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The Genesis of Liberalized Abortion in New York: A Personal Insight

Alan F. Guttmacher

I. PRELUDE TO LIBERALIZED ABORTION STATUTES

SINCE MY DEBUT as an Aesculapian antedates those of other physician-contributors to this symposium, I thought it valuable to relate medical practices and attitudes toward induced abortion a half century ago and to analyze the genesis, direction, and magnitude of the change in those attitudes and practices and its reflection in the legal position on abortion.

I was taught obstetrics at The Johns Hopkins Medical School by Dr. J. Whitridge Williams, one of the great medical figures of the 1920's. He was forceful, confident and didactic. To him, and therefore to us, induced abortion was either therapeutic or "criminal." He told us therapeutic abortion was performed to save the life of the pregnant woman and that the primary threats involved dysfunction by three organs: the heart, the lung, and the kidney. To these hazards he begrudgingly added toxic vomiting of pregnancy. I say "begrudgingly" because I remember full well the drastic treatment meted out to hyperemetic gravidae: isolation, submammary infusions, rectal clyses, and feeding by stomach tube. To resort to therapeutic abortion in these cases was admission of medical failure. No medical sanction was then given to abortion on socio-economic or psychological grounds.

The experiences I encountered during my residency from 1925 to 1929 made me question the wisdom of such a restrictive medical policy. In a short period I witnessed three deaths from illegal abortions: a 16-year old with a multiperforated uterus, a mother of four who died of sepsis rejecting another child, and a patient in early menopause who fatally misinterpreted amenorrhea. My skepticism of the wisdom of existing abortion laws was further reinforced by an incident involving Dr. Williams. A social worker
came to me seeking abortion services for a 12-year-old black child who had been impregnated by her father. Dr. Williams was a court of one to validate abortion requests so I sought his permission to perform the operation. He was sympathetic, but reminded me that Maryland prohibited abortion except where necessary to preserve the life of the mother, and he did not believe that continuation of pregnancy in this case would endanger the girl's life. When I brought up the social injustice of compelling a child to bear her father's bastard, Dr. Williams compromised, saying that if I could obtain a letter from the district attorney granting special permission to The Johns Hopkins Hospital, then I could perform the abortion. I failed to get this permission and delivered the baby 7 months later. At about the same time one of the residents at a neighboring hospital showed me a child, the daughter of an army colonel, who had been hysterotomized to eliminate pregnancy conceived through "rape." Experiences such as this made me question the possibilities for social injustice and disparate treatment, ever present under a restrictive policy which gave one man the sole power to determine the validity and permissibility of abortion services.

Such a restrictive policy could only lead to reliance on those who would go outside the law to provide the desired services. Indeed, during the same period there were two competent physician-abortionists in Baltimore who practiced for many years relatively unmolested by the police. They were so well known that an inquiry addressed to either a traffic policeman or a salesgirl would have elicited their names with equal ease. They were not partners, but close collaborators, occasionally preparing death certificates for each other. One, while attending a public national meeting in Washington, rose to defend the service provided by illegal medical abortionists who had been defamed by a speaker. He stated openly that there had been but four deaths in the 7,000 abortions with which he had been associated. This was before the first use of antibiotics, "salting out," and other precautionary procedures. Finally, years later when a complaint was filed, the district attorney was compelled to take official cognizance of the existence of one of the two abortionists. At the trial, the abortionist offered to produce,


2 Presently, California follows a similar procedure in cases of incest. Cal. Health & Safety Code § 25952 (West Supp. 1971) (permitting abortion where the district attorney is satisfied that there is probable cause to believe that the pregnancy resulted from rape or incest and this validation is transmitted to the Committee of the Medical Staff).
in his defense, a list of 300 reputable physicians who had referred cases to him. I assume my name was among them.

On one occasion, the nestor of American gynecologists, Dr. Robert L. Dickinson, called me from New York requesting that I arrange a meeting in Baltimore with Dr. T. We lunched at a hotel and Dr. T produced a roster of his patients, duration of pregnancy, parity, city of residence, fees, source of referral, etc. On another occasion Dr. T met with a few of the senior medical faculty of Johns Hopkins to disclose his technique. To minimize infection, he had invented a boilable rubber perineal shield with a rubber sleeve that fitted into the vagina and through which he worked. His technique was to pack one inch gauze strips into the cervix and lower uterine segment the night before he was to evacuate the conceptus. After 12 hours of packing, the cervix was wide open, and he was able to empty the uterus with an ovum forceps, followed by curettage without anesthesia. In advanced pregnancies he inserted intrauterine bougies, held in place by a vaginal pack until strong contractions commenced, which not infrequently took several days.

These early medical experiences with the unavailability of abortions in reputable hospitals and the incidence of illegal abortions convinced me that permitting abortion only "to preserve the life of the mother" was undesirable and unenforceable. I thus sought changes which would both curb the morbidity and mortality of illegal abortion and eliminate the ethnic and social discrimination which was inherent to all induced abortions, whether legal or illegal.

I found in my hospital contacts that obstetricians and gynecologists were the most conservative medical group in regard to abortion. Internists and psychiatrists were constantly berating us for our low incidence of legal pregnancy terminations. Indeed, there had developed a feeling of prideful accomplishment among the obs-gyn staff if one's hospital had a low therapeutic abortion rate and a feeling of disgrace if the rate was relatively high compared to similar institutions. I shared this viewpoint, no doubt swayed by the writings and addresses of obstetrical leaders such as Drs. George Kosmak and Samuel Cosgrove. My sentiment was that as long as the law was as restrictive as it was, doctors should not breach it, but work to change the law — a position which I forthrightly espoused in the classroom. Despite the fact that it was not a radical notion, this position had few adherents. Members of the medical profes-

3 See, e.g., TENN. CODE ANN. § 39-301 (1955), which currently restricts abortions to such cases of necessity.
sion were content to leave things as they were; they would frequently perform a therapeutic abortion for a favored patient because of her important social position, or at least refer her to a safe, illegal medical operator. But acceptance of generally available legal abortion was still far in the future. In the early 1930's, I was invited to present a paper on abortion reform before the New Jersey Obstetrical and Gynecological Society. One participant, Dr. Cosgrove, tore into me like a tank. I can still recall my discomfiture and frustration at the unyielding establishment.

Until 1940, the decision to permit or to deny therapeutic abortion in the individual case was made solely by the chief of the obstetrical service. The physician handling the case presented the patient's history, physical examination, and laboratory findings to the chief who, in turn, made an immediate decision. Through personal observations, I learned that it was impossible to predict how the chief would decide, for such decisions seemed to turn on the chief's mood and on the latest article he had read on the subject.

It was in recognition of the inadequacies of such a procedure that, when I became Chief of Obstetrics at Baltimore's Sinai Hospital in 1942, I decided to have a staff committee of five make decisions about abortion. This committee consisted of representatives from medicine, surgery, pediatrics, psychiatry, and obstetrics, with the obstetrician as chairman. As far as I knew, such a plan had never been tried, although I have since learned that it had been in force in a few other hospitals. The abortion committee system functioned well. Among other things it added medical expertise in special areas beyond obstetrics. Moreover, greater consistency was attained through adherence to guidelines adopted in cases with similar factual patterns. I do not believe that the committee system significantly affected the hospital's incidence of legal abortion, but at least all applicants were treated on an equal basis.

When I became Director of Obstetrics and Gynecology at the Mount Sinai Hospital in New York in 1952, I learned that the Department of Gynecology (there had been no department of obstetrics previous to my arrival) had performed 30 abortions in the previous 6 months. I was told that if a private patient was denied

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4 The committee method of decisions regarding abortions is prevalent and is codified in many states. CAL. HEALTH & SAFETY CODE § 25951(b) (West Supp. 1971), for example, requires the consent of an approved hospital committee before an abortion can be performed. The statute requires that the committee be composed of not less than three licensed physicians and requires that the decision to permit an abortion be unanimous.
abortion in another institution, she frequently sought abortion at Mt. Sinai because of its well-known, relatively liberal policy. I recall resenting this reputation. Fortwith we introduced the committee system, the results of which have been reported in three publications. The committee met each Wednesday afternoon if any case was to be heard. Forty-eight hours prior to that meeting the staff obstetrician who wished to carry out an abortion would have provided each member a summary of the case together with recommendations from consultants, if any had examined the patient. The staff obstetrician and frequently a consultant from a medical discipline germane to the problem (for example, a cardiologist for a cardiac case or a neurologist for the mother who had borne a child with muscular dystrophy) presented their findings or views. The committee always voted in executive session and a unanimous vote was required to authorize abortion. This requirement was not as forbidding as it sounds for in almost every instance the other members of the committee would agree with the opinion of the member within whose discipline the problem lay.

Statistics on the number of abortions performed at Mt. Sinai and at other New York hospitals over generally contemporaneous time periods are illuminating. At the Mt. Sinai Hospital, 207 therapeutic abortions were performed between 1953 and 1960, yielding an incidence of 5.7 abortions per 1000 live births. In part due to my efforts to eliminate discrimination, the rate was 6.3 per 1000 live births on the private service and 4.6 per 1000 births on the ward service. One commentator, in reporting figures from another large New York voluntary hospital for the years 1951 to 1954, showed an incidence of 8.1 abortions per 1000 live births on the private service and a rate of 2.4 on the ward service. Statistics were also available for two New York municipal hospitals: Metropolitan Hospital (1959-61) and Kings County Hospital (1958-60). In the former the abortion incidence was 0.077 per 1000 live births, and in the latter the incidence was 0.37 per 1000 live births. Gold published a study of abortion incidence for all New York hospitals for the peri-

5 Guttmacher, Therapeutic Abortion: The Doctor's Dilemma, 21 J. MT. SINAI HOSPITAL 111 (1954); Guttmacher, Therapeutic Abortion in a Large General Hospital, 37 SURGICAL CLINICS OF NORTH AMERICA 459 (April, 1957); Guttmacher, The Legal and Moral Status of Therapeutic Abortion, in PROGRESS IN GYNECOLOGY IV 279 (J. Meigs & S. Sturgis eds. 1963).
7 C. McLANE, ABORTION IN THE UNITED STATES (Calderone ed. 1958).
8 Guttmacher, supra note 6.
The incidence in proprietary institutions was shown to be 3.9 per 1000 live births; and in the voluntary hospitals the incidence was 2.4 on the private services and 0.7 on the ward services. Municipal hospitals showed a rate of 0.1 per 1000 live births. There was also a marked ethnic differential: the ratio of therapeutic abortions per 1000 live births was 2.6 for whites, 0.5 for Negroes, and 0.1 for Puerto Ricans.

Not only was there great disparity in the incidence rates among various hospitals but, in addition, the abortion policies and rules established by hospitals were confusingly different. Mt. Sinai, for example, validated abortion for well-documented rubella (german measles), whereas Columbia-Presbyterian did not. Mt. Sinai did not permit abortion for rape, whereas St. Johns in Brooklyn did. The marked differences among hospitals in regard to incidence and standards as well as patient discrimination — discrimination between ward and private patients and between ethnic groups — served to aggravate my dissatisfaction with the status quo and led to my desire for the enactment of a new law.

The question was, what should be the content of an ideal law? Because my twin brother the late Dr. Manfred Guttmacher, a forensic psychiatrist, was a member of the American Law Institute (A.L.I.), which was then engaged in writing a revised penal code, I was present on a Sunday afternoon in December, 1959 when Mr. Herbert Wechsler (Professor of Law at Columbia) unveiled his model abortion statute now called the A.L.I. bill. The recommended statute provided that a doctor would be permitted to perform an abortion: (1) if continuation of pregnancy "would gravely impair the physical or mental health of the mother"; (2) if the doctor believed "that the child would be born with grave physical or mental defects"; or (3) if the pregnancy resulted from rape or incest.

When Professor Wechsler had finished presenting his suggested statute, an elderly gentleman sitting at the large, felt-covered table inaudibly mumbled some comment. Mr. Wechsler said, "What did you say, Judge Hand?" The eminent federal jurist, Learned Hand said, "It is a rotten law." Mr. Wechsler asked why, and Judge Hand responded, "It's too damned conservative." How right he was.

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11 Id.
was, yet most of those present, including myself, disagreed with him. The Wechsler abortion bill was passed by the Institute as part of the total revised penal code revealed to the public in 1962. Many, including myself, hailed it as the answer to the legal problems surrounding abortion, which had always been the doctors’ dilemma.

Even though the A.L.I. Code had not yet been adopted by any state, its mere promulgation opened the medical profession’s eyes to the preservation of health as being a justification for abortion. The most difficult health hazard to document (but equally difficult to refute) was significant trauma to the psychic stability of the pregnant individual. “Psychiatric” indications for abortion rapidly increased in importance. Tietze’s figures demonstrate that in 1963, psychiatric indications accounted for 0.57 legal abortions per 1000 live births in the United States; in 1965 the rate was 0.76 per 1000, and in 1967 it was 1.50 per 1000. The increasing frequency of psychiatric justifications for abortion caused concern for many. Because the psychiatric indications were so ill-defined and pliable, it was feared that they might become an upperclass ticket for legal abortion, thus increasing discrimination and doing little to lower the morbidity and mortality rates in the population at large. In 1967, Colorado, California, and North Carolina, and in 1968, Maryland and Georgia, all modified their respective statutes using the A.L.I. bill as the prototype. Between 1967 and 1968 the incidence of legal abortions in the United States increased from 2.59 to 5.19 per 1000 live births, and abortions for psychiatric indications increased from 1.50 to 3.61 per 1000 live births.

In December, 1968, I was appointed to Governor Rockefeller’s 11-member commission which had been formed to examine the abortion statute of New York State and to make recommendations for change. When the Governor convened the commission, he said, “I am not asking whether New York’s abortion law should be changed, I am asking how it should be changed.” The commission was made up of a minister, a priest, a rabbi, three professors of law, three

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15 Tietze, supra note 12, at 7.
physicians, a poetess, and the president of a large Black woman's organization. There were four Catholics, four Protestants, and three Jews. The commission met every two weeks for more than three months. It was apparent that three members wanted no change in the old law despite the Governor's charge, two wished abortion removed entirely from the criminal code, and six advocated the enactment of the A.L.I. model with further liberalization: the majority report — approved 8 to 3 — added legal abortion on request for any mother of four children. My proposal of adding a clause to permit abortion on request for any woman 40 years or older was voted down — this was April, 1969.

The more I studied early results from the five states which had been the first to liberalize their laws, the more I began to espouse the opinion that abortion statutes should be entirely removed from the criminal code. The number of legal abortions being undertaken under the new liberalized laws, when contrasted with the figures for the previously undertaken illegal abortions, were far too low. In 1968, for example, California reported only about 5000 abortions under the new law. It is true that this number has steadily increased to a present rate of over 100,000 per year, but that increase stems in large part from an increase in the number of abortions legitimized on psychiatric grounds: over 90 percent of current abortions are performed on that ground. In actuality it places the psychiatrist in the untenable situation of being an authority in socio-economics. I examined the situation personally in Colorado and discovered that two Denver hospitals were doing virtually all of the pregnancy interruptions and these were being performed primarily on the private sector. This clearly implied that the state-imposed requirement of two psychiatric consultations was causing an effective discrimination against ward patients: private consultations were so expensive as to be available only to the wealthier patients, and psychiatric appointments in public facilities were booked solid for 3 months — far beyond the time limitation on obtaining an abortion. From these experiences, I reluctantly concluded that abortion on request — necessitating removal of “abortion” from the penal codes — was the only way to truly democratize legal abor-

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16 California's Therapeutic Abortion Act became operative November 8, 1967. During the first calendar year under the new law, legal abortions reported from the entire state were 5,030. See Overstreet, California's Abortion Law — A Second Look, in ABORTION AND THE UNWANTED CHILD 16 (C. Reiterman ed. 1971).

tion and to sufficiently increase the numbers performed so as to de-
crease the incidence of illegal abortions. I came to this conclusion
in 1969, 47 years after abortion first came to my medical attention
when I was a third-year medical student. Abortion on request, a
position which I now support after having been converted by years
of medical practice and observation, was soon to have its trial in
New York, the state in which I reside. This gave me the oppor-
tunity to observe firsthand how effectively it would function. The
three criteria to be used for evaluation were straightforward. Did
abortion on request save lives? Did it minimize socio-ethnic dis-
 crimination, and did it reduce the incidence of illegal abortion?

II. THE NEW YORK SITUATION

On April 10, 1970, the New York State Legislature amended
the State Penal Code, permitting licensed physicians to provide abor-
tion services for any consenting woman less than 24 weeks preg-
nant.18 The law specifies no restrictions on place of residence, age,
marital status, or consent of spouse, if married, and it makes no re-
strictions as to the type of facility where abortions might be per-
formed. After 142 years of one of the most restrictive abortion
statutes — allowing abortions only when necessary to preserve the
life of the mother — New York suddenly had the most liberal
abortion law in the world.

The New York State Legislature in 1969 had flatly rejected the
bill produced by the Governor’s Commission — basically the A.L.I.
model plus permissible abortion on request for any woman with
four or more children. Those of us in favor of reform hoped in
1970 that we could somehow put through a modified A.L.I. bill.
We knew of the “radical” bill sponsored by Constance Cook, an
upstate legislator, but had no hope for its passage. Much to every-
one’s surprise, however, it passed the House by a modest majority.
When it came before the Senate there was a tie vote and an expec-
tation that the speaker would break the tie with his negative vote
since he was a strong opponent of abortion reform. However, a
senator from an upstate Catholic county broke the tie by changing his
negative vote to an affirmative one. The bill was to become law
July 1, less than 3 months later.

The medical community was in a state of shock, not from op-
position, but from total surprise. There were dire prophecies that
all existing medical facilities would be dangerously overtaxed by a

18 N.Y. PENAL LAW § 125.05(3) (McKinney Supp. 1971).
nationwide demand for abortion. But the New York City Department of Health began to ready the facilities of the 15 municipal hospitals, and the mayor appropriated an extra three million dollars to fund the new abortion service. In recognition of the financial potential, several proprietary hospitals were converted into abortoria. The voluntary hospitals agreed to do their part and some arranged to perform abortions on both an inpatient and an outpatient basis. Some physicians began to prepare their private offices for abortions and others advocated free-standing clinics with built-in safety factors such as blood available for transfusion, cardiac arrest equipment, quick access to a back-up hospital, counselling before and after the operation, and performance of abortion only by specialists in obstetrics and gynecology.

When July 1 arrived, the City Board of Health had not yet established its own standards for abortion services and did not do so until September 17. On that day the New York City Board of Health issued regulations outlawing private office abortions within New York City. They agreed that abortions could be performed in accredited hospitals and their outpatient departments. Also permitted were abortions in licensed free-standing abortion clinics which could meet certain enunciated standards regarding factors such as the size of the operating room, the availability of resuscitating equipment, and the availability of blood; furthermore, abortion of a pregnancy beyond 12 weeks could not be performed in such a free-standing clinic.

A. Incidence Figures

The New York City statistics on abortion have been accurately recorded and reported, but abortion statistics for the state outside of New York City are fragmentary. During the first 18 months of the new law, July 1, 1970 to December 31, 1971, 278,122 legal abortions were performed in New York City in 15 municipal, 52 voluntary, 37 proprietary hospitals, and 18 free-standing clinics. It is estimated that another 78,000 were performed in the rest of the

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19 See, e.g., Hall, Widening Frontiers of Legalized Abortion, 12 MEDICAL WORLD NEWS 44 (1971).
20 Health Service Administrative Regulations art. 42 (1970).
21 Pakter & Nelson, The First Nine Months, 3 FAMILY PLANNING PERSPECTIVES 4 (1971); New York State Study (a joint publication of the New York City Health Department and Planned Parenthood-World Population).
22 Figures obtained from the Health Service Administration of the City of New York.
From the reports of the first 15 months, of the abortions performed in New York City it was found that 68,391 were performed on residents (35.5 percent) and 127,129 on nonresidents (64.5 percent). During the first 12 months the following eight states supplied the most out-of-state patients: New Jersey, 11,849; Ohio, 7,403; Michigan, 7,296; Illinois, 7,163; Pennsylvania 6,660; Florida, 5,255; Massachusetts, 5,107; and Connecticut, 3,729. A few even came from Alaska, Hawaii, and Washington. Although these latter states have abortion laws almost as liberal as New York's, the influx of these nonresidents is probably attributable to the fact that New York permits abortion in pregnancies of longer duration.

When the law was proposed, there was no concerted effort by any medical group to extend the permissible abortion period to its present maximum of 24 weeks following conception. That provision appears to have been inserted by legislators who drew up the statute. Tietze and Lewit have shown that the period of gestation at which abortion is performed is inversely associated with the woman's age at the time of abortion — the younger the woman, the more advanced her pregnancy, and the older the woman, the earlier she seeks abortion. In their study, carried out on a different population sample than the New York City studies, the abortions performed in the second trimester accounted for 49 percent of all abortions performed on girls 14 years or less, and 20 percent of all abortions performed on women over 30. They also found an ethnic difference — 36 percent of the blacks had abortions after 12 weeks while only 23 percent of the whites waited that long. Modifying social factors such as availability of services may have played a role in the latter instance.

23 Id.
26 Id.
29 Id.
B. Abortions of New York City Residents per 1000 Births

Comparing the number of women of reproductive age (between the ages of 15 and 44) residing within the city of New York with the number of abortions performed on New York City residents during the first year of the new statute, Tietze has computed an annual legal abortion rate of 37 per 1000 women of reproductive age. Applying this rate to the 43.8 million females between the ages of 15 and 44 in the United States, he projects a possible figure of 1,640,000 annual legal abortions if all 50 states had abortion regulations and practices similar to New York City. Using the reduction in live births in New York City during the first 9 months of 1971, compared to the 1970 rate, Tietze concludes that if the whole country followed the pattern of New York City there would be 330,000 fewer live births annually resulting in a reduction in the crude birth rate of 1.6 points per 1000 population. Using the reduction in New York City births, one may roughly calculate that three in four of the legal abortions performed replaced illegal abortions. One in four prevented the birth of a child which was unwanted in early pregnancy but, under the old law, would have been born nevertheless. On the basis of the fact that there was a 14 percent decline in out-of-wedlock births compared to a 7 percent decline for births within marriage, Tietze calculates that almost two-fifths of the eliminated unwanted conceptions is represented by a decline of out-of-wedlock births.

C. Effect on Maternal Mortality

The effect of the new abortion statute on maternal mortality and ethnic discrimination in abortion practices is revealed in a paper presented by Harris at the recent meeting of the American Public Health Association. The paper compares the maternal deaths in New York City for the first eight months in 1969, 1970, and 1971, and provides the following figures, here presented in tabular form:

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32 Tietze, supra note 30.
33 Id.
The figures thus indicate that New York City, in 1971, experienced the lowest maternal mortality rate on its record. This abrupt improvement in the maternal mortality rate is explained in part by the displacement of unsafe criminal abortion by safe, legal procedures. There were nine deaths from criminal abortions during the first 18 months of the new law in New York City, but only two of these occurred in the third six-month period. If this low rate is maintained there would be four in the second 12-month period of the new law.

The most extraordinary feature of the statistics presented is not the decline in total abortion deaths, but the dramatic decline of approximately 60 percent in maternal mortality unassociated with abortion. One contributory factor is that six percent of the abortions performed on New York City residents involved children aged 17 or less, and 10 percent involved women over 35 years of age — the two age groups with the highest obstetric death rates. If the trend in greatly reduced obstetric mortality is sustained in subsequent years, the contribution of "abortion on demand" in reducing nonabortion obstetric deaths would merit more extensive analysis.

D. Third Six-Month

According to information provided to the New York Times by Mr. Gordon Chase, Health Services Administrator for New York City, the third 6-month period of the new law (July to December, 1971) showed interesting changes. In the total 18-month period, 278,122 legal abortions were performed in New York City. But figures showed a decline in legal abortions during the third 6-month period: from 57,090 abortions in the third quarter of 1971 to 52,282 in the final quarter. The decline was felt most in municipal, voluntary, and proprietary hospitals, while there was an increase in the

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35 News release prepared by Gordon Chase, supra note 25.
36 Harris, supra note 34.
number of patients served by free-standing clinics. "Almost half of all abortions in the city during the period July-December 1971 were performed in clinics — up from about one-third during the first year of the law." Finally, according to Mr. Chase, the death rate dropped from 4.7 per 100,000 abortions during the first year to a rate of 3.7 in the third 6-month period. But since two out of three abortions were performed on nonresidents who may remain only a few hours, it is possible, despite serious efforts of the New York City Health Department to search out such deaths, that the latest rate of 3.7 deaths per 100,000 abortions is an understatement.

E. Effect on Illegal Abortion

There is no satisfactory way to determine the effect legal abortion on demand has on illegal abortion. There are suggestive data, however. One is the decline in total abortion deaths and another is the decrease in hospital admissions for "spontaneous" and incomplete abortions. In 10 municipal hospitals taken together, incomplete and spontaneous abortions averaged: 480 per month from July to December 1970; 350 per month from January to June 1971; and 199 per month from July to December 1971. It is impossible to document a trend by the observations of one illegal medical abortionist of the effect of the new law on his own practice. Still, a most popular illegal physician-abortionist complained to me 5 months after the new law had gone into effect that he had not seen a patient in the preceding 2 weeks.

F. Effect on Ethnic Discrimination

As was noted earlier in this discussion, Gold documented the social and ethnic discrimination of legal abortion as practiced in New York City in 1962. Removal of abortion from the criminal code and the exemplary efforts of the municipal hospital system to implement the new liberal policy seem to have largely eliminated discrimination. In his report of the first 12 months, Harris states that 42.8 percent of the abortions performed on the city's residents involved nonwhites, while only 31 percent of all live births involved nonwhites; 10.2 percent of those aborted were Puerto Rican but

38 Id. at col. 4.
39 Figures obtained from the Health Service Administration of the City of New York.
40 See Gold, supra note 9.
41 Harris, supra note 34.
they accounted for 18 percent of the births; whites formed 47 percent of those aborted and gave birth to 51 percent of the babies. The ratio of legal abortions to live births among New York City residents for nonwhites is 60:100; for whites, 40:100, and for Puerto Ricans 30:100.

III. ABORTION PROCEDURES

A. New Developments in the Field of Abortion

Two new developments in the field of abortion may have important impact on the expanding liberalization of abortion availability: high-dosage, post-coital estrogens (the "morning-after pill") and the prostaglandins.

1. High Dosage Estrogens — Implantation, a highly complex and sensitive physiological process, can be disrupted and inhibited by interference from a variety of environmental conditions.42 As early as 1926, it had been demonstrated that injection of an estrogen in rodents shortly after successful mating would prevent nidation. In 1967, Morris and Van Wagener gave estrogens to 35 monkeys following artificial insemination, and instead of attaining an anticipated 50 percent pregnancy rate none became pregnant.43 Estrogen was then prescribed for humans, at a dosage of 50 mg of diethylstilbestrol per day for five days beginning within three days of the unprotected coitus. Other estrogens are in trial: 2.5 mg of ethinylestradiol taken orally twice a day for five days; and 20 mg of premarin introduced intravenously every other day for three doses. Published and unpublished results are encouraging, although final evaluation is not yet completed. Kuchera from the University of Michigan Health Service reports that her subjects avoided conception in each of 1,000 cases treated with post-coital stilbestrol.44 And in a personal communication from Yale, I was told there was only one pregnancy in 1,500 patients on similar treatments. According

42 In the laboratory, implantation has been shown to suffer from interference caused by a number of experimental techniques: stress reactions brought about by overcrowding in a rat population; stress caused by placing a recently mated mouse in a cage significantly larger than its home cage; and exposure of the recently mated mouse either to a strange male or to a cage soiled by the urine of a strange male. See A. Rosenblatt, Social-Environmental Factors Affecting Reproduction & Offspring in Infrahuman Mammals, in Childbearing — Its Social and Psychological Aspects 256 (S. Richardson & A. Guttmacher eds. 1967).


to Tietze, each isolated unprotected coitus scattered over the full intermenstrual month yields a two to four percent likelihood of pregnancy. The Michigan report states that of the women with regular menses, 80 percent were exposed to impregnation in midcycle and their expectation of pregnancy should have been more than two to four percent. Massey reports prevention of all but four pregnancies (1.6 percent) in 247 rape cases treated with stilbestrol immediately after the crime.

Like any new medical treatment, possible harmful side-effects have not yet been completely ruled out in the use of stilbestrol. Herbst reports the development of adenocarcinoma of the vagina in eight young women born between 1946 and 1951, and in seven cases, their mothers had been given diethylstilbestrol to prevent spontaneous abortion beginning in the first trimester and continuing through most of the pregnancy. Since then, Greenwald has documented five additional cases. There is, however, little similarity between the use of post-coital stilbestrol to prevent pregnancy and later post-conceptional stilbestrol applications to prevent spontaneous abortion. In the former method a relatively high dose is given acutely over a short period, and in the latter treatment a smaller amount is introduced over a lengthy period, the total dose being at least 15 times as great. Then, too, the time of administration is different: in one, before the zygote is even a blastocyst; in the other, after the Mullerian ducts are laid down. Nevertheless, should stilbestrol ever be adopted as a primary means of preventing nidation, the possibility of harmful side-effects occurring in the offspring is a problem to be faced: it makes one question whether it would not be prudent to terminate pregnancy by induced abortion should post-coital stilbestrol ever fail in preventing nidation.

2. Prostaglandins — In 1930, Kurzrok and Lieb, while carrying out experiments on artificial insemination, observed that if semen was introduced directly into the uterine cavity the uterus would

47 See Kuchera, supra note 44.
48 Massey, Garcia, & Emich, Management of Sexually Assaulted Females, 38 OBSTETRICS & GYNECOLOGY 29 (1971). Of the four reported cases of pregnancy, three should not properly be considered therapeutic failures: one was "raped" on the 29th day of the menstrual cycle and admitted other occasional unprotected coital exposures during the same month, and two cases discontinued therapy after only a few tablets.
react with violent contractions and cramps. They then excised strips of uterine muscle at Cesarean section and suspended them in a water bath. The addition of semen to the bath stimulated vigorous contractions.\(^5\) Five years later Von Euler investigated the reaction and concluded that the active principle was an acidic lipid, present in seminal vesicle extracts, which he called prostaglandin.\(^6\) In a sense, the name is a misnomer since the compounds are in much higher concentration in seminal vesicle fluid than in prostatic fluid. Subsequent studies have shown that there are at least 14 different prostaglandins in various body tissues including uterine endometrium. There was an extreme shortage of the drug until 1965 when the group at the Karolinska Institute succeeded in producing pure prostaglandins biosynthetically by incubating one of six fatty acid precursors with sheep seminal vesicle glands. Recently, prostaglandins have been produced by total synthesis and it is anticipated they will soon be readily available at low cost.\(^5\)

The two prostaglandins which act upon the female reproductive tract are \(E_2\) and \(F_2\), the letter and subscript number having reference to chemical structure. Karim, Professor of Pharmacology at Makerere University in Uganda, began clinical studies with these two compounds in the mid-1960's. At first, they were administered in an intravenous drip to initiate term labor in cases in which the fetus had died in utero; later, they were successfully used to induce term labor in patients bearing a live fetus. Being successful in his work with term pregnancies, Karim next turned his attention to the induction of abortion.\(^5\) Recently, in a paper before the New York Academy of Sciences, Karim reported on 200 therapeutic abortions; 150 induced by means of an intravenous (i.v.) drip of \(E_2\), with only five failures, and 50 induced by using \(F_2\) with only six failures.

Other workers have not been able to report the same degree of success, especially in pregnancies beyond eight weeks.\(^5\) It is uncer-


\(^{54}\) Bygdeman & Wiquist, *Early Abortion in the Human*, in ANNALS, NEW YORK ACADEMY SCIENCE (in press); Anderson & Speroff, *supra* note 52.
tain whether the difference in results may be due to a difference in the definition of a successful result or some technical difference in administration. Side-effects, in the form of nausea, vomiting, and diarrhea, are very common with the i.v. drip administration. In order to use a lesser amount of prostaglandin and thus reduce side-effects, the Karolinska group introduced prostaglandin directly into the uterine cavity through a polyethylene catheter inserted through the cervix and left in place between the fetal membranes and uterine wall. They report complete or partial expulsion of the conceptus in 12 cases with pregnancies of 5 to 13 weeks, using one-tenth the usual intravenous dose.\textsuperscript{55}

In an attempt to reduce side-effects, Karim is working with analogues of $E_2$ and $F_{2a}$ and is also seeking methods other than i.v. for administering the natural prostaglandins. He is using oral capsules, lactose intravaginal tablets, and vaginal suppositories which melt at body temperature.\textsuperscript{56} There are three different times at which the prostaglandins may be given to control conception: (1) when pregnancy is firmly implanted, in which case a visible abortus will be expelled; (2) when a woman is two to seven days overdue on her period, in which case the delayed menses will be brought on; and (3) once a month on a late cycle day, thus acting as a contraceptive agent.

Many clinical investigations of the possible use of $E_2$ and $F_{2a}$ as abortifacients are being conducted worldwide. The attempt to bring on delayed menses is being carried out at Makerere in Uganda, and monthly application as a contraceptive is being studied by investigators at the Karolinska Institute and Makerere University. Karim reported the successful treatment of 11 of 12 patients who had menstrual delays of two to seven days by intravaginal insertion in the posterior fornix of either 40 mg of $E_2$ or 100 mg of $F_{2a}$ in two divided doses four hours apart. Of the 12 women, eight initially had positive pregnancy tests. In 10 cases, menstrual-like uterine bleeding started within one to six hours after the intravaginal insertion of the second lactose tablet. In the remaining two cases, no bleeding occurred on the first day. A third prostaglandin tablet inserted the next day induced bleeding in one. The other did not bleed and had a positive pregnancy test one week later.\textsuperscript{57} In Swed-

\textsuperscript{55} Wiquist & Bygdeman, \textit{Therapeutic Abortion by Local Administration of Prostaglandin}, 2 LANCET 716 (1970).
\textsuperscript{56} Personal conversation with S. Karim.
\textsuperscript{57} Karim, \textit{Once-a-month Vaginal Administration of Prostaglandins E$_2$ and F$_{2a}$ for Fertility Control}, 3 CONTRACEPTION 173 (1971).
en, monthly dosages of prostaglandins are being administered to a group of women at the time of their expected menses; no other contraceptive is used. The compounds are inducing menses, and none of the women has become pregnant during the first 6 months of the study.\textsuperscript{58}

It is generally agreed that F_2 and F_2a exert their oxytocic effect directly on uterine muscle cells. F_2a may also be a luteolysin, regulating the secretion of progesterone by the corpus luteum through an effect on local blood flow. F_2a, a venoconstrictor, is present in significant amounts in secretory endometria and may play an important role in the physiology of normal menstruation.\textsuperscript{59}

The prostaglandins are exciting drugs, but it is too early to assess their full impact. If abortion could be induced by self-insertion of a vaginal suppository, or menses could be harmlessly and infallibly produced once monthly either premenstrually or after a period is briefly delayed, the fields of contraception and abortion would be significantly altered.

B. Traditional Abortion Techniques

1. \textit{Aspiration versus D \\& C} — Surgical induction of abortion in pregnancies less than 12 weeks in duration can be accomplished either by suction aspiration or by dilatation and curettage (D \\& C). Since both techniques are discussed elsewhere in this symposium,\textsuperscript{60} it is not necessary to do so here. I want to point out, however, that aspiration termination is rapidly replacing curettage in New York City, for it has been found simpler, quicker, associated with less blood loss, and more susceptible to performance under local, para-cervical anesthesia. The trend in the preference for aspiration over D \\& C is graphically recorded in a recent release by the Health Services Administration of New York City.\textsuperscript{61} From July 1 to December 31, 1970, the first 6 months of experience under the new law, 58.5 percent of the 31,507 early pregnancy terminations in New York City were done by aspiration. During the most recent three-month period reported (July 1 to September 30, 1971), however, 84.4 percent of 44,658 early terminations were accomplished by aspiration.

\textsuperscript{58} Anderson \& Speroff, supra note 52.

\textsuperscript{59} See id.


\textsuperscript{61} News release prepared by Gordon Chase, supra note 25.
2. **Hysterotomy and "Salting Out"** — The two techniques commonly used in the United States for terminating pregnancies which have gone beyond 12 weeks are hysterotomy, a miniature abdominal Cesarean section, and "salting out," a procedure entailing the replacement of 200 cc of amniotic fluid by 200 cc of a 20 percent saline solution which kills the fetus and initiates uterine contractions causing spontaneous abortion. "Salting out" has almost replaced hysterotomy in New York City, except in cases in which sterilization by tubal ligation is planned concomitantly. Of 12,452 late pregnancy terminations performed during the first half year of the new law, 5.7 percent were done by hysterotomy, while in the third quarter of 1971, only 3.5 percent of 11,157 late cases were so terminated. The significant advantage of "salting out" over hysterotomy is that it leaves the uterus unscarred for future child-bearing.

The use of intra-amniotic hypertonic solutions was first described by Aburel of Rumania in 1934. He used a 33 percent saline solution to induce labor in cases of lethal fetal malformations, deaths in utero, and for patients needing therapeutic abortions. The technique was used in Japan beginning in 1948, but discarded because of a high maternal morbidity and mortality. Beginning in the early 1960's, the use of hypertonic saline to induce late abortion or labor in cases of a dead fetus was introduced into Scandinavian, British, and United States obstetrics.

Kerenyi has detailed the standard technique which has evolved over 10 years of use at the Mt. Sinai Hospital, reporting on 50 consecutive cases treated on an outpatient basis. No premedication is used and the abdomen and pubic areas are not shaved. The site for puncture is determined by bimanual palpation, selecting the uterine area which feels most cystic and is clearest of fetal parts. The skin is sprayed with iodine and the operative area steriley draped. A skin wheal is raised, and the abdominal wall infiltrated with 5 cc of 2 percent zylocaine. An 18-gauge, 3⅛ inch disposable spinal needle with obturator in position is inserted into the amniotic

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62 Id.
63 See discussion in Berkowicz, Electrolyte Changes and Serious Complications After Hypertonic Saline Instillation, 14 CLINICAL OBSTETRICS & GYNECOLOGY 166 (1971).
64 It was introduced on my service at New York's Mt. Sinai Hospital in 1961. See Jaffin, Kerenyi, & Wood, Termination of Missed Abortion by the Induction of Labor in Mid-trimester Pregnancy, 84 AM. J. OBSTETRICS & GYNECOLOGY 602 (1962).
cavity. In the occasional case in which free flow of clear amniotic fluid is not obtained a teflon catheter is inserted through the needle. If free flow does not then occur, the procedure is postponed and repeated in several days. Approximately 220 cc of amniotic fluid is withdrawn and replaced by an equal amount of 23 percent saline which is infused by the drip technique. Patients are queried about headache, dizziness, tingling sensation in the lips, tongue, or the needle site. During the course of introducing the saline, the bottle is lowered several times to check for a clear back flow. When the infusion is complete, the obturator is replaced before the needle is withdrawn. Manual pressure on a gauze pad is exerted by the patient for five minutes to prevent even a few drops of saline from leaking into the peritoneal cavity. The patient is discharged from the outpatient department and told to return after contractions commence. If no contractions occur within 36 hours, she is admitted and given an intravenous infusion of oxytocin in lactated Ringer's solution.

In the cases of 50 patients treated as out-patients, the time lapse from the initial saline instillation to the completion of abortion averaged 35.2 hours. This can be compared to 36.5 hours for 200 treated as hospital inpatients. In each group the latent period averaged more than 30 hours and the period between the onset of contractions and the expulsion of the conceptus averaged about five hours.

While an oxytocin drip is not used routinely in conjunction with hypertonic saline instillation, it may be necessitated by medical complications. The most common complication in the Mt. Sinai series of cases was retention of the placenta which occurred in 11.2 percent of the reported cases. Most of the placentas were expelled spontaneously if a concentrated intravenous drip of oxytocin (50-100 international units per 500 cc) was used. Other complications were: bloody tap or loss of free flow of fluid, both necessitating postponement and later repetition of amniocentesis in 6.4 percent of the cases; prolonged latent period in 6.8 percent of the cases; postpartum fever in 4.0 percent of the cases; failure to accomplish amniocentesis in 4.0 percent of the cases; and premature rupture of membranes in 3.2 percent of the cases. Hypotension or agitation and acute abdominal pain were noted in 2.8 and 1.6 percent of the cases, respectively.\(^6\) No live-born fetuses were delivered in the series and

\(^6\) Id.
in 15 carefully monitored cases the fetal heart usually disappeared in less than one hour, though one was detectable for two hours.

Mackenzie and his co-workers have shown that duration of gestation affects the likelihood of successful amniocentesis. When the uterus was 12-15 weeks in size, 50 percent of the treatments succeeded; when the uterus was 16-18 weeks in size, 95 percent succeeded, and after 19 weeks, 100 percent of the treatments succeeded.\(^6\)

A survey of the literature reveals three potential serious complications: perforation of the intestines; infection of the uterine contents; and accidental intravascular or intraperitoneal injection of hypertonic saline. The third complication may trigger a pulmonary reaction or lead to permanent brain damage or death: when serum sodium exceeds 170 mEq/liter there is likelihood of irreversible brain damage.\(^6\) In attempts to eliminate the danger of natremia, efforts have been made to find a substance which will cause abortion if substituted for 200 cc of amniotic fluid, but which is relatively free of danger if inadvertently injected intravascularly or intraperitoneally. The British have focused their experimentation on urea since it can be given intravenously even when there is present any one of several potentially harmful physical conditions, including cerebral edema and glaucoma. Craft and Musa report 30 successful inductions of mid-trimester abortion using intra-amniotic urea.\(^6\)

**IV. Conclusion**

In a field as vast as abortion, one has to select those facets of the topic for discussion for which training and experience have equipped him. I chose three: the first, a very personal discussion of the evolution of an attitude and my conversion from a conservative to a liberal position; the second, observation at firsthand how well an extremely liberal statute functions; and the third, a survey of newer abortion techniques.

This symposium will not be the end of the story; it is simply a chapter. Attitudes and practices toward the control of conception are in a highly fluid state. The newest concept is "menstrual regulation." Perhaps some time in the near future, a woman one week

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\(^6\) See Berkowitz, *supra* note 63.

\(^6\) Craft & Musa, *Induction of Mid-trimester Therapeutic Abortion by Intra-Amniotic Urea and Intravenous Oxytocin*, 2 LANCET 1058 (1971).
overdue in her menses may choose to have aspiration of the uterine contents or perhaps the insertion of an intravaginal prostaglandin suppository. No pregnancy test will be done and neither physician nor patient will ever know whether an early pregnancy was evacuated or a tardy period brought on.

It can be expected that during the remainder of the 1970's, abortion procedures and laws will continue to present an intense example of the rapidity of socio-medical-legal change.