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### Resource Allocation in Healthcare: Have We Misjudged Societal Values?



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#### Equitable Healthcare

With increased emphasis on financial constraint in healthcare, resource allocation discussions are heard more commonly in clinical departments. As agents of the patient, clinicians are faced with struggles to ensure that individual patients can receive costly treatments, despite growing demands for healthcare throughout society. It increasingly seems as though there is a conflict between the right of the individual to receive treatments, and the rights of society, who pay for it (Bulger et al. 1995). As this conflict grows, we should ask ourselves if the problem is in part due to our failings in understanding public preferences, as we may have misjudged societal values in the allocation of healthcare resources.

Innovations in healthcare have been responsible for a significant improvement in morbidity and mortality, resulting in an estimated seven-year increase in life expectancy between 1960 and 2000 in high income countries (Cutler et al. 2006). This comes at a price, however, as innovations in healthcare require a concurrent increase in healthcare expenditure. EU projections of spending on healthcare suggest that by 2060, average spending for the EU12 countries will reach 9 percent of gross domestic product (GDP) and 8.7 percent of GDP for the EU15 (Pryzwara 2010). Following the turbulence of a global economic crisis, together with rising healthcare expenditure, containing costs appears to have become the goal of both governments and private insurers. Yet in the face of rising costs and discussions about the sustainability of current levels of healthcare expenditure, it is even more important that decisions about necessary levels of spending, and how these resources should be distributed, should include the values of those who pay for it. Societal value judgments play an important role, now more than ever, in ensuring that the provision of healthcare is fair and equitable (Daniels 2013).

However, in reality society's opinion is rarely included. In areas of resource allocation within healthcare, the opinions of the public have consistently been shown to be different from those of healthcare professionals and politicians (Kinnunen 1998). In the emotive world of resource allocation in healthcare, we tend to assume that in order to provide care for an individual, we prevent other members of the public from accessing this care. In doing so we forget about the benefit that society gains through acts of altruism. In essence, we forget that society cares for the individual. Following are the steps through decision-making in resource allocation, which draw attention to the possibility that healthcare professionals may be wrong in assuming that we must trade off care for one against care for many. Furthermore, Big Data may have a role to play in helping us determine true societal values.

#### Equity-Efficiency Trade-Off

Fair resource allocation relies on the determination of an equitable and efficient trade-off, and is a focus of welfare economics. This trade-off can be long term, that is a tradeoff between current and future generations, or it can be in the shorter term, between those requiring healthcare at a given point in time. The concern of all stakeholders is how to fairly balance the delivery of finite resources to one individual, therefore decreasing available healthcare for the rest of society. This balance is referred to as the equity-efficiency trade-off (Investopedia 2016). However, even the use of the term "trade-off" ignores the fact that society can benefit from delivering care to individuals. We know that individuals derive a benefit from altruistic deeds, including blood donation, cadaveric organ donation and indeed stranger-to-stranger living organ donations (Steinberg 2006). We can assume that society and the public care about others' health, as demonstrated by the importance of healthcare on the political agenda, and the degree of funding delivered to medical charities (Hanson 2008). While economists argue that the most appropriate perspective for economic analyses is societal (Byford and Raftery 1998), the reality is that while the costs taken in these equations are societal, the benefit gained by society, from helping individuals, is not included in economic analyses within healthcare. In fact we examine benefits that accrue to the individual patient, their family or their community. If an equity-efficiency trade-off is required to appropriately distribute healthcare, then the preferences of and benefits to the public matter in determining how to allocate resources.

#### Agency Relationship

Decision-making in healthcare is undertaken by clinicians, who act as agents for the patient. Blomqvist went even further in describing them as triple agents in the delivery of resources, as they act for the patient, for society and to some extent in a self-interested way as their own agent (Blomqvist 1991). An additional agency relationship exists between society and policymakers, whose role should be to act in the best interests of the public. However, while both clinicians and policymakers appear to have similar stated beliefs regarding the optimal allocation of resources in healthcare, these differ from the opinions of the public. Evidence from Australia comparing the attitudes of various stakeholders within the healthcare system showed that doctors and the public differed in their attitudes to managing a healthcare system that was under substantial

pressure due to costs (Robertson et al. 2011). For example, the public were more likely than doctors to believe that drug companies and lobby groups were responsible for increasing medical costs. However, the public were also more likely to believe that increasing costs were due to patients failing to take responsibility for their own health. In addition, fewer doctors than patients believed that the doctor should be responsible for educating the public regarding healthcare costs (Robertson et al. 2011).

In the face of such discrepancies in values, is the position of the policymaker and clinician as an agent of society untenable?

### **Measuring Societal Preferences**

Rather than relying on an agent to understand societal values, perhaps we should rely on public opinion instead? This builds on the idea that decisions taken by a large group may be better than those taken by a small group, even when that small group is composed of experts (Surowiecki 2004). One of the major concerns with using societal/ public preferences is how to accurately measure them. We need to pay particular attention to how data regarding these preferences is obtained, as accurately measuring areas of public opinion is fraught with methodological concerns. Using survey questions targeted at a representative cross-section of the population to rank the priority of various health policies may appear, at first, to be a reliable source of data. Through surveying we can determine the stated preferences of that sample. However, using these stated preferences conflicts with aspects of both theoretical and experimental economic research, which suggests stated preferences do not represent true value judgements. For example when consumer choice is examined, the stated preference (the purchase a consumer tells us they would make) is less reliable than revealed preferences (the actual purchase they make) (Wardman 1988). Economists tend to reject the use of stated preferences in favour of revealed preferences. Studies examining the differences between stated and revealed preferences in healthcare have shown a discrepancy between the two groups, although they have mainly focused on willingness to pay studies (Blumenschein 2001).

### **Social Media as a Measure Of Preferences**

While it is relatively easy to determine an individual consumer's revealed preference for an individual purchase, examining the revealed preferences of a society for the distribution of a public good is clearly a different and more difficult scenario. Public discourse plays an important role in democracies, not only in forming values, but also in reflecting them (Della Carpini et al. 2004). Both the act of talking as an individual in public and conversations with fellow citizens allow the expression of views, the development of shared concerns and preferences, and enable society to reach a consensus about matters of public concern (Chambers 1996). Perhaps more importantly, though, analysis of the most common topics of public discourse can show us what is of most concern to the public.

Increasingly people turn to social media to document events and issues that concern them, and in doing so they provide us with a real-time account of issues that concern the public. Social media monitoring has the ability to quantify positive and negative reactions to policy, including health policy. Analysis of social media is now a well-described method of analysis of public opinion (O'Connor et al. 2010), and allows unheard voices to enter the process of discussion of both policy and politics (Anstead and O'Loughlin 2015), of which resource allocation in healthcare is undoubtedly a feature. This is not a new use of social media content. It has previously been used to assess public responses to long-term political problems, including economic downturn (Gonzalez-Bailon et al. 2010). Along with public opinion, public mood can also be captured by analysis of social media, demonstrated by analysis of a Twitter feed in a study from the University of Bristol (Landsall-Welfare et al. 2012). In this study, the researchers identified four key moods — anger, joy, fear and sadness — and linked these moods to words. They noticed that words associated with joy were particularly evident at Christmas, while words associated with a negative mood were found in mid-October 2010. The researchers noted that this corresponded to a time of large cuts in public spending. Furthermore, anger appeared to increase around the time of the summer riots in London in August 2011.

However, using Big Data methodology to analyse public opinion carries its own risks. The social value judgments recorded are likely to represent only a proportion of the population. According to the Oxford Internet Survey, social media users, in particular Twitter users, tend to be young, well-educated, and live in urban areas (Dutton et al. 2013). Analysing tweet data alone does not take into account the values of those who choose to engage by following the conversation, rather than entering it. Furthermore the number of tweets discussing a subject may not relate to the number of Twitter users who care about the issue — in an analysis of 26,000 uses between February and December 2011, it was found that 1 percent of users accounted for two thirds of tweets (Bruns, & Burgess 2012).

### **Conclusion**

A combination of stated and revealed preferences may be the most acceptable means of determining social values. However, as healthcare professionals involved in resource allocation decisions, it is time for us to realise that what we consider to be a conflict between the right of the individual to healthcare and the right of society to those same resources, may not be a conflict for society itself. We may have underestimated the degree to which the public cares about individuals. Big Data has given us the opportunity to include revealed preferences in the equity-efficiency tradeoff. Despite the uncertainty that it brings, we should welcome its inclusion in making decisions about resource allocation in healthcare.

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