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Medi(c)ation Work in the Emergency Department: Making Standardized Practice Work

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Abstract: Medication review, the systematic examination of an individual patient's medicines in order to improve medication therapy, has been advocated as an important patient safety measure. Despite widespread use, little is known about how medication review is conducted when implemented in routine health care. Drawing from an ethnographic case study in a Swedish emergency department and using a practice-based approach, we examine how medication review is practically accomplished and how knowledge is mobilized in everyday practice. We show how physicians construct and negotiate medication safety through situated practices and thereby generate knowledge through mundane activities. We illustrate the centrality of practitioners' collective reflexive work when co-constructing meaning and argue here that practitioners' local adaptations can serve as important prerequisites to make "standardized" practice function in everyday work. Organizations need to build a practical capacity to support practitioners' work-based learning in messy and time-pressured health care settings.

Keywords: Practice-based study, ethnography, practical knowledge, professional practice, medication review, implementation, patient safety

Medicines are the most commonly used therapies in health care, and the consumption of acute and chronic medications is increasing worldwide (World Health Organization, 2011). Although the availability of effective and safe drug treatments has had beneficial effects on the health of many patients, medication therapy has also been associated with negative health outcomes (Cadogan, Ryan, & Hughes, 2016). Quality of care and patient safety can be compromised when medicines are used or prescribed inappropriately, administered wrongly, or not monitored adequately. Prescribing or using inappropriate medications, that is, medicines without a clear clinical indication or not considered suitable for a given clinical situation of an individual patient, can result in ineffective drug treatment or medication-related problems (Leendertse, Egberts, Stoker, & van den Bemt, 2008). Nevertheless, medication appropriateness itself is a complex concept where several interconnected processes of selecting a particular drug have to be taken into account: the prescriber's clinical assessment of a patient's situation, an evaluation of the therapeutic aim, but also the accepted scientific evidence for that drug. Quality and safety of medication therapy, though, not only depend on these latter steps. Importantly, quality and safety are further entangled with activities of documentation where medical justification for a

specific medication is provided and is made accessible to others (Tully & Cantrill, 2006). This means that safer medication therapy is not only based on selecting the "correct" medication but equally rests on "correct" and up-to-date medication documentation (Kripalani et al., 2007).

Medication-related problems account for a considerable number of emergency department (ED) visits, many of which are considered preventable (Castro et al., 2013). Medication review, the systematic assessment of an individual patient's pharmacotherapy with the aim of improving therapy, has been suggested as a potentially relevant strategy to reduce medication-related harms (Christensen & Lundh, 2016). Medication review usually starts with a process called medication reconciliation whereby the patient's usual medications are identified and compared with a list known to the health care provider. Unintended discrepancies are reconciled and then included in an updated list used to assess medication therapy (Kwan, Lo, Sampson, & Shojania, 2013). Although hospital-based medication review was found to lead to a reduction of ED visits after discharge, it did not consistently improve clinically relevant health outcomes (Christensen & Lundh, 2016; Huiskes, Burger, van den Ende, & van den Bemt, 2017). Programs of medication review have been increasingly put into practice in various countries (Bulajeva et al., 2014), yet implementation into routine health care has proved to be challenging (van Sluisveld, Zegers, Natsch, & Wollersheim, 2012).

Little is known about how medication review really works (Sinnott et al., 2015). Uncertainties around the effectiveness of medication review as well as the difficulties to successfully integrate it into routine health care have prompted discussions about the complexity of medication review (Huiskes et al., 2017). Contributing to such complexity are, among others, the number of tasks and professional actors involved, the degree of patient involvement, and questions such as the optimal intensity and timing of conducting medication review. Difficulties to implement new practices or technologies in routine health care have been framed as accounts of clinicians' resistance against guideline- and protocol-driven care, viewed as too technical, standardized or "cookbook medicine" and not attuned to the contextualized nature of health care (Pope, 2003). We argue here that integrating a new way of working into everyday clinical routine requires a deeper understanding of the practice to be implemented but also of the dynamic context where implementation takes place. Thus, attention should be paid to how practitioners enact this practice and how they judge its workability in a given context (May, Johnson, & Finch, 2016). Rather than exploring difficulties in implementation with a focus on clinicians as resisting standardized practice, it should be examined how practitioners make such standards work in routine, messy practice situations. Conceiving standardization as a dynamic process where "localization and universality are inevitably intertwined" (Timmermans & Berg, 1997, p. 277), one should then look into how professional knowledge and working practices are re-configured when trying to make these standards work as "local universalities."

This article draws from a case example of local implementation of medication review in an ED at a Swedish university teaching hospital. In Sweden, in the case of medical emergencies or accidents, care is provided at hospital EDs with full 24-hour emergency services concentrated at the larger hospitals (Anell, Glenngård, & Merkur, 2012). Patient volumes and ED waiting times have increased, and there is a growing proportion of ED visits by elderly patients with complex conditions who require admission (Socialstyrelsen, 2014). Time targets for processing patients in Swedish EDs were introduced to reduce waiting times, and ED physicians report heavy workloads and lack of available hospital beds as significantly contributing to difficult work conditions (Bejerot, Gustavsson, Hasselbladh, Kankkunen, & Ekberg, 2017).

Medication review was introduced nationally in Sweden in 2012 as a measure to reduce inappropriate prescribing and preventable medication-related problems (Socialstyrelsen, 2012). According to binding national regulations, patients aged 75

years or older with five or more prescribed medications are entitled to receive medication review once a year in primary and ambulatory care, and when admitted to hospital. Regional guidelines in Östergötland are broader in scope in that medication review must be conducted for all patients irrespective of age or number of medications. Regulations and guidelines, though, offer few specifics of how assessment of medication appropriateness shall be done.

However, implementation in Östergötland aimed to establish "uniform procedures in order to reduce the risk of avoidable medication-related problems" (Region Östergötland, 2015). Efforts were made to provide shared medication lists within the electronic medical record (EMR) system to facilitate access to updated medication information within and across regions in Sweden. Yet, medication data are not automatically transferred between different regions, electronic medication lists are frequently incorrect, and patients often do not use these medication lists as an information source (Hammar, Ekedahl, & Petersson, 2014). Thus, it is crucial for patient safety that medication lists are verified and updated in each health care episode.

This article addresses an existing gap in the research literature in that it examines the practical, everyday doing of medication review using an ethnographic approach. A large number of controlled clinical trials evaluating the effectiveness of medication review with respect to subsequent health care contacts, morbidity and mortality have been conducted (Christensen & Lundh, 2016) but left issues of implementation unresolved (Viswanathan et al., 2015). In addition, aspects relevant to the delivery of medication review, such as physician-pharmacist collaboration, task distribution, or physicians' perceived competence in performing medication review have been previously explored (Hatah, Braund, Duffull, & Tordoff, 2013; Jubraj et al., 2015). Nevertheless, these studies used interview or questionnaire methods and were directed at cognitive and attitudinal factors of individual practitioners only. A focus on practical accomplishment brings to the fore the situated and processual character of a practice but also the normative dimension as practitioners' collective sense of appropriate practice (Geiger, 2009). Taking such a stance provides a broader perspective on how activities can be understood and analysed, going beyond cognitivist and rationalist views on doing and learning (Mahon, Francisco, & Kemmis, 2016). Thus, attending to the "seen but unnoticed, social and interactional resources" (Heath, Knoblauch, & Luff, 2000, p. 316) that practitioners draw upon in accomplishing everyday work can provide insights into how practices can be transformed and improved. In this article, we aim to analyse the practical knowledge necessary to perform medication review in the ED. We are particularly interested in analysing how medication safety is practically accomplished and how practices of medication review are being reproduced in everyday ED work.

Theoretical perspective: A practice-based approach

Practice theory has been described as consisting of a "broad family of theoretical approaches" (Nicolini, 2012) rather than being a unified theory (Schatzki, Knorr Cetina, & von Savigny, 2001). Nevertheless, practice-based approaches share various common assumptions, such as focusing on practices instead of individuals as the central unit when analysing social phenomena and viewing human activity as an ongoing and open event entangled with material arrangements (Nicolini, 2017). How actors define and organize the actions of a practice, their ideas of a practice's meaning, utility and legitimacy, in short, what they agree on that "makes sense to do" (Nicolini, 2012, p. 165), all hold a practice together. Researching a practice then implies not only attending to "what people actually do" but also to the specific historical, social, material and cultural context in which such doings are situated. Importantly, the context here is not conceived as a pre-given property but as emerging, dynamic and connected to the practices themselves (Nicolini, Gherardi, & Yanow,

2003). One of the several orientations within practice-based studies assumes the inseparable entanglement of knowledge with practice. Here, knowledge is transformed through its use in practice, where the knowing and the doing (of a practice) are relationally considered equivalent, as knowledge is activated and translated into a particular knowing through practices (Gherardi, 2011).

We have chosen to analyse medication review by focusing on the practical knowledge necessary to accomplish everyday work. Here, practical knowledge is understood as knowledge continuously constructed in normal work activities and as something which is recognized by or made recognizable to other participants in the practice. It is the knowing generated in performing a practice, a knowing-how-to-see, knowing-how-to-speak, and knowing-how-to-act (Gherardi, 2006, 2012b). Such a conception of practice emphasizes the situated, problem-oriented, experience-based and provisional character of human activity and posits learning and knowledge as unfolding over time *in* practicing. Knowledge is then not understood as simply pre-existing or residing in the head of individuals as an abstract possession. Knowledge, instead, is conceived as located in practices and activated through sayings and doings (Bruni, Gherardi, & Parolin, 2007). Practical knowledge, thus, concerns the "multiple methods of seeing, listening, reasoning and acting in connection with human and non-human elements" (Gherardi, 2009, p. 118); it is embedded in an institutional context, drawing on prior experiences, and constituted in how participants in the situation define, discuss and negotiate how the practice is being done appropriately (Gherardi, 2008).

The empirical project

A case study with an ethnographic approach was conducted in the ED of a large teaching hospital in the county council of Östergötland in Sweden. Ethical approval has been granted by the Regional Ethics Board (Dnr 2015/194-31). Ethnographic methods (Gherardi, 2012b) are often used in practice-based studies because they make it possible to appreciate everyday interactions and "practice as it happens" (Nicolini, 2012, p. 14). A case-study approach using ethnographic techniques with a "sensibility for practice" (Sedlačko, 2017, p. 47) seems best suited for studying practices. Such an approach upholds the principles of openness, immersion and reflexivity, while at the same time attends to people's doings and sayings and the materials used in practice.

Data collection

Between October 2015 and May 2016, the first author conducted the fieldwork and all interviews, undertaking about 160 hours of direct observation in all areas of the ED on 21 work shifts (day shifts but also several evening shifts on weekdays). The physicians shadowed (11 male, 10 female) reflected a wide a range of work experience in terms of duration of specialty training in emergency medicine and time worked at the ED. Fieldwork included informal discussions with ED staff. At the beginning of the shift, the researcher was assigned to a team by the ED charge nurse. Depending on the preferences of the physician of the assigned team, written or oral consent was obtained from the physicians shadowed, and oral informed consent was obtained from all other participants; participants received short written information about the study purpose and procedures. Open jottings in a paper notebook were made on site and further expanded into full fieldnotes on the same or subsequent day on the computer. Fieldwork not only included shadowing of physicians but also involved following material objects and tools that ED staff interacted with. After initial observations, the field researcher particularly focused on the artifacts that critically mediated ED medication work, such as the medication list (both in electronic and paper format), the EMR, but also the drug-interaction checker and other web-based

clinical decision aids.

Additionally, semi-structured interviews with 13 ED physicians were conducted where participants were recruited to ensure diversity with respect to seniority, sub-specialty and time worked in the ED. All 13 semi-structured interviews (mean dura-tion of interviews 34 minutes; 7 ED specialist physicians, 6 at various stages of ED speciality training; 5 of the interviewees were previously shadowed by the first au-thor) took place on hospital premises, in a room chosen by the physician, and were based on a broadly structured interview guide. All interviews (with the exception of one interview done during fieldwork directly after the physician's work shift) were conducted shortly after completion of the fieldwork phase. Interviews were digitally recorded and transcribed verbatim by the first author.

Data analysis

Data analysis was conducted by the first author with regular reflexive discussions among all authors. Throughout the research process, the first author kept a reflective journal describing experiences in the field, the researcher's reaction to the partici-pants (personnel and patients), and also participants' reactions to the researcher. Writing and then sharing these reflections with the co-authors facilitated the devel-opment of critical awareness of the research process, particularly researcher–partic-ipant interactions during fieldwork and how these interactions might have affected data collection and interpretation. This involved recognizing tensions between the researcher role and the need to build and maintain rapport and trust with participants, making explicit the first author's assumptions prior to and when entering the field, but also reflecting on the field researcher's own position vis-à-vis the shadowed par-ticipants. Additionally, the first author engaged in regular meetings with the co-au-thors (one of them being a social anthropologist with about 15 years of ethnographic research experience) discussing fieldnotes, interview excerpts, conceptual maps, memos and analytic categories. Discussions about the methods of data analysis fo-cused on how theoretical conceptions were developed, particularly how categories and relations between sets of data were generated. NVivo 10 was used for the initial and focused coding of the entire material after multiple readings of the data.

An interpretive, constructivist approach (Charmaz, 2014) with time spent in the field interspersed with periods immersed in the data was used. During two rounds of initial analysis, major categories and ideas (practices for identifying medication problems, constructions of risk and patient safety, generation of relevant knowledge, appraisal of own work, practices to prevent medication harm, professional responsi-bility) were created inductively and then iteratively interrogated by emerging con-cepts and the practice-theoretical constructs employed (Hammersley & Atkinson, 2007; Timmermans & Tavory, 2012). Particularly, the concepts of situated action of work practices and knowing-in-practice as elaborated by Gherardi (2006; 2012b) were used as analytical frames to investigate practitioners' own conceptions of med-ication safety and good medication practices. We particularly examined how these conceptions and understandings were connected to the objects used, own and others' actions performed, as well as the specific practice context. We focused on presenting fieldnote extracts to illustrate the findings discussed in this article. To this end, we selected instances that illustrated how physicians' knowing-in-doing medication re-view was organized when dealing with routine and non-routine problems in the ED. We found that the fieldnotes best captured the highly contextualized and situated nature of participants' sayings and doings when carrying forward a practice. Never-theless, to a limited extent, we also present findings based on field observations as paraphrased text. The intention was to present concepts related to medication review practice that complement fieldnote extracts and which, although lacking the speci-ficity and vividness of them, are still being true to the field experience. Finally, we also included physicians' "sayings in action" and embedded these verbatim passages

in the narrative text (shown in double quotation marks). Again, we found these comments, made in informal field conversations (DeWalt & DeWalt, 2011), very relevant to researching practices as these were often made in direct connection to physicians' daily activities and, thus, tapped into the processual character of a practice.

Findings

Zooming in on how medication review is being practised in the ED, we first show the heterogeneous network in which the practical knowledge relevant to medication review is located. In the following subsections, three fieldnote extracts were chosen to illustrate how different elements of knowledge related to medication safety are connected "in-action" and how practical knowledge emerges each time anew.

It has to add up

Physicians exert some discretion with respect to the extent and depth of inquiring about a patient's medications and emphasize that not all patients they see in the ED would "need medication review." They acknowledge the "difficulty in specifying such need beforehand" and find it easier to define situations where medication lists are not "the main concern," usually patients with minor injuries. Conversely, patients with more complex conditions and those who might require hospital admission generally warrant a more thorough exploration to verify medications. The following account illustrates the special effort needed to obtain complete information about the medicines this patient was actually using.

> Dr N sees an elderly patient with abdominal pain. The patient, according to a note in the EMR, is a retired neurologist and has had several episodes of a urinary bladder infection. Asked by the doctor which medicines he had been taking, he insists, "Please, read it to me." Dr N checks her notepad and starts with the first few of the medications she had copied from the EMR, yet comes to a halt, "I have jotted down three different kinds of antibiotics from your record—have you taken all of them?" "Well, yes, I stopped the first one, and then tried two different antibiotics, but", he adds, "it did not get better… I thought I need something different now." On the way back Dr N comments, "He is self-medicating." She again checks the medication list on her computer, fetches the printout to double-check but still seems not convinced, "This does not add up… I can't figure out which of these (antibiotics) he took and for how long—I have to check again with him later." As the situation develops, the patient requires intravenous antibiotic therapy and in-hospital observation, so Dr N returns to the patient to verify medications for the second time. Finally, when dictating, she makes sure to refer to the patient as "a retired physician colleague" and lists all the medications she could establish, then pauses mid-dictation, "I usually do not mention this, but he was self-prescribing," then continues dictating. (Fieldnotes, January 2016)

Knowledge relevant in this situation resides in multiple locations: knowledge is anchored in the medical record and medication list, yet to a limited extent only. As this patient was self-prescribing, the parts most relevant to the situation—recent medication use and information on the course of the illness—had to be uncovered and reconstructed mainly in the patient-physician interaction. Thus, here, knowledge relevant for medication safety is not only distributed among these artifacts and the patient with knowledge on his actual medications; what makes it a skilful accomplishment and enactment of medication safety are the material-discursive practices in attending to what was actually *not* present in the record. This doctor assembled information obtained from the clinical presentation of the patient, notes in the medical record, and the patient's account of his own antibiotic use while also recognizing the

gaps in the medical record and the discrepant medication lists. Here, practical knowledge is demonstrated by the physician's drawing on experience with self-medicating patients and her reacting to cues for action unfolding in the situation. The knowing-in-practice relevant to medication safety and medication review lies in how this physician critically interrogated the medical record, the medication lists, and the patient, hereby transforming the fragmented knowledge contained in the artefacts, or the "known," into a "knowing" (Bruni, Gherardi, & Parolin, 2007, p. 98) of how to obtain the best possible medication history in this situation. As stated at the beginning of this section, the in-depth inquiry of all patients about all medications is not considered doable in a busy ED environment. However, by making the "extra" effort so that medication information finally did "add up," this physician's practical accomplishment also shows the situated construction of medication risk, by identifying such a patient as "at risk" for a medication-related problem.

Illustrated, further, in the above account is the physician's hedging in the dictation by mentioning that the patient was a physician himself. ED clinicians do not express full confidence in the correctness of the medication information obtained, and given the episodic nature of their work, they are aware that they "never really know the patient." Faced with situations when patients are not quite certain about a specific medicine, physicians resort to a combination of clinical judgement and other validation strategies when deciding on approving a patient's medication list. Physicians then not only assess the face validity of a medication list by checking the drug therapy's plausibility given a recorded indication, but they also consider the date of a medication prescription and weigh up the credibility of the respective prescriber in a particular situation. Still, physicians stress the importance of "checking medications with the patient," not only because this helps them to produce an accurate medication list but equally so to "get a feel" of whether a patient is in control of and understands his or her own medications. Thus, physicians determined an individual patient's understanding of his or her medications through interaction with the patient *in* the practice of dealing with the medication list. This involved, for instance, using the list in some situations to assist patients in recalling their medications by reading out the drug names listed on the current medication list; yet, at other times when deemed appropriate, leaving the list and a pen to the patient and taking up such a list as edited by the patient in a medication discussion afterwards.

Similarly, as we will illustrate in the following subsection, a sensitivity for situational factors is also implicated in the practical knowledge required when assessing the appropriateness of medication therapy.

Checking medicines, checking patients

Medication review guidelines require physicians to assess a patient's medication therapy and provide individually tailored information to the patient. How medication safety is enacted in the ED, however, is shaped by the particular nature of emergency medicine practice with its focus on stabilizing and managing acute and potentially severe conditions. Thus, as exemplified in the following account, medication safety efforts focus on the problem at hand and take into account the organizational context in the ED where patients can stay and be monitored only for a limited period of time.

> After a brief handover at shift start Dr A sees a young female patient—she has given birth three weeks ago and is still breastfeeding—with acute renal colic symptoms; she was in extreme pain but feels better now after having received intravenous pain relief. It is agreed that she can be sent home with pain medication but shall return for further exams the next day. After double-checking whether an NSAID (nonsteroidal anti-inflammatory drug) is compatible with breastfeeding, Dr A writes a prescription. He then very thoroughly explains to the patient that she has to use the breast pump when taking the other medication,

the one that contains codeine, an opioid. On our way back he explains "It's always important to get a feel how reasonable a person is, how much they understand, I mean practically… I could see she was following what I was saying. So I'm confident to send her home now." (Fieldnotes, December 2015)

This illustrates the practical knowledge at play or the knowing-in-practice as situated and competent knowing, "a knowing-how in situation" (Gherardi, 2012b, p. 206). In the above case, this entailed the physician assessing the patient's clinical condition and linking decontextualized knowledge anchored in an artefact—the online information resource to check on drugs and breastfeeding, knowledge about the safety of a specific drug from the pharmaceutical database—with the knowledge learned "from experience and in experience" (Gherardi, 2012b, p. 25), that is, the sensible knowing of judging this patient's ability to follow medication instructions. The latter knowledge was not something pre-existing or known to this physician; rather, it emerged as knowledge tied to the (inter)actions performed, and its mobilization also demonstrates the continuity of learning and practicing. The pragmatic stance, an orientation to problem solution, is evident in the above account and characteristic of practical knowledge; although patients with a similar condition might have required longer monitoring, this patient was considered safe to send home because it was possible to establish a sense of safety through interaction with the patient.

There are, however, further challenges to enacting medication safety. The difficulties ED physicians are confronted with when assessing medicines previously prescribed by health care providers outside the ED are illustrated in the following subsection.

Negotiating good practice

One of the main objectives of medication review is to identify medication-related problems, such as the use of potentially inappropriate medicines. Yet, ED physicians are very cautious about interfering with potentially problematic medications in everyday busy work. Put simply, not interfering with a patient's medications in non-acute situations is often considered legitimate practice, and, therefore less acute or more long-standing medication issues often cannot be addressed. Yet, as the following account shows, there are legitimate causes that warrant taking action.

> Dr J, a junior resident, is seeing a young female patient who came to the ER with a suspected allergic skin reaction. Although no medical conditions or diagnoses are documented in the EMR, a lot of medicines are recorded on her medication list. Unsure of how to proceed, Dr J needs to discuss this patient with the senior specialist and comments to her, "Look, she has an old lady's medication list." The list contains sleeping pills, antidepressants and sedatives; the patient also takes a daily dose of a diuretic (a water pill). Asked by the specialist why this patient is taking such a drug without a documented indication in the patient record, the resident just replies, "You know, I didn't even want to get into too much details with her … all the other medications were complicated enough to talk about." Dr J then reviews all medications listed, discusses this again with the specialist and returns to the patient. During a longer conversation with the patient, Dr J learns that the patient is in close contact with her primary care physician and currently in the process of reducing her psycho-active medications; Dr J later documents her conversation with the patient and her recommendation to cut down and discontinue some of those problematic medications. When Dr J returns to the team room, Dr A, the specialist, comments, "We have to bring such things up, I know that other doctors here would just have only taken care of the main complaint and would have let her go. But she is so young; one has to try." (Fieldnotes, December 2015)

The above account illustrates the modalities of two discursive practices, "talk in practice" and "talk about practice" (Gherardi, 2012a, p. 30), as further resources through which a practice's performance is reproduced. While talk *in* practice occurs as exchanges between participants in collaborative work or when giving instructions, talk *about* practice refers to practitioners' talk when the practice itself becomes the object of discourse. As the situation developed, the specialist mobilized narrative discourse by recounting how she dealt with "patients' problematic medication use." More specifically, she emphasized that "as an ED physician, one is not risking undermining the trust relationship between the patient and the physician, like in primary care" when dealing with uncomfortable situations. Thus, the practical accomplishment also rests on the competent use of "reflexive and argumentative discursive practices" (Gherardi, 2012b, p. 130) through which the specialist legitimized professional authority and accountability and on the ways how physicians understood and negotiated the implicit and formal rules regulating the practice in that situation. In talk about practice, the implicit rules "of doing or not doing things in the ED" were mobilized, eventually turning them into the practice's "normative infrastructure" (Gherardi, 2012b, p. 132), a resource that supports a practice. At the same time, by talking about dealing with long-standing medication problems—typically not considered ED business—the specialist also put forth the affordances of the ED as a favourable setting as well as the professional competencies necessary for "being straightforward with the patient" and, thus, being capable of managing potential medication-related problems in the ED.

Moving beyond the above account and looking at other instances of managing suspected medication-related problems, talk in and about ED practice was also connected to knowledge based on formal rules embedded in diagnostic algorithms and ED treatment procedures. This would, for example, involve the team nurse proceeding with the triage protocol and checking with the physician which laboratory tests to order. The practitioners then subsequently engaged in discussions about the expected consequences of these tests, which, finally would result in a physician's making the planned course of action explicit to others, often referring to a particular clinical algorithm. Talk in and about practice also developed when a physician sought advice from a senior ED specialist or consultant from other disciplines. Thus, talk constituted in practice made it possible to follow how knowledge unfolded in routine work situations. In addition, it made visible how professional competencies related to medication work were negotiated and how practices and competencies were bound up with protocols and rules intended to order or standardize the practice.

Conversely, theorizing through talk *about* practice was less evident in inter-professional contexts. Interpretation of observational data suggests that meanings of a practice were not exchanged between physicians and nurses in certain situations. Brief physician-nurse exchanges in instances when a medication list had to be reviewed and authorized before a patient's admission to a ward revealed different understandings of the practice task and its competent performance. Here, physicians were often prompted by a nurse to "just sign the list," whereas physicians, thereby deliberating their own practice, tried to make their doings accountable and emphasized the consideration required before approving such a list. Physicians, later, expressed frustration as they felt that the "complexity of reviewing medications" was lost on the nurses. Similarly, talk *about* practice was absent when team members at the start of each shift briefly discussed how to go about reviewing patients' medication lists, hereby co-constructing what was considered "a patient at risk" and what was falling "inside the practice." Usually, it was determined by the physician whether, for example, all patients' medication list should be reviewed or only lists of specific patients. Nevertheless, as physicians would provide no explanations of their judgments, their understandings of appropriate candidacy for medication review were not made accessible to nurses. Although this was not further explored in this article, not sharing this knowledge, such "stickiness" of knowledge (Brown & Duguid, 2001) could be understood as practitioners not fully sharing a practice.

Discussion

In this article, we analysed the practical knowledge involved when performing medication review in the ED and how practices of medication review were being reproduced in everyday work. Viewing practice as an epistemic-normative construct (Rouse, 2001), what becomes reproduced as a practice is what is made recognizable to others as "accepted ways of doing and performing things" (Geiger, 2009, p. 133). We showed how ED physicians skilfully mobilized different forms of knowledge through participation in the practice. In doing so, the constructed they situated practice boundaries of medication review as well as negotiated the competencies to perform it appropriately. Subsequently, we will discuss the modalities identified that stabilized or reproduced the practice of medication review.

Firstly, the practice of medication review was reproduced through "silent legitimization" (Bjørkeng, Clegg, & Pitsis, 2009, p. 150), such as through the absence of sanctioning when physicians did not conduct medication review "according to the guidelines." Such silent legitimization was upheld by physicians' following the "accepted ways of doing things" in the local ED and in emergency medicine as a specialty. Contributing to the reproduction of medication-related practices, thus, was the professional vision of ED clinicians in how they understood events as a professional community and then transformed them into answerable problems (Goodwin, 1994). Here, the logic of standardized performance was at odds with the characteristics of a working environment with great time pressures, frequent non-routine situations and high patient variability with respect to symptom severity. Thus, ED physicians—often implicitly—engaged in constructing the practice's boundaries, establishing what was falling inside or outside medication review practice in a specific ED situation. This was exemplified in how physicians went about defining the "need" for medication review. Similarly, they adapted the conduct of medication review according to clinical judgements of a patient's risk for medication-related problems, for instance by modifying the thoroughness and duration of certain medication review components when asking about and documenting a patient's medications. These constructions of risk, "locally and contextually filled with practical meanings" (Gherardi, 2006, p. 227), focused on medication complexity, narrow therapeutic range drugs, and on patients with multiple conditions. Thus, ED physicians' medication review practices were not standardized in the sense of performance uniformity or conformity to guidelines. Rather, physicians practically constructed risk for medication problems where what counts as a relevant medication-related problem was shaped by what was considered answerable in the ED. Working around the medication review guidelines in certain situations, therefore, was at times legitimized as still being true to the "accepted ways of doing things" in the ED, accommodating the need to practice according to an individual patient's medical needs.

Secondly, medication review was reproduced by discursive practices where practitioners constructed medication review activities, such as how to identify, investigate or manage a suspected medication-related problem. Particularly in talk *about* practice (Gherardi, 2012a), such as shown in the specialist's taking up a young patient's problematic medication use, normative understandings of "good practice" were activated discursively through storytelling by the senior specialist. In talking about practice, practitioners negotiated the boundaries of what falls "inside" the practice of medication review, but also how to perform it competently in the ED. Talk about practice was conducive to learning within the community of ED physicians through practitioners' own theorizing about a practice, that is, their own practical reasoning about what makes medication review work or appraised their own work. Such theorizing often occurred "in the midst of practice and as a mundane conversation" (Gherardi, 2012a, p. 31), at times almost in passing, arising for example in the course of clinical supervision which attests to the significance of situated, practical knowledge through participation in everyday work. That practices and competencies were "negotiated" between professionals meant that situated meaning

was made accessible to each other. Also, there was evidence of different inter-professional understandings of "good" or legitimate medication review practice, specifically of medication review activities where practice understandings were not established or exchanged. It should also be mentioned that not all practitioners had equal positioning, as talk in and about practice was essentially framed within a medically dominated discourse and within clearly delineated jurisdictions where physicians have the ultimate responsibility for conducting medication review and prescribing decisions.

Thirdly, we showed how materiality was involved in reproducing the practice where people and non-human actors were doing things together as a collective accomplishment. This meant that the practical knowledge was embedded in the community of ED clinicians, interacting with each other and the patient, as well as with multiple material entities (such as the medical record, the medication list, clinical decision support tools, drug databases) and organizational rules. Understanding practice as a phenomenon where non-human actors are "doing things together" with human actors shifts attention to the ways material entities act together with rules and discourses as mediators of social actions. Illustrated in the example with "an old lady's medication list," the formalized knowledge contained in artifacts such as the diagnostic algorithm for a patient presenting with suspected allergic reaction skin, privileged particular steps for a diagnostic work up. Nevertheless, mediated by talk about an ED physician's unique position to tackle uncomfortable medication problems, competencies, and the sense of what it takes to be an ED physician were skilfully mobilized into the practice. The collective accomplishment of such medi(c)ation work, then, lies in the everyday practices of assembling these mediators so that medication safety can be achieved.

Lastly, the above discussed material-discursive practices were instrumental not only in reproducing medication review in routine work but also in adapting work practices to the local context. This is of practical relevance since adapting practice components in order to increase the fit between an intervention and its context can lead to improved outcomes when implementing a novel practice (Kakeeto, Lundmark, Hasson, & von Thiele Schwarz, 2017). Here, we showed how practitioners through material-discursive practices both enact and challenge the "script" (Akrich, 1992) ingrained in the medication review guidelines. Importantly, many of this script's elements, the envisioned goals and purposes of medication review, the hypothesized mechanism and the conditions under which it works, as well as the actions set out for effective accomplishment, figure only implicitly in the guidelines. We argue here that practitioners' local adaptations can serve as important prerequisites to make standardized practice function in everyday health care work. However, this requires a less traditional notion of standardization of medical care, one that accentuates its ongoing and co-constructive character (Ellingsen, Monteiro, & Munkvold, 2016). Thus, rather than viewing ED physicians' deviations from the guidelines as resistance to top-down prescribed procedural standards, we understand their tweaking of and tinkering with these standards as efforts to align practice as prescribed in the guidelines with local contingencies on site and profession-specific standards of appropriate practice. Using our empirical case, we showed how ED physicians adapted practices by incorporating messy, less systematic, and less formal practices in order to make medication review locally workable.

Conclusions

We have made visible how ED physicians mobilize different forms of knowledge in "practicing" medication review in everyday work. We showed the important role of material-discursive practices and of silent legitimization in reproducing and adapting medication review, but also in learning within the community of ED practitioners.

Engaged in their ED practices, physicians implicitly and explicitly constructed medication risk and medication safety, established what defines "good" medication review practice and negotiated how it is competently performed. Both, workplace learning and implementation strategies need to better take into account such practical knowledge and the variability of practice in messy and time-pressured health care settings. Future research should explore how practitioners accomplish to integrate formalized, rules-based knowledge with practical knowledge to identify and manage medication-related risks and how these knowledge practices can be made accessible to other health professionals so that learning can materialise.

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