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What is This?
Healthcare managers’ decision making: findings of a small scale exploratory study

Jackie MacDonald, Peter A. Bath and Andrew Booth

Managers who work in publicly funded healthcare organizations are an understudied group. Some of the influences on their decisions may be unique to healthcare. This study considers how to integrate research knowledge effectively into healthcare managers’ decision making, and how to manage and integrate information that will include community data. This first phase in a two-phase mixed methods research study used a qualitative, multiple case studies design. Nineteen semi-structured interviews were undertaken using the critical incident technique. Interview transcripts were analysed using the NatCen Framework. One theme represented ‘information and decisions’. Cases were determined to involve complex multi-level, multi-situational decisions with participants in practical rather than ceremonial work roles. Most considered organizational knowledge in the first two decision phases and external knowledge, including research, in the third phase. All participants engaged in satisficing to some degree.

Keywords
decision complexity, healthcare managers, naturalistic decision making, organizational decision making, work roles

Introduction

Improved patient outcomes are the ultimate objective of investment in health research related to diagnosis, interventions and technological innovation. A population health approach to decision making expands this definition of outcomes to include improving the health of groups at risk and of the general community, and global wellness.

The literature on decision making in healthcare suggests that relevant research evidence is not always considered by healthcare decision makers [1, 2], and that some decisions,
including policy decisions, are made with little reference to research evidence [3]. Some theoretical articles have suggested that evidence-based decision making should be applied to all healthcare decisions [4], while others have suggested the types of information that healthcare managers should use when making policy decisions [5].

There have been few studies of healthcare managers as they draw on information while engaged in decision making. Consequently little is known about the information they do use in decision making, how and when they look for information, or how they choose their information sources. In order to understand these, it is essential to understand the circumstances in which healthcare managers’ need for information arises.

This study looks at healthcare managers’ work roles and at the environment in which they make unstructured, non-clinical decisions. It examines decision complexity, including phases in decision making, and identifies the decision making mode most frequently used in the study sample. It also identifies points in decision phases where healthcare managers draw on information, and the information used in each decision phase.

**Conceptual framework**

Decisions were examined within a framework of decision complexity, work roles, influences on the decision, and whether or not decision makers felt they had ‘enough information’. This paper presents information on decision complexity and work roles.

**Decision complexity**

Organizational decisions have been studied from a number of perspectives, including alternatives or possible actions, expectations or consequences, preference or value to the decision maker, and decision rules – how choices are to be made among alternatives [6]. Decision structure, policy decision type, decision levels, decision modes, decision phases, decision situations, and decision makers – whether individual or group – have been identified as factors in decision complexity.

Decisions may be structured or unstructured [7]. Structured decisions are routine, made on a regular basis within the organization, so that the data needed to inform the decision, the process to follow in reaching the decision and the evaluation of alternatives can be spelled out. Structured decisions can be programmed, and supported through simple rules and information system data mining. Unstructured decisions are unique or rare. The information and processes required to meet them have not been preprogrammed because the situations have not previously been encountered within the organization in quite the same form [8, 9].

Healthcare system decision makers engage in three policy decision types: public policy decisions that determine what services will be offered; clinical policy decisions that identify who will receive clinical services; and administrative policy decisions that establish where services will be located and how they will be supported and managed [4]. Decision levels are: strategic, consequential and far reaching decisions; tactical, medium range and moderate decisions that support strategic decisions; and operational, everyday decisions that support tactical decisions [10].

The two dimensions of goal clarity and procedural certainty can be combined in four decision modes [11]. These are boundedly rational, where both goals and the procedures
to reach them are clear [7]; anarchic or ‘garbage can’, where neither goals nor procedures are clear [12]; process, where goals are clear but procedures are not [13]; or political, where procedures are clear but there is more than one goal, and/or goals are conflicting or unclear [14]. A fifth mode, naturalistic decision making, is characterized by group decisions, time pressures, poorly defined goals, high stakes, the importance of expertise, a focus on assessing the situation over selecting a course of action, and a reliance on experience in the form of situation matching and story-telling to anticipate the decision outcome, rather than searching for new information [14].

The four phases in a decision have been characterized as: (1) intelligence/identification, identifying the problem; (2) design/development, inventing, developing, and analysing possible courses of action; (3) choice/selection, selecting a particular course of action from those available; and (4) implementation and review, carrying out decisions and assessing past choices [7, 8]. As Simon suggested, ‘Each phase in making a particular decision is itself a complex decision-making process’ and may contain other phases within it [7, p. 43].

Various workplace situations give rise to the need to make decisions, which can then be classified as: opportunity decisions, where decision makers decide voluntarily to innovate or improve; crisis decisions, made in response to severe pressures; and problem decisions, made in response to milder pressures than crisis decisions. Decisions can also be described as problem–crisis and as problem–opportunity [8].

Work roles and organizational level

Administrative policy decisions have been represented by one or more of Mintzberg’s managers’ roles [15]. These are interpersonal roles arising from the manager’s position of formal authority in the organizational hierarchy (being the figurehead, acting as liaison with other units inside and outside the organization, and leading the department or service); information processing roles (monitoring information to identify new information relevant to departmental operations, disseminating information from within the department outside, and from outside, within and speaking for the department); and decisional roles (improverchanger, resource allocator, disturbance handler, and negotiator).

Managers’ jobs are open-ended and fragmented, with numerous short tasks and frequent interruptions. Senior managers’ work involves large workloads handled at a demanding pace [15]. A rough correlation exists between decision structure and management level, with managers at lower levels dealing with more structured decisions, and managers at higher levels being involved in more unstructured decisions [7]. Organizational decisions tend to be hierarchical, passed upward for approval. Authorization to proceed with a decision process may happen in any decision phase [8].

Study aim and objectives

It is important to understand work related information needs in the context of the work roles within which they arise [16]. There are few studies of information behaviour of healthcare decision makers that identify their decision situations and their information preferences, and variations in these, and the challenges they face in information access and use.

The aim of this study was to examine the information needs and uses associated with non-clinical healthcare decision making. The objectives were to identify at what points in the decision making process healthcare managers recognize an information need, how
they decide whether to access information, what information sources they use, and why they choose the information sources they do.

Methods

This small scale exploratory interview study used a multiple case study approach [17]. Semi-structured qualitative interviews were conducted using a critical incident technique (CIT) [18]. Seventeen participants were selected from the paid leadership of a rural district health authority and two from volunteer board members. Participants were selected by organizational level, namely senior executive, directors, managers or other leaders, or board chair or board member; by portfolio, namely acute care, community health or operations; and by employer, namely single DHA or shared service.

Twenty interview questions were organized in three sections of 10 CIT questions, six general questions and four population health questions. An additional 118 probing questions, several for each main question, were constructed to be used if needed.

Taped responses from interviews were transcribed verbatim, then indexed categorically with 526 terms in four broad families using ATLASi, then analysed according to Framework, a matrix-based content analysis technique developed for qualitative research by the UK National Centre for Social Research (NatCen) [19].

A single interview with a healthcare manager or decision maker is a ‘case’. The ‘units of analysis’ are the information sources used in each case, as well as the approach to information seeking. The interviewee is labelled ‘participant’. Explicit explanations are supported with participants’ own explanations in the form of quotations, or by diagrams that condense findings for information points in decision phases. Implicit explanations of decision complexity are developed through the researcher’s observation of patterns and linkages in the data and through inference, relating research literature with knowledge of the situation or context.

Results

Nineteen interviews were carried out. All participants had post secondary education and most had both professional degrees and graduate degrees. The mean participant age was 51 years, and the mean length of healthcare career was 21 years.

Four main themes were identified from the analyses: information and decisions, information and sharing, information and seeking, and information and population health. This paper describes and discusses one of these themes: information and decisions.

Responses were examined for literal replication, similar results within position level, portfolio and employer status and demographic variables, and for theoretical replication, contrasting results between these same categories.

Decision complexity

Upon analysis, all cases involved unstructured decisions encountered for the first time, and so were unsupported with existing decision making rules. No cases involved clinical policy decisions. Several cases involved new public policy decisions and one involved a
new administrative policy decision. Most cases involved decisions made within existing administrative policy. These are classified further below by managers’ roles.

With respect to decision structure and decision policy type, cases were almost homogeneous. There were no patterns to suggest these were influenced by demographic variables.

Decisions were complex in that they generally spanned two or more levels: both operational and tactical, both tactical and strategic, or across all three decision levels. Some were simply operational or simply tactical, but no critical incident discussed involved just a strategic decision.

There was only a slight pattern with respect to decision level and position level. At least one participant from the two middle position levels – manager or director – was involved in operational/tactical/strategic decisions; all senior executive members’ incidents involved decisions of this level of complexity.

In the slight majority of cases, participants followed clear processes for meeting identified goals, suggesting the *boundedly rational* mode of decision making. However, other criteria defining this mode were not obvious, including an indication that choice was guided by performance programmes [20] or that alternative courses of action and their consequences were identified, or that selection criteria were established with alternatives compared or evaluated.

In the remaining cases, procedures to reach goals were unclear, suggesting the *process mode* of decision making [12]. In two divergent cases, where the problem situation was external to the organization, participants were unclear both about their goals and about the procedures to achieve them, suggesting an *anarchic mode* of decision making [10]. There were no cases that followed the *political mode* of decision making, where procedures were clear but goals were obscure or conflicting [10].

All cases matched primary criteria for *naturalistic decision making* (NDM) in most key areas. A majority of participants described group decisions with reliance on expertise to inform the decision.¹

So we brought together a cross-section of people from across the district, the various sites, the various services, everybody including housekeeping, maintenance, physicians, nurses, the various departments that … provide services for/within the organization. (director)

This is why I saw our group partnering – we are not experts in this area – we don’t have the time, we are not in this field – we don’t have the expertise – let’s partner with people who know this stuff. (other leader)

Participants tended to identify and consider options sequentially instead of selecting a range of alternatives, developing selection criteria and comparing alternatives with each other.

I tend to draw on the range of my experience and move forward based on decision making that comes from that – that happens much more I think than systematically lining up a range of alternatives, it relies on trust in my experience in my work. (manager)

All decision makers dealt with time pressures in the midst of conflicting priorities.

… one of the things that I don’t think we are really good at, giving people enough time to make decisions around certain things. (manager)

When I am looking at something like this, this is one of many, many things I am doing …. (director)
NDM decision makers also rely on situation matching and story-telling to resolve uncertainty. Situation matching occurred in a number of cases, as did anticipating the decision outcome and imagining what might happen.

I will ask around a bit and another guy might say, ‘Well look, you know I have been working here for the last 20 years and here’s what is going to happen.’ (director)

The first being the fact that there was a hospital in New Brunswick, a friend of mine who runs it says it worked. (manager)

Personally, my preference would be through a story, because it makes the connection back to what is real and it is better than I can explain it that way to people. (manager)

NDM decisions are characterized by unclear goals. Cases did not correspond with NDM in this one key area.

By definition of critical incidents as explained in the interview invitation, situations were perceived as ‘high stakes’ by participants. Some were situations prompted by crises that had to be dealt with immediately, or problems that involved unique situations. Most were problems that provided an opportunity to make progressive change. No decision appeared to be just an opportunity decision.

There was a slight pattern with respect to position level in the organization and decision situation. Decision situations were almost homogeneous but only managers and directors described decisions that were classified as crisis decision situations. Participants at the highest position levels, senior executive, and the lowest, other leaders, did not describe crisis decisions.

With respect to decision mode, cases were almost homogeneous. There was nothing to suggest mode was influenced by demographic variables.

All four decision making phases were represented in the cases discussed, with all participants engaged in at least the first three phases of decision making. The most activity occurred in phase 2 and the least activity in phase 4. Points at which participants drew on information in each phase are shown in Figure 1.

In most cases, phase 1 was short as there was no need to spend time identifying the problem. Participants’ own knowledge and access to organizational knowledge was used to assess the problem, identify decision partners and identify objectives.

… So I saw that as a huge need because it is a real risk issue within an organization – not to know what is happening and what is happening about it. (director)

[We] did sit down and develop … the purpose of it, what our objectives would be – all of those kinds of things …. (other leader)

In one divergent case, there was a need to probe further to identify the exact nature of the problem.

… we went through the situation – obviously there was a problem amongst us. (manager)

Some participants involved in problem decision situations considered whether to engage in, ignore or postpone consideration of the problem, or whether to turn it into a problem–opportunity in phase 1.

So we will start there, and then look at what the scope of what the issue is, as to who is impacted and who is involved in the decision or the process, who do we get information
Figure 1 Categorical diagram for knowledge and information use within decision phases
from – we look at the ripple effect – this is what the issue is, but who else is impacted, as no decision is made in isolation. (director)

Most participants described spending time examining the system and the environment.

The first step was to look at the manager and myself in terms of what are our roles and responsibilities and what are the actions expected of us. (director)

Participants appeared to be most active with respect to use of information in phase 2, particularly oral information. Some considered what they knew themselves; others looked for recorded information such as policies and procedures.

… [the previous manager] had tried things like this and I knew that he had … but … there was no policy and no procedure for me. (manager)

Factors in determining whether or not to continue engaging in the decision were considered.

And I think when you want to make a change, even though you have all of the information, that you could have moved forward 5 years ago with it … if it is not broadly accepted … it is very hard to affect an overall change … there has to be some kind of buy-in from people … I have done enough things in my past when the timing wasn’t right … if the senior leadership in an organization doesn’t understand the information … hasn’t had time to digest it and absorb it and agree with it, it will bomb. (director)

I will be honest with you, I am ready for the decision to be made and to move on because I just can’t facilitate the change that is not ready to happen. It is all about readiness and timing as it is about knowing what could or couldn’t work. (senior executive)

Participants noted the importance of getting co-workers’ opinions on issues.

… it would make it much easier to move forward with change if you have concrete answers, work to share with people. So what I wanted was to be able to have that policy draft and then be able to take it to the next step, to the people that [I] would trust, who would have good information, in terms of influence, in terms of procedure, to have it adopted. (manager)

There was less emphasis on selecting a course of action in phase 3 than would be expected in boundedly rational decision making. Instead, participants in problem–opportunity decisions who had identified information gaps in phase 2 looked for additional information in phase 3 choice/selection to use to make positive progress beyond solving the problem.

I talked to one [manager] … and she thought the same way … so I was just going to meet with her and then I thought maybe I should meet with a group of [managers] and then collectively we can work on establishing the next step. (other leader)

By phase 3, almost all participants had groups working harmoniously. External facilitators were used in the two cases where there was disagreement in phase 3.

What I saw at our last meeting with this facilitator, [those] involved in this process seemed to be quite protective and defensive, even though … those of us … who had concerns, tried to be quite supportive and bringing it up in a good way, but this was very difficult for [others] to … listen to and accept – it was kind of pooh-poohed …. (other leader)
… we had an external facilitator … so at the end of our first meeting … we got very dia-
metrically opposed … and we had very loud voices … no they didn’t want to take a vote,
so we came back together a week later and talked again about what are the pros and cons
so at the end of the day … [we resolved it] to everybody's satisfaction. (director)

Closure had not been reached in most decisions by the time of the interview. Only some
cases included discussion of the decision being tested or implemented. There was not
enough information to draw conclusions about participant activity with respect to decision
implementation and review.

It's done – it has gone to human resources. (director)

This is what I will be doing. (manager)

Research literature has not been identifi ed that would suggest whether these partici-
pants are typical of healthcare managers involved in unstructured decisions, with respect
to decision policy type, decision levels, decision situations or decision phases. The fi nding
that these healthcare managers tended to use a naturalistic decision mode is consistent
with one theoretical paper [21].

Work roles

Cases were examined for managers’ role and found to be heterogeneous, spread through-
out the three roles. Within interpersonal roles, cases where the decision maker was in the
leader role, ensuring that the department functioned to best meet both service and staff
needs, were dominant.

… and maybe my staff don’t like working after 3:00 in the afternoon, but I have to provide
that service, so there is no way around that … it does mean that I lose my staff, they go
to other jobs, and I have a large turnaround … but I just can’t just shut [the department]
down after 3:00. (manager)

In a number of cases, participants took the role of liaison, functioning as an information
exchange centre.

And I just started sharing that information with other people in the district who were
impacted by this – lab managers, registration managers, that kind of staff – and the
meetings started to grow as more people saw it, and information started coming in from
all groups. (manager)

There were no cases where the decision maker’s role could be categorized as fi gurehead,
suggesting that participants’ roles were practical in these cases rather than ceremonial.

With one exception, cases fell broadly into three of the four decisional roles for managers.
In keeping with the decision situation where problem–opportunity dominated, the role of
improver/changer was common, suggesting that decision makers control change within
the organization.

… so [I] have been involved in that whole new programme which is based on research that
has been garnered on what children need to have a healthy early childhood. So lately that
is what I have been doing. (director)

The role of resource allocator was also common.
Certainly I had spoken to my supervisor and said we will require extra staff to get through this and this is what I will be doing so that – he was fine – I think it is my budget. (manager)

A number of cases could be categorized with decision makers in the role of disturbance handler.

You know, we would get a call at eight o’clock saying ‘well, we are ready for the equipment to be installed … there is nobody around’, and we would have to go [start from scratch] get them sent over there. As I say, over a period of two weeks it got out of hand. It started off the occasional one, then was getting more and more frequent. (manager)

No participant discussed their decision such that their role would be categorized as negotiator.

Within information processing roles, the role of monitor was recurrent, suggesting that the participants look for and receive information to evaluate situations and the organization’s performance.

So that people are reporting to us what almost happened, and consequently … we are able to introduce change to processes so that it won’t happen. Thereby diminishing risk to the patient. (director)

A number of cases involved participants in the role of spokesman, providing information and working to develop strategy with external organizations.

… the question was raised by me at a provincial [meeting of senior executives], because it seemed to me that we were doing a lot of duplication of effort and there should be some way or some method that we could perhaps pool resources and be more efficient. (senior executive)

At the same time I was just getting involved with this where I thought it wasn’t too complicated. I received a call from the Department of Health saying that there had been a complaint going to the Premier’s Office so we were being asked to address it. I then had to … talk to the Premier …. (director)

Only two patterns were observed in managers’ work roles that may be related to demographic variables. One was that participants who were volunteers, not paid employees, described their own role in critical incidents in ways that could not be easily classified within management roles. The second was that, in the cases studied, only participants in more senior positions took the role of spokesman for the organization.

Research has not been identified that would suggest whether participants’ roles in these cases are typical of healthcare managers engaged in decision making.

**Conclusions**

Participants in this study made unstructured administrative decisions that involved two or more levels or involved groups. All participants engaged in at least the first three of Simon’s decision phases [7, 8]. Despite the fact that most goals were clear, as most decisions arose from problem situations, most decisions shared characteristics of the naturalistic
decision making mode. A majority of participants addressed their situation as an opportunity to both solve the problem and improve aspects of their healthcare system. Managers’ work roles were practical and spread through Mintzberg’s three sets of managers’ roles.

Most participants drew on information in at least the first two of four decision phases. In this study, participants considered internal information first in phases 1 and 2, identified information gaps in their own or decision partners’ knowledge, and then actively searched for additional external information in phase 3.

Note

Quotations from interview transcripts are included verbatim, with three utilities. Parentheses […] are used around text that has been generalized to preserve participant anonymity. Ellipses … are used to represent additional text that has been removed without changing context. To preserve anonymity, any quotes used from a board chair’s transcript are flagged as ‘senior executive’ while quotes used from a board member’s transcript are flagged as ‘other leader’.

References


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