preexisting medical conditions on adverse pregnancy outcomes. The blend of public and private sector representation, along with state and local leadership, gives breadth to the focus and efforts of this group.

In Florida, the March of Dimes, state department of health, and other partners joined together to host a “Florida Prematurity Summit: Preconception Health for Every Woman.” The focus was to identify new approaches to reducing risk and to discuss how to incorporate preconception care into existing practice. Building on the CDC recommendations for preconception health, Florida leaders have begun a review of data and strategies to integrate preconception health recommendations into existing clinical care for women of childbearing age. In addition, the Florida Department of Health made special funding available to Healthy Start grantees for activities that include interconception care for women who have had a previous adverse pregnancy outcome (CDC Recommendation 5). Of particular interest are programs that focus on community outreach, provider education, and direct service delivery. In addition, maternal and child health leaders have developed a legislative proposal that would increase the state’s investment in preconception health and health care.

The Ohio Department of Health has developed an action plan to improve preconception health. This plan combines elements of prior projects with a new emphasis on reaching high-risk women before and between pregnancies. While the program is driven by the CDC recommendations, the work is based on efforts such as the Perinatal Data Use Consortium focus on Perinatal Periods of Risk (PPOR) analyses that measure the contribution of maternal risk to infant adverse outcomes. Other efforts will include increased emphasis on preconception health in local health departments, new analyses of Medicaid data, enhanced use of community health workers to support women, and other preconception care–related activities.

Other states took action in 2006, in response to release of the CDC recommendations. For example, Washington State held a state summit, hosted by Governor Gregoire. Michigan’s Department of Community Health began epidemiological and related analyses to assess the status of preconception health among women in Michigan. Utah’s Title V Maternal and Child Health program convened leaders and has an action plan to promote preconception care. Colorado is putting together an action plan to promote preconception care.

Local Initiatives and Public Health Practice Collaborative

Many local initiatives are underway. A pilot Urban Practice Collaborative was recommended as a strategy by the Public Health Workgroup. The Public Health Workgroup developed a three-part strategy to foster the integration and translation of preconception health in public health practice: data and surveillance, integration, and workforce development. The Public Health Workgroup specifically recommended using a “practice collaborative” model to promote adoption and integration of preconception health recommendations among peers. NCBDDD/CDC awarded funding for CityMatCH for one year to develop this pilot practice collaborative in three major cities: Los Angeles, CA; Nashville, TN; and Hartford, CT. These cities were selected based on prior expressed interest, capacity, and population diversity. Hartford represents a smaller, racially and ethnically diverse urban area in the Northeast with a large Latina population; Los Angeles is a large urban center with a diverse population including many immigrants; and Nashville is a midsize, traditional Southern urban area with large black population. The project focus in Hartford is on integrating preconception health into existing MCH programs. The Nashville project is focusing on special populations, including young women with sickle cell disease or trait. With Los Angeles County accounting for one in four U.S. births, the success of the multifaceted initiative there will have a tremendous potential impact on maternal and infant health outcomes.

Each multidisciplinary team will consist of at least five members with expertise in community assessment/engagement, prevention programming, clinical practice, policy development, and systems integration of reproductive/women’s health. CityMatCH will provide ongoing expert consultation and technical assistance to the three program teams for specific expressed needs; this will be done using distance education (via web or phone conferencing) to build a common knowledge base about the science of preconception health and health care. At the end of the project year, CityMatCH will develop case studies based on the experience of the pilot cities to capture lessons learned and insights on how other communities might implement the PCC/PCH recommendations. CityMatCH will also evaluate the creation and engagement process and the impact of the pilot project, and will make recommendations for expansion for current participating communities and for others interested in implementing their own projects.



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