



Healthy Generations

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Inside this Issue

Exploring Myths about Nutrition and Pregnancy Outcome

Judith E. Brown, Ph.D.
Maureen A. Murtaugh, Ph.D.
Division of Epidemiology, University of Minnesota

Social Determinants and Women's Reproductive Health

Wendy Hellerstedt, MPH, Ph.D.
Division of Epidemiology, University of Minnesota

PAGE 3

Using Data to Guide the Development and Implementation of a State Cancer Screening Program

Jane E. Korn, MD, MPH & Annette Bar-Cohen, MA, MPH
Cancer Control Section, Minnesota Department of Health

PAGE 6

Family Planning and Reproductive Health Services

Michael Vaughn
Family Planning and Reproductive Health Wisconsin Division of Public Health

PAGE 8

"Partners in Health" – Caring for Women and Their Families: WIC and its Partners in Dakota County, MN

Debra Thingstad Boe RN, PHN, BAN
Dakota County Public Health Department

PAGE 12

Exploring Myths about Nutrition and Pregnancy Outcome*

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The science underlying women's reproductive health in the area of nutrition and pregnancy outcome relationships has grown substantially over recent decades. Far more nutrition recommendations and interventions for preconceptional and pregnant women are now based on evidence generated by scientific studies, and far fewer on clinical assumption than in the past. Yet, much of the evidence-based knowledge about nutrition and pregnancy outcome has not been transferred to health care policy decisions and clinical practice. This article highlights and responds to five common myths about nutrition and pregnancy outcome so that they may be replaced by state-of-the-art science knowledge.

Myth 1: Females are born with "maternal

instincts" that guide them to select and ingest foods with needed nutrients during pregnancy.

Response: Females are not born with such instincts.

Humans are born with the ability to regulate caloric intake based on caloric need. (These soft-wired mechanisms can be overpowered by environmental circumstances, however)¹. There are not data to support the speculation that females have an inherent ability to select appropriate foods for pregnancy, or to seek-out foods that contain needed nutrients. Changes in taste and odor preferences are common during pregnancy,²⁻⁴ and although these changes may modify food intake, they have not been shown to rectify deficient diets. The practice of eating ice, freezer frost and other substances such as baking powder, baby powder, clay, or dirt during pregnancy was reported in over half of a Texas

continued on page 2

We have now officially entered the new millennium. Many great advances have been made in the area of Maternal and Child Health, but this winter edition of Healthy Generations reminds us that there are many problems yet to solve. Women's reproductive health is this issue's topic. Judy Brown and Maureen Murtaugh challenge some of the many nutritional myths that women face during pregnancy. Wendy Hellerstedt considers the impact of gender roles in the home and the labor force, on women's reproductive health issues. Jane E. Korn and Annette Bar-Cohen examine a breast cancer-screening program in Minnesota. They highlight the beneficial partnership between research and programming. Michael Vaughn discusses the importance and uniqueness of family planning and reproductive health services. Several programmatic examples from the state of Wisconsin are provided. In the Partners in Health section, Debra Thingstad Boe of the Dakota County WIC clinic in Minnesota, reveals the multiple programming efforts of various community organizations at the WIC clinic site.

We in MCH at the University of Minnesota have recently updated our website. You are invited to take advantage of the many resources and presentation materials available there. Resources in the area of women's reproductive health include PowerPoint presentations and fact sheets (<http://www.epi.umn.edu/mch/HealthyGenerations/hga.html>). The videoconference associated with this issue will be held on March 14 from 1-3 p.m. (see page 2 of this issue). Please check out our website (<http://www.epi.umn.edu/mch/HealthyGenerations/hga.html>) for any possible changes and updates. The videoconference provides you the chance to speak with the authors featured in this issue. If you are not able to attend the videoconference, free videotapes of the event can be requested from Jan Pearson (pearson@epi.umn.edu or call 612.626.8644). Tapes of the previous conference on adolescent tobacco use and childhood obesity can also be requested. Please note, due to technical difficulties the childhood obesity tape is not a live recording but is a re-recording. Thus audience participation is not included on this tape.

I welcome any feedback or comments about Healthy Generations and related activities. Previous letters to the editor have been posted at <http://www.epi.umn.edu/mch/HealthyGenerations/HealthyGenerationsRes.html#letterToEditor>. You can contact me at meschke@epi.umn.edu or call 612.625.4891. To join our list of subscribers please contact Jan Pearson at pearson@epi.umn.edu or call 612.626.8644.

Laurie L. Meschke, Ph.D.
Editor

Healthy Generations Videoconference

Women's Reproductive Health

March 14, 2001
1-3 p.m.

**Beltrami County
Services Center**
616 America Avenue,
Suite 250, Bemidji

Douglas County
809 Elm Street, Alexandria

Freeborn County
203 W. Clark Street, Room
241, Albert Lea

Koochiching County
715 4th Street,
International Falls

Pennington County
1st and Main,
Thief River Falls

Ramsey County
MDH, Metro Square Annex
Building, 130 E. 7th Street,
St. Paul

Renville County
500 E. DePue - 3rd Level,
Olivia

Rock County
204 E. Brown, Luverne

Roseau County
606 5th Avenue SW, Room
20, Roseau

**St. Louis County
Courthouse**
Courtroom 3, 100 N. 5th
Avenue W., Duluth

Stearns County
Room 21, 705 Courthouse
Square, St. Cloud

Winona County
202 W. 3rd Street, Winona

Registration is limited by site. To register please contact Jan Pearson by phone (612.626.8644) or email (pearson@epi.umn.edu). Please visit <http://www.epi.umn.edu/mch/HealthyGenerations.hga.html> for any changes to these sites.

continued from page 1

sample of low-income women. This practice argues against an innate ability to choose needed nutrients during pregnancy.

Myth 2: Pregnant women should restrict their salt (sodium) intake.

Response: Restriction of salt or sodium intake during pregnancy is not recommended in the U.S. ⁵.

Sodium restriction may be harmful in pregnancy due to pregnant women's increased need for sodium. Such a restriction does not reduce the risk of pregnancy-induced hypertension ⁶ and may decrease diet quality ⁷. Previous studies have shown that the incidence of hypertensive disorders in pregnancy decline if women are given additional salt ^{8,9}.

Myth 3: All pregnant women should take a multiple vitamin and mineral supplement during pregnancy.

Response: It is not clear whether prenatal vitamin and mineral supplements benefit



women in general, or if they are harmful in some ways. Routine administration of supplements is not recommended in the U.S. ^{10,5}.

Although popular, prenatal supplements have not been specifically formulated to meet the needs of pregnant women nor have formulations been tested for bioavailability, safety, or efficacy. In general, women who have high quality diets are more likely to take supplements than women who may need the extra supply of nutrients ^{11,12}. As more foods become fortified with vitamins A, C, folic acid, calcium, and other nutrients, there is increased concern that overdose reactions may become more common in women using multivitamin and mineral supplements. High intakes of supplemental iron, for example, lower serum zinc levels ¹³ and initiate oxidation reactions that disrupt cell functions ¹⁴. Low serum zinc levels are associated with many adverse consequences in pregnancy ^{15,16}. The lack of systematic, long-term evaluations of prenatal vitamin and mineral

supplement use in pregnancy appears to contribute to the belief that they are always safe.

Some women, including women with multifetal pregnancy, healthy smokers, alcohol and drug abusers, and women who do not ordinarily consume an adequate diet, may benefit from a moderate-dose multivitamin and mineral supplement ¹⁰. It is concluded that dietary improvements, rather than nutrient pills, should serve as the primary, long-term solution to inadequate dietary intakes ¹⁰.

In contrast to multivitamin and mineral supplements, it is recommended in the U.S. that women be given 30 mg of elemental iron after 12 weeks of pregnancy to prevent iron deficiency ¹⁰. Women are also being urged to take a supplement containing 400 mcg of folic acid prior to and early in pregnancy, or to consume that amount of folic acid from fortified foods ¹⁷.

Myth 4: Pregnant women need to eat for two.

Response: Actually, this is true. They sometimes need to eat for three, four, and even more. What is not true about this statement is the assumption that pregnant women are eating for two adults. Based on a pregnancy weight change of 30 pounds, a 120-pound woman is actually eating for 1.25 adults of her size.

Myth 5: Maternal nutritional status can be described by knowledge of weight status.

Response: Weight status describes only weight status. Nutritional status includes weight for height status, other body size, and composition assessments, dietary and supplement intake, clinical signs of deficient or excessive nutrient intake, laboratory values related to nutrient status, and relevant health status indicators ¹⁸. It cannot be assumed that normal weight women are well nourished, or that acceptable hemoglobin levels reflect a general state of robust nutritional health. Nor can it be concluded that if weight status, hemoglobin level, or another single indicator of nutritional status is or is not related to an outcome of pregnancy then nutritional status is or is not related. There are ample examples of misuse of the term nutritional status and misrepresentation of results in the recent literature.

Conclusions

Maternal nutritional status is composed of hundreds of factors that range from time-specific levels of intake and availability of calories and nutrients to genetic predispositions that modify nutrient need. Intake levels of many nutrients covary, making it difficult to separate specific effects of individual nutrients.

Although complex and intensive, results of well-designed studies promise to reduce the

confusion that exists about many maternal nutrition and outcome relationships. Because dietary intake, supplement use, and body weight are modifiable, advances in knowledge could be applied productively towards the improvement of short and long-term health of individuals worldwide.

* Adapted with permission from Brown JE, Murtaugh MA. Exploring myths about nutrition and pregnancy outcome. *Perinatology* 1999; 1: 305-316. For more information about the *Perinatology* publication, please contact prism@vsnl.com

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Social Determinants and Women's Reproductive Health

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Reproductive health indicators for women, including fertility and sexually transmitted infections, reflect differences along social strata¹⁻⁵. High prevalence and incidence among some women may have gender inequity (within demographic strata) as an underlying source.

Pregnancy, Childbearing and Abortion.

U.S. women average 3.2 pregnancies, of which 1.8 become wanted births⁶. The rate of unintended pregnancy in the U.S. is 57%⁷. A disproportionate number of women with unintended pregnancies are at the lower or upper ends of the reproductive age span; e.g., about 85% of all pregnancies to adolescents are reportedly unintended⁷. Non-Hispanic white and black women report they want the same number of infants (on average, 1.8), but black women have about 70% more pregnancies (4.6 compared with 2.7 pregnancies among whites)⁶. Differences in pregnancy wantedness appear to be associated with socioeconomic factors at the individual, family, and neighborhood levels^{6,9}. And, while pregnancy, abortion, and birth rates to adolescents have been dropping in the U.S. for the past 6 years, rates among black and Hispanic youth are nearly twice that of white youth; adolescent childbearing, particularly, is concentrated among socially disadvantaged youth^{5,6,9}.

Nearly half of all unintended pregnancies occur to women who report using reversible contraception at the time of conception^{7,8,10}. Of the six million pregnancies that occur in the U.S.

annually, 1.6 million end in abortion ^{6,11}. Women seeking abortions are more likely than women in the general population to be white, Hispanic, between 19-24 years-old, separated or never-married, enrolled in Medicaid, and earning less than \$15,000/year ¹¹.

Sexually Transmitted Infections (STIs).

Two-thirds of all new cases of STIs occur in persons younger than 25 years-old. Among women, STI rates are higher among blacks than whites and higher among low-income women compared with middle- and upper-income women ^{12,13}. AIDS, for example, is the fourth leading cause of death among women 25-44 years-old and is the leading cause of death among black women in this age group ¹⁴. The rate of AIDS among females in 1997/1998 was 59/100,000 for blacks and between 2-5/100,000 for American Indians, Asians, and whites ¹⁵. STIs can lead to systemic infections, infertility, and ectopic pregnancy and may be related to spontaneous pregnancy loss and preterm risk ¹³. Infected pregnant women are also at risk of transmission of the infection to the fetus. A recent summary of the burden of STIs on the health of U.S. women includes ¹⁵:

- Chlamydia: 322 cases/100,000—and likely increasing ¹².
- Genital herpes: Some estimates suggest 27% of women of childbearing age may be infected ¹⁶.
- HIV (not AIDS): 3750 new cases among women reported annually ¹².
- Human papilloma virus: prevalence is difficult to know, but some estimate almost 50% of young women may be infected ¹³.
- Bacterial vaginosis: a large cohort study suggested perhaps 16% of pregnant women are affected ¹⁷.
- Pelvic inflammatory disease: there are about 175 hospitalizations/100,000 women aged 15-44 years every year ¹³.

Do Gender Roles Influence Health?

Implicit in most social stress theories about women and health are conceptualizations of power imbalances, between men and women, that contribute to, and manifest in, social norms, economic contexts, environmental risks, and individual behaviors ^{18,19}. Gender imbalances exist on at least two levels: the societal and the institutional. The societal level is constructed through a variety of historical and sociopolitical forces that consistently segregate power and ascribe social norms that maintain discriminatory roles (based on gender, age, race, etc.). A lower level, the institutional level, is more concrete and reflected through social institutions such as schools, workplaces, families, relationships, religious institutions, the medical system, and the media. Imbalances are maintained within institutions through mechanisms like unequal pay for comparable work, discriminatory admission or hiring practices, imbalance of control in relationships, and stereotypical or degrading depictions of individuals through media ¹⁹. These mechanisms can constrain the economic potential of women, their control of resources, and their expectations about their societal roles ¹⁹.

Gender Imbalances in the Division of Labor

At the societal level, gender imbalances in the division of labor may refer to the allocation of women and men to certain occupations (e.g., "women's work"). Such constraints can affect economic well-being, worksite exposures, and educational and occupational expectations. At the institutional level, the imbalance is manifested not only at the worksite (e.g., inequities in pay for comparable worth) but in the family and elsewhere, where women's stereotypical roles as primary nurturer (for children, elderly relatives, etc.) and primary housekeeper are uncompensated.

Employment. About 59% of adult women are employed in the U.S. ²⁰. Women constitute about 45% of the labor force, but occupations are segregated: about 99% of the secretaries, 95% of the nurses, and 97% of the child-care workers are women; about one-fifth of the lawyers and one-quarter of the physicians are women ²⁰. Women make about 78 cents for every dollar earned by a man in a comparable position ²⁰. Increases in the proportion of women, as well as parents in two-parent families, who are employed, highlight the need to address child-care issues and support systems for women with multiple responsibilities, potential exposures that can affect pregnancy or fertility (i.e., teratogens, including salient work-related stress), and the possibility of providing worksite-based prenatal and reproductive health counseling. Data on the impact of paid employment on women's health have been mixed ²¹: some studies have found an association between employment and good health (measured by self-esteem, perceived health and physical functioning) ^{1,22,23}, while others have found that some conditions, such as chronic hypertension and preterm delivery, are exacerbated by professional stresses ²⁴. High-demand and low-control jobs ²⁵, the lack of employment, and the absence of family responsibilities have also been associated with poor health ^{1,26}. Time constraints, conflicting responsibilities, and non-supportive work environments also negatively affect psychological health ²⁶.



Caregiving. Many women are the primary caregivers for children and/or aging or ill relatives. As with paid employment, excessive and conflicting responsibilities are associated with poor health. Prolonged caregiving (1 year or more) may be associated with psychological health, including self-esteem and role conflict ²⁷.

Economic status. Female-headed households are economically disadvantaged compared with male-headed and married couple households: 1994 annual median incomes were \$18,545, \$29,849, and \$43,129, respectively²⁸. The poverty rate is 46% for female-headed families with children compared with 23% for male-headed households and 9% for married couple families²⁸. Consistent with their relatively poorer economic status, women are more likely than men to be dependent on a spouse for health coverage and more likely to be dependent on a publicly-funded sources of health coverage.



Gender Imbalances in Interpersonal Power

Fundamental to health is individual control over exposure and vulnerability to environmental and behavioral risks. At the societal level, accepted representational imbalances in power, conveyed through political institutions, conventional language, etc., are the models for institutional imbalances that can disempower women through gender inequalities in control and authority (e.g., in relationships, at worksites, at educational settings). For example, preventing domestic violence and identifying women who are victims is of current interest. In addition to causing injury, violence increases many long-term health risks, including chronic pain, disability, substance abuse, and depression. Women with histories of abuse are also at increased risk for unintended pregnancy, STIs, and adverse pregnancy outcomes²⁹⁻³¹. It is estimated that the prevalence of violence during pregnancy ranges from 0.9 – 20.1%, depending on the sample³². It is possible that violence during pregnancy is more prevalent than

conditions for which women are routinely screened during pregnancy (e.g., diabetes), which has led public health workers to encourage universal screening for violence in health-care settings. Interest in the nature of intimate relationships—and power inequities—goes beyond concern for violence. Male cooperation is critical for condom use, yet men

Interested in making a difference?

Did you know that:

- African-American and American Indian infants have twice the risk of death in the first year of life compared with European-American infants?
- Women of color are less likely than European-American women to receive adequate well-women care and prenatal care? As a result, women of color are at higher risk for reproductive health concerns and for poor pregnancy outcomes.
- The risk for sexually transmitted diseases in African-American and American Indian adolescents is almost twice as high as that of European-Americans?
- Adolescent pregnancy, abortion, and birth rates for African-American and American Indian girls are twice that of European-American adolescents?

And, did you know that: While racial, and class, disparities in health are deep in the United States, public health workers, including maternal and child health professionals, are working to develop programs, policies, and surveillance methods to promote optimal health for all American women, families, and children?

If you have an interest in public health—especially social inequities in health—consider applying your talents and your passion to a career in Maternal and Children Health. One- and two-year Master's in Public Health (MPH) training is provided through the Maternal and Child Health (MCH). Program in the Division of Epidemiology, School of Public Health at the University of Minnesota. The program of study integrates practical experience with scientific and methodological content.

What does an MCH professional do? MCH professionals, at the master's and Ph.D. level, focus on developing individual- and community-level programs, policies, and surveillance systems that promote and preserve the health of families, including mothers, children, and adolescents.

Who should apply for an MPH in Maternal and Child Health? People who want to positively influence health outcomes of mothers, children, and families in the United States should apply. Students may be interested in program development and evaluation, policymaking, assessment, surveillance, teaching, or research. Individuals with degrees in MCH work in multidisciplinary collaborations in health-care organizations, community-based programs, public health departments, and private or public research organizations.

The Master's in Public Health in MCH is an appropriate degree for individuals interested in applying to PhD programs in behavioral or biological epidemiology, such as those offered in the Division of Epidemiology, where the MCH Program is housed.

Why Minnesota? There are two major reasons that individuals who are interested in social inequities in health should come to the University of Minnesota: (1) the population of Minnesota has problems that need addressing and an active public health workforce that has developed many innovative programs to which students may be exposed and trained; and (2) the MCH Program has a large and talented faculty who have strong community ties and national reputations for excellence in research.

Minnesota, especially the Twin Cities, is a major site for immigrants and is home among the largest populations of SE Asians, Somalis, and Ethiopians in the U.S. The Twin Cities also is deeply racially segregated and has one of the worst rates of poverty among children of color in the U.S. Minnesota has also persistently had among the lowest teen birth rates to European-Americans—and among the highest teen birth rates to African-Americans—in the U.S. The MCH Program at the University of Minnesota is nationally recognized as one of 13 federally funded training programs. The 21-member multidisciplinary MCH faculty focus their research, teaching, and community services to addressing social inequities in health. They have expertise in reproductive and perinatal health, family planning, child, adolescent, and family health promotion, risk reduction, and resiliency; child and family adaptations to chronic health conditions; and preventative interventions in the areas of adolescent pregnancy, childhood obesity, and fetal substance exposure. They work collaboratively with faculty throughout the School of Public Health and University, with particular strong linkages with the Adolescent Health Program in the Medical School, the School of Nursing, the School of Social Work, the Department of Family Social Science, and the Institute of Child Development.

For further information about the MCH Program-- call 612.626.8802 or 1.800.774.8636; email gradstudies@epi.umn.edu; or check out www.epi.umn.edu/mch and <http://www1.umn.edu/twincities/>

may have different priorities and different knowledge than women regarding safer sex and contraceptive practices ³³.

Conclusion

Gender inequity affects women and men. Men also suffer from stereotypical encouragement to perform “men’s work,” discouragement from nurturing roles, and dated notions that “real men” do not express emotions. It may be appropriate for public health workers to openly address, and perhaps challenge, social norms that discourage the full expression of thoughts, skills, and feelings in order to identify women—and men—at reproductive health risk and provide effective services for them.

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Using Data to Guide the Development and Implementation of a State Cancer Screening Program

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Congress passed the Breast and Cervical Cancer Mortality Prevention Act (Title XV) in 1990, ushering in a new era in the battle against breast and cervical

cancer. Title XV charged the Centers for Disease Control and Prevention to establish a national program to reduce morbidity and mortality from breast and cervical cancer by increasing screening, particularly among low income women and women of racial and ethnic minorities. In that year, Minnesota was one of four states funded to begin planning and implementation of what has come to be known as the Minnesota Breast and Cervical Cancer Control Program (MBCCCP).

In the late 1980's, national survey data ^{1,2} implicated cost as a significant barrier to screening, particularly among low income women and women of color. As a result, the majority of federal funding for MBCCCP was earmarked to provide direct patient services, including free Pap smears and mammograms. Other barriers, well described in the literature, related more to women's perceived risk of breast cancer and whether or not their physicians recommended screening. To address these issues, states were mandated to incorporate professional and public education into their programs. Partnerships with professional organizations and advocacy groups were deemed key to successfully advancing the program's mission.

Minnesota's public health system is unique in the extent to which local agencies rely on local funding and determine their priorities based on local needs. Given this, as well as local agencies' shift away from providing personal medical services, MBCCCP looked to the existing medical care system to deliver screening services. Beginning in 1991 with two demonstration sites, MBCCCP's service delivery network has grown to include 300 hospitals and clinics statewide, which provide free breast exams, mammograms, and Pap smears to eligible women (see Figure 1). Every woman screened is tracked and followed until all needed services are received. All screening and follow-up data are maintained in a central database managed by the Cancer Control Section at the Minnesota Department of Health. This has enabled data-driven evaluation of the program and spawned a variety of program-based initiatives.

Since the program's inception, over 66,000 women have received services through MBCCCP, including 69,790 mammograms and 96,917 Pap smears. More than 7900 breast screening abnormalities have been detected, in addition to 8700 cervical screening abnormalities. Five hundred cases of cancer and 1500 cases of significant cervical dysplasia have been diagnosed in women who might have not been screened were it not for MBCCCP. Fewer than 2% of women with

screening abnormalities have been lost to follow-up thanks to the intense efforts of clinic staff and MBCCCP's case manager.

Identifying and reaching eligible women efficiently and cost-effectively has been an ongoing challenge. By definition, eligible

Figure 1.

MBCCCP Eligibility Requirements

Age 40 or older

Income at or below 250% Federal Poverty

No insurance or underinsured

women are medically underserved and often isolated and alienated from the medical and social service systems. In order to successfully reach and enroll women into MBCCCP, the Cancer Control Section has relied on a combination of original research, evaluation-guided interventions, use of program data, and evidence-based approaches reported in the literature to construct its outreach program.

Results of two research projects have been incorporated into the outreach program. The Friend-to-Friend project, funded by the National Cancer Institute, tested the efficacy of an outreach approach using social support networks, and an "inreach" approach offering screening services to women seeking other health services in a hospital setting. The outreach intervention, a community trial utilizing the 41 Minneapolis subsidized public housing buildings randomized to intervention and control sites, employed a structured three part social event to increase breast cancer screening behavior. Screening behavior in women in the intervention group increased 12% ($p < 0.05$) over those in the control group ³. The Friend-to-Friend program has been adopted by the American Cancer Society and by local public health agencies as a statewide recruitment strategy to enroll women into the program.

A second research project funded by the Association of Teachers of Preventive Medicine, focused on the issue of rescreening. The study was guided by findings from a rescreening survey that a significant number of MBCCCP enrolled women failed to return to the program for a subsequent mammogram because they were unaware of the program's ongoing nature. Using a sample of MBCCCP newly enrolled

women, the study tested the use of tailored and timely mailings designed to keep the availability of the free screening program and the importance of rescreening on the minds of MBCCCP participants. Women in the intervention group were more likely to return for a repeat screening than women in the control group ($p < 0.05$)⁴. This strategy is currently being applied to the MBCCCP program both for newly screened women and for women who have not returned several years after their initial screening.

The cost-benefit outcomes of new outreach strategies also have been rigorously evaluated and strategies have been refined accordingly. This approach has been used in a number of media efforts. The use of televised phone banks has enabled MBCCCP to capitalize on the sense of urgency created by a time sensitive call to action. TV ads prompt women to call the program's toll free number to learn if they are eligible and how they can make a screening appointment⁵. The efficacy of this approach has been evaluated by matching names of eligible callers to patient enrollment forms in the MBCCCP tracking and follow-up database. Over the course of three years and five phone banks, the proportion of eligible callers that have subsequently been screened through the program has risen from 19% to nearly 70%. This increased effectiveness is a result of significant changes made in program delivery based on evaluation findings. These changes have also significantly decreased the cost per woman enrolled. Staff now directly schedules appointments for eligible callers within days of their initial call. This approach has been very effective at increasing the number of appointments kept. Other evaluation-driven modifications have improved caller rates by optimizing the timing and frequency of ad placements, utilizing effective spokespeople and using volunteers and the local public health network efficiently. Variations of the phone bank are currently being tested in local media markets around the state.

Finally, a strategy that is supported by MBCCCP experience and the national literature on outreach is the use of community outreach workers^{6,7,8}. MBCCCP currently works with community outreach workers from the Somali, Hmong, Latino, African American, and American Indian communities in urban and rural settings. These outreach workers come from the communities they serve, speak the appropriate languages, know the culture of their audiences, can identify appropriate outreach venues, and are sensitive to the particular issues raised by breast and cervical cancer screening in their communities. All of the community outreach programs receive close technical assistance from MBCCCP staff and document their progress toward reaching screening goals.

The MBCCCP has made ample and productive use of available research and evaluation data during the

development, implementation and improvement phases of the program. This approach has optimized the program's ability to provide free cancer screening services to thousands of underserved Minnesota women.

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Family Planning and Reproductive Health Services

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Unintended pregnancy and spacing and timing of pregnancy are among the most significant factors affecting maternal, child and family health, and family economic stability. Unlike many other social, health, and financial circumstances, decisions affecting the spacing, timing, and number of children, are largely under the control of individuals and couples. For this reason, sexual activity needs to be recognized as significant a reproductive health event as conception and pregnancy, requiring access to information and services. Several steps are essential to promote intended and prepared for pregnancy, and to reduce unintended pregnancy:

- Improve access to quality contraceptive and related health services,
- Ensure unrestricted access to information for informed choices and decisions,
- Ensure privacy with family planning patient care and information,
- Ensure family planning settings that respect patient dignity, and

- Ensure unrestricted patient choice of family planning providers

The relationship between access to family planning and related reproductive health services in terms of estimated unintended pregnancy and births averted is significant. Using national-level data, the number of prevented unplanned pregnancies and births was calculated for each state. Nationwide, over 1.5 million unplanned pregnancies and births were avoided in the following year among the nearly 6.5 million women receiving publicly-supported family planning services in 1994. A large proportion of averted pregnancies were among young, never-married, and low-income women — women most vulnerable to the economic and social impact unintended pregnancy. Estimates are that over 1/3 would have become eligible for Medicaid. This illustrates the estimates that approximately \$4.40 has been estimated saved in health and medical services and economic support during the first 2 years following unintended pregnancy for each \$1.00 spent for publicly-supported contraceptive services. Among the 150,000 women who received family planning services in all publicly-supported clinics in Wisconsin in 1994, the conservative estimate is that 35,200 unplanned pregnancies and births were averted.

The Role of Public Family Planning Programs

The primary role of publicly-funded family planning programs is to enable women and couples to make and achieve their personal “family planning” goals, and to enter pregnancy and parenthood by choice: under reasonably achievable circumstances most favorable to maternal health, to a healthy pregnancy, and to infant growth and development.

Access

Public programs have a responsibility to provide quality services that are available,

The Institute of Medicine (IOM) report is comprehensive and addresses at length the extent, causes, and consequences of unintended pregnancy. The terminology and definitions used in the National Survey of Family Growth are also explained. Website: <http://books.nap.edu/catalog/4903.html>

Fertility, Family Planning, and Women’s Health: New Data From the 1995 National Survey of Family Growth, published in 1997 by CDC’s National Center for Health Statistics is available at http://www.cdc.gov/nchs/fastats/pdf/sr23_19.pdf.

An analysis of the 1995 National Survey of Family Growth, with a summary of the demographic distribution of unintended pregnancy, is presented in "Unintended Pregnancy in the United States" by Stanley Henshaw. Family Planning Perspectives. Volume 30, No. 1. 1998. Website: <http://www.agi-usa.org/pubs/journals/3002498.html>

affordable, and acceptable to the needs of prospective patients. These are the main components of access.

Privacy

Prospective family planning patients consistently identified privacy as one of their highest priorities and prerequisites for accessing services. Family planning and related reproductive health services have a higher standard of patient privacy expectations than other health care services.

For further information on the history of publicly-supported family planning services, and current issues, see The U.S. Family Planning Program Faces Challenges and Changes. Issues in Brief. Alan Guttmacher Institute. <http://www.agi-usa.org/pubs/ib3.html>

Choice of Provider

Family planning matters involve the most intimate and personal aspects of an individual’s life and health care. Highly sensitive information must be obtained from and

For further information, see Impact of Publicly Funded Contraceptive Services on Unintended Pregnancies and Implications for Medicaid Expenditures. Jacqueline Darroch Forrest and Renee Samara. Family Planning Perspectives. Vol. 28, No. 5. <http://www.agi-usa.org/pubs/journals/2818896.html>

discussed with patients to provide quality contraceptive and related reproductive health care. Family planning health care settings, clinic policies and practices, and staff proficiency must maintain an approachable and responsive environment that respects patient dignity. Women and couples may want to segregate these issues from their other personal and family

More information on family planning patient privacy rights and provider responsibilities are available at <http://www.hcet.org/wfpp/sandr/conf.html>.

health care. It is necessary and appropriate for patients to have the choice of an alternative “family planning” medical home separate from their “medical home” for primary health care. Public programs have a responsibility to provide an alternative “family planning medical home” for patients who prefer a separate setting for contraceptive and related reproductive health services.

Current Initiatives in the Wisconsin Family Planning Program

Several program requirements and initiatives have been established recently for

family planning services supported under contract with the Wisconsin Department of Health and Family Services/Division of Public Health to enhance the role of the Wisconsin Family Planning Program. A brief description of several main initiatives illustrates efforts to improve quality of care, availability, access, affordability, and acceptability of services to current and prospective patients.

Early Confirmation of Pregnancy and Timely Continuity of Appropriate Care

The main purpose of this on-going program initiative is to elevate pregnancy tests from a laboratory procedure to an organized intervention program. This program is referred to as EIDP: Early Identification of Pregnancy. There are several primary components of this service.

(1) public information and education to increase public awareness of the importance of early confirmation of pregnancy, and awareness of pregnancy testing services.

(2) delivery of services to provide accessible, convenient, private, affordable pregnancy testing services in settings in which patients are most likely to be comfortable. (Healthy Birth Guidelines)

(3) development of interventions and “community pathways” to facilitate timely continuity of care appropriate for a patient’s pregnancy status, decisions, and choices.

The pregnancy status of patients (pregnant or not pregnant) and the pregnancy plans of patients (intended or not) shape the four main patient “pathways of care” and determine the intervention and continuity of care appropriate for a patient’s individual circumstances.

Patient assessment, education and anticipatory guidance, referral and follow-up, short-term care coordination, and same-visit contraceptive services are necessary to achieve the desired intervention outcomes within the four main patient pathways of care. These services and “community pathways” have to be organized

The framework for Early Identification of Pregnancy Services is described in Healthy Birth Guidelines: (<http://www.hcet.org/wfpp/sandr/sandg.html#hbg>).

and coordinated to provide and ensure timely care appropriate for each of the above patient circumstances. “Community pathways” are formally established arrangements among providers who define and commit to assuring timely access to appropriate care within the community.

Emergency Hormonal Contraception

The main purpose of this recent program initiative is to provide “emergency contraception” to women at risk of pregnancy due to a contraceptive failure or not currently using contraception. The most common “emergency contraception” is hormonal contraception (pills) taken to prevent pregnancy within 72-hours following contraceptive failure or non-use of contraception. The effectiveness of this method of contraception depends upon how soon intervention occurs within the 72



hours time period. “Emergency contraception” does not interfere with and will not adversely affect pregnancy and should not be confused with abortion.

This temporary contraceptive method has the potential to significantly prevent unintended pregnancy. Availability, and awareness and knowledge of this contraceptive method are very low. To reduce unintended pregnancy, public family planning programs can make a significant contribution by increasing a community’s awareness of and access to this service. “Emergency contraception” is intended as a provisional method and not practical as a primary contraceptive method. Therefore it is important this method is provided in conjunction with all other methods of contraception.

Improved Access to Hormonal Contraception in Advance of Traditional Medical Services and Laboratory Services

The main purpose of this recent program initiative is to increase timely access to contraception. This initiative makes hormonal contraception available to patients based on

More information on emergency contraception is available at the following websites:

- The “NOT-2-LATE.Com” website supported by the Office of Population Research at Princeton University: <http://ec.princeton.edu/index.html>
- The Wisconsin Family Planning and Reproductive Health Association (WFPRHA) position paper on emergency contraception: <http://www.hcet.org/pdf/wfpp/WFPRHAp.pdf>
- Department of Health and Human Services Food and Drug Administration announcement on postcoital emergency contraception: <http://www.hhs.gov/progorg/opa/titex/fr-ec.pdf>

history and limited physical assessment (unless medically contra-indicated) in advance of a physical examination and laboratory services traditionally provided before a prescription. This initiative has the potential to significantly increase access to hormonal contraceptive methods.

This initiative can reduce patient waiting time before beginning hormonal contraception, i.e., waiting for a comprehensive office visit appointment that would traditionally be required prior to initiating hormonal contraception. This eliminates the need for an additional patient visit (for a comprehensive office visit) before initiating hormonal contraception when a pregnancy test is the reason for clinic visit and when comprehensive services cannot be provided at the same visit. An additional visit can be a significant barrier related to transportation or work schedule conflicts. Apprehension related to the physical examination, pelvic examination, and pap test is commonly cited among first-time contraceptive patients as a primary reason for delaying contraception.

This initiative emphasizes “patient responsive” services. Services are organized to respond immediately to the primary needs identified family planning patients: contraception and preventing and unintended pregnancy. After providing contraception, other related health services can be provided at a subsequent visit.

Providing or arranging related health services at a subsequent visit is often more manageable after initiating contraception. Patients and providers have a 1-3 month timeframe in which to accomplish this component of care.

Additional information about provision of hormonal contraception in advance of physical examination and laboratory tests is available at the following website: <http://www.hcet.org/resource/postconf/pills.html>

This initiative, combined with more accessible, affordable, and private pregnancy testing services and emergency contraceptive services, has the potential to significantly improve access to contraception. The boundaries of the clinic can be extended beyond the clinic or office facilities. Satellite clinic offices that only provide these limited services can be staffed in locations that would not be feasible for full service clinic services.

Wisconsin Family Planning Medicaid Waiver

The main purpose of this initiative is to prevent unintended pregnancies by expanding access to affordable family planning and related health services. A larger

proportion of pregnancies among low-income (below 100% of the poverty level) women and couples are unintended, compared to women and couples above 100% of the poverty level.

Existing public family planning resources would be extended as a result of the Medicaid eligibility expansion. Women not income eligible for Medicaid family planning services would have access to more affordable services under services supported with existing public funds.

Legislation enacted in 1997 authorized the Wisconsin Medicaid Program to request a waiver from the federal Department of Health and Human Services to expand Medicaid eligibility for family planning services. Family planning services under medical assistance would be expanded to any woman between the ages of 15 and 44 whose family income is below 185% of the federal poverty level. During the first year of implementation, this project is projected to extend family planning access to over 45,000 women not currently eligible for other Medicaid or state-supported family health insurance benefits. The Wisconsin Family Planning Medicaid waiver is currently under review by the federal Health Care Financing Administration.

A waiver (referred to as a Section 1115 Medicaid waiver) is a state request to alter minimum federal requirements for benefits and eligibility. A waiver describes a demonstration project for a specific period of time during which results will be evaluated. Overall federal Medicaid expenditures must not increase above the level that would otherwise be projected without the expanded benefits. Therefore, a family planning waiver must be designed and implemented to successfully reduce unintended pregnancies. Medicaid cost

Legislation authorizing the Wisconsin Family Planning Medicaid Waiver, Family Planning Demonstration Project 49.45(24r) Wisconsin State Statutes, is available at: http://folio.legis.state.wi.us/cgi-bin/om_isapi.dll?clientID=79107&infobase=stats.nfo&j1=49.45%2824r%29&jump=49.45%2824r%29

savings would result from the reduction of unintended pregnancies: a reduction in pregnancy-related Medicaid expenditures costs that would otherwise occur with unintended pregnancies eligible for Medical Assistance pregnancy-related benefits.

Summary

The Wisconsin Family Planning Program initiatives described above are intended to enhance the role of the Wisconsin Family Planning Program: to improve access to affordable contraceptive services and quality health care. Improved access is a major step toward promotion of planned and prepared for pregnancy, reduction of unintended pregnancy, and improvement in reproductive health of women and couples.

Focus on the Family...

Interested in family focused courses, research, and outreach at the University of Minnesota? Searches by your topic of interest can be conducted at www.family.umn.edu

“Partners in Health” – Caring for Women and Their Families: WIC and its Partners in Dakota County, MN

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Women living in poverty have multiple issues that may impact their health, including nutritional status and health care. The Special Supplemental Nutrition program for Women, Infants, and Children [WIC] has been effective in improving or maintaining the health and nutritional status of low-income families.

WIC is a federally funded grant program that targets poor families who are nutritionally at risk. Participants include pregnant women (up to six weeks after their infant’s birth), breastfeeding women (up to one year after their infant’s birth), non-breastfeeding postpartum women (up to 6 months after pregnancy), infants (under the age of one), and children (ages five and younger). WIC provides supplemental nutritious foods, nutrition education and counseling, and screening and referrals to other health, social and community services.

The U.S. Department of Agriculture [USDA] reports that WIC serves 25% of new mothers and 45% of all infants born in the U.S. USDA research based reports share that Medicaid eligible women who participated in WIC while pregnant, had longer pregnancies, fewer premature births, lower incidence of moderately low and very low birth weight infants, fewer infant deaths, greater likelihood of receiving prenatal care, and savings in health care costs for each dollar spent on WIC.

Dakota County Public Health promotes children, youth and families living in safe secure and supportive homes and communities, while maintaining positive health behavior and outcomes. WIC serves as an entry point for access to program information and referral for participants. WIC program participants meet many eligibility requirements for other programs provided by the Dakota County Public Health Department. Given this, in addition to WIC, various community programs provide their services at the WIC clinic.

While at the WIC clinic, pregnant participants meet with either a Public Health Nurse or a Registered Dietitian, who provides a comprehensive assessment, nutrition education, referral to community resources and programs that target families expecting a child, early in the pregnancy. One of these programs is Minnesota Healthy Beginnings, a universal home visiting

program that supports new parents living in a targeted geographic area of Dakota County. Dakota Healthy Families is another program offered to WIC participants. This is a relationship-based, targeted home visiting program that provides long-term support for participating at-risk families. Dakota Healthy Families enhances strengths associated with healthy families.

WIC participants also have the opportunity to meet partners from other community services and department programs. Child and Teen Checkups frequently visits county WIC sites. They provide activities that promote family health and safety. During this interaction with participants, the importance of well child checkups and related information is discussed with families. Early Childhood Family Education [ECFE] programs also occur at WIC sites in their school district and offer activities to engage families and discuss available ECFE classes and activities. Through WIC, Family Learning also provides programs that promote high school completion; improved reading, writing, spelling and math skills; and learning readiness in children. The Dakota County Library supplies a selection of children’s books for families to use while waiting for their WIC vouchers, thus enhancing awareness of resources and programs for families with young children.

Together WIC and the programs that provide services at the WIC clinic, encourage pregnant women and their families to access available community support and resources. This effort is intended to strengthen families and communities so that they can provide the best possible setting where children and families can thrive.

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Shrouded Legacy: The History of the American Eugenics Movement

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The estimate has frequently been made that the United States would be much better off eugenically if it were deprived of the future racial contributions of at least 10 percent of its citizens.

—Paul Popenoe and Roswell Johnson, 1926¹

Norplant for convicted child abusers... Access to fertility therapies for only the wealthy (and sometimes only the married)... Sex selection... Abortion of potentially disabled fetuses... Validity of racial classification in research... Effects of economic support to poor mothers... Cultural competence in reproductive health services... Though largely forgotten from formal memory, echoes of the early 20th century American eugenics movement can still be heard in contemporary arguments around fertility promotion and fertility control. The debates and scandals associated with eugenics still reverberate in cultural attitudes, fears and beliefs around race, disability, poverty and reproductive services. An critical analysis of this movement with its legacy of distrust is necessary to appreciate the current context in which reproductive policies are shaped and reproductive services offered. To that end, I offer here a brief history of eugenics movement that initially gave form to many ethical debates still echoing nearly a century later, and brutally tested some of its tenets on the very real bodies of American women and men in the ostensible interest of social betterment.

Eugenics as a framework originated at the end of the 19th century with the British gentleman scientist Sir Francis Galton. Inspired by the ideas in his cousin Charles Darwin's recently published volume, *The Origin of Species*, Galton reoriented its theory of "survival of the fittest." Instead of enquiring who *would* survive under evolutionary pressure, Galton asked who *should* survive. If higher civilization and its protective policies interfered with Nature's control of the "fitness" of human stock through the death rate, was not it thus appropriate to consider instituting policies to control it through the birth rate? In 1909, his endowment of the Francis Galton Laboratory for

National Eugenics at University College London, and his enstatement of the prolific statistician and eugenicist Karl Pearson as its chair, established the first institutional body specifically for the study and promotion of eugenics. By then, the newly embraced theory of Mendelian genetics provided a biological justification for the scientific study of heredity and its effects on national vitality. The science of eugenics — defined by Galton as "the study of agencies under social control, that may improve or impair the racial qualities of future generations, either physically or mentally"³ — promptly ascended to academic legitimacy with the founding of academic institutes, research stations, private foundations and academic journals.⁴

While Britain led the world in eugenic "science," eugenic policies were argued but never formally enacted there. The most extensive implementation of such policies occurred in two democratic states: the progressive-era United States and Nazi-era Germany. Practical eugenics took two directions — *positive* eugenics and *negative* eugenics. The goal of positive eugenics was to increase birth rates amongst the "fit." Concern by policymakers around the higher birthrates of recent immigrants, and declining birthrates among middle- and upper-class American-born white women, spurred popular discourse around such ideas as "race suicide." In 1911 Theodore Roosevelt, a vocal opponent of "wilful sterility" among non-immigrant white Americans, argued that the greatest danger to civilization was that "there will be failure to have enough children of the marriages that ought to take place."⁵ Through eugenics, reproduction was recast in terms of its contribution or detriment to the strength of a nation. From this new position of state interest in a previously private concern, it was a logical jump to more extensive state involvement in reproductive policy.

While positive eugenics created distinctions among those who ought and ought not to bear children, more pernicious and ultimately more codified was negative eugenics. Negative eugenics encompassed programs and policies that aimed to decrease the proportion of "unfit" members of a population. This was accomplished through a number of methods: Policies to prevent "undesirable" births included segregation or sterilization of "defectives,"

and laws denying marriages between first cousins and across races. The “unfit” population was also limited through differential immigration quotas structured to favor those from more “desirable” regions. Programs to eliminate economic poverty were derided as dysgenically fostering a greater biological poverty. Throughout the 1920s and 1930s, negative eugenics replaced positive eugenics as the primary approach for eugenic policy and practice in the United States.

While national strength and population health could be considered reasonable or even laudable concerns, the enthusiastic adoption of this new social Darwinism immediately produced a problem within its arguments: Who was “fit,” who was “unfit,” and whose place was it to decide? Popenoe and Johnson of the Human Betterment Foundation give a laundry list of “defectives” including the blind, deaf, insane, feeble-minded, paupers, criminals, epileptics, tramps, prostitutes and beggars.¹ The proliferation of eugenic books, articles and research papers provides an even larger list, including syphilitic, tuberculous, sexually promiscuous and alcoholic persons, whose predisposition to their conditions was believed hereditary. Targeting was then tied with a neat simplicity to the complex interrelated conditions of poverty, disability and race.⁶

The extent to which eugenic policies were implemented is perhaps most striking when one considers eugenic sterilization. Thirty of the forty-eight American states passed eugenic sterilization laws authorizing the voluntary or involuntary sterilization of certain citizens, including such nebulous categories as the feeble-minded. Over 63,000 Americans were thus recorded as sterilized prior to 1964.⁷ This number does not include sterilizations performed in private medical practice for eugenic purposes. While several state statutes were contested in courts, in 1927 the U.S. Supreme Court upheld the right of a state to forcibly sterilize. In *Buck v. Bell*, Oliver Wendell Holmes argued for the court that forcible sterilization could be justified by the same principles that governed compulsory vaccination laws.²

The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes....
Three generations of imbeciles are enough.

—U.S. Supreme Court Justice Oliver Wendell Holmes, *Buck v. Bell*, 1927²

It was into the midst of rising popular acceptance of eugenic policies and ideas that the American birth control movement emerged. With eugenic discourse at full tide amongst the educated, birth control debates reflected those concerns. Would birth control availability be a dysgenic force, utilized primarily by the very women who “ought” to

be producing more progeny? Alternately, could it be a eugenic tool for reducing birthrates?

Impacted by these arguments, relationships between black America and the mostly white leadership of birth control organizations were frequently fraught. Black nationalist Marcus Garvey dismissed birth control in arguing for racial empowerment through increases rather than decreases in birth numbers, and even birth control supporter W.E.B. DuBois expressed disdain for the white middle-class birth controllers, stating that he had “more respect for the colored servant who yields to her frank longing for motherhood than for her white sister who offers up children for clothes.”⁸ While some black women attended white-sponsored clinics, others responded to the combination of desire for safe means of family limitation and freedom from racist targeting by establishing community-controlled clinics. Such groups frequently utilized materials provided by birth control organizations, but limited the interface to that.⁹ Given the tenor of eugenic and racial debate, distrust of reproductive services offered by whites to African-Americans was logically manifest from the onset. In combination with publicity over forced and coerced sterilizations, this distrust would later develop along a spectrum ranging from avoidance to charges of genocide.

While formal eugenics fell out of intellectual favor by the 1950s, following the Nazi atrocities of World War II and the complexities of genetic theory beyond Mendelism, the ideas that eugenics engendered carried on. Several notable court cases and scandals of the 1970s kept it at the fore. These included the sterilization of 12- and 14-year-old African-American sisters in Alabama, without consent, and the trial of a South Carolina doctor who refused maternity services to large numbers of welfare mothers who did not consent to his demand for their sterilization. This legacy of coerced, if not legally mandated, sterilization was felt within the disability community as well. Within the academic research world, eugenics gave conventional form to racial research, and such conventions of racial taxonomy and biological legitimacy of “race” are just now being questioned in earnest within this realm.¹⁰

Eugenics has under girded the structure of American thought on pregnancy and childbearing. It has established basic conventions for academic work on race and for observational research more generally. Eugenics has provided a very real and deep historical root for resistance to fertility control services. Most importantly, eugenics provides us with an example of a program of well-studied practices, scientifically justified and popularly accepted in its time that appears glaringly unethical in hindsight. Thus, it demands from us careful scrutiny of our own research, arguments, political and programmatic policy, by a standard stricter than that of conventionality at the present point in time.

Notes

1. Paul Popenoe and Roswell Johnson. *Applied Eugenics*. New York: Macmillan Company, 1926.
2. *Buck v. Bell* 274 U.S. 200 (1927). This decision was later to be cited in trials for Nazi war crimes as justification for the sterilization of two million Germans.
3. This definition is quoted frequently through the eugenics literature in both Britain and the United States over the next several decades. Here it is cited inside the front cover of each volume of the Eugenics Laboratory Lecture Series.
4. In addition to the Eugenics Laboratory at University College London, some notable American examples include the Eugenics Research Station at Cold Spring Harbor, NY, the Dight Institute at the University of Minnesota, the Human Betterment Foundation and the American Eugenics Society. For specifically eugenic academic journals, see *Eugenics*, *Eugenics Review*, *Annals of Eugenics*, and *Biometrika*.
5. Theodore Roosevelt. "Race Decadence." *The Outlook*, April 8 1911. While some eugenicists, such as Margaret Sanger, consistently argued against racist interpretation of eugenic principles, others explicitly argued for the eugenic inferiority of specific races. Popenoe and Johnson, for example, provide extensive argument for the inferiority of black Americans, stating that "If the number of original contributions which it has made to the world's civilization is any fair criterion of the relative value of a race, then the Negro race must be placed very near zero on the scale." It should be noted here that in the lexicon of the day, "race" had a meaning strongly linked to national identity, at least among the "white races." Thus one could speak of the Germans, the French, and the Italians in terms of specific "racial qualities." Amongst these white races, the most frequent eugenic concern was voiced over those tainted by Catholicism: the Irish and the Italians. In any case, given the social structure of pauperism, criminality and feeble-mindedness in the early 20th century, there can be no doubt that even when not explicitly voiced, the definition of "defective" would be understood along racial lines.
7. Jonas Robitscher. *Eugenic Sterilization*. Springfield, IL: Charles C. Thomas, 1973.
8. W. E. B. DuBois. *Darkwater: Voices from within the Veil*. New York: Harcourt, Brace and Howe, 1920. Jessie M. Rodrique. "The Black Community and the Birth Control Movement." In: Judith Walzer Leavitt (Ed.) *Women and Health in America*, 2nd ed., Madison: University of Wisconsin Press, 1999, pp. 293-305.
10. For more on the history, ethics and legitimacy of racial research, see William H. Tucker. *The Science and Politics of Racial Research*. Chicago: University of Illinois Press, 1994. For examples of current arguments over the use of race in public health research, see Muntaner C, Nieto FJ, O'Campo P. The bell curve: On race, social class, and epidemiologic research. *American Journal of Epidemiology* 1996;144(6):531-536. Also, LaVeist TA. Beyond dummy variables and sample selection: What health services researchers ought to know about race as a variable. *HSR: Health Services Research* 1994;29(1): 1-16.

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