

## Appendix L

# Preventing Unintended Pregnancies in High-Risk Women: School-Based Clinics

One approach to altering the rate of infant mortality and low birthweight would be to give women at high risk of poor birth outcomes enhanced opportunities to avoid unintended pregnancies (296). It is well known that certain demographically defined groups of women have much higher rates of low birthweight and neonatal mortality than do others, although the exact causes of demographic differences in outcomes are not well understood.

Table L-1 displays national statistics on neonatal mortality rates and low birthweight birth rates by selected maternal demographic characteristics. Because of the close relationship between low birthweight and neonatal mortality, many of the risk factors associated with low birthweight are also predictors of neonatal mortality. Mothers in their twenties and low thirties have the lowest neonatal mortality rates and the lowest percentage of low birthweight births. In comparison to these women, teenagers and women age 35 and above are at higher risk of having babies that die in the neonatal period (the first 28 days of life) and that weigh 2,500 grams (5 lbs. 8 oz.) or less at birth. Education level is included in table L-1 as a proxy for income or socioeconomic status. Women who have not graduated from high school are at greater risk of experiencing poor birth outcomes than women with at least a high school education.

The demographic characteristics found to be related to elevated risk of low birthweight tend to cluster in individual women, but the literature does not specify how the presence of more than one risk factor in an individual woman affects her total risk for poor birth outcomes. Nevertheless, it would appear from table L-1 that providing opportunities for pregnancy prevention to unmarried teens, particularly to those in poverty, would target a group at especially high risk of low birthweight and neonatal mortality.

In 1981, an estimated 24 percent of 20-year-old women in the United States had experienced a first pregnancy before the age of 18 (443). In 1984, about 1,005,000 pregnancies occurred to adolescents, but approximately 40 percent of those ended in abortion and 13 percent in miscarriage (443). Thus, in 1984, the United States experienced about 470,000 births to teenage mothers (443). The vast majority of teenage pregnancies are not only unintended, but unwanted once they occur. In 1979, 82 percent of unmarried teenagers who became pregnant reported that the pregnancy was

**Table L-1.—Relationship Between Selected Maternal Characteristics and Poor Birth Outcomes**

Maternal characteristics	Neonatal mortality rate (1980) <sup>a</sup>	Low birthweight rate (1984) <sup>b</sup>
<b>Age:</b>		
<15 . . . . .	21.9	13.6
15-19 . . . . .	9.6	9.3
20-24 . . . . .	7.1	6.9
25-29 . . . . .	6.5	5.9
30-34 . . . . .	6.7	5.9
35-39 . . . . .	8.1	6.7
40-44 . . . . .	10.6	8.3
45-49 . . . . .	17.4	9.8
<b>Race:</b>		
White . . . . .	6.3	5.6
Black . . . . .	12.3	12.4
<b>Education level:</b>		
0-8 yr . . . . .	10.4	9.4
9-11 yr . . . . .	9.8	10.2
12 yr . . . . .	7.4	6.8
13-15 yr . . . . .	6.3	5.6
> 16 yr . . . . .	5.6	4.5
<b>Marital status:</b>		
Married . . . . .	8.6	5.6
Not married . . . . .	15.6	11.0
<b>Number of previous births:</b>		
0 . . . . .	7.8	
1 . . . . .	6.4	
2 . . . . .	6.7	NA <sup>c</sup>
3 . . . . .	7.1	
4 . . . . .	8.8	
5-15 . . . . .	9.1	

<sup>a</sup>Deaths in the first 28 days of life per 1,000 live singleton births, 1980

<sup>b</sup>Percentage of live births with birthweight of 2,500 grams (about 5 lbs 8 oz.) or less

<sup>c</sup>NA = not available

SOURCES: Neonatal mortality rates Preliminary tables from the National Infant Mortality Surveillance Project, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA, May 1986; 1. Eberstein, R. Weller, and D White, Florida State University, Gainesville, FL, unpublished data from the 1980 National Natality Survey, prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, 1966. Percentage of low birthweight births U.S. Department of Health and Human Services, Public Health Service, National Center for Health Statistics, unpublished data in preparation for *Vital Statistics of the United States* 1984, Vol. 1: Natality, Hyattsville, MD, 1986

unwanted, but of those who did not want the pregnancy, only 32 percent used contraception (443).

Strategies for preventing teen pregnancy span a wide range of philosophies, from programs that are intended to influence teens' attitudes about sexual behavior and relationships to those that prescribe or dispense contraceptive services (443,652a). Two recent excellent re-

views of the evidence on the effectiveness of programs addressing teen pregnancy have concluded that the quality of the evidence on what programs work is poor, owing largely to the difficulty of measuring pregnancy rates among teens, vague program objectives that go beyond pregnancy prevention as a primary goal, and poorly conceived evaluation plans (443, 652a). Despite these problems, there is accumulating tentative evidence that comprehensive school-based clinics that offer contraceptive services (as well as other kinds of health care) can influence teenage pregnancy rates and avoid unwanted births.

Teenagers have special needs when it comes to family planning services. The usefulness of the existing network of family planning agencies is limited by factors that include the need for confidentiality, a caring attitude on the part of staff, and proximity (515a). School-based clinics are clinics in or near junior or senior high schools that typically offer a variety of health care services, including physical examinations, treatment for minor acute illness, preventive services, family planning, pregnancy testing, prenatal care, and screening for venereal disease. Services offered vary widely among programs, and none of the school-based programs consider adolescent family planning to be their sole purpose. The early experience of a program in Minnesota made it clear that school-based clinics limited to reproductive health care alone would be unacceptable to students, largely for reasons of confidentiality (142). At present, while many school-based clinics will refer students to other providers for prescription contraceptives when appropriate, only a minority will prescribe such methods, and only a few actually dispense contraceptives at the clinic site.

The number of school-based health clinics has increased dramatically in the past 3 years. In March 1987, there were 85 clinics affiliated with junior high or high schools throughout the country, up from 61 such clinics in the summer of 1986 (385,385a). Such clinics are usually staffed by nurse practitioners, clinic aides, part-time physicians, social workers, nutritionists, and other professionals.

The effectiveness of school-based clinics in preventing pregnancies and births among adolescents has been examined in three studies to date. Two of the studies assessed a school-based clinic program with three sites in St. Paul, Minnesota (147,333). The third study evaluated a school-based clinic program in Baltimore, Maryland (777).

The two studies of the Minnesota school-based clinic program suggested that the program was successful in reducing birth rates among female students (147,333). From 1976 to 1983, birth rates to female students declined by 50 percent—from 60 births per 1,000 students

in 1976-77, to 46 per 1,000 in 1978-79 (147), to 30 per 1,000 in 1982-83 (333). Contraception continuation rates were quite high (approximately 90 percent) in the population served by the school-based clinics—much higher than the continuation rates observed among adolescent users of regular family planning clinics.<sup>1</sup>

The studies of the Minnesota school-based clinic program have methodological limitations. Clinic staff very probably did not know of all relevant pregnancies and births during the study periods. Pregnancies, births, abortions, and miscarriages occurring to clinic attenders who dropped out of school and clinic non-users may have been missed. Nevertheless, the overall reductions in births observed over the period from 1976 to 1983 are quite large, indicating that even with some overestimation of effectiveness, the Minnesota school-based clinic program had a substantial impact on births among students.

In the 1986 study of a school-based clinic program in Baltimore, the investigators collected data on students from four schools (777). Most of the students were black, inner-city adolescents from families with low socioeconomic status. Students from three schools who received services from an adolescent health center located within three blocks of their schools formed an experimental group. Students from two other schools not served by the clinic were used as a comparison group.<sup>2</sup>

This study showed major impacts of the Baltimore school-based clinic program in preventing pregnancies among students receiving services. Pregnancies among students receiving services from the adolescent health center increased 13 percent after 16 months of exposure, while pregnancies among comparison group students who were not receiving such services increased 50 percent.

More importantly, after 20 months of exposure, pregnancy rates among students receiving clinic services dropped by 22.5 percent, but rose by 39.5 percent among students not receiving clinic services. At 28 months, pregnancies were down by 30 percent among students receiving clinic services and up by 58 percent among students in the comparison schools. In addition, the proportion of students who were sexually active declined in the program school over the course of the study.

Although it is premature to draw conclusions about the effectiveness of school-based clinics in reducing

<sup>1</sup>Fewer than two-thirds of adolescent family planning clinic patients consistently use effective methods of contraception during periods of sexual activity. (269a)

<sup>2</sup>The student bodies of the comparison schools were racially mixed, but of similar socioeconomic status. The analysis was based only on black students in the comparison schools.

high-risk unwanted pregnancies, the evidence accumulated to date does look promising. A large evaluation of school-based clinics is currently underway at the Center for Population Options (333a). The results of that evaluation should offer more information not only on how well such clinics work as a whole, but also on the effectiveness of specific components of a program—such as whether or not the clinic dispenses or prescribes contraceptives—in altering teenage pregnancy.

The costs of providing school-based health services is about \$125 per year per student (443). **School-based clinics** currently receive about two-thirds (**64 percent**)

of their funds from public sources and one-third (**36 percent**) from private sources. The majority of public funds for school-based clinics comes from State sources, through the Maternal and Child Health block grant or State-only funds (333a). Medicaid's Early and Periodic Screening, Diagnosis, and Treatment program provides about 14 percent of the funds for school-based clinics; and other Federal programs, such as Title X (Family Planning), Title XX (Social Services block grant), and the community health centers program provide about 6 percent of the funds (333a).