**Top articles in health economics**

**Anthony J. Culyera,b and Lyudmila Mansurovaa**

**aInstitute for Work & Health, Toronto and bUniversity of York**

Citation counts, impact factors, immediacy indices and cited half-lives [1] have, since the seminal article by Liebowitz and Palmer [2], become common currency not only amongst bibliometricians but also journal editors and others interested in the standing of journals. They have also become standard instruments in the armamentarium for measuring aspects of the productivity of academic researchers and their departments. All such instruments are based upon frequency of citation in journals; none, so far as we know, has examined frequency of citation on student reading lists. Recently (2005), in the course of preparing four edited volumes of health economics readings [3] which is intended to be a representative portable ‘library’ of journal articles in the sub-discipline of health economics, one of us (AJC) contacted active teachers of health economics to request their student reading lists in order that frequency of citation could be used as an inclusion criterion for the volumes. It is this database that forms the raw material for this article which we hope will be of general interest to health economists and which may also provide a perspective on the state of the subject as seen by those who teach it.

**The data**

The initial search for contacts who might provide reading lists of journal articles for undergraduate or graduate courses in health economics was made from the 2005 membership list of the International Health Economics Association, supplemented by membership of the UK-based Health Economists’ Study Group for instances where one author (in practice AJC) noticed an apparent omission. The names of people known (by AJC) not to be teaching were removed and all those with an e-mail address were contacted with a request for their most recent reading lists. At the time of this exercise, a truly systematic trawl was not intended and no record was kept of those contacted. A list of the 112 who replied with reading lists for both undergraduate and graduate courses is in Appendix A. In the event, AJC estimates the overall response rate to have been about 90 per cent, including those who regretted either not issuing reading lists (relying mainly on textbooks to supplement their teaching) or who were, it turned out, no longer teaching health economics. The maximum frequency with which any article could be cited was thus 112 (multiple citations in the same reading list were not counted). The most frequently cited article was (not unexpectedly) Arrow (1961), which was cited 39 times (35%). This score may strike readers as low. It is accounted for, at least in part, by the number of teachers reporting that their course was either primarily for non-economists or that it had a particular focus (often health technology assessment and cost-effectiveness analysis) for which that article might have been either too sophisticated or not relevant.

There were 3,032 journal articles (out of 6,220 items in total) cited at least once in the submitted reading lists. The vast majority of the journal articles (2,759) were cited only once or twice (and were often self-citations by the teachers in question). We had hoped initially that there might be a cut-off point at about the 100th most frequently cited article. In the event, and to keep number manageable, we included all articles that were cited at least four times. This generated the list of 142 journal articles shown in Appendix 2. These are listed in order of frequency of citation and, within bands, alphabetically by first author (our apologies to second and subsequent authors). In what follows, we use the Harvard text reference method “author (date)” to refer to articles. A list of articles ordered alphabetically by first author is available from the authors.

**Topic distribution**

To analyse the distribution of articles across the topics commonly met in health economics we used a schematic (‘plumbing diagram’) based on one developed by Alan Williams [4]. This has eight ‘boxes’ of topics, but differs from the Williams diagram (a) by not using general topic “Planning, budgeting and monitoring mechanisms” (which includes relatively few genuinely economics items), (b) by including a box “Health insurance” which has a vast economics literature and (c) by having non-intersecting connecting pipelines. The pipelines have arrows indicating that the box from which the pipeline flows has contents which are for the most part logically prior to the contents of the box into which it flows. These interlinkages and feedbacks make it possible to see health economics as an integrated whole ‑ more than merely an *ad hoc* assemblage of topics.

Figure 1 about here

G. COST-EFFECTIVENESS, COST-UTILITY AND COST-BENEFIT ANALYSIS

Alternative ways of delivering health care (choice of mode, place, timing, amount) at various phases (e.g. prevention, detection, diagnosis, treatment, aftercare) and location (e.g. hospital, community, home, workplace); issues of study design (e.g. RCTs, observational studies); perspective and scope; treatment of uncertainty; discounting; confidence intervals, boxes and ellipses, cost-effectiveness acceptability curves; sensitivity analysis; modelling; decision theoretical approaches (e.g. Markov, value of information); systematic reviews.

F. MARKET ANALYSIS

Health care as an industry; health care insurance as an industry; the pharmaceuticals and medical appliance industries; demand and supply of information; behaviour of suppliers and other health-related agencies in markets; ‘internal’ markets; health care labour markets; equilibrating devices: prices, waiting, other non-price rationing; price discrimination; externalities, public goods and market failure; evaluation of performance of markets; market regulation and subsidy.

B. DETERMINANTS OF INDIVIDUAL HEALTH (OTHER THAN HEALTH CARE AND HEALTH INSURANCE) AND THE HEALTH OF POPULATIONS

Genetics; cultural factors; hazards: occupational, workplace, home and environmental; prevention of workplace and occupational accidents and disease; consumption patterns; education and training; income; capital or wealth (human and physical); economic and social inequalities; family background and values; early parenting; other social influences.

A. HEALTH AND ITS VALUE

Perceived attributes of health; measurement of health; value of health; value of life; value of avoiding risk of ill-health; utility measures of health-related quality of life (standard gamble, time trade-off, person trade-off, visual analogue scales); stated and revealed preference methods of measuring willingness to pay; conjoint analysis.

C. DEMAND FOR HEALTH AND HEALTH CARE

Influences of A and B on health care seeking behaviour; the prevention of sickness and injury; barriers to access to care (price, time, psychological, formal); price and income elasticities; information provision and utilization; asymmetries of information; agency relationship; supplier-induced demand; need; altruism.

E. HEALTH INSURANCE

Health care insurance – demand for and effects on the demand for care; value of risk sharing; moral hazard and adverse selection; coinsurance; cream skimming; supplier reimbursement; public and private insurance; over- and under-insurance.

D. SUPPLY OF HEALTH SERVICES

Factors of production; production functions; cost functions; input substitution; markets for inputs (human, equipment, drugs, etc.); education and training of health care professionals; remuneration methods and their incentives; health care firms and organizations, for-profit and non-profit, public and private.

H. EFFICIENCY AND DISTRIBUTIONAL ASPECTS OF HEALTH POLICY

Concepts of equity and efficiency; equity and efficiency criteria applied to whole systems of health care provision and systems of finance; impact of systems of health care on health; impact of systems of health insurance on health; interregional and international comparative studies, descriptive and analytical; global expenditure patterns and their determinants; epidemics and other global issues with economic implications.

 **Figure 1. The main topics of health economics**

The five central boxes are, so to speak, the analytical ‘engine room’ of health economics: A (Health and its Value), B (Determinants of Individual and Population Health other than Health Care and Health Insurance), C (Demand for Health and Health Care), D (Supply of Health Services) and E (Health Insurance). The remaining three are the main areas of applied health economics: F (Market Analysis) G (Cost-

Table 1 about here

**Table 1. Distribution of top journal articles across topics in health economics**

|  |  |  |
| --- | --- | --- |
| Topic/box | Articles | Number of articles |
| Health | Murray (1997), Nord (1992), O'Brien (1996), Torrance (1986), Viscusi (1993) | 5 |
| Determinants | Auster (1969), Brook (1983), Deaton (2003), Deaton (2002), Evans (1990), Muurinen (1982), Rosenzweig (1983), Smith (1999), Wagstaff (1993) | 9 |
| Demand | Becker (1994), Culyer (1996), Dranove (1987), Dranove (1988), Dranove (1994), Grossman (1972), Gruber (2001), Harris (1977), Kahneman (1979), Mooney (1993), Pauly (1994), Wagstaff (1986) | 12 |
| Supply | Akerlof (1970), Buxton (1997), Cutler (2001), Danzon (1991), Ellis (1986), Gaynor (2003), Gaynor (1995), Gruber (1993), Hickson (1987), Keeler (1999), Kessler (1996), Ma (1994), McGuire (1991), Newhouse (1996), Newhouse (1970), Pauly (1973), Yip (1998) | 17 |
| Insurance | Buchmueller (2002), Cardon (2001), Cochrane (1995), Cutler (1996), Cutler (1995), Ellis (1998), Farber (2000), Feldstein (1973), Labelle (1994), Ma (1997), Manning (1984), Manning (1987), Manning (1996), Nyman (1999), Pauly (1968), Pauly (1990), Zeckhauser (1970) | 17 |
| Markets | Berndt (2002), Cutler (1996), Cutler (1998), Dranove (1992), Dranove (1988), Ellis (1993), Enthoven (1993), Feldman (1991), Gaynor (1994), Kessel (1958), Kessler (2000), Maynard (1991), Newhouse (1992), Pauly (1986), Rice (1992), Robinson (1985) | 16 |
| CEA | Beck (1983), Bleichrodt (1997), Boyle (1983), Brazier (1999), Briggs (1998), Briggs (1998), Briggs (1999), Briggs (2002), Byford (1998), Claxton (2002), Cookson (2001), Diener (1998), Dolan (1996), Donaldson (2002), Drummond (1993), Eddy (1992), Eddy (1991), Garber (1997), Gerard (1993), Hadorn (1991), Klose (1999), Loomes (1989), Mason (1993), Murray (2000), Neuhauser (1975), Palmer (1999), Palmer (1999), Palmer (1999), Raftery (2000), Richardson (1994), Robinson (1993), Rothschild (1976), Ryan (2000), Sculpher (2000), Sheldon (1996), Smith (2003), Sonnenberg (1993), Stinnett (1998), Tengs (1996), Thompson (2000), Torgerson (1999), Torrance (1989), Weinstein (1977), Williams (1985) | 44 |
| Efficiency & Distribution | Arrow (1963), Besley (2001), Byford (2000), Culyer (1993), Culyer (1971), Culyer (1989), Cutler (2002), Fuchs (1996), Gruber (1994), Iglehart (2000), Iglehart (1999), Kremer (2002), Manning (1989), Maynard (2000), Olsen (1998), Pauly (1974), Van Doorslaer, (2000), Wagstaff (1999), Wagstaff (1991), Weisbrod (1991), Williams (1997) | 21 |
| Unclassified | Fuchs (2000) |  |

effectiveness, Cost-utility and Cost-benefit analysis) and H (Efficiency and Distributional Aspects of Health Policy).

Table 1 shows the distribution of the top 142 journal articles across these topics. The most populated box by far was G (Cost-effectiveness etc.) with 44 articles. This reflects well the policy popularity of health technology assessment. It was followed by H (Efficiency and distribution) with 21 articles, D (Supply) and E (Insurance), each with 17, and F (Markets) with 16. Box C (Demand) was relatively small (12 articles). A (Health) was, however, the truly orphan topic with a mere five articles. Box B (Determinants etc.) also had relatively few citations (9) and is a field that economists seem to have given over largely to epidemiologists, ergonomists and others, despite the valiant efforts of economists such as those cited here. One article (Fuchs 2000) was of a general reflective kind that could not be classified in the schema.

**The top articles**

The top 31 articles are listed in Table 2 order of frequency of appearance on reading lists. It is unsurprising that Arrow (1963), as what many would regard as the intellectually founding article in health economics, tops the list, nor that it is followed by the joint account of the most famous experiment ever conducted in health economics - or, arguably, economics in general (Manning et al. 1987). Nor is it remarkable that two

Table 2 about here

**Table 2 The most frequently cited health economics articles**

| **First author Article** |
| --- |
| Arrow  | Arrow KJ. Uncertainty and the welfare economics of medical care. *American Economic Review* 1963; **53(5)**: 941-973. |
| Manning et al. | Manning WG, Newhouse JP, Duan N, Keeler EB, Leibowitz A. Health insurance and the demand for health care: evidence from a randomized experiment. *American Economic Review* 1987; **77(3)**: 251-277. |
| Torrance  | Torrance GW. Measurement of health state utilities for economic appraisal: a review. *Journal of Health Economics* 1986; **5**: 1-30. |
| Grossman  | Grossman M. On the concept of health capital and the demand for health. *Journal of Political Economy* 1972; **80**: 223-255. |
| Newhouse  | Newhouse JP. Reimbursing health plans and health providers: efficiency in production versus selection. *Journal of Economic Literature* 1996; **34(3)**: 1236-1263. |
| Pauly  | Pauly MV. The economics of moral hazard: comment. *American Economic Review* 1968; **58(3)**: 531-753. |
| Buxton et al. | Buxton MJ, Drummond MF, et al. Modelling in economic evaluation: an unavoidable fact of life. *Health Economics* 1997; **6**: 217-227. |
| Harris  | Harris JE. The internal organisation of hospitals: some economic implications. *Bell Journal of Economics* 1977; **8**: 467-482. |
| Labelle et al. | Labelle R, Stoddart G, Rice T. A re-examination of the meaning an importance of supplier induced demand. *Journal of Health Economics* 1994; **13**: 347-368. |
| Rothschild & Stiglitz | Rothschild M and Stiglitz. Equilibrium in competitive insurance markets: an essay on the economics of imperfect information. *Quarterly Journal of Economics* 1976; **90(4)**: 629-649. |
| Cutler & Reber | Cutler DM and Reber S. Paying for health insurance: the trade-off between competition and adverse selection. *Quarterly Journal of Economics* 1998; **113**: 433-466. |
| McGuire & Pauly | McGuire TG and Pauly MV. Physician response to fee changes with multiple payers. *Journal of Health Economics* 1991; **10(4)**: 385-410. |
| Drummond et al. | Drummond MF, Torrance G and Mason J. Cost-effectiveness league tables: more harm than good? *Social Science and Medicine* 1993; **37**: 33-40. |
| Olsen and Donaldson | Olsen JA and Donaldson C. Helicopters, hearts and hips: using willingness to pay to set priorities for public sector health care programmes. *Social Science and Medicine* 1998; **46**: 1-12. |
| Viscusi  | Viscusi WK. The value of risks to life and health. *Journal of Economic Literature* 1993; **31(4)**: 1912-1946. |
| Weisbrod  | Weisbrod BA. The health care quadrilemma: an essay on technological change, insurance, quality of care, and cost containment. *Journal of Economic Literature* 1991; **29(2)**: 523-552. |
| Brazier et al. | Brazier J, et al. A review of the use of health status measures in economic evaluation. *Health Technology Assessment* 1999; **3(9)**: 1-164. |
| Ellis & McGuire | Ellis RP and McGuire TG. Supply-side and demand-side cost sharing in health care. *Journal of Economic Perspectives* 1993; 7(4):135-151. |
| Feldman & Dowd | Feldman R and Dowd B. A new estimate of the welfare loss from excess health insurance. *American Economic Review* 1991; **81(1)**: 297-301. |
| Gerard & Mooney | Gerard K and Mooney G. QALY league tables: handle with care. *Health Economics* 1993; **2**: 59-64. |
| Kessler & McClellan | Kessler DP, McClellan M. Is hospital competition socially wasteful? *Quarterly Journal of Economics* 2000; **115(2)**: 577-615. |
| Newhouse  | Newhouse JP. Medical care costs: how much welfare loss? *Journal of Economic Perspectives* 1992; **6(3)**: 3-21. |
| Culyer  | Culyer AJ. The nature of the commodity ‘health care’ and its efficient allocation. *Oxford Economic Papers* 1971; **23**: 189-211. |
| Cutler & McClellan | Cutler DM and McClellan M. Is technological change in medical care worth it? *Health Affairs* 2001; **20(5)**: 11-29. |
| Ellis & McGuire | Ellis RP and McGuire TG. Provider behavior under prospective reimbursement. *Journal of Health Economics* 1986; **5(2)**: 129-152. |
| Evans & Stoddart | Evans RG and Stoddart GL. Producing health, consuming health care. *Social Science and Medicine* 1990; **31(12)**: 1347-1363. |
| Fuchs  | Fuchs VR. Economics, values and health care reform. *American Economic Review* 1996; **86(1)**: 1-24. |
| Garber & Phelps | Garber AM and Phelps CE. Economic foundations of cost-effectiveness analysis. *Journal of Health Economics* 1997; **16:** 1-31. |
| Wagstaff (1986) | Wagstaff A. The demand for health: theory and application. *Journal of Epidemiology and Community Health* 1986; **40**: 1-11. |
| Wagstaff (1991) | Wagstaff A. QALYs and the equity-efficiency trade-off. *Journal of Health Economics* 1991; **10**: 21-41. |
| Williams  | Williams A. Intergenerational equity: an exploration of the ‘fair innings’ argument. *Health Economics* 1997; **6**: 117-132. |

key articles of conceptualization follow (Torrance (1986) and Grossman (1972). The frequency of citation can be seen in Appendix 2. These top four are clearly ahead of the rest of the field. Hereafter there is considerable bunching. The next eight articles were each cited between 10 and 13 times, the next four were all cited nine times, the following six were cited eight times and the last nine were each cited seven times. Each of these top 31 articles is readily recognized as a classic of its sort and between them they encompass a variety of topics, empirical and theoretical, of methods and of political predilection. They are also clearly dominated by US authors, with some representation by Canadian and UK authors.

**Geographical distribution**

The geographical distribution of (first) authors is given in Table 3. It contains few surprises, with the USA contributing about twice as much as the rest of the world. There is of course a cultural bias in that the English language lists rarely included material in other languages, whereas the Dutch, for example, were studded with English language references. The complete absence of French references is striking.

Table 3 about here

**Table 3 Geographical distribution of cited articles (by first author)**

|  |  |
| --- | --- |
| Country | Number of journal articles |
| USA | 86 |
| UK | 40 |
| Canada | 8 |
| Australia | 2 |
| Netherlands | 2 |
| Norway | 2 |
| Finland | 1 |
| Germany | 1 |

**The most popular journals**

The journals in which the top 142 articles appeared, together with the number appearing in each, are shown in Table 4. There are few surprises here with both the main health economics journals, *Journal of Health Economics* and *Health Economics*, at or very near the top. The high rank of the BMJ is primarily due to its popular series on health technology assessments and related topics, whose explicit editorial guidance on health economics submissions implicitly assumes that the subject matter presented will be exclusively cost-effectiveness and similar studies. The relative prevalence of material in the *British Medical Journal* and *New England Journal of Medicine* is probably accounted for by the immense impact that the National Institute for Health and Clinical Excellence has had. We expect that, again largely due to the currency of the topic, *Pharmacoeconomics* is likely to rise up the table. *Health Economics* has not yet managed to beat the *AER*, arguably the world’s most popular generalist journal for economists, but *Health Economics* publishes more articles per year on health economics than any other journal (including *Journal of Health Economics*) and is highly unlikely to lose rank.

Table 4 about here

**Table 4 Journals in order of frequency of citation**

|  |  |
| --- | --- |
| Journal | Number of cited articles |
| Journal of Health Economics | 27 |
| British Medical Journal | 15 |
| American Economic Review | 11 |
| Health Economics  | 11 |
| Quarterly Journal of Economics | 9 |
| New England Journal of Medicine | 7 |
| Journal of Economic Literature | 6 |
| Journal of Economic Perspectives | 6 |
| Social Science and Medicine | 6 |
| Journal of Political Economy | 5 |
| RAND Journal of Economics | 5 |
| Journal of the American Medical Association | 4 |
| Medical Decision Making | 4 |
| Health Affairs | 3 |
| Econometrica | 2 |
| Pharmacoeconomics | 2 |
| Other (18 journals) | 19 |

**Distribution by year of publication**

The earliest article in any list was Kessel’s (1958) article on price discrimination in the medical market place and the most recent year for which articles were cited was 2003. While there is a strong indication (see Figure 2) that the passage of time has a considerable winnowing effect, with half the articles being dated between 1995 and 2003, others have had considerable staying power (including two by well-known health economists (Newhouse 1970 and Zeckhauser 1970).

There appears to be a marked falling off in references dated 1990 and earlier, where the average per year is fewer than two, compared with nearly eight per year thereafter.

**Figure 2. Distribution of articles by year**



Figure 2 about here

**The top health economists**

In the list of 3032 articles there were 1,696 lead authors. The majority of them (1,472) had only one or two articles. We identified the top 30 authors by the number of first authored articles and the top 30 by citations as first author. This second selection brought in seven authors not in the first group (all were distinguished economists: Robinson (R), Gaynor, Grossman, Ellis, Manning, Kessler and Arrow).

The relative contributions of the top health economists over the period 1958-2003 are shown in three ways in Table 5. Column 1 in Table 4 shows the selection criterion, number of articles published by each (first) author. This indicator plainly emphasizes quantity relative to quality and unsurprisingly relegates Arrow to the lowest

**Table 5 The top 37 authors**

|  |  |  |
| --- | --- | --- |
| By number of articles as first author | By number of citations as first author | By total number of citation as author |
| 1 Pauly (25) | Pauly (69) | Newhouse (114) |
| 2 Newhouse (24) | Cutler (60) | Pauly (93) |
| 3 Feldman (22) | Newhouse (57) | Torrance (70) |
| 4 Reinhardt (21) | Briggs (46) | Cutler (65) |
| 5 Briggs (18) | Manning (42) | Feldman (57) |
| 6 Cutler (18) | Feldman (41) | Drummond (56) |
| 7 Robinson J (18) | Torrance (37) | Wagstaff (56) |
| 8 Nyman (17) | Wagstaff (37) | Briggs (52) |
| 9 Williams (17) | Arrow (36) | Donaldson (50) |
| 10 Brent (16) | Culyer (34) | Johannesson (49) |
| 11 Drummond (16) | Dranove (34) | Manning (49) |
| 12 Dranove (15) | Grossman (29) | Grossman (45) |
| 13 Sloan (15) | Gruber (29) | Gruber (43) |
| 14 Wagstaff (15) | Nyman (29) | O'Brien (40) |
| 15 Denton (14) | Drummond (28) | Dranove (39) |
| 16 Gruber (14) | Iglehart (28) | Arrow (36) |
| 17 Iglehart (14) | Reinhardt (28) | Culyer (35) |
| 18 Johannesson (13) | Robinson J (28) | Reinhardt (31) |
| 19 Ryan (13) | Ellis (27) | Ryan (31) |
| 20 Bleichrodt (12) | Williams (25) | Williams (31) |
| 21 Culyer (12) | Fuchs (24) | Evans (29) |
| 22 Nord (12) | Johannesson (24) | Nyman (29) |
| 23 Phelps (12) | Gaynor (23) | Robinson J (29) |
| 24 Donaldson (11) | Donaldson (21) | Ellis (28) |
| 25 Evans (11) | Nord (21) | Iglehart (28) |
| 26 Fuchs (11) | Ryan (21) | Torgerson (28) |
| 27 O'Brien (11) | Bleichrodt (20) | Gaynor (27) |
| 28 Dolan (10) | Evans (20) | Sloan (26) |
| 29 Torgerson (10) | Kessler (20) | Bleichrodt (25) |
| 30 Torrance (10) | Robinson R (20) | Fuchs (24) |
| 31 Robinson R. (9) | Torgerson (20) | Phelps (24) |
| 32 Gaynor (8) | O'Brien (17) | Nord (23) |
| 33 Grossman (8) | Sloan (17) | Kessler (22) |
| 34 Ellis (7) | Brent (16) | Robinson R (20) |
| 35 Manning (6) | Dolan (16) | Dolan (19) |
| 36 Kessler (5) | Denton (14) | Brent (16) |
| 37 Arrow (4) | Phelps (14) | Denton (15) |

position amongst the top 37. Others at the bottom are Kessler and Manning – two well-known and highly original thinkers. Topping the list is the ever-productive Pauly, closely followed by Newhouse, Feldman and Reinhardt.

Column 2 shows the frequency with which those articles were cited and is an indicator of the impact each author has had on the sub-discipline. Pauly again tops the list followed by Cutler (up from 6th) and Newhouse, with the relative ‘youngster’ Briggs coming 4th, up from 5th. Below this the ranking proves hugely sensitive to the change in criterion. Manning is massively promoted from 35th to 5th, Ellis from 34th to19th,Grossman from 33rd to 12thand Torrance from 29th = to 7th. At the bottom are Phelps (down from 20th =), Denton (down from 15th =), Dolan (less spectacularly down from 28th) and Brent (down from 10th =).Other notable slippers are Reinhardt from 4th to 17th , Williams from 9th to 20th, and Sloan from 13th = to 32nd =. The ranking appears also to be sensitive to the breadth of favoured topic, which may help to account for the fact that Arrow, Grossman and Reinhardt rank in the middle.

Column 3 is a ranking by the total number of citations including non-first authorships. Newhouse and Pauly change places at the top, followed in third place by Torrance (up from 7th in fist-author citations) and Cutler. At the bottom are Denton, Brent and Dolan. Notable risers are Drummond to 4th place from15th in column 2, Johannesson from 21st = to 10th = and Donaldson from 24th = to 9th. Evans gets his highest ranking in this column and Nyman his lowest. Again, Arrow, Grossman and Reinhardt are middling rankers.

**Discussion**

The results presented here will probable surprise few readers. From the evidence of citations the largest topic in health economics turns out to be cost-effectiveness analysis in its various manifestations, which also happens to be a topic ‘owned’ by others such as decision theorists and epidemiologists. Health measurement and valuation and the non-health care determinants of health are also multidisciplinary fields but rather less populated by health economists, lending some credence to the common observation that ‘health economics’ is more accurately described as ‘health care economics’.

The top articles include both empirical and theoretical material and will, in general, be well-known to health economist readers. The top six are Arrow (1963) on uncertainty and welfare, Manning et al. (1987) on the US health insurance experiment, Torrance (1986) on health state utilities, Grossman (1972) on health capital, Newhouse (1996) on health insurance and Pauly (1968) on moral hazard. All are well-established classics. Five of the six pre-date 1990 but, these apart, most references were in fact to post 1990 articles. The subject matter has tended to focus on ‘big’ issues of policy, theoretical development, measurement and interpretation. This remains true for all 142 articles listed in Appendix 2: none can fairly be described as a ‘pot-boiler’ and none are ‘mere’ applications to routine issues. For example, the vast and expanding literature of applied cost-effectiveness studies, whose equivalent in epidemiology or medicine seems characteristically dominant, is not represented at all.

The field is dominated by US economists (and probably even more dominated by US-trained economists, though no data were collected on the training background of authors) with the UK common a distant second – but still well ahead of other countries (but the reader should bear in mind the linguistic bias in the selection process). The most frequently cited journal is *Journal of Health Economics*, followed at some distance by the *British Medical Journal* and then (joint third) *American Economic Review* and *Health Economics*.

Finally, the top names contain few surprises: Newhouse, Pauly, Torrance, Cutler, Manning, Feldman, Drummond, Wagstaff, Briggs. However, aside from those at the very top of the tree, the ranking of the economists is sensitive to the criterion used.

**References**

1. Amin M, Mabe M. Impact factors: use and abuse. *Perspectives in Publishing* 2000; **1**: 1-6.

2. Liebowitz S L, Palmer J P. Assessing the relative impacts of economics journals. *Journal of Economic Literature* 1984; **22**: 77-88.

3. Culyer, A J *Critical Perspectives on Health Economics*. London, Routledge: 2006.

4. Williams, A H. Health economics: the cheerful face of the dismal science? In Williams AH (ed.), *Health and Economics: Proceedings of Section F (Economics) of the British Association for the Advancement of Science, Bristol, 1986.* Houndmills: Macmillan, 1987: 1-11.

**Appendix 1 List of Respondents providing reading lists**

|  |  |
| --- | --- |
| Jean Marie Abraham | University of Minnesota |
| John S. Akin | University of North Carolina at Chapel Hill |
| Jay Bhattacharya | Stanford University |
| Han Bleichrodt | Erasmus University |
| Glenn Blomquist | University of Kentucky |
| Frikkie Booysen | University of the Free State in South Africa |
| Robert Brent | Fordham University |
| Friedrich Breyer | Universität Konstanz |
| Stirling Bryan | University of Birmingham |
| John P. Burkett | University of Rhode Island |
| Jim Butler | The Australian National University |
| Sarah Byford | Institute of Psychiatry, King's College London |
| Colin Cameron | University of California-Davis |
| Guy Carrin | Universiteit Antwerpen |
| John Cawley | Cornell University |
| Martin Chalkley | University of Dundee |
| Karl Claxton | University of York |
| Susan Cleary | University of Cape Town |
| Paul Contoyannis | McMaster University |
| Philip Cook | Duke University |
| Richard Cookson | University of York |
| David M. Cutler | Harvard University |
| Patricia M. Danzon | The Wharton School, University of Pennsylvania |
| Diana De Graeve | Universiteit Antwerpen |
| Jostein Grytten | University of Oslo |
| Nancy Devlin | City University |
| Livio Di Matteo | Lakehead University |
| Marisa Domino | University of North Carolina at Chapel Hill |
| Karen Eggleston | Tufts University |
| Ch. Eisenring | University of Bern |
| Randall P. Ellis | Boston University |
| David Feeny | Kaiser Permanente |
| Roger Feldman | University of Minnesota |
| Paul Feldstein | University of California |
| Liz Fenwick | University of York |
| Steffen Fleßa | University of Greifswald |
| Richard Foster | University of Colorado |
| Richard Frank | Harvard Medical School |
| Kevin Frick | Johns Hopkins Bloomberg School of Public Health |
| Alan M. Garber | Stanford University |
| Martin Gaynor | Carnegie Mellon University |
| David C. Grabowski | University of Alabama at Birmingham |
| Alastair Gray | University of Oxford |
| Warren Greenberg | George Washington University |
| Richard Grieve | London School of Hygiene and Tropical Medicine |
| Michel Grignon | McMaster University |
| Paul Grootendorst | University of Toronto  |
| Terje P. Hagen | University of Oslo |
| Kara Hanson | London School of Hygiene and Tropical Medicine |
| Alan Haycox | University of Liverpool |
| Stephen Heasell | Nottingham Trent University |
| Bradley Herring | Emory University |
| Lanis Hicks | University of Missouri  |
| Richard Hirth | University of Michigan |
| Bruce Hollingsworth | Monash University, Melbourne |
| Douglas Hough | Johns Hopkins University |
| Dyfrig Hughes | Centre for the Economics of Health, IMSCaR  |
| Jeremiah Hurley | McMaster University |
| Haiden Huskamp | Harvard Medical School |
| Tor Iversen | University of Oslo |
| Stephen Jan | London School of Hygiene and Tropical Medicine |
| Magnus Johannesson | Stockholm School of Economics |
| William G. Johnson | Arizona State University |
| Andrew Jones | University of York |
| Meredith Kilgore | University of Alabama at Birmingham  |
| Reiner Leidl | Ludwig-Maximilians-University |
| Robert E. Leu | University of Bern |
| Don Lewis | University of Wollongong |
| Björn Lindgren | Lunds Universitet Centre for Health Economics |
| Guillem López | Universitat Pompeu Fabra, Barcelona  |
| Joanne Lord | Imperial College London |
| Paula Lorgelly | University of East Anglia |
| Carl Hampus Lyttkens | Lund University |
| Albert Ma | Boston University |
| Douglas McCulloch | University of Ulster |
| Brendan McElroy | University College Cork |
| Ali McGuire | London School of Economics |
| Barbara McPake | London School of Hygiene and Tropical Medicine |
| Stephane Mechoulan | University of Toronto |
| David Meltzer | University Of Chicago |
| Celia Moh | The Wharton School, University of Pennsylvania |
| John Moran | Syracuse University |
| Stephen Morris | Imperial College London |
| Michael A. Morrisey | University of Alabama at Birmingham |
| Michael B. Nichol | University of Southern California |
| Charles Normand | University of Dublin |
| Edward C. Norton | Duke University |
| John A. Nyman | University of Minnesota |
| Owen O’Donnell | University of Macedonia |
| Stuart Peacock | Monash University |
| João Pereira | Universidade Nova de Lisboa  |
| Thomas Rice | University of California |
| Tracey Sach | University of Nottingham |
| Nazmi Sari | University of Saskatchewan |
| Janelle Seymour | University of Aberdeen  |
| Phil Shackley | University of Newcastle upon Tyne |
| Alan Shiell | University of Calgary |
| Edina Sinanovic | University of Cape Town |
| Jonathan S. Skinner | Dartmouth College |
| Frank A. Sloan  | Duke University |
| Greg Stoddart | McMaster University |
| Michael Thiede | University of Cape Town |
| Gary Tompkins | University of Regina |
| Bob Town | University of Minnesota |
| Aki Tsuchiya | University of Sheffield |
| Marjon van der Pol | University of Aberdeen |
| Wynand van de Ven | Erasmus University Rotterdam |
| Eddy van Doorslaer | Erasmus University, The Netherlands |
| Tom Van Ourti | Erasmus University Rotterdam |
| Rebecca Warburton | University of Victoria |
| David Whynes | University of Nottingham |
| Aaron Yelowitz | University of Kentucky |

**Appendix 2**

**Top 142 health economics journal articles by frequency of citation on reading lists and, within bands, by alphabetical order of first author’s surname**

|  | **Code** | **# of citat.** | **Article citation** |
| --- | --- | --- | --- |
| ≥30 | Arrow (1963) | 31 | Arrow KJ. Uncertainty and the welfare economics of medical care. *American Economic Review* 1963; **53(5)**: 941-973. |
| ≥25 | Manning (1987) | 27 | Manning WG, Newhouse JP, Duan N, Keeler EB, Leibowitz A. Health insurance and the demand for health care: evidence from a randomized experiment. *American Economic Review* 1987; **77(3)**: 251-277. |
| ≥15 | Torrance (1986) | 20 | Torrance GW. Measurement of health state utilities for economic appraisal: a review. *Journal of Health Economics* 1986; **5**: 1-30. |
|  | Grossman (1972) | 19 | Grossman M. On the concept of health capital and the demand for health. *Journal of Political Economy* 1972; **80**: 223-255. |
| ≥10 | Newhouse (1996) | 13 | Newhouse JP. Reimbursing health plans and health providers: efficiency in production versus selection. *Journal of Economic Literature* 1996; **34(3)**: 1236-1263. |
|  | Pauly (1968) | 12 | Pauly MV. The economics of moral hazard: comment. *American Economic Review* 1968; **58(3)**: 531-753. |
|  | Buxton (1997) | 11 | Buxton MJ, Drummond MF, et al. Modelling in economic evaluation: an unavoidable fact of life. *Health Economics* 1997; **6**: 217-227. |
|  | Harris (1977) | 11 | Harris JE. The internal organisation of hospitals: some economic implications. *Bell Journal of Economics* 1977; **8**: 467-482. |
|  | Labelle (1994) | 11 | Labelle R, Stoddart G, Rice T. A re-examination of the meaning an importance of supplier induced demand. *Journal of Health Economics* 1994; **13**: 347-368. |
|  | Rothschild (1976) | 11 | Rothschild M and Stiglitz. Equilibrium in competitive insurance markets: an essay on the economics of imperfect information. *Quarterly Journal of Economics* 1976; **90(4)**: 629-649. |
|  | Cutler (1998) | 10 | Cutler DM and Reber S. Paying for health insurance: the trade-off between competition and adverse selection. *Quarterly Journal of Economics* 1998; **113**: 433-466. |
|  | McGuire (1991) | 10 | McGuire TG and Pauly MV. Physician response to fee changes with multiple payers. *Journal of Health Economics* 1991; **10(4)**: 385-410. |
| ≥9 | Drummond (1993) | 9 | Drummond MF, Torrance G and Mason J. Cost-effectiveness league tables: more harm than good? *Social Science and Medicine* 1993; **37**: 33-40. |
|  | Olsen (1998) | 9 | Olsen JA and Donaldson C. Helicopters, hearts and hips: using willingness to pay to set priorities for public sector health care programmes. *Social Science and Medicine* 1998; **46**: 1-12. |
|  | Viscusi (1993) | 9 | Viscusi WK. The value of risks to life and health. *Journal of Economic Literature* 1993; **31(4)**: 1912-1946. |
|  | Weisbrod (1991) | 9 | Weisbrod BA. The health care quadrilemma: an essay on technological change, insurance, quality of care, and cost containment. *Journal of Economic Literature* 1991; **29(2)**: 523-552. |
| ≥8 | Brazier (1999) | 8 | Brazier J, et al. A review of the use of health status measures in economic evaluation. *Health Technology Assessment* 1999; **3(9)**: 1-164. |
|  | Ellis (1993) | 8 | Ellis RP and McGuire TG. Supply-side and demand-side cost sharing in health care. *Journal of Economic Perspectives* 1993; 7(4):135-151. |
|  | Feldman (1991) | 8 | Feldman R and Dowd B. A new estimate of the welfare loss from excess health insurance. *American Economic Review* 1991; **81(1)**: 297-301. |
|  | Gerard (1993) | 8 | Gerard K and Mooney G. QALY league tables: handle with care. *Health Economics* 1993; **2**: 59-64. |
|  | Kessler (2000) | 8 | Kessler DP, McClellan M. Is hospital competition socially wasteful? *Quarterly Journal of Economics* 2000; **115(2)**: 577-615. |
|  | Newhouse (1992) | 8 | Newhouse JP. Medical care costs: how much welfare loss? *Journal of Economic Perspectives* 1992; **6(3)**: 3-21. |
| ≥7 | Culyer (1971) | 7 | Culyer AJ. The nature of the commodity ‘health care’ and its efficient allocation. *Oxford Economic Papers* 1971; **23**: 189-211. |
|  | Cutler (2001) | 7 | Cutler DM and McClellan M. Is technological change in medical care worth it? *Health Affairs* 2001; **20(5)**: 11-29. |
|  | Ellis (1986) | 7 | Ellis RP and McGuire TG. Provider behavior under prospective reimbursement. *Journal of Health Economics* 1986; **5(2)**: 129-152. |
|  | Evans (1990) | 7 | Evans RG and Stoddart GL. Producing health, consuming health care. *Social Science and Medicine* 1990; **31(12)**: 1347-1363. |
|  | Fuchs (1996) | 7 | Fuchs VR. Economics, values and health care reform. *American Economic Review* 1996; **86(1)**: 1-24. |
|  | Garber (1997) | 7 | Garber AM and Phelps CE. Economic foundations of cost-effectiveness analysis. *Journal of Health Economics* 1997; **16:** 1-31. |
|  | Wagstaff (1986) | 7 | Wagstaff A. The demand for health: theory and application. *Journal of Epidemiology and Community Health* 1986; **40**: 1-11. |
|  | Wagstaff (1991) | 7 | Wagstaff A. QALYs and the equity-efficiency trade-off. *Journal of Health Economics* 1991; **10**: 21-41. |
|  | Williams (1997) | 7 | Williams A. Intergenerational equity: an exploration of the ‘fair innings’ argument. *Health Economics* 1997; **6**: 117-132. |
| ≥6 | Akerlof (1970) | 6 | Akerlof GA. The market for “lemons”: quality uncertainty and the market mechanism. *Quarterly Journal of Economics* 1970; **84(3)**: 488-500. |
|  | Briggs (1998) | 6 | Briggs AH and Sculpher M. An introduction to Markov modelling for economic evaluation. *Pharmacoeconomics* 1998; **13**: 397-409. |
|  | Culyer (1993) | 6 | Culyer AJ and Wagstaff A. Equity and equality in health and health care. *Journal of Health Economics* 1993; **12**: 431-458. |
|  | Cutler (2002) | 6 | Cutler DM. Equality, efficiency and market fundamentals: the dynamics of international medical-care reform. *Journal of Economic Literature* 2002; **40(3)**: 881-906. |
|  | Cutler (1995) | 6 | Cutler DM. The incidence of adverse medical outcomes under prospective payment. *Econometrica* 1995; **63(1)**: 29-50. |
|  | Diener (1998) | 6 | Diener A, O’Brien B and Gafni A. Health care contingent valuation studies: a review and classification of the literature. *Health Economics* 1998; **7**: 313-326. |
|  | Eddy (1991) | 6 | Eddy DM. Oregon’s methods: did cost effectiveness analysis fail? *Journal of the American Medical Association* 1991; **266(15)**: 2135-2141. |
|  | Kahneman (1979) | 6 | Kahneman D and Tversky A. Prospect theory: An analysis of decision under risk. *Econometrica* 1979; **47**: 263-291. |
|  | Kessler (1996) | 6 | Kessler DP and McClellan MB. Do doctors practice defensive medicine? *Quarterly Journal of Economics* 1996; **111(2)**: 353-390. |
|  | Neuhauser (1975) | 6 | Neuhauser D and Lewicki AM. What do we gain from the sixth stool GUAIAC? *New England Journal of Medicine* 1975; **293**: 226-228. |
|  | Newhouse (1970) | 6 | Newhouse JP. Towards a theory of non-profit institutions: an economic model of a hospital. *American Economic Review* 1970; **60(1)**: 64-74. |
|  | Nyman (1999) | 6 | Nyman JA. The economics of moral hazard revisited. *Journal of Health Economics* 1999; **18**: 811-824. |
|  | Pauly (1973) | 6 | Pauly MV and Redisch M. The not-for-profit hospital as a physicians’ cooperative. *American Economic Review* 1973; **63(1)**: 87-99. |
|  | Richardson (1994) | 6 | Richardson J. Cost-utility analysis: what should be measured? *Social Science and Medicine* 1994; **39(1)**: 7-21. |
|  | Smith (1999) | 6 | Smith J. Healthy bodies and thick wallets: The dual relation between health and economic status. *Journal of Economic Perspectives* 1999; **13(2)**: 145-166. |
|  | Torrance (1989) | 6 | Torrance GW and Feeny D. Utilities and Quality-Adjusted Life-Years. *International Journal of Technology Assessment in Health Care* 1989; **5**: 559-575. |
|  | Weinstein (1977) | 6 | Weinstein MC and Stason WB. Foundations of cost-effectiveness analysis for health and medical practices. *New England Journal of Medicine* 1977; **296**: 716-721. |
|  | Williams (1985) | 6 | Williams A. Economics of coronary artery bypass grafting. *British Medical Journal* 1985; **291**: 326-329. |
| ≥5 | Becker (1994) | 5 | Becker GS, Grossman M and Murphy K. An empirical analysis of cigarette addiction. *American Economic Review* 1994; **84(3)**: 396-418. |
|  | Berndt (2002) | 5 | Berndt ER. Pharmaceuticals in U.S. health care: determinants of quantity and price. *Journal of Economic Perspectives* 2002; **16(4)**: 45-66. |
|  | Boyle (1983) | 5 | Boyle MH, Torrance GW, Sinclair JC, et al. Economic Evaluation of Neonatal Intensive Care of very Low birthweight infants. *New England Journal of Medicine* 1983; **308(2)**: 1330-1337. |
|  | Briggs (1998) | 5 | Briggs AH and Fenn P. Confidence intervals or surfaces? Uncertainty on the cost-effectiveness plane. *Health Economics* 1998; **7(8)**: 723-740. |
|  | Brook (1983) | 5 | Brook RH, Ware JR, Rogers W, Keeler EB, et al. Does free care improve adults’ health? Results from a randomized controlled trial. *New England Journal of Medicine* 1983; **309**: 1426-1434. |
|  | Claxton (2002) | 5 | Claxton K, Sculpher M and Drummond M. A rational framework for decision making by the National Institute for Clinical Excellence (NICE). *The Lancet* 2002; **360**: 711-715. |
|  | Culyer (1996) | 5 | Culyer AJ and Evans RG. Mark Pauly on welfare economics: Normative rabbits from positive hats. *Journal of Health Economics* 1996; **15**: 243-251. |
|  | Culyer (1989) | 5 | Culyer AJ. The normative economics of health care finance and provision. *Oxford Review of Economic Policy* 1989; **5**: 34-58. |
|  | Cutler (1996) | 5 | Cutler DM, McClellan M, Newhouse JP, Remler D. Are medical prices declining? Evidence from heart attack treatments. *Quarterly Journal of Economics* 1996; **113**: 991-1024. |
|  | Danzon (1991) | 5 | Danzon PM. Liability for medical malpractice. *Journal of Economic Perspectives* 1991; **5(3)**: 51-69. |
|  | Deaton (2003) | 5 | Deaton A. Health, inequality and economic development. *Journal of Economic Literature* 2003; **41**: 113-158. |
|  | Deaton (2002) | 5 | Deaton A. Policy implications of the gradient of health and wealth. *Health Affairs* 2002; **21(2)**: 13-30. |
|  | Dranove (1992) | 5 | Dranove D, Shanley M and Simon C. Is hospital competition wasteful? *RAND Journal of Economics* 1992; **23(2)**: 247-262. |
|  | Ellis (1998) | 5 | Ellis RP. Creaming, skimping and dumping: provider competition on the intensive and extensive marings. *Journal of Health Economics* 1998; **17**: 537-555. |
|  | Enthoven (1993) | 5 | Enthoven AC. The history and principles of managed competition. *Health Affairs* 1993; **12(1)**: 24-48. |
|  | Gruber (2001) | 5 | Gruber J, Koszegi B. Is addiction ‘rational’? Theory and evidence. *Quarterly Journal of Economics* 2001; **116(4)**: 1261-1303. |
|  | Gruber (1994) | 5 | Gruber J. The incidence of mandated maternity benefits. *American Economic Review* 1994: **84(3)**: 622-641. |
|  | Hadorn (1991) | 5 | Hadorn DC. Setting health care priorities in Oregon: cost-effectiveness meets the rule of rescue. *Journal of the American Medical Association* 1991; **265**: 2218-2225. |
|  | Kremer (2002) | 5 | Kremer M. Pharmaceuticals and the developing world. *Journal of Economic Perspectives* 2002; **16(4)**: 67-90. |
|  | Loomes (1989) | 5 | Loomes G and McKenzie L. The use of QALYs in health care decision making. *Social Science and Medicine* 1989; **28**: 299-308. |
|  | Ma (1994) | 5 | Ma CA. Health care payment systems: cost and quality incentive. *Journal of Economics and Management Strategy* 1994; **3**: 93-112. |
|  | Ma (1997) | 5 | Ma CA and McGuire TG. Optimal health insurance and provider payment. *American Economic Review* 1997; 87(4): 685-704 |
|  | Manning (1984) | 5 | Manning WG, et al. A controlled trial of the effect of a prepaid group practice on use of services. *New England Journal of Medicine* 1984; **310**: 1505-1510. |
|  | Manning (1989) | 5 | Manning WG, Keeler EB, Newhouse JP, Sloss EM and Wasserman J. The taxes of sin: do smokers and drinkers pay their own way. *Journal of the American Medical Association* 1989; **261(11)**: 1604-1609. |
|  | Mason (1993) | 5 | Mason J, Drummond M and Torrance G. Some guidelines on the use of cost-effectiveness league tables. *British Medical Journal* 1993; **306**: 570-572. |
|  | Maynard (2000) | 5 | Maynard AK and Kanavos P. Health economics: an evolving paradigm. *Health Economics* 2000; **9**: 183-190. |
|  | Murray (1997) | 5 | Murray CJL and Acharya AK. Understanding DALYs. *Journal of Health Economics* 1997; **16**: 703-730. |
|  | Nord (1992) | 5 | Nord E. Methods for Quality Adjustment of Life Years. *Social Science and Medicine* 1992; **34(5)**: 559-569. |
|  | O'Brien (1996) | 5 | O’Brien B and Gafni A. When do the ‘dollars’ make sense? Toward a conceptual framework for contingent valuation studies in health care. *Medical Decision Making* 1996; **16**: 288. |
|  | Pauly (1994) | 5 | Pauly MV. Editorial: A re-examination of the meaning and importance of supplier-induced demand. *Journal of Health Economics* 1994; **13**: 369-372. |
|  | Pauly (1986) | 5 | Pauly MV. Taxation, health insurance and market failure in the medical economy. *Journal of Economic Literature* 1986; 24(2): 629-675. |
|  | Pauly (1990) | 5 | Pauly MV. The rational nonpurchase of long-term care insurance. *Journal of Political Economy* 1990; **98(1)**: 153-168. |
|  | Rice (1992) | 5 | Rice T. An alternate framework for evaluating welfare losses in the health care market. *Journal of Health Economics* 1992; **11(1)**: 85-92. |
|  | Sheldon (1996) | 5 | Sheldon TA. Problems of using modelling in the economic evaluation of health care. *Health Economics* 1996; **5**: 1-11. |
|  | Sonnenberg (1993) | 5 | Sonnenberg FA and Beck JR. Markov models in medical decision making: a practical guide. *Medical Decision Making* 1993; **13**: 322-338. |
|  | Thompson (2000) | 5 | Thompson SG, Barber JA. How should cost data in pragmatic randomised trials be analysed? *British Medical Journal* 2000; **320**: 1197-1200. |
|  | Yip (1998) | 5 | Yip WC. Physician response to Medicare fee reductions: changes in the volume of coronary artery bypass graft (CABG) surgeries in the Medicare and private sectors. *Journal of Health Economics* 1998; **17(6)**: 675-699. |
| ≥4 | Auster (1969) | 4 | Auster RD, Leveson I and Sarachek D. The production of health: an exploratory study. *Journal of Human Resources* 1969; **4**: 411-436. |
|  | Beck (1983) | 4 | Beck JR and Pauker S. The Markov process in medical prognosis. *Medical Decision Making* 1983; **3**: 419-458. |
|  | Besley (2001) | 4 | Besley T, Gouveia M. Alternative Systems of Health Care Provision. *Economic Policy* 2001; **19**: 199-258. |
|  | Bleichrodt (1997) | 4 | Bleichrodt H and Johannesson M. Standard gamble, time trade-off and rating scale: experimental results on the ranking properties of QALYs. *Journal of Health Economics* 1997; **16**: 155-175. |
|  | Briggs (1999) | 4 | Briggs AH. Handling uncertainty in economic evaluation. *British Medical Journal* 1999; **319**: 120-120. |
|  | Briggs (2002) | 4 | Briggs AH, O’Brien BJ and Blackhouse G. Thinking outside the box: recent advances in the analysis and presentation of uncertainty in cost-effectiveness studies. *Annual Review of Public Health* 2002; **23**: 377-401. |
|  | Buchmueller (2002) | 4 | Buchmueller TC, DiNardo J. Did community rating induce an adverse selection death spiral? Evidence from New York, Pennsylvania, and Connecticut. *American Economic Review* 2002; **92(1)**: 280-294. |
|  | Byford (2000) | 4 | Byford S, Torgerson DJ, Raftery J. Cost of illness studies. *British Medical Journal* 2000; **320**: 1335. |
|  | Byford (1998) | 4 | Byford S, Raftery J. Perspectives in economic evaluation. *British Medical Journal* 1998; **316**: 1529-1530. |
|  | Cardon (2001) | 4 | Cardon JH, Hendel I. Asymmetric information in health insurance: evidence from the National Health Insurance Survey. *RAND Journal of Economics* 2001; **32(3)**: 408-427. |
|  | Cochrane (1995) | 4 | Cochrane JH. Time-Consistent Health Insurance. *Journal of Political Economy* 1995; **103(3)**: 445-473. |
|  | Cookson (2001) | 4 | Cookson R, McDaid D and Maynard A. Wrong SIGN, NICE mess: is national guidance distorting allocation of resources? *British Medical Journal* 2001; **323**: 743-745. |
|  | Cutler (1996) | 4 | Cutler DM and Gruber J. Does public insurance crowd out private insurance? *Quarterly Journal of Economics* 1996; **111(2)**: 391-430. |
|  | Dolan (1996) | 4 | Dolan P, Gudex C, Kind P, Williams A. Valuing health states: a comparison of methods. *Journal of Health Economics* 1996; **15**: 209-231. |
|  | Donaldson (2002) | 4 | Donaldson C, Currie G, Mitton C. Cost effectiveness analysis in health care: contraindications. *British Medical Journal* 2002; **325**: 891-894. |
|  | Dranove (1987) | 4 | Dranove D and White W. Agency and the organization of health care delivery. *Inquiry* 1987; **24**: 405-415. |
|  | Dranove (1988) | 4 | Dranove D. Demand inducement and the physician-patient relationship. *Economic Inquiry* 1988; **26**: 281-298. |
|  | Dranove (1994) | 4 | Dranove D, Wehner P. Physician-induced demand for childbirths. *Journal of Health Economics* 1994; **13(1)**: 61-73. |
|  | Dranove (1988) | 4 | Dranove D. Pricing by non-profit institutions: the case of hospital cost-shifting. *Journal of Health Economics* 1988; **7**: 47-57. |
|  | Eddy (1992) | 4 | Eddy DM. Cost-effectiveness analysis. A conversation with my father. *Journal of the American Medical Association* 1992; **267(12)**: 1669-1675. |
|  | Farber (2000) | 4 | Farber HS and Levy H. Recent trends in employer-sponsored health insurance coverage: are bad jobs getting worse? *Journal of Health Economics* 2000; **19**: 93-119. |
|  | Feldstein (1973) | 4 | Feldstein MS. The welfare loss of excess health insurance. *Journal of Political Economy* 1973; **81(2)**: 251-280. |
|  | Fuchs (2000) | 4 | Fuchs VR. The Future of Health Economics. *Journal of Health Economics* 2000; **19**: 141-157. |
|  | Gaynor (2003) | 4 | Gaynor M, Vogt W. Competition among hospitals. *RAND Journal of Economics* 2003; **34(4)**: 764-785. |
|  | Gaynor (1994) | 4 | Gaynor M. Issues in the industrial organisation of the market for physician services. *Journal of Economics and Management Strategy* 1994; **3**: 211-255. |
|  | Gaynor (1995) | 4 | Gaynor M, Gertler PJ. Moral Hazard and Risk Spreading in Medical Partnerships. *RAND Journal of Economics* 1995; **26(4)**: 591-613. |
|  | Gruber (1993) | 4 | Gruber J and Owings M. Physician financial incentives and caesarean section delivery. *RAND Journal of Economics* 1993; **27**: 99-123. |
|  | Hickson (1987) | 4 | Hickson GB, Altmeier WA and Perrin JM. Physician reimbursement by salary or fee-for-service: effect on physician practice behavior in a randomized prospective study. *Pediatrics* 1987; **80**: 344-350. |
|  | Iglehart (2000) | 4 | Iglehart JK. Revisiting the Canadian Health Care System. *New England Journal of Medicine* 2000; **342(26)**: 2007-2012. |
|  | Iglehart (1999) | 4 | Iglehart JK. The American Health Care System: Medicaid. *New England Journal of Medicine* 1999; **340(5)**: 403-408. |
|  | Keeler (1999) | 4 | Keeler EB, Melnick G, and Zwansiger J. The Changing Effects of Competition on Non-Profit and For-Profit Hospital Pricing Behavior. *Journal of Health Economics* 1999; **18(1)**: 69-86. |
|  | Kessel (1958) | 4 | Kessel RA. Price Discrimination in Medicine. *Journal of Law and Economics* 1958; **1**: 20-53. |
|  | Klose (1999) | 4 | Klose T. The contingent valuation method in health care. *Health Policy* 1999; **47**: 97-123. |
|  | Manning (1996) | 4 | Manning WG, Marquis MS. Health insurance: the tradeoff between risk pooling and moral hazard. *Journal of Health Economics* 1996; **15(5)**: 609-640. |
|  | Maynard (1991) | 4 | Maynard AK. Developing the Health Care Market. *Economic Journal* 1991; **101**: 1277-1286. |
|  | Mooney (1993) | 4 | Mooney G, Ryan M. Agency in health care: getting beyond first principles. *Journal of Health Economics* 1993; **12**: 125-135. |
|  | Murray (2000) | 4 | Murray CJL, Evans D, Acharya A, Baltussen R. Development of WHO guidelines on generalized cost-effectiveness analysis. *Health Economics* 2000; **9**: 235-251. |
|  | Muurinen (1982) | 4 | Muurinen J-M. Demand for health: a generalised Grossman model. *Journal of Health Economics* 1982; **1**: 5-28. |
|  | Palmer (1999) | 4 | Palmer S, Torgerson DJ. Definitions of efficiency. *British Medical Journal* 1999; **318**: 1136-1136. |
|  | Palmer (1999) | 4 | Palmer S, Raftery J. Opportunity cost. *British Medical Journal* 1999; **318**: 1551-1552. |
|  | Palmer (1999) | 4 | Palmer S, Byford S, Raftery J. Types of economic evaluation. *British Medical Journal* 1999; **318**: 1349-1349. |
|  | Pauly (1974) | 4 | Pauly MV. Over-insurance and public provision of insurance: the roles of moral hazard and adverse selection. *Quarterly Journal of Economics* 1974; **88**: 44-62. |
|  | Raftery (2000) | 4 | Raftery J. Costing in economic evaluation. *British Medical Journal* 2000; **320**: 1597. |
|  | Robinson (1993) | 4 | Robinson R. Cost-utility analysis. *British Medical Journal* 1993; **307**: 859-862. |
|  | Robinson (1985) | 4 | Robinson JC and Luft H. The impact of hospital market structure on patient volume, average length of stay, and the cost of care. *Journal of Health Economics* 1985; **4**: 333-356. |
|  | Rosenzweig (1983) | 4 | Rosenzweig MR and Schultz T. Estimating a household production function: heterogeneity, the demand for health inputs and their effects on birth weight. *Journal of Political Economy* 1983; **91**: 723-746. |
|  | Ryan (2000) | 4 | Ryan M and Farrar S. Using conjoint analysis to elicit preferences for health care. *British Medical Journal* 2000; **320**: 1530-1533. |
|  | Sculpher (2000) | 4 | Sculpher M, Fenwick E and Claxton K. Assessing quality in decision analytic cost-effective models: a suggested framework and example of application. *Pharmacoeconomics* 2000; **17(5)**: 461-477. |
|  | Smith (2003) | 4 | Smith RD. Construction of the contingent valuation market in health care: a critical assessment. *Health Economics* 2003; **12**: 609-628. |
|  | Stinnett (1998) | 4 | Stinnett A and Mullahy J. Net health benefits: a new framework for the analysis of uncertainty in cost-effectiveness analysis. *Medical Decision Making* 1998; **18**: S68-S80. |
|  | Tengs (1996) | 4 | Tengs TO. An evaluation of Oregon's Medicaid rationing algorithms. *Health Economics* 1996; **5(3)**: 171-181. |
|  | Torgerson (1999) | 4 | Torgerson D, Raftery J. Measuring outcomes in economic evaluations. *British Medical Journal* 1999; **318**: 1413-1413. |
|  | Van Doorslaer (2000) | 4 | Van Doorslaer E, Wagstaff A, van der Burg H, Christiansen T, De Graeve D, et al. Equity in the delivery of health care in Europe and the US. *Journal of Health Economics* 2000; **19**: 553-583. |
|  | Wagstaff1993 | 4 | Wagstaff A. The demand for health: an empirical reformulation of the Grossman Model. *Health Economics* 1993; **2**: 189-198. |
|  | Wagstaff1999 | 4 | Wagstaff A, van Doorslaer E, van der Burg H, et al. Equity in the finance of health care: some further international comparisons. *Journal of Health Economics* 1999; **18**: 263-290. |
|  | Zeckhauser1970 | 4 | Zeckhauser R. Medical insurance: a case study of the tradeoff between risk spreading and appropriate incentives. *Journal of Economic Theory* 1970; **2**: 10-26. |