

From Context Comes Expertise: How Do Expert Emergency Physicians Use Their Know-Who to Make Decisions?

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Study objective: Decisionmaking is influenced by the environment in which it takes place. The objective of our study was to explore the influence of the specific features of the emergency department (ED) environment on decisionmaking. In this paper, we specifically report on the way emergency physicians use their knowledge of their collaborators to make their decisions.

Methods: We conducted a qualitative study on emergency physicians recruited in 3 French hospitals. Physicians were equipped with a microcamera to record their clinical activity from their “own-point-of-view perspective.” Semistructured interviews, based on viewing the video, were held with each physician after an actual clinical encounter with a patient. They were then analyzed thematically, using constant comparison and matrices, to identify the central themes.

Results: Fifteen expert emergency physicians were interviewed. Almost all of them reported using their knowledge of other health care professionals to assess the seriousness of the patient’s overall condition (sometimes even before his or her arrival in the ED) to optimize the patient’s treatment and to anticipate future care.

Conclusion: Emergency physicians interact with many other health care workers during the different stages of the patient’s management. The many ways in which experts use their knowledge of other health care professionals to make decisions puts traditional conceptions of expert knowledge into perspective and opens avenues for future research. [Ann Emerg Med. 2015;■:1-5.]

Please see page XX for the Editor’s Capsule Summary of this article.

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SEE EDITORIAL, P. XXX.

INTRODUCTION

In the decisionmaking literature, the environment in which physicians make decisions is referred to as “context,” which encompasses the setting of the encounter, its circumstances, and its specific features.^{1,2} In an effort to better understand how the emergency medicine context affects decisionmaking, we performed a qualitative study of a small number of patient-physician initial history and physical examinations. Results about the way that emergency physicians generate and evaluate diagnostic hypotheses have previously been reported in this journal.³

One of the characteristics of emergency medicine is its horizontal division of labor, which requires that physicians interact frequently with multiple health care workers in the process of patient care.⁴ These interactions are likely to affect physicians’ decisionmaking, rendering it particularly complex.¹

As Gruppen and Frohna⁵ wrote in their critique of the literature on clinical reasoning, “[t]oo often, studies of clinical reasoning seem to take place in a vacuum. A case or scenario

is presented to subjects, usually in written form, stripped of any ‘irrelevant’ noise.... The traditional methodology of providing clinical cases that are decontextualized and ‘clean’ may not be particularly valid means of assessing the full range of processes and behaviors present in clinical reasoning in natural settings.” This is a significant threat to the external validity of these findings, ie, in terms of transferring them to real-life clinical practice. To address this, we specifically set out to study clinical reasoning in real clinical situations occurring in the participants’ natural setting.

This article reports on how emergency physicians use the knowledge they have of other members of the health care team in their decisionmaking process.

MATERIALS AND METHODS

We provide a brief overview of our methods, which have been previously described in more detail.³

Study Design

Investigating decisionmaking is an extraordinary challenge because the thought processes that interest us

Editor's Capsule Summary*What is already known on this topic*

Many efforts to characterize physician decisionmaking do so with artificial scenarios and other techniques that are less complex and less context-dependent than reality.

What question this study addressed

This qualitative study used lapel cameras to videotape 15 emergency physician encounters with patients and then had the physicians watch the tapes and, as best they could, articulate what they were thinking. Qualitative techniques were used to develop a matrix of ideas about how context, including knowledge of coworkers, affected medical decisionmaking.

What this study adds to our knowledge

This study is an early step in understanding how physicians actually make decisions in the complex environment of the emergency department (ED).

How this is relevant to clinical practice

This article adds to the small but growing literature on how physicians make decisions in the ED.

are, by definition, not observable and occur partly unconsciously, which explains why practitioners find it very hard to articulate them. To meet these methodological challenges, we used a qualitative approach based on a focused ethnographic design, whereby data are collected on a targeted aspect of a community's activity during a limited time. The targeted community was that of expert emergency physicians.

Selection of Participants

We used a range of criteria stemming from research by Ericsson⁶ on expertise and reasoning in other fields to identify "experts" within a population of emergency physicians.³ To diversify the sample as much as possible, these experts were recruited in the emergency departments (EDs) of 3 hospitals: a large urban hospital, a university hospital in a large provincial town, and a regional hospital in a medium-sized town. Potential participants were contacted with the help of contact person at each site. All participants provided their informed consent before taking part in the study, and all physicians provided written consent to their interview data's being anonymously included in publications. Ethics committee approval for this study was granted by the Education and Social Sciences Research Ethics Committee of

the University of Sherbrooke, Quebec, Canada and the Committee for the Protection of Persons Northwest 2, Amiens University Hospital, France.

Data Collection and Processing

Focused ethnography involves data collection in authentic environments. For each participant, we collected data on 1 actual encounter between the physician and a patient who was spontaneously seeking care. The patient encounter was filmed from physicians' own-point-of-view perspective, using a high-definition microcamera mounted on the practitioners' temple or on one of the arms of their glasses, at eye level. This technique, unique in the investigation of decisionmaking in medicine, is a powerful tool for the people concerned in the action to assist retrospective articulation on the thought processes used.⁷ The video recording was stopped when the physician had completed the history and physical examination and left the patient's cubicle. The video was used as support to retrospectively articulate physicians' reasoning in the semistructured, head-mounted video, cued-recall interviews,⁷ carried out with each of the practitioners by an investigator (T.P.) after treatment of the patient. The median time between the end of the patient encounter and the interview was 110 minutes (interquartile range [IQR] 80 to 180). Open questions were asked of the experts to understand what they were thinking as the patient encounter unfolded. The videos were deleted immediately after these interviews. These were continued in series of 5. A total of 15 interviews took place between May 2011 and April 2012, 5 in each of the 3 hospitals, separated by several months.

Primary Data Analysis

The data collected were processed as part of an interpretive approach based on thematic analysis with constant comparison.⁸ The aim was to identify central themes, using an iterative, gradual process of data analysis and structuring. The interviews were fully transcribed by secretarial staff. The transcriptions were checked and anonymized by T.P. T.P., C.A., and C.B. first performed blind coding of the transcribed interviews with NVivo 9 (QSR International, Melbourne, Australia) to facilitate coding. Inter-coder agreement reached 96% after discussion.

In line with recommendations of Miles and Huberman,⁹ data condensation matrices were then constructed for each participant, within a context of constant back and forth between verbatim reports and the results of the primary coding. These matrices crossed each of the patient treatment stages horizontally with what was happening in the practitioner's mind vertically, the practitioners' goals,

and the results of reasoning. Several members of the multidisciplinary research team were involved in their construction: an emergency physician (T.P.), a cognitive psychologist (J.T.), and a researcher in education (E.T.). The results we report in this article emerged as an unexpected theme during this step.

Finally, a matrix comparing each participant's reasoning was produced. Horizontally, it showed the themes that emerged during construction of the individual matrices; and vertically, each of the 15 participants. The contents of this matrix were discussed between members of the research team, using the individual matrices and verbatim transcripts. Its construction began once the primary coding of the first series of 5 interviews was finished to adjust the following interviews to emergent findings.

RESULTS

Fifteen practitioners (11 men and 4 women) were interviewed. Their average age was 42 years (SD 5 years) and on average they had 12 years' experience in emergency medicine (SD 5 years). Almost all the physicians interviewed used their knowledge of the environment in which they practice, particularly concerning the health professionals with whom they work. These could be health professionals in particular—identified by their name—or categories of health professionals. This knowledge led some of the physicians to lend credence to the suggestions or actions of some health professionals and not others, which could happen even before the patient's arrival in the ED:

- “The nursing auxiliaries are really old-timers, and even if they don't know how to interpret the clinical signs, they can tell if someone is doing well or not. So in fact there is really a sense of trust in their judgment, and usually we go to see [the patient].” (Physician 7, when called by a nursing auxiliary to go and see patient whom the nursing auxiliary believed “was not well”)

“If an experienced department nurse tells me ‘she's not well,’ I have to go!” (Physician 11)

“I know her, and I don't necessarily trust what she says because she tends to minimize things slightly; that's it. She's a bit...in her opinion, it's never serious, so I believe her without really believing.” (Physician 9, about a triage nurse)

“I don't know if I can say this.... In this district, we work with 2 SMURs [a mobile emergency medical unit, or physician-staffed ambulance]. We have the [city] X SMUR and the [city] Y SMUR. There are more blunders with the X. Let's just say we're more vigilant with the X than with the Y. The Y is my colleague; I know how she works. I know that if she's left a chest pain to the paramedics, it's really not serious. And she often medicalizes the transportation of her patients, so...” (Physician 9, before the patient's arrival in the ED)

Physicians could also use this knowledge to appraise the seriousness of the situation during the initial management of the patient:

- “If the anesthetists from this private hospital decided to place a central venous line, well, that could just be them being cowboys, but still, it could be because they suspect that the patient might deteriorate quickly.” (Physician 2)

“I said to myself, ‘Damn, he's bleeding! He's bleeding!’ and Frank [the physician who transported the patient to the hospital by helicopter; not his real name] told me [that he observed 2 hypotension events] in a specific way: he frowned. I know Frank. I look at him too right at that moment, and I know he's thinking the same thing as me. He's bleeding, so now we have to move fast.” (Physician 3)

“I told myself the SMUR doctor didn't feel the need to monitor the patient, so he thought the patient was doing pretty well.” (Physician 5, when he met the patient for the first time)

This knowledge could also be used by experts to manage the care team and other physicians called in during initial patient examination:

- “Eva [not her real name] is not comfortable in resuscitation. That's why I ask for a second nurse as backup, and I split the jobs between the two.” (Physician 3)

“Well, I don't give her the choice. Because she's a visceral surgery resident, I know her.... [I] can't think of her first name. I was on call with her and I was right behind her because she took 3 hours to see a patient. So I said to her, ‘Look, you don't have a choice; you come down with your senior.’” (Physician 3)

“It's best to first have the nurse take bloods. [The nurses who work in the same ED as the physician] have a good idea of what we're going to order in a patient with dyspnea; they know we always ask for blood gases, so they anticipate.” (Physician 8)

Participants also used knowledge of other health professionals in decisions about discharge from the ED. In particular, they considered waiting times and their perceptions of the skills of the physicians who were likely to be managing the patient farther down the line:

- “The neurologist always wants cardiac enzymes for stroke patients, so it's true that we do them.” (Physician 1)

“To find a bed in the right department, I'll be asked for them [pro-BNP (brain natriuretic peptide)], especially if I tell the cardiologist that I think it's cardiac, but I have no signs on auscultation. He'll want proof.” (Physician 15)

“For major surgery in children with trauma, they won't do them at [name of town anonymized] because either the anesthetist won't put the child under or the surgeon will say, ‘I can't operate.’ We really have a major problem with the pediatric department.” (Physician 12)

LIMITATIONS

Our study has several limitations that we described in a previous article.³ In particular, post hoc verbalizations can differ from in-the-moment thinking. Video-cued recall is designed to mitigate that risk. Furthermore, the findings from this small qualitative study should not be generalized outright. Specifically, our purposeful sampling focused on selecting experts working in diverse settings and managing diverse cases, but did not seek variability in collaborators, nor in situations in which collaborative practice might specifically vary (eg, variability in the life-threatening potential of the situation, in the turnover of team members, in experts' familiarity with the environment). It is therefore possible that we did not reach data saturation for this part of our study.

DISCUSSION

Experience is an important factor in clinical decisionmaking.^{10,11} The physicians interviewed in our study had acquired experiential knowledge not only of clinical presentations and how to manage them (know-how) but also of other health care workers, particularly relative to their reasoning, experience, skills, habits, and practices.

This experiential "know-who" was used several ways by our participants. Some used it as a lens through which they interpreted the information that other health care workers provided either directly, through oral communication, or indirectly, through their management decisions. Others used it to optimize teamwork within the ED or across settings (eg, when anticipating the requirements of physicians taking over the patient's management on the hospital wards).

Like any experiential knowledge, this know-who is built on the person's belief and subjective values,¹² rendering it highly subjective and idiosyncratic. As such, it may be prone to biases.

Our results suggest that in the field of emergency medicine, expertise is not only a matter of acquiring experiential scientific and technical knowledge to better manage patients. The emergency physicians we interviewed became experts because they learned how to manage patients in a given and specific context. This context varies from one place to another, in particular because individual collaborators differ. Given that this know-who can be gained only in context, lack of familiarity with the setting (as would be the case when starting a job or doing locum tenens work, for instance) will affect physicians' ability to provide optimal care.

Although preliminary, our findings suggest fruitful avenues for future research. Further studies could examine how experts acquire and use their contextual know-who. Furthermore, the consequences of a lack of know-who on decisionmaking in the ED should also be explored.

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