The Public Health Effects of Legal Abortion In the United States

By Christopher Tietze

More than 15 million legal abortions have been performed in the United States since 1967, the first year in which any state liberal- ized its restrictive abortion law. Some of these legal abortions, possibly a majority, have replaced illegal abortions; others have replaced unwanted and mistimed births. I In both cases, the public health effect has been a marked reduction in pregnancy-related mortality.

Table 1 shows the numbers of abortion- related deaths per 100,000 legal abortions and birth-related deaths per 100,000 live births for each year from 1970 through 1980. The numbers of abortion-related deaths used in the computation of death-to-case ratios for 1970 and 1971 are estimates based on num- bers of deaths, by cause, reported to the National Center for Health Statistics (NCHS);2 the ratios for later years are based on the abortion surveillance reports of the Centers for Disease Control (CDC).3 The completeness of abortion surveillance by the CDC has been carefully evaluated and is es- timated to have reached 94 percent.4

Three estimates of birth-related mortality appear in Table 1. The lowest is based on the numbers of deaths reported by the NCHS;5 the intermediate estimate shows birth-relat- ed mortality adjusted to the distribution of legal abortions by women's age and race; and the highest set, derived from the adjusted figures, is based on an estimate by the CDC that birth-related deaths are underreported

Over the past decade, the replacement of unintended births and illegal abortions by legal abortions has averted perhaps 1,500 pregnancy-related deaths, and several tens of thou- sands of life-threatening complications.

to the NCHS by a factor of at least one-quar- ter.6 The data show that in 1970, the risk to life associated with a legal abortion was of the same magnitude as the risk associated with a term birth, and that both types of risk de- clined substantially over the decade, the for- mer much more steeply than the latter. Ma- jor factors that contributed to the rapid de- cline in abortion-related deaths were a shift from later to earlier abortion by safer proce- dures, including the use of local rather than general anesthesia, and above all the growing expertise of physicians in providing abortion services.

Table 2 shows annual rates of mortality per million women aged 15-44 associated with legal, illegal and spontaneous abortions. Again, the rates for 1958-1971 are estimates based on NCHS data and the rates for 1972- 1980 are based on the CDC's abortion sur- veillance.7 The low rates of mortality-per million women, not per 100,000 abortions- associated with legal abortion during 1958- 1969 reflect the small number of such proce- dures performed at that time. The relatively high rates in 1970 and 1971 stem from the inexperience of physicians who had not pre- viously provided abortion services. From 1972 to 1975, mortality remained stable, al- though the number of legal abortions almost doubled. The changes from year to year dur- ing the most recent period (1976-1980) re- flect the random variation that would be ex- pected with an annual average of only 12 deaths associated with legal abortion.

The decline in abortion-related mortality following the legalization of abortion has been dramatic. Some decline would have been expected even without legalization, however, because the increasing use of effec-

tive contraceptive methods, including steril- ization, has reduced the number of unin- tended pregnancies, and the improved man- agement of life-threatening abortion compli- cations has reduced the risk of fatal outcome. The last column of Table 2-in which the decline in mortality during 1958-1967 (prior to any liberalization of abortion laws) has been projected to the next 13 years-sug- gests the order of magnitude of abortion-related mortality that might have been ex- pected had legalization not occurred.

The total number of pregnancy-related deaths averted over the past decade by the replacement of unwanted and mistimed births and illegal abortions by legal abortions appears to have been on the order of 1,500. * Since mortality is only the proverbial tip of the iceberg, the number of life-threatening, but not fatal, complications averted probably reached several tens of thousands.

Another beneficial effect of the progres- sive liberalization of abortion laws has been that women with medical contraindications to continued pregnancy, especially poor and minority women, now have better access to legal pregnancy termination. The upper two panels of Table 3 show the numbers of thera-

Christopher Tietze is Senior Consultant with The Popula-

peutic abortions, as legal abortions were then tion Council and directs its abortion research activities.

called, per 1,000 deliveries in New York City This article is based on the Alan F. Guttmacher Lecture delivered by the author at the annual meeting of the Association of Planned Parenthood Professionals, Los An-

during 1960-1962 and 1965-19678 and in the United States for each year from 1963 geles, Oct. 21, 1983.

through 1968.9 The first two columns sum-

*Computed by (1) multiplying the difference between

marize abortions performed for psychiatric birth-related and abortion-related mortality by the num-

reasons and for rubella. The last column, ber of abortions in each year, and (2) subtracting the total

labeled "other," represents abortions performed on all other medical indications, as well as sizable numbers of abortions for which there was no reported indication (some of which may have belonged in the as psychiatric or rubella categories). The number of abortions performed on "other" medical indications shown in the upper two panels of Table 3 are, therefore, probably overestimates. The proportion of pregnancies terminated on "other" and, especially, on psychiatric indications increased over time, notably in 1967 and 1968, when three states became the first to liberalize their abortion laws. Rubella was an important indication during the epidemic of 1964 and early 1965, although risk of fetal defect was then not a reason for abortion in any state.

The bottom row of Table 3 shows, for 1972-1978, the number of abortions per 1,000 live births among women suffering from serious preexisting complications, as estimated by the CDC using the restrictive criteria advocated by Bernard Nathanson. o These include chronic diseases of the heart, kidneys and respiratory tract, hypertension, degenerative diseases of the central nervous system, sickle-cell disease and morbid obesity, but not diabetes, thrombophlebitis and multiple sclerosis. It is quite obvious that even when these very restrictive criteria are applied, the data show that more women obtained legal abortions on medical grounds in 1972-1978 than were able to do so on much broader grounds in 1960-1968.

A third positive effect of abortion legalization has been the possibility of preventing the birth of infants with major physical or mental defects. In many cases, fetal defects can now be detected in utero with certainty by such methods as ultrasonography, fetoscopy, fetal blood sampling and chorionic villus biopsy (an experimental technique that is expected to substantially replace amniocentesis 11). Conditions that can be detected in utero include Down syndrome, Tay-Sachs disease, sickle- cell anemia and neural tube defects. In addition, since prenatal diagnostic techniques make it possible to identify the sex of the fetus, pregnant women who are carriers of such sex-linked disorders as hemophilia are able, through selective abortion, to avoid the birth of male fetuses, one-half of which would be affected by the disorder.

Because all procedures for the prenatal detection of fetal abnormalities require highly trained personnel, and because some procedures may result in injury to the pregnant woman or to a normal fetus, they are currently practical only if high-risk pregnancies can be identified.12 For many rare conditions, the only clues now available are the prior birth of a defective child or such clinical signs as hydramnios (excess of amniotic fluid), which is often associated with fetal malformation. Some abnormalities, however, are known to occur with greater frequency among particular population subgroups. Tay-Sachs disease occurs most often among Jews of Eastern European origin, one person in 30 being a carrier of the disorder; couples in which both spouses are carriers have been successfully identified by community-sponsored screening programs.13 In the case of sickle-cell anemia, about one-tenth of all U. S. blacks are carriers and are easily identified, but the methods used for the diagnosis of affected fetuses are not generally available. Because the incidence of Down syndrome increases steeply with maternal age, it has been recommended that amniocentesis be offered to all pregnant women over 35 years of age. With most of the currently available techniques, prenatal diagnosis is rarely possible prior to 16 weeks' gestation, and in some cases, a definitive determination may not be available before 22-24

Table 1. Abortion-related and birth-related mortality, 1970-1980

Year	Deaths/ 100,000 abortions*	Deaths/100,000 live births			
		legal	Re- ported	Adjusted	Estimated total
1970	18.6	16.4	21.1	28.2	
1971	11.1	14.3	17.7	23.5	
1972	4.1	15.2	18.2	24.3	
1973	3.4	12.6	14.8	19.8	
1974	2.8	12.1	15.2	20.3	
1975	2.8	10.3	12.9	17.2	

weeks, at the borderline of fetal viability and at a stage of pregnancy when abortion, should it be chosen, is more dangerous. (This circumstance will change, however, if chorionic villus biopsy-which must be performed before the 12th week of pregnancy- comes into wide use.)

The importance of prenatal diagnostic procedures lies in the fact that findings are negative in more than 95 percent of cases, thereby providing reassurance to prospective parents who suspect a particular or fear disorder. that their Prenatal child will diagnosis suffer backed by selective abortion makes procreation possible for couples who might otherwise avoid childbearing, perhaps by aborting all pregnancies.

At present, the number of abortions performed on the basis of prenatal diagnosis is quite small. Because diagnostic procedures have been in use only since 1968, most prospective parents and even some physicians are not aware of them, and comparatively few centers exist where they can be carried out. In the United States, there were about 125 prenatal diagnosis programs in 1978, but only 10-15 laboratories were adequately staffed and equipped for the diagnosis of Tay- Sachs disease or neural tube defects. The number of diagnostic amniocenteses performed in that year was roughly 15,000, out of 150,000-200,000 pregnancies regarded as at risk under currently accepted criteria.[14] By 1982, the number of programs had risen to at least 155 and the number of amniocenteses, to at least 30,000.[15] The number of abortions performed in 1982 on the basis of prenatal diagnosis may have been on the order of 1,500, or one-tenth of one percent of all U.S. legal abortions during that year. Each of those abortions averted a major catastrophe for a family.

1976 0.9 10.6 12.7 16.9
1977 1.3 9.3 11.1 14.9
1978 0.5 8.0 9.5 12.6 1979 1.2 7.9 8.8 11.8 1980 0.5 7.5 8.2 11.0

*Death-to-case ratios for 1970-1971-numbers of deaths estimated from data reported by National Center for Health Statistics (NCHS); ratios for 1972-1980- based on numbers of deaths reported by Centers for Disease Control (CDC).

tBased on numbers of deaths reported by the NCHS.

tAdjusted en's age and to the race.

?Based on assumption that birth-related deaths are underreported to the NCHS by at least one-fourth.

Table 2. Abortion-related mortality per million women aged 15-44, by type of abortion, 1958-1980

Year or period*	Legal	Illegal	Spontaneous totalt	Total Projected totalt
1958-1962	0.14	9.93	10.07	na
1963-1967	0.10	6.96	7.06	na
1968-1969	0.10	3.85	3.95	5.52
1970	0.84	3.09	3.93	4.96
1971	1.24	2.04	3.20	4.62
1972	0.54	0.92	0.56	2.02 4.31
1973	0.55	0.46	0.22	1.23 4.01
1974	0.54	0.15	0.45	1.14 3.74
1975	0.61	0.08	0.29	0.98 3.48
1976	0.23	0.06	0.27	0.56 3.25
1977	0.34	0.08	0.28	0.70 3.03
1978	0.14	0.14	0.18	0.46 2.82
1979	0.35	0.00	0.15	0.50 2.63
1980	0.15	0.04	0.11	0.30 2.45

*Rates for 1958-1971-estimate 1972-1980-based on CDC reports.

tProiected from 1958-1967 trend.

Note: In this table and Table 3, na=not applicable.

Table 3. Numbers of abortions performed on medical indications per 1,000 live births, 1960-1978

Year or period*	Psychiatric	Rubella	Other*
New York City			
1960-1962	1.25	0.14	0.66
1965-1967	1.98	0.20	0.89
United States			
1963	0.57	0.06	0.64
1964	0.55	0.90	0.91
1965	0.76	0.25	0.92
1966	0.94	0.07	0.75
1967	1.52	0.09	1.00
1968	3.61	0.10	1.48
United States			
1972-1978	na	na	4.13

*Including abortions for w

Sources: States, New 1963-1968--see York City-see reference reference 8; 9; United United States, 1972-1978-see reference 10.

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Some Organizational Alternatives To Increase Support for Reproductive And Contraceptive Research

ByJeannie L. Rosoff

Some 55 million U.S. couples face the prob- lem of avoiding an unintended pregnancy. 1 In spite of the virtually universal use of con- traceptives, an estimated 3.3 million un- planned pregnancies occur annually; about half end in abortion.2 For some women, these unplanned pregnancies are a conse- quence of the fact that no method of con- traception is 100 percent effective. Howev- er, even if all women used the most effective reversible methods now available the pill and the IUD-an estimated 450,000 abor- tions would still occur annually in the United States.3

For some women, unplanned pregnancies occur because the method they have delib- erately chosen because of its low perceived risk of harmful side effects has a relatively high risk of failure. Thirty-nine percent of women exposed to the risk of unplanned pregnancy who are not practicing contracep- tion do not use any birth control method ertheless, an estimated four million low-in- because of their concern about potential come adult women and over two million health risks and side effects.4 While the dan- teenagers at risk of having an unintended gers from use of various contraceptive meth- pregnancy are not getting contraceptive ser- ods have at times been alarmingly and inac- vices from either family planning clinics or curately portrayed, for some women, the private doctors, the only sources of prescrip- most effective methods are in fact medically tion for the most effective methods.7 For contraindicated.

some women, currently available methods Other women lack financial means to pur- are inadequate for a variety of reasons. For chase available medical services and contra- example, many unmarried women-espe- ceptive methods. Last spring, a study by The cially teenagers, for whom sexual activity Alan Guttmacher Institute reported that tends to be episodic, unpredictable and sur- costs of first-year use of the pill, the dia- rounded by moral ambivalence-feel the pill phragm and the IUD can amount to $172, is inappropriate and perceive use of barrier $160 and $131 a year, respectively,5 about methods as embarrassing and as interfering half of the $357 average monthly welfare pay- with spontaneity. ment to a family of four through Aid to Fami-

The dissatisfaction of couples with current lies with Dependent Children.6 Still other reversible methods is dramatized by the women live in areas where appropriate medi- steep rise in sterilization, now the most pop- cal services are not readily available a prob- ular method of contraception among U.S. lem even more serious in developing coun- couples.8 Clearly, however, recourse to such tries than in the United States and other a permanent method is not appropriate for

Jeannie I. Rosoff is President of The Alan Guttmacher Institute. This article is adapted and expanded mony before the Institute of Medicine of Academy of Sciences, "The Organization of the the National National from testi- women The practice has increased of contraception in the last 20 among years, U. and S. choice children of they want. methods is The need for a wider even greater in develop- Institutes of Health and Priorities in National Health Re- access to effective methods has improved ing countries than it is in the United States.

search," Washington, D.C., Sept. 30, 1983.
with the help of government programs. Nev- Yet, since the advent of the pill and the IUD,