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Australian Health Care System and Medical Technology

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Special Adviser on Social Welfare Policy
Commonwealth of Australia

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AUSTRALIA: COUNTRY DESCRIPTION

Australia is an island continent with a population of 14. s million and an area close to 3 million square miles. Its greatest east-west mainland distance is 2,400 miles, and its north-south spread is almost as great. With an overall population density of 3.5 persons per square mile, large areas of Australia are sparsely populated. Huge, dry inland areas carry little, if any, population. More than 80 percent of the people live in urban environments, which lie mainly along the coastal fringe. Large and prosperous cities along the southern and eastern shores of the country are major ports of entry. These include Sydney, with a population of 3.2 million, and Melbourne, with 2.7 million.

Six States have been federated under the name of the Commonwealth of Australia. The Commonwealth also includes two mainland Territories, one of which is self-governing. At the time of federation in 1901, all governmental powers other than those exclusively vested in the Parliament of the Commonwealth by the Constitution were retained by the States.

THE HEALTH CARE SYSTEM'

The Australian health care system is pluralistic, complex, and not tightly organized. It involves three levels of government (Federal, State, and municipal), as well as public and private providers and institutions. In spite of the increasing role for government in the financing of health services, most medical and dental care is provided by private practitioners on a fee-for-service basis. This has been—and will continue to be—an important feature of Australian health services.

Prior to 1946, most major health functions were retained by the States, and the primary health functions of the Commonwealth pertained to quarantine and the health needs of veterans. consequent upon a 1946 constitutional amendment, however, the Commonwealth was given powers to make laws about pharmaceutical, hospital, and sickness benefits, and medical and dental services. In addition to these powers, the Commonwealth also has used its constitutional powers to make grants for health purposes to the States and nongovernment organizations.

State governments have the major responsibilities with respect to the public provision of health services. These governments are responsible for the public hospital systems, mental health services, public health regulation, and licensing. The statutory obligations of local governments vary from State to State, but the

'Much of the descriptive information pertaining to the Australian health care system in this chapter is based on personal conversations with Australian health authorities or unpublished, confidential documents to which the author has access in his capacity as Special Adviser on Social Welfare Policy for the Commonwealth. For this information, specific references are generally not cited.

major health responsibilities of these governments are in the area of environmental control and in the provision of a limited range of personal preventive services.

Public hospitals in Australia are very heavily subsidized by State governments. These, in turn, are assisted by the Commonwealth, which meets half of the approved aggregate net operating costs of public hospitals in each State. Public hospitals accommodate both private patients and public patients. Private patients are treated by their own doctors on a fee-for-service basis and charged inclusively (at subsidized rates) by the hospital for accommodation and nonmedical services. Public patients are not charged at all and are cared for by doctors engaged by the hospital. Any patient who is not insured can elect to be treated as a public (or "hospital") patient.

Private hospitals, established during the 19th century for those who did not want to be admitted to the public hospitals, are run both commercially and by religious and charitable organizations. Patients at private hospitals are treated by their own private doctors on a fee-for-service basis.

The 790 public and 340 private hospitals in Australia provide approximately 71,000 and 21,600 beds, respectively, totaling 6.5 beds per 1,000 population (11). In addition, 1,190 nursing homes supply 58,000 beds, or 4.1 beds per 1,000 population. In 1978, the Commonwealth's 10 medical schools graduated 1,260 persons with a first medical degree. The total number of medical practitioners in Australia was 23,600, yielding a ratio of 1 doctor to 600 persons. It is predicted that by 1990 the ratio will have increased to 1 doctor to 500 persons (9).

Commonwealth medical and hospital benefits schemes were introduced in the 1950's. Since 1972, the Commonwealth Government has made frequent and major revisions in health care financing arrangements. The development of Commonwealth benefits schemes prior to 1972 and the changes that have been made since 1972 are described in the next two sections of this chapter.

Development of Commonwealth Health Benefit Schemes (1950=72)

From 1950 to 1972, four major Commonwealth benefits schemes were introduced to **as**sist patients to purchase health care. They concerned: 1) pharmaceutical benefits, 2) medical benefits, 3) pensioner medical services (PMS), and 4) hospital benefits. These schemes, along with mental health services, health benefits for veterans, and the Commonwealth Department of Social Security, are discussed below.

Pharmaceutical Benefits

A pharmaceutical benefits scheme was introduced in the early 1950's. Currently, about 1,000 items are listed in a Commonwealth pharmaceutical benefits schedule. Australian doctors may prescribe items other than those listed on the schedule, but government benefits on these items will not be paid. For items on the schedule, ordinary patients contribute only $2.75 per item, and pensioner patients pay nothing. Pharmacists bill the Commonwealth Department of Health for the balance of their charges, which are fixed in agreements.

There is no separate charge for pharmaceutical items supplied through public hospitals, because the public hospital's bill is an inclusive one that covers the costs of accommodation, nursing, and pharmaceutical supplies. For pharmaceuticals in private hospitals, however, patients pay separately. Federal Government payments for pharmaceutical services and benefits at present amount to approximately $320 million per year (10).

Therapeutic substances in Australia are subject to close surveillance by the Commonwealth Department of Health, which administers the pharmaceutical benefits scheme.[2] Drugs and medicinal preparations are added to or deleted from the schedule of pharmaceutical benefits following recommendations from the Pharma-

[2]Therapeutic substances of various kinds are subject to controlled clinical trials in the major Australian medical centers. Comparatively few prospective, controlled trials of surgical therapy, however, have been done. The same might be said of changing technologies in diagnostic mediums.

ceutical Benefits Advisory Committee. The Commonwealth Department of Health, which provides technical services to the advisory committee, evaluates applications for listing. In order to exert some control over the cost of the pharmaceutical benefits scheme, the Department also negotiates with manufacturers on the prices of products listed as pharmaceutical benefits.

Responsibility for ensuring that therapeutic goods comply with standards of safety and effectiveness rests with the National Biological Standards Laboratory, which tests samples for compliance with standards, evaluates manufacturers' protocols, and inspects manufacturing plants. In addition, the Commonwealth Department of Health exercises control over the importation of therapeutic goods with regard to quality, safety, and efficacy. It maintains a register of adverse drug reactions from reports received from the professions in Australia and from overseas. It also provides technical services for the Australian Drug Evaluation Committee. This committee is an independent group established to evaluate specific drugs referred to it and other drugs which it thinks require evaluations beyond that normally undertaken prior to listing as a subsidized pharmaceutical benefit. Reports concerning adverse reactions suspected to be caused by prescribed medications are sent to the Adverse Drug Reactions Advisory Committee, which examines the reports and assesses the likelihood that a prescribed medicine was responsible for the observed symptoms. All doctors are promptly advised of the committee's findings.

Medical Benefits

A voluntary insurance scheme introduced in the early 1950's was intended to provide broad coverage for medical expenses, while at the same time preserving the traditional doctor-patient relationship. Payment of Commonwealth medical benefits under this scheme was made contingent on the patient's membership in a registered medical insurance fund. Insured patients chose their own doctors and were charged whatever fees these doctors thought appropriate. A Commonwealth benefit was payable for each item of doctor's service. Having settled the doctor's account, the patient submitted the receipt of the bill to his or her insurance fund. The insurance fund paid the fund benefit and also paid, as agent for the Commonwealth, the Commonwealth benefit. For reimbursement of the latter, the fund subsequently claimed on the Commonwealth Department of Health.

A matter of concern to those who believed in full coverage was the size of the copayment that patients had to meet out-of-pocket under this scheme. Originally, it had been intended that the copayment would amount to about 10 percent of the bill. Although there were fluctuations, however, the amount did not fall below 30 percent until the medical benefits scheme was amended in 1970.

The new scale of benefits introduced in 1970 was directly related to the fees most commonly charged for specified medical services. Each benefit was set so that the common fee for the item of service would not exceed the total benefits by more than $5.00. In respect of general practitioners' services, the patient was expected to meet very small amounts out of pocket.

Pensioner Medical Service

PMS commenced in 1951. It paid for medical attention by general practitioners, without any charge to the patients, for all recipients of age, invalid, widow's, and war service pensions, and their dependents. The Commonwealth Government entered into an agreement with the Australian Medical Association (AMA) under which doctors were paid reduced fees by the government for services provided to eligible pensioners and their dependents.

Because the AMA repeatedly expressed dissatisfaction regarding the levels of reduced fees and the enrollment in the PMS of pensioners for whom the pensions means test had been progressively relaxed, after 1969 individuals who qualified for pensions solely because of some specified liberalization of means tests were excluded from automatic eligibility for PMS membership, pensioner pharmaceutical benefits, and free treatment at public hospitals.

Hospital Benefits

A hospital benefits scheme was introduced in 1952. This enabled public hospitals, in State public hospital systems, to introduce charges for accommodation in public beds and to utilize means tests to determine patients' eligibility for treatment in public beds. The Commonwealth paid a small basic benefit ("ordinary benefit") for all public hospital patients, whether insured or not, an "additional hospital benefit" for subscribers to voluntary hospital insurance schemes, and a benefit at or above the ordinary rate for patients covered by PMS.[3]

Initially, the benefits paid from Commonwealth funds under this scheme made a substantial contribution towards the cost of maintaining patients in public hospitals. In 1958, the cash benefits the Commonwealth paid in respect of insured patients amounted to some *20* percent of the total share for public ward accommodation in all States. Because Commonwealth hospital benefits did not keep pace with increases in hospital costs, however, State governments had to pay increasingly larger subsidies to their public hospital systems, and voluntary insurance funds progressively raised their subscription rates to provide coverage against higher charges.

When the hospital insurance scheme was first established, insurance funds set subscription rates at levels that were sufficiently low to be attractive to most people. They were able to set such rates, because benefits were not payable for chronic illnesses, for hospital treatment exceeding a certain period each year, or for ailments existing at the time a member joined a fund. Since these exclusions debarred from benefit some of those who were most in need, in 1959 the Commonwealth introduced a "special accounts" system, enabling registered funds to offer benefits for subscribers in respect of claims that otherwise would have been disallowed under the exclusion rules. Deficits incurred by organizations operating special accounts were covered by the Commonwealth. Initially, the special account benefit scales were, in many instances, less than the charges levied. In 1966, however, the special accounts system was amended so that hospital insurance subscribers were guaranteed the payment of hospital benefit at the full rates for which they were insured, up to the amount of the hospital bill, irrespective of the length of hospital stay.

In the original hospital benefits scheme, patients in approved and licensed nursing homes were entitled to hospital benefits. In the early 1960's, separate provision was made for the payment of a Commonwealth nursing home benefit.' This benefit was paid without means test on behalf of any person, whether insured or not, accommodated in an approved public or private nursing home. No insurance fund benefit was payable to nursing home patients, but patients who had been contributing to a hospital insurance fund now could receive the Commonwealth nursing home benefit. In 1969, a supplementary extensive care benefit was introduced for those nursing home patients who were deemed to require more extensive nursing care than others.

Mental Health Services

Apart from some minor exceptions, services for the mentally ill were originally provided by State governments. Although psychiatric services have become better integrated with other types of health care over the past 20 years or so, the largest part of inpatient psychiatric care is still provided in State mental hospitals. There are some 90 State psychiatric hospitals in Australia, with about 25,000 available beds. These hospitals treat a total of approximately 70,000 inpatients each year and also provide substantial outpatient and domiciliary care services. More than 85 percent of these hospitals' costs are met from State funds. In two States, patients in State mental hospitals may be charged for the accommodation and services that they receive; hospital charges to patients incapable of managing their own affairs may be met from the pa-

[3] Only patients who satisfied a means test at the hospital were treated free in public hospitals; all others were required to pay. The additional "hospital benefit" was intended to encourage people to buy insurance.

[4] The Commonwealth also entered a new field in the early 1960's, namely, the institutional care of physically and mentally handicapped children. A handicapped children's benefit subsidized the costs of accommodating handicapped children in homes maintained by religious or charitable organizations that employed nursing and special staff.

tients' estates. In other States, there are no charges.

When insurance-based schemes of hospital benefits were being introduced in the 1905's, mental hospital patients tended to be long-term cases and were not recognized as good insurance risks. Largely because of this, there was little likelihood of their becoming subscribers to insurance funds; these patients, therefore, were not generally eligible for insurance fund hospital or nursing home benefits. More recently, however, there has been a sharp decline in the average length of stay in State mental institutions, and mentally ill patients are being viewed as better risks. In addition, an increasing number of public general hospitals and also some private hospitals are providing psychiatric care. Mentally ill patients in public and private hospitals, and in nursing homes, may receive Commonwealth and insurance fund benefits in the same way as other patients in these institutions.

Health Benefits for Veterans

The Commonwealth Department of Veterans' Affairs has major responsibilities in the health field. It provides a wide range of cash benefits and personal health services to those who have served in war and to dependents of such exservice personnel, Treatment is provided free of charge, either through departmental institutions or through the general facilities available in the community, for all disabilities that have been recognized as due to war service.

The Department of Veterans' Affairs administers six large general hospitals that provide care for virtually all types of cases, excluding obstetrics. These hospitals are concerned mainly with the management of acute episodes of illness. Patients who do not require the facilities of a fully equipped general hospital are accommodated in the Department's five auxiliary hospitals. There are 3,100 beds in veterans' hospitals. At these hospitals, undergraduate and postgraduate medical education is conducted in association with university medical schools and professional colleges.

The armed forces run six hospitals that are maintained at the expense of the Commonwealth Government and staffed by service personnel. The peacetime bed complement of each of these institutions is between 100 and 120. Limited medical facilities also are available at other service centers.

Commonwealth Department of Social Security

The Department of Social Security plays an important role in the disbursement of a wide variety of cash benefits. It also makes grants to approved nonprofit organizations for a large portion of the capital costs of residential and nursing home type accommodations for the aged and infirm, and for the provision of sheltered workshops and accommodations for the disabled. In addition, the Department subsidizes the States for the provision of home help services, senior citizen centers, and welfare officers, and it runs the Commonwealth Rehabilitation Service, which provides treatment and training for selected disabled persons who are deemed potentially able to work. Fourteen Commonwealth rehabilitation centers provide work preparation and work adjustment services to about 4,500 clients annually.

Changes in Health Care Financing Since 1972

Since 1972, there have been major and frequent revisions of the medical and hospital benefits schemes previously described. The history of changes in arrangements for financing health care in Australia since *1972* illustrates the difficulties faced by Australian Governments in seeking to provide universal health insurance coverage, while also attempting to limit government outlays and inflation.

Introduction of Medibank by the Labor Government (1972-76)

In December 1972, a reforming Labor government came to office, and the following year, legislated for a new health insurance scheme known as Medibank.[5] This scheme, which came

[5] In addition to Medibank, a community health program was introduced by the Labor government in 1973 to provide capital and recurrent financial assistance to the States and nongovernment organizations to: 1) establish and improve community health and health-related services, 2) promote disease prevention, health maintenance, and rehabilitation, and 3) improve coordination of health services in the community and their links with other health and welfare services. Approximately 700 projects involved a Commonwealth expenditure of some $70 million in 1976-77 (1).

into operation on July 1, 1975,[6] was financed out of general revenues. It provided for universal coverage entitling all Australian residents to specified medical and hospital benefits. A Health Insurance Commission was established to operate the plan.

Medical benefits to all residents (including pensioners who previously had had restricted entitlements, and individuals who were covered by workers' compensation and third-party motor vehicle insurance) were paid at 85 percent of schedule fees, subject to a maximum copayment of $5 for any item of service. Coverage was extended to consultation involving eye refractions, whether performed by doctors or optometrists.

The basic hospital benefit under Medibank was a universal entitlement—without any means test—to free standard ward care, including medical treatment, in recognized public hospitals. Provision of this benefit involved the negotiation of agreements between the Commonwealth and individual States.

Under these agreements, the Commonwealth undertook to meet so percent of the aggregate net operating costs of the public hospitals in States that agreed to provide free medical treatment for "hospital patients" (public inpatients and outpatients) at their public hospitals. Treatment for "hospital patients" was to be provided free of charge by staff employed by public hospitals on a salaried or contractual basis. Patients who chose to be admitted to public hospitals as private patients were to be charged agreed on daily fees. For patients in private hospitals, the Commonwealth paid a daily benefit of $16 directly to the hospital.

Benefits available from the government could be supplemented by private insurance, especially for private status in hospitals. Private insurance contributions in respect of supplementary service remained tax deductible.

Reform of Medibank by the Conservative Government (1976-77)

At the end of 1975, the Labor government lost office. The newly elected conservative government was committed to the reduction of inflation, which at the time was running at very high levels. In pursuit of its objective, it aimed to reduce Commonwealth expenditures so that budget deficits could be contained. In the area of health, the new government sought to maintain universal health insurance, but to concentrate government expenditures on the needy.

An important feature of the new Medibank health insurance plan which the conservative government introduced in October 1976 was a levy on taxable income at an annual rate of 2.5 percent, with ceilings of $150 for taxpayers without spouses or dependents and $300 for families. Exemptions were provided for persons at the lower end of the income scale and for certain pensioners and veterans. Individuals and families not otherwise exempt could "opt out" of Medibank coverage and gain exemption from the levy by buying private medical and hospital insurance (both) to an approved level.

Levy payers and those exempted from the levy (for reasons other than the purchase of private insurance) received medical benefits under Medibank in the same way **as** they had under the previous scheme. They also had the right to accommodation and treatment as "hospital patients" free of charge in recognized public hospitals without being means-tested. An additional right to purchase supplementary "hospital only" coverage privately at subsidized rates enabled persons with little income to insure for hospital benefits equal to the minimum fees charged to private patients in public hospitals. Persons so-insured could be treated at public hospitals by their own doctors (rather than as "hospital patients" treated by doctors engaged by the hospitals). The assistance also helped them to choose care in private hospitals.

The conservative government also introduced new Commonwealth/State cost-sharing agreements on public hospital costs. Previously, the Commonwealth had paid 50 percent of the net operating costs of public hospitals in each State, whatever these costs turned out to be. It now came to exert leverage over public hospital costs by paying 50 percent of only those operating costs in each State which it had previously approved in the State's aggregate budgets.

[b]Medibank came into operation on July 1, 1975, but agreements with all the States were not completed until several months later.

A compulsory reinsurance pool replaced the "special accounts" system for hospital care, and the Commonwealth contributed a flat $50 million annually to that pool. This subsidy was far less than the special account outlay would have been and also imposed a firm ceiling on the Commonwealth's liability. The reinsurance subsidy was available only on objectively determined grounds: hospitalization for more than 35 days in a year. Special accounts in relation to medical services ceased.

The regulation of private health insurance funds was strengthened. Individuals who opted out of Medibank had to be covered unconditionally, at least for levels of benefit equivalent to those provided by Medibank. Private funds could not reject or discontinue the insurance of any subscriber; nor could they limit the payment of benefits from the basic tables. All tables to which the funds could apply limitations and exclusions had to be expressed as supplementary tables. This requirement ensured that contributors to higher tables participate in the basic tables and so share the risks of all other basic contributors.

In 1977, the Commonwealth Government agreed upon an insurable nursing home benefit. This benefit was payable in each State at a level which—when combined with a specified compulsory out-of-pocket patient contribution[7]—would cover fully the Commonwealth-approved controlled fees charged to *70* percent of patients in private ("nongovernment") nursing homes in each State. Hospital insurance organizations became liable for payment of the full amount of nursing home benefits in respect of their standard (basic) hospital benefit table contributors. The amount of benefit payable by the private insurers in such cases was the Commonwealth basic benefit (about $25 a day) plus, where appropriate, an extensive care benefit (which was raised from $3 a day to *$6* a day). Uninsured nursing home patients, who were not entitled to benefits from hospital benefits organizations, continued to receive both the basic and extensive care benefit from the Commonwealth Department of Health.

[7]The out-of-pocket contribution amounted to about 90 percent of the age pension.

Additional Reforms by the Conservative Government (1978-79)

With the 1976 and 1977 health care financing arrangements, the conservative Commonwealth Government had gone some way towards achieving its objective of reducing the proportion of expenditures from the Commonwealth's budget. It was still not satisfied, however, and introduced new arrangements in November 1978. By this time, the government was concerned about the effect of health insurance arrangements on the consumer price index. It also believed that the existing insurance arrangements were too complex.

The new scheme the government introduced in 1978 was less complex than the previous one. It abolished the health insurance levy and provided for the Commonwealth to pay a new universal medical benefit from general revenue. The new medical benefit covered *40* percent of schedule medical fees, subject to a maximum patient contribution of *$20* for any one item for which the schedule fee was charged, and was paid through private insurance health funds, Although additional coverage was not compulsory, private health insurance funds were permitted to offer supplementary medical benefits. They also continued to provide hospital benefits. Funds were given considerable freedom and flexibility to devise attractive benefit packages.

Accommodation in standard wards of public hospitals with treatment by doctors engaged by the hospitals continued to be made available free of charge to those who were not privately insured for hospital care.

For pensioners and their dependents who were not privately insured, doctors continued to accept reduced payments of 85 percent of schedule fees from the Commonwealth. People who were unable to pay their medical bills could be classified by their doctors as "disadvantaged." For individuals in this new group, doctors billed the Commonwealth Department of Health and received 75 percent of the schedule fee in full settlement; they were not permitted to seek any additional payments from the patients themselves.

All these new arrangements were estimated to add $305 million a year to Commonwealth budget outlays and to reduce receipts from the health insurance levy by about $320 million in a full year (2). Because the arrangements were largely tax financed, their effect on the consumer price index was favorable.

Hardly *6* months had elapsed before the Commonwealth Government announced yet another change. In May 1979, it decided to pay no universal Commonwealth benefit at all on small bills up to $20 for any item of service, and to pay the full amount in excess of $20 in respect of the schedule medical fee for each item. Arrangements for pensioners and the disadvantaged were continued. Because some 80 percent of medical services attract a schedule fee of less than $20, the upshot of this arrangement should be a savings to the Commonwealth of approximately $200 million a year and a reduction in the number of claims processed by the private health insurance funds.

Rising Health Care Costs (1974-78)

For some time, but particularly during and after the financial year 1974-75, Australian health care costs had been rising rapidly. Total public and private expenditures on health increased from $4.19 billion in 1974-75 to $7.15 billion in 1977-78 (7,8). As a percentage of gross national product, they rose from about 4 percent in the mid-1950's to 7.89 percent in 1977-78 (7,8). The rate of growth in expenditures has been declining since 1976.

Health care has always been financed to a large extent by the public sector in Australia. With the introduction of Medibank in 1975, however, the public sector's share of expenditures rose from 62 percent in 1974-75 to 72 percent in 1975-76 (7,8). By far the largest share of the increase in public sector expenditure was borne by the Commonwealth Government. The Commonwealth's share of total health expenditures rose from 30 percent in 1974-75 to 48 percent in 1975-76, while the States' percentage fell from 32 to 24 percent.

The changes the conservative government made in health care financing in 1976 resulted in a reduction in the Commonwealth Government's share of total health expenditures to 42.6 percent in 1976-77 (7,8). The States' share remained reasonably consistent at *23.6* percent for both fiscal years 1975-76 and 1976-77, and private sector spending rose to over 35 percent after the change. The share of health costs borne by individuals has now returned to about the same level it was at prior to the introduction of Medibank.

Nearly 58 percent of all health expenditures in *1976-77* was for institutional care (7,8). Public hospital costs continue to account for over one-third of all current expenditures on health care, and other institutional care accounts for an additional one-fifth of health expenditures. By far the largest share of institutional care, 70 percent in 1974-75 and about 76 percent in the next 2 years, is financed by the public sector.

PUBLIC POLICIES THAT AFFECT MEDICAL TECHNOLOGIES

The arrangements for financing health care in Australia, described in the previous section of this chapter, exert a considerable influence on the supply and utilization of medical technology. These arrangements, a discussed below, exert their effects through 1) hospitals' cost-sharing agreements, which affect the supply of public hospital facilities and staff and provide opportunities for rationalization; 2) regulation of charges in hospitals; 3) negotiation of fees and salaries; and 4) regulation of private health insurance. Major policy decisions on these matters are made by the Commonwealth Government on the basis of recommendations submitted by the Minister for Health (5,13,14).

Hospitals' Cost= Sharing Arrangements

Cost-sharing arrangements for public hospitals, since July 1, 1975, have been elaborated in agreements between the Commonwealth and individual States. These bilateral agreements pre-

scribe hospital services to be provided and cost shared, categories of patients to be charged, and processes for agreeing to hospital budgets and rates of charges. Commonwealth and State officials meet formally twice each year in bilateral negotiating sessions. At these sessions, they discuss estimates of income and expenditures, formulate budgets, and review experience in the light of known revenue shortfalls or overexpenditures in relation to approved budgets, The officials' recommendations are submitted to the Commonwealth Minister for Health and the State Minister responsible for the particular State's health portfolio for their approval.

Negotiations take place in an atmosphere in which there is no agreed on absolute ceiling on the level of expenditure for medical care and hospital services that the country can afford, but in which there is doubt that marginal increases in the hospital budget will produce benefits comparable to those that will result from similar outlays in other sectors. The Commonwealth need not approve the full level of subsidy required to meet 50 percent of the aggregate net operating costs experienced by one or more States, and in the context of national budget-framing, when the Commonwealth decides how much it is prepared to allocate to the public hospital system, it has repeatedly rejected budgets prepared by officials. Commonwealth expenditures under the arrangements in 1978-79 are estimated at about $1,040 million. (Commonwealth subsidies to private hospitals totaled $73 million (7).)

The formulation and development of hospital cost-sharing policies, which are subject to ministerial endorsement, is undertaken by a National Standing Committee comprised of senior health officials from the Commonwealth and from each of the States and Territories, and by State standing committees established under Commonwealth/State administrative arrangements. These standing committees provide a forum for the exchange of views on budgetary matters and on a range of hospital and related health policies which the Commonwealth and the States use to seek effectiveness, efficiency, and cost containment in the delivery of public hospital services. These objectives are sought through continuing review of hospital resources, standards, methods, and procedures; rationalization of existing facilities and services; and evaluation of proposals for the upgrading or expansion of public hospital services, including the introduction of high-cost technology.

Rationalization of Existing Hospital Facilities and Services

In recent years, as government and insurers have covered large proportions of incurred costs, there have been few financial inhibitions on the use of medical services. Knowing that the marketplace is no longer effective as a rationing process, State and Commonwealth officials aim to replace it by conscious planning or the imposition of controls to change the behavior of health professionals and the community.

HOSPITAL BEDS/DAYS

Because there is a generous overall supply of beds in public hospitals, there is no need to add to the pool. When new facilities are provided, they arise not because of shortages, but because of the age or geographic or functional maldistribution of existing hospital facilities. Without making any commitment, the Commonwealth Government has proposed that public hospital services should be reduced by the application of two principles (11):

- as additional staffed beds are opened, every effort should be made to achieve offsetting closures of other staffed beds wherever that may be feasible, and
- public hospital patient days should be reduced within 4 years from approximately 1,300 to approximately 1,100 days per 1,000 population per annum.

It is considered important that the rationalization program should cover all hospitals (public, private, and veterans) and related facilities (such as nursing homes and mental hospitals); otherwise, contraction in one area could lead to expansion in another. In the nongovernment nursing homes area, growth control already applies. A guideline now used on a State or regional basis is that there should be not more than *50* nursing homes beds per 1,000 population aged *65* years or more. It is not thought to

be necessary for the Commonwealth Government to take steps to discourage the transfer of patients from recognized hospitals to mental hospitals, because the States now carry the major burden in regard to mental hospitals and can be expected to take whatever action is necessary to avoid their expansion.

HOSPITAL UTILIZATION

Hospital utilization rates are high in Australia, with annual utilization approximating 1,600 patient days (about 1,300 patient days in public hospitals and 300 in private hospitals) per 1,000 population (11). Some States provide satisfactory levels of care with far lower rates of hospital use. Evidence exists that many patients are in hospitals because hospitalization is the most convenient answer to a problem which may be as much social, domestic, or financial as it is medical (11).

There are large differences in length of stay for the same illnesses and operations. These differences can be only partially explained by social and geographical factors. Surveys of customary practice also have shown large variations in surgery rates between different areas—even after allowing for difference in age composition. For example, the highest rate for tonsillectomy is five times the lowest rate, the rates for appendectomy and gallbladder removal both show a threefold variation; and the rates for hysterectomy show an almost fivefold variation *(4,6).*

Commonwealth and State Health Authorities agree that hospitals should be influenced to reduce inappropriate inpatient utilization. Unnecessary inpatient care generates staff and technology costs almost as great as those generated by essential care. The admission of patients who could be treated at lower cost elsewhere contributes to excessive use of hospitals and of their associated technologies.

It is generally agreed that, to monitor customary practice, it is necessary to have good medical record systems, prompt analyses of records, and displaying of the results for consideration. Attempts are being made by Health Authorities to upgrade present record practices and procedures and to organize medical staff in hospitals so that they can participate in reviews of hospital utilization.

Evaluation of Proposals for Expansion of Public Hospital Services

Eighty percent of short-term acute hospital care is delivered in public hospitals, which must comply with conditions of subsidy determined by State Health Authorities. These conditions are increasingly likely to reflect the arrangements agreed to in Commonwealth/State discussions and negotiations with respect to the hospitals' cost-sharing arrangements.

In public hospitals, an item of new equipment valued up to $50,000 can be treated as "expendable" and the cost of its purchase be regarded as an operating cost. Thus, a good deal of medical technology can be introduced and expanded without being subjected to the acquisition scrutiny described below. All investments exceeding $50,000, however, are treated as capital, and State governments are the sources of funds. Consequential growth in operating costs is taken into account before State facilities are expanded, because there can be no assurance that the Commonwealth Government will agree to share these costs unless they have been specifically approved.[8]

STATE EVALUATIONS OF TECHNOLOGIES

Australian Health Authorities agree that the most specialized facilities and services should be concentrated in large units rather than dispersed haphazardly because:

. large populations are required to support specialist units of economic size, especially in neurosurgery, thoracic surgery, radiotherapy, and plastic surgery (some of the expensively equipped diagnostic technologies should be included in this group of services);

[8] In private hospitals, all capital charges are borne by the owners. Private hospitals, therefore, tend to invest in facilities and equipment that assure a quick and good return. They tend to keep away both from investment in training and emergency care facilities which require generous staffing and from investment in the most sophisticated and expensive technologies. A high proportion of private hospital work consists of common forms of elective surgery and of obstetrics.

. specialists require a regular and adequate flow of patients to maintain their skills; and
- the provision of a comprehensive range of specialists in a single site assists in the cross referral of patients between specialists.

State Health Authorities discourage the provision by local or district hospitals of more than a limited range of services (e. g., general medicine, relatively minor surgery, minor trauma, physical and psychiatric rehabilitation, uncomplicated obstetrics, and outpatient consultations). Because these hospitals provide ready access for local communities, however, the Authorities support their staffing and provision.

In most States, advisory committees help the State Health Authority determine criteria for the provision of sophisticated services in public hospitals. These advisory committees have been particularly helpful in the process of rationing sophisticated new technologies in a public hospital system subject to increasingly firm cost controls.

In New South Wales, for instance, the assessment of a request for equipment to be purchased by a particular hospital will take into account factors which include:

- guidelines for the provision of specialized services,
- the hospital's capacity to make effective use of the equipment,
- the extent and state of existing equipment in the hospital, and
- the availability of similar facilities in other hospitals in the area.

The hospital's capacity to make effective use of equipment will depend on the availability of accommodations, the presence of enough trained staff to manage the technology, and a sufficient workload to justify the purchase of new equipment. Policy guidelines for the provision of cancer services, open-heart surgery, neurosurgery, and other highly specialized services have been published and widely distributed by the Health Commission of New South Wales.

Similar activities in other States have resulted in the establishment of the following 11 stages for the acquisition of technology equipment by public hospitals:

1. initiation of a request to the State Health Authority,
2. justification of the proposal,
3. technical assessment,
4. allocation of funds,
5. preparation of specification,
6. invitation of tenders or quotation,
7. technical evaluation of tenders,
8. financial evaluation of tenders,
9. approval of funds,
10. acceptance of tenders, and
11. evaluation of practice.

Public hospitals are generally under the immediate administrative control of boards of directors incorporated under State laws. Public hospital boards consist of both elected and appointed members, several of whom wield considerable influence in their communities. They see their task partly in terms of determining policies for the management of hospitals in accordance with the conditions of subsidy determined by State Health Authorities and partly in terms of acquiring resources. [g]

In pursuing 'resources, the boards frequently find allies among the doctors using the public hospitals. Jointly with these doctors—and usually supported by the medical and local communities seeking the best and the brightest in an environment in which taxpayers foot most of the bill—public hospital boards are able to exert strong pressures on governments. With public hospital charges fixed at uniform rates, the acquisition of additional facilities and staff will not be reflected in a particular hospital's bill, but such facilities will attract better qualified specialists and add to the prestige of the hospital's board of directors. In this atmosphere, guidelines for the rationalization of medical technology are subjected to political processes and may be set aside, particularly as the earn-

[g] In some States, approval for the acquisition and installation of expensive new equipment in a public hospital is conditional on the hospital's raising a substantial share of the capital by voluntary local effort. This system operates to the advantage of affluent communities, however, and is therefore in the process of being discarded.

ings derived from the technology by doctors using it will come largely from the Commonwealth and health insurance funds.

NATIONAL EVALUATION OF TECHNOLOGIES

Awareness of the need for some national system of evaluation, in addition to the technology assessment procedures that are now applied to technologies used in the public hospital systems of individual States, has grown.

In 1978, the Commonwealth Committee on Applications and Costs of Modern Technology in Medical Practice identified the folIowing as issues needing examination in the development of criteria for the location and use of technology services (3):

- whether the current availability of the various technologies is appropriate;
- whether essential resources or support services are available to ensure adequate standards in the provision of a particular technological service;
- whether it is possible to determine optimum sizes of population services by highly specialized technologies;
- whether it is possible to indicate the patient throughput per year that is desirable to maintain professional expertise and an efficient service; and
- whether limits should be imposed on the provision of any technology. ‘

This committee suggested that policy guidelines for rationalizing technologies should be developed by consultative advisory committees in each State and that these committees should have a formal link to a national advisory committee in order to achieve uniformity throughout Australia. It further suggested that duplication of resources in any specialty should be avoided unless need could be demonstrated and the cost justified.

The Commonwealth Committee on Applications and Costs of Modern Technology in Medical Practice recommended both the establishment of an expert national advisory panel on medical technology and the creation of a central repository of technical information (3).

The expert national advisory panel would advise on questions pertaining to new technologies, such as (3):

- whether a new technology is for broad general use or for use by specific types of patients;
- whether medical benefits should be paid for the new technology, and if so, whether the technology should be restricted to specific locations;
- whether benefits should be paid for use of the technology in an extended experimental evaluation period (if there are doubts about its efficacy);
- whether the introduction of the new technology into the benefits schedule might affect national health expenditures in significant ways; and
- whether there is likely to be a change in the patterns of use of related technolog=s.

The central repository of technical information would (3):

- receive reports from the expert national panel;
- collect information on:
  —the effects of technological services on patient outcomes,
  —the economic effects of technical services on the health system and the public, and
  —the winding down of displaced or ineffective technologies; and
- supply information to the States or other interested bodies as required.

The Committee on Applications and Costs of Modern Technology in Medical Practice has proposed a sequential process for using the R&D process as a method of regulation. The main components of the proposal are (3):

- modification of the operation of the medical benefits schedule in such a way that the experimental nature of and doubts about the effectiveness of some technologies are recognized;
- initiation of carefully designed evaluation studies of all new medical technologies; and
- establishment of a system to oversee and monitor the development, introduction, and diffusion of new technologies.

The first stage of the evaluation of a new technology, to determine its effectiveness, would be an experimental phase during which the payment of a medical benefit would be limited to those services provided at pilot locations.[10] The second stage would be an extended experimental period or a period of extended use during which evaluation would be aimed at assessing the impact of the technology on the use and cost of health services. The main focus of the second stage would be not so much on efficacy as on technology use rates and on the costs and quality of care.

Regulation of Charges in Hospitals

The average gross operating costs per occupied bed in public hospitals in different States vary from $125 to $175 a day. Yet inclusive charges to private patients in these hospitals are fixed uniformly throughout Australia at $50 a day for a shared room and a $75 a day for a private room. Patients who are not insured are treated free of charge by doctors engaged by the hospital. Commonwealth and State governments contribute equally to make up the hospitals' deficits (approved net operating costs).

Patients who are insured against hospital cost usually carry enough coverage to meet the full charge for the type of public hospital accommodation that they prefer, and the same level of coverage applies in the event of their admission to a private hospital. Charges in private hospitals, however, are not inclusive, i.e., fees for use of operating theaters, labor rooms, pharmaceutical, and toilet items may be additional. The Commonwealth Government subsidy in private hospitals is limited to $16 per patient per day. To the extent that private hospitals are influenced not to raise charges much higher than the levels for which patients are covered by private room insurance, charges generally do not greatly exceed $100 a day plus extras. Individuals can purchase supplementary insurance to cover the cost of extras, however, and a few private hospitals have much higher charges for high standards of amenity.

As some 50 percent of the beds in public hospitals are used for treating private patients, the comparatively low charges for private care in public hospitals have an indirect effect on charges in private hospitals. To maintain their competitive position, private hospitals have to hold their charges down. Another indirect effect is to hold down the cost of hospital insurance subscriptions; this, in turn, holds down potential rises in the general consumer price index, which is seen by the Commonwealth Government as a desirable objective, because wages are indexed. A perverse effect of artificially low charges in private hospitals, however, is the stimulus such charges offer entrepreneurs who own the hospitals to generate revenue by expanding their technological equipment to take advantage of leasing and hiring arrangements with doctors who are paid by fees for services rendered through use of that equipment.

Medical Fees and Third-Party Coverage

With the high levels of third-party coverage that Australia has experienced since 1970, the price elasticity of demand at the margin has been negligible. The medical profession has strenuously protected this position by advocating that fee increases should always be followed by increases in subsidized insurance benefits, and at the same time by insisting that it has the sole authority to determine fees. This does not mean that fees have ever been determined at the national level by AMA. Representatives of local AMA branches and specialist societies have shared in the function of recommending fees. The recommendations of these groups ultimately led to the adoption of a schedule of "recommended" fees in each State, but individual doctors were not bound to follow this schedule.

In recent years, AMA has used a formula for adjusting fees in accordance with changes in unit costs. This has guaranteed gains from any growth in productivity (e.g., achieved by reducing home visits and so providing more office services per day, or by technological advances in diagnostic procedures) or from extensions in the capacity to earn income (e.g., by abolition

[10]A new technology has been accepted for medical benefits purposes until now on the basis of advice from the Medical Benefits Advisory Committee that the technology is in use, reputable practitioners are using it, and it is not in conflict with any current legislation or safety standards.

of the honorary system in public hospitals) .11 Furthermore, in issuing their fee recommendations, State branches have usually gone beyond the formula-indicated percentage changes by rounding off upwards or by seizing opportunities related to foreshadowed increases in insurance benefits. All these factors have combined to establish systematic and consistent fee variations between States.

Prior to 1970, specialist fees were not the subject of AMA's recommendations. Some specialist bodies circulated fee lists, but these did not enjoy the same authority as the recommendations for general practitioners published by AMA. Individualism in fee setting was particularly blatant in the field of surgery, where, for example, in April 1967, the insured charges for appendectomy ranged from $35 to $180, the most common fee being $60 (14). This dispersion of specialist fees, while possibly increasing the price elasticity of demand, was inconsistent with the objectives of those who believed that the central purpose of health insurance was to remove random fluctuations in consumers' disposable incomes caused by medical care expenditures.

With absence of a proper relationship between doctors' fees and medical benefits being seen as the "fundamental deficiency in the medical benefits scheme" (14), the concept of a schedule of common fees for all items of service evolved. The intention was that variance around the central fee would diminish; the dominant issue, therefore, became the amount of the central fee. Related to this were questions about who would determine the central fee and by what process, as well as about what sanctions would ensure the fee's application.

Under threat in *1970* that the Commonwealth Government would introduce a "participating doctor scheme," under which only the fees of doctors who agreed to charge the "common fee" would attract insurance benefits, the profession agreed to formal mechanisms for determining fees for benefits purposes. An independent arbitral body, recently headed by a judge, has reviewed and determined these fees ever since. The price that the doctors—particularly the specialists—exacted for conceding to the government on this matter was acceptance of their fee proposals unchanged. Before agreement was reached, they were promised a maximum copayment of $5, provided the common fee was charged. The rise in fees and benefits resulted in the immediate growth of Commonwealth medical benefits from $54.9 million in 1969-70 to $127.1 million in 1971-72 (14).

The increase in the amount being paid to doctors was not accompanied by any assurances about the effective level of coverage that insured people could expect, because the government, the professional associations, and the insurance organizations were given no authority over individual doctors' fees. A parliamentary committee's previous proposal that doctors should agree to inform their patients of their own fees and of the established common fee was rejected. In 1975, an attempt was made under Medibank to induce doctors' adherence to common fees by making available to patients the alternative of receiving free treatment from public hospitals (for both inpatient and ambulatory care). Doctors engaged by the hospitals on a salaried, sessional, or contractual basis to provide such treatment, however, were not at any time appointed in sufficient number to have much impact, and the policy was not pursued with any vigor after the demise of the Labor government in 1975.

So the country was left with a system in which there **was** no effective power countervailing that of the doctors and no built-in control of usage, but in which there was a high level of subsidized underwriting of private medical fees through health insurance. This system stimulus was sure to give impetus to the growth of expenditures. Neither patient nor doctor had

[11] prior to 1975, Australia had an honorary system for providing hospital care to public patients. Originally, it arose from association between charity to the sick poor and medical education (14). The teaching hospitals were staffed at senior levels by leaders of the profession who spent part of their time in unpaid teaching and in caring for indigent patients. Similar arrangements were adopted in other hospitals, despite the appointment of increasing numbers of salaried specialists and resident medical officers. The honorary staff derived benefit by treating their private patients in public hospitals on a fee-for-service basis and by coming to the notice of referring practitioners.

reason to base treatment decisions on the cost of services rendered, so doctors increasingly tended to perform or request any procedure that had diagnostic or therapeutic possibilities irrespective of its cost. Medical technology was set to diffuse rapidly in such an environment, and this it did.

The situation has been aggravated by the granting of rights of private practice to salaried public hospital specialists. The salaries and conditions of service of these doctors are determined by industrial courts[12] and are generous. Rights of private practice are usually allowed on the basis that up to about one-fifth of the specialist's hospital salary can be earned in private practice as an additional personal income. Any amount in excess of that portion is paid into a trust fund which finances travel, study, and research activities of the specialist group at each hospital.

When expensive hospital equipment and staff are used by the salaried specialists exercising their rights of private practice, the hospital is paid a share of the fees earned. Thus, in radiology and pathology, it is not unusual for the public hospital to take 60 percent of the fees earned by its salaried specialists in private practice. There can be no sharper conflict of interests for a hospital management wishing to limit excessive utilization of diagnostic tests and procedures than that which arises when the hospital is paid a substantial portion of the fees that are earned from them—especially when the management knows that increased utilization will generate income for the hospital without making any real call on patients' disposable resources.

Recent changes in health insurance arrangements were aimed at restoring price as a factor to be taken into account. The abolition of Commonwealth medical benefits for fees up to $20 for any item will apply to all persons who are not pensioners or designated "disadvantaged." The disincentive to excessive provision for pensioners and disadvantaged persons is that the benefits paid by the Commonwealth on their behalf amount, respectively, to 85 and 75 percent of the common fee. All other persons pay the copayment out of pocket or insure to cover it. Because a high proportion of these individuals do insure, expensive, excessive, and inefficient use of technology is likely to persist.

Administration of the medical benefits scheme, however, can be used to influence the costs, utilization, and quality of medical services. One mechanism that is infrequently used, although its availability may exert influence, is a system of Medical Services Committees of Inquiry. Committees are set up under law to inquire into the practice of doctors who are believed to provide excessive and unnecessary services in private fee-for-service practice.

Rules can be devised by the Minister to modify the level of fees, and accordingly, the benefits payable, under various circumstances depending on the type and nature of the service. The Commonwealth Medical Benefits Schedule Revision Committee makes recommendations in regard to the inclusion of new items into the benefits schedule, the deletion of items, amendments of the description of items, and the combination or grouping of items of service. It also recommends appropriate fees for benefits purposes for new items and investigates anomalies in fees.

The Commonwealth Medical Benefits Advisory Committee considers claims for increased fees in cases in which a service is of unusual length or complexity. It also considers whether professional services rendered in specified circumstances should be excluded from payment of medical benefits. Medical benefits for tomography, for example, have been restricted to services rendered in the management of glaucoma. Medical benefits for health screening services are not authorized unless the Minister for Health directs otherwise. Medical consultations for medical checkups in the course of normal practice do qualify for benefits. Benefits are not payable for mammography unless the patient has been referred to a specialist radiologist and the referring doctor has reason to suspect the presence of malignancy.

[12] Industrial courts have been established for all industries in Australia and are concerned with the salaries and conditions of service of employees.

The fee level for an item is intended to provide a fair and reasonable return to the doctor for the rendering of that service in most circumstances. Adjustments to common fees are made regularly. Factors which have a direct bearing on the need to review and restructure items include evidence of the reduced capital cost of equipment, cheaper alternative equipment, and increased throughput. As a result of recommendations made recently by the Committee on Medical Technology (3), fee levels are being examined in accordance with the concept that they should reflect efficient use of facilities.

Special arrangements have been made for pathology services. A new schedule of services and fees for pathology services has reduced the number of individual pathology items, adjusted fees to stimulate the reasonable use of modern cost-saving technology, and generally improved the rules relating to multiple testing of the pathology specimens. Requests for pathology services must be in writing and the requesting practitioner must be clearly identified. Providers of services must retain the requests for a specified period to enable examination in connection with Medical Services Committees of Inquiry. Medical benefits for most pathology services will not be payable unless the practitioner providing the service has been approved as a provider by the Minister for Health, and before approval is granted, the provider is required to give an undertaking to abide by a code of conduct prohibiting fee-splitting and other undesirable practices.

It is not yet clear to what extent patients will cover themselves by insurance to meet their bill; nor is it clear whether the recent health insurance amendments will have any effect on the use of technology. Nevertheless, total health expenditures in Australia, which had been growing very rapidly during the brief period when tax-financed universal coverage was provided, did show progressively lower rates of growth as the proportion of public sector expenditure dropped. For instance, in 1975-76, when a basic level of universal coverage was provided out of tax revenues, total expenditures on health rose by 36.6 percent over the previous year (9).[13] In the next year, the rise was only 14 percent and in 1977-78 it was 10.7 percent (12).

Education and Research

Material related to the value and utility of specific diagnostic procedures has been prepared by the Commonwealth Department of Health for circulation to medical colleges and societies to generate discussion concerning the cost effectiveness of the related technological services. In a similar vein, officers of the Department of Health and AMA have approached the Australian medical schools with a view to having medical students exposed to some information about the cost effectiveness of technological services.

AMA has been awarded specific grants to develop and implement peer review systems throughout the nation. A period of some 2 years was taken up in informing the profession at the grassroots level about the concept. A resource center has now been established, and peer review (including utilization review of work done in the hospital) is slowly becoming accepted as a formal goal by the medical profession.[14] Informal review activity has always been undertaken at the larger teaching hospitals.

The Commonwealth Department of Health has approximately $1.5 million a year available to it to fund health services research studies and health service development projects. In addition, health services research funds are available in the States and to a limited extent at universities. Some examples of current studies and projects are:

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[13] "Other factors were involved when overall cost rises were so steep. These included a very rapid escalation in labor costs in hospitals at a time of sharp inflation. Population growth accounted for only a small proportion of this rise in expenditures (12).

[14] Peer review of medical services was requested by the Commonwealth Government at the time of introducing health insurance amendments in October 1976. The Australian Medical Association was subsidized to set up voluntary systems, and was advised that failure to respond satisfactorily within 3 years could result in some kind of compulsory program. Both peer review and hospital accreditation had been resisted in Australia, although numerous informal review activities were common. Hospital accreditation was not seen to be necessary by State Authorities, who, in fact, maintained close supervision of most hospitals through their conditions of subsidy of public hospitals and licensing of private hospitals.

- *Accreditation of Australian hospitals.* —To develop standards of accreditation for Australian hospitals, including a series of pilot studies to refine the methodology.
- *Medical administrative standards in hospitals.* —To develop medical administrative standards by conducting a survey of the formal organization of medical staff in Australian hospitals, and analyzing the effectiveness of the organizational patterns.
- *Cost effectiveness of treatment of end-stage renal disease.* —To analyze the treatment of end-stage renal disease with special emphasis on the available alternative methods of treatment.
- *Evaluation* of *the role* of *specialist medical units in a teaching hospital.* —To compare and evaluate the treatment received by patients with similar disorders who are admitted either to specialist units or general medical wards at random.
- *Prospective evaluation of coronary care in two* States. —To undertake a pilot study involving selected hospitals in Queensland and New South Wales on the effectiveness of a range of facilities in treating certain coronary conditions.
- *The autopsy in quality insurance in hospital practice.* —To use autopsy data to examine the effectiveness and quality of care and services.
- *An evaluation of the cost effectiveness* of *surgical and related hospital services.* —To develop a cost accounting system which will identify and analyze the cost differentials between the surgery units at two Melbourne hospitals.
- *Retrospective evaluation* of *coronary care in Queensland.* —To study various levels of intensity of coronary care with respect to intrahospital survival and cost to the community.
- *The impact of computed tomography (CT) in Australia.* —To evaluate CT services, with particular attention to cost effectiveness and cost efficiency, and to develop guidelines for patient selection.
- *Evaluation* of *CT and ultrasound.* —A prospective clinical evaluation of the parallel and complementary use of CT and ultrasound in diagnostic imaging of the body, excluding intracranial examinations.
- *An educational program to reduce excessive use of clinical biochemistry laboratory tests within hospitals.* —To reduce the overuse of pathology tests in hospitals by the use of an educational program aimed at influencing doctors responsible for ordering tests.
- *Evaluation of a large-scale screening programs.* –To evaluate a multiphasic health testing service (study completed under the auspices of the University of New South Wales).

These studies raise a number of questions. Should all technologies be evaluated? If that is our belief, there are substantial resource implications. Even when evaluations are well done, a remaining question is this: Will anybody be influenced by the results?

SPECIFIC TECHNOLOGIES

Sophisticated and expensive new technologies have had their diffusion in public hospitals controlled primarily by the overall cost caps applied by State and Commonwealth Governments (12). These controls have slowed growth of public hospital operating costs in real terms from 11.2 percent in 1975-76 to 8.8 percent in 1976/77, 6.2 percent in 1977-78, and 3.4 percent in 1978-79.[15] Similar success has not been achieved outside the public hospital system, in private office practice, or in private hospitals.

Against the background of intention and practice outlined in the preceding section of this

[15]Even during the 4 years prior to 1975, when cost-growth in the health services generally was rapid, however, 8 percent of it was estimated to be due to population changes, about 60 percent to higher prices and wages, and 32 percent to increased volume and intensity of usage. Most of this growing volume and intensity of usage is attributable to the comparatively less sophisticated technologies, such as chest X-rays, audiometry, electrocardiography, electro-encephalography, respirometry, and endoscopy.

chapter, Australia's experience with specific medical technologies is presented below.

CT Scanners

CT scanners were introduced to Australia in the mid-1970s. By December 1978, there were 28 in use and 1 on order. They were distributed among the States in public and private facilities as listed in table 1. Scanners are identified as "head" and "general purpose" scanners (rather than "head" and "body" scanners), because 75 to 85 percent of examinations carried out on the body scanners in Australia are head scans.

With 29 scanners, there will be approximately 1 CT scanner per 500,000 population. Since 15 of the scanners are located in Sydney and Melbourne, the peripheral populations of large States have difficulties of access. Government-subsidized aerial ambulance services and other subsidized transport schemes for those living in remote areas are designed to overcome these problems.

As a noninvasive technique with high diagnostic accuracy, CT scanning has caught the imagination of Australia's medical profession. Nevertheless, in recent years, special concern has been shown about the effectiveness and economics of CT scanning. Its role in patient management and its advantages and effects on other neuroradiological investigations have been under review in all States. Because improvement in patient outcome and advantages over isotope scanning have not been satisfactorily demonstrated, State Health Authorities have rigidly curtailed the introduction of CT scanners into public hospitals and do not support an expansion of this technology at present. In addition, the New South Wales Health Commission has determined that referrals of patients for CT scanning in public hospitals should be restricted to those made by clinical specialists in disciplines relevant to the examinations being conducted.

In the private sector, these direct restraints are not possible. Private installations are not regulated. Medical benefit arrangements have been reviewed recently, however, and as a result of the review, fees have been reduced so that profits will not be so high as to encourage a rapid expansion of CT scanning in the private sector.

Renal Dialysis

Renal dialysis maintenance programs were instituted in 1964, 1 year before the first successful renal transplant. Since then, the capacity to treat patients with renal failure has been progressively expanded. A total of 1,124 patients are alive with functioning kidney grafts, a rate of 78 per 1 million population. The rate for patients on dialysis is 77 per 1 million population.

A national policy for the management of chronic renal insufficiency was developed by the National Health and Medical Research Council, and this policy has been accepted and implemented on a voluntary basis. Transplantation is seen as the objective for all potentially suitable recipients, but both dialysis and transplantation

Table I.–Number and Distribution of CT Scanners in Australia (1979)

State/territory	Number of scanners by type		Distribution of scanners in public and private facilities		Total number of scanners/facilities
	Head	General purpose	Public	Private	
New South Wales	1	9	5		10
Victoria	2	3	2	3	5
Queensland	2	2	2	2	4
South Australia	1	2	2	1	3
Western Australia	1	3	2	2	4
Australian Capital Territory	—	1	1	—	1
Tasmania	—	1	1	—	1
Northern Territory	—	1a	1a	—	1
Total	7	22	16	13	29

[a]On order.

are used in an integrated combined approach to the management of renal insufficiency.

Renal dialysis units are located exclusively in the public hospital system, where they are subject to controls on expansion and where State Health Authorities are committed to a policy of rationalization. Home dialysis is coordinated and supervised at major hospital units. Cooperation and coordination among dialysis units has been remarkably close.

Coronary Artery Bypass Surgery

Coronary artery bypass surgery was introduced in 1971 and has been limited to nine public teaching hospital units which are subject to the rationalization policies of State Health Authorities. As the following figures for annual operations show, the controlled diffusion of this technology in Australia has been quite rapid.

Year	Number of operations
1971	158
1972	283
1973	366
1974	621
1975	1,070
1976	1,506
1977	1,978

At this stage, further diffusion to additional units in public hospitals is not proposed. There are indications, however, that a private hospital may enter the field; this entry cannot be controlled under present legislation.

Cobalt Therapy

Cobalt therapy was introduced to Australia in 1959. It is centralized in each State at selected teaching public hospitals; and State policies are to maintain their principles of regionalized radiotherapy facilities. In New South Wales, an effort is being made to include cobalt therapy in an integrated and planned oncology program based in public hospital units.

Laboratory Automation

Laboratory automation has quite a different character from the technologies discussed above. Major laboratory automation was introduced to Australia in 1960, and its acquisition by public hospitals is subject to the general rules for equipment purchases previously described.

Rationalization of some services occurs without formal government intervention through the use by several hospitals and private practitioners of particular services provided by large public hospital laboratories. All State Health Authorities promote and facilitate cooperative arrangements, and these Authorities have established some major regional biochemistry services. In all cases, participation in regional or area services is optional. Technical advisory committees assist the Authorities in planning integrated or cooperative arrangements.

Outside public hospital and government laboratories, automation has been very widely diffused. It is found in private hospitals, in university laboratories, in both single and group private medical practices of pathologists, and in large commercial laboratories. In these situations, the major influence on the amount of testing is that exerted by specially designed codes of conduct that supplement the influence of health insurance arrangements.

CONCLUDING REMARKS

In conclusion, it must be said that there are being heard in Australia some voices that question medicine's extravagant support of lives of suffering and torment. The major question is whether society should not dispute the proposition that life should be maintained regardless of other factors. Some claim that resources should be diverted to other pressing, and possibly more rewarding, efforts aimed at improving the organization and coordination of services and the prevention of disease and disability.

A large proportion of patients suffer chronic diseases, disabilities, discomforts, and worries that will seldom go away quickly. These patients endure more and more encounters with

specialists, technical personnel, and machines, while perceiving less and less continuity of care and coordination of interests on their behalf. They often leave the technical services disillusioned—with little change in their problems—to find themselves in a community served by splintered sources of help that leave unbridged gaps between the health and social services that the patients require.

What about, for example, the thousands of handicapped children in remote areas of Australia who do not receive sufficient help? Can a clear case not be made for studies in communication and transport technology which would be of assistance to such children? To take another example, is the prevalence of child abuse in our society not an indictment of our inept handling of a problem which could be eradicated? What about the 3 percent of Australian children who are born with a serious disability? While few of them can be cured now, is there not clearly scope for the application of modern technology to their problems? As the result of an intensive and comprehensive genetic counseling program, Perth is said to have one of the lowest incidence of muscular dystrophy in the world.

It may be appropriate to end this discussion with the following comment. Stimulus to the social sciences and their technology may yield greater benefits than the mindless multiplication of diagnostic and therapeutic technologies in hospitals. If Henry Sigerist was right in asserting that the target of medicine is to keep people adjusted to their environment, or to help them readjust when they have dropped out because of illness or injury, then we have a social goal.

CHAPTER 4 REFERENCES

1. *Annual Report of the Director-General of Health 2976-77* (Canberra: AGPS, 1977).
2. "Budget Speech, 1978/79" (Canberra: AGPS, 1979).
3. *Committee on Applications and Costs* of Modern *Technology in Medical Practice*, report (Canberra: AGPS, 1978).
4. Gadiel, D., "Private Medical Insurance and Elective Surgery: The Experience With Hysterectomy, " paper presented at the ANZSERCH/APHA Joint National Conference, Perth, May 23, 1979.
5. Hospital and Health Services Commission (Australia), "A Discussion Paper on Paying for Health Care" (Canberra: AGPS, 1978).
6. McEwin, R., "Morbidity Monitoring in New South Wales, Australia: Incidence of Discretionary Surgery, " paper presented at the 51st General Scientific Meeting of Royal Australasian College of Surgeons, Kuala Lumpur, May 1978.
7. Minister for Health (Australia), "Curbing Rising Health Expenditure, " news release 52/79 (Canberra, May 1979).
8. *National Health Account: A Study* (Canberra: AGPS, 1978),
9. *Report of the Committee of Officials* on Medi*cal Manpower Supply* (Canberra: AGPS, 1979).
10. *Report of the Pharmaceutical Manufacturing Industry Inquiry* (Canberra: AGPS, 1979).
11. "Report on Rationalisation of Hospital Facilities and Services and on Proposed New Charges: A Discussion Paper" (Canberra: AGPS, 1979).
12. Sax, S., "Impact of Federal Health Insurance and Health Resources Allocation Policies in Australia, 1975-79, " paper presented at the Annual Meeting of the American Public Health Association, New York, November 1979.
13. _____, *Medical Care in the Melting Pot* (Sydney: Angus and Robertson, 1972).
14. Scotton, R. B., *Medical Care in Australia* (Melbourne: Sun Books, 1974).