Fig 1—In patients with ARDS lying supine (left), computed tomography shows bilateral crest shaped densities in the dependent lungs. When the patient is placed prone (right) the densities redistribute. Changes in arterial oxygen tension are shown adjacent to the scan

found that a few minutes after moving the patient from supine to prone, these densities moved from the previously dependent (dorsal) region to the dependent (ventral) region (fig 1¹). They found no relation between oxygenation and redistribution in lung densities.⁸

There is a natural reluctance in intensive care units to move such desperately ill patients. There are fears that infusions will become dislodged, as well as anxieties about moving the neck and placing the face of an intubated patient in an inaccessible position. In practical terms the patient needs to be turned for periods of four to six hours at least once a day. The frequency

is limited by difficulty in gaining access to the airway and providing the necessary hygiene and skin care. Facial oedema, pressure damage, bruising, and difficulty in keeping the tube strapped in place owing to saliva are common. The endotracheal tube needs to be tied in. Fixing the patient on pillows to permit free diaphragmatic excursion requires particular attention; this has proved less difficult than it sounds, but it requires a team of helpers.

The prone position may improve oxygenation and enhance removal of secretion in patients with respiratory failure, but prospective randomised trials are needed to define the real efficacy of this approach.

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The prone position in respiratory failure¹¹

Indications

- Acute lung injury
- Cardiogenic oedema
- Permeability oedema

Contraindications

- Shock
- Acute bleeding
- Multiple trauma
- Spinal instability
- Pregnancy
- Raised intracranial pressure

- Recent abdominal surgery

Complications

- Nerve compression
- Crush injury muscle
- Venous stasis
- Airway security
- Diaphragmatic limitation
- Pressure sore
- Dislodging access lines
- Retinal damage

Second primary cancers after childhood cancer

Low absolute risk, but prevention and monitoring are high priorities

Over the past two decades, impressive advances have been made in the treatment and survival of children with cancer. Population based data from the United States document a 68% five year survival for children aged 0-15 years who were diagnosed with cancer in 1985.¹ In the vast majority of cases, five year survival represents cure. Accordingly, the number of children and young adults in the population who have been exposed to cancer treatments, which often include radiation and chemotherapy, continues to increase. These children, cured of their cancer, are at risk from adverse effects of the treatment they received.

Little is known about the long term consequences of cancer treatment. Rapid improvements in the treatment and survival of children with cancer were first realised in the early 1970s, and therefore the first large cohort of survivors of childhood cancer is now entering adulthood, a decade or more after being treated. A retrospective cohort of children in Britain diagnosed with cancer since 1940 has provided an opportunity to investigate the long term risk in a large population.^{2,3} The recent report by Hawkins and colleagues from the Childhood Cancer Research Group in Oxford describes the risk of bone cancer in over 13 000 children who survived three years after treatment.⁴

Hawkins *et al* emphasise the need to put the risks in perspective. Review of the literature gives a picture of massive excesses in risk, with observed to expected ratios in excess of 50—that is, 50 times the expected number of cases occurring in children with previous cancers.⁵ But from the patient's perspective, the relevant statistic is the cumulative probability or the absolute risk of developing a second cancer. Reports on large populations of patients have shown that the cumulative probability of second cancer can be quite low.⁶ Despite this low absolute risk, high priority should be given to characterising and preventing second neoplasms because they are often associated with high levels of morbidity and mortality.

Several questions remain regarding the future risk of cancer in child survivors. Firstly, what are the latencies between specific cancer treatments and subsequent cancers? While the risk of leukaemia associated with alkylating agents seems to be restricted to the first decade after exposure,⁷ data suggest that radiation will play a substantial role in the risk of non-leukaemic malignancies two and more decades later.^{7,8}

Secondly, what interactions exist between treatments? The possibility of interactions between radiation and some chemotherapeutic agents has been suggested.⁹ However, testing for

such interactions often requires large study populations, which up until now have been scarce.

Thirdly, what interactions exist between treatment and the patient's genetic characteristics? As the report by Hawkins *et al* confirms,⁴ patients with hereditary retinoblastoma who have received radiation exposure are at massively increased risk of developing a subsequent bone tumour.¹⁰ Other genetic characteristics that may interact in this way include p53, ATM, and GST null phenotype.

Fourthly, what interactions exist between treatment and lifestyle? It is clear that lifestyle factors, including tobacco, alcohol, diet, and occupation, can influence the risk of cancer in the general population. It is reasonable to speculate that exposure to therapeutic agents during childhood may modify the impact of these lifestyle factors, resulting in a multiplicative increase in cancer risk. Conversely, it may be that healthy lifestyle behaviours result in a lower treatment related risk.

Studying survivors of childhood cancer can also provide insights into the cause of primary malignancies. For example patients treated with epipodophyllotoxins have an excess risk of biologically distinct secondary acute myeloid leukemia.¹¹ This suggests that environmental exposures (such as diet and drugs) that inhibit topoisomerase-II may be important in the aetiology of leukemia in infants with MLL (mixed lineage leukaemia) gene abnormalities.¹²

Treatment protocols will continue to evolve, with new combinations of drugs and different dose intensity and sequencing, all of which may modify the risk of a second cancer. The ultimate goal is clear—to successfully treat and cure children with cancer while maximising their chances of a long and healthy life. This will need both primary prevention strategies (such as changes in treatment protocols) and secondary prevention

programmes (such as screening). Efforts like those of Hawkins and colleagues to carefully evaluate the experience of previous and future patient cohorts provide data essential for achieving this goal.

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Long term care of older people

Strategic management would stop people going too early to the wrong place

Car manufacturers have responded radically to the challenge of global competition; they have revolutionised assembly through technology, just-in-time inventories, team working, and a focus on quality; they have optimised component supply by forging long term contracts based on mutual help and trust; they have introduced customer focus into relationships with car purchasers. This exemplifies how industry has recognised the need for effective strategic management when crisis looms. Why then, when Britain faces the unprecedented strategic challenge of the long term care of older people, is there increasing evidence of strategic drift? Two issues are of particular concern and may lead to increased costs: they are the poor assessment of eligibility of older people for long term care, and poor quality of care.

Evidence of the present inadequacy of eligibility assessment in Britain is beginning to emerge.¹ A recent audit report disclosed a disturbing level of inappropriate placement, even after poor documentation was allowed for;² only 11% of nursing home residents were definitely appropriate for nursing home care, and 54% possibly appropriate; the rest were probably more suitable for home or residential care. The lifetime cost, estimated by the authors, is £42 250 per misplaced resident.

Social services are responsible for eligibility assessment and must take much of the blame. Assessment methods are neither standardised nor systematic. (The Joseph Rowntree Foundation has commissioned a study of existing methods to improve this.³) The audit also showed that documentation was poor, with the result that the knowledge base of the multidisciplinary team in health care of older people is not being properly

deployed. There was no medical information in 40% of cases, no social information in 70%, no nursing information in 35%, no occupational therapy information in 93%, and no physiotherapy information in 90%.

But social services should not take all the blame. Major responsibility lies within the secondary health care system, since most older people entering long term care come from acute hospitals - 82% in this audit.² The growing focus on acute medicine is marginalising rehabilitation,^{4,5} despite evidence of its effectiveness.

The second likely contributor to high costs is the poor quality of care; documented examples range from failure to preserve individuals' privacy, to inappropriate use of drugs and mismanagement of incontinence.^{2,8} Legislation and inspection, though a necessary protection, are unlikely to ensure high quality care. Other approaches, such as clinical audit which empower staffs,⁹ are now being introduced.

The difficulties with assessing eligibility and ensuring quality indicate the urgent need for some form of strategic review. Strategic management, which aims to match up where you are, what you have, and what you want to do, could bring together disparate information, activities, and stakeholders. It might include several approaches. First, the strategic environment could be evaluated using tools such as PEST analysis (which looks at political, economic, social, and technological factors) and scenario modelling. International comparisons may be useful; in Australia no one enters long term care without seeing a geriatric assessment team; in Japan a 10 year "Gold Plan" is being implemented by the ministry of health and welfare to