At Risk in the Welfare State  

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Experience has taught that the danger of invasion by the government of these rights of the individuals is greatest where its purposes are benevolent. Men born to freedom are alert to resent the arbitrary invasion of their liberty by evil minded rulers. It is in the insidious encroachments by the well meaning—by those of zeal without understanding—that the greatest danger lurks.  

Louis D. Brandeis  

THE AMERICAN WELFARE STATE has always been at least as much focused on preventing poverty as on relieving it. In this paper, I want to explore the dilemmas of one kind of prevention—the well-intentioned, morally laudable, and often successful effort to prevent disease and disability. These are two conditions that often lead to poverty and, in any event, that the state recognizes as grounds for legitimate claims on social aid.

There is a new thrust to disease prevention that takes the form of early identification of people likely to develop a disease or disability. Rather than aiding people who are already needy, prevention focuses on people who might become needy. Early identification rests on two central theories about the nature of disease causation. The first is the lifestyle-factor theory, which holds that much disease and disability is caused by behavioral factors that are within an individual’s control—such things as diet, exercise, smoking, controlling one’s blood
pressure, and other forms of taking risks. The second is the theory of "genetic predisposition" or "susceptibility," which holds that there is a specific gene or set of genes that controls whether an individual will develop a disease. Based on these theories, early-identification efforts take several forms: mass screening of large populations for signs of future disease; preemployment screening of workers; so-called "biological monitoring" of workers in dangerous jobs; and prenatal and newborn screening.

These new sociomedical technologies have several disturbing implications. In many respects, they reproduce older forms of character assessment as a mode of preventing poverty, but they are more powerful and affect people's lives more profoundly. They are more powerful because they are invested with the enormous cultural and political legitimacy of medical authority, and because, to a large extent, they are promoted, funded, and disseminated by government. Moreover, they are often used in ways that have destructive social and economic consequences for the individual: they are used increasingly as actuarial rating factors in private insurance, making it difficult for people to obtain health and life insurance, and their use is being contemplated in social-insurance programs as well; they have been used as eligibility criteria for disability benefits; and increasingly they are used in employee-hiring decisions, making it difficult for people to find and keep jobs. In the aggregate, these phenomena have significant impact on the relationship between the public- and private-sector social-protection systems.

Before I go on, I want to enter three caveats. First, I am not a technological Luddite. I do think preventing disease and disability is a worthwhile endeavor, and I think much of preventive medicine contributes to that end. But the endeavor has some unanticipated negative consequences, and I think it is worth discovering them, examining them, and preventing them, too. In that vein, I would note that much of my argument is speculative. I have pulled together some trends and

combined them with an analysis of certain institutional incentives and social forces to predict the direction of future policy. Second, I am not making an argument that prevention is a form of instrumental social control. There may be some elements of social control in this area, particularly in the regulation of the labor force by employers, but I do not see the state as taking a directly instrumental role here, even if it is inadvertently helping industry. The nature of this "inadvertence" leads to my third caveat: Most of the harmful effects of prevention I will discuss are not inherent in the technologies themselves, but are the product of the conservative context of the American welfare state. My argument is that any form of prevention, however sensible and well meaning, is likely to take on a different cast when it is conducted by and in a state whose welfare policy emphasizes individualism, responsibility for oneself, and deterrence.

The Historical Context of the Preventive Impulse

Prevention is not a new policy in the welfare state. The current efforts of preventive medicine, though based on new sociomedical technologies, derive from old and well-established ideological foundations of the welfare state, foundations which in turn had a profound impact on the institutions of relief.

Historically, as capitalism developed, states needed a way to move people into the sphere of wage labor. The state did this in part by contracting old forms of distribution predicated on principles other than work—such things as church aid, begging, and local relief systems. Nevertheless, all societies require a need-based system of relief; otherwise, arguably, they would not be societies. The central problem of the modern welfare state was (and still is) how to maintain the work-based system as primary or, put another way, how to prevent large-scale migration into the need-based system. As I have
argued elsewhere, the resolution to this dilemma, adopted in one fashion or another by virtually all modern states, was to erect a system of categorical welfare. The state established categories of people who would be exempt from the work-based distributive system, and the definition of these categories served to delineate the boundaries between the work-based and need-based systems. The traditional categories are childhood, old age, sickness, disability, and survivorship or widowhood. By having clearly defined categories with objective and verifiable criteria of eligibility, the state could control entry into the need-based system.

One important aspect of the control system is deterrence—making need-based relief so unattractive that people either do not ask for it at all or give up trying once they have applied. Thus the old principle of “least eligibility” entailed making public relief significantly less remunerative than the lowest-paying jobs in the local economy, and the “workhouse test” required families to live in an almshouse, where they would usually be separated from one another, given minimal accommodations, and required to work. Their willingness to enter the workhouse was supposedly a test of the genuineness of their need for financial assistance. Contemporary programs use variations on the same deterrence principles: low benefit levels, stigmatizing application procedures, monitoring of the recipients’ personal lives such as spending habits and child-rearing practices, and grants conditioned on work. The assumption of all deterrence-based policies is that poverty is a willed condition, under the control of the individual, and these policies are essentially aimed at trying to change the individual’s cost-benefit calculus of whether public assistance is a worthwhile choice.

Another less punitive, but still ultimately individualist, preventive tack took hold among the Progressive reformers of the late nineteenth century. It was based on a different causal analysis of poverty, one that might loosely be labeled “environmental” in that it saw the causes of poverty in assorted living and working conditions. Reformers advocated cleaning up slums, bringing fresh air and parks to poor people, making playgrounds for children, offering adult-education courses in household management and vocational skills, and social casework. Yet even these reformers saw individual character as part of the causal chain. Each of their reforms would prevent poverty by putting potential paupers in a new environment that would strengthen their character, and hence their ability to resist poverty.

Some Progressive reformers, notably the American Association of Labor and the left wing of the settlement-house movement, did espouse a structural analysis of the causes of poverty. They advocated systemic changes, such as minimum-wage laws, child-labor laws, unemployment insurance, social security, stronger trade unions, and an end to racial discrimination. But, as many scholars have shown, even when these various reforms were enacted in the United States, they were implemented in conservative versions that still gave primacy to individual responsibility as both the cause of poverty and the means of preventing it. Since this argument has been well established by others, I will give only two illustrations here—unemployment insurance and Social Security. I choose them because they demonstrate how the social-welfare system is dominated by the metaphor of private insurance, and the insurance metaphor, in turn, profoundly shapes the social uses of the new science of preventive medicine.

As various states experimented with industrial-accident

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insurance, unemployment insurance, and health insurance, two alternative policy models dominated the early struggles for social insurance. The Wisconsin school, which eventually won out in the national plans, sought to design social insurance around the values of individual responsibility for oneself, individual initiative, competition, and capitalism. The Ohio school, led by leaders of the American Association of Labor, saw employment and poverty as structural problems, beyond the control of either individual workers or employers, and sought to design social insurance that adequately compensated for individual need in the face of larger systemic failures. The Wisconsin version of unemployment insurance emphasized prevention of unemployment by pegging employer taxes to the rate of unemployment among their own employees; the idea was to give employers a financial incentive to prevent unemployment. The Ohio version emphasized adequate financial support for the unemployed as its goal, rather than prevention, and therefore used higher benefit levels and financing out of general revenues.  

The struggle over unemployment insurance illustrates an important point. In general, the prevention focus in social-welfare programs, in the context of a profound American belief in individual responsibility, entails less concern with benefit levels for people with an actual condition, and more concern with influencing the motives of people who might find themselves in a condition of need. This theme appears over and over again in the design of new programs.

This same ideological and policy struggle was reenacted in the adoption and implementation of the Old Age and Survivors Insurance program, popularly known as Social Security. The program might have taken a substantially redistributive direction by using progressive financing mechanisms (levying proportionately higher contributions for high earners) and a need-based benefit structure. Instead, the program uses a regressive financing mechanism (a flat rate on income up to a certain level, and a zero tax on income above that ceiling) with a mixed-benefit structure (granting proportionately larger awards to low earners, despite their lower absolute contributions to the scheme, but imposing a ceiling on awards of 80 percent of prior earnings, regardless of whether that level is below the poverty line).

Jerry Cates has shown that leaders of the Social Security bureaucracy consciously used the commercial-insurance metaphor to legitimate the fundamentally antiredistributional, anti-need-based direction of the system. The program's first head actuary, Rulon Williamson, defended his opposition to a Social Security tax exemption for poor workers by saying, "I am still sufficiently insurance-minded to believe that all citizens must pay for all benefits they receive. These taxes, since they are contributions toward an insurance program, should be regressive." Indeed, for the most part leaders were careful to insist on calling the payroll deductions "contributions" rather than "taxes" to emphasize their similarity to a commercial-insurance policy.

The use of commercial-insurance imagery to drive (indeed shape) American social-insurance programs has had certain important consequences for social policy. All insurance embodies a contradiction between risk pooling on the one hand and actuarial rating on the other. Risk pooling means that people whose experience of harms will differ agree to contribute to a collective savings account and to distribute that account quite unequally, according to the incidence of harms or need. Thus, for example, in health insurance, only people who get sick draw out of the account, so that the healthy always subsidize the sick. Insurance always involves this kind of redistribution, which in the jargon of the trade is called "cross subsidy." Actuarial rating, however, means that people pay into the collective savings account according to their expected

3 Cates, Insuring Inequality, pp. 22-24.

* Ibid., p. 45.
risk of incurring the harm for which the insurance will pay out. If actuarial rating were carried out perfectly, that is, if we could predict each person's precise risk of incurring the particular harm and charge him or her accordingly, then in effect each contributor would be paying for him or herself, and there would be no redistribution. (There would still be some redistribution over time, since people who incur the harm soon after they begin paying contributions would not have paid enough into the pool to cover their expenses.) Commercial insurers in fact seek to use "actuarial science" to divide people into homogeneous risk classes, so that they can be charged precisely what they will be expected to cost the program and so that there is as little cross subsidization as possible.

The main policy choice in the design of social-insurance programs, and the main distinction among the different national approaches, is therefore the degree of emphasis in the program on risk pooling versus actuarial rating. The United States, by using the commercial-insurance analogy, has generally located its social-insurance programs at the actuarial-rating end of the spectrum. This choice means that certain values are embedded into our programs. First, there is a value on individual responsibility for oneself, as distinct from social responsibility for individual welfare, reflected in the requirement that individuals pay for themselves to the degree possible. Second is the value of contractualism. The entitlement to social insurance patterned on commercial insurance is based on prior agreement about specified contingencies (say, old age, widowhood, disability) rather than upon a flexible definition of need. Third, the commercial-insurance analogy drives a social-insurance program back toward a work-based principle of distribution. Benefits flow to those who "earn" them by contributing, not to those who deserve them by some principle of need, such as poverty.

There is one more aspect to the background of prevention in American social policy I want to discuss, and that is the undying belief that prevention will save money for the state in the long run. Thus the commercial-insurance vision of Social Security was justified as a mode of saving money on public-relief systems. According to Harry Hopkins, "The plan which helps to make further relief unnecessary is the best and cheapest form of relief." The architects of Social Security thought that if they structured the program on insurance principles, poverty would eventually be eliminated and relief programs would wither away.

This same mentality permeated the sphere of public health. Preventive health measures, such as vaccination, quarantine, mandatory disease reporting, or prohibitions on drugs and alcohol, often entailed a perceived interference with individual liberty. To overcome the enormous ideological resistance to government interference with individual choice, both British and American public-health advocates found it necessary to clothe prevention measures in the rhetoric of efficiency. Already in the early nineteenth century, English poor-law reformers were making the connection between rates of disease and the poor rates. Edward Jenkins developed a classic mercantilist argument to the effect that "public health is public wealth": disease reduced national productivity not only by the loss of work of the sick people, but by the reduced productivity of those who had to care for sick people. Another variant of this argument saw disease as sapping the military strength of the nation. Ironically, in liberal societies with a dread of big government, the collectivist argument for public health has not been predicated on some kind of moral obligation to sick people, or even on the benefits of social cohesiveness, but rather on a strict utilitarian calculus: it costs the state less to prevent disease than to take care of sick people.

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5 Patterson, America's Struggle Against Poverty, p. 60.
7 Ibid., pp. 44–45.
The corollary, of course, is that sick people are a drain on collective prosperity.

All of this discussion of the role of prevention in the American welfare state is meant to set the stage for what I see as the modern thrust of preventive medicine—early identification of people at risk. It is important to see the context in which this new effort is carried out. That context includes three key features. First, prevention in general has historically been predicated on and tied to a philosophy of individual responsibility for one's own well-being. Second, social-aid programs have been designed to replicate as much as possible the features of commercial-insurance plans, wherein individuals pay for themselves and there is minimal redistribution. And third, preventive efforts of government have been motivated and justified at least as much by cost-saving concerns as by humanitarian ones.

*Early Identification: The New Prevention*

Preventive medicine seeks to forestall illness and disability before they happen. Until fairly recently, that goal was carried out mostly through control of infectious diseases, first by interrupting contagious transmission with better sanitation and vaccination, and later by treatment with antibiotics. The focus of preventive medicine is now on identifying people at risk of becoming sick or disabled, and a host of new sociomedical technologies is available for the process.

Since about 1970, there has been a growing emphasis in the preventive-medicine establishment on "lifestyle factors" as risk factors in disease. The term conventionally includes smoking, alcohol consumption, diet, weight, and exercise, and is often broadened to include blood pressure, stress, and dangerous behavior, particularly driving without a seat belt, speeding, driving while under the influence of alcohol, and riding motorcycles. The movement to prevent disease by altering individual behavior on these dimensions got its chief impetus from two government reports. In 1975, the Canadian minister of health published *A New Perspective on the Health of Canadians*, whose message was that contemporary lifestyles are the prime contributors to disease and disability. This report was hailed by American public-health researchers who were already beginning to collect large-scale community data on the contribution of life-style to health and disease, and in 1979 the U.S. surgeon general, Julius Richmond, embraced the lifestyle theory in his report, *Healthy People*.

Following the Canadian report, *Healthy People* postulated four major "contributing elements" to the causes of death and disease: unhealthy lifestyles, environmental factors, biological or genetic factors, and inadequate health-care services. Lifestyle, however, was deemed the most important of these factors. The report said that "perhaps as much as half of U.S. mortality in 1976 was due to unhealthy behavior or lifestyle; 20 percent to environmental factors; 20 percent to human biological factors; and only 10 percent to inadequacies in health care."

The litany of lifestyle factors said to contribute to disease is now long and quite well known. Smoking is associated with lung cancer and heart disease, and seems to "boost" the negative effects of other risk factors, such as oral contraceptives or asbestos. Diet has been implicated in a number of ways: malnutrition among pregnant women leads to low-birthweight babies (which is in turn associated with a host of developmental problems); consumption of certain kinds of fat is thought to lead to high levels of serum cholesterol, which in turn is associated with coronary artery disease and stroke; there are

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many theories, mostly quite disputed, about the relation between dietary habits and cancer. Weight or obesity has been associated with coronary heart disease, diabetes, gall bladder disease, degenerative joint disease, and some types of cancer (e.g., endometrial). Exercise, or more properly lack of it, has been associated with obesity and therefore all of its correlates, and with coronary heart disease. Moderate to heavy alcohol consumption has also been linked with greater risk of stroke in men and greater risk of breast cancer in women.

More recently sexual behavior has been added to the list of risk factors for disease and disability. Of course, AIDS has been associated with homosexuality, anal intercourse, and with sexual promiscuity in general. Prominent policymakers as well as news media have blamed people with AIDS for bringing on their condition by engaging in sinful behavior. Apart from AIDS, sexual behavior has also been associated with cancer in ways that lead to interesting (if not misogynist) prescriptions. Some studies have found elevated risks of cervical cancer among women who began sexual intercourse at an early age, or in women who have had multiple sexual partners. These epidemiological findings then lend medical authority to what have been long-standing elite moral values—delayed sexual activity among teenagers and a limited number of sexual partners. Other research has found a reduced risk of breast and cervical cancer among women whose onset of menstruation (menarche) is relatively late or who have infrequent and irregular periods. Combined with other findings that vigorous exercise by teenage women often delays menarche, some physicians are now suggesting that young women exercise in order to reduce the total lifetime number of menstrual periods, thereby (allegedly) reducing their risk of cancer.

Another aspect of the early-identification strategy of


18 Dr. Craig Henderson, a breast-cancer specialist at the Dana Farber Cancer Institute in Boston, told a reporter: "The best way to reduce the risk of breast cancer is to shorten the time between menarche and menopause, that is, to reduce the number of years in which a woman's sex hormones are most active": quoted in Judy Forman, "Rising Death Rate From Breast Cancer baffles Specialists," *Boston Globe*, Feb. 15, 1989, pp. 1 and 8. There are also epidemiological studies showing that early pregnancy and breastfeeding reduce the risk of cancer. See A. McTeirman and D.B. Thomas, "Evidence for a Protective Effect of Lactation on Risk of Breast Cancer in Young Women," *American Journal of Epidemiology* 124 (September 1986): 585–588; G. Kuale, I. Heuch, and G. E. Eide, "A Prospective Study of Reproductive Factors and Breast Cancer," *parts I and II, American Journal of Epidemiology* 126 (November 1987): 831–841, 842–850. These findings suggest that in order to prevent breast cancer, young women should not exercise, so as to bring on early menstruation, and that they should get pregnant and nurse their babies. Somewhat, no physicians seem to be advising this course of action as a means of preventing breast cancer.
prevention focuses on the apparent hereditability of disease and applies new genetic technology to identify either genes or genetic markers for disease. Genetic bases or markers have been found for a long list of diseases, some rare, some relatively more common: Alzheimer's disease, manic-depressive disorders, Down's syndrome, two types of muscular dystrophy, cystic fibrosis, multiple sclerosis, Tay-Sachs disease, Huntington's disease, retinoblastoma (a rare form of eye cancer), polycystic kidney disease, and well over thirty different metabolic disorders. Although no markers have yet been found, hereditary patterns have been documented in some kinds of cancer, schizophrenia, alcoholism, scoliosis, and even ear infections. Genetic bases have even been found for two of the most important risk factors for other disease—high cholesterol and high blood pressure.

With very few exceptions, the identification of genetic bases or markers does not predict with certainty whether a person will in fact develop the disease or disorder in question. Instead, gene-probe technology reveals that a person has a gene which may or may not "express" a certain trait—the disease—depending on a number of other factors, including the presence of other genes and exposure to substances in the environment. Moreover, even where a genetic test positively determines the presence of a genetic abnormality (for example, Down's syndrome in fetuses), it gives no information on the severity of the disease or the nature of the disabilities it will entail. Thus the new genetic tests are very much like risk factors; they do not provide certain information but rather an estimate of the likelihood that someone will develop a disease or disorder.

In fact, a very large proportion of genetic tests fall in the category of what is called "predisposition" or "susceptibility" testing. They purport to show that a person has an increased risk of incurring a disease. Thus genes have been found that predispose for coronary-artery disease, diabetes, and hypertension; other genetic tests have been used to identify people with a greater susceptibility to certain industrial chemicals or a greater predisposition to musculoskeletal problems, but their validity is highly controversial. In the case of all these tests, as Marc Lappé notes, "the gene is not the disease," and complex factors determine whether the gene will find expression as the disease.\(^\text{19}\)

Grounded in these two new theories of disease causation—the epidemiological theory of risk factors and the biological theory of genetic predisposition—preventive medicine uses several types of screening programs for the early identification of people at risk. First, there are mass screening programs which simply apply a particular test or measurement to a large number of individuals in order that they may be treated if a risk factor is found. Treatment might mean anything from a little talk on modifying one's behavior ("you should try to eat fewer fats") to drug therapy (such as drugs to reduce blood pressure or serum cholesterol).\(^\text{20}\) In the United States, a large campaign to screen people for high blood pressure has been promoted and sponsored by various agencies of government as well as research and professional associations. On a smaller scale, there have been screening programs for cholesterol levels, diabetes, colon cancer, breast cancer, glaucoma, scoliosis and others. In 1986, 41 states used Public Health Service block-grant money to screen 2.2 million people—almost 10 percent of the population.\(^\text{21}\) Screening is also conducted by voluntary organizations, who run "health fairs" in parks, shopping malls, community centers, and parking lots. By one

\(^{19}\) Marc Lappé, "The Limits of Genetic Inquiry," Hastings Center Report, August 1987, p. 10. Genetic tests for susceptibility to industrial chemicals are discussed further below.

\(^{20}\) Even for the most widely used screening and treatment programs—hypercholesterolemia and hypertension—there is controversy in the medical literature about whether treatment is indeed effective in reducing either the disease in question or overall mortality. For a review, see M.F. Oliver, "Strategies for Preventing and Screening for Coronary Heart Disease," British Heart Journal 54 (1985): 1-5.

estimate, some 1.5 million people were screened in health fairs in 1984.22 Voices from the public-health establishment regularly call for screening programs for their pet diseases. The Centers for Disease Control (part of the U.S. Public Health Service) has actively promoted the development and use of computerized "health risk appraisals." These entail measuring a person's individual risk factors and converting them into estimates of his or her current "risk of early death" based on epidemiological data, mortality statistics, and actuarial methods. As of 1981, over 200 health-risk-appraisal programs existed, most of them conducted in workplaces.23

Second, there are prenatal and newborn screening programs. Prenatal screening is prospective in two senses: it seeks to identify diseases before they develop, in people who are not yet people. Virtually any genetic test can be applied to a fetus through amniocentesis or the newer method of chorionic villus sampling (CVS). CVS can be done during the first trimester, while amniocentesis cannot be done until the fourteenth week, so the new technique makes early identification even earlier. A 1976 article listed some 85 metabolic disorders which potentially could be detected in utero; at the time, tests existed for 30 of them.24 There are also over twenty different disorders for which newborn screening tests are available.25 As

new tests become available, there are regular calls for universal screening, so that there are now advocates of routine prenatal screening for neural tube defects, fragile X chromosome (associated with retardation), assorted metabolic disorders, and hepatitis B virus.26 Amniocentesis is generally recommended by the medical profession for women in "high risk categories," which means all women over 35, and those who are known carriers of chromosomal or metabolic disorders, or who have had a child with a genetically based disorder.27

Employer-sponsored screening is the third major pillar of the early-identification strategy. Employers want to use medical screening for risk factors as a way of promoting safety, complying with occupational health and safety requirements, and ultimately (if not primarily) controlling their costs. They hope that by eliminating high-risk or hypersusceptible workers from their work force, they will reduce absenteeism, long-term health problems, health- and disability-insurance costs, workers' compensation payments, and potential liability for occupational accidents.

Preemployment medical screening by employers is widespread. According to a survey in 1981 to 1983, preplacement medical exams were required for almost 27 percent of employees in small firms (8-249 workers), almost 56 percent of employees in medium-sized firms (250-500 workers) and almost 88 percent of employees in large firms (over 500 workers). Overall, nearly 60 percent of all workers were subject to replacement exams, and this figure compares with about 48

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22 The estimate was made by the National Health Screening Council for Volunteer Organizations, and is cited in Donald M. Berwick, "Screening in Health Fairs," *Journal of the American Medical Association* 254 (Sept. 20, 1985): 1492-1498, on p. 1492.
percent in the 1972–74 period. In certain industries, notably primary metals, coal and petroleum products, and transportation equipment, required preplacement medical exams covered more than 90 percent of employees. But medical screening of employees was by no means limited to heavy industry; during the period 1981–83, preemployment screening covered approximately 73 percent of workers in transportation and public utilities; 69 percent in services; and 62 percent manufacturing.28

The Dangers of the At-Risk Status

With all this medical screening going on, what happens to people deemed to be at risk for diseases, disorders, and disabilities? Within clinical medicine, the high-risk status usually entails additional medical scrutiny and attention, more intensive examination, and greater follow-up care. But outside the clinical setting, in the less-forgiving arena of the competitive insurance and labor markets, the new medical status can be a political and economic liability.

Risk factors as developed in the epidemiological model fit perfectly with the actuarial rating that is the technical core of insurance. Recall that actuarial rating is the estimation of likelihood of a particular harm (say illness, theft, or auto accident) to a particular individual or class of people. Insurers use actuarial rating to predict the costs they will have to pay out over the life of an insurance policy, in order that they may charge high enough premiums to cover those costs plus their administrative and tax expenses. In an important sense, insurance is a business where the strategic use of information about future events is the key element of profitability. It is a basic tenet of insurance practice that the insurer should know at least as much as the applicant for insurance about the applicant's future risks if the insurer is not to take a financial loss.

Insurers use the term "underwriting" to designate the process by which they examine or investigate an applicant for insurance. Underwriting in health- and life-insurance jargon does not have the lay meaning of financially backing a person or a venture. On the contrary, underwriting means investigating a person for the purpose of deciding whether the insurer will insure him or her. With information in hand, the insurer can then decide whether to accept the applicant at all, that is, whether to enter into a contract, and if so, what rates to charge. A person or group with a high risk of incurring a loss will not necessarily be rejected for insurance, but will be charged higher rates for coverage. In the jargon of insurance, people who are deemed to be at extremely high risk of illness or disability are called " uninsurable," and people deemed at high risk but who are offered insurance with higher premium charges are called "substandard risks." These terms disguise what is actually an insurer's decision by making them appear to be natural traits of the applicant.

It is important to note that different segments of the insurance industry use actuarial rating of individuals to a greater or lesser extent. Life insurance is written almost entirely on an individual basis, and involves a great degree of actuarial rating, including usually a medical questionnaire and often a physical exam as well as laboratory tests. Risk factors as they are "discovered" in epidemiology are then used by insurers to decide whether to accept people for life insurance and on what terms. Questions about smoking, alcohol and drug use, measures of weight, and tests of serum cholesterol and blood pressure are standard rating factors.

Life insurance is important in the welfare state because it is the primary vehicle, other than inheritance and pensions, by which adults provide for their dependents following their

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death. Life insurance is the private version of the survivorship component of the Social Security program. To the extent it fails—that is, to the extent that people cannot provide for their dependents either through amassing and leaving significant assets or through life insurance—dependents who cannot work must look to the public sector for support.

We need more information about how life-insurance companies utilize epidemiological information, but it is safe to say that as more risk factors are accepted by the medical profession as legitimate predictors of disease and death, more will be used by the insurance industry, and more people either will not be able to obtain life insurance at all or will not be able to afford it at the price offered them. That means more dependents will be relying on the public sector to take care of them after their primary source of support dies.

The use of risk factors in health insurance is so far much more attenuated, for the simple reason that 85 to 90 percent of private health insurance is provided on a group basis, and insurers do not typically look for information about individuals when writing group insurance. Underwriting and actuarial rating are important primarily in the individual market, and in very small groups of under ten or fifteen people, which are treated as individual insurance for purposes of rating. In the individual-insurance market, applicants are almost always asked to complete a medical questionnaire with questions about current and past health problems, diagnostic tests, medical care, and family history. If they indicate any health problems that might possibly be indicative of future disease, insurers request a statement from their physicians and possibly also medical exams or specific tests, such as electrocardiograms, blood-pressure measurements, or blood and urine tests. It is here that risk factors and family history can be determinative. Obesity or high cholesterol levels, for example, can be enough to reject an applicant altogether. More than half of commercial insurers use “healthy habits” as an important risk classification factor in writing individual policies.\(^9\)

The use of risk factors and predictive medical tests in health insurance is not yet a large phenomenon. A recent survey found that within the individual-insurance market (which is about 10 to 15 percent of all private health insurance), only around 8 percent of applicants are rejected outright, and between 9 and 20 percent of applicants are accepted but charged higher premiums. The 9-percent figure is for commercial insurers, the 20-percent for Blue Cross/Blue Shield. Health maintenance organizations, interestingly, reject applicants at a far higher rate of 24 percent in part because they cannot charge differential premium rates for higher risks.\(^9\)

Nevertheless, the use of epidemiological risk factors and predictive testing is likely to expand beyond the individual private-insurance market and have a large impact on the remainder of health insurance. Public-health advocates are pushing for actuarial rating by medical-risk factors as a way of motivating individuals to adopt healthier life-styles. A well-known epidemiologist would rate life- and health-insurance premiums by “modifiable risk factors” such as alcohol abuse, smoking, cholesterol levels, and hypertension; moreover, this proposal suggests ways of monitoring these individual risk factors with objective measures: blood-serum level of lipids for cholesterol control; blood-serum level of hepatic enzymes to test for alcohol abuse; measurement of carbon-monoxide content of expired air to test for cigarette smoking; and blood-pressure measurement for control of hypertension.\(^9\)

The surgeon general’s report, *Healthy People*, advocated that

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\(^9\) Ibid.

insurance companies should offer "preferential rates on life and health insurance to groups engaged in health promotion programs at the worksite."32 The same proposal is part of the recommendations by the Office of Disease Prevention and Health Promotion of the Department of Health and Human Services.33

The general idea of rating health-insurance premiums by health-risk factors has caught on. In 1988, the National Association of Insurance Commissioners (NAIC) adopted a model regulation that might have an even greater impact. Private insurance is regulated by the states, and the NAIC is the national membership body of state insurance commissioners and the vehicle by which state policies on insurance regulation are coordinated. Although the NAIC has no official standing—it is not a government agency but a private professional association of insurance commissioners—it in fact exercises tremendous influence over the way insurance is conducted. When the NAIC adopts model regulations or promotes model legislation, a substantial proportion of the states follow its lead and adopt these policies.34

The new model regulation, if adopted by an insurance commissioner, would require all certified health-insurance policies—individual and group, no matter whether they were offered by commercial companies, Blue Cross/Blue Shield, health maintenance organizations, or fraternal benefit societies—to "provide significant economic incentives to insureds designed to encourage their participation in the practice of healthy lifestyle behaviors."35 (Insurers could still offer uncertified plans without these incentives.) Economic incentives might be in the form of premium reductions, benefit enhancements, or direct employer rebates to employees. The regulation requires incorporation of smoking, regular exercise, moderate alcohol consumption, blood-pressure maintenance, weight control, nonabuse of drugs, and seat-belt use as risk factors in the design of insurance plans, and it contemplates the addition of other criteria as new actuarial data develop. The NAIC regulation requires insurers to monitor policy holders' compliance by having them certify their "participation in the practice of healthy lifestyle behaviors" and it would give insurance carriers the right to "investigate, at any time, to verify an insured's compliance."36

With this imprimatur of the NAIC behind it, actuarial rating by lifestyle factors is certain to become widespread, if not standard, in private health insurance. The insurance department of Delaware has proposed a regulation that would require rating premiums by lifestyle factors in all health insurance sold in the state.37 Several companies, including Prudential, Travelers, and John Alden Life Insurance Company, have begun offering discounted health-insurance rates to employee groups whose members "qualify" on the basis of answers to questionnaires about their health habits.38 Since our social-insurance programs have always been patterned on private insurance, the change in the private sector is likely to

32 Healthy People, p. 143.
34 Insurers may not follow the NAIC's lead, however, when they feel strongly that their business interests conflict with the NAIC policy. Thus, although NAIC guidelines prohibit insurance discrimination on the basis of sexual orientation, many insurers are still using that criterion in an effort to reduce their coverage of people who might develop AIDS.
35 National Association of Insurance Commissioners, Model Regulation for Certification of Health Plans or Policies (Kansas City, Mo., 1988), sec. 5.
36 Ibid., sec. 6, parts B and D.
37 Indeed, the NAIC model regulation was the pet project of Delaware's insurance commissioner, David Levinson. The Delaware insurance department is waiting for an opinion from the state attorney general on the legality of this mandatory feature (personal telephone conversation with Ms. Maryann Chillas, health insurance section of Delaware Department of Insurance). See also "Insurance Bill in Delaware Aims to 'Motivate' Health," New York Times, Aug. 24, 1986, p. 46.
be imitated in the public sector. There have already been proposals to charge higher premiums for smokers in Medicare.39

Another way that the risk-factor theory might be used punishly is in the payment of disability benefits under both private- and social-insurance plans. Disability-pension policies usually exclude coverage for conditions which an individual has "willfully" brought on. To the extent that risk factors for diseases causing disability are understood as under individual control or voluntarily chosen, they might be used as evidence that a person willfully caused his or her own disability.

The Social Security Administration (SSA) uses this interpretation of lifestyle factors to deny eligibility for its disability-insurance program. Program regulations stipulate that an applicant must follow any prescribed treatment that might restore his or her ability to work; not following a prescribed treatment without good reason is grounds for denial of eligibility.40 Using this provision, the SSA has denied eligibility to people who have not followed physicians' recommendations to lose weight, stop smoking, or reduce alcohol consumption. Applicants have also been denied eligibility for their "failure to control high blood pressure" with medication or "failure to control diabetes" with proper diet.41 (Note the language that

"attributes high blood pressure and blood-sugar levels to individual failure." These cases came to light because they found their way into the appeals courts. Appeals courts almost always overturn the SSA's decision and restore the claimant's eligibility, either because these judges are more understanding of the individual's limited ability to live a middle-class lifestyle, or because they doubt that the applicant would be able to work even if his or her chronic symptom were resolved. If numerous cases are reaching the federal appeals courts, there is almost certainly a much larger number of cases denied on similar grounds where claimants simply do not appeal or give up before reaching the federal appeals courts.

Perhaps the most important way risk-factor theory and predictive tests will affect the welfare state is in the area of employment and labor policy. Medical screening of employees to improve work efficiency is by no means a new idea. The prospect of disability payments through Workers' Compensation led insurers—whether they were employers, commercial companies, or public programs—to seek screening of potential claimants. Employer-sponsored medical examinations began around 1910, just as workers' compensation programs were started. By 1917, more than 10 percent of the 300 largest corporations conducted employee exams, and among firms with medical and/or welfare departments, over 50 percent used medical exams for prospective employees.42 Insurance

hypertension and headaches with medication; Harris v. Heckler, 756 F.2d 431 (1985), claimant "aggravated" her condition by smoking and overeating; Goodwin v. Richardson, 557 F. Supp. 540 (1973), failure to control diabetes with diet; Badichek v. Secretary, 374 F. Supp. 940 (1974), claimant did not take "positive steps" to cure his alcoholism; Patterson v. Bowen, 799 F.2d 1455 (11th Cir. 1986), failure to follow prescribed diet for diabetes.


banning smoking at the workplace, because they apply to people who smoke off the job. The public-health rationale is compelling. In the case of two companies whose employees work with asbestos products (USG and Manville), the ban is justified from a disease-prevention perspective because smoking is known to interact with asbestos and greatly increase the risk of cancer. Nevertheless, the prospect of employee selection and dismissal based on probabilistic estimates of their future health characteristics is chilling.

A second very common form of risk screening is the use of lower-back X rays to detect a predisposition to lower-back injury. Lower-back injury is probably the largest single type of Workers' Compensation and disability claim. There is a great deal of medical controversy over whether X rays can help predict an individual's risk of back injury, and there is now an extensive literature discrediting their use for this purpose. But lower-back X rays are widely used nonetheless. Insurance companies that underwrite Workers' Compensation frequently recommend to their client companies to use X rays as a screening tool, and sometimes back up these recommendations with dividends or premium discounts.

Third, several genetic tests have been touted as capable of detecting hypersusceptibility to occupational injuries or diseases. Sickle-cell trait has been associated with sudden death during vigorous physical exercise, and with severe internal injuries in high-pressure or low-oxygen environments. Serum


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companies were among the promoters of annual physical examinations. Moreover, these exams were explicitly directed at "the exclusion or the recording of defects that might subsequently complicate injuries or become involved in claims for compensation." What seems new in contemporary labor policy is the extent of efforts to identify people who are likely to develop a disease or disability rather than those who currently have a medical problem—what McGarrity and Schroeder have called "risk oriented screening." To some extent, age and gender have been used for a long time as proxies for high susceptibility to injury or disability. For example, the federal requirement that a commercial pilot retire at age 60 is based on the assumption that older people are at greater risk of sudden incapacitating illnesses (strokes and heart attacks); a variety of state legislation excluded women from certain jobs involving heavy lifting or work in dangerous environments; and firms have for a long time refused to hire those who are obese, diabetic, alcoholic, or hypertensive. Now, however, with more scientific reports of the links between lifestyle factors and future disease, and with genetic tests for susceptibility to disease, all couched in mathematically stated risk estimates, employers are likely to use risk screening even more aggressively in the selection of a work force. Let me take four examples.

Several companies have very recently adopted policies of refusing to hire smokers. Some municipalities will not hire smokers for jobs as firefighters. These policies go beyond

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46 ibid., pp. 1004–1006.


48 Bureau of National Affairs, Where There's Smoke (Washington, D.C., 1986);
alpha-1 antitrypsin deficiency (SAT) has been associated with increased sensitivity to pulmonary irritants. Glucose-6-phosphate dehydrogenase deficiency (G-6-PD) is associated with increased sensitivity to hemolytic (blood-cell destroying) chemicals. HLA-B-27 has been associated with ankylosing spondylitis, an arthritic back disorder. These tests are the subject of scientific controversy, and there is a substantial degree of opinion that they are not suitable for preemployment screening devices, either because they are not very accurate or not very good predictors of the alleged disease.51 Few companies have used genetic screening to date, but many say they are interested.52 But the scientific and commercial search for genetic tests to determine employee health risks is proceeding vigorously. Biotechnology firms are developing genetic and enzyme tests to identify people at risk for atherosclerosis, diabetes, hypertension; liver, kidney, and lung disease; high cholesterol; urinary-tract infections; and periodontal disease.53 At least one of these firms is funded in large part by an insurance company,54 and although the expressed interest of the company is in promoting health through education and behavior modification, the potential for these risk screens to be used in actuarial rating is too obvious to miss.

A fourth type of risk-oriented employee selection is the exclusion of pregnant women or women of childbearing age from jobs entailing exposure to chemicals that might be toxic to the fetus (fetotoxins). As with the earlier use of gender as a proxy for susceptibility to occupational injury, the new policies of protecting against so-called reproductive hazards usually cast a wide net. Based on epidemiological or laboratory evidence (often nonhuman animal studies), women are removed from jobs working with chemicals that might be harmful were they to be pregnant. Employers worried about liability suits and Workers’ Compensation claims are quick to respond to new scientific evidence about reproductive harms. AT&T banned all pregnant women from its semiconductor production lines almost immediately after a university study found a higher incidence of miscarriage among workers who produce computer chips.55

The public-health rationales for these policies are sometimes compelling: since lead, for example, builds up in the body and could damage a fetus before a woman knew she was pregnant, it makes a certain sense to exclude all fertile women and not just pregnant women from jobs with lead exposure. Yet these protective rationales may be justifications for excluding women from high-paying jobs. There is more and more evidence that fetal harms occur through male exposure as well as female, yet rarely, if ever, are male workers excluded from jobs to protect their reproductive capacity.56 Moreover, reproductive harms caused by male exposure to chemical substances were


52 The only figures of employer use of genetic screening come from an Office of Technology survey published in 1983. Of the companies surveyed (the 500 largest industrial companies, the 50 largest private utilities, and 11 unions), 5 respondents said they currently used genetic screening, 12 said they had used it in the past, and 54 said they would consider using it in the future. See Office of Technology Assessment, The Role of Genetic Testing in the Prevention of Occupational Disease (Washington, D.C.: Government Printing Office, 1988). These figures probably underestimate the prevalence of genetic testing, because adverse publicity has made corporate management reluctant to discuss medical screening. See Michael Severo, "Screening of Blacks by Dupont Sharpens Debate on Gene Tests," New York Times, June 23, 1982, p. A9. OTA is currently doing a new survey.


54 Focus Technologies is funded by Equitable Life Assurance Society: Henderson, "Biomark Program.”


documented and vigorously publicized as early as 1925.\textsuperscript{57} Another reason to doubt that protection of women's health explains the whole story is that no one advocates removal of fertile women from jobs entailing toxic exposures when the entire occupation is dominated by women—a situation that prevails for most female hospital workers. As Elaine Draper suggests, the issues of hypersusceptibility, differential health, and possible job exclusion arise when a particular group, such as women or blacks, is relatively new to an industry or occupation and constitutes only a small minority within it.\textsuperscript{58}

Screening of job applicants and employees for risk of future health problems is always justified as a health-promotion measure. But no one involved—not labor, not management, not occupational physicians—fails to miss the economic incentives for employers to screen in order to select a healthy work force.\textsuperscript{59} In addition to the ordinary economic incentives, two other forces probably influence employers' beliefs that risk screening ultimately saves them money.

First is the profession of occupational medicine. Occupational physicians are for the most part employees of business firms, so their bread is of course buttered on the same side as their employers'. But they have developed a professional ideology that is positively missionary on the cost-saving virtues of their practice. During the early years of the industrial-medicine profession—approximately 1910 to 1930—industrial physicians promoted themselves to industry on the basis of their ability to save a firm money. Their professional articles bore titles like "Why Industry Profits by Health Supervision"; "Why a Factory Doctor's Salary Costs Less than Nothing"; and "An Estimate of the Monetary Value to Industry of Plant Medical and Safety Services."\textsuperscript{60} Current volumes of the \textit{Journal of Occupational Medicine}, the organ of the American Occupational Medical Association, are replete with articles about preemployment screening using strength testing, X rays, physical examinations, personality tests, and psychometric testing to screen out workers with low tolerance for stress. It is axiomatic in these studies that preemployment screening can save employers money in a variety of ways. One example will give the flavor of this unchallenged but oft-repeated conventional wisdom:

The physical examination, as part of a risk assessment, is an appropriate and defensible tool for employers to use in evaluating applicants for employment, particularly handicapped persons or disabled veterans. \ldots In terms of business economy, this method fosters sound practices since it can reduce the rate of injuries or illnesses due to inappropriate placements. Optimally this can lead to reduced absenteeism, increased productivity, and decreased expenditures for workers' compensation and group health insurance. In addition, it may also reduce the potential for litigation brought against organizations for knowingly and negligently placing uniquely sensitive individuals in environments that may cause harm.\textsuperscript{61}

Workers appear in these studies and statements not as people whose quality of life might be improved by corporate health policies but as investments to be evaluated on financial grounds. Thus a physician from Southern Railway testified in congressional hearings on genetic screening in the workplace that medical departments should "provide the railroad


\textsuperscript{60} All titles from citations in Nugent, "Fit for Work," p. 580.

industry with applicants who are as near perfect physical specimens as is possible to find."  

A second impetus for the expansion of preemployment risk-oriented screening is that more and more employers are choosing to self-fund or self-insure their employee health-insurance benefits. Most estimates are that over half of all firms now self-insure. This means that rather than going through insurance companies or Blue Cross/Blue Shield, employers essentially run the insurance program themselves. They maintain the financial reserves—an important advantage because they, not an outside insurance company, can invest the funds and retain the earnings. In practice, the larger companies contract with third-party administrators to run their insurance programs; they can farm out any or all of the functions, from asset management to claims handling. But the most important feature of insurance—its profitability—is now in the hands of the firm. Self-insurance means that now employers, in their capacity as insurers, have a financial incentive to screen their employees as if the employees were insurance applicants, not just workers. Employers who self-insure have a direct financial stake in the future illness and disability of their work force. Obviously, employers always had some financial stake in the health of their work force, if only through the lost productivity engendered by illness and disability. But the financial stake is much more direct when the employer becomes an insurer.

In the face of this growing trend toward medical selection of the work force and the growing pressures to do so, are there any restraints? The most likely counterforce is handicapped-discrimination law. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination against the handicapped. Its definition of handicap is conceivably broad enough to cover any form of "predisposition" or hypersusceptibility. A person is handicapped for purposes of this law if he or she has a physical or mental impairment that substantially limits a major life activity, has a record of such an impairment, or is regarded as having such an impairment. Whether this law applies to the new status of high risk—that is, the employee who is at risk of future disease or disability and is not hired because the employer fears future costs—is still an open question. In any case, it is clear that people are using civil-rights statutes, that tried-and-true American remedy, as a way of fighting against the harms of risk classification.

The Making and Meaning of the At-Risk Category

The epidemiological and genetic theories of disease causation have created a new category of people who are "at risk" for a problem but do not yet have it and may never have it. They are not sick, but they are not deemed healthy. They are viewed instead as being on a trajectory toward illness. Everyday scientific discourse is replete with designations of people at risk; there is a spate of new books and articles with titles like "Young People at Risk," "The At-Risk Infant," "The High Risk Employee." Pregnant women over the age of 35 are routinely designated and treated by physicians as "high-risk pregnancies."

The creation of categories of people designated "at risk" for certain diseases involves a radical intellectual shift as well as a radical social transformation. The intellectual change has to do with the larger evolution in scientific thought from a mechanistic view of causation to a more probabilistic under-

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64 See Rothstein, Medical Screening of Workers, pp. 118-121; Canter, "Employment Discrimination Implications."
standing. Epidemiologists, physicians, and other policymakers often treat an estimate of the likelihood of something happening to an individual as an important fact about them. These estimates or predictions become attributes of the individual and qualities by which he or she is judged.

The social change has to do with the introduction of probabilistically derived categories into a welfare state already based on categorical thinking, but on categories derived from actual conditions rather than probable conditions. Important social institutions now treat people as though probabilistic estimates about them were their characteristics. Because the at-risk category is rapidly becoming an administrative category in private insurance, social insurance, and labor policy, it is worth dissecting its intellectual assumptions and underpinnings.

Epidemiologists establish so-called “risk factors” for specific diseases by comparing large groups of people with and without a disease. Comparisons might be made for medical history, socioeconomic variables (such as income, race, and education), exposure to substances (such as alcohol, industrial chemicals, or drugs), and behavior (such as smoking, exercising, and diet). When a high correlation is found between the factor and the disease, the factor is designated as a “risk factor.”

Risk factor is a probabilistic notion. It implies a comparison of the probability of something happening (a disease) with or without the presence of something else (the risk factor). Smoking, for example, is generally considered a risk factor for lung cancer because smokers are fifteen times more likely to develop lung cancer than nonsmokers. A risk factor is not a cause in the mechanical sense of causation; it is neither necessary nor sufficient to cause the condition. (Many nonsmokers develop lung cancer, and many smokers do not.) It might be thought of as a contributing factor.

The modern risk-factor theory admits of multiple causation. Several risk factors might contribute to a particular disease, such as obesity, high-fat diet, high blood pressure, and smoking all contributing to coronary heart disease. Alternatively, a single risk factor such as smoking might contribute to more than one disease. Risk factors are understood to be at least additive; the more of them one “has,” the greater the increased likelihood (total risk) of disease. In some cases, risk factors are thought to be more than additive; for example, the combination of smoking and working with asbestos increases the risk of mesothelioma far greater than the sum of the separate risks of smoking and asbestos exposure; similarly, the combination of smoking and taking oral contraceptives increases a woman’s risk of coronary heart disease far greater than the sum of the risks associated with the two factors. This phenomenon is called “risk-factor synergism.”

Although both risk-factor theory and the concept of genetic predisposition are probabilistic notions, they tend to be interpreted in the popular, if not the scientific, mind as mechanistic causation. For example, researchers and health educators often convert the probabilistic findings about risk factors into statements such as “every cigarette reduces your life span by one minute” or “every egg eaten reduces your life span by five seconds.” The new risk factors are treated as if they were the microbial agents of late-nineteenth-century disease theory, always causing disease if they ever entered the body.

65 There is a great deal of methodological debate among epidemiologists about attributing causality to an observed association. Most epidemiologists use several criteria to designate a correlation as risk factor—not only specificity of association, but also strength of association, consistency, coherence, and logical time order. See Mausner and Bahn, Epidemiology (Philadelphia: W.B. Saunders, 1974), ch. 5; and A.S. Evans, “Causation and Disease: The Henle-Koch Postulates Revisited,” Yale Journal of Biological Medicine 49 (1976): 175-195.

66 This principle was one of Robert Koch’s postulates for identifying the causal agents of disease. In fact, as we now know, even bacteria and viruses do not work with the deadly mechanical certainty we often impune to them. Scientists recognize, for example, that individual susceptibility and environmental factors play roles in whether a microbe will lead to disease in a particular person.
of biological destiny," without a deeper understanding of the importance of mutation and interaction for gene expression.

The new theory of disease and disease prevention reifies risk factors, so that even when they are environmental (such as exposure to a toxic substance) they are attached to the individual and counted as part of his or her portfolio of risks, as though each risk factor were located inside the boundaries of the person. The discourse refers to people as "having risk factors," an expression that situates the factor in the person rather than in the socioeconomic structure or in public policy. A person who smokes cigarettes is said to have a risk factor for stroke and heart disease; an alternative description of the same epidemiological information might emphasize that society has a risk factor, in that public policy promotes and subsidizes smoking.

The reification of risk factors as individual traits is illustrated by the rhetoric of the surgeon general's report, Healthy People. Despite its attention in other parts to environmental hazard reduction and preventive health services, the report emphasizes the "actions individuals can take for themselves," which include elimination of smoking, reduction of alcohol misuse, dietary changes, exercise, periodic screening for cancer and high blood pressure, and adherence to speed laws and use of seat belts. It notes that of the ten leading causes of death in the United States, at least seven could be reduced if "persons at risk improved just five habits: diet, smoking, lack of exercise, alcohol abuse, and use of antihypertensive drugs." It characterizes many of these factors as "excesses," and Califano, in his preface to the report, refers to the lifestyle factors as "the matter of individual discipline and will." It is part of the intellectual underpinnings of epidemiology and preventive medicine that risk classifications should be drawn very broadly. By their very nature, they are designed to identify a larger set of people than those who will actually develop a disease or disorder. They are by definition overinclusive. In coronary heart disease, for example, high blood pressure and serum cholesterol levels are strongly associated risk factors; yet fully two-thirds of healthy men aged 40–55 who have very high blood pressure and cholesterol levels will not develop heart disease over the next twenty-five years. Among children with the fragile X chromosome, about 20 percent of boys and 66 percent of girls will have no symptoms at all; in the others, the manifestation will range from retardation to behavioral problems and mild learning disabilities. In a study of 3,000 amniocenteses, only 2.4 percent of mothers over 35 had a "defective" fetus, and only 9 percent of the women considered at risk for specific disease or disorder had an affected fetus.

Overinclusive categorization is the essence of stereotyping. This form of stereotyping is deeply ingrained in public-health ideology. Physicians are trained to cast a broad net for disease. The error of missing a possible case of a disease (false negatives) is regarded as far more serious than incorrectly diagnosing someone as having a disease (false positives). Letting an unrecognized disease run its course is thought to be worse than temporarily treating a healthy person as if he or she were sick. Public-health researchers have sometimes recognized the negative effects of being labeled sick (not to

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68 Healthy People, p. 10.
70 Ibid.
71 Ibid., p. viii.
mention the iatrogenic effects of unnecessary treatment), but by and large, public health is still dominated by the drive to root out all possible causes of disease. When important economic benefits or deprivations flow from being categorized as at risk, the fact that the category is highly overinclusive becomes politically important. That the overinclusiveness derives from benign motivations does not lessen the economic impacts on those affected.

As it happens, there is a high correlation between presence of the lifestyle risk factors and both low socioeconomic status and race. One of the first and largest American studies on health practices, the Alameda County Study, examined the impact of seven “health practices” on mortality: sleeping at least seven hours a day, eating breakfast, not snacking between meals, maintaining a reasonable weight, exercising, drinking alcohol in moderation, and not smoking. The study found each of these practices leads to greater health and longevity, and it defined a corresponding set of high-risk practices (i.e., not adhering to the good-health practices). Not surprisingly, the study also found that the lower the socioeconomic level, the more likely a person is to have high-risk health practices, and that black men and women are much more likely to engage in high-risk health practices than whites. A great deal of other evidence supports the correlation between risk factors and both low socioeconomic status and black ethnicity. Poorer people are more likely to be heavy drinkers, to be smokers (though not to be very heavy smokers), to smoke during pregnancy, to be overweight, to have high blood pressure, and to consume a higher proportion of fat in their diets. Blacks in general have a higher prevalence of obesity, smoking (though very heavy smoking is more prevalent among whites), and high blood pressure; black males have a higher prevalence of elevated serum cholesterol levels than white males.

There are several ways to interpret these correlations. First, we should note that the sheer naming of sleeping, exercise, low-fat diet, not snacking, and “reasonable” body weight as “health practices,” rather than as (say) “middle-class life-style patterns,” has enormous political import. To call them health practices is to isolate them from the web of social and subcultural practices that constitute daily life and treat them as if they were merely one-minute exercises, easily incorporated into daily routines. If any correlation is then found between the behaviors and subsequent health levels, these class and social-group values acquire a new legitimacy, with scientific authority proclaiming them correct.

Second, one has to ask how the norms are established against which people are measured. The first epidemiological data in fact came from insurance companies, who were in a position to demand physical examinations and laboratory tests of their applicants and to collect data for large populations. But that meant that the data were necessarily restricted to the class of people who could and would buy life insurance. The standard health tables for normal weight and blood pressure used in epidemiological research come from actuarial tables of the Metropolitan Life Insurance Company. They are probably based almost exclusively on data for whites, since few blacks could afford life insurance and since insurance companies

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actively discouraged agents from selling to blacks once states began to prohibit companies from charging higher rates to blacks than whites.  

Finally, if indeed risk-factor classifications correlate with socioeconomic status and race, and if risk-factor classifications are used administratively to determine access to insurance and to jobs, the disadvantages that redound to people labeled high-risk will tend to fall more heavily on people who are already disadvantaged by being poor and/or black. The motive for these administrative uses may well be to educate people to modify their behavior in ways that improve their health, but the effect is to reinforce existing inequities in the distribution of jobs and economic security.

The motives for the use of risk classification in insurance and job allocation are not completely altruistic, either. The whole enterprise is constantly and continuously justified as an efficiency move. From government policy documents (such as *Healthy People* and all the prevention literature of the Office of Disease Prevention and Health Promotion) to the epidemiological and occupational-medicine journals, innovations in risk classification are legitimated and promoted as ways to save money. Even the most enlightened calls for prenatal or newborn screening are sure to note that the program would be cost-effective because it costs less to detect a case of some rare disease than to maintain an affected person in an institution.

In the context of cost-containment and efficiency goals, the at-risk status is converted into a form of dangerousness, not just to self but to others. The person who is at risk for disease is a potential drain on public resources. Califano wrote in his introduction to *Healthy People*: "Indulgence in 'private' excesses has results that are far from private. Public expenditures for health care that consume eleven cents of every federal tax dollar are only one of those results. . . . There can be no denying the public consequences of those private habits."*  

Howard Leichter has found the same ideology in the preventive-medicine movement in Great Britain. The Conservative government's policy handbook, *Care in Action*, notes: "A general aim should be to help people appreciate that much illness is avoidable and that avoidable illness preempts resources needed for the treatment of those who are unavoidably sick."* Subtly, the at-risk status becomes a way of dividing the sick and disabled into the old "deserving" and "undeserving" moral categories of poverty policy.

Given its intellectual underpinnings and its link to cost containment, the at-risk category has enormous potential for expansion as an administrative instrument in both the private and public sectors. Let me just speculate on a few possibilities. One can imagine mandatory prenatal screening for welfare mothers, justified as a cost-saving measure for AFDC programs. One can imagine, worse, mandatory abortions of "defective" fetuses, again on the grounds that severely handicapped infants are extraordinarily expensive to care for and likely to wind up on the public dole.*

The number and variety of situations that might be deemed risk factors for disease and disability are unlimited. There is substantial evidence that marital status is related to health; men seem to stay healthier when they are married, women when

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80 *Healthy People*, p. ix.

81 Leichter, "Free to Be Foolish," p. 113.

82 Lest this Orwellian scenario sound totally implausible, a recent *New England Journal of Medicine* article uncovered 21 cases where physicians sought court orders to perform surgery or a cesarean section against the mothers' wishes. Almost all of them were poor, and almost all were black, Asian, or Hispanic. See Veronica Kolder et al., "Court Ordered Obstetrical Interventions," *New England Journal of Medicine* 316 (May 7, 1987): 1192–1196. All of these cases were justified on grounds of protecting the health or life of the fetus. Nevertheless, the precedent for mandatory intervention has been established, and ethics are already engaging in cost-benefit analysis to determine when compelled treatment of pregnant women is justified. See, for example, F. A. Chervenak and L. B. McCullough, "Perinatal Ethics: A Practical Analysis of Obligations to Mother and Fetus," *Obstetrics and Gynecology* 66 (1985): 442–446.
they are single. Divorce is associated with increased morbidity. Working mothers seem to stay healthier than mothers who stay home with their children. People who live next to dump sites, near nuclear power plants, or near chemical plants have a higher risk of contracting certain diseases. Each of these correlations could be converted into an incentive for behavior modification or an instrument of cost containment. We could have higher health-insurance premiums for single men and married women, recently divorced people, nonworking mothers, and residents of high-risk neighborhoods. Marriage, work, and residence are no less behavioral choices than smoking, eating, and exercising, after all. Private and public policies select certain behaviors and traits to treat as important and to regard as causal factors in poverty and disease. This very selection of factors is a deliberate policy choice, dictated by culture and politics, not by the mere presence of statistical associations.

Conclusion

The preventive impulse can take punitive and exclusionary forms. Health-risk classification in insurance and labor markets casts off individuals who cannot make the grade and puts them outside the social-welfare pale. Bringing predictions about future health into current administrative decisions in effect saddles people with a bad future they might never have had. Probabilistic predictions are made a part of each person's curriculum vitae. The use of health-risk classification for any allocative purpose—any purpose other than treating people who could benefit from preventive measures—treats future health as if people could control it and lends scientific authority to theories of poverty and illness that locate the cause in individual will.

Using health-risk classification as an instrument of disease and cost control also further fragments social-welfare institu-

tions and debilitates public institutions in particular. To the extent that insurers are allowed to cream off people with good health risks, the people with poor health prospects will necessarily become the province of public-sector programs. Medicaid (or nothing) will become the insurer of the very sick, while private insurance insures the healthy. People with chronic illnesses and disabilities have always had a harder time getting jobs than healthy people, but job allocation by risk selection will exacerbate this tendency. The unemployed will also be the sick to an even greater extent than is now true. The pressure to litigate handicapped discrimination cases will increase.

The strategy of prevention through early identification of people at risk is a double-edged sword. It reveals starkly the fundamental tension in insurance and in welfare institutions based on insurance principles. Are these institutions meant to influence individual behavior and to minimize the impact of individual troubles on community and society? Or are they designed primarily to foster community by spreading responsibility and compensating individual misfortunes?