Letters

AIDS Case Definition

Both the text and figure 1 of the article by James W. Curran *et al.* (5 Feb., p. 610) suggest that the Public Health Service (PHS) projections for cases of acquired immunodeficiency syndrome (AIDS) in the United States, extrapolated from cases reported through April 1986, have not been updated on the basis of more recent information collected by the Centers for Disease Control (CDC) (*1*).

The number of AIDS case reports was 52,256 as of 1 February 1988. Of these cases, 15,297 were diagnosed in 1986 and 16,862 in 1987. The 1987 figure is likely to increase as reporting becomes more complete. The PHS projected 15,800 1986 AIDS diagnoses (range = 14,800 to 16,400) and 23,000 1987 diagnoses (range = 21,000 to 25,000) (*2*). Curran *et al.* indicate that the cumulative number of case reports since May 1986 equaled 92% of the projected figure after allowing for a 2-month lag time for reporting delays and was within the 68% confidence bounds around the projection.

In September 1987, the CDC expanded the AIDS case definition to include greater reliance on laboratory evidence of infection by the human immunodeficiency virus (HIV) and an expanded spectrum of severe HIV-associated disease. Health agencies were encouraged to report retroactive cases (*3*). The projection models, however, are based on the earlier and more limited definition. The number of AIDS diagnoses during 1986 was 13,954 according to the 28 September 1987 surveillance report, the last report that did not indicate that it included retroactive definitions of previous diagnoses. This figure is 88% of the 1986 estimate. If one lags case reports by 3 months in order to estimate incident diagnoses, the number of old-definition cases diagnosed during the first half of 1987 is 8925. This figure is approximately 80% of the projected figure for that time period. Observations that are consistently lower than the lower confidence bound of an estimate suggest a need to reevaluate the nature and, especially, the slope of the projection equation.

The number of new AIDS case reports received by the CDC averaged 350 per week in the first quarter of 1987, 339 in the second, 348 in the third, and 350 in the fourth, after newly defined or retroactively diagnosed cases were excluded. For the month of January 1988, AIDS cases were reported at a rate of 448 per week, of which 290 were diagnosed according to the earlier case definition. These observed rates are not consistent with the projection of steeply increasing incidence rates shown in figure 1 of the article by Curran *et al.*

A number of critical issues relating to health services delivery and public health policy planning could be better approached if the PHS projections were updated to reflect the expanded definition of clinical AIDS and current incidence rates.

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REFERENCES

1. Centers for Disease Control, *AIDS Wkly. Surveil. Rep.*, 30 March 1987, 29 June 1987, 28 September 1987, 28 December 1987, 1 February 1988.
2. W. M. Morgan and J. W. Curran, *Publ. Health Rep.* **101**, 459 (1986).
3. Centers for Disease Control, *Morbid. Mortal. Wkly. Rep.* **36** (suppl.) 1S (1987).

Response: The projections for cases meeting the 1985 (old) case definition have proved much more accurate than Imrey's letter suggests, mainly because that analysis does not adequately adjust for delays in the reporting of AIDS cases to the CDC. The following statistics should be compared with those in Imrey's letter.

The projections for cases diagnosed in 1986 are extremely good. As of 23 March 1988, a total of 14,784 reported cases both met the old definition and were diagnosed in 1986. This figure is 94% of the projected 15,800 total and very close to the lower 68% confidence bound of 14,800 cases for that year. However, reporting for 1986 is still incomplete and, on the basis of past experience, we expect that several hundred new 1986 diagnosed cases will be reported during the remainder of 1988.

The projections for 1987 are also very good, particularly for the first 6 months. The number of old definition AIDS cases projected to be diagnosed in 1987 was 23,000, with 10,600 of those in the first half of the year. The total reported for the first half of 1987 is now 8917 or 85% of that projected. However, past experience suggests that an additional 1300 old-definition cases are likely to be reported over the next 12 months, which would bring the number to 96% of that projected.

From 1 January through 21 March 1988, the CDC has received an average of 606 new cases per week, 423 of which meet the old case definition. The low figures reported by Imrey for the month of January alone reflect a seasonal trend that has been seen in prior years.

We strongly agree with Imrey's main point: the Public Health Service projections need to be updated to account for the recent changes in the case definition. Nearly 24.7% of AIDS cases diagnosed and reported since the new case definition became effective in September 1987 meet only the revised definition. This proportion has increased significantly over the past months, from 21.8% of those cases reported in November 1987 to 29.2% of those reported in March 1988. How long this trend will continue and whether it might serve as a basis for revising the projections remains to be seen. It will become increasingly difficult to evaluate the performance of the current PHS prediction model in light of the new AIDS surveillance definition. The added reliance on HIV antibody testing and clinical AIDS diagnoses may directly affect the way future cases are diagnosed. Further, the expansion of the AIDS definition to include HIV encephalopathy and HIV wasting syndrome may allow patients to be classified as having AIDS earlier in the course of their illness. These patients would not necessarily be recognized as meeting the old definition in the later stages. Several prospective studies are now being planned by the CDC to directly measure the impact of the new definition AIDS trends.

As available data warrant, these projections will be updated to reflect the most current information on the number of persons now infected with the AIDS virus and trends in reported AIDS cases, as well as the effects of the revised AIDS surveillance definition.

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U.S. Observing Facilities

M. Mitchell Waldrop's article "Troubled times ahead for telescope-makers" (Research News, 1 April, p. 28) presents a bleak picture for the U.S. astronomy program, especially with respect to the development of large telescopes for nighttime astronomy. Although the article gives good perspective on international plans for large telescopes, it quotes one astronomer as saying the U.S. astronomy community is "paralyzed" by

budget constraints. In the discussion concerning the possibility of closing existing facilities, Kitt Peak and Cerro Tololo in Chile are presented favorably, but one might conclude from the way the argument is structured that it makes the most sense to consider closing the remaining mountain site of the National Optical Astronomy Observatories (NOAO), namely Sacramento Peak in New Mexico. The importance of the National Solar Observatory and its Sacramento Peak component to solar physics is not discussed. A more in-depth look at budgeting pressures might suggest other ways of meeting the current shortfall, especially for the national solar effort.

The operation of the solar facilities at Sacramento Peak differs considerably from that at Kitt Peak and at Cerro Tololo. Sacramento Peak is the world's premier solar observing facility, important to both U.S. and worldwide solar physics, to astrophysics, and to the U.S. solar-terrestrial research effort. Its relative importance has grown as NASA support and other funding of solar physics have declined. Sacramento Peak is an interagency effort, jointly funded by the National Science Foundation and the Air Force, that continues to generate new and exciting instrumentation and projects in spite of budgetary constraints. Recent advances include development of a prototype reflecting coronagraph, a filter system capable of 20-milliangstrom resolution, image stabilization systems that remove atmospherically induced image motions and feed the stabilized images into spectrographs and filter systems, multiple charge-coupled–device camera systems that permit simultaneous high-speed observations at many wavelengths, active and passive methods for removing image distortion, and portions of the fully automated telescopes for GONG, a network of telescopes being built to measure global solar oscillations. Larger projects for which work is both ongoing and planned and for which partial funding has been obtained include development of an adaptive mirror and development of a large reflecting coronagraph.

While the scientific rationale for larger ground-based, nighttime telescopes is strong, such projects should be approached carefully, with attention paid to the technical issues of making them work properly, and with a logical plan for phasing them in without destroying or seriously harming other important scientific programs. The funds in the NOAO budget for solar facilities are intended for solar astronomy. Closing existing solar facilities without replacing them with new solar capabilities would mean the loss of these funds to the solar community with no guarantee they could be used by the rest of the astronomy community. The new nighttime facilities should come from expanding the astronomy budget through successful advocacy or from shutting down those facilities that will be made scientifically obsolete by the new telescopes.

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Retirement Policy

I was disheartened to read M. Brewster Smith's letter (8 Apr., p. 129) trotting out old, tired arguments in favor of mandatory retirement of faculty members. It is especially discouraging to see material dredged up out of the muddy pool of stereotypes, myths, and half-truths. What evidence can there possibly be to suggest that lifting the age ceiling will produce results "stultifying to the research and teaching enterprise?" I know of no such evidence; and none has been, or can be, produced.

I assume that since Smith is a member of the post-65 group himself, he feels he can speak of people of a certain age as "superannuated" or refer to people who "hang on until the bitter end," indeed, "until they have to be carted away." None of this has the remotest relation to the reality of academic or professional life. People do not "hang on"; the overwhelming majority leave when they are no longer comfortable doing their jobs. This is not a guess, but reflects the experience of firms and occupations where rules of mandatory retirement do not and have not applied. One such occupation is Justice of the U.S. Supreme Court. In the 200 years of that institution, which places much more demands on incumbents than the professoriate, the problem of "superannuation" has cropped up at most once or twice; to the contrary, some of the most magnificent contributions have been made by men long past "normal" retirement age—John Marshall, Louis Brandeis, and Oliver Wendell Holmes, Jr., among others, who all served well past age 80, and, in the case of Holmes, past 90.

The factual case in favor of mandatory retirement is at best wrong-headed speculation, at worst, mindless hysteria. The moral case is, if anything, weaker. If a professor wishes to retire early, that is his (or her) privilege. Many—perhaps most—professors will likewise retire, before they reach 70; this has been the experience so far at most universities. Some will want to continue serving. They should be allowed to do so. Smith says it is "kindness" to let the axe fall "with complete impartiality and arbitrariness." Those on whom the axe falls may feel otherwise. Would it be a "kindness" to exclude all women from the professoriate, or all blacks, provided it is done with "complete impartiality?" Discrimination is discrimination; and tyranny can be exercised, and often is, through blind, general rules which pay no attention to *individuals* as human beings, but consign them to arbitrary categories, without possibility of exception or appeal.

There is an ethical issue here, an issue of justice and of civil liberties—the right to be judged on one's merits and not to be dumped on the ash-heap simply because there are so and so many candles on the birthday cake. Fortunately, the U.S. Congress has decided otherwise. In this case, they are entirely correct.

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Whatever retirement pattern develops when professors, like the rest of us, become immune to age-mandated retirement is almost certain to be the cause of greater injustice than is the arbitrary system now in place. Smith's comment on Koshland's editorial (11 Mar., p. 1225) clearly outlines the flaws in this ill-considered legislation, but he delicately refrains from noting that, by nature, the professorial role is such as to make it relatively easy to rest on one's oars and, thus, tempting to remain in place. Except at the extremes, there is no obvious measure by which the individual, let alone others, can objectively gauge his or her performance. Nor is it easy to imagine devising a test that would not fatally compromise academic freedom, especially if—as is likely—the courts insist that any gauge of productivity be applied across the board rather than, invidiously, to the aged only. Even if that hurdle is cleared, somehow, the winkling out of ancients who have for many years previously been honored members of the community will be distasteful in the extreme. Most institutions will shrink from it, incurring costs they can ill afford; those that grasp the nettle will pay costs of another kind, equally unaffordable.

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Erratum: Two books were inadvertently omitted from reference 12 of the article "Manufacturing innovation and American industrial competitiveness" by Stephen S. Cohen and John Zysman (4 Mar., p. 1110): M. Piore and C. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (Basic, New York, 1984) and C. Sabel, *Work and Politics: The Division of Labor in Industry* (Cambridge Univ. Press, New York, 1982).