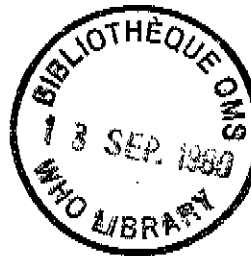




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Endocrinological tests make a larger contribution to clinical diagnoses than almost any other kind of biochemical determination: they often form the sole basis of a clinical decision, untempered by any other clinical observation. For this reason they must be exceptionally reliable and accurate. Most of them demand a high degree of technical expertise, expensive equipment and sound medicoscientific insight derived from extensive biochemical knowledge coupled with long clinical experience. All these requirements argue for a high degree of specialization; and this, coupled with the fact that the relevant laboratory tests usually relate to chronic rather than acute disorders and that the tests themselves are rarely matters of clinical emergency, argues in favour of a centralized system which is necessarily slower than a local service but can concentrate the requisite expertise and benefit from economies of scale.

A centralized system based on 12 centres offering 30 hormone assays was constructed in 1973 to serve all of England and Wales (population 49 million). A parallel system of 5 centres to serve Scotland (population 5 million, about the size of an English region) was set up simultaneously. The centres were designated on the basis of their known achievements in endocrinological research and most were in university hospital laboratories. Half of them formed part of a larger department of clinical chemistry, and the others were in separate endocrinological departments. The centres were equipped and supported from a central fund and were expected to fulfil six functions: (a) to assay specimens and provide a consultative clinical service to any part of the country, (b) to ensure comparability of results between centres offering the same assays, (c) to produce and share high-quality reagents not readily available commercially (e.g. certain antisera), (d) to produce recommended assay protocols, (e) to train laboratory staff for less specialized centres and, with the help of these and the above reagents and protocols, to devolve responsibility for established assays to the less specialized laboratories, and (f) to explore the clinical usefulness in practice of new endocrinological investigations recently reported in research journals.

As the various hormone assays have proved their usefulness and demand for them has grown, decentralization has proceeded rapidly for many hormone assays (e.g. thyroxine, cortisol), but not in the planned way that was envisaged, namely through devolution to regional centres (for 1.5 to 5.2 million population) and thence to sub-regional laboratories (for 150 000 to 500 000 population), if appropriate. Development of specialized expertise has tended to be geographically haphazard and has created the need for elaborate national quality assessment arrangements centrally initiated; while the envisaged quality-assurance and monitoring role of the central laboratories has been less successful than expected. Reasons for this will be discussed.

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