

Decision makers' perceptions of health technology decision making and priority setting at the institutional level

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Abstract

This study describes health care decision makers' perceptions about decision making processes for the introduction, diffusion and prioritisation of new health technologies at the regional and institutional level. The aim of the study was to aid the design of a new process of technology assessment and decision making for the Northern Sydney and Central Coast Area Health Service (NSCCAHS). Twelve in-depth, semi-structured interviews were conducted with senior health service managers, nurse managers and senior medical clinicians in the NSCCAHS. Interviewees described prioritisation and decision-making processes as "ad hoc". Safety and effectiveness were considered the most important criteria in decision making but budgetary consideration often drove decisions about the uptake and diffusion of new technologies. Current dissatisfaction with decision-making processes creates opportunities for reform, including the introduction of consistent local technology assessments.

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IN NEW SOUTH WALES, local health regions are responsible for delivering health services to the general population residing in their catchment area.¹ Under existing arrangements, funding is provided directly by the state government under

What is known about the topic?

Despite the increased awareness among policy makers to develop mechanisms for the introduction of health-related technologies, there is only limited understanding of current priority setting and resource allocation processes at the local level.

What does this paper add?

This study provides a description of local decision-makers perceptions of current priority setting mechanisms at the hospital/AHS and their views on the key characteristics of future processes.

What are the implications for practitioners?

Future local priority setting processes should involve a broad range of stakeholders, be administratively simple and well communicated. Local initiatives should be linked to a broader state-wide or national framework for technology assessment and decision-making.

mechanisms which impose budget caps.² One of the main objectives for local area decision makers is to maximise health outcomes using available resources.

Decisions regarding the acquisition and use of new technologies pose a key challenge to the local decision makers. Advances in health technology may improve patient outcomes but can also increase health expenditure and thereby place greater strains on the budget.³ The critical issue is how to introduce technologies that maximise health gains from available resources. New health technologies are usually funded from existing Area resources although there are some notable exceptions for big-ticket items such as radiotherapy equipment.⁴ These arrangements lead to inevitable financial pressures and the need for priority setting at the local area level.⁵ However, at this level there are no comprehensive arrangements to review new technologies once they have marketing approval by the regulatory agency (the Therapeutic Goods Administration [TGA]).⁵

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There is a lack of assessment, including economic evaluation, for a range of technologies used in the public hospital system, with procedural and coverage gaps.⁵ As a consequence, there is some risk that inefficient technologies enter the system and efficient ones are rejected. Similarly, there are risks that existing technologies currently being used in the system are inefficient because they have never been properly assessed on the basis of costs and outcomes.

In an attempt to develop a more consistent approach across Area Health Services (AHSs), the NSW Department of Health issued a Model Policy for the introduction of new interventional procedures into clinical practice. The purpose of the Model Policy is to guide AHSs in their development of a standard process to introduce new procedures that are supported by evidence of efficacy and safety and are an effective use of resources within current budgetary constraints.⁶ The Model Policy provides guidance but is not prescriptive on how Areas should implement such a process. Indeed, the document stresses the need for Areas to adopt a model that reflects local needs and context.

In part, this flexibility is recognition that local areas already have processes in place to guide the introduction of new technologies. In the case of drugs, for example, some public hospitals have drug and therapeutics committees (DTCs) that make decisions on the adoption and diffusion of new pharmaceuticals or new indications for existing pharmaceuticals.⁷ In addition, but perhaps less consistently, AHSs have a business case approach to the purchasing of new technologies or introduction of procedures. Yet, despite this history, the nature of these processes is unclear and there is little knowledge about how widely they are adhered to in decision making.⁸ To our knowledge there has only been one report about the implementation of the Model Policy in NSW.⁹ According to this report it appears that the emphasis is predominantly on safety. The degree of emphasis on assessing whether the interventional procedure is effective and cost effective is less clear.

In line with the recommendations contained in the Model Policy, the Northern Sydney Central

Coast Area Health Service commenced development of an assessment and decision-making process for new procedural technologies. In doing so, the Area first attempted to gain a better understanding of decision-making processes currently in place. It was anticipated that greater insights into current processes and opinions would facilitate the development of a locally relevant and more accepted new process. Knowledge of actual practice is important in order to advance understanding of how to improve the current process. Further, one of the challenges of setting priorities in health care institutions is organisational behaviour. There is a real risk that any new process is not adhered to by clinicians and managers. It is therefore important to carefully consider the features of the new process to improve its likelihood of successful implementation.¹⁰

This paper presents the findings of a qualitative research project aimed at describing current mechanisms for the introduction, divestment and prioritisation of new health technologies at an area health service, including health care decision-makers' perceptions about current decision-making processes. It also reviews the suggested changes decision-makers felt were necessary to improve these processes.

For the purpose of this project, health technology was defined as:

Encompassing all methods used by health professionals to promote health, prevent and treat disease, and improve rehabilitation and long-term care. These methods include clinical procedures, programs, drugs, devices and equipment.

Methods

Setting

This study took place in the Northern Sydney Central Coast Area Health Service (NSCCAHS), NSW. The AHS provides health care to a population of about 1.13 million people through its seven acute hospitals and range of public health and community health services. Public hospitals in the Area range in size, the largest of which is a

major teaching hospital with 551 beds (including bed equivalents).¹¹

Participants and recruitment

Stratified purposive sampling was used to identify senior managers ($n = 4$), clinical service (medical) managers (ie, middle managers) ($n = 5$), medical clinicians ($n = 4$) and nurse managers ($n = 3$) ensuring representation across the four health sectors of the Area Health Service (AHS), and clinical specialties. These decision makers were selected on the basis of who would provide well informed advice. Also, clinicians and clinical service managers were selected on the basis of influence and/or being representative of views of that category of people. It is important to note that these decision makers do not have the approval authority within the Area Health Service regarding the introduction of new health technologies.

The list of potential participants was developed in consultation with a member from the AHS. The individuals were approached with a letter of invitation, which outlined the objectives of the study. Those who answered positively were contacted and an interview was arranged to take place in a location that suited them. Interviews were conducted in three different hospitals within the NSCCAHS.

Data collection and analysis

A three-part interview guide was developed to ascertain perceptions of current practice, criteria used in the decision-making process and the role of economic evaluation. A schedule was used as a guide or prompt sheet to ensure the same topics were covered during each interview. The interviewer gained signed consent before each interview. All interviews were conducted by the second author (SF) and recorded with the permission of the interviewees; these were later transcribed by the interviewer. Preliminary data analysis was conducted after each interview. This allowed identification of issues that required further exploration in the interviews that followed.¹² Continuous analysis of collected data was performed.

After preliminary analysis was performed, segments (paragraph, sentences) were coded and labelled. Coded segments were then compared for differences and similarities of events and ideas. This process was repeated until all comments were assigned to categories (constant comparison).^{13,14} Interviews were conducted until thematic saturation was reached. The third author (KvG) went through the data to check for correct interpretation.

Ethics

This study was approved by the University of Technology, Sydney Human Research Ethics Committee and endorsed by the Medical Research Ethics Committee of the Royal North Shore Hospital. Written consent was obtained from all study participants. All interviews were de-identified and all data were kept confidential.

Results

Sixteen people were approached: two were on leave during the interview period, two were unable to be interviewed and twelve agreed to participate. Three were senior managers, four clinical service (medical) managers, three medical clinicians and two nurse managers. The quotes selected from the semi-structured interviews are meant to be illustrative of the themes.

Description and perceptions of current decision-making processes

Respondents were asked to describe the current process for introducing new health technology and in what ways, if any, this process could be improved.

a) Introducing, prioritising and approving new health technologies

The majority of respondents described the current process as "ad hoc". Clinicians were reported to be the main drivers for introducing new technologies. Requests were either formalised, by completing forms, or in some cases lengthy business plans, to justify the adoption of the new technology or, if they are small cost items or

straightforward changes in procedure, then often these were just introduced immediately at the department level without further consultation; indeed most changes in patient care tended to be integrated into day-to-day practice and decisions made solely among senior clinicians.

Pretty ad hoc procedure did exist in [the] past for new equipment but [we] had no governing body to review new technologies eg, a clinician would write to request a new technology that he already uses in the private sector, they would be sent forms to complete (may get them back in 6 months time) they will go into the system (ie, back to Senior Health Service Management) who then makes a decision (can we afford it).

The more formalised written requests were submitted to health service management where most decisions were made; if the new technology was expensive then requests may have had to go higher within the hospital or the AHS. The process for approving new technologies at this level also involved Health Service Management making enquiries as to where the new technology was already in use.

A small number of participants noted that departments with access to their own trust funds often purchase a required new technology. However, there was one example where senior staff still had to submit a formal request as the item they required was very expensive, even though they were using trust money to purchase it. According to most participants, health technology industry representatives also played a significant role in introducing new technology, providing demonstrations of new equipment and devices.

At the moment I have a request from gastroenterologist for a "new" bit of equipment [for this hospital] — although not new in field of gastroenterology and [name of the hospital] already have one [different brand] at the moment we have quotes from suppliers and I'm inclined to just buy it and not refer it to this committee as in effect it's an adjunct piece of equipment really and I do know that

my staff can use it, there are no formal credentialling process but they have done courses, those sort of things the new process is not clear — could take who knows how long to get this piece of kit.

The length of time, from the initial request to the new technology being put into practice took from 1 month to 2 years.

b) Managing the use and spread of new health technologies

Managing the use and spread of new technologies was explored. The respondents also considered there was no formal communication regarding use of new health technologies between sites within the AHS. Knowledge regarding the use and spread of new technology was generally left to individuals making enquiries and existing clinicians' informal peer-group networks. When asked how the process could be improved, the majority of respondents considered that good communication was fundamental. Some reported that regular email notifications and a database detailing all new health technology by specialty would be a good idea. However, some expressed concern as to the feasibility of this given the size of the newly expanded AHS.

c) Discontinuing the use of health technologies

None of the respondents were aware of a formalised process for the discontinuation of health technologies in the AHS. However, some respondents reported that often old procedures and technologies were not formally discontinued but often replaced or upgraded. Some also considered that old technologies tended, in some cases, to duplicate new ones.

d) Criteria used in the decision-making process

Respondents were then asked which criteria were currently used in the decision-making process regarding the adoption of new technologies. The majority of respondents considered that safety and efficacy were fundamental. However, these respondents assumed that safety and effectiveness were determined elsewhere, for example, in clinical trials or by the Therapeutic Goods Adminis-

tration (TGA). According to the majority of respondents, an overarching influence on adoption decisions is the anticipated budgetary impact of the new technology and the current budget position of the Area. Other criteria mentioned by most participants included: improving patient care; equity to ensure equal access according to need to services for all; political considerations, especially if an election was imminent; pressure from individual clinicians advocating the new technology; community expectations (this included media attention for high profile cases and situations); and workforce issues. It was apparent that those working at the smaller hospitals felt that innovation tended to filter down from the larger teaching hospitals.

The perceived role of economic evaluation in the decision-making process was also explored. For the purpose of this exercise, economic evaluation was not defined as it was felt a useful exercise to gauge the understanding of the term among senior staff. The majority of respondents had a narrow view of economic evidence, referring solely to costs and budgetary constraints rather than costs and benefits together. However, a small number expressed a basic understanding of the underlying principles, mentioning the need for cost-benefit analysis, raising awareness of the role of rationing and efficient resource allocation. This group of respondents stated that economic evaluation had an important role to play, but at the same time there were words of concern and caution. Its value in everyday decision making, ability to be carried out at an Area level, and credibility among many clinicians were seen as major obstacles to its influence.

[Economic evaluation is] really important —
[but] where are the health care dollars going
to be spent?

For most of the respondents, lack of knowledge and understanding about economic evaluation techniques was seen as the biggest barrier; not just among clinicians but also the general public. Those who had responded solely about cost and budget limitations just raised the need for more money.

Credibility is lacking — data can be manipulated.

Get rigidity around the accuracy of those economic evaluations — things are introduced because they make health care better (usually way before economic evaluations are even looked at) I can't think of one example whereby economic evaluation was needed to prove this — all the ones I looked at were rubbish — useful at the time purely to justify expenditure.

When asked what they felt would encourage the use of economic evaluations, those with a basic understanding stated that there was a need to raise awareness of health economics among clinicians and the general public, and to explain in layman's terms why rationing is an integral part of a health care system. Also, improving its credibility was seen to be important, and there was the call to centralise the whole process so economic evaluation could be carried out at a level where it can be afforded and where they have the expertise to undertake such evaluations.

Education campaign in the community that rationing is a fact of life.

Plus new technology sits inside the political process — it won't disappear — priority setting will always be influenced by the people — if there is a sick baby they will fund raise and involve the media — so we should put economic evaluation in their terms so the public can understand that when you ask for [X] then something else [Y] won't happen so make them aware that there is a decision to be made about which is considered more important.

Participants' recommendations for a future process

In response to being asked how the current process could be improved, the majority considered that the main elements included: a need for a clearer definition as to what constitutes a new technology, ensuring that the new process is simple, fast, and standardised so all staff within

the AHS are aware of the procedure. A few people suggested that a third party (either an agent or project officer) would be useful to assist with the paperwork, and others mentioned the need to include credentialling of the individuals who will use the new technologies. It was also apparent that involving senior clinicians in the design stage of the new process was essential to ensure ownership.

Need to have it linked with all the credentialling and the medical practitioners in some ways which it's not — we need it to go hand in hand.

It was then asked at what level respondents felt decisions regarding new technology should take place (by level we meant clinician/clinical division/department/ institution/Area Health Service/state/federal), and in most cases it was considered the responsibility of the Area Executive, although one respondent was adamant that it should rest with the clinical networks (at the time of interviews these were yet to be created), as they will include senior clinicians from all parts of the AHS. Other respondents felt senior clinicians should be left to make the decisions at a department level. Centralisation was raised in response to this question for big item innovations. It was felt that such technologies should be evaluated for effectiveness and cost effectiveness at state level, where there is capacity to carry out such assessments.

We need to get the Commonwealth and the state to get together and have one health bureaucracy — stop playing off each other.

When asked which criteria should be included in the decision-making process, most respondents agreed with the existing criteria used, although one did say that political considerations should not be an influencing factor but realised that this was an unrealistic sentiment.

Discussion

Participants described health-related technology decision making and priority setting as “ad hoc”

and many of its facets run counter to transparent, accountable and evidence-based decision making. In particular, it seems only partial evidence is often considered, with budgetary impact and costs considered to be the major deciding factor in whether a new technology is actually introduced. It appears that simultaneous consideration of costs and effectiveness (as provided by a full economic analysis) are often overlooked. This failure can lead to a sub-optimal allocation of resources and runs contrary to the AHS' objective to maximise health outcomes within the current budget constraint. Participants also revealed that the introduction, prioritising and approval of new health technologies depends on a number of criteria such as political pressures, marketing initiatives by industry, and the availability of trust funds. These issues suggest that a new process to introduce new technologies more rationally may deliver significant benefits. Importantly, none of the respondents could identify a mechanism for disinvestment of ineffective or inefficient health technologies. Thus, any new process should also include assessment of old technologies for potential disinvestment.

To improve awareness and compliance with any new process, the Area must put in place an effective communication strategy. Not only is there a need to ensure that all staff are aware of any new forms and procedures that are to be introduced as part of the new process but also there is an ongoing need to keep them informed as new health technology is introduced.

Secondly, any new process must be clear, easy to comply with, timely and involve minimal resources on the part of clinical staff. This suggests that new processes must be supported by designated staff to help clinical departments fulfil process requirements. It is also clear that new processes must bring together evidence on costs and effects, with evidence from high quality economic evaluations being considered as part of the decision-making process. However, a number of questions remain about who is best placed to produce economic evidence, with a number of participants raising concerns over the capacity and appropriateness of the Area to produce such evidence.

Participants highlighted a number of factors that influence the acquisitions and use of new technologies. Some of these factors may at times run contrary to what can be regarded as rational decision making (eg, budgetary position, industry marketing, and political influence). In a bid to reduce the influence of some these factors it is important that any new process adhere to principles of procedural justice. Clinicians and Area staff must believe that the new process is fair and operates without fear or favour.

Conclusion

To date, limited research has been conducted regarding funding and introduction of new health technologies at the local (public hospital/AHS) level. Even though the goal of qualitative research is not generalisability,¹⁵ other hospitals or AHSs might benefit from the findings and implications arising from this study.

More broadly, evidence from Canada suggests that health technology assessment (HTA) units at the regional level can have significant influence on overall health benefits and cost.¹⁶ Studies have shown that a more transparent, fair, consistent and evidence-based decision-making process is likely to be accepted by a broad range of stakeholders and might help to lessen practical problems arising from resources being shifted from one service to another.^{17,18} The AHS health technology assessment initiative could serve as “an instrument that supports dialogue and transparency” in the decision-making process for the introduction of new health technologies.

However, local (area/institutional) level-led initiatives have some possible limitations. Firstly, decisions about funding and introduction of new health technologies taken at the AHS level could create differences in the services provided by different AHSs and will perhaps open the possibility for patients to seek those services that are not provided by their AHS. Secondly, there is a high risk of duplicating health technology assessment and priority setting activities if several AHSs adopt more rigorous decision-making processes. Thirdly, it should be recognised that some “big

ticket” technology items require statewide or even national consideration, and the area/institution is not the right decision-making level for such technologies. Finally, public hospitals or AHSs may have only limited capacity to undertake HTAs. This highlights the need for a more comprehensive and statewide or national framework for assessment and decision making. The intention of such a framework is to coordinate assessment activities in line with the decision-making functions of the local Areas.

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Competing interests

The authors declare that they have no competing interests.

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