

## Health Care Rationing

The article by Henry Aaron and William B. Schwartz on rationing health care (26 Jan., p. 418) is provocative, but seems so locked into an econocentric line on health care that it misses some obvious truths and some obvious, if painful, solutions.

Aaron and Schwartz state that fully insured consumers "and physicians acting in the patients' interests" overorder services because the patient pays only a fraction of the actual cost. However, patients generally defer to physicians' recommendations for services, and the motivations for ordering those services in an age of malpractice are often *not* solely in the "patient's interests."

More important, the authors seem not to be able to fathom why European countries spend so much less a percentage of their gross domestic product on health care than the United States without a significantly different mortality rate. The only solution they offer is higher administrative costs in the United States. They appear to incorrectly make the assumption that European countries all practice the same medicine with the same cultural values and judgments. However, even industrialized countries practicing "Western"-style medicine can have fundamentally different medical philosophies and therefore highly variable types and utilization of services.

A recent book (1) comparing the health care systems of the United States, Great Britain, France, and West Germany points out that all four countries have comparable mortality and morbidity rates. Yet the United States uses far more expensive technological and surgical interventions than Britain or France. Although part of that is economic, an equally important factor is our interventionist, frontier ethic of heroic medicine, which assuages our need to feel technologically superior much more than it improves our mortality and morbidity statistics. Reducing our inflated numbers of hysterectomies, cardiac bypass surgeries, and caesarean sections, to name but a few procedures, is not a matter of simply eliminating unnecessary services that would result in a one-time savings. It necessitates a rethinking of the way we conceive of health and practice medicine.

There are a variety of measures to be taken before we begin a serious program of rationing. We need a wholesale emphasis on preventive care (not just the underfunded, grudging nod we give it now), a move to a lower technology regimen, a reduction of

defensive medical services, an elimination of the over-distribution of high technology products (which results in their overuse to justify their purchase price), and an increase in the use of less expensive, nonphysician practitioners for simple problems. (Does one really need to pay for an office visit to an expensive, highly trained professional to get a prescription of Seldane for hayfever?) Equally important, primary care needs to be structurally reintegrated into the community life of the populace, rather than being merely a commodity bought and sold with the same consumer attitude as purchasing a car. One reason that the problem has seemed so intractable is that it is too often conceived of solely as an economic problem calling for economic solutions. Although rationing may be the easiest solution, it is far from the best.

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## REFERENCES

1. L. Payer, *Medicine and Culture* (Holt, New York, 1989).

Aaron and Schwartz present an interesting perspective on the growing debate concerning the need to ration access to medical services. They correctly identify technology change as an important contributor to rising medical costs. However, they exaggerate the contribution of technology change to health cost inflation and suggest that rationing is a new phenomenon in the United States.

A recent report of the Joint Economic Committee of Congress (1) estimated the components of health cost inflation from 1965 to 1986 as follows: demographic changes, 8%; quality improvements, 26%; and price inflation, 66%. Technological change that leads to improved quality is less important than relentless medical price increases that are greater than general inflation. It is also important to distinguish between appropriate and inappropriate distribution of technology. Today, most large urban areas are oversupplied with expensive medical technology because hospitals compete primarily through nonprice rivalry based, in part, on offering a full array of services and technology. In 1988, only 65.5% of the nation's hospital beds were occupied and between 1984 and 1988 American hospitals added 176 open heart surgery units, 792 computed tomography (CT) scanners, 490 magnetic resonance imaging (MRI) scanners, 287 cardiac catheterization units, and 148 organ transplantation units (2). Much of this investment has occurred in overserved markets and has led to

waste, underutilization, and unnecessary care.

Rationing access to medical care has always occurred in our health care system, as it has in foreign systems. The most important issues concerning rationing are (i) whether rationing will be implicit or explicit, (ii) the nature of the barriers used to ration, (iii) what segments of the population are most affected, and (iv) what levels of care are most heavily rationed.

Explicit rationing involves overt decisions to limit access of some classes of patients to some forms of care. Utilization review programs that limit access to inpatient hospital care, nursing homes, and expensive services apply one form of explicit rationing in the United States. Implicit rationing is also not unknown in the United States. State certificate-of-need (CON) programs seek to limit the supply of medical services and technology. In most states these regulations have enjoyed little success in controlling politically powerful hospitals, but many states are experiencing nursing home shortages caused, in part, by CON programs.

Time and price barriers are most frequently discussed as ways of limiting access to health care. Relative to other Western industrialized democracies, the United States makes greater use of price rationing and pays less of its health bill through government. Price rationing in a population with incomplete insurance coverage and widely differing incomes causes the impact of rationing to fall most heavily on the poor.

Time rationing also occurs in our system, although on a much smaller scale than is reported in Britain. Disabled elderly patients waiting for a nursing home bed represent one example. Medically indigent patients seeking routine care in public clinics and hospital emergency departments can also face significant waiting times.

Aaron and Schwartz discuss the prospect of rationing high technology, tertiary care to insured patients. This has come to be the focus of the rationing debate for obvious political reasons. However, the United States currently rations access to primary and preventive services for large segments of the population. We devote at most 4% of our health care spending to prevention and health promotion. Primary and preventive care are price-rationed for the 31 to 37 million uninsured Americans and some of the 70 million underinsured. Providing prenatal care for a pregnant woman costs about \$600 compared to the \$350,000 needed to keep a low birthweight baby alive for 4 months in an infant intensive care unit (1). Thus, some reallocation of resources from tertiary to primary care would appear to be warranted.

Rationing is a fact of life in all health care systems. Relative to other Western industrialized democracies, the United States rations primary care more and tertiary care less and makes greater use of price rationing, which adversely impacts the poor. The question before us is, do we wish to reform the system in ways that change how and what we ration, recognizing that no conceivable reform will eliminate the need to ration medical care?

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#### REFERENCES

1. Joint Economic Committee, Congress of the United States, *The Future of Health Care in America* (Government Printing Office, Washington, DC, 1989).
2. *Hospital Statistics, 1989-90 Edition* (American Hospital Association, Chicago, IL, 1989).

Aaron and Schwartz describe the pressure of rising costs of health care and the probable consequence—rationing. My experience as a physician, and as a patient, has demon-

strated an additional cause of rising costs, the *worst case scenario*.

When a patient is found to have a symptom or sign that may be associated with a serious disorder such as a malignancy (the worst case), most physicians feel obligated to rule out the worst case by a battery of tests, which frequently includes invasive and uncomfortable procedures, including exploratory surgery. Even if an alternative diagnosis is much more likely, many physicians will insist on that work-up because they cannot *completely* rule out a serious disorder. It is not difficult to persuade the patient, given the dread of the worst case scenario. There is rarely a discussion of the alternatives and of the actual probability of the worst case or of the risks of mortality and morbidity of the diagnostic procedures, on the basis of the best data available.

By contrast, physicians usually observe the rights of patients to participate in decisions when obtaining "informed consent" for surgery; why not demand the same informed consent before embarking on an extensive work-up? Protection against litiga-

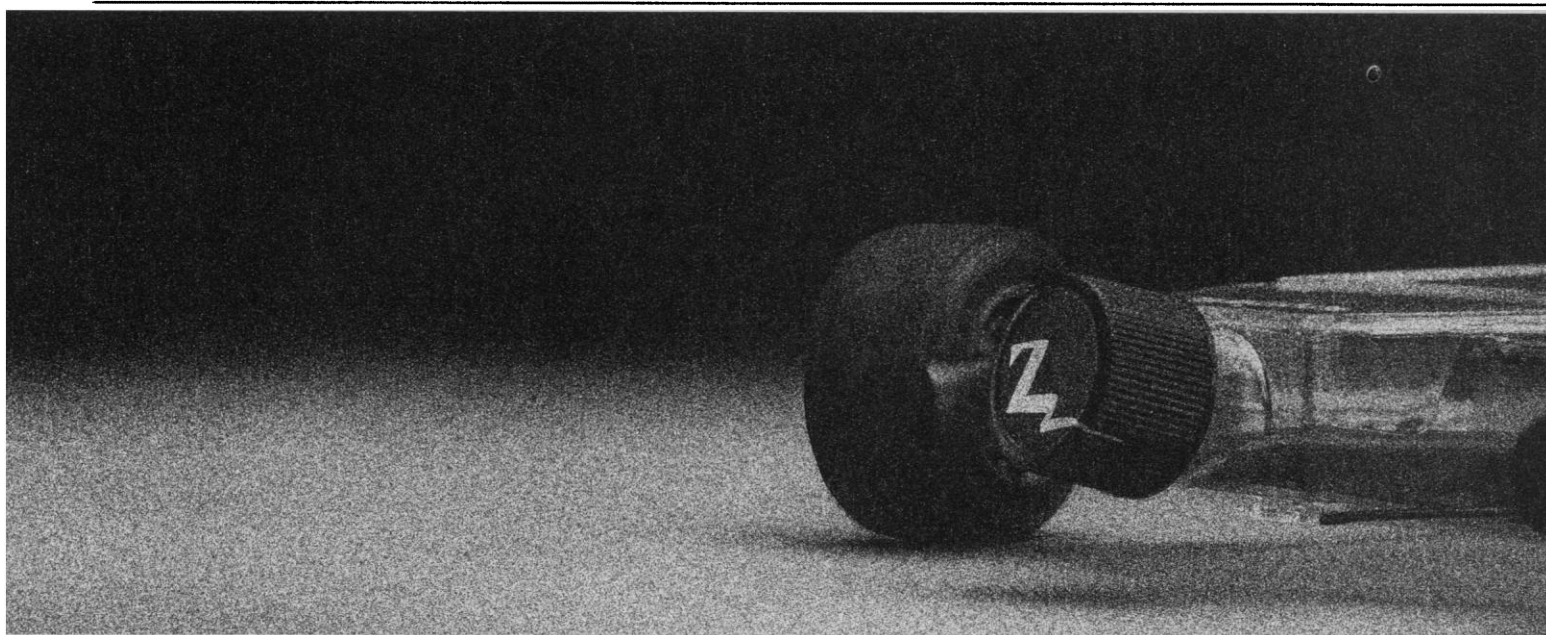
tion would be provided by the patient's signature, documenting that they had chosen not to pursue the "rule out" work-up, in favor of a period of follow-up without it.

In addition to the discomfort and risk of diagnostic procedures, a long-term disadvantage of the worst case practice is that the astute patient rapidly perceives the disadvantage of informing his or her physician of complaints, because that may lead to an exhaustive work-up which, on average, will be negative. Ultimately, worst case practice leads to *less* early consultation with a physician.

One benefit of more selective work-ups would be a reduction in costs. Such rationing has some desirable consequences, as opposed to rationing based on the ability to pay.

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The article by Aaron and Schwartz does not point out the significant difference be-



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tween the British and Oregon models of rationing health care. Rationing in Great Britain has been implicit, not explicit, as public input routinely has been excluded from the process. It is a silent conspiracy between a dense, obscuring bureaucracy, intentionally avoiding written policy for macroallocation (rationing), and a publicly unaccountable medical profession privately managing microallocation so as to conceal life and death decisions from patients.

The Oregon approach is open, starting with citizen values for health care and building through expert advice toward legislated, health care rationing policy. Oregon Health Decisions, a citizen network for education and action on ethical issues in health care has been mandated by the Oregon legislature to seek citizens' values directly through more than 50 community meetings before allocating scarce medical resources.

Understanding the difference between the two systems is critical in obtaining active endorsement of health care rationing by the community, rather than passive community acceptance. Oregon Health Decision's goal

in taking health policy to the people is to approach the problem from the bottom up, with the ultimate responsibility for life and death decisions resting on the citizens (much as with Selective Service). This approach avoids both corrupting the medical profession with responsibilities antithetical to the profession's ethical duty and burdening civil servants with life and death decisions fostered from the top down.

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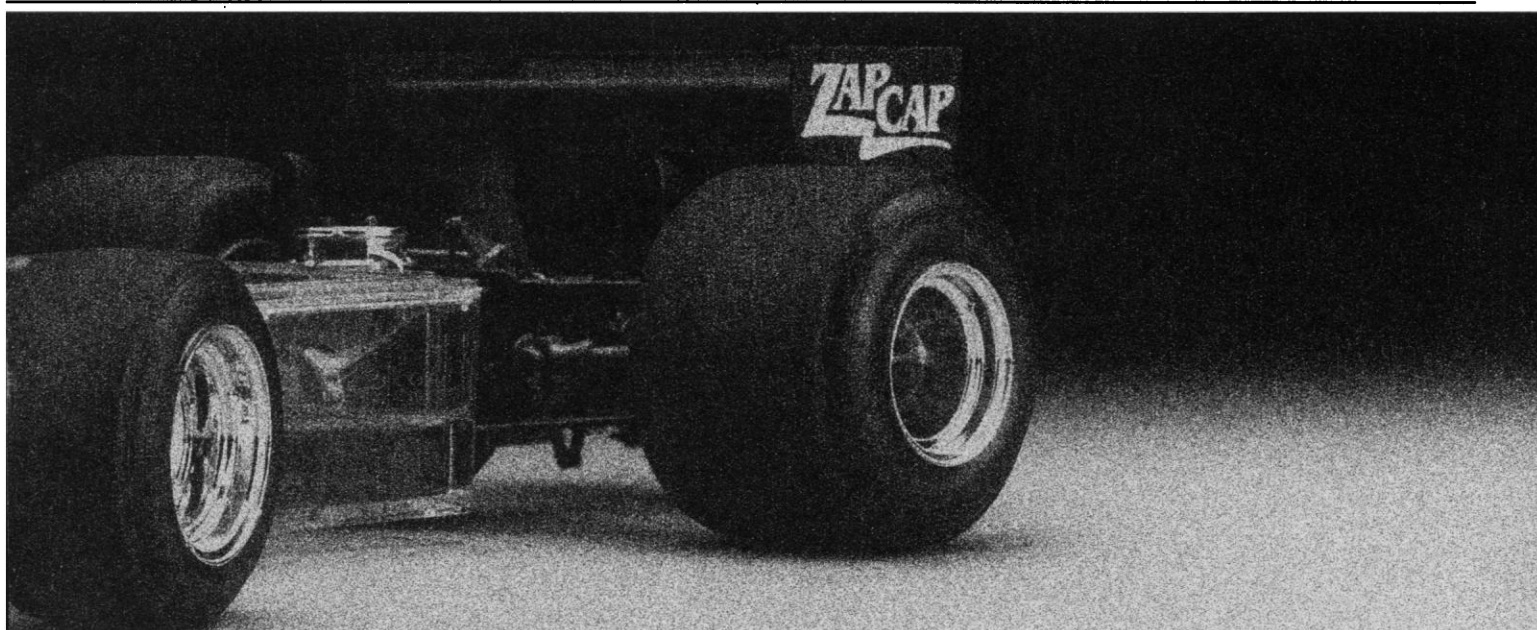
*Response:* Many people react to a nasty prospect by engaging in denial. In our view, the comments on our article illustrate this syndrome. We think that, regrettably, health care rationing is the only way to avoid continuous, rapid growth of health care costs. The solutions proposed by the various letters all suffer from one of two flaws: they imply greatly exaggerated savings or they promise one-time savings that will have no

perceptible effect on the upward trend in cost. We focus on a few of the issues raised in these letters.

One confusion evident in Higgins' letter is particularly distressing because we addressed it in detail in our article. Like many people, he lumps together two different problems—price rationing and nonprice rationing. Price rationing flows from the inability of those who are underinsured or uninsured to afford care. Nonprice rationing is in prospect for the opposite reason—the widespread availability of good insurance coverage, which effectively eliminates any check on expenditures. The continued use of the term “rationing” to describe each arises in part because English has only one word for two distinct issues.

Higgins also argues that the primary force behind rising outlays is the rise of medical prices. When one removes the effects of general cost inflation, the largest single factor in rising outlays is quality improvement.

One or more of the letter writers tax us for failing to consider such factors as underused beds, preventive medicine, and mal-

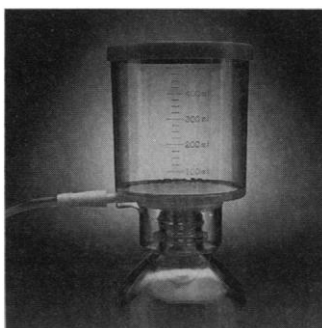


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practice litigation, which, if properly handled, could obviate the need for rationing. The writers are obviously not the first to have thought of these issues. In fact, each has been intensively studied, and none has been found to promise much relief.

When hospitals are closed and redundant facilities are eliminated, savings result, but they are disappointingly small because nearly all the costs directly incurred in caring for the patient must be picked up by other institutions that take over the care (1).

Preventing illness is everyone's favorite way to avoid rising medical costs. However valuable some prevention efforts—prenatal care, screening for hypertension, Papanicolaou smears, and pressure tests for glaucoma, for example—are in promoting improved health, few promise large savings. Educational programs or screening for large numbers of people—and associated therapies—usually cost about as much as, or more than, treatments for the avoided illnesses (2). Even if there are some savings, the economic gains are likely to be temporary. The savings from dietary change or cessation of smoking that spares a 60-year-old sudden death from a heart attack are likely to be small and less than the subsequent costs of treating the survivor's senile dementia, cancer, or rheumatoid arthritis.

Malpractice litigation undoubtedly causes physicians to do more than they might otherwise do. But close students of malpractice have concluded that much of such additional care is actually beneficial and that benefits of the malpractice system would exceed plausible costs if it reduced the incidence of negligent medicine by as little as 20 percent (3). Moreover, the contribution of malpractice premiums to the increase in hospital costs is no more than 0.1 percentage point (4).

Guntheroth deplores the tendency of physicians to pursue the "worst case scenario." Wolpe evokes images of U.S. physicians as frontiersmen. This language is admirably vivid, but it clouds a complicated issue that falls in the domain of decision analysis. When the possibility of a serious diagnosis exists, physicians have a responsibility to explain the situation to their patients and, if patients consent, to press on whenever a risk-benefit analysis (which incorporates such factors as pain and anxiety) indicates that more is to be gained than lost. Only when cost constraints are imposed on doctors by society can they abandon this fundamental ethic.

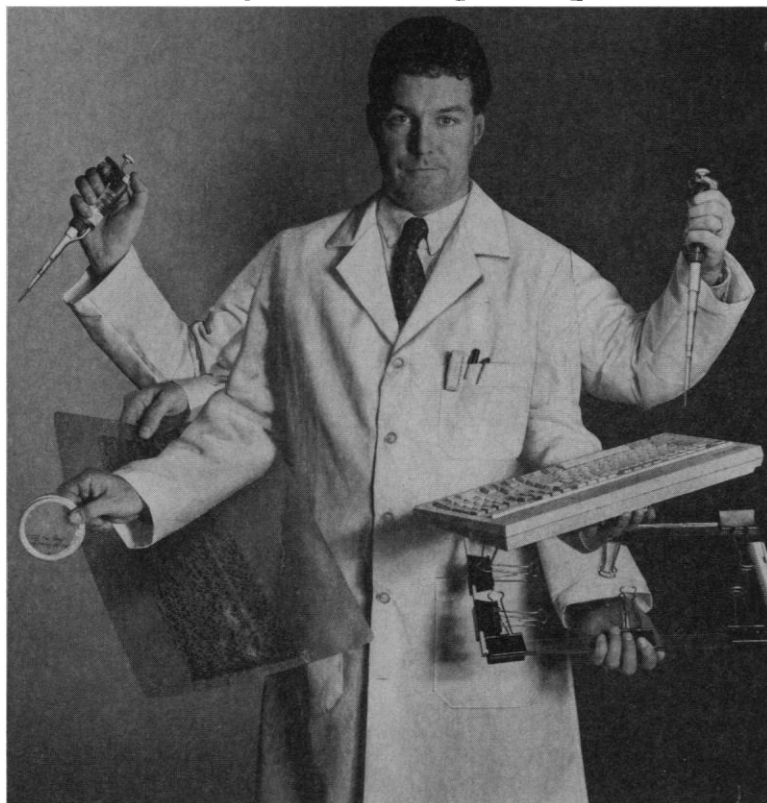
That some medical care is rendered even when the risk-benefit analysis weighs against it is undeniable. Its elimination is an impor-

tant goal, principally because it would improve the quality of care. It would probably save some money too. But, once again, these one-shot savings would be small measured against the rising trend of total spending (4).

Wolpe assesses the benefits of health care services in terms of mortality rates, but these rates are influenced more by immunization, diet, substance abuse, and use of seat belts than by medical care. He neglects the key fact that most expensive medical advances contribute primarily to quality rather than length of life. Hip transplantation and coronary bypass grafts, which relieve pain and increase mobility, are two dramatic examples of highly valued therapies that are in limited supply in a budget-constrained country, such as Great Britain.

Crawshaw does not dispute the necessity for rationing, but makes the case that decisions about rationing should be arrived at openly, as is now being done in Oregon, rather than bureaucratically, as in England. Openness is praiseworthy, but societal concerns can also be expressed, as in Britain, through decisions of administrators, physicians, and other health care providers who try to express societal values and arrive at an informal, unstated consensus on resource allocation.

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More fundamentally, the Oregon approach is inferior to the British method of rationing in at least two ways. Oregon is trying to determine which procedures will be available and which will be entirely denied. This approach will permit low priority uses of some approved procedures, while excluding some high benefit uses of disapproved categories of care. Furthermore, the Oregon scheme would apply only to Medicaid recipients but not to the rest of the population. The British method of rationing, in contrast, is based on budget limits covering essentially all medical care. This method permits officials to set budgets to maximize the value of health services. Furthermore, the British seem to think that if rationing is necessary it should apply to services not just for the poor but for everyone. That is our point too.

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#### REFERENCES

1. W. B. Schwartz, and P. L. Joskow, *N. Engl. J. Med.*

303, 1499 (1980).

2. L. Russell, *Is Prevention Better Than Cure?* (Brookings Institution, Washington, DC, 1986).
3. P. Danzon, *Medical Malpractice: Theory, Evidence, and Public Policy* (Harvard Univ. Press, Cambridge, MA, 1985).
4. W. Schwartz, *J. Am. Med. Assoc.* 257, 220 (1987).

#### Competition Exclusion Principle

In his News & Comment article "Paleoanthropology gets physical" (16 Feb., p. 798), Eliot Marshall mentions the belief of some physical anthropologists that Neandertals and anatomically modern humans couldn't have coexisted because "classic evolutionary biology rules out the notion that two types could share such a small territory." This competitive exclusion principle (CEP) gained attention among paleoanthropologists when it was invoked to argue that robust and gracile australopithecines must have belonged to a single polymorphic species (1). The logic used was that the human niche is culture (especially material culture—tools); since culture is so flexible, niche breadth is great, and no two culture-bearing species can coexist.

Similar unspecialized primates can coexist despite significant dietary and habitat over-

lap (2) and may even form regular polyspecific associations (3), so the crux of the problem is clearly how culture and the CEP interact. The answer to this is becoming apparent with each newly discovered fossil; multiple hominid taxa at Koobi Fora (4) and the possibility that *Homo habilis* actually represents at least two species (5) together indicate that material culture per se was not a constraining factor, at geological if not ecological scales of resolution, during our early days.

As for the more elaborated (material) cultures of Neandertals and early modern humans, the CEP provides paleoanthropologists with a handy null hypothesis; but let's not forget what null hypotheses are for.

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#### REFERENCES

1. M. H. Wolpoff, *Man* 6, 601 (1971).
2. C. E. G. Tutin and M. Fernandez, *Int. J. Primatol.* 6, 27 (1985).
3. M. Cords, *Mixed-Species Association of Cercopithecus Monkeys in the Kakamega Forest, Kenya* (Univ. of California Press, Berkeley, CA (1987).
4. R. E. F. Leakey and A. C. Walker, *Nature* 261, 572 (1976).
5. D. E. Lieberman, D. R. Pilbeam, B. A. Wood, *J. Hum. Evol.* 17, 503 (1988).

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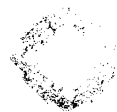
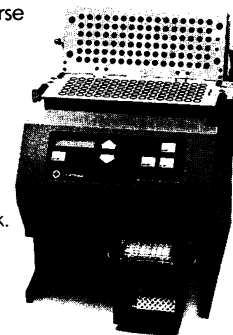
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