

US cancer treatment gains called into question

- National Cancer Institute criticized
- Survival improvements overstated

Washington

A CONGRESSIONAL report claiming that increases in the US cancer survival rate over the past 30 years have been exaggerated has angered officials of the US National Cancer Institute (NCI). The report*, from the General Accounting Office (GAO), says that progress in extending the lives of cancer patients has been "limited" except in certain rarer cancers, and that improvement in survival for specific cancers is "often not as great as that reported". Scientists at NCI believe, however, that it is possible to draw quite different conclusions from the report.

The report was prepared at the request of Representative Ted Weiss (Democrat, New York) who was concerned about criticism he had heard of NCI figures given to Congress and to the press. Among past NCI claims that had raised eyebrows in the scientific community was one that cancer deaths could be cut in half by the year 2000 (see *Nature* 324,9; 1986). To compile the report, data on disease trends were collected from NCI documents and from an extensive literature search. Expert testimony was then taken for each of the 12 cancers studied from group interviews at national cancer centres. The NCI figures were not themselves questioned, but their interpretation certainly was.

From the expert testimony came evidence that cancer survival rates may be subject to measurement bias. Cancers are being detected earlier; changes have taken place in classifying the stage to which a cancer has developed and in what is counted as cancer; and those attending screening programmes are healthier and better educated. All these biases help to boost figures showing that people survive cancer longer. Looking at the NCI figures in this light led Weiss to the harsh conclusion that "NCI has apparently overstated the degree of genuine progress made. . . . Neither congressional policymakers nor the public is well-served by unwarranted expectations that we have turned the corner on this group of devastating diseases."

Scientists at NCI, on the other hand, read the report in a much more positive light. Great strides are documented in treating leukaemias and lymphomas. Five-year survival rates have increased over the past thirty years from 10 per cent to 33 per cent for leukaemias and

from 31 per cent to 48 per cent for non-Hodgkin's lymphoma. Carcinomas have proved more intractable but some progress has still been made. After considering possible bias the report concludes that there has been moderate improvement in survival for bladder, endometrial and prostate cancers, and slight improvement for breast, cervical, colorectal, head and neck, and small-cell carcinomas of the lung. Only for stomach cancer has there been no improvement. There have also been substantial improvements in the quality of life for cancer patients, Dr Gregory Curt, an NCI medical oncologist stressed, and these are acknowledged in the report. New diagnostic techniques now mean that investigative surgery is often unnecessary, for example. And mastectomy operations are now performed far less frequently than 20 years ago.

The biases affecting cancer survival figures do not come as news to NCI scientists; the difficulties in interpreting epidemiological data are well known. Although the Department of Health and Human Services, responsible for the NCI, has accepted the report's recommendation that survival rate data should in future include a description of possible biases, this is not a major policy change. According to Curt, NCI technical reports already include such cautions.

Whether the real gains in treating cancer have been overplayed by NCI must remain partly a matter of opinion. The report acknowledges as much—but points out that independent experts agreed with the essence of the report. Ambiguity also remains over how to rate overall improvements in cancer therapy, largely because the biggest gains have been seen in the rarest cancers: the report limply concludes that "it is difficult to find there has been much progress, but it is also impossible to say that there has been none".

Whichever way it is read, the report is not going to make it easier for NCI to gain research funds. And as 65 per cent of funds supports basic research, studies on the molecular biology of cancer could be adversely affected. The enormous progress made in the past few years has yet, of course, to have an impact on cancer survival rates. **Alun Anderson**

*Cancer patient survival: What progress has been made? GAO/PEMD-87-13

Animals can now be patented

Washington

THE US Patent and Trademark Office will announce this week that it will now consider patent applications for "nonnaturally occurring non-human multicellular living organisms" — that is, genetically altered higher animals. This policy turnaround results from a case brought by the University of Washington over a genetically manipulated oyster.

Earlier this month, the Board of Patent Appeals and Interferences overturned a rejection of an application for a Pacific oyster made sterile. The original examiner of the University of Washington application refused to grant a patent for the oyster on the basis that it was a higher life form, and therefore was not patentable subject matter.

But the appeals board ruled that that was not sufficient grounds to reject a patent application, given the Supreme Court ruling in 1980 in the *Diamond v. Chakrabarty* case that cleared the way for the patenting of microbes. According to the board, it was the intent of the law that "everything under the Sun made by man" be eligible for patent protection.

To receive a patent, the University of Washington must still prove that its sterile oyster, edible year-round, is more than an obvious extension of similar work on American oysters published previously.

This case has set the stage for the world's first patented animal. According to Rene Tegtmeyer, the Assistant Commissioner of the US Patent and Trademark Office, there are 15 applications for animal patents waiting in the wings.

Humans were expressly excluded from patent eligibility in the patent board's decision. Donald J. Quigg, Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, indicated that "the grant of a limited, but exclusive property right in a human being is prohibited by the Constitution".

Hybrids and cross-breeds arising from age-old breeding techniques will not be eligible for patents under the recent decision either. Applicants for animal patents will be forced to prove that the animal constitutes a manufacture or composition of matter not found in nature.

Critics of the decision state that granting patents for higher life forms implies that man can create and claim ownership for new living things. Jeremy Rifkin of the Foundation on Economic Trends has formed a coalition to attempt to have the the patent office's decision rescinded. Rifkin has drafted legislation that would bar the patenting of vertebrates and invertebrates, and is now seeking a member of Congress to sponsor the bill. Carol Ezzell