

**Making sense of medical mishaps: Depicting information processes
in the context of learning from adverse events in health care.**

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Key words: sense making
organizational learning
information processes
adverse events
health care

Paper submitted for
ISIC 2002, Lisbon, September 11-13, 2002

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ABSTRACT

Studies have shown that serious adverse clinical events occur in approximately 3%-10% of acute care hospital admissions, and one third of these adverse events result in permanent disability or death. These findings have led to calls for national medical error reporting systems and for greater organizational learning by hospitals. However, there has not been adequate development of the theoretical or empirical basis to understand *how* such information is perceived and used by health care professionals. The central theme of this paper is that the flow and use of information about adverse events in health care organizations can be characterized as an inherently social process of sense making. We propose a working model of the process based on an adaptation of Checkland and Holwells' (1) "processes for organizational meaning". Implications for future research are discussed.

INTRODUCTION

Studies of patient safety have estimated that 3% to 10% of inpatient admissions result in some form of injury related to medical care, half of which may have been preventable (2, 3, 4, 5). In the interests of learning and prevention, it has been suggested that adverse event reporting systems would allow open sharing of the incidence and causal factors (6, 7). However, there has not been adequate development of the theoretical or empirical basis to understand *how* such information is perceived and used. In the U.S., this knowledge gap was recognized by the Agency for Healthcare Research and Quality (AHRQ), which recently set a research agenda for medical errors and patient safety. The agenda includes two very pertinent questions: "How can useful information be provided effectively to those who can act (e.g., consumers, providers and

provider organizations, purchasers, states, and oversight organizations)?" and "How can we encourage the adoption and use of safety information?" (8, p. xvi).

While there is some literature on adverse event or incident reporting in health care (9, 10, 11, 12), there is inadequate theory and empirical research on conditions that may impede or facilitate perception and use of information about adverse events in health care organizations. There may be underlying ways of shared thinking or culture and related information practices which may make it more difficult for an organization to handle information about errors and failures effectively (13, 14, 15, 16).

An information processing view of organizations, linked with Checkland's (17) view of organizations as composed of human activity systems, may provide a useful starting point to explore this topic. Health care organizations need varied information to support the purposeful activities of delivering care to patients/clients. For the purpose of learning and improvement to create safe patient care processes and environments, hospitals also need to pay attention to information about errors and adverse events. The central theme of this paper is that the flow and use (or obstruction and non-use, as may be the case) of adverse event information in health care organizations can be characterized as an inherently social process of sense making (18, 19, 20, 21, 22, 23), which Checkland represents in his model of "processes for organizational meanings" or POM (1).

In this paper we propose that an adaptation of POM could serve as a framework for studying organizational and professional beliefs, values, and practices related to adverse clinical events in a health care organization. The goal is to find out how these beliefs and practices affect sense making and the flow and use of information about adverse events. Ultimately, this knowledge

could help us to better understand organizational learning from adverse events in clinical settings, and may assist the design of effective information systems.

A social information processing view of organizations and sense making

Sense may be in the eye of the beholder, but the beholders vote and the majority rules. (23, p. 6).

Researchers highlight the importance of information processes linking the organization to its internal and external environments (18, 24, 25, 26). But given the complex, ambiguous, paradoxical information environment (27), how do members pay attention to and make sense of their "cognitively messy organizational reality" (28, p. 345)?

Choo notes there are two complementary, but quite different, streams of organizational theory describing the information processing view of organizations (18). The information processing perspective "focuses on the fact that organizations extract, process, and act on information from their environment" (29, p. 132). In one stream, organizations are portrayed as boundedly rational decision making systems, dealing with information to make choices and decisions in pursuit of specified goals and reduction of uncertainty (30, 31, 32, 33). Roles and decision premises guide the decision making: "Roles tell organization members how to reason about the problems and decisions that face them: where to look for appropriate and legitimate informational premises and goal (evaluative) premises, and what techniques to use in processing these premises" (34, p.177).

The second stream builds on Weick's view of organizations as loosely coupled, social interpretation systems whose primary concern is to reduce ambiguity and equivocality (35, 23). As Walsh and Ungson state, "an organization is a network of intersubjectively shared meanings that are sustained through the development and use of a common language and everyday social

interactions” (36, p. 60). Organizational members engage in sense making and construct shared meaning in a social "conversational process in which the world is interpreted in a particular way which legitimates shared actions and establishes shared norms and standards" (1, p. 71).

Choo describes the principal information activities in organizational sense making as scanning, noticing, and interpreting (18, p.103). By scanning both the internal and external environment an organization may be alert to risks and hazard information. This requires that individuals and groups in the organization act as sensors attuned to hazard cues and signals which might indicate a need for some form of protective intervention. This could be part of the organizational early warning system, so to speak, supporting organizational intelligence. This is parallel to Daft and Weick's (35) model of organizations as interpretation systems and fits well with Klimecki and Lassleben's (37) stated assumption that organizational learning is dependent on the organization's ability to process information about perceived differences in the fit of the organization with its environment. They define organizational knowledge as "reality constructions that are shared among organization members and guide and instruct organizational actions" (37, p. 409).

The steps of the cycle representing sensing, perception, interpretation, and their interaction with the norms and frames stored in memory (18), are of particular interest in relation to sense making. Three researchers, Weick (23), Dervin (22), and Solomon (19, 20, 21), have each framed the concept somewhat differently.

Weick's characteristic profound yet plain-spoken approach is evident in his view of organizations as "collections of people trying to make sense of what is happening around them" (38, p.5). Weick describes sense making as a process that is: grounded in identity construction; retrospective; enactive of sensible environments; social; ongoing; focused on and by extracted

cues; and driven by plausibility rather than accuracy (23, p.17). However, the focus is not on the individual in isolation, as sense making is an intrinsically social activity.

Sense making is retrospective as it is the reflective act of determining the meaning of what has occurred, and remembering past experience is a primary source of meaning. “The problem is that there are too many meanings, not too few. The problem faced by the sensemaker is one of equivocality, not one of uncertainty. The problem is confusion, not ignorance” (p. 27). Weick points this out as a contrast to the view that would suggest that people need more information for sense making. He states that instead people need values and clear priorities because “clarity on values clarifies what is important in elapsed experience, which finally gives some sense of what that elapsed experience means” (p. 28).

Weick emphasizes that action is crucial to sense making, in that people are part of, and in fact create, their environment, a theme also espoused by Solomon (19, 20, 21) and Rosenbaum (39). People bracket and punctuate the continuous flow of experience, by noticing some aspects or cues extracted from the environment and imposing labels or categories on them, and ignoring others. To understand use or non-use of adverse event information we need to understand what influences people to notice some cues or data and not others. In an organizational or work setting, there may be common influences on ways of perceiving. If there are common labels or categories shared by individuals or groups, these could play a role in determining what sense is made of situations.

In a research track somewhat parallel to that followed by Weick, Brenda Dervin has developed a conception of sense making based in communication and information studies. Dervin characterises information behaviour as a constructive process of sense making. Individuals, in their every day experiences, find themselves in problematic situations, faced with

gaps in the road, for which they require some form of bridge or informational help (metaphorically speaking) (22). "Sense-Making focuses on the making and un-making of sense, the practices and procedures by which individuals and collectives make and unmake their worlds" (40, p.736). How a user subjectively perceives and defines the nature of the information gaps influences how they go about looking for information and how it is used; that is, whether it helps or facilitates, or it hurts or blocks (22, 41). Sense making proceeds in cycles of steps as the individual or group periodically encounters discontinuities in their realities, creating new gaps, and the need for more help. The majority of studies using Dervin's Sense-Making theories and methods (i.e., the micro-moment time line interviews) have focused on individuals and sense making within their personal frame of reference, as opposed to constructing sense with others (42). Dervin does state the situation-gap-helps/uses metaphor also applies at the group and organizational level (41), holding the door open for application in such contexts. The descriptors she has devised to categorize situations, gaps, and uses, could be a helpful way to represent group level perceptions of information about adverse events, without necessarily applying her specific methods, as is shown in Solomon's work (19).

Paul Solomon's work serves as a bridge between the approaches of Weick and Dervin. He relies on Weick's characterization of organizational sense making, but also draws from Dervin's framework of situations, gaps, and uses as preliminary codes for analysis of the related information behaviours he observed. Solomon's three part paper "Discovering Information Behaviour in Sense Making" presents a holistic approach to the study of the role of information in people's work lives (19, 20, 21). His ethnographic research followed in great detail the contemporaneous sense making and information use of participants in an organization's work planning process over the course of three years. Using techniques from ethnography of

communication, Solomon paid close attention to all forms of information, including memos, minutes, formal reports, and communication acts of participants, focusing on how participants captured and constructed meaning in their own cyclical and non-linear fashion. Solomon draws from Weick's (23) properties of organizational sense making and concludes that in the work planning process "the character of information behavior is shaped by the organization's sense making tradition (20, p. 1112). This is consistent with Turner and Pidgeon's (13) observations about the organizational construction of ignorance, in which culture and assumptions shape information filters and collective blind spots.

Solomon stresses that the participants viewed information and the information process as an integrated part of the tasks and problems they were dealing with, which could not be separated from sense making. They developed meaning and understanding through arguing, expecting, committing and manipulating (see Weick (23), chapters 6 and 7), which is also akin to "contested collaboration" as described by Sonnenwald and Pierce (43).

Taken together, the work of Choo, Weick, Dervin, and Solomon yield complementary ideas to apply in studying sense making related to adverse event information. Dealing with information is an inextricable part of day-to-day work life, which involves constructing the meaning of events in conjunction with other people. The events can range from infrequent, major disruptions to numerous, relatively trivial changes occurring in work environments. How individuals sense, perceive, and interpret cues about the events is influenced by past experiences and knowledge stored as memories. Events which disrupt their sense of the world create gaps in understanding, which prompt information needs, which may or may not prompt information seeking. Shared meanings may be created with others, spurred on by belief-driven arguments, and action may or may not follow. Sometimes action is taken first, and once committed to, is

then justified through sense making. It seems that there are many opportunities for the process of sense making and information use to be either facilitated or impeded, influenced heavily by the organization's "sense making traditions".

Another researcher who has spent a lifetime career studying organizations' sense making processes and traditions is Peter Checkland. His work brings a systems perspective to the ideas about sense making and the construction of shared organizational meanings outlined above. The concepts underlying his model of processes for organizational meaning form the backbone for a model of processes related to the use of information about adverse events.

Checkland's processes for organizational meaning

Checkland describes the world as made up of many "ill-structured, hard-to-define, 'wicked' problem situations" in which people are trying to take purposeful action without being able to articulate clear, common objectives (1, p. 24). He suggests that it is possible to make sense of such situations by thinking and learning about them in a systematic fashion and modelling them using systems concepts as a guide. Underlying this approach to understanding situations is an appreciation of how individuals and groups establish meaning and "make sense of what is going on around them", as Weick put it. Checkland and Holwell devised a visual representation of the processes by which organization meanings are created, or POM for short (as adapted in Figure

1). They caution that

it does not purport to be a descriptive account of the organizational process. What it does purport to be is a defensible device with a structure and language which can be used to make sense of life in real organizations and their provision of information systems. Real life itself is always richer and more complex than any of our images of it. Thus, though we would argue that the figure [POM] broadly represents aspects we can observe and analyse, the detailed reality will always be less clear-cut than the model; a terrain is never the same as the map which relates to it. (1, p. 107)

The diagram highlights the key role of "appreciative settings", a term Checkland borrowed from Sir Geoffrey Vickers, a respected British management thinker and writer. Appreciative settings can be interpreted as the values, beliefs, and norms which act as perceptual filters and influence our attention and sense making. In the diagram, they are separated from the people

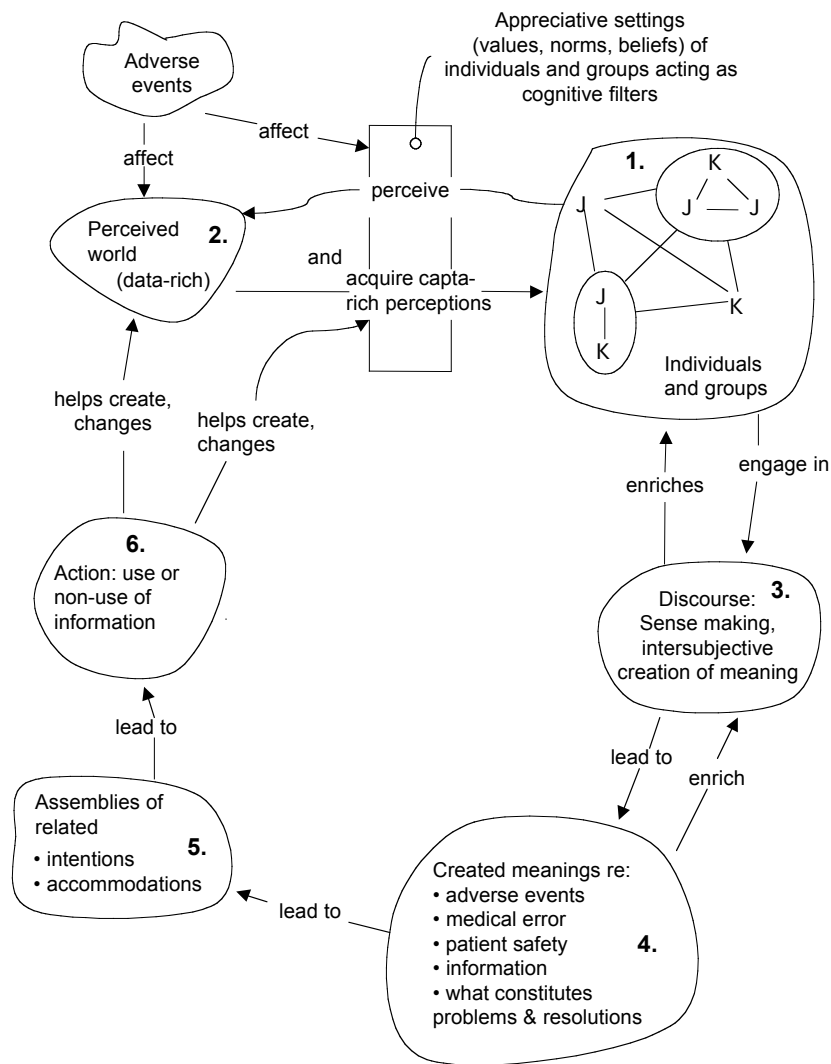


Figure 1. Checkland and Holwell's processes for organizational meaning (POM) model (1, p. 106), adapted.

simply to emphasize their important role as filters of the perceived world. This concept is central to sense making and is a focal construct related to adverse event information processes.

People (element 1), as individuals and members of various groups, sense and notice cues from their environments (element 2). Checkland calls the data they extract and pay attention to "capta". Weick would call this bracketing parts of their streams of experience and enacting their environment. People engage in discourse (element 3), which is the social act of sense making through discussing, debating, contesting, arguing, persuading, and even manipulating (although discourse may not always be quite so openly and deliberately devious or combative!). Examples of this are found in Solomon's (19, 20, 21) and Sonnenwald and Pierce's (43) studies, and in Weick's (23) work. Although complete agreement or understanding may be rare, some shared meanings and compromises are achieved (elements 4 and 5), sometimes enough to allow action to be taken (element 6). As Weick notes, sometimes action is undertaken first and commitment spurs sense making for justification. Action, in turn, creates changes in our perceived world, as Weick has pointed out in his conception of the recursive nature of sense making.

POM can serve as a very useful device to structure exploration of and sense making about sense making, so to speak. The elements of POM are the foundation of the tentative model of use of information about adverse events. We need to understand the "POM" behind adverse event information processes in health care before we can successfully design and implement information systems to support error reporting and improvement. And to understand the POM, we need to explore the appreciative settings that affect the sense making.

Appreciative settings and cognitive schema

As noted in the previous section, Checkland borrowed the idea of "appreciative settings" which act as perceptual filters from Sir Geoffrey Vickers. Appreciative settings reflect

accumulated experience and beliefs, which in turn determine what events catch one's attention (interest), how one differentiates features of events (discrimination), and how one weights their importance (valuation) (44). Harris (45) would call the categories and criteria "schema", which he defines as "dynamic, cognitive knowledge structures regarding specific concepts, entities, and events used by individuals to encode and represent incoming information efficiently" (45, p. 286). He points out that schemas are mental maps which help orient us to our experiential terrain. Because schemas provide cognitive short-cuts for efficient information processing, information which is inconsistent with the schema may be discounted or ignored.

Harris states schemas are developed and modified in social information processing, and that "organizational culture is reflected in the emergence of congruent schemas... which shape, and are shaped by the social sense making process" (45, p. 299). Once again we see the reciprocal and recursive relationship between cognitive filters and shared meaning creation, as illustrated in POM.

In summary, appreciative settings and cognitive schemas can be powerful filters of current experience. They are built on the basis of making sense of prior experience or beliefs, and are stored in shared memory. In the next section, we will look into more specific dimensions of culture related to schemas and sense making.

Organizational culture and sense making

There is a curious inconsistency in Checkland and Holwell's description of processes for organizational meaning. Checkland refers to culture and politics as aspects of problem situations which should be investigated, but does not give any further guidance as to how or what elements this would entail. There is another somewhat indirect reference to culture in Checkland and Holwell's definition of "cultural feasibility", which suggests that "the culture of a particular

problem situation with its unique norms, roles and values, will be able to accept, as meaningful and possible, a certain range of changes" (1, p. 313). These oblique references to culture, implying it is a separate variable, are interesting because the basic elements many researchers include in their definitions of culture (see 46) are already incorporated in Checkland's schematic of processes for organizational meaning (POM adapted, Figure 1). Beliefs, values and norms can be interpreted as the appreciative settings which act as cognitive filters influencing perception of events. Beliefs, values, and norms also shape the creation of shared meaning, as well as delimit the range of acceptable actions which can be taken (as implied by "cultural feasibility"). Discourse, according to Checkland, is the foundation of sense making and intersubjective creation of meaning. Other researchers have characterized *culture* as ongoing conversation and discourse. For example, Turner and Pidgeon portray culture as organizational discourse and ongoing debate which creates and recreates meaning: "a distinctive organizational discourse about 'the way safety is handled around here'... we can think of safety culture as less a property of an organization which is open to explicit audit, than as a set of (sometimes conflicting) arguments about the organization" (13, p. 188). The overlap between the elements of POM and the various definitions of culture make it feasible to take POM as representing components of organizational cultures and the process by which cultures affect sense making. The addition of Sackmann's (47, 48) concept of cultural knowledge provides more specific categories for studying assumptions, beliefs and values.

Cultural knowledge and cultural artifacts

Sackmann (48) defines *cultural knowledge* as mechanisms for collective sense making. She focuses on the shared cognitive components of culture, similar to Alvesson's (49) ideational level of collectivities, which include beliefs, values, and meanings. Also akin to Alvesson (and unlike

Schein (50)), she states that *artifacts* and behavioural manifestations are not part of the core of culture, but rather are part of the culture network. Likewise, DiMaggio's (51) definition of culture includes a category for "symbol systems external to the person, including content of talk, elements of the constructed environment, media messages, and meanings embedded in observable activity patterns" (p. 274).

Sackmann describes four categories of cultural knowledge: dictionary, directory, recipe, and axiomatic, as shown in Table 1.

Kinds of cultural knowledge	Cognitive components	Characteristic question	Manifestations	Examples
Dictionary knowledge	Descriptive categories	"what is" "that exists"	Definitions and labels of things and events	Who are the clients or customers Who are "providers" Who are stakeholders What constitutes a problem vs normal operations What error means
Directory knowledge	Causal-analytical attributions	"how things are done"	Expectations about cause and effect relationships, descriptive theory of action	How staff are evaluated and promoted Rivalry and competition vs co-operation Accessibility /openness of management
Recipe knowledge	Causal-normative attribution	"should" "ought to"	Cause and effect relationships of hypothetical events Prescriptive theory of action	How problems should be solved Codes of behaviour
Axiomatic knowledge	Causes, assumptions/ wants	"why things are done the way they are"	Fundamental beliefs	The organization's mission Organization's self-image and image in the community Preference for change or stability

Table 1. Definitions and characteristics of the different kinds of cultural knowledge. Adapted from Sackmann (47, p. 39).

Sackmann's categories are particularly helpful because they provide a more specific way to organize thinking about appreciative settings, or the shared values, beliefs, and norms, and sense making. Cultural knowledge could influence every element of the processes for organizational

meaning. The visible expression of those beliefs, values and norms may be evident in the physical artifacts produced, and in the practices and behaviours of organizational members. For example, Feldman and March (52) observe that reports and memos are often requested and produced (and then ignored in decision making) as part of information "rituals" in organizations.

The addition of the cultural knowledge categories takes us another step towards refining a tentative working model of the process of adverse event information use based on POM. The various dimensions of cultural knowledge could guide the search for data in an empirical study and may appear as significant themes in data analysis. The final step is to consider complementary ideas from studies of information use environments, from Taylor's (53) work in particular.

Taylor's information use environments

Taylor also describes the information process in terms of problem recognition and search for solutions in pursuit of sense making (54). Taylor defines information behaviour as the sum of activities through which information becomes useful for resolving problems through clarification, alteration or actual solution (53, p. 221). Taylor expanded the inquiry (as has Wilson (55), to some extent, and Dervin and Solomon to a great extent) to delve into the context of information use, studying the information use environments (IUE) which affect the flow and use of messages into, within, and out of defined entities (53). Taylor includes six broad categories of elements to describe IUEs; people, problems, settings, resolutions to problems, how people perceive information, and processes of decision, summarized in Table 2. Taylor suggests that information behaviours of different sets of people (in his studies, engineers, legislators, and physicians) will be influenced by the assumptions they make about their work; how they see the problems they deal with; the constraints and opportunities in their environments; and the

assumptions they make about problem resolution and usefulness of information. He is able to make generalized observations about each of those sets of people, highlighting differences in the information behaviour of each group.

The IUE concept and the categories of elements Taylor includes overlap with Checkland and Holwell's processes for organizational meaning, as shown in the version of POM in Figure 2. Element 1, individuals and groups, represent the *people*. Their *perceptions* are represented in the appreciative settings. What constitutes *problems and resolutions* are part of the shared meanings created in element 4. *Decision processes* may be composed of elements 3, 4, 5, and 6, the cycle of discourse, accommodations, and action. Taylor's last category, settings, is really the context for POM in its entirety, which can be added as the permeable boundary around all the elements. What POM brings to Taylor's information use environments is the critical linkage of the elements to processes in a system. What Taylor adds to POM are more specific aspects to describe each element, and hence, to guide data collection and analysis.

Element of Information Use Environment:	Specific aspects of each element:	
People	<ul style="list-style-type: none"> ▪ Their assumptions about the nature of their work ▪ Attitudes to risk taking ▪ Education 	<ul style="list-style-type: none"> ▪ Conceptual structures ▪ Social networks ▪ Occupations
Problems	<ul style="list-style-type: none"> ▪ May not be well articulated ▪ Problem dimensions 	<ul style="list-style-type: none"> ▪ Discrete classes of problems in each particular setting ▪ Are not static
Settings	<ul style="list-style-type: none"> ▪ Constraints and opportunities ▪ History and experience ▪ Information flow and sources ▪ Patterns of information dissemination 	<ul style="list-style-type: none"> ▪ Structure and style of organization ▪ Domain (what the unit of concern does) ▪ Availability of information ▪ Reliability of information
Resolutions to problems	<ul style="list-style-type: none"> ▪ What constitutes resolution to problems ▪ Filtering mechanisms ▪ Attitudes to cost/benefits of information use 	<ul style="list-style-type: none"> ▪ Kind (amount, quality, format) of information expected for resolution ▪ Criteria for information use ▪ Criteria for information choice
How people perceive information	<ul style="list-style-type: none"> ▪ (Related to above components) 	
Decision processes	<ul style="list-style-type: none"> ▪ Rational 	<ul style="list-style-type: none"> ▪ Non-rational

Table 2. Taylor's (53) elements of information use environments.

Given that care teams in health care organizations will often involve multiple people and groups from diverse backgrounds, one may have to accommodate multiple views of the information use environments to understand their influence on the flow and use of information concerning adverse events.

Putting it all together: an illustration of how the model may work.

Figure 2 combines and adapts the three major components, namely Checkland and Holwell's POM, Sackmann's cultural knowledge categories, and Taylor's IUE. The result is a tentative model that may depict how information about adverse clinical events is constructed and used in health care organizations. How adverse events are interpreted, portrayed, and stored in hospital memory over time may influence interpretation of information and current situations in an organization. If a hospital has experienced a previous traumatic and very public adverse event, the memory of the event may affect how staff make sense of information and new situations. For example, the deaths of a number of cardiac patients in a Canadian hospital were erroneously labelled as the possible result of homicide and attributed to a specific nurse, apparently based on circumstantial evidence. The event resulted in criminal investigations and an inquiry (56). Ultimately, the nurse was exonerated, but she and her family suffered a great injustice. Such an experience may affect front line staff reactions to future adverse events. We can map these hypothetical reactions using the elements in Figure 2.

Beliefs about past events may be reflected in a hospital's cultures or the *appreciative settings* (values, norms, beliefs) of the staff. For example, nurses may see the past event as an example of the failure of a hospital to stand by a staff member. On the other hand, managers may interpret it as a liability threat to the organization that had to be handled. Staff (*people*, element 1), will *discuss* the mishap among themselves (element 3). Their conclusion from their sensemaking or

the *meanings* they create (element 4) may be that individuals will be personally blamed for anything that goes wrong and will be left to fend for themselves. This can be described as *directory knowledge*, a kind of *cultural knowledge* about "how things are done here" (see Table 1). This may be unwittingly reinforced by a lack of understanding in the organization about systems, as opposed to individual, causes of failure and human error. These beliefs may influence *perceptions* of staff when the next mishap or adverse event occurs, even if it is of a less serious nature. It is possible their interpretation may well influence willingness to be forthright about failures and near misses for many years (*action*, element 6). This erodes the ability of the organization to learn from its own failures by stifling the information flow.

A similar cycle may influence how information about failures that happen elsewhere is handled in an organization. If the organizational self-image is one of world-class excellence combined with denial that such failures could happen there, then staff may not be supported in raising potential weaknesses that they learn about from others' experiences. On the other hand, there could be strong beliefs about the importance of patient safety and continuous improvement, cultural knowledge which could be classified both as *recipe knowledge* or "how things should be done", and *axiomatic knowledge*, or "why things are done the way they are" (see Table 1). In such an environment, the information flow might be facilitated because such beliefs and values are perceived to be consistent with actual practices.

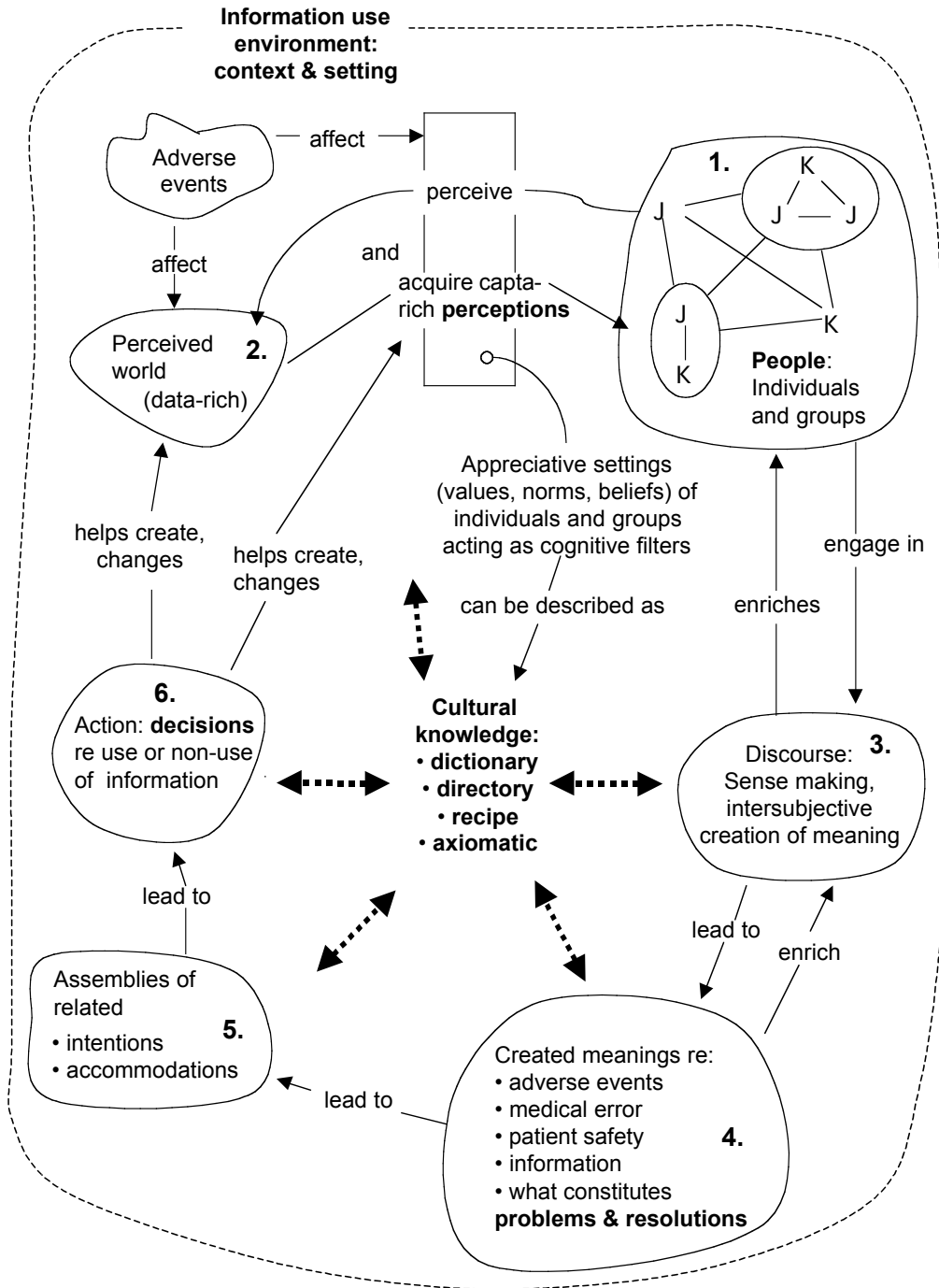


Figure 2. A tentative model of the construction and use of information about adverse events in health care organizations. (Adapted from Checkland & Holwell (1, p. 106)).

Summary and questions for future research

Medical error and adverse clinical events have become very topical in both the popular press and in professional clinical journals. One of the suggestions for improvement is the implementation of adverse event reporting systems. However, as described earlier, there has not been adequate development of the theoretical or empirical basis to understand how such information is perceived or used. The diverse literature on sense making, organizational meanings, cultural knowledge, and information use environments supplies the basis for a tentative framework and model. It should be noted that the examples discussed in the previous section to illustrate the model are, by necessity, somewhat simplistic and understate the probable complexity of the information use environments, cultural knowledge, and sense making in hospitals. The next step will be to study organizational and professional beliefs, values, and practices related to adverse clinical events in a health care organization, to find out how they affect sense making and the flow and use of information about adverse events. Questions to guide such future research include

- How is information about adverse clinical events and clinical error perceived and handled in health care organizations?
- How do institutional, cultural, and sub-cultural beliefs and practices (13) affect the creation, flow and use of information about adverse events?
- If use of information depends on the construction of shared meanings (18; 23), what forms of meanings do health care providers construct about clinical failures?
- What role do organizational context and culture play in shaping the sense making of those involved?

This paper lays the foundation to extend the theory of sense making and information use processes to the realm of clinical mishaps and health care organizations. Ultimately, this knowledge may support the development of better ways to deliver appropriate information to health care practitioners and managers for use in improving patient safety.

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