

Women's Reproductive Health and Their Overall Well-Being



Reproductive health no longer is construed to represent the entirety of women's health care needs, yet remains an important factor in women's overall health. A woman's reproductive health status influences her physical, psychological and social well-being. Three specific examples are used to highlight the predominant cross-cutting themes in reproductive health -- infections, breast and cervical cancer, and cesarean section. Limitations in the knowledge base related to other more "benign" yet serious conditions (such as endometriosis and fibroids) prompted exclusion of these issues in this review.

Epidemiological Trends/Demographics

- Two thirds of all cases of sexually transmitted infections occur in persons under the age of 25.

Infections

Infections and Related Conditions in Women

Condition	Year	Rate
Chlamydia ¹	1996	321.5 per 100,000
Gonorrhea ¹	1996	119.5 per 100,000*
Syphilis (1° & 2°) ¹	1996	4.0 per 100,000
Genital Herpes ²	1997	25.6% infected with HSV-2
HIV (not AIDS) ³	June 1996- July 1997	3,750 (new cases)
Human Papilloma Virus ⁴	1997 study (n=376)	46% of college students
Bacterial Vaginosis ⁵	1995 cohort study (n=10,000)	16% of pregnant women**
Pelvic Inflammatory Disease ⁶	1994	177 hospitalizations per 100,000 women (15-44 years of age)

* Decreased 14.8% from 1995

** Ranging from 9-28%

- Rates of syphilis in the U.S. have decreased since 1990, but remain significantly higher than rates in other countries. The incidence of chlamydia and other sexually transmitted diseases remains high.
- Sexually transmitted diseases can lead to systemic infections, infertility and ectopic pregnancy.

Cervical Cancer

Invasive Cervical Cancer Per 100,000 Women (Selected Years)⁹

Year of Diagnosis	All Females	White Females	Black Females
1973	14.2	12.8	29.7
1975	12.4	11.1	27.9
1977	10.9	9.7	23.0
1979	10.6	9.1	23.6
1981	9.0	8.0	18.9
1983	8.7	8.0	15.1
1985	8.5	7.6	15.9
1987	8.3	7.4	15.2
1989	8.8	8.1	13.2
1991	8.3	7.5	12.9

- Of the 14,500 women diagnosed in 1997, 4,800 were expected to die.
- The 1993 cervical cancer rate was estimated to be 8.2 per 100,000.¹⁰
- Mortality is twice as high for Black women as White women.¹⁰

Breast Cancer

- Rare but more fatal in premenopausal women.
- 180,200 new breast cancer cases were diagnosed in 1997, and 43,000 deaths were documented.
- The prevalence of breast cancer is leveling off at 110 cases per 100,000 women.

Female Breast Cancer Per 100,000 Women (Selected Years)⁹

Year of Diagnosis	All Females	White Females	Black Females
1974	94.6	95.9	78.7
1976	85.3	87.3	70.4
1978	83.9	86.0	71.5
1980	85.2	87.1	74.1
1982	89.1	91.6	76.9
1984	96.7	99.6	83.6
1986	106.1	108.6	94.4
1987	112.4	116.8	90.3
1988	109.8	113.3	98.4
1989	105.7	109.2	88.6
1990	109.4	112.8	97.2
1991	110.2	113.6	95.1

Cesarean Sections

- Cesarean section increased five-fold since 1970, but there have been encouraging decreases in the rate in the 1990's.¹³

Rate of Cesarean Deliveries Per 100 Deliveries United States, 1970-1993¹⁴

Year	Cesarean Rate
1970	5.5
1975	10.4
1980	16.5
1985	22.7
1986	24.1
1987	24.4
1988	24.7
1989	23.8
1990	23.5
1991	23.5
1992	23.6
1993	22.8

Risk Factors/Predictors for Disease

Each reproductive health problem has multiple risk factors, many of which crossover to other diseases.

Those for infections include multiple sexual partners (or partner with multiple sexual partners); early age at first intercourse; failure to regularly use condoms, and drug abuse.⁷ Additionally, women with gonorrhea or syphilis are more likely to become infected with HIV.⁷

For cervical cancer, infection with sexually transmitted human papilloma virus¹⁵⁻²⁰ and smoking²¹⁻²³ are risk factors.

Regarding breast cancer, risk factors include nulliparity, first birth after age 30,^{17,24,25} obesity, weight gain,^{26,27} and low levels of physical activity (data are limited).²⁸⁻³⁰

Cesarean sections are more likely with older maternal age,³¹ high parity, small stature, high BMI or high weight gain,^{32,33} obstetrician provider compared to nurse midwife,³⁴⁻³⁷ high level of insurance reimbursement relative to vaginal delivery,³⁸ and prior Cesarean section.³⁹

Interventions

- The Institute of Medicine (1997) recommends an independent, long-term, national campaign to promote a new norm of healthy sexual behavior in the United States. This norm will promote open discussion of healthy sexual behaviors which include condom use and other means of protecting against STDs and unintended pregnancy, and delaying the age of first intercourse.⁷
- Infections can also be prevented by behavioral interventions based on social learning theory and social marketing (mass media).^{40,41}
- Chlamydia, the most common STD, is asymptomatic in 75 percent of women.⁷ By reducing duration of infection, the likelihood of transmission to others is decreased through early detection and effective treatment.
- Women are more likely than men to be asymptomatic from sexually transmitted diseases, and thus are potentially less likely to seek out screening or treatment, and more likely to experience adverse sequelae.⁷
- According to data from the Health Plan Employer Data and Information Set (HEDIS) 3.0, there is great variation in mammography and screening rates among plans submitting data. Rates of screening for breast cancer vary from 27.7% to 89.0%, and rates for cervical cancer screening vary from 24.0% to 100%.⁴²
- Pap screening can detect cervical cancer early. Breast self-examination can increase early detection of breast cancer.

Issues for Policy, Practice and Research*

- Women's, families' and providers' awareness of a number of sexually transmitted conditions is limited. Increased awareness is crucial to achieve changes in prevention and screening behaviors.
- Screening (and treatment) services provided in local health department STD clinics, publicly funded community-based health clinics, and private health care settings serve different but sometimes overlapping population groups, and each group has somewhat different needs. Women are under-represented among those served in public health STD clinics and over represented in the group served by the community-based agencies (which include family planning clinics).⁷
- Disease rates could be reduced by increasing healthy and risk-reducing behaviors among women (e.g. for infections, condom use; for breast cancer, physical activity; for cesarean section, moderating weight gain).^{28-30,32,33,43,44}
- Methods to stem transmission of infections, particularly female-controlled methods, are limited.
- Screening and diagnosis of infections could be improved with the development and implementation of less expensive and more rapid tests.
- The nature and extent of modifiable risk factors for breast cancer remain unclear; the focus on genetics may be a barrier.
- Investments in provider training are needed to improve early detection and treatment of infections, and breast and cervical cancer.
- Screening programs can be integrated with diagnostic and treatment services to improve comprehensiveness of care.

* Given the formative nature of our research on this topic, this material does not reflect an exhaustive list of potential issues of concern. Rather, the material below reflects selected preliminary ideas generated to stimulate dialogue and further study. In addition, certain issues may have been intentionally omitted from this section in favor of their incorporation in other materials prepared as part of a broader initiative to review the state of the field of perinatal and women's health.

- Coverage for comprehensive reproductive health services, which include screening and treatment for sexually transmitted diseases, breast and cervical cancer screening and treatment, etc., is limited.
- Cesarean sections are often performed on women based not on their personal characteristics but on medical and structural factors such as practice setting and the availability and use of technology.
- For infections, partner notification and insurance coverage of partner treatment are both currently inadequate and uncoordinated.
- Technology related to screening for breast cancer in younger women is underdeveloped.
- Reaching high risk subpopulations (homeless, incarcerated, adolescent, poor) requires targeted, intensive education and outreach.

References

- 1 Division of STD Prevention, 1997. *Sexually Transmitted Disease Surveillance, 1996*. Atlanta: Centers for Disease Control and Prevention, Public Health Service, U.S. Department of Health and Human Services.
- 2 Fleming DT, McQuillan GM, Johnson RE, Nahmias AJ, Aral SO, Lee FK, St. Louis ME, 1997. Herpes simplex virus type 2 in the United States, 1976 to 1994. *New England Journal of Medicine* 337(16):1105-1111.
- 3 Centers for Disease Control and Prevention, 1997. *HIV/AIDS Surveillance Report* 9(1).
- 4 Viscidi RP, Kotloff KL, Clayman B, Russ K, Shapiro S, Shah KV, 1997. Prevalence of antibodies to human papillomavirus (HPV) type 16 virus-like particles in relation to cervical HPV infection among college women. *Clinical & Diagnostic Laboratory Immunology* 4(2):122-126.
- 5 Hiller SL, Nugent RP, Eschenbach DA, Krohn MA, Gibbs RS, Martin DH, Cotch MF, Edelman R, Pastorek JG, 2nd, Rao AV, et al., 1995. Association between bacterial vaginosis and preterm delivery of a low-birth-weight infant. *New England Journal of Medicine* 333(26):1737-1742.
- 6 U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Health Statistics, 1996. *Healthy People 2000 Review 1995-6* (DHHS publication no. (PHS) 96-1256). Washington, DC: U.S. Government Printing Office.
- 7 Eng TR, Butler WT, 1997. *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*. Washington, DC: Institute of Medicine.
- 8 Center for Sexually Transmitted Diseases, 1997. *STD prevention and research: A wise investment*. Washington DC.
- 9 Ries LAG, Miller BA, Hankey BF, Kosary CL, Hargrett-Keane M, Edwards BK (eds), 1994. *SEER Cancer Statistics Review, 1973-1991: Tables and Graphs*, Bethesda: National Cancer Institute. NIH Pub. No. 94-2789.
- 10 American Cancer Society, 1997. *Cancer facts and figures, 1997*.
- 11 Walker RA, Lees E, Webb MB, Dearing SJ, 1996. Breast carcinomas occurring in young women (<35 years) are different. *British Journal of Cancer* 74:1796-1800.
- 12 Chu KC, Tarone RE, Kessler LG, et al., 1996. Recent trends in U.S. breast cancer incidence, survival, and mortality rates. *Journal of the National Cancer Institute* 88:1571-1579.
- 13 National Center for Health Statistics, 1997. Rates of Cesarean birth and vaginal birth after previous cesarean, 1991-1995. *Monthly Vital Statistic Report* 45:1-11.
- 14 1995. Rates of Cesarean Delivery -- United States, 1993. *MMWR* 44(15):303-307.
- 15 Beutner KR, Tyring S, 1997. Human papillomavirus and human disease. *American Journal of Medicine* 102:9-15.
- 16 Verdon ME, 1997. Issues in the management of the human papillomavirus genital disease. *American Family Physician* 55:1813-1816.
- 17 Hulka BS, 1997. Epidemiologic analysis of breast and gynecologic cancers. *Progress in Clinical & Biological Research* 396:17-29.
- 18 Munoz N, Bosch FX, 1996. The causal link between HPV and cervical cancer and its implications for prevention of cervical cancer. *Bulletin of the Pan American Health Organization* 30:362-377.
- 19 Turek LP, Smith EM, 1996. The genetic program of genital human papillomaviruses in infection and cancer. *Obstetrics and Gynecology Clinics of North America* 23:735-758.
- 20 Stoler MH, 1996. A brief synopsis of the role of human papillomaviruses in cervical carcinogenesis. *American Journal of Obstetrics and Gynecology* 175:1091-1098.
- 21 Phillips AN, Smith GD, 1994. Cigarette smoking as a potential cause of cervical cancer: Has confounding been controlled? *International Journal of Epidemiology* 23:42-49.
- 22 Simons AM, van Herckenrode C, Rodriguez JA, Maitland N, Anderson M, Phillips DH, 1996. Demonstration of smoking-related damage in cervical epithelium and correlation with human papilloma virus type 16, using exfoliated cervical cells. *British Journal of Cancer* 71:246-249.
- 23 Engeland A, Andersen A, Haldorsen T, Tretli S, 1996. Smoking habits and risk of cancers other than lung cancer: 28 years' follow-up of 26,000 Norwegian men and women. *Cancer Causes & Control* 7:497-506.
- 24 Velentgas P, Daling JR, 1994. Risk factors for breast cancer in younger women. *Journal of the National Cancer Institute* 86:15-24.

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- 25 Kelsey J, 1993. Breast cancer epidemiology: Summary and future directions. *Epidemiologic Reviews* 15:256-263.
 - 26 Willett WC. Diet and Human Cancer, 1991. In: Brugge Jea, ed. *Origins of Human Cancer: A Comprehensive Review*. New York: Cold Spring Harbor Laboratory Press.
 - 27 Huang Z, Hankinson, SE, Colditz, GA, et al., 1997. Dual effects of weight and weight gain on breast cancer risk. *JAMA* 278:1407-1411.
 - 28 Bernstein L, et al, 1994. Physical exercise and reduced risk of breast cancer in young women. *Journal of the National Cancer Institute* 86:1403-1408.
 - 29 Gammon, MD, John EM, Britton JA, 1998. Recreational and occupational physical activities and risk of breast cancer. *Journal of the National Cancer Institute* 90(2): 100- 117.
 - 30 Thune I, Brenn T, Lund E, Gaard M, 1997. Physical activity and the risk of breast cancer. *New England Journal of Medicine* 336:1269-1275.
 - 31 Peipert JG, Bracken MB, 1993. Maternal age: An independent risk factor for cesarean delivery. *Obstetrics and Gynecology* 81:200-205.
 - 32 Thomson M, Hanley J, 1988. Factors predisposing to difficult labor in primiparas. *American Journal of Obstetrics and Gynecology* 158:1074-1078.
 - 33 Witter FR, Caulfield LE, Stoltzfus RJ, 1995. Influence of maternal anthropometric status and birth weight on the risk of cesarean delivery. *Obstetrics and Gynecology* 85:947- 951.
 - 34 Rosenblatt RA, Dobie SA, Hart LG, et al, 1997. Interspecialty differences in the obstetric care of low-risk women. *American Journal of Public Health* 87:344-351.
 - 35 Butler J, Abrams B, Parker J, Roberts JM, Laros RK, 1993. Supportive nurse-midwife care is associated with a reduced incidence of cesarean section. *American Journal of Obstetrics and Gynecology* 168:1407-1413.
 - 36 Ruderman J, Carroll JC, Reid AJ, Murray MA, 1993. Are physicians changing the way they practice obstetrics? *The Canadian Medical Association Journal* 148:409-415.
 - 37 Berkowitz GS, Fiarman GS, Mojica MA, Bauman J, Haynes de Regt R, 1989. Effect of physician characteristics on the cesarean birth rate. *American Journal of Obstetrics and Gynecology* 161:146-149.
 - 38 Gleicher N, 1984. Cesarean section rates in the United States: The short-term failure of the National Consensus Development Conference in 1980. *JAMA* 252:3273-3276.
 - 39 Eskew PN, Saywell J, R.M., Zollinger TW, Erner BK, Oser TL, 1994. Trends in the frequency of cesarean delivery: A 21-year experience, 1970-1990. *Journal of Reproductive Medicine* 39:809-817.
 - 40 Bandura A, 1977. *Social learning theory*. Englewood, NJ: Prentice-Hall.
 - 41 Rogers EE, 1983. *Diffusion of innovations*. New York: Free Press.
 - 42 Thompson J, Hochheimer JN, Schifrin E, Kim N, 1998. *Nationwide comparison of women's health indicators among managed care plans*. NCQA, Washington, DC, presented at The Future of Managed Care and Women's Health: New Directions for the 21st Century, January 26-27.
 - 43 Hawes SE, Hillier SL, Benedetti J, et al., 1996. Hydrogen peroxide producing lactobacilli and acquisition of vaginal infections. *Journal of Infectious Diseases* 174:1058- 1063.
 - 44 Wasserheit JN, 1994. Effects of human ecology and behavior on patterns of sexually transmitted diseases, including human immunodeficiency virus infection. *Proceedings of the National Academy of Sciences* 91:2430- 2435.
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