

policy that aims to deliver infants weighing less than 1000 g in a larger unit. We accept that in utero transfer is vastly superior to postnatal transfer and aim to transfer infants of 27 weeks or less if possible. This policy enables us to maintain the skills necessary to deal with such infants in the short term if they are born locally or if the regional unit is full. The Audit Commission's statements on neonatal care are far too influenced by the vested interests of the larger units, to the detriment of neonates.

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Health inequalities in Australia

EDITOR,—Margaret Whitehead and colleagues correctly identify Aborigines' health status as being unconscionably behind that of other Australians.¹ This has long been recognised by governments, health agencies, and the Australian Medical Association and other groups of doctors. Aborigines' health problems result from a complex mix of historical, racist, religious, cultural, and economic factors.² Despite this the National Health Strategy, which is much praised by Whitehead and colleagues, has decided not to prepare its scheduled paper on Aboriginal health.

Looking around at the remaining 98.6% of Australians, I found myself wondering what country Whitehead and colleagues were referring to. I suspect that they were overwhelmed with statistics prepared specifically to endorse a particular political Weltanschauung of Australia's health care issues.

Apart from people living in remote rural areas, who have travel problems (Australia is as large as Europe with its few cities scattered on the coastal fringe), every Australian has virtually free access to services provided by general practitioners and specialists, pathologists, and radiologists in free standing consulting rooms. Every Australian is entitled to free treatment in the many public hospitals. That the hospitals have waiting lists is another issue. But the authors' claims that, Aborigines apart, there are "obvious inequalities" and "some of the most dramatic social inequalities in health" must be challenged.

They seem to have been misled by the details of the funding of health care into thinking that our system is complex. The only complexities lie between doctors and governments. For patients there are no complexities: doctors and investigations are freely accessible, and, although there are waiting lists, public hospital services are available on the basis of need.

The "inequity" argument is being used by our politicians to camouflage the severe financial problems faced by a system that promises everything to everybody at no direct cost. Cost containment has been the driving force behind the former health minister Brian Howe and his "self acknowledged socialist" director,³ Ms Jenny Macklin. Had either of them been truly concerned with inequalities they would, indeed, have concentrated on the problems of Aborigines, instead of attempting to find socially justifiable reasons for imposing

even tighter financial constraints on the delivery of health care services to all Australians.

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Leukaemia in children whose parents have been exposed to radiation

EDITOR,—Eve Roman and colleagues' case-control study of childhood leukaemia and fathers' pre-conceptual exposure to radiation at the atomic weapons establishments in the United Kingdom shows that the fathers of three (out of 54) cases compared with two (out of 324) controls had worked in the area where they were monitored for exposure to external sources of ionising radiation before their child was conceived (relative risk=9.0, p=0.047).¹ All cases aged 0-4 years were diagnosed as having acute lymphocytic leukaemia. Since no father was monitored for exposure to external radiation in the four years before his child's conception, they had been exposed at the spermatogonial stage. The present study is different from previous human studies in the United Kingdom² and Japan³ and also from my mouse experiments (table).^{4,5}

Estimated induced rates of leukaemia after spermatogonial exposure in Hiroshima and Nagasaki and Sellafield were close to those in my mouse experiments with leukaemia resistant strain ICR and leukaemia sensitive strain N5 when corrected exposure doses at Sellafield were incorporated into the calculation. Acute lymphocytic leukaemia and non-Hodgkin's lymphoma are two to three times more common in the United Kingdom than in Japan, and the incidences are also low in the survivors of the atomic bomb and their children, while most of the leukaemias observed in the British studies were these types. Differences in spontaneous and induced rates between the United Kingdom and Japan may be caused by the difference in genetic predisposition between these two populations, as in the case of the difference between the strains in my mouse experiments, but it is also possible that early acute lymphocytic leukaemia was missed by different diagnostic classification or modified by environmental factors. In mice the incidence of leukaemia is modified by the nursing (or microbial) environment.

In contrast, the induced rate of leukaemia at atomic weapons establishments was 100 times higher than that in mouse studies and studies at Sellafield, since external doses with ionising

radiation at atomic weapons establishments are low and not more than 5 mSv—that is, only 1% of those at Sellafield. Consequently, it is almost impossible for a father's external exposure to ionising radiation to account for the higher risk of leukaemia. Furthermore, the incidence of tumours (and also ordinary mouse mutations) in the offspring is reduced by the protracted irradiation of spermatogonia with ionising radiation owing to the high repairing ability of these germ cells. One possibility that remains to be elucidated is that cases' fathers might have been heavily contaminated with radionuclides of high linear energy transfer such as plutonium: DNA damaged by such radionuclides is not repaired and accumulates in germ cells, resulting in a higher frequency of mutations in mice.

Nevertheless, the present study reinforces the need for further large scale epidemiological surveys of cancer (adult type cancers besides leukaemia) and other disorders in the children of parents who have been exposed to radiation and chemicals. No mouse experiment has been carried out to examine whether cancer can be induced in offspring by the continuous exposure of parents to radiation at the low dose rate to which humans are exposed.

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Complaints: consumerism leads to poor services

EDITOR,—Fedelma Winkler proposes the politically correct view that organisations should encourage complaints not only to satisfy customers but also to improve their performance.¹ It is assumed that the complainant will either be justified in expecting redress or constructive in suggesting improvement. The contrary view, with which I have sympathy, is that modern consumerism, by encouraging mistrust of the supplier and expecting the worst, is a self fulfilling prophecy of poor service. Paradoxically, although my philosophy is out of sympathy with Winkler's editorial, I come to the same conclusions.

Only some complaints can be easily satisfied expeditiously—for example, where they are

Parental preconceptional exposure to radiation and induced rate of childhood leukaemia per mSv ($\times 10^6$) in mice and humans

Exposed parent	Mouse		Human		
	ICR	N5	Hiroshima	Sellafield	Atomic weapons establishments
Father:					
Post-gonia	1.9	13.8		180-260 (90-130)	
Spermatogonia	0	6.9	}0-23	22 (11)	850
Mother	0				0

To estimate the induced rate of leukaemia per mSv, the background incidence of leukaemia in each area was multiplied by the excess risk and the values were divided by average exposed dose (mSv). For atomic weapons establishments the maximum dose (5 mSv) was used for calculation.

*Figures in parentheses are the induced rate/mSv on the corrected doses at Sellafield (about twice the dose quoted in the original report by Gardner et al).