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Perilous Politics — Morbidity and Mortality in the Pre-*Roe* Era

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Michael Baden, an 85-year-old forensic pathologist, is best known for his role in investigations of such high-profile cases as the assassination of President John F. Kennedy and the murder of Nicole Brown Simpson. But for Baden, who worked in the New York City medical examiner's office before the *Roe v. Wade* Supreme Court decision, the most haunting cases involve people whom society seems to have forgotten: women who died after illegal abortion attempts. Baden told me he saw about 20 deaths per year attributable to attempted pregnancy termination, usually self-induced. "Metal wire coat hangers, knitting needles, and slippery tree branches" were the most common approaches, he said. When abortion was legalized in 1973, Baden says, with very rare exceptions, deaths due to unsafe abortions stopped.

Soon, however, we may once again see increases in morbidity and mortality due to self-induced abortion. Though efforts to restrict abortion rights in the United States have been under way for decades, the recent appointment of two conservative Supreme Court justices has prompted a flurry of state legislation taking more direct aim at *Roe*'s protections. Missouri, for instance, recently passed a law banning abortions after 8 weeks' gestation, and six states have passed legislation banning abortion after a fetal heartbeat can be detected, which is usually around 6 weeks after a woman's last menstrual period and frequently before she has even realized that she is pregnant. In a more draconian move, Alabama passed a ban on all abortions except in cases where the mother's life is at risk. (None of these laws have yet taken effect.)

Exempting the small number of women whose lives are threatened by pregnancy while ignoring the many more whose lives will be risked if abortion is banned is an irony not lost on those who practiced medicine in the pre-*Roe* era. And as Baden emphasized, any such restrictions will disproportionately harm poor and minority women who lack the resources to travel for a legal abortion or to pay someone with the expertise to perform one safely. Because complications due to unsafe or illegal abortions are vastly underreported, it's hard to know how many women died in the pre-*Roe* era. But we know something about what killed them: Baden told me that, on the basis of the autopsies he performed, the most common cause of death was sepsis from the use of nonsterile instruments in the vagina and uterine cavity, often complicated by lung abscess-

es, septic emboli, and septic pelvic thrombophlebitis. Although many of the infections may have been treatable, some women avoided or delayed seeking care, presumably fearing that their crime would be discovered. For the same reason, though some women's bodies were sent to the medical examiner's office by hospitals, others were simply dumped on the streets. Women with complications from self-abortion attempts who made it to a hospital typically claimed to be having a spontaneous miscarriage; physicians were left to figure out what had actually happened and to treat the developing infection.

Though inserting instruments into the uterus posed substantial risks, other approaches proved equally hazardous. One woman, Baden recalled, had heard that cold on the abdomen would cause a miscarriage; she went out into the snow naked, became hypothermic and died, presumably from ventricular tachycardia. One woman took sleeping pills because she thought they would cause miscarriage; she lost her own life instead. Another frequently lethal complication was air embolism, caused either by soapy-water vaginal enemas (used in an attempt to prevent infection) or by air blown into the cervix, an intervention rumored to cause abortion. If enough air is trapped between the membranes surrounding the pregnancy and the uterine wall and enters large, low-pressure maternal venous channels, it can either travel into the right ventricle and obstruct cardiac output or enter the arterial circulation and cause catastrophic embolic phenomena. (And because a special type of autopsy is required to diagnose air embolism, its frequency was most likely underestimated.) Baden recalls one case on which he was consulted involving a pregnant teenager whose boyfriend orally blew air from her vagina into her cervix, causing her death. A police investigation revealed that he had read an article about the lethality of air embolism and had intended to kill his girlfriend because he didn't want to be a father.

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Even for women who sought medical care, in an illegal market, it's difficult to assess medical legitimacy. As Karissa Haugeberg, a historian of women and medicine at Tulane, explained to me, women of color, immigrant women, or even those new to town, such as young women in college, were the most vulnerable because they did not know the trusted networks. "There have always been very brave physicians and nurses who have stepped up and performed illegal abortions safely and ethically," Haugeberg said. "The problem is, when it's illegal, a vast entrepreneurial class rises to fill the vacuum."

Especially for women with no understanding of the damaging and dangerous sequelae, the illegal market could be deadly. Baden recalls a woman who enlisted a "supposed" doctor who performed her abortion on the kitchen table and ruptured her uterine fundus. The woman developed excruciating pain but was reassured that it was normal and that the fetus would pass in 1 to 3 days. So she waited. When no fetus passed and the pain only intensified, she finally asked to be taken to the hospital. She was dead on arrival, and in performing her autopsy, Baden found that the perforation extended into the abdominal viscera; the fetus was lying in the peritoneal cavity.

Even competent people may behave abhorrently when functioning in an illegal market. In one infamous 1962 case, a 19-year-old woman was brought by her wealthy mother to the home of a family physician known to provide safe abortions. After paying $500, the mother waited in an exam room for several hours. When the physician finally emerged, he told the mother he'd sent her daughter to a nearby hospital because of some minor complications and urged the mother to go home. The physician, with his receptionist, then fled the country. When, soon afterward, the drains in the physician's home were found to be clogged, plumbers found the girl's mutilated body in the pipes draining the toilet. She had died of an air embolism, and the physician, "apparently in a panic, had dismembered the patient's body with a hatchet and scalpel and tried to flush the pieces down the toilet."[1]

It's uncertain how much of this history would repeat itself if *Roe* were overturned. But as Abigail Aiken, a reproductive health expert at the University of Texas,

told me, the "post-*Roe* world for most disadvantaged people is already here." Abortion may still be legal, but in states with few abortion clinics, "accessing one is a completely different ballgame." Some women lacking access to a clinic seek medication-based abortions online, typically using mifepristone and misoprostol, but this approach is approved only up to 10 weeks' gestation, and there have been problems with a lack of clinical guidance. In late 2018, a service called Aid Access began screening women for eligibility, shipping them the pills (from a pharmacy in India), and offering telemedicine support if they have questions.[2]

As welcome as these services are, some clinicians worry that women will attempt to induce abortion with medication beyond 10 weeks' gestation or fail to seek care if complications arise. Nevertheless, Aiken emphasizes that in the absence of such services, women will try to terminate their pregnancies using ineffective methods such as ingesting excessive amounts of vitamin C, caffeine, or black cohosh pills, or more violent approaches such as punching themselves in the abdomen. Moreover, Aiken's research on self-managed abortion in Ireland and Northern Ireland during a recent period when abortion was essentially illegal found that, among 1023 women who used an online telemedicine service to complete a medical abortion, the outcomes were similar to those seen in a clinical setting.[3] To Aiken, then, such services typify the "harm reduction" approach we apply to other clinical scenarios — such as cases of drug use in which abstinence, though the ideal solution, is not immediately possible. What's so disconcerting is that in this situation, the ideal solution is eminently possible: keeping abortion legal and accessible.

An audio interview with Dr. Michael Baden is available at NEJM.org

In 1960, when Ronald Arky, a Harvard professor and endocrinologist, was a first-year fellow in New York City, he cared for nine women under 30 years of age who had attempted to end their pregnancies using instruments. All developed Clostridium-related uterine necrosis complicated by renal failure. Because hemodialysis was in its infancy, each woman could undergo only two dialysis runs; all the women died. Arky was so upset by this experience that he moved to Boston, where hemodialysis was more advanced, to complete his training. Indeed, 9 years later, Robert Bartlett, who was a surgical resident at Boston's Peter Bent Brigham Hospital at the time, would publish a case series in the *Journal* detailing the care of five women who'd survived chemical abortion.[4] These women similarly developed uterine necrosis and renal failure, but they survived primarily because of prompt hysterectomy, hemodialysis, and careful attention to respiratory complications. At the time, their cases were considered a medical triumph.

Bartlett, now an emeritus professor of surgery at the University of Michigan, told me that many nights during his residency, a patient or two would show up after an attempted abortion, usually presenting with bleeding or sepsis. "It was much more common than people realized," he said. "No one wanted to talk about it, of course." When I asked him to tell me more about these women's lives, emphasizing that I would understand, given the 50-year time lapse, if he couldn't remember, he replied, "Are you kidding? I remember each one intimately." If the current threats to safe and legal abortion in the United States are any indication, however, our collective memory is far more tenuous.

Bartlett, who went on to invent extracorporeal membrane oxygenation, reminded me of a common conundrum in medicine: our technical limitations are sometimes more readily overcome than our social ones. Today, though we have learned so much about how best to support patients through critical illness, we struggle to address deeply rooted social ills, such as poverty and racism, that leave people vulnerable to sickness in the first place. Unavailability of safe and legal abortion need not be added to this list of intractable societal afflictions. It is unconscionable that we may soon once again condemn women to a fate that we could so easily prevent.

Disclosure forms provided by the author are available at NEJM.org.

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