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THE AUSTRALIAN NATIONAL UNIVERSITY

HEALTH RESEARCH PROJECT

Annual Report, 1979

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The Health Research Project was established in July 1978 for the purpose of conducting studies in health economics and statistics. It is the only unit in Australia which offers full-time research appointments to economists wishing to specialise in health. The Project's main financial support comes from the University and the National Health and Medical Research Council, but grants for specific projects have also been received from the Commonwealth Department of Health, and the Victorian College of Pharmacy.

Staff

1979 was the first full year of the Project's operation with support from the National Health and Medical Research Council. Research staff supported by the NH&MRC grant were Mr D.R. Harvey and Dr P.M. Tatchell (Research Fellows), Mr I.W. Scott and Mrs J. Bubb (Research Assistant/Programmer). Dr Tatchell took up his appointment in December 1978 but Mr Harvey did not commence duty until March 1979. Mrs Bubb was appointed in August 1979, Ms A. Elvin having previously been employed as a casual Research Assistant/Coder from time to time. Dr L.R. Smith, who had been on staff of the National Population Inquiry, transferred to the Project staff at the termination of that study. As with most new projects, the delays in recruiting permanent staff were longer than anticipated, and, in this context it is worth mentioning the very limited supply of well-qualified economists in Australia who are interested in Health Service matters. Recruitment to date has been from Australasian sources but any future expansion and/or replacement of academic staff will need to explore a wider base overseas.

Major Projects

Two major projects are being conducted with National Health and Medical Research Council support. The first study concerns the nature and causes of labour cost increase in Victorian Public General Hospitals, for which Dr Tatchell is primarily responsible. Hospital costs have been by far the largest contributor in increased health expenditures over the last decade and, until recently, labour costs were the largest component of the rise. Policies relating to cost containment require a clear understanding of the causes of this labour cost inflation. It is, for example, important to know the separate effects of changes in either the quantity of labour inputs (relative to outputs) or the quality of these inputs as measured by skill levels (and therefore costs); as compared with changes in the unit cost of labour which arise either directly through money wage changes or indirectly, through improved employment conditions (shorter hours, extended leave, larger training components, etc.). Furthermore, it is important to determine whether the large increase in labour costs during the 1970's was due to technological factors which might be expected to continue, or to special circumstances - relating particularly to changing wage relativities - which may no longer exert the same influence on costs.

The Victorian project examines the three 'unit cost' factors of

- (a) movement in money wages
- (b) changes in other conditions of employment, and
- (c) changes in skill 'mix',

separately from changes in the quantities of labour used per unit of hospital output. Victorian public hospitals were selected because of the existence, for at least part of the period and for some hospitals, of a centralised computer-based payroll system. The first stage of the study did not, however, require such data. Movements in money wages and conditions of employment are documented in both public sources

(awards, determinations ect.) and hospital records. A base year quantity weighted set of quarterly indexes of award wage rates has been calculated for the period 1969 to 1979 (covering a total of 253 occupational categories, aggregated into 23 sub-groups), together with indexes of average employee earnings. Dr Tatchell presented a preliminary report on this work to the ANZSERCH Conference in May 1979. A revised and expanded version was published in the October 1979 issue of Community Health Studies. The results are of some importance in that while they show the average award wages of hospital staff to have increased more rapidly than the average award wages of the Victorian adult workforce generally, the increase was less than would be expected from the sex composition of the hospital workforce. Similarly, the average earnings (including overtime, allowances, etc.) of hospital employees increased significantly more than the average earnings of all Victorian employed adults over the 1969-79 period, but only slightly more than would have been predicted after adjustment for sex composition. In other words, the faster rise in hospital staff earnings was almost entirely due to the effects of a society-wide realignment of male-female wage relativities in an industry in which female employment predominates. Formal equal pay decisions accounted for only part of the change in relativities, which was almost completed by 1976. Given Australian methods of wage fixation, there appears to have been little that the hospital sector could have done to avoid such massive wage cost rises. Similar effects on other industries employing large numbers of female employees have led to reduced employment - the growth of self-service in retail trade, for example- but options of this kind are rarely available to hospitals.

Changes in money earnings appear to account for about half of the rise in labour costs in Victorian Public Hospitals, the remainder being attributable to higher staff numbers. But output has also increased, and the third stage of the study involves a detailed analysis of the way in which labour was utilised.

The second stage, which is now in progress, comprises a study of the effects of changed conditions of service. Their overall contribution to changed money earnings was estimated in the first stage, but they were not analysed by employee group. Moreover, the effects of improved conditions may well appear as increased staff numbers if, for example, hospitals react to increased penalty rates by re-rostering or are forced to cover improved leave conditions by replacement staff. Studies of this kind require detailed data from payrolls, and the last three months of 1979 were devoted to extracting payroll data from 1972 to 1979 for a group of 12 hospitals whose computerised records covered the whole period. The data have now been transcribed to computer tapes for analysis here (96 tapes in total, a large file for research purposes). It is expected that the second stage will be completed and reported by mid-1980 and that a full report of the whole study will be available by September-October of this year.

The second main study involves an investigation of the relationship (if any) between hospital bed supply and patterns of medical practice in three regions of the NSW and the ACT where bed use varies considerably. Apart from examining the characteristics of patients admitted to hospital under different conditions of supply (age, sex, diagnostic category, procedures performed, etc.), we wish to examine differences in the mix of out-of-hospital services. The approach differs from the conventional one in which the supply of hospital beds is regarded as responding to a demand arising from population characteristics and the supply of doctors. Conceptually, we are treating supply as exogenously determined (by historical and political factors), and seeking to identify what, if any, substitution of services takes place when supply conditions differ. At the State level, aggregate statistics show considerable differences in composition, but the relationships may be obscured by a number of factors. By examining regions within a State in which the majority of doctors have experienced the same medical education and training, have been subject to the same peer-group influences and work

within the same administrative and institutional structures, it is hoped to standardise for some of the factors which bedevil broader-based analyses.

The major problem is the availability of data and work in 1979 has mainly involved the collection of information. 1975-76 is the only year for which sufficiently detailed comprehensive information is available for medical services, but the other major source - hospital morbidity statistics - provides comparable information for only one of the three regions studied. These are the ACT and the Illawarra and Riverina regions of New South Wales (the ACT was included because its facilities and doctor population parallel a Sydney metropolitan region, but with a more easily defined population). For the ACT and the Illawarra region, hospital morbidity statistics are available only from 1976-77. Given the apparent stability of hospital morbidity measures, this does not appear to be a significant source of error, but a 10 percent sample of 1975-76 admissions to hospitals in the ACT has been extracted, coded in accordance with the hospital morbidity collection of the Australian Bureau of Statistics and examined for significant differences. With the assistance of the Health Commission of New South Wales, 1976-77 data for the study regions are being extracted and transferred to computer tapes. These will be available early in 1980. The Commonwealth Department of Health has provided data from a sample of all medical services provided in New South Wales in 1975-76, from which details of services provided by doctors in the study regions can be extracted. The two sources cover about 100,000 hospital admissions and nearly double that number of medical services.

Mr Harvey is working on this study and has been heavily involved in the design of data collection and analysis. However the delays inherent in reliance on the supply of information by other authorities have enabled him to complete a study of the demand and supply of pharmacists in Victoria over the next decade. The Project was requested to undertake this study by

the Victorian College of Pharmacy and the Pharmaceutical Society as a guide to entry policy. The Society provided access to registration data contained in its records and both groups provided some financial support. From a research viewpoint the study is valuable in several respects. First, it provides a pilot for the application of Operations Research techniques developed in other areas of manpower planning, and improves knowledge of specific data requirements. Second, it requires the modelling of certain aspects of the health care system and some economic factors affecting them, which have a direct application elsewhere. This is so because the demand for pharmacists - in their professional role - is a derived demand, dependent on such variables as the rate at which patients consult doctors, the doctor supply, community morbidity, the doctors' treatment choices - particularly prescribing habits - and the efficiency with which prescribed medicines are dispensed. A number of plausible assumptions may be made about each factor and these may vary for both empirical and theoretical reasons. Formal modelling allows the realism of these assumptions to be checked. For example, existing data of doctor supply suggest that the general practitioner - population ratio will rise by about 50 percent over the next decade. What volume and mix of services will these practitioners supply? Are predictions of this variable consistent with observed community utilization rates? How might the resulting volume of services be financed? Will treatment methods change? How might changes in government policy affect both consultation rates and prescription volumes? A preliminary report exploring the implications of various key assumptions has been presented to the Pharmaceutical Society, and a final report has been prepared for publication in the Project's Research Report series.

Other Studies

Aboriginal Health Statistics

Dr Smith completed his work on the collection of Aboriginal health statistics with Department of Health support, and a report was submitted to the Department. In addition to documenting existing methods of collection, the Report includes recommendations for change. Dr Smith also presented a paper on Aboriginal infant mortality of the May 1978 meeting of ANZSERCH. Dr Smith is currently overseas on a National Health and Medical Research Council Fellowship, and will return to the Project in 1981.

Health Service Price Indexes

The Project has been awarded a two-year grant from the Commonwealth Department of Health for the purpose of constructing indexes of price and cost movements in the health services. Dr J.R.J. Richardson was appointed a Research Fellow under this grant, to take up duty early in 1980. In the meantime work proceeded on two aspects of this study, namely, the interpretation of movements in hospital operating cost indexes, and on the measurement of changes in drug prices, particularly those paid by hospitals (for which no reliable data has been available in the past). Dr Richardson has already conducted (at Macquarie University) a major study of the determinants of demand for medical services, and of price variation in these services, and his work will make a major contribution to this study.

Visiting Fellows

With the approval of the Advisory Committee, the Project was host to two Visiting Fellows during 1979. The purpose of

these Fellowships is to assist in the publication of research related to the Project's interests which has largely been completed elsewhere but which would, for reasons of special interest and/or a restricted readership, be unlikely to be published through normal channels. The results are reported under the authors' names in a Research Monograph series, approval for publication resting with the Advisory Committee. Fellowships are short-term (the two awarded in 1979 extended for only six weeks and four weeks of full-time work respectively) and cover limited travel expenses within Australia plus a living allowance in accordance with University practice for similar Fellowships elsewhere.

Mr D.P. Doessel, Lecturer in Economics in the University of Queensland, spent six weeks in January preparing for publication a manuscript entitled 'Cost-benefit Analysis and Water Fluoridation: An Australian Study'. This study examines the costs and benefits of water fluoridation in Townsville, and concludes that, at all feasible rates of discount, water fluoridation is a viable economic proposition. To this extent, the results simply confirm the intuition of decision-makers, but the primary interest is in the development of a methodology which can be used in evaluating other forms of preventive medicine. Because of its technical nature, the manuscript required considerable editing, but has now been published in February 1980.

Mr T.A. Pensabene, of the Commonwealth Department of Health, spent some time preparing a manuscript entitled The Rise of the Medical Practitioner in Victoria of which four weeks were supported by a full-time Visiting Fellowship. This work was originally submitted to Monash University for the degree of Master of Economics in Economic History. It deals with a crucial period in Australian medical history during which the orthodox medical profession clearly distinguished itself from alternative practitioners and established the basis of its present status and influence. The study is the first of its kind in Australia and constitutes an original contribution to knowledge.

Other Activities

In September 1979, the Project organised the first Australian conference of health economists. Over twenty economists from Universities, health authorities and the public service attended. Professor A.J. Culyer, of the Institute for Social and Economic Research at the University of York and one of the leading health economists in Britain, was the main overseas speaker, supported by a Visiting Fellowship in the Project. Papers presented will be published shortly, together with discussants' comments. Following the conference a Health Economists Group was formally established and the Project will act as host to a similar meeting this year.

Summary

Work during 1979 has been mainly concerned with data collection and analysis, the main results of which will be published in 1980. The Project is becoming increasingly recognised as the major Australian centre of research in health economics, and its advice and assistance are increasingly sought. For example, Mr Harvey and Dr Deeble were requested by the Pharmaceutical Industry Inquiry to submit both written and verbal evidence, some of which was incorporated directly into the Inquiry's report. Dr Tatchell's work has been submitted to the Inquiry into the Administration and Efficiency of Hospital and Dr Deeble participated in a study of Coronary Care Units conducted by the Commission of New South Wales. Project staff have assisted research workers and groups in both public and private organisations and the first post-graduate student to work within the Project has recently commenced.

PublicationsResearch Reports

No. 1. Deeble, J.S., Health Expenditure in Australia, 1960-61 to 1975-76, Health Research Project, 1978

No. 2. Smith, L.R., Aboriginal Health Statistics: a Report and a Plan, Health Research Project, 1979

Research Monographs

No. 1. Doessel, D.P., Cost benefit analysis and water fluoridation: an Australian Study. Health Research Project, 1979

No. 2. Pensabene T.A., The rise of the medical practitioner in Victoria, Health Research Project, 1980

Articles and Papers

Tatchell, P.M., 'Rising wage costs in Victorian Hospitals' Community Health Studies, Vol.3, No.3 pp. 152-162

Deeble, J.S., 'Australian Health Expenditures - An Overview,' in Health Care Cost Control, South Australian Postgraduate Medical Education Association, 1979, pp.5-15.

Smith, L.R., 'Aboriginal Health Statistics: A Statistical Analysis, Paper presented to 1979 Annual Conference of ANZSERCH, Perth 1979.