Section of Radiology

President Margaret Snelling FRCS

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Medical and Legal Aspects of the Increasing Demand for Diagnostic Radiology

Dr John C A Raison
(Scientific Services Division, Department of Health & Social Security, Hannibal House, London SE1 6TE)

Radiological Resources

Accident and emergency X-rays form a significant part of the work of radiology departments – in 1974 nearly 17.5% (Fig 1). This has been the case for some years (Table 1). But statistics suggest that the incidence of accidents has not been rising (Fig 2). The inference is that relatively more accident X-ray work is undertaken. This is in line with international trends in the use of diagnostic services generally. The observed workload (England) in pathology increased by 6.7–8.4% annually from 1966 to 1973. Likewise in radiology there has been a 5–6.4% increase per annum in much the same period, from 23.5 million in 1963 to nearly 37 million units in 1972 (Fig 3). Although this can be attributed partly to the increase of population, radiography workload related to population shows that there has been a 38% increase between 1965 and 1972 (Fig 4). (Revised data collection systems since 1972 make later comparison invalid.)

Table 1

Accident and emergency radiographic workload

Year	Total units (millions)	Accident and emergency units No. (millions)	% of total
1965	26.0	3.9	14.9
1966	27.2	4.2	15.2
1967	28.3	4.5	15.9
1968	29.8	5.0	16.7
1969	31.7	5.5	17.5
1970	32.9	5.9	18.0
1971	34.7	6.1	17.7
1972	36.9	6.7	18.2
1973	119.6●	36.7●	18.4
1974	210.9	36.8	17.5

● revised method of recording work units introduced in 1973

Radiology is a costly service. Precise figures are complicated, and difficult to discuss briefly, but in 1974–5 about M£50 was spent on revenue

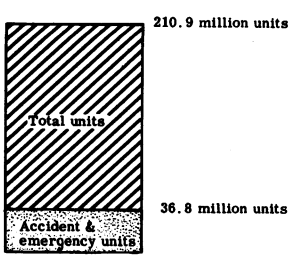

Fig 1 *Accident and emergency radiographic work load 1974 (England)*

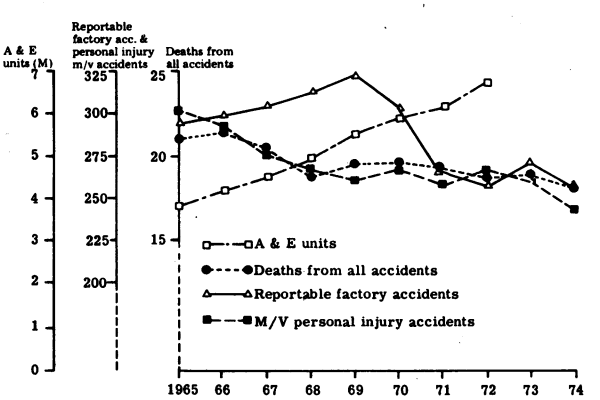

Fig 2 *Accident trends, Great Britain, 1965–1974. A & E, accident and emergency. M/V, motor vehicle*

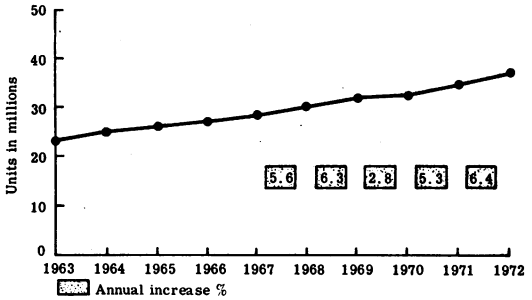

Fig 3 *Work units – all NHS hospitals in England, 1963–1972. Note that a new system of recording work units was introduced in 1973*

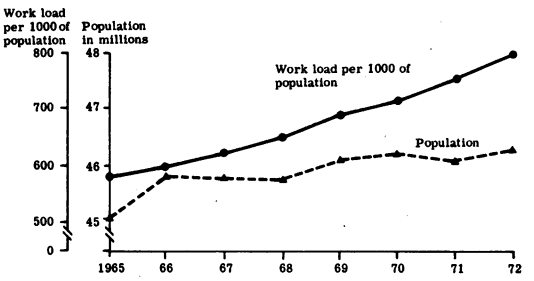

Fig 4 *Radiography workload related to population for England, 1965–1972*

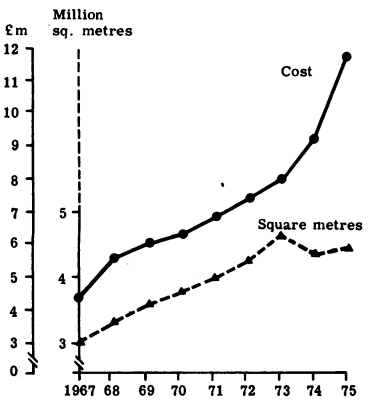

Fig 5 *Consumption and cost of radiographic film in NHS hospitals in Britain, 1967–1975*

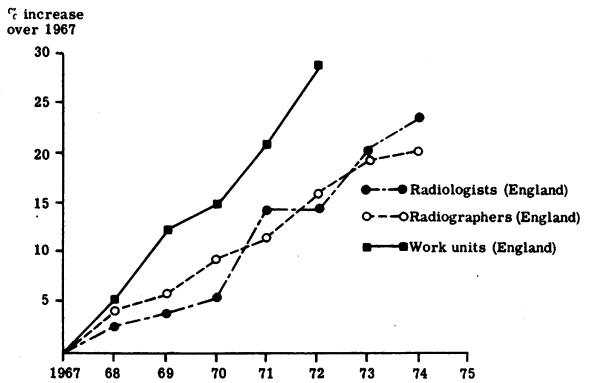

Fig 6 *Radiologists, diagnostic radiographers and work units in England, 1967–1975*

and capital in the specialty (England), about 2% of hospital costs. Other estimates have been made as high as 5%. X-ray film alone cost M£11.6 in 1975 (Fig 5).

Increasing demand in radiology can be met in two ways. The obvious is simply to increase resources in manpower to meet the rise, and to some extent this has been done (Fig 6). The numbers of radiologists and radiographers in the National Health Service each increased by 15–17% from 1967 to 1972; in the same period workload units rose by 30%. But this response may not be practicable, financially possible, or necessarily best as a continuing one. Another way to tackle the problem is to be more selective in the use of radiology or choice of special investigation. There needs to be further scrutiny by the professions of the resources used by different treatment regimes; decisions on clinical practice concerning individual patients continue to be the responsibility of the clinicians concerned. Other factors need consideration, such as the advent of computer-assisted axial tomography which may influence the choice of examinations for trauma, the consequent workload and of course the provision of radiological facilities.

The present constraints in both manpower and financial terms on resources are well known. The previous Secretary of State's foreword in the Consultative Document on Priorities for Health and Personal Social Services in England (DHSS, 1976. HMSO, London) reiterates that demand will always outstrip our capacity to meet it, and the document asks all who provide, manage and plan services to seek more economical methods of providing them to enable available resources to be used more efficiently. It refers to the particular importance of a review of general and acute hospital and maternity services (some 40% of total National Health Service costs). It recognizes the initiatives already shown and particularly notes the work of the Royal College of Radiologists in undertaking to examine improvements and economies in the use of radiological services which have considerable financial and radiation safety implications.