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Improving the legitimacy of medicines funding decisions: A critical literature review

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Abstract
Many healthcare systems globally provide publicly subsidised access to prescribed medicines. Decisions about which medicines to fund affect a range of stakeholders and it is not reasonable to expect that medicines funding decisions are supported by all stakeholder groups all the time. A more realistic aim may be for decisions to be understood and accepted as legitimate by stakeholders, however several shortcomings of existing processes make it difficult to achieve this aim. To date, the main strategy to address these shortcomings has been to increase stakeholder involvement in decision-making, either by eliciting stakeholder values or increasing stakeholder participation in decision-making. Despite these efforts, there is growing evidence that decision-makers are falling short when it comes to the perceived legitimacy of their resource allocation processes and decisions. As such, there is a pressing need for decision-makers to think seriously and creatively about ways to increase the legitimacy of their processes and to make them more acceptable to a wider range of stakeholders. In this article we summarise and critique existing literature on the legitimacy of public resource allocation processes, and make some practical suggestions for those who are concerned about this issue.

Keywords: pharmaceutical funding decisions, legitimacy, stakeholder engagement, resource allocation, priority setting.

Pharmaceuticals are expensive and subsidy is required before most patients achieve access

Pharmacotherapies play a vital role in the treatment of disease but they are also expensive, both in terms of overall and unit costs. It is not uncommon for new therapies (particularly biological agents and targeted therapies used to treat conditions such as cancer, hepatitis and autoimmune disease)

to cost upwards of $100,000 per patient for a year of treatment (1). Meanwhile, expenditure on prescribed pharmaceuticals accounted for US$263.3billion in the USA in 2012 (2), €190billion in the European Union in 2010 (3) and $10.1billion in Australia in 2013-14 (4); representing 1.6, 1.7 and 0.7% of GDP, respectively. It is predicted that these costs will increase substantially in the near future (5), due to factors such as the development of new expensive targeted biological agents (6), the ageing population in many countries (7) and the emergence of new healthcare markets, particularly in the developing world (5).

The high cost of many therapies means that, in practice, some form of subsidy is required before all but the wealthiest patients can access them. Many jurisdictions internationally have public mechanisms in place to provide subsidised access to prescribed medicines. Examples include national publically funded healthcare schemes such as the UK's National Health Service (NHS), the United States Medicare and Medicaid programs (CMS) and Australia's Pharmaceutical Benefits Scheme (PBS), as well as publicly funded hospital drug and therapeutics committees (8). Low and middle-income countries are also increasingly focused on finding ways to provide public access to "essential" medicines, some of which are very expensive (9-11).

Medicines funding decisions affect a range of stakeholders, all of whom make different "claims" for funding of medicines

Decisions about subsidising expensive prescribed medicines in public healthcare systems occur in the context of escalating healthcare costs and budget constraints. Healthcare payers must therefore make difficult choices as to which therapies are subsidised, and inevitably some patients will miss out on subsidy for treatment that they need or want.

In this context, different stakeholder groups tend to make different kinds of "claims" for funding of medicines. Patients, patient advocates and clinicians generally emphasise the importance of timely access to effective medicines at a price consumers can afford, the need for equity between different patient groups and the need to "rescue" desperately ill patients. These views emerge regularly in the media when a decision is made to refuse public funding for particular therapies (12-15). Pharmaceutical companies typically focus on the need for public payers to fund more medicines and reward companies for the costs associated with drug development; this is illustrated in a recent report commissioned by Medicines Australia (Australia's pharmaceutical industry representative body), entitled "Access to Cancer Medicines in Australia" (6). Public payers and those advising them acknowledge the importance of factors such as equity and rewarding and encouraging drug development, but emphasise that effectiveness and cost-effectiveness of medicines must be demonstrated before they can be subsidised. This is evident in the guidelines of health technology assessment agencies (such as Australia's Pharmaceutical Benefits Advisory Committee's (PBAC) (16), the UK's National Institute for Health and Clinical Excellence (NICE) (17) and the Canadian Agency for Drugs and Technology in Health (CADTH) (18)) that provide advice to payers.

Stakeholder claims are difficult to reconcile and it is nearly impossible to make decisions that all stakeholders agree with

The tensions between these conflicting stakeholder positions mean that it is nearly impossible to make decisions that all stakeholders will agree with all of the time. Therefore, a more realistic aim may be to make funding decisions that stakeholders can understand and accept as legitimate. In this context, "legitimacy" refers to the degree to which a decision or decision-making process is seen to be in accordance with established or accepted patterns and standards and, therefore, to be "acceptable".

Perceived legitimacy of public resource allocation processes is important because, without it, attempts will inevitably be made to "work around" the decision-making process, potentially undermining it (19). An example of this is the "Herceptin Program" in Australia (20). This was established as a separate funding mechanism after the government's advisory group (the Pharmaceutical Benefits Advisory Committee) did not recommended public funding of trastuzumab (Herceptin) for metastatic disease on the Pharmaceutical Benefits Scheme, as it was not deemed to be cost-effective. Other examples include England's "cancer drugs fund", which was established in 2011 to provide access to cancer medications that are not available through the National Health Service (21), and the increased demands that are often placed on hospital drug and therapeutics committees by patients who cannot obtain subsidy for therapies through publicly funded healthcare schemes (8). Even if people do not attempt to "work around" systems they perceive to be illegitimate, legitimacy in decision-making is still important, as it is an essential feature of liberal democracy. Officials are elected to make decisions on behalf of the population and voters expect these decisions to be made in a manner that considers their views, respects community values and is able to balance competing considerations (22).

Legitimacy of decision-making processes for funding of medicines has been examined and some shortcomings of existing processes identified

Researchers and policymakers have paid significant attention to the process of healthcare resource allocation. To date, most work in this area has involved characterising and describing existing processes to determine how decisions about the funding of medicines are made (examples include work by Gallego *et al*. (23, 24) and Martin *et al*. (25-28) examining hospital drug and therapeutics committees or Mitton *et al*. (19) examining centralised decision-making processes in Australia, Canada, the UK and Israel). Other work has focussed specifically on the perceived legitimacy of these processes and several weaknesses of current processes have been identified.

Firstly, concerns about transparency have been raised. Examinations of hospital decision-making committees in Australia (23, 26, 27), for example, have found that limited information about the decisions of these bodies is made available to hospital staff, patients or the broader community. Meanwhile, participants in an interview-based study by Mitton (19) examining the fairness of centralised decision-making processes in Australia, New Zealand, Canada and the UK acknowledged recent attempts to increase the transparency of funding processes by posting final decisions on the agency websites; however, they noted that only limited information is provided and questioned the adequacy of this approach.

Second, those concerned about legitimacy have raised concerns (19, 23, 27) that the full range of interests is not represented in resource allocation processes. Limited opportunities for stakeholder participation in some processes have been noted, in particular involvement of patients and members of the broader community in hospital decision-making committees. For example, a review of empirical research into decision-making in priority-setting for medicines in industrialised countries (29) found that experts such as physicians and pharmacists were the most influential stakeholders in hospital decision-making processes; lay people were rarely involved. Similarly, lack of community engagement has been emphasised in a number of case studies examining hospital decision-making committees in Australia (23) and Canada (25-28, 30).

Decision-making bodies are making efforts to increase the legitimacy of their processes

A number of strategies have been identified that may increase the legitimacy of medicines funding decisions. For the most part, these have focused on ways of increasing stakeholder participation in

decision-making, as this is thought to increase transparency (19, 23, 31, 32) and provide decision-makers with unique patient knowledge about treatments (33).

Currently there are two main approaches suggested for increasing public participation: eliciting stakeholder views for incorporation in decision-making and increasing stakeholder involvement in decision-making processes. Researchers have suggested focus groups, citizens juries (34), discrete choice experiments (35) and surveys (36, 37) as methods that could be used to elicit stakeholder opinions for incorporation into decision-making. For example, Gallego *et al*. (37) conducted a survey of 200 people in the Sydney metropolitan area to explore what members of the general public considered to be important criteria for resource allocation. Linley and Hughes (35) conducted a larger study of 4,118 members of the general public in the UK using a discrete choice experiment to explore societal preferences for NHS resource allocation. Menon and Stafinski (34) used a citizens jury composed of 16 members of the general public in Alberta, Canada to elicit preferred prioritisation criteria. Meanwhile, a review of public participation in decision-making by Menon *et al*. (38) identified a variety of methods that can be used to increase stakeholder involvement in decision-making. These include involving the public in decisions about which technologies to appraise, including stakeholders on decision-making committees, providing stakeholders with opportunities to make submissions to decision-making bodies and to appeal the decisions of health technology assessment bodies, and allowing stakeholders to review the guidelines and summary documents produced by health technology assessment bodies.

While the ideal approach to increasing public participation is not yet clear, a number of decision-making bodies have taken up these strategies. In the UK, the NICE Citizens' Council is one public consultation mechanism that has been used to elicit community values for incorporation into decision-making (39, 40). This consists of 30 members of the general public that meet once a year to discuss issues identified as important to NICE decision-making. Council recommendations and conclusions are collated into a report, which is then considered in NICE appraisals. NICE also has a "Patient and Public Involvement Programme", which seeks to engage patients, carers and the public in the development of NICE guidance (41); stakeholders can also comment and provide evidence at various stages of guideline scoping and development (17). Meanwhile, the Canadian Agency for Drugs and Technologies in Health (CADTH) has a system for patient group input to its Common Drug Review (CDR) process (42).

The success of efforts to increase legitimacy has been limited

Despite these efforts to engage the public, and integrate their values into decision-making, there is evidence of persistent problems with the perceived legitimacy of decision-making processes for the funding of medicines. Media articles continue to detail patients pleading for and being given *ad hoc* compassionate access to therapies (described in studies by MacKenzie *et al.* (12) and Robertson *et al*. (13) examining media coverage of medicines funding decisions). There are also heated debates currently occurring in a number of jurisdictions about the use of "cancer drugs funds", with calls for Australia to establish such a fund (43) at the same time that the future of the English fund is uncertain (44). Thus, while existing work in this area provides a useful starting point, there is a need for agencies making decisions about the funding of medicines (or those planning to establish and run such agencies in the future) to consider new ways to increase the perceived legitimacy of their processes, taking into account a range of stakeholder perspectives.

A number of processes and tools have been identified that could be used to enhance the legitimacy of decision-making. One of these that we believe holds great promise is the 6-STEPPs tool (45, 46). This consists of six modules: decision clarification, criteria filtering (including aspects like strength of evidence, outcome benefit importance and regulatory status), clinical evaluation, cost modeling,

data integration and values clarification, and process evaluation. The tool was designed to overcome many of the weaknesses of existing processes and, as such, has an emphasis on increasing stakeholder involvement in decision-making and includes a template that forms a record that can be used to ensure accountability. It has undergone pilot testing with a number of clinical groups in Alberta, Canada, where it has been received favourably and has continued to be used by participants after the pilot-testing process had occurred. Although further evaluation is needed to determine the effect that the use of this tool has on the acceptability of decisions to other stakeholders, it could play a useful role in increasing the legitimacy of decisions about the funding of medicines.

Conclusions

Different stakeholders make different, and often incompatible, claims for the public funding of medicines. Overall, there are two competing sets of stakeholder claims- those of patients, manufacturers and physicians, who advocate for increased access to medicines, with reduced time to access and at a price that patients can afford, and those of public payers, who focus on achieving equitable access to healthcare within a fixed budget. The difficulties in reconciling these claims, and therefore in making decisions that all stakeholders agree with, means that a more appropriate aim may be for decisions that stakeholders can understand and accept as legitimate. There is evidence that public decision-makers internationally are alert to the importance of perceived legitimacy, and are attempting to increase the legitimacy of their processes, primarily by increasing stakeholder participation in decision-making. Although these efforts—and the body of research that has accompanied them—provide a useful starting point, continued concerns about legitimacy underscore the need for those making decisions about the funding of medicines to seriously consider the perceived legitimacy of their processes from the perspective of a number of stakeholders and to make efforts to increase this. The use of tools such as 6-STEPPS to aid decision-making are one way that agencies could increase the legitimacy of their processes and make them more acceptable to a wider range of stakeholders.

References

1 Chustecka Z. High Price of Cancer Drugs Is Harming Patients. Medscape Medical News 2013.

2 National Health Expenditures 2012 Highlights: Centers for Medicare and Medicaid Services 2012.

3 OECD. Health at a Glance: Europe 2012: OECD Publishing 2012.

4 Budget Paper 1: Budget Strategy & Outlook. Canberra: Australian Government; 2014.

5 The Global Use of Medicines: Outlook through 2017: IMS Institution 2013.

6 Access to Cancer Medicines in Australia Medicines Australia; 2013.

7 Health system expenditure on cancer and other neoplasms in Australia: 2008–09. Canberra: Australian Institute of Health and Welfare; 2013.

8 Gallego G, Taylor SJ, Brien J-aE. Provision of pharmaceuticals in Australian hospitals: equity of access? Pharmacy World & Science. 2007;**29**(2):47-50.

9 Dey S, Soliman AS. Cancer in the global health era: opportunities for the Middle East and Asia. Asia-Pacific journal of public health / Asia-Pacific Academic Consortium for Public Health. 2010 Jul;**22**(3 Suppl):75s-82s.

10 The world health report 2013: research for universal health coverage.: World Health Organisation; 2013.

11 Knaul FMF, Julio; Shulman, Lawrence. Closing the Cancer Divide: A Blueprint to Expand Access in Low and Middle Income Countries. Boston, MA: Global Task Force on Expanded Access to Cancer Care and Control in Developing Countries; 2011 November 2011.

12 MacKenzie R, Chapman S, Salkeld G, Holding S. Media influence on Herceptin subsidization in Australia: application of the rule of rescue? JRSM. 2008;**101**(6):305-12.

13 Robertson J, Walkom EJ, Bevan MD, Newby DA. Medicines and the media: news reports of medicines recommended for government reimbursement in Australia. BMC public health. 2013;**13**(1):489-.

14 Fenton E. Making Fair Funding Decisions for High Cost Cancer Care: The Case of Herceptin in New Zealand. Public Health Ethics. 2010;**3**(2):137-46.

15 Gabe J, Chamberlain K, Norris P, Dew K, Madden H, Hodgetts D. The debate about the funding of Herceptin: a case study of 'countervailing powers'. Social science & medicine (1982). 2012;**75**(12):2353-61.

16 PBAC. Guidelines for preparing submissions to the Pharmaceutical Benefits Advisory Committee (Version 4.4) June 2013: Pharmaceutical Benefits Advisory Committee 2013.

17 NICE. Guide to the methods of technology appraisal 2013: National Institute for Health and Clinical Excellence 2013.

18 CADTH. Procedure for the CADTH Common Drug Review: CADTH; 2014 August 2014.

19 Mitton CR, McMahon M, Morgan S, Gibson J. Centralized drug review processes: are they fair? Social science & medicine (1982). 2006;**63**(1):200-11.

20 Medicare Australia : Late stage metastatic breast cancer. 23 May 2014 [cited 2014 9 October]; Available from: http://www.medicareaustralia.gov.au/provider/patients/late-breast-cancer.jsp

21 NHS England: The Cancer Drugs Fund. [cited 2014 11th November 2014]; Available from: http://www.england.nhs.uk/ourwork/pe/cdf/

22 Rothstein B. Creating Political Legitimacy Electoral Democracy Versus Quality of Government. American Behavioral Scientist. November 2009;**53**(3):311-30.

23 Gallego G, Taylor SJ, Brien J-aE. Priority setting for high cost medications (HCMs) in public hospitals in Australia: A case study. Health policy. 2007;**84**(1):58-66.

24 Gallego G, Taylor SJ, Brien J-AE. Funding and access to high cost medicines in public hospitals in Australia: decision-makers' perspectives. Health policy (Amsterdam, Netherlands). 2009;**92**(1):27-34.

25 Martin D, Abelson J, Singer P. Participation in health care priority-setting through the eyes of the participants. Journal of Health Services Research & Policy. 2002;**7**(4):222-9.

26 Martin DK, Giacomini M, Singer PA. Fairness, accountability for reasonableness, and the views of priority setting decision-makers. Health policy (Amsterdam, Netherlands). 2002;**61**(3):279-90.

27 Martin DK, Hollenberg D, MacRae S, Madden S, Singer P. Priority setting in a hospital drug formulary: a qualitative case study and evaluation. Health policy (Amsterdam, Netherlands). 2003;**66**(3):295-303.

28 Martin DK, Pater JL, Singer PA. Priority-setting decisions for new cancer drugs: a qualitative case study. The Lancet. 2001;**358**(9294):1676-81.

29 Vuorenkoski L, Toiviainen H, Hemminki E. Decision-making in priority setting for medicines--a review of empirical studies. Health policy (Amsterdam, Netherlands). 2008;**86**(1):1-9.

30 Singer PA, Martin DK, Giacomini M, Purdy L. Priority Setting For New Technologies In Medicine: Qualitative Case Study. BMJ: British Medical Journal. 2000;**321**(7272):1316-9.

31 Drummond M, Evans B, LeLorier J, et al. Evidence and values: requirements for public reimbursement of drugs for rare diseases--a case study in oncology. The Canadian journal of clinical pharmacology = Journal canadien de pharmacologie clinique. 2009;**16**(2):e273.

32 Drummond MF, Schwartz JS, Jönsson B, et al. Key principles for the improved conduct of health technology assessments for resource allocation decisions. International Journal of Technology Assessment in Health Care. 2008;**24**(3):244-58.

33 Facey K, Boivin A, Gracia J, et al. Patients' perspectives in health technology assessment: A route to robust evidence and fair deliberation. International Journal of Technology Assessment in Health Care. 2010;**26**(3):334-40.

34 Menon D, Stafinski T. Engaging the public in priority-setting for health technology assessment: findings from a citizens' jury. Health Expectations. 2008;**11**(3):282-93.

35 Linley WG, Hughes DA. Societal views on nice, cancer drugs fund and value-based pricing criteria for prioritising medicines: a cross-sectional survey of 4118 adults in Great Britain. Health economics. 2013;**22**(8):948-64.

36 Jenkins VA, Trapala IS, Parlour L, Langridge CI, Fallowfield LJ. The views of patients and the general public about expensive anti-cancer drugs in the NHS: a questionnaire-based study. JRSM short reports U6 - ctx_ver=Z3988-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rfr_id=info:sid/summonserialssolutionscom&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rftgenre=article&rftatitle=The+views+of+patients+and+the+general+public+about+expensive+anti-cancer+drugs+in+the+NHS%3A+a+questionnaire-based+study&rftjtitle=JRSM+short+reports&rftau=Jenkins%2C+Valerie+A&rftau=Trapala%2C+Ivonne+Solis&rftau=Parlour%2C+Louise&rftau=Langridge%2C+Carolyn+I&rftdate=2011-09-01&rfteissn=2042-5333&rftvolume=2&rftissue=9&rftspage=69&rft_id=info:pmid/21969880&rftexternalDocID=21969880&paramdict=en-US U7 - Journal Article U8 - FETCH-pubmed_primary_219698801. 2011;**2**(9):69.

37 Gallego G, Taylor SJ, McNeill P, Brien JaE. Public views on priority setting for High Cost Medications in public hospitals in Australia. Health Expectations. 2007;**10**(3):224-35.

38 Menon D, Stafinski T. Role of patient and public participation in health technology assessment and coverage decisions. London: Expert Reviews Ltd; 2011. p. 75-89.

39 NICE. Citizens Council 2014 [cited 2014 12/5/14]; Available from: http://www.nice.org.uk/aboutnice/howwework/citizenscouncil/citizens_council.jsp

40 Chalkidou K. Evidence and values: paying for end-of-life drugs in the British NHS. Health economics, policy, and law. 2012;**7**(4):393.

41 NICE Public Involvement Programme [cited 2014 2nd December 2014]; Available from: http://www.nice.org.uk/about/nice-communities/public-involvement/public-involvement-programme

42 CADTH Patient Input 2014 [cited 2014 2nd December 2014]; Available from: http://cadth.ca/en/products/cdr/patient-group-input/

43 Hagan K. Call to fast-track new cancer drugs. The Age 2014 March 8 2014.

44 Swinford S. Cancer drugs fund subject to 'value for money' assessment for first time. The Telegraph 28th August 2014.

45 Browman GP, Manns B, Hagen N, Chambers CR, Simon A, Sinclair S. 6-STEPPPs: A Modular Tool to Facilitate Clinician Participation in Fair Decisions for Funding New Cancer Drugs. Journal of Oncology Practice. 2008;**4**(1):2-7.

46 Sinclair S, Hagen NA, Chambers C, Manns B, Simon A, Browman GP. Accounting for reasonableness: Exploring the personal internal framework affecting decisions about cancer drug funding. Health policy. 2008;**86**(2):381-90.