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Economics and Communicable Diseases: An Overview of Issues

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Abstract

Infectious diseases are the largest cause of mortality world-wide and in 1997 were responsible for one third of total deaths. Despite this, there has been little discussion of infectious disease by health economists. This undoubtedly reflects the concentration of infection related deaths in developing countries and their relative unimportance in the west. Partly because of the AIDS epidemic there has been increasing interest in the area and a number of recent studies have examined the unique issues arising from 'economic epidemiology'. This literature is reviewed. Infectious diseases have also been the subject of on going cost effectiveness analyses and, in the second half of the paper, these and associated issues are discussed. The need for methodological standardisation in these studies is noted. It is argued that the priority accorded to studies of infectious diseases may be illegitimately compromised if priority setting is based upon the total burden of each disease and that this error may be the result of an excessive focus upon interventions for diseases associated with designated areas of national priority.

Economics and Communicable Diseases: An Overview of Issues

1 Introduction: Why does economics have a role?

As a discipline, economics seeks to explain the allocation of resources and to indicate how these may best be used to maximise social welfare or wellbeing. In the context of communicable diseases, as elsewhere, three sets of issues must be considered; first, what programs and services will achieve this ultimate objective; secondly, how will consumer/patients and providers respond to various financial and other incentives and, given the above, which policies should governments adopt to achieve maximum social wellbeing. Each of these issues is addressed below.

In the unregulated competitive marketplace, the answer to the three questions is, in principal, simple and elegant. Well informed individuals demand goods and services whenever the benefit they receive exceeds the price paid: each consumer performs a private "cost benefit analysis". Competitive forces ensure that this price is the lowest possible; and any mismatch between supply and demand will result in a change in price and profit margins, which will create the incentives necessary to correct the temporary market failure. Individuals' self-interest ensures that each person maximises their own wellbeing and, given the distribution of resources, social welfare cannot then be increased. In this sense, the competitive market is "efficient". Government policy is only needed to preserve the competitive environment and to redistribute income for reasons of social justice.

In the absence of a competitive market and well informed consumers, individual decisions concerning the use of free or heavily subsidised services will not result in such "efficiency". In the health sector and elsewhere, economists have therefore developed a variety of methodologies for assessing costs and benefits. In the context of health care, these techniques - discussed in Section 4 below - are incomplete, but nevertheless, have the potential to significantly improve decision making. This potential is largely unrealised.

While competitive markets do not exist, there is still a supply and demand for health services, with the equilibrating mechanism being the residual patient co-payment, queuing, or the direct management of demand, and these issues have been the subject of theoretical and empirical research by health economists. In the case of infectious diseases, there is an additional variable, which has given the aggregate or systemic analysis of infectious diseases, an unique character. This is the extent to which individuals systematically change their behaviour or seek services to prevent a disease or to mitigate the likelihood of acquiring it. This is the pivotal variable which drives the sometimes counter-intuitive results in the system level economic analysis of infectious disease, which has recently been described as "economic epidemiology".

2 Systemic behaviour: economic epidemiology

In the theory of "rational epidemics" individuals who are at risk or susceptible to an avoidable disease are increasingly likely to undertake preventive measures - to "demand protection" - as the prevalence of the disease increases. In the jargon of economics, there is a "price elastic demand for prevention" (PEDP). This leads to three key differences between "economic" and "biological" epidemiology (Philipson, 2000). These concern: (i) short and long-run behaviour and disease incidence;(ii) the relative burden of different diseases; and (iii) the appropriate policy response. The latter two issues are discussed later.

The first difference occurs as a direct consequence of PEDP. In biological epidemiology the probability of infection rises with disease prevalence, i.e. the probability of transmission is proportional to the number of infectious cases. This, however, takes no account of the response of rational individuals. Economic epidemiology postulates that as a result of increased protection - PEDP - the likelihood of infection and disease incidence will eventually fall with rising prevalence. As a consequence, a cyclical pattern may emerge. Rising prevalence induces preventive behaviour, which eventually leads to declining infection and disease incidence and prevalence. This, in turn, leads to less preventive measures, resurgent infection and the commencement of a new disease cycle.

In the seminal study, Geoffard and Philipson (1995), assumed a steady state population structure and perfect immunity from protective measures. This was used to demonstrate the improbability of disease eradication, when prevention is voluntary and the likelihood of the cyclical behaviour described above. More recently, Delfino and Simmons (1999) have explored the consequences of imperfect protection. This makes the dynamics of system behaviour significantly more complex. They demonstrate the possibility of multiple "steady states", some stable, some unstable, as defined by the rate of infection and protection. Optimal regulatory and subsidy policies may be complex. For example, a "pro-cyclical" policy of vaccinating when prevalence is high and immunity imperfect, is preferable to a low prevalence policy or policy of constant vaccination. However, with full and permanent immunity, a low prevalence policy of vaccination is found to be better.

Burden of Disease and Optimal Policy

Both the measurement of the burden of disease (BoD) and the appropriate policy response to it, are affected by PEDP. In biological epidemiology and most economic analyses, the BoD depends upon mortality and disease incidence. Drawing upon the theory of optimal taxation and the associated concept of an "excess burden" arising from attempts to avoid taxation, it is argued that during the "rational epidemic" described above, an increase in disease prevalence will eventually be associated with declining incidence and, consequently, a decreasing BoD, as conventionally measured. However, this is associated with increasing efforts to avoid infection and this will inflict a personal cost, According to Philipson (2000), this may cause an additional "excess burden", which could exceed the magnitude of the more conventional BoD and alter the disease ranking in a BoD league table. To date, the only plausible example cited in the literature, is the change in the number and range of sexual encounters resulting from the AIDS epidemic and it is not clear that a similar excess burden could arise in cases where prevention is achieved by a single medical service and vaccination.

The implications of PEDP for policy are potentially more significant. Economic theory suggests that complete disease eradication, even when technically feasible, would not normally be desirable. With low disease prevalence, the cost of a further reduction in disease incidence is likely to be very high and the benefits small [1] The usual policy objective, therefore, is to ensure that preventive measures are carried out as long as social benefits exceeds costs. However, this will not occur spontaneously and, indeed, in orthodox health economics theory, infectious disease is one of the standard examples of an "externality". Neither the harm inflicted by an infected individual, nor the benefits from vaccination are "internalised" in the market: individuals are harmed/benefited without compensation/reward. The standard "solution" to this problem is to tax the undesirable or subsidise the desirable activity (a so-called "Pigouvian subsidy"). This later action reduces the net price until individuals are encouraged to adopt the socially optimal level of prevention.

Policy commonly targets particular groups and not the entire susceptible population. Under these circumstances, the effect of PEDP is potentially very significant. Increasing protection and reducing disease prevalence in the targetted group will reduce the demand for prevention in the remainder of the population and, in part or whole, offset the beneficial effects of the subsidy and reduce the effective "price elasticity of prevention". Thus, in his U.S. study of measles vaccination, Philipson (1996) concludes that because of PEDP, the partial relationship between a vaccine price and demand overstates the true or net price elasticity of demand by a factor of at least 2.5, which implies a corresponding decease in the effectiveness of a simply policy of subsidised vaccinations.

The effectiveness of policy is also affected by its timing. Early in the disease cycle, when prevalence is low, a tax financed subsidy may be "pareto optimal" - a win/win strategy. Beneficiaries include taxpayers who achieve greater protection because of the increased immunity of the population. Later in the cycle, increased prevalence and a protection subsidy have offsetting effects and the benefits may no longer be obtained by the taxpayer.

Evidence

Direct testing of the predictions of abstract models is difficult and to date, the plausibility of these models depends upon the evidence supporting the key assumption of a prevalence elastic demand for protection. Because of the newness of the subject matter, even this is limited. In his survey of the field, Philipson (2000) identifies a significant body of evidence rising from the analysis of AIDS related behaviour which is clearly consistent with his hypothesis. Likewise, Mullahy (2000), demonstrates a high correlation between prevalence and the demand for influenza vaccine in the USA. In the most thorough study to date, Philipson (1996), examined the relationship between the prevalence of measles in the USA between 1984 and 1990 and the age of first measles vaccination. From this he infers an average prevalence elasticity of demand for measles vaccination of between 1.56 and 1.89 - a 10% increase in disease prevalence was associated with a 15.6% to 18.9% increase in the demand for vaccinations. The strength and stability of the relationship suggests that the predictions of "economic epidemiology" should be taken seriously.

[1] Complete cease eradication would only be desirable if immunity was complete and permanent, and the benefits to future patients and generations were not discounted by the rate of time preference.

Economic policy and bacterial resistance

There is a second, 'externality' in the treatment of infectious diseases. This arises from the overuse of antibiotics for particular individuals which, in aggregate, leads to the growth of antibiotic resistance. The harmful effects of this are not reflected in patient or doctor costs at the time of overuse. In a series of recent studies it has been suggested that a flexible solution to this problem could be the establishment of a market in tradeable permits for the use of antibiotics, in which the sum of the permits would be capped at a predetermined level which balanced the benefits and the longer term expected costs of using antibiotics (Coast et al 1996, 1998; Smith and Coast 1998). Economists have similarly argued for the creation of a market to buy and sell pollution permits where the sum of these would create the socially optimal level of pollution.

Initial permits for antibiotic use would be allocated freely each year to providers in proportion to the expected use of such providers generally. Permits could then be traded at a market determined rate in accordance with the form of practice adopted by the providers. The tendency for under use would be offset, in part, by professional motives and, in part, by the potential loss of patients who would be aware of provider incentives. In a capitated health service or where no additional fees were paid for repeat visits, under-use would, additionally, increase the likelihood of uncompensated repeat services.

Numerous issues need resolution before such a scheme could be adopted (and many of these have been discussed by the schemes' proponents). For example, rationing might be inequitable if doctors treated patients differently according to their assessment of the patient's likelihood of rejecting the doctor's authority and if—as is likely—this was associated with a patient's education and socio economic status. Despite this, the proposal has the potential to mitigate a to-date intractable problem. It represents an interesting application of economic theory to a serious systemic failure.

3 Micro level analysis and economic evaluation

The newly emerging field of "economic epidemiology", with its macro or systemic focus, represents only a tiny part of the economic analyses of infectious and other diseases. Most of these have a micro or single disease focus and are concerned with either the burden of disease (BoD) or the benefits and costs of particular interventions (economic evaluation). The BoD requires, first, an estimate of disease incidence and progression through time and, secondly, a method for evaluating and comparing the evolving health states. Economic evaluation requires, first, an estimate of the efficacy/efficiency of an intervention and secondly, a method for comparing the value of the health state improvement with the costs of the intervention. In both cases, the first task is epidemiological and the second requires health economics.

A further similarity is that both forms of analysis require the combination of the quantity and quality of life into a single unit of value. Unsurprisingly, very similar methodologies have been employed to do this in BoD and evaluation studies. In both cases, each year of life is weighted by an index of the QoL which has been derived (usually) from interviews of well-informed and "appropriate" groups of individuals. These are asked to trade off quantity and quality of life - either years of life for improved quality (the Time Trade Off -TTO - technique) or the number of people cured against the extent of the cure (the Person Trade Off - PTO - technique). The result of these procedures is the Quality Adjusted Life Year (QALY). Variations in the methodologies arise from the choice of "scaling instrument" (TTO etc); the perspective adopted in the scaling

interview ("imagine you are a patient/government decision maker"; from the time frame 1 year/full duration of the disease/lifetime), choice of group interviewed (public, patients, experts) etc. At least 20/30 variations of QALY like measures exist and, at present, there is no consensus over the most appropriate of these.

A recent publication by Tengs (2000) brings together 1,000 of the QoL scores obtained to date and classifies them by disease type. An extract of the study is reproduced in Table 1.

Table 1 'Utility' scores for Health States associated with Infectious Disease

Health State	QoL Weight	SD	Scaling Instrument
HIV, asymptomatic	0.87	0.29	TTO
HIV, asymptomatic, CD4 count mean 459	0.804	0.215	SC
HIV, symptomatic CD4 count mean 398	0.822	0.224	SC
HIV, CDC classification 3	0.772	0.018	QWB
HIV, CDC classification 4a	0.623	0.032	QWB
HIV, CDC classification 4c1	0.653	0.024	QWB
HIV, CDC classification 4d	0.59	0.056	QWB
HIV, high (4^{th} quartile) β-2 microglobulin level	0.649	0.2	QWB
AIDS, CD4 count mean 90	0.744	0.218	RS
AIDS, CD4 count mean 90	0.796	0.247	SG
AIDS, CD4 count mean 166, placebo	0.634	0.0844	QWB
AIDS, CD4 count mean 188, azidothymidine (AZT)	0.6486	0.0735	QWB

Source: Tengs, 2000 Appendix A

Key: TTO = Time Trade off; SC = Standard Count, RS = Rating Scale; QWB = Quality of Wellbeing (a generic utility instrument)

The QoL score in column 2 is, in fact, more than a "weight"; it is, in effect, an exchange rate between the quantity and quality of life. Thus, the score of 0.87 for asymptomatic HIV, indicates that survey respondents were prepared to give up 13 per cent (1.00-0.87 = 0.13) of their life to avoid a health state with the typical physical and psychological characteristics of asymptomatic HIV. These and similar data are now the basis for much of the micro economic analyses of disease.

Burden of Disease

In 1996 the W.H.O. published estimates of the burden of diseases associated with every disease in every country. After a variety of methodological changes, these were used to produce more precise estimates for Australia and for Victoria (Mathers et al, 1999; Vos et al, 2000). All three studies define the BoD as the disease induced loss of "Disability Adjusted Life Years" (DALYs), where these are one of the family of QALY-like metrics defined by the use of the person trade off scaling technique and by the particular methods of elicitation used. Unlike the two Australian studies, the WHO also used "age-weights" to reflect the relative "social value" of DALYs at different stages of the life cycle. Extracts from the full Australian study are reproduced in Table 2.

Table 2 BoD: Disability Adjusted Life Years (DALYs)

Cause	DALYs			
	Numbers (000)		Percent of total DALY Loss	
	Male	Female	Male	Female
HIV/AIDS	13,885	ns	1.0	
Lower Respiratory Infections	9,844	10,673	0.7	0.9
Hepatitis	3,398	ns	0.3	ns
Total Infectious and Parasitic Disease	27,950	16,506	2.1	1.4

Notes: ns = not amongst leading 75 causes of DALY loss

Source: Mathers C, Vos, T and Stevenson, 1999, Tables 5.3, 5.5

As noted earlier, this mortality/morbidity based definition of the BoD represents a subset of the broader BoD concept which includes the costs of disease avoidance. Cost of illness studies may also include current resource outlays in the health sector associated with each disease.

BoD studies, and especially the WHO study, have been surprisingly controversial (Williams 1999; Mooney, et al 1997; Mathers and Vos 1999; Murray and Lopez 2000). Contention focusses upon the usefulness of BoD studies and their potential for misleading policy makers. Critics argue that there will be a powerful temptation to use such BoD studies as the basis for the allocation of resources. They correctly argue that the greatest or best C/B ratio may be obtained from interventions for diseases with very low total BoD's. It is also correctly argued that the reallocation of resources should be based upon incremental and achievable benefits (reductions in the BoD) and not upon the theoretical maximum benefit indicated by the total BoD. Defenders argue that the BoD per sé has a different purpose. First, global BoD studies represent a "stocktake" of the nation's health and, like the GDP, may be used to monitor overall national health performance. Secondly, the BoD does indicate the maximum achievable benefit within any disease category and is therefore a sensible basis for allocating funds for disease focussed research. Critics doubt that the BoD data will only be used for these limited purposes and believe that, as in the past, health officials decision making will be driven by readily available data, by the need for quick fix methods and solutions and by an intuitively plausible, but wrong, belief that there is a close nexus between total program benefits and the magnitude of the BoD.

A third defence of comprehensive BoD studies is that results may, in fact, be used to estimate the benefits from interventions once the efficacy of the intervention is known. If it is assumed that marginal and average benefits are the same then the QALY/DALY benefit of an intervention which cures x percent of patients will be x percent of the BoD. The assumption is not unreasonable and is commonly made in single intervention studies. Critics are concerned that this approach will result in 'bad currency driving out good': that the availability of quick, cheap and 'dirty' results will crowd out the more expensive but accurate intervention-specific studies. But this response shifts the focus of the debate. The initial criticism is that, even conceptually, BoD data cannot be useful in economic evaluation studies. The latter criticism is that BoD data will be unacceptably inaccurate. At present there is no objective basis for assessing the importance of this legitimate concern.

The immediate relevance of this debate is that the relatively small BoD associated with infectious diseases should not imply a correspondingly small priority for cost effective interventions which target infectious diseases. Exhortations to focus upon national priority areas, defined by the BoD, may be appropriate for the determination of research spending, but not for the determination of incremental program grants.

Economic Evaluation

The largest number of "micro economic" studies of health and health care, are concerned with the benefits and costs of particular health services. Because of the difficulty of assigning a dollar value to life, the predominant form of economic evaluation evolved from Cost Benefit Analysis (CBA), - defined by the reduction of all benefits and costs to dollars, - to Cost Effectiveness Analysis (CEA) which seeks to find the cost of health improvement where this is measured in natural units, and most commonly, by life years. Attempts to include the Quality of Life (QoL) led to the development of Cost Utility Analysis (CUA), which estimates the cost of obtaining additional QALYs, as discussed above. Recently, the introduction of additional social considerations into evaluation studies – age weights, severity, distributional considerations etc. – has led to a suggested new category, 'Cost Value Analysis' (Nord et al 1998, Nord 1999, Menzel et al 1999).

Within these broad categories methods and conventions remain unstandardised. Thus, for example, the authors of a world review of economic evaluations of hepatitis B concluded in 1994 that 'we found profound variability in the main parameters of the efficiency equation (disease incidence, costing methods, use of marginal theory, discounting and study time span, sensitivity analysis and reporting methods). We also found inconsistencies in definition and study design in thirty-eight percent of a subset studies ... there is an urgent need to standardise study methods and to define a common set of procedures (Jefferson and Demicheli 1994, p25).

The following year a USA team published such a set of standardised results (Tengs et al 1995)[2]. These included only 30 interventions for infectious diseases. Six of these were for childhood immunisations (Pertussis, Diphtheria, Tetanus, Polio, Rubella and Measles). In each of these cases costs were negative – the direct cost of immunisation was less than the direct down stream cost savings from averted illnesses. Fifteen of the remaining results are reported in Table 3.

[2] The seven criteria for inclusion were that (i) estimates existed or could be made of the 'cost per life year saved'; (ii) cost and benefits incorporated a societal perspective; (iii) indirect costs such as forgone earnings should be excluded; (iv) costs and effectiveness should be net figures allowing for resource savings and mortality risks; (v) future values should be discounted at a rate of five percent per annum; (vi) cost effectiveness ratios should be incremental and compared with a well defined baseline alternative; and (vii) costs should be expressed in 1993 US dollars with adjustment to this year made with the consumer price index.

Table 3 Selected Cost-effectiveness Ratios

Intervention		Cost/Life Year ($US1993)
HIV/AIDS	**Prevention**	
	Voluntary (vs limited) screening for HIV in female drug users and sex partners	<0
	Screen blood donors for HIV	$14,000
	Screen donated blood for HIV with an additional FDA-licensed test	$880,000
	Universal (vs category-specific) precautions to prevent HIV transmission)	$890,000
HIV/AIDS	**Treatment**	
	Zidovudine for asymptomatic HIV + people	<$0
	Oral dapsone for prophylaxis of PCP in HIV + people	$16,000
	Aerosolized pentamidine for prophylaxis of PCP in HIV + people	$20,000
	AZT for people with AIDS	$26,000
	Prophylactic AZT following needle stick injury in health care workers	$41,000
Pneumonia	**vaccination**	
	Pneumonia vaccination for people age 65+	$1,800
	Pneumonia vaccination for people age 65+	$2,000
	Pneumonia vaccination for people age 65+	$2,200
	Pneumonia vaccination for high risk people age 25-44	$14,000
	Pneumonia vaccination for children age 2-4	$170,000
Tuberculosis	**Treatment**	
	Isoniazid chemotherapy for high risk White male ruberculin reactors age 20	<$0
	Isoniazid chemotherapy for low risk White male tuberculin reactors age 55	$17,000

Source: Tengs et al, 1995. Appendix A

Results illustrate the single most important conclusion to be drawn from economic analyses in the health sector. This is that the cost of health improvement, and in this case, lives saved, varies enormously. A direct implication is that with a limited budget the amount of health which might be obtained also varies enormously with the type of expenditure. Thus, from Table 2, for an average cost of $US880,000 it was possible to gain an additional life year in 1993 in the USA by conducting an additional test on blood already screened for HIV. The same expenditure could have gained 52 life years if it had been spent on isoniazid chemotherapy for low risk white male tuberculin reactors aged above 55, or 489 life years if spent on pneumonia vaccinations for people over sixty-five[3].

[3] Despite standardisation with respect to certain study parameters, the results were not subject to exhausted validation and anomalies exist. Thus, for example, zidovidine treatment for symptomatic AIDS has a published cost per life year gained which is negative in one study for $45,000 in another

Relative to the size of the task there has only been a miniscule number of economic evaluations carried out in Australia and, outside the context of the PBAC and MSAC (described below) there has been no attempt to impose standardised methodologies on existing Australian analyses or to adapt overseas studies to Australian standards and conditions. An internal document of the Commonwealth Department of Health and Aged Care reviews various Australian studies of the costs and benefits of published health interventions including vaccinations (Dadds, 1998). The overview does not purport to evaluate the quality or policy relevance of the various policy options. Subsequent studies, and particularly in the area of Hepatitis C, have identified highly cost effective strategies (Harris et al, 2000; Shiell and Law, 2000; Crowley et al, 2000). While of high standard, these studies are opportunistic in the sense that they arose from a particular interest and not as a response to a coordinated approach to the National provision of medical services or a comprehensive strategy for the cost effective reduction of infectious diseases.

In one respect Australia has led the World in the adoption of a coherent economic framework. It was the first country to require an economic evaluation as part of the process for selecting drugs for public subsidy through the pharmaceutical benefits scheme and it is currently pioneering a similar requirement for new medical services seeking listing on the medical benefits schedule for Medicare subsidised services. Criteria for use in these evaluations have also been carefully detailed and reviewed. The impact of these requirements is, however, unknown although the study by Harris and Mitchell (2000) indicates that drugs with high cost to benefit ratios have generally been excluded and those with a lower cost approved for public subsidy. In aggregate, however, the impact of these requirements must necessarily be very small. Only a handful of drugs and medical services have been reviewed the backlog of untested established drugs and procedures are vast and there is no plan for their progressive evaluation and rationalisation.

4 Conclusions

Economics has a potentially large role to play in the understanding of disease behaviour and in the adoption of policies which will maximise health from available resources. The full potential is undoubtedly unrealised. At the systemic level 'Economic Epidemiology' is a new and involving area. At the micro level, service evaluation methods are still evolving. This does not explain, however, the failure to use existing methodologies to help rationalise the delivery of existing services. Evidence reported here clearly indicates that significantly greater health improvements may be obtained from some expenditures than from others and such information must be available to those who are designing best practice guidelines, if these are to maximise health gains from a limited budget.

In the absence of an economic framework for analysis, ad hoc approaches to the prioritisation of health expenditures are likely to emerge. In particular, the priority given to interventions for diseases with a large burden of disease or for diseases on a list of national health priorities may result in an inappropriate low priority for other diseases, including infectious diseases, when their incremental benefit to cost ratio is high.

Inconsistencies in present economic studies are, in part, capable of a resolution through the adoption of methodological guidelines. In part, they reflect the inevitable shortcomings of individual studies and imply the need for a collaborative and well resourced approach to the evaluation of individual studies and possibly, the creation of an organisation such as the Cochrane Collaboration for the evaluation of clinical trials and for the dissemination of the

resulting information. Such a database is being developed in both the US and UK and a cross National collaboration may well emerge. With or without such a development there is a need for an Australian capacity to evaluate the relevance of such studies in the context of the Australian health system and Australian social values.

References

Coast J, Smith R & Miller M 1996, 'Superbugs: Should Antimicrobial Resistance be Included as a Cost in Economic Evaluation?', *Health Economics*, 217–226.

Coast J, Smith R & Miller M 1998, 'An Economic Perspective on Policy to Reduce Antimicrobial Resistance', *Social Science and Medicine*, 46, 1, 29–38.

Crowley S et al 2000, 'Cost Effectiveness Analysis of Lamivudine for the Treatment of Chronic Hepatitis B', *Pharmaeconomics*, 17, 5, 409–427.

Dadds R 1998, 'The Economics of Public Health Interventions: An Examination of the Cost and Benefits of Public Health Interventions in Australia', Unpublished Report prepared for the Policy and Planning Section, National Public Health Planning Branch, Commonwealth Department of Health and Aged Care.

Delfino D & Simmons P 1999, 'Infectious Disease Control by Vaccines Giving Full or Partial Immunity', Department of Economics and Related Studies, University of York Discussion paper, No. 99/32

Geoffard P & Philipson T 1995, 'The Empirical Content of Canonical Models of Infectious Diseases', *Biometrika*, 28, 1, 101–114.

George B, Harris A & Mitchell A 1997, 'Reimbursement Decisions and the Implied Value of Life: Cost Effectiveness Analysis and Decisions to Reimburse Pharmaceuticals in Australia 1993–1996, in AH Harris (ed), *Economics and Health 1997*, Proceedings of the 19th Australian Conference of Health Economists (School of Health Services Management, University of NSW, Sydney).

Harris A, Yong K & Kermode M 2000, 'Cost Effectiveness of Combination Vaccine for Hepatitis B and HIV in Australia, Unpublished paper Health Economics Unit, Monash University.

Jefferson T & Demicheli V 1994, 'Is Vaccination Against Hepatitis B Efficient? A Review of World Literature', *Health Economics*, 3, 25–37.

Mathers C, Vos T, Stevenson C 1999, '*The Burden of Disease and Injury*', Australian Institute of Health and Welfare.

Menzel P, Gold M R, Nord E, Pinto-Prades J L, Richardson J, Ubel P 1999, 'Toward a Broader View of Values in Cost-Effectiveness Analysis of Health', Hastings Center Report, May-June , 7-15.

Mooney G, Irwig L & Leeder S 1997, 'Priority Setting and Health Care: Unburdening from the Burden of Disease', *Australia and New Zealand Journal of Public Health*. 21, 7, 680–682.

Mullahy J 2000, 'It'll Only Hurt a Second? Microeconomic Determinants of the Demand for Flu Vaccines', *Health Economics*, Forthcoming (cited in Philipson 2000).

Murray C & Lopez A 1996, *The Global Burden of Disease*, Harvard University Press.

Murray C & Lopez A 2000, 'Progress and Directions in Refining the Global Burden of Disease Approach: A Response to Williams', *Health Economics*, 9, 69–82.

Nord E 1999, *Cost Value Analysis in Health Care*, Cambridge University Press, Cambridge.

Nord E, Pinto J L, Richardson J, Menzel P, Ubel P 1999, 'Incorporating Societal Concerns for Fairness in Numerical Valuations of Health Programmes', *Health Economics*, 8, 25-39.

Philipson T 1996, 'Private Vaccination and Public Health: An Empirical Examination for US Measles', *The Journal of Human Resources*, 31, 3.

Philipson T 2000, 'Economic Epidemiology and Infectious Diseases' in Culyer A & Newhouse J (eds), *Handbook of Health Economics*, Vol 1B, 1761–1799.

Shiell A & Law M 2000, 'The Cost of Hepatitis C and the Cost Effectiveness of it's Prevention', Unpublished paper, Department of Community Health Services, University of Calgary.

Smith R & Coast J 1998, 'Controlling Antimicrobial Resistance: A Proposed Transferable Permit Market', *Health Policy*, 43, 319–323.

Tengs T 2000, 'One Thousand Health Related Quality of Life Estimates', *Medical Care*, 38, 6, 583–637.

Tengs T et al 1995, 'Five Hundred Life Saving Interventions and Their Cost Effectiveness', *Risk Analysis*, 15, 3, 369–390.

Vos T, Mathers C 1998, 'Appropriate Yardsticks for Measuring Population Health', *Australia and New Zealand Journal of Public Health*, 22, 4, 107-108.

Williams A 1999, 'Calculating the Global Burden of Disease: Time for a Strategic Reappraisal', *Health Economics*, 8, 1–8.

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Hawthorne, L., Toth, J. and Hawthorne, G., 2000, Patient Demand for Bilingual Bicultural Nburses in Australia, *Journal of Intercultural Studies*, 21(2), 193-224.

Jackson, T., 2000, Cost estimates for inpatient care in Australia: evaluation of alternative sources, *Australian and New Zealand Journal of Public Health*, 24, 234-241.

Pirkis, J., Burgess, P. and Dunt, D., 2000, Suicidal ideation and suicide attempts: epidemiological findings from the Australian National Survey of Mental Health and Wellbeing, *CRISIS*, 21, 16-25.

Thomson, J., Pirkis, J. and Dunt, D., 2000, Local Follow up Systems with a Focus on a General Pratice Based Register - Reminder System for Immunisation in GP - Heresy or Commonsense?, *Australian Family Physician Reason*, 29, 16-17.

Ubel, P., Richardson, J. and Menzel, P., 2000, Societal value, the person trade-off, and the dilemma of whose values to measure for cost-effectiveness analysis, *Health Economics*, 9, 127-136.

Appleby, N., Dunt, D., Southern, D. and Young, D., 1999, General Practice Integration in Australia: Primary Health Service Providers and consumers perceptions of barriers and solutions, *REASON (accepted)*, 28, 858-863.

Burgess, P. and Pirkis, J., 1999, The currency of case management: Benefits & Costs, *Current Opinion in Psychiatry*, 12, 195-199.

Carlin, J., Jackson, T., Lane, L., Bishop, R. and Barnes, G., 1999, Cost effectiveness of rotavirus vaccination in Australia, *Australian and New Zealand Journal of Public Health*, 23, 611-616.

Carter, R. and Hailey, D., 1999, Economic Evaluation of the Cochlear Implant, *International Journal of Technology Assessment in Health Care*, 15, 520-530.

Carter, R., Marks, R. and Hill, D., 1999, Could a national skin cancer primary prevention campaign in Australia be worthwhile?: an economic perspective, *Health Promotion International*, 14, 73-82.

Defina, J., Crowley, S. and Streeton, C., 1999, Pharmacoepidemiology: A commentary on the evidence-based review of drug efficacy and safety, *Australian Epidemiologist*, 6, 5-9.

Dunt, D., Day, N. and Pirkis, J., 1999, Evaluation of a community-based health promotion program supporting public policy initiative for a healthy diet., *Health Promotion International*, 4, 317-327.

Hawthorne, G., Richardson, J. and Osborne, R., 1999, 'The Assessment of quality of life (AQoL) instrument: A psychometric measure of health related quality of life', *Quality of Life Research*, 8, 209-224.

Jackson, T., Watts, J., Lane, L. and Wilson, R., 1999, Data comparability in patient level clinical costing systems, *Casemix*, 1, 36-45.

Jiritjwong, S., Dunt, D. and Goldsworthy, D., 1999, Social support and antenatal clinic performance among Thai pregnant women in Hatyai, a city in Southern Thailand, *Journal of Advanced Nursing*, 29(2), 395-406.

Menzel, P., Gold, M., Nord, E., Pinto, P., J-L, Richardson, J. and Ubel, P., 1999, Toward a broader view of values in cost-effectiveness analysis of health, *Hastings Centre Report*, 29, 7-15.

Mihalopoulos, C., McGorry, P. and Carter, R., 1999a, Is phase-specific, community-oriented treatment of early psychosis an economically viable method of improving outcome?, *ACTA Psychatrica Scandinavica*, 54, 1-9.

Mihalopoulos, C., Pirkis, J., Dunt, D. and Naccarella, L., 1999b, Shared mental health care and people of non-English speaking backgrounds: A qualitative study of key informants views, *Primary Care Psychiatry 1999*, 5, 19-24.

Montalto, M., 1999, Hospital in the home: take the evidence and run, *Medical Journal of Australia*, 170, 148-149.

Naccarella, L., 1999, Transcultural Mental Health Promotion: An exploratory study, *Health Promotion Journal of Australia*, 9, 89-95.

Nord, E., Pinto-Prades, J. L., Richardson, J., Menzel, P. and Ubel, P., 1999, Incorporating societal concerns for fairness in numerical valuation of health programmes, *Health Economics*, 8, 25-39.

Olsen, J. and Richardson, J., 1999, Production gains from health care: What should be included in cost-effective analyses?, *Social Science & Medicine*, 49, 17-26.

Peacock, S. and Segal, L., 1999, Prospects for Risk adjusted Capitation in Australia, *Health Care Management Science*, in press.

Richardson, J. and Segal, L., 1999, The cost of good health: How much will we need to spend?, *Journal of Law and Medicine*, 7, 117-129.

Scotton, R., 1999, Managed Competition: The policy context, *Australian Health Review*, 22, 103-121.

Southern, D., Batterham, R., Appleby, N., Young, D. and Dunt, D., 1999, The concept mapping method: An alternative to focus groups inquiry in general practice, *Australian Family Physician*, 28, S35-S40.

Thomson, J., Hilditch, A., Pirkis, J. and Dunt, D., 1999, Immunisation Initiatives in General Practice: Important Lessons from Division Projects, *Family Physician Journal REASON*, 28, 1290-1297.

Ubel, P., Richardson, J. and Pinto-Prades, J. L., 1999, Life-Saving Treatments and disabilities. Are all QALYs Created Equal, *International Journal of Technology Assessment in Health Care*, 15, 738-748.

Coast, R., Smith, R. and Millar, M., 1998, An economic perspective on policy to reduce antimicrobial resistance, *Social Science and Medicine*, 46, 29-38.

Cohen, J., Piterman, L., McCall, L. and Segal, L., 1998a, Near patient testing for serum cholesterol: Attitudes of general practitioners and patients, appropriateness and costs, *The Medical Journal of Australia*, 168, 605-609.

Cohen, J., Piterman, L., McCall, L. M. and Segal, L., 1998b, Cost-effectiveness of the primary prevention of non-insulin dependent diabetes mellitus, *Health Promotion International*, 13, 197-209.

Doyle, C. and Ward, S., 1998, Education and training in dementia care in Australia, *Australian and New Zealand Journal of Public Health*, 22, 589-597.

Easton, J. and Segal, L., 1998, Opportunistic screening for diabetes, *Medical Journal of Australia*, 168, 45.

Gisjbers, A., Dunt, D., Huang, N., Hurworth, R. and Southern, D., 1998, An evaluation of the cervical cancer screening program in Victoria, *Health Promotion Journal of Australia*, 8, 92-99.

Huang, N., Hurworth, R. and Dunt, D., 1998, Cervical cancer screening, Evaluation of the Victorian Program 1995: A balancing act between pragmatism and rigor, *Evaluation Journal of Australasia*, 10, 69-81.

Kerr, G., Dunt, D. and Gordon, I., 1998, Effect of the introduction of casemix funding in patients admitted with suspected unstable angina in a Victorian public hospital, *Medical Journal of Australia*, 168, 57-60.

Montalto, M., 1998, How safe is hospital in the home care?, *Medical Journal of Australia*, 168, 277-280.

Montalto, M. and Karabatsos, G., 1998, General practitioner involvement in hospital in the home. The hospitals view, *Australian Family Physician*, 27.

Morgan, M., Crowley, S. and Wright, C., 1998a, Economic evaluation of a pit and fissure dental sealant and fluoride mouthrinsing program in two nonfluoridated regions of Victoria, *Journal of Public Health Dentistry*, Winter 58, 19-27.

Morgan, M., Wright, F., Campian, A. and Crowley, S., 1998b, The efficacy and effectiveness of a primary preventive dental programme in non-fluoridated areas of Victoria, Australia., *Community Dental Health*, 15, 263-271.

Naccarella, L., 1998, Community based health promotion: An analysis of projects conducted by Divisions of General Practice, *Australian Journal of Primary Health Interchange*,, 49-57.

Nori, A. and Gunn, J., 1998, Data in general practice: What is useful?, *Australian Family Physician*, 27, 110-111.

Peacock, S., 1998, Fundamental funding, *Hospital & Healthcare*,, 18-19.

Pirkis, J. and Burgess, P., 1998, Suicide and recency of contact with health care: A systematic review, *British Journal of Psychiatry*, 173, 462-475.

Pirkis, J. and Gardner, H., 1998, Writing for Publication, *Australian Journal of Primary Health Interchange*, 4, 38-42.

Pirkis, J., Jolley, D. and Dunt, D., 1998, Recruitment for women by GPs for Pap test: A Meta-analysis, *British Journal of General Practice*, 48, 1603-1607.

Richardson, J., 1998, Economic evaluation of health promotion: friend or foe?, *Australian and New Zealand Journal of Public health*, 22, 247-253.

Robertson, I., Bound, R. and Segal, L., 1998, Colorectal cancer, diet and lifestyle factors: opportunities for prevention, *Health Promotion International*, 13, 141-150.

Schulman, K., Burke, J., Drummond, M., Davies, L., Carlsson, P., Gruger, J., Harris, A., Lucioni, C., Gisbert, R., Llana, T., Tom, E., Bloom, B., Willke, R. and Glick, H., 1998, Resource costing for multinational neurological clinical trials: methods and results, *Health Economics*, 7, 629-638.

Segal, L., 1998a, Health funding: the nature of distortions and implications for the health service mix, *Australian and New Zealand Journal of Public Health*, 22, 271-273.

Segal, L., 1998b, Economic Evaluation and Health Promotion, *Health Promotion International*, 13, 1-2.

Segal, L., 1998c, The importance of patient empowerment in health system reform, *Health Policy*, 44, 31-44.

Segal, L., 1998d, Book Review, Economic Evaluation of Health Promotion by C Phillips, *Health Promotion International*, 13.

Segal, L., Dalton, A. and Richardson, J., 1998, Cost effectiveness of the primary prevention of non-insulin dependent diabetes mellitus, *Health Promotion International*, 13, 197-209.

Smith, R. and Coast, J., 1998, Controlling antimicrobial resistance: a proposed transferable permit market, *Health Policy*, 43, 219-232.

Smith, R. and Widiatmoko, D., 1998, The cost-effectiveness of home assessment and modification to reduce falls in the elderly, *Australian and New Zealand Journal of Public Health*, 22, 436-440.

Smith, R. and Wilton, P., 1998, General practice fundholding: progress to date, *British Journal of General Practice*, 48, 1253-1257.

Stewart, M. and Hailey, D., 1998, Laser treatment for superficial vascular lesions in a public hospital program, *Minimally Invasive Therapy and Allied Technologies*, 7, 1653-1662.

Streeton, C. and Harris, A., 1998, Treatment patterns of external genital warts in Australian general practice, 1997, *Venereology*, 11, 20-25.

Watts, J. and Jackson, T., 1998, A task-weighted approach to determining authorship, *Australian Journal of Primary Health Interchange*, 4, 64-70.

Wilton, P. and Smith, R., 1998, Primary care reform: a three country comparison of 'budget holding, *Health Policy*, 44, 149-166.

Carr-Hill, R., Hardman, G., Martin, S., Peacock, S., Sheldon, T. and Smith, P., 1997, A new formula for distributing hospital funds in England, *Interfaces*, 27, 53-70.

Easton, J. and Segal, L., 1997, Cost of screening for diabetes, *Medical Journal of Australia*.

Elliot, S. and Harris, A., 1997, The methodology of cost effectiveness analysis: avoiding common pitfalls, *Medical Journal of Australia*, 166, 636-639.

Graffram, J. and Naccarella, L., 1997, Disposition toward employment and perspectives on employment process held by clients with psychiatric disability, *Australian Disability Review*, 3, 3-15.

Hailey, D., 1997, Australian economic evaluation and government decisions on pharmaceuticals, compared to assessment of other health technologies, *Social Science and Medicine*, 45, 563-581.

Harris, A., Clark, R. and Verikios, G. a., 1997, Cost effectiveness versus cost benefit analysis in road safety interventions, *Accident Analysis and Prevention*.

Huang, N., 1997, Health promotion in general practice: Some questions raised, *Challenging Public Health*, 1, 34-42.

Jackson, T. and Sevil, P., 1997, Problems in counting and paying for multidisciplinary outpatient clinics, *Australian Health Review*, 20, 38-54.

Kerr, G. and Dunt, D., 1997, Early prediction of risk in patients with suspected unstable angina using Serum Troponin T, *Australian and New Zealand Journal of Medicine*, 27, 554-559.

Montalto, M., 1997, An audit of patients admitted for home intravenous therapy directly from the emergency department, *International Journal of Clinical Practice*, 51, 433-437.

Montalto, M. and Dunt, D., 1997, Home versus hospital intravenous therapy for two acute infections: An early study, *Australian and New Zealand Journal of Medicine*, 27, 19-23.

Morgan, M., Campian, A., Crowley, S. and Wright, F., 1997, Evaluation of a primary preventive program in non-fluoridated areas of Victoria, *Australian Dental Journal*, 42, 381-388.

Olsen, J., 1997a, Aiding priority setting in health care: is there a role for the contingent valuation method?, *Health Economics*, 6, 603-612.

Olsen, J., 1997b, Theories of justice and their implications for priority setting in health care, *Journal of Health Economics*, 16, 625-639.

Pirkis, J., Dunt, D. and Jordan, H., 1997a, GPs and practice-based health promotion: An analysis of divisional projects, *Australian Journal of Primary Health Care Interchange*.

Pirkis, J., O'Regan, K. and Baillie, R., 1997b, Contact dermatitis and exposure to in-feed antibiotics among pig feed handlers, *Australian Journal of Rural Health*, 5, 76-79.

Pirkis, J., Segal, L., Dunt, D., Orr, T., Parsons, T. and Mossop, G., 1997c, An evaluation of a diabetes 'shared care' program in a rural division of general practice, *Journal of Primary Health Care Interchange*, 3, 26-35.

Richardson, J. and Nord, E., 1997, The importance of perspective in the measure of quality adjusted life years, *Medical Decision Making*, 17, 33-41.

Robertson, I. and Ball, M., 1997, Is there an effect of menopause on CHD mortality - Asia Pacific comparisons, *Asia Pacific Journal of Clinical Nutrition*, 6, 226-228.

Solin, M., Ball, M., Robertson, I., deSilva, A., Pasco, J., Kotowicz, M., Nicholson, G. and Collier, G., 1997, Relationship of serum leptin to total and truncal body fat, *Clinical Science*, 93, 581-584.

Southern, D., Hurworth, R., Dunt, D., Gijsbers, A. and Huang, N., 1997, An evaluation of community initiatives in Victoria directed at preventing cancer of the cervix, *Journal of Primary Health Care Interchange*, 3, 29-39.

Summers, M., 1997, Output-based funding in two community-based services, *Just Policy*,, 40-47.

Batterham, R., Dunt, D. and Disler, P., 1996, Can we achieve accountability for long term outcomes?, *Archives of Physical Medical Rehabilitation*, 77, 1219-1225.

CART-Project-Team, 1996, Developing methodologies for evaluating community-wide health promotion, *Health Promotion International*, 11, 227-236.

Coast, R., Smith, R. and Millar, M., 1996, Super-Bugs: should antimicrobial resistance be included as a cost in economic evaluation?, *Health Economics*, 5, 217-226.

Hailey, D., 1996a, Health technology assessment in Australia: a need to refocus, *Journal of Quality in Clinical Practice*, 16, 123-129.

Hailey, D., 1996b, Developments and outcomes in Australian diagnostic imaging services, *Academic Radiology*, 3, S92-S94.

Hailey, D., 1996c, International health technology assessment meetings, *Journal of Quality in Clinical Practice*, 16, 61-63.

Hailey, D., 1996d, Prostate cancer raises doubts about screening, *Diagnostic Imaging International*,, 33-34, 39-40.

Hailey, D. and Kevles, B.-A., 1996, Debate intensifies over the value of breast cancer screening, *Diagnostic Imaging International*, 12, 19-25, 27.

Harris, E., Richardson, J., Farish, S. and Saltman, D., 1996, The reliability and validity of physician work measurements in Australian general practice office consultations, *Medical Journal of Australia*, 65, 18-21.

Harris, P. and Dunt, D., 1996, Diabetic retinopathy: the role of the General Practitioner, *Medical Journal of Australia*, 165, 293.

Hawthorne, G., 1996a, A comment on Stephen Wallace's letter regarding Life Education, *Addiction*, 91, 288-291.

Hawthorne, G., 1996b, Pre-teenage drug use in Australia: The key predictors and school-based drug education, *Journal of Adolescent Health*, 20, 384-395.

Hawthorne, G., 1996c, The social impact of Life Education: Estimating drug use prevalences among Victorian primary school students and the statewide effect of the Life Education Program, *Addiction*, 91, 1151-1159.

Jackson, T., 1996, A proposal for managed care payment options for patients with chronic conditions, *Australian Health Review*, 19.

Marshall, D., Hailey, D. and Jonsson, E., 1996, Health policy on bone density measurement technology in Sweden and Australia, *Health Policy*, 35, 217-228.

McKie, J., Kuhse, H., Richardson, J. and singer, P., 1996a, Another peep behind the veil, *Journal of Medical Ethics*, 22, 216-221.

McKie, J., Kuhse, H., Richardson, J. and Singer, P., 1996b, Double jeopardy: the equal value of life and the veil of ignorance, *Journal of Medical Ethics*, 22, 204-208.

McKie, J., Kuhse, H., Richardson, J. and Singer, P., 1996c, Allocating healthcare by QALYs: the relevance of age, *Cambridge Quarterly of Healthcare Ethics*, 5, 534-545.

Montalto, M., 1996, Patient and carer satisfaction with Hospital in the Home care, *International Journal of Quality in Health Care*, 8, 243-254.

Montalto, M., Dunt, D. and Richardson, J., 1996a, Differences in patient throughput between community health centres and general practitioners, *Australian Health Review*, 19, 56-65.

Montalto, M., Dunt, D., Vafiadis, R. and Young, D., 1996b, Disease prevention and health promotion activity to private and community health centre general practitioners, *Australian Journal of Primary Health*, 2, 41-47.

NHMRC-Working-Party, 1996, Prevention of overweight and obesity in Australia.

Pirkis, J., Martyres, R., Wyman, K., Burge, B., Isaac, D. and van Doorn, H., 1996a, Integrating General Practice and hospital services, *Australian Family Physician*, 25, 537-543.

Pirkis, J., Speed, B., Yung, A., Dunt, D., MacIntyre, C. and Plant, A., 1996b, Time to initiation of anti-tuberculosis treatment, *Tubercle and Lung Disease*, 77, 401-406.

Richardson, J., Hall, J. and Salkeld, G., 1996, The measurement of utility in multiphase health States, *International Journal of Technology Assessment in Health Care*, 12, 151-162.

Rowe, L., Temple, S. and Hawthorne, G., 1996, Mother's emotional needs and difficulties after childbirth, *Australian Family Physician*, September, S53-S58.

Sanson-Fisher, R., Redman, S. and Carter, R., 1996, Developing methodologies for evaluating community wide health promotion, *Health Promotion International*, 11, 227-236.

Selby Smith, C. and Crowley, S., 1996, An employment profile of allied health professions in Australia: challenges for the 90's and beyond, *Journal of Allied Health*,, 249-265.

Smith, R., 1996, Is Regret Theory an alternative basis for estimating the value of healthcare interventions?, *Health Policy*, 37, 105-115.

Smith, R., Coast, J. and Millar, M., 1996, Over-the-counter antimicrobials: the hidden costs of resistance, *Journal of Antimicrobial Chemotherapy*, 37, 1031-1032.

Wood, C., Maher, P., O'Callaghan, D., Hailey, D. and Downing, B., 1996, Underutilization of laparoscopic oophorectomy, *The Australian and New Zealand Journal of Obstetrics & Gynaecology*, 36, 198-201.

Costello, A., Crowe, H., Jackson, T. and Street, A., 1995, A randomised single institution study comparing laser prostatectomy and transurethral resection of the prostate, *Annals Academy of Medicine, Singapore*, 24, 700-704.

Crowley, S., Dunt, D. and Day, N., 1995, A review of the cost effectiveness of alternative interventions for the prevention and treatment of coronary heart disease, *Australian Journal of Public Health*, 19, 336-346.

Day, N., Dunt, D. and Day, S., 1995, Maximising response to surveys in health program evaluation at minimum cost using multiple methods: mail, telephone and visit, *Evaluation Review*, 19, 436-450.

Dunt, D., Abramson, M. and Andreassen, D., 1995a, Health impact assessment of a new freeway development, *Australian Journal of Public Health*, 19, 347-356.

Dunt, D., Crowley, S. and Day, N., 1995b, Is prevention really better than cure? Parameters of the debate and implications for program evaluation design, *Health Promotion International*, 10, 325-334.

Hawthorne, G., 1995, Life Education's failure to face the facts, *Addition*, 90, 1404-1406.

Hawthorne, G., Garrard, J. and Dunt, D., 1995, Life Education's drug education program: does it have public benefit, *Addiction*, 90, 205-215.

Jackson, T., 1995, Casemix: the building blocks, *Australian Health Review,* 18, 105-116.

Jackson, T., Street, A., Costello, A. and Crowe, H., 1995, Cost effectiveness of laser ablation of the prostate: premature evaluation, *International Journal of Technology Assessment in Health Care,* 11, 595-610.

Montalto, M., 1995a, Hospital in the home units: early issues for GP involvement, *Australian Family Physician,* 24, 797-801.

Montalto, M., 1995b, Using referral letters to measure quality and performance in general practice, *Journal of Quality in Clinical Practice,* 15, 45-50.

Montalto, M., Adams, G., Dunt, D. and Street, A., 1995, The True Believers Study: differences in work activities between private and community health centre general practitioners, *Medical Journal of Australia,* 163, 187-190.

Nord, E., Richardson, J., Street, A., Kuhse, H. and Singer, P., 1995a, Who cares about cost: does economic analysis impose or reflect social values, *Health Policy,* 34, 79-94.

Nord, E., Richardson, J., Street, A., Kuhse, H. and Singer, P., 1995b, Maximising health benefits versus egalitarianism: an Australian survey of health issues, *Social Science and Medicine,* 41, 1429-1437.

Nord, E., Street, A. and Richardson, J., 1995c, The significance of age and duration of effect in social evaluation of health care, *Health Care Analysis,* 4, 103-111.

Osman, L. and Dunt, D., 1995, Factors influencing mothers' decisions to consult a general practitioner about their children's illnesses, *British Journal of General Practice,* 45, 310-312.

Pirkis, J. and Tallis, G., 1995, Communication between general practitioners and their non-English speaking patients in Melbourne, *Australian Journal of Primary Health - Interchange,* 1, 38-48.

Richardson, J., 1995, Medicare: radical reform or incrementalism, *Australian Health Review,* 18, 2-8.

Richardson, J. and Crowley, S., 1995, The case for alcohol taxation in Australia, *Drug and Alcohol Review,* 14, 89-99.

Rogers, P., Hawthorne, G. and Wheeler, R., 1995, Primary school drug education: An evaluation of Life Education Victoria, *Evaluation News & Comment,* 4, 29-36.

Scotton, R., 1995, Managed competition: issues for Australia, *Australian Health Review,* 18, 82-104.

Selby Smith, C. and Crowley, S., 1995, Labour force planning issues for allied health in Australia, *Journal of Allied Health,*, 249-265.

Singer, P., McKie, J., Kuhse, H. and Richardson, J., 1995, Double jeopardy and the use of QALYs in health care allocation, *Journal of Medical Ethics,* 21, 114-150.

Speed, B. and Dunt, D., 1995, Clinical and host differences between the two varieties of Cryptococcus Neoformans, *Clinical Infectious Disease,* 21, 28-34.

Bower, C., Condon, R., Payne, J., Hendrie, D., Harris, A. and Henderson, R., 1994, Sequelae of Haemophilus Influenza Type B Meningitis in children under 5 years of age, *Journal of Paediatrics and Child Health,* 30, 393-397.

Carter, R., 1994, A macro approach to economic appraisal in the health sector, *The Australian Economic Review,* 2nd Quarter, 105-112.

Cook, J., Richardson, J. and Street, A., 1994, A cost utility analysis of treatment options for gallstone disease: methodological issues and results, *Health Economics,* 3, 157-168.

Costello, A., Jackson, T., Crowe, H. and Street, A., 1994, Comment and reply: Transurethral resection of the prostate, *Australian New Zealand Journal of Surgery,* 64, 795.

Geelhoed, E., Harris, A. and prince, R., 1994, Cost effectiveness of hormone therapy and lifestyle interventions for hip fracture, *Australian Journal of Public Health,* 18, 153-159.

Harris, A., 1994, Economic appraisal in the regulation of pharmaceuticals in Australia: its rational and potential impact, *Australian Economic Review,* 2, 99-104.

Harris, A., Bower, C. and Hendrie, D., 1994, An economic appraisal of the PRP-OMP vaccine for Haemophilus Influenza Type B disease, *Medical Journal of Australia,* 160, 464-483.

Harris, E. and Richardson, J., 1994, Pressure for health care reform, *Medical Journal of Australia,* 160, 463-464.

Hawe, P., 1994a, Capturing the meaning of community in the evaluation of community interventions: some contributions from community psychology, *Health Promotion International,* 9, 199-210.

Hawe, P., 1994b, Measles control: A best-practice challenge in public health, *Australian Journal of Public Health,* 18, 241-243.

Hendrie, D., Rosman, D. and Harris, A., 1994, The hospital costs of road crashes in Western Australia, *Australian Journal of Public Health,* 18.

Montalto, M., Dunt, D. and Young, D., 1994a, True believers? A Victorian survey on the characteristics of general practitioners in community health centres, *Australian Journal of Public Health,* 18, 424-428.

Montalto, M., Gunesekera, A. and Sanderson, F., 1994b, The use of inpatient admission privileges by members of a Division of General Practice, *Australian Family Physician,* 23, 453-461.

Montalto, M., Rosengarten, P. and Harris, P., 1994c, Impact of general practitioners. Referral letters to the emergency department, *Australian Family Physician,* 23, 1320-1328.

Pirkis, J. and Montalto, M., 1994, General practitioners in hospitals, *Australian Family Physician,* 24, 1026-1028.

Richardson, J., 1994a, Cost utility analysis: what should be measured, *Social Science and Medicine*, 39, 7-21.

Richardson, J., 1994b, Medicare: policy issues and options, *The Australian Economic Review*,, 73-80.

Richardson, J. and Crowley, S., 1994, Optimal alcohol taxation: balancing external and consumption costs, *Health Economics*, 3, 73-77.

Richardson, J., Schwartz, S. and Glasziou, P., 1994, QALYs for resource allocation: a reply to Burrows and Brown, *Australian Journal of Public Health*, 17, 394-396.

Scotton, R., 1994, Lets think seriously about managed competition, *Social Science and Medicine*, 38, v-vii.

Segal, L., Carter, R. and Zimmet, P., 1994, The cost of obesity: the Australian perspective, *Pharmaco-Economics*, 5, 45-52.

Segal, L. and Richardson, J., 1994, Economic framework for allocative efficiency in the health sector, *The Australian Economic Review*,, 89-97.

Selby Smith, C. and Crowley, S., 1994, Health labour force planning for allied health. The Australian perspective, *Journal of Allied Health*.

Selby Smith, C., Hailey, D. and Drummond, M., 1994, The role of economic appraisal in health technology assessment: the Australian case, *Social Science in Medicine*, 38, 1653-1662.

Sintonen, H., 1994, Outcome measurement in acid-related diseases, *Pharmaco-Economics*, 5, 17-26.

Weerasooriya, H., Murdock, C., Harris, A. and Davis, M., 1994, The cost effectiveness of treatment of Supraventricular Arrythmias related to an accessory atrioventricular pathway: comparison of catheter ablation, surgical division and medical treatment, *Australian and New Zealand Journal of Medicine*, 24, 161.

Whitworth, J. and Jackson, T., 1994, Consensus Statement on the management of hypertension, *Medical Journal of Australia*, 160.

Burrows, C. and Brown, K., 1993, QALYs for resource allocation: Probably not and certainly not yet, *Australian Journal of Public Health*, 17, 278-286.

Burrows, C., Brown, K. and Gruskin, A., 1993, Who buys health insurance: a survey of two large organizations, *Australian Journal of Social Issues*, 28, 106-123.

Carter, R., Glasziou, P., Oortmarssen, G. and al, e., 1993, Cost-effectiveness of mammographic screening in Australia, *Australian Journal of Public Health*, 17, 42-50.

Duckett, S. and Jackson, T., 1993, Casemix classification for outpatient services based on episodes of care, *Medical Journal of Australia*, 158, 489-492.

Halloran, J., Dunt, D. and Young, D., 1993, Coronary risk factors, knowledge and beliefs in 'blue-collar' men attending general practice, *Australian Family Physician*, 22, 351-358.

Hawe, P., 1993, Parental reporting of a child's measles immunisation status, *Australian Journal of Public Health*, 17, 400.

Herrman, H., Singh, B., Schofield, H., Eastwood, R., Burgess, P., Lewis, V. and Scotton, R., 1993, The health and wellbeing of informal caregivers: a review and study program, *Australian Journal of Public Health*, 17, 261-266.

Montalto, M. and Dunt, D., 1993, The delivery of traditional hospital services to patients at home, *Medical Journal of Australia*, 159, 263-265.

Montalto, M., Harris, P. and Rosengarten, P., 1993, Survey of Australian emergency physicians' expectations of general practitioner referrals, *British Journal of General Practice*, 43, 277-280.

Nord, E., Richardson, J. and Macarounas-Kirchmann, K., 1993, Social evaluation of health care versus personal evaluation of health States: evidence on the validity of four health State scaling instruments using Norwegian and Australian survey data, *International Journal of Technology Assessment in Health Care*, 9, 463-478.

Richardson, J., 1993a, 'Bulk billing of general practitioner services: the evidence', *Australian Journal of Public Health*, 17, 74-75.

Richardson, J., 1993b, Bulk billing of general practitioner services: the evidence: commentary on Rosenman and McKinnon, *Australian Journal of Public Health*, 17, 74.

Richardson, J., 1993c, Medicare: condition satisfactory, *New Doctor*, 59, 14-18.

Richardson, J., Schwartz, S. and Glasziou, P., 1993, QALYs for resource allocation. A reply to Burrows and Brown, *Australian Journal of Public Health*, 17.

Schwartz, S., Richardson, J. and Glasziou, P., 1993, Quality adjusted life years: origins, measurements, applications, objections, *Australian Journal of Public Health*, 17, 272-277.

Singh, J., Dunt, D. and Nandapogal, D., 1993, Stress response in meditators using heart rate variability, *Automedica*, 15, 273-279.

Wilson, A., Bekiaris, J., Gleeson, S., Papasavva, C., Wise, M. and Hawe, P., 1993, The good heart, good life survey: Self reported cardiovascular disease risk factors, health knowledge and attitudes among Greek-Australians in Sydney, *Australian Journal of Public Health*, 17, 215-221.

Brown, K. and Burrows, C., 1992, A prospective cost-effectiveness study of alternative work-up strategies in colorectal cancer screening, *Australian Health Review*, 15, 176-189.

Burrows, C. and Brown, K., 1992, Are any numbers better than no numbers? The sorry state of willingness-to-pay and some major methodological shortcomings, *Australian Health Review*, 15, 135-144.

Doyle, C., Luszcz, M. and Rendell, P., 1992, Real and perceived effects of ageing on cognition: a report on the ageing symposium, Seventh Australian Developmental Conference, Brisbane, July 1992, *Australian Educational and Developmental Psychologist.*

Garrard, J., 1992, Promoting health and evaluating change, *Australian Health Review,* 15, 213-224.

Hall, J., Gerard, K., Salkeld, S. and Richardson, J., 1992, Cost utility anlysis of mammography screening in Australia, *Social Science and Medicine,*, 9.

Hawthorne, G., 1992, Unreal expectations: Drug education in schools in Australia, *Health Review,* 15, 200-212.

O'Connor, R., 1992, Health related quality of life measures need content validity, *Australian Health Review,* 15, s155-163.

Phillips Doyle, C., 1992a, Aged care reform strategy mid-term review 1990-91 report: Commonwealth Department of Health, Housing, and Community Services: A review, *Australian Health Review,* 15, 225-227.

Phillips Doyle, C., 1992b, Assessing the quality of residential care for the aged, *Australian Health Review,* 15, 164-176.

Richardson, J. and Cook, J., 1992a, The QALY: victim of misinformation, *Health Issues,*, 24-26.

Richardson, J. and Cook, J., 1992b, Cost utility analysis: new directions in setting health care priorities, *Australian Health Review,* 15, 145-154.

Selby Smith, C. and Dunt, D., 1992, Work program of the National Centre for Health Program Evaluation, *Australian Health Review,* 15, 117-123.

Selby Smith, C., 1992, Health economics and policy: problems and prescriptions by Malcolm C. Brown: a review, *Australian Health Review,* 15, 228-229.

Selby Smith, C. and Dunt, D., 1992, Work program of the National Centre for Health Program Evaluation, *Australian Health Review,* 15, 117-123.

Shelley, J. and Street, A., 1992, Increasing women's participation in Pap smear screening in Australia - how can we tell if the national policy is effective?, *Australian Health Review,* 15, 190-199.

Social-Psychiatry-Research-Unit, 1992, The Canberra interview for the elderly: a new field instrument for the diagnosis of dementia and depression by ICD-10 and DSM-III-R, *Acta Psychiatrica Scandinavica,* 85, 105-113.

Street, A., 1992, Are QALYs equiable?, *Commentary on Hall, J, in 'Economics and Health 1991: Proceedings of the Thirteenth Australian Conference of Health Economists'.*

Street, A. and Richardson, J., 1992, The value of health care: what can we learn from Oregon?, *Australian Health Review,* 15, 124-134.

Altman, S. and Jackson, T., 1991, Health care in Australia: lessons from down under, *Health Affairs,* 10, 129-144.

Dunt, D., Temple-Smith, M. and Johnson, K., 1991, Nursing outside hospitals: the working experience of community nurses: job characteristics, *International Journal of Nursing Studies,* 28, 27-31.

Dunt D, Wyndham LE, Hailey DM, Lea A, Thomas DW, Maynard JH, Streitberg GS, Mudge P and Reed CSH 1991, Dry chemistry pathology in general practice. An assessment of utilisation, perceptions and impact on patient care, *Medical Journal of Australia,* 154, 511-518.

Jackson, T., 1991, Ambulatory casemix in Australia, *Australian Health Review,* 14, 335-345.

Phillips, C. and Henderson, A., 1991, The prevalence of depression among Australian nursing home residents: results using draft ICD-10 and DSM-III-R criteria, *Psychological Medicine,* 21, 739-749.

Phillips, J., 1991, Developing a method of assessing quality of care in nursing homes using key indicators and population norms, *Journal of Ageing and Health,* 3, 407-422.

Richardson, J., 1991a, Alcohol consumption in Australia: the economic cost and policy implications, *Medical Journal of Australia,* 154, 842-844.

Richardson, J., 1991b, 'Economic assessment of health care: theory and practice', *Australian Economic Review,* 1, 4-21.

Richardson, J., 1991c, 'Is eight percent of GDP enough: the future direction of Australia's health care system', *Australian Quarterly,*, 314-336.

Richardson, J., 1991d, Medical Remuneration, *New Doctor,* 53, 17-22.

Rylander, R. and Dunt, D., 1991, Traffic noise exposure planning: A case application, *Journal of Sound and Vibration,* 151, 535-541.

Selby Smith, C., 1991, The social sciences of health research by J. Daly and E. Willis: a review, *Australian Health Review,* 14, 475-477.

Shelley, J., Irwig, L., Simpson, J. and Macaskill, P., 1991, Evaluation of a mass media led campaign to increase Pap smear screening, *Health Education Research,* 6, 267-277

Brown, K. and Burrows, C., 1990, The sixth stool guaiac test: $47 million that never was, *Journal of Health Economics,* 9, 429-445.

Richardson, J., 1990, Alcohol taxes: the case for reform, *Medical Journal of Australia,* 152, 12.