Formula Funding and Regional Planning of Health Services in Australia

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THE PROVISION OF HEALTH SERVICES TO PARTICULAR groups and communities within Australia's scattered population has been problematic for more than a century. When modern scientific medicine was developing its present form, in the 1880s, Australia was composed of six self-governing colonies of the United Kingdom. Half of the population was dispersed in an agricultural and extractive economy supporting a few regional service towns, but commercial, financial, and governmental activities were concentrated in the seaboard capital cities. Numerous small hospitals were established by voluntary initiative in the country towns and voluntary initiative, often aware of a British model if not appealing directly to it, was responsible for a considerable part of the hospital services in the urban metropolitan areas.

Dispersed voluntaryism may have worked in the United Kingdom, where landed wealth also was dispersed, but it was not adequate to the Australian situation, where hospital boards quickly fell into the habit of seeking subsidy from the colonial government for their institutions. The trouble with the subsidy was that it created political and financial obligations on governments to maintain institutions over whose establishment and expansion they had no control. The system

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of matching grants or "2 for 1" subsidies meant that governments had to support the enthusiasm of every local hospital committee whether it was in line with national policy or not (Bell 1968; Dickey 1967, 1980; Horsburgh 1977; Mitchell 1967). The demands of the subsidized voluntary institutions meant that government spending on health services was concentrated increasingly upon treatment rather than prevention and, even in the field of prevention, the need to meet the hygienist goals of environmental cleanliness, pure water supply, and safe disposal of sewage limited the attention which was given to other forms of primary health care.

When the colonies federated to form a Commonwealth of Australia in 1901, the new constitution left authority in all health service matters except quarantine in the hands of the six states, of which New South Wales, Victoria, and South Australia were the most populous. National health policy was slow to develop. The Commonwealth Department of Health, which was a focus for a nationalist interest in the value of a healthy population, did not emerge until 1921 (Roe 1976). A Commonwealth Royal Commission on Health in 1926 suggested a plan for providing health services throughout the country that might have gone some way to achieving the national goal; it recommended a preventive emphasis, particularly in maternal and child health and in industrial hygiene, to be supported by an organization of the country into a hierarchy of health districts and regions which would integrate curative and preventive, and government and voluntary, services (Australia. Parliament 1926–1927). Nothing came of the 1926 proposal or of the plans put forward in 1941 by the National Health and Medical Research Council and by a select committee of the Commonwealth Parliament (Australia. National Health and Medical Research Council 1941; Australia. Parliament 1944). The select committee proposed a national network of preventive and curative facilities provided by salaried doctors but the British Medical Association in Australia—forerunner of the Australian Medical Association—plumped, after some hesitation, for private practice, fee-for-service medicine subsidized by government through a decentralized insurance system (Hunter 1966).

The medical association's view prevailed, with the support of a conservative national government, for a quarter of a century. Doctors provided most of their medical services on a private basis to fee-paying customers. The Commonwealth subsidized the insurance system for

those who could afford to insure but, despite a rapidly growing revenue base during the 1950s and 1960s, its contribution to a national health service was limited to providing a few discrete services—for tuberculosis treatment, the rehabilitation of injured workers, and the medical and hospital care of war veterans. The states, whose revenue base did not include the burgeoning company and personal income taxes available to the Commonwealth, had to fund large public hospital systems, including an outpatient medical service for the substantial minority of the population who could afford neither private doctors' fees nor insurance cover. Between 1949 and 1972, in essence, the doctors provided private medicine to individuals and the states spent their limited resources on hospitals and on medical services for the indigent; the Commonwealth, which had the financial capacity to promote a wider view of health services, did not do so.

By the early 1970s the deficiencies of the private medical system were notorious. The insurance system was inefficient and far from universal (Australia. Committee of Inquiry into Health Insurance 1969) while the Labour opposition was able to claim, credibly, that medical services were inaccessible to many of the population. The Commonwealth Labour government that was elected in December 1972 introduced a new hospital cost-sharing agreement with the states, grants for initiatives in community health, and a universal medical insurance scheme. The states' interest in a more active role for government in health care was indicated by the appointment of committees of enquiry in New South Wales, Victoria, and South Australia. The South Australian enquiry, which undertook the most detailed review, encapsulated the history of the previous fifty years; it took the government-subsidized, privately provided medical system as a given and proposed in addition the regional organization of a hierarchy of medical support and other health services similar to those which had been suggested in 1926 and 1941 (South Australia. Committee of Enquiry into Health Services 1973).

During the middle years of the 1970s the state health bureaucracies in New South Wales and South Australia were reorganized in an attempt, in part, to turn the increased resources which the Commonwealth was providing into more accessible and more broadly construed health services. In New South Wales a Health Commission was created in 1974 from a congeries of former departments and in 1977 thirteen health regions were organized under the direction of

the Commission, ostensibly to achieve a geographic devolution of health administration "on a scale which brings the decision makers closer to the places and the people directly affected by their decisions . . . administering state government services on a more human scale" (New South Wales 1980). It is a mark of the continuing turbulence in Australian health service administration that by the end of 1983 the Commission itself was abolished and replaced by a conventional Department of State (Lennie and Owen 1983). In South Australia the lengthy enquiry into health services which reported in 1973 was followed by a four-year delay in implementing the coordination of services under a health commission which the enquiry proposed, succeeded by a period of uncertainty in the life of the new commission lasting at least until 1980.

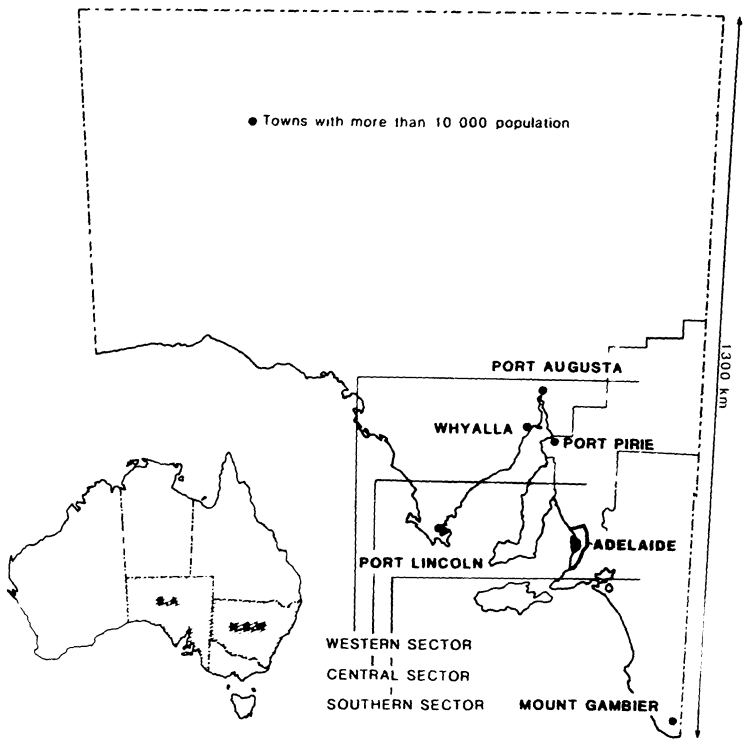
By the time that the reorganized administrations were beginning to show hints of stability, interest in distributing new health resources had given way to that concern about the escalation of total health expenditure which marked Australia as much as the United States. By 1980 the activities of the newly appointed planners were redirected from distributing the sum of health resources to restraining the demand for resources. The purposes of health planning were fluid in Australia but the two models the planners might employ were clear. In England the Resource Allocation Working Party (RAWP) had represented an effort to transfer funds from one region of that country to another. RAWP was partly successful in transferring funds on the basis of a formula that multiplied population by a measure of need, although it has been suggested that the interregion transfers amounted to robbing poor parts of rich regions to pay rich parts of poor regions. In addition, some of the poorer regions were not able to use the additional funds allocated by RAWP because of the unwillingness of doctors to work in those regions (Smith 1982). In the United States of America the Health Systems Areas model, developed under the National Health Planning and Resources Development legislation of 1974 (P.L. 93-641) was designed to achieve national standards of provision by formula funding—for planning, not service delivery—with an implication that poorly resourced regions would be levelled up to the national standard and with a significant provision that there should be consumer involvement in the planning process. In Australia the English example has been imitated, with little direct debt to the American legislation.

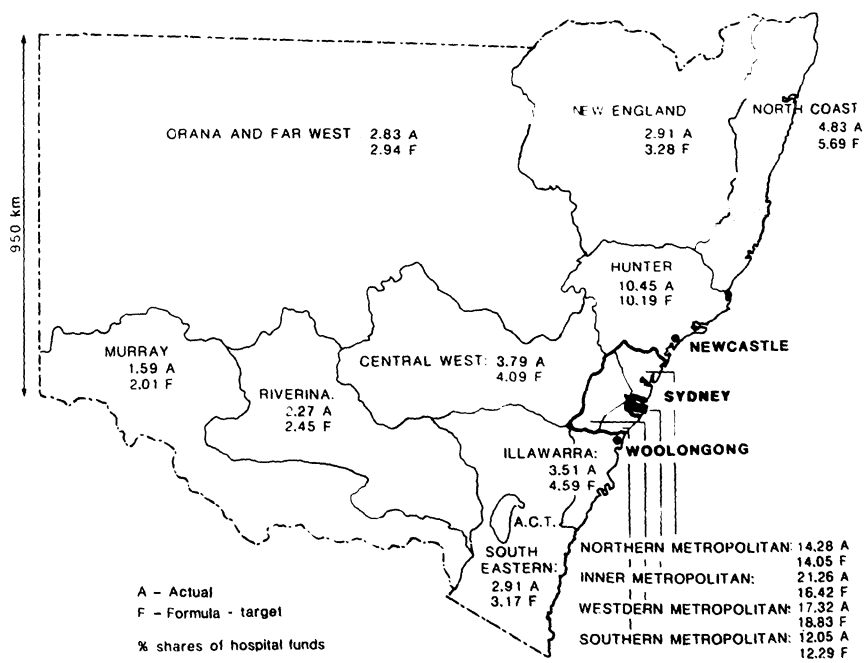
Australian Exercises in Planning and Funding

Organization by regions and funding by formula allocation have proceeded most rapidly in New South Wales. New South Wales is Australia's most populous state with 5.5 million inhabitants; 3.5 million live in metropolitan Sydney with another 0.5 million in the industrial cities of Newcastle and Wollongong and the remainder spread over an area roughly 500 miles wide and 800 miles long.

One hundred years of local initiative and central subsidy have not produced an even distribution of hospital resources in New South Wales, either between the metropolis and the rest of the state or even within the metropolitan area. The collection of data from the thirteen regions created in 1977 (since reduced to eleven) has illuminated the disparities. In 1981, for example, there were 13.5 beds of all kinds per 1,000 population in the metropolitan area but only 11.5 beds per 1,000 in nonmetropolitan areas. Within the Sydney metropolitan area, the inner region had 23.5 beds per 1,000 and the western region of dormitory suburbs had only 9.9 per 1,000. Outside Sydney, the central western region had 16.1 beds per 1,000; the Hunter region, which was settled nearly as early as Sydney itself and includes the Newcastle industrial zone, had 14.4 beds per 1,000 population, but the Illawarra region, which includes the industrial city of Wollongong with a majority of post-1945 immigrants in its population, had only 7.4 beds per 1,000. Even when private provision—roughly 30 percent of all beds—is removed from these figures, public bed numbers range from 11.7 in the inner metropolitan area to 4.8 in the northern metropolitan region and from 12.4 in the central western region to 3.9 in Illawarra (New South Wales. Health Commission 1982, table 3.4).

There was no sign in 1981 that the historical imbalance would be overcome. The compound population-growth rates predicted for 1981-1986 showed the Orana-and-Far-West region in last place with an expected nil growth rate but in first place in the supply of both public and private hospital beds in 1981; Illawarra, which was fourth in terms of expected growth, was tenth in bed provision (New South Wales. Health Commission 1982, table 2.4). There were also wide variations in the gross operating payments to public hospitals in 1980-1981, ranging from $637 per head in the inner metropolitan region to $205 in the western metropolitan region and from $340 in Hunter to $174 in Illawarra.


● Towns with more than 10 000 population
1300 km
PORT AUGUSTA
WHYALLA
PORT PIRIE
ADELAIDE
PORT LINCOLN
WESTERN SECTOR
CENTRAL SECTOR
SOUTHERN SECTOR
MOUNT GAMBIER


950 km
ORANA AND FAR WEST 2.83 A 2.94 F
NEW ENGLAND 2.91 A 3.28 F
NORTH COAST 4.83 A 5.69 F
HUNTER 10.45 A 10.19 F
NEWCASTLE
SYDNEY
WOOLONGONG
MURRAY 1.59 A 2.01 F
RIVERINA 2.27 A 2.45 F
CENTRAL WEST 3.79 A 4.09 F
ILLAWARRA 3.51 A 4.59 F
A.C.T.
SOUTH EASTERN 2.91 A 3.17 F
NORTHERN METROPOLITAN 14.28 A 14.05 F
INNER METROPOLITAN 21.26 A 16.42 F
WESTDERN METROPOLITAN 17.32 A 18.83 F
SOUTHERN METROPOLITAN 12.05 A 12.29 F
A – Actual
F – Formula - target
% shares of hospital funds

Hospital operating costs account for about 80 percent of total government expenditure on health services in New South Wales and it is these funds that are being allocated on a formula basis for the regions. The formula "is designed to . . . highlight disparities between different health regions [and to] provide a more objective method for future allocations of health resources" (New South Wales. Health Commission, Division of Planning 1981). The formula is claimed to be more likely to lead to equity and efficiency in the health service "in a climate of financial stringency" than the "traditional incremental budgeting approach . . . which had tended to perpetuate historic inequalities in the pattern of service provision."

The formula employed in New South Wales is similar to that devised by RAWP. The population of each region, in broad age-sex categories, is multiplied by state average bed-utilization rates for each age and sex category and weighted by standardized mortality ratios (SMR). The derived number of beds required in each region is then adjusted to take account of interstate and interregion flows of patients, of the utilization of private hospital, psychiatric, and nursing home beds and of the cost of operating the various types of bed that make up the provision in each region. The private bed provision is deducted to protect regions "with a relatively high private hospital bed capacity from losing *public* resources on account of *private* flows into the region" and the interregion flows are discounted by 25 percent as "an incentive for some avoidable outflows to be reversed."

The effects of applying this formula would be considerable. Compared with the gross operating payments of 1980-1981, payments to the inner metropolitan region of Sydney would fall by 22.8 percent if it were to meet the 1981-1982 formula while the Illawarra region would receive an increase of 30.8 percent in 1981-1982 compared with its 1980-1981 figures (New South Wales. Health Commission, Division of Planning 1981). Inner Sydney has inherited a rich texture of technically sophisticated health resources, of a kind generally lacking in the outer suburbs, and would lose $70 million if the 1981 formula were applied immediately. It is obvious that the inner metropolitan region could not shed so much money in a single year and equally obvious that the Illawarra region would be hard put to move from a budget of $51 million in 1980-1981 to $67 million in 1981-1982. As the formula document recognized, any adjustment would need to be phased in gradually to avoid disruption to health services. For example, a

benefiting region would find difficulty in absorbing a large, rapid increase in operating costs unless the historic deficiency of capital provision in such a region were remedied simultaneously with the provision of additional operating grants.

The New South Wales Health Commission formula document also makes it clear that the provision of additional resources to a region will depend upon that region planning to provide services to the major client groups within it. The regions have been warned, however, that benefiting regions should not assume that they can automatically increase the *hospital* provision in their region. This suggests that some latent planning problems are in store, for if a region were to follow current orthodoxy and seek to provide a wider range of *extra* institutional services, rather than hospital beds, it would be eroding the base from which a future allocation of funds might be calculated.

South Australia occupies an area nearly as great as that of New South Wales but has less than one quarter of the population. Seventy-five percent of the 1.2 million citizens live in metropolitan Adelaide, the capital, and only one population center outside the metropolitan area has more than 30,000 inhabitants. Indeed, the five biggest extra-metropolitan towns together account for only 10 percent of the state population. With such a dearth of regional centers, the devolution of health service administration to geographic regions would obviously lack any realistic focal point, even if there were a break away from the long South Australian tradition that Adelaide rules the country (Hirst 1973, chap. 3). The South Australian situation is also complicated by the state's traditional culture of voluntaryism. About one-half of the hospital beds in Adelaide are in community or charitable hospitals and the large public hospitals have boards of management with a tradition of independent action. As much care for the mentally retarded is in voluntary as in public institutions. District nursing and maternal and child health care were organized, until very recently, by jealously independent voluntary associations whose own branches resented central interference.

In 1980 a new chairman and chief executive officer was appointed to the South Australian Health Commission who had served for a short time as a director of one of the New South Wales regions. In 1981 he moved to reorganize the administration of the South Australian Commission on the basis of a corporate sector and "central," "western," and "southern" sectors. These last three sectors are not geographic

areas for the devolution of administration like those in New South Wales, although there are lines on the map which divide the state into three sectors each composed of both a metropolitan and an extra-metropolitan element. There is considerable disparity of population and of health service resources between the sectors and minimal common interest between the geographic districts that comprise the sector maps. There are no regional offices for the sectors; on the contrary, all three sector directors have their offices on adjacent floors of the Health Commission's headquarters building in Adelaide. One purpose of this administrative arrangement was to provide the service units with an identifiable focus for complaints and source of authority and there is general agreement within the health service that this focus has been the chief success of the sector system.

The lack of common interest among the districts composing each sector might be a device that allowed the sector directors to divide and rule the service units. This certainly would be in accord with the centralist clauses in the purpose statement that was issued prior to the designation of the sectors. For example, the sector organization is designed:

- To overcome current deficiencies in the internal organization of the health commission;
- To provide a single point of reference for all health units and the community within a sector;
- To assist in the central coordination and rationalization of the state's health services.

The sector organization was also designed to enhance the Health Commission's ability "to identify needs and develop appropriate programs to meet those needs" (South Australia. Health Commission 1981)—in other words to maintain central control over resource distribution. This interest in control of resources was developed in the submission made by the Health Commission to the Public Service Board of South Australia to justify the creation of the sector directors' positions. For example:

> *Objective resource allocation.* It is the government's policy that a system of program and performance budgeting be developed for government departments and authorities . . . . The Commission intends to seize

> the opportunity to develop a rational and objective system of resource allocation which will reduce competition for resources, identify waste and provide funding for services rather than institutions.
>
> *Provision of services on the basis of Need not Demand.* Local decision-making, integration, coordination and a rational allocation of resources will be to no avail if services continue to be provided on the basis of the demand for them rather than on the real need for such services. . . Unless the needs of the community are clearly established, distinguished from the demand for services, and resources allocated to meet the needs only, there will continue to be growth and overprovision of services in the health system.

The tone of the South Australian documents would merit Bachrach's (1967) label of "democratic elitism." In Victoria, where the conservative government issued a discussion paper on regionalization in November 1980, it was obvious which elite purpose would be served. Devolution is offered as a way of helping people in the regions to accept cuts in health resources:

> The underlying rationale for regional devolution is that participation by those most closely affected will result in more acceptable and efficient policies concerning the allocation of scarce resources than would occur if decisions were imposed from a central authority.

The Victorian paper also left no doubt that devolution of authority would be occurring in a paternalistic context. For example, consider the possible reasons for failure of devolution:

> a) People located in regions may lack skills and experience and may not necessarily make more efficient decisions than would be made at the centre;
>
> b) Regional decision makers may accurately represent the demands of their constituents but these may not lead to rational trade-offs between needs and wants;
>
> c) People at the regional level may fail to reach consensus about resource allocation, with a consequent need for central intervention (Victoria. Health Commission 1980).

In South Australia this kind of rhetoric has produced the Program Information System (which had an unfortunate acronym and later became the Program Classification of Health Services—PCHS) and a regional resource allocation model (RRAM) (Bennett and Filby 1983).

The PCHS is a derivative of the program and performance budgeting system (PPBS) more familiar in the United States of America. When fully developed it might allow cost allocation fairly close to the point where that cost is generated, as well as a service-oriented accounting system which can also be rolled up to produce the more conventional line budget commonly employed in government accounting. The categories which have been developed for the programs, program sectors, and services under the PCHS are a local adaptation of the "programs of care" developed by the United Kingdom Department of Health and Social Security (1976).

While the PCHS might enable the Commission to provide "funding for services rather than institutions," there is potential for conflict between the need which this implies to intervene well down the structure of service delivery and the promise which has been made to the institutions that the independent decision-making power of their incorporated boards will be respected. By mid-1983 it was clear from pronouncements by successive Liberal and Labour ministers that the democratic elite, not the boards, would prevail in this conflict.

RRAM, the resource allocation model, is drawn essentially from RAWP and its New South Wales modifications. In New South Wales, the formula is based on population structure and standardized mortality ratios with adjustments for regional flows, private bed provision, and costs of different bed types. In the theoretical description of the RRAM model it is said that the SMR is to be used logarithmically to "ensure that only large deviations from the expected values are given prominence" but, in practice, the SMR is being used arithmetically. There is a further distinction from the New South Wales procedure in that patient flows within sectors are not discounted.

Some of the officials involved in applying the South Australian RRAM model have doubts about the subtlety of the formula that they are employing and rapid swings in the levels of deficit and surplus between the various sectors have been implied by various versions of the model. Even if the managers of the formula were confident about it, there would still be room for questions about its probable effectiveness. During 1981-1983, PCHS and RRAM had some influence on *discussions* about funding initiatives but there is not yet much evidence of intersector transfers of *resources* on any large scale. In addition, because each sector in South Australia represents an enormous geographical area with both metropolitan and country components, the down-the-line effect of the

formula within each sector is bound to be gross, relative to the accumulated variations in health need and service provision and capital investment. Although the sector directors may regard the variations of need within their sectors as the primary focus for their activity, there is no reason why they should do so since no specific health outcome is required of them, only administrative outcomes. The test of their competence is conformity to budget goals, first, and political invisibility of any health service problems in their sector, second.

Politically, formula funding offers the advantage of a defense against the importunate syndicates in the health system. Politicians who do not wish to be pushed into pork-barreling can point to the formula as the reason for not allowing hospital B to replicate the open-heart surgery unit of hospital A. Alternatively, they may claim that, say, cuts in nurse staffing levels in hospitals are not their fault but an inevitable consequence of the formula. A more cynical view of the formula, expressed by one South Australian official, is that "if your goal is not achievable then make it somebody else's responsibility. This tactic is sometimes known as the new Federalism" (Cooper 1981). That is to say, federal governments push the responsibility for health services onto the states, the states push it onto the regions, and no one in the chain is easily made responsible to the user population.

Regional resource allocation might be described as a case of inadequate knowledge fueling defective models in the hands of officials without the power to implement them. A major constraint upon the officials, as Cooper observes in a critique of studies by Wildavsky and Thurow, is that "since every policy generates its own constituency, new policies tend always to be additions to rather than substitutions for existing policies." In addition, the beneficiaries of an existing policy may be few in number but have a substantial interest in its continuation, while the potential beneficiaries from the abolition or replacement of an existing policy are "most often marginal and removed." Zero-sum democracy gives veto power to all potential losers (Cooper 1981; Wildavsky 1980; Thurow 1980).

Two recent Australian experiences indicate possible consequences of the veto-power problem. In New South Wales in 1979 an attempt to cut the Community Health Program, in the wake of reductions in federal budget allocations to the state, met fierce resistance from the new cadre of community health workers which had grown up during the preceding five years. In New South Wales the reaction

was against a reduction in posts with obvious, immediate effects upon individuals. In South Australia the Conservative government avoided this reaction from a pool of potential "losers" by pledging not to cut staff salaries, which are a significant part of the total operating costs of health services. An immediate political consequence was thus avoided—but at the cost of a less obvious effect. Throughout the life of the Conservative government (1979-1982) funds for capital works were diverted to meet recurrent expenditure. In the case of the South Australian Health Commission, the provision for capital works in 1982-1983 dropped to only $12 million, a ridiculously low level by private enterprise standards, when seen in the context of capital assets in the health service of at least $1 billion and annual expenditure in the vicinity of $540 million. In this case jobs were saved but the problem of allocating recurrent costs by formula without reference to capital infrastructure was exacerbated.

Much more extensive analysis would be necessary to discover just which groups have gained or lost during the recent turbulent period of the political economy of health in Australia. However, the likely shape of the answer is suggested by Goode's perceptive analysis of the syndicates that negotiate to influence and control the health domain. These syndicates include the teaching hospitals, whose interests may be different from nonteaching institutions, the Health Commissions, and the various health worker groupings, including the colleges of medical specialists whose interests may differ from those of general practitioners, whose interests may differ from those of nurses or even users of health services (Goode 1981). In Victoria and South Australia in the early 1980s the Health Commissions are trying to subordinate other syndicates in order to establish themselves, and the notion of regionalization is probably a useful weapon in the struggle. Regionalization of the Commissions is a variation upon bureaucratic arrangements in which the Commissions are already skilled. The ministerial paper announcing the decision to implement regionalization in Victoria suggests that a region is likely to be in the form of the Commission itself but writ small (Victoria. Minister of Health 1983). The regional authorities will be dealing with their diminished version of the whole health system whereas other syndicates like the medical and hospital associations and hospital employees' unions and the nurses' federation, serving a state-wide membership and dependent upon access to the political center, are likely to be relatively less effective in dealing with a number of dispersed regional officials and service managers.

The present-day advocates of regionalization are managerialists, unlike the general-practitioner doctors and voluntary sector organizers who argued for national health services regionally organized in 1926 and 1941. Doctors and the users are two syndicates that appear to be discounted at present. Klarman (1978) observes that the redistribution of hospital resources and, sometimes, their closure has been opposed in the United States by the physicians whose hospital staff appointments are threatened by the redistribution of beds. Newspaper reports suggest that there was a reaction of this kind during the furor about redistribution of hospital beds in Sydney in 1981-1982. Similarly, there has been some muted, private reaction by university staff in teaching hospitals in Adelaide who fear that relocation of beds under a metropolitan hospital plan for Adelaide could see them practicing at some distance from the attractions of the city center (South Australia. Health Commission 1982).

The other syndicate liable to be ignored during regional planning is the users of health care services. As Ellenburg (1981) observes of the United States experience:

> In health planning the citizen suffers a role demotion. The [National Health Planning] law makes reference to a variety of occupational, geographical and demographic characteristics but nowhere . . . are the ordinary powers of citizenship affirmed.

What Ellenburg fears has been known to happen in Australia where it seems at times that planning is done by cosmopolitans and mediated by caretakers to the locals (Bryson and Thompson 1972; Raymer 1980). Nothing like the American "health systems areas" legislation has been implemented in Australia and the recent evidence in South Australia, like the Victorian discussion paper on regionalization, does not promise any early flowering of user participation. Ministers of Health from both the Tory left and the Socialist right have moved against the domination of community health service management committees by local interests and the sector directors, who are part of the administrative executive of the South Australian Health Commission, showed minimal commitment to citizen participation in advisory committees for their sectors (Hicks and Powning 1983).

In Australia, funding by formula, and the regional organization that it requires, have been promoted by the new managerialists flowering in state and Commonwealth administration. (Kelly [1984] and Campbell

[1984] give journalistic hints of what must be the raw material for many imminent learned papers about this development in politics and public administration journals.) Formula funding is regarded as value-neutral, objective, and pragmatic. Attempts to raise value questions tend to be treated by the rampant pragmatists as "merely academic." In fact, the formulae are not value-neutral but depend upon a prior judgment, usually unstated, about what criterion will be used as a test of the effectiveness of a health service. Hemenway (1982) illustrated the point nicely in his comparison of four criteria for achieving optimal location of a fixed supply of doctors in two populations of equal numbers of people with different age and sex structures. Different distributions of doctors would be required and different incidences of death would result depending upon whether the criterion of a good health service was its economic efficiency, its tendency to maximize health, to provide equal access to doctors, or to yield equal death rates between populations.

Both the New South Wales resource-allocation formula and the South Australian regional resource-allocation model appear to have settled upon the criterion of standardized mortality, not least because the information is easy to collect. In fact, mortality is only one possible index of health, illness, or the effectiveness of medical care. The Resource Allocation Working Party in England sought information on morbidity measures as an alternative criterion of health need and

TABLE 1
Distribution of Doctors under Different Criteria

	Number of doctors		Number of deaths		
Criterion	Area A	Area B	Area A	Area B	Total
Economic efficiency (free market: doctors maximize return	9	1	19	190	209
Maximize health (least deaths)	7	3	25	143	168
Equal access (doctor/patient ratios)	5	5	54	125	179
Equal death rates	2	8	107	107	214

Source: Derived from Hemenway 1982 (headings modified).

resource allocation but found that morbidity data are difficult to collect and that, in any case, the rate-producing process depended upon those same sociocultural factors which probably cause substantial variations in morbidity within the population. The RAWP, therefore, settled on the standardized mortality ratio as a surrogate for morbidity, arguing that the SMR and morbidity profiles are similar. This argument is patently invalid. For example, the morbidity from skin diseases, which are widespread among certain groups of industrial workers, are not reflected by the mortality rates for the same diseases. People tend not to die of dermatitis (Graham 1979). Tenosynovitis is another example of significant morbidity that does not cause death. In addition, there is no guarantee that eventual mortality reflects the complex of social factors that influence child development and disability and that probably are the major generators of chronic morbidity and medical need (Townsend and Davidson 1982).

As well as ignoring the disjunction between mortality and morbidity, administrators of formula funding in Australia have failed to deal with the distinction between measures of the state of health and measures of the activity of health services (Mowbray 1979; Doyal 1979). State of health measures might extend to an assessment of the physical environment, possibly indicated by housing quality, or measures of lifestyle, perhaps indicated by the numbers of single homeless men in a locality. In each case, the assumption is that there is a link between the measure and long-term health status. Measures of the activity of health services would include general practitioner-to-patient ratios, size of catchment areas for hospitals, lengths of bed stay and waiting lists for hospital admission. It has become conventional to collect these activity statistics in Australia but their usefulness is debatable. Not all private hospitals contribute to the hospital morbidity statistics and, while general practitioner-to-patient ratios could be calculated for various districts, the bald ratios would reveal nothing about the relative experience of doctors or standards of doctoring in those districts.

Regional planning and formula funding rarely take a broad view of the state of health. For example, the Black Committee on Inequalities in Health in the United Kingdom pointed to working *conditions*, child nutrition, the social position of women, and *lifetime* employment prospects as all being health and social welfare indicators where much better information could be developed (United Kingdom. Department

of Health and Social Security 1980). Rather than evaluating health status and health service activity, planning during periods of fiscal retrenchment tends merely to extrapolate by existing norms, such as the number of beds per thousand of population or the average length of hospital stay for particular procedures. Mowbray (1979) suggests that this is an invalid technique, since the norms "are simply values based on experience but rarely on proper experimentation. They are derived from current utilization data which may or may not be appropriate." On an even gloomier note, Mowbray and McKinlay (McKinlay 1977) suggest that, even if fresh evaluations were made, the interests of the medical-industrial complex would block any substantial change in the health care system.

Regional planning and formula funding rely upon central, proxy measures like the SMR or a national doctor/patient ratio. These measures defend existing administrative positions or further established interests and they are collected at the expense of local, detailed measures. For example, attention to total numbers of doctors has obscured the problem of doctor distribution in Australia (Hicks 1973); the statewide data-collection system proposed for community health services in Victoria cut across the local purposes of the services (Bruen 1977); epidemiological data on environmental hazards is usually in the hands of experts not responsible to the affected populations (Gibbs 1981); health statistics everywhere "tell us more about fashions in treatment than about the extent to which the population suffers from the conditions which they are intended to remedy" (Radical Health Statistics Group 1980).

Part of the problem of deficiencies in the statistics underlying funding formulas is the artificiality of planning regions. The South Australian sectors are totally artificial according to any canon of causality in social and preventive medicine and the metropolitan regions proposed in Victoria show little more social rationality. In regions which cut across boundaries of common interest among citizens the chance is slight that coalitions will form to press for local detailed measures that they can understand. The central proxy measures which are offered to "consumer councils" in those regions are likely to be detached from the councillors' experience and will mystify rather than illuminate. The paternalism which has been noted in the Victorian discussion of regionalization and the political opposition to local, elective power in health service administration in South Australia, like the construction

by patronage of community health councils in England, make it unlikely that power bases can be created to generate more immediate, realistic information. Lurking behind both the political and the technical problems with formula funding and regional planning is a broader problem called democratic malaise.

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