Beyond guidelines: Discretionary practice in face-to-face triage nursing

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Abstract

This paper draws on ethnographic data from a Norwegian emergency primary care clinic (EPCC) to explore nurses' discretionary application of guidelines. Specifically, it analyses nurses' discretionary use of the *Manchester Triage System* (MTS) when performing face-to-face *triage*, i.e. assessing the urgency of patients' complaints. The analysis shows how nurses assessed patients at odds with MTS prescriptions by collecting supplementary data, engaging in differential diagnostic and holistic reasoning, relying on emotion and intuition, and allowing colleagues and patients to influence their reasoning. The findings also show how nurses' reasoning led them to override guidelines both overtly and covertly. Based on this evidence, it is argued that nurses' assessments relied more on internalised *triage mindlines* than on codified triage guidelines, although the MTS did function as a support system, checklist and system for supervisory control. The study complements existing research on standardisation in nursing by providing an in-depth analysis of nurses' methods for navigating guidelines and by detailing how deviations from those guidelines spring from their clinical reasoning. The challenges of imposing a managerial logic on professional labour are also highlighted, which is of particular relevance in light of the drive towards standardisation in modern healthcare.

Introduction

From the 1980s onward, standardisation has been 'a focal point of interest in the health care field' (Timmermans and Berg 2003: 13). A key expression of this interest is the continual introduction of what are variously called guidelines, protocols, algorithms or standards, which have in common that they constitute 'a set of instructions telling medical personnel to do A in situation B' (Berg 1997: 1081). Timmermans and Berg characterise these as 'procedural standards' and claim that they 'boost the stakes of standardization to the highest level' because they 'attempt to achieve the seemingly impossible: prescribe the behavior of professionals' (2003: 26).

Procedural standards have become remarkably widespread in emergency medical service (EMS) triage, in which healthcare workers—typically nurses—assess the urgency of patients' complaints in order to determine how long they can wait before receiving medical attention (FitzGerald et al. 2010). In Norway, attempts to standardise triage multiplied in the wake of a highly critical report from the Norwegian Board of Health Supervision (2008), to which managers responded by introducing guidelines to ensure more systematic and objective assessments (Halvorsen et al. 2014).

Despite managerial intentions, however, standardisation research suggests that the influence of guidelines varies. Ethnomethodologists have noted that no rule can exhaustively prescribe every aspect of a practice (cf. Heritage 1984), and empirical analyses have shown how workers can tinker with standards in a number of ways (cf. Timmermans and Epstein 2010).

The aim of this paper is to explore nurses' discretionary use of guidelines when performing face-to-face triage—a type of triage that has received markedly little attention in the guideline application literature. Specifically, the paper analyses how nurses use discretion in their clinical reasoning and priority setting. Clinical reasoning refers to the social process of making judgments about patients' state of health, which despite its centrality in understanding guideline application has been under-analysed in previous guideline research.

The data are drawn from an ethnographic project in an urban, large-scale emergency primary care clinic (EPCC)[1], which resembles EMS organisations in several other countries in that it is open to all patients at all times. The EPCC in question utilised the *Manchester Triage System* (MTS), which is Europe's most widely used triage guideline (Mackway-Jones *et al.* 2014).

The analysis shows how nurses contravened MTS recommendations by collecting supplementary data, engaging in differential diagnostic and holistic reasoning, relying on

emotion and intuition and being influenced by interaction with colleagues, patients or patients' relatives. The findings also show that nurses would override the system by both overt and covert methods whenever their discretionary assessments led them to believe that the system-prescribed waiting time was unreasonable or unrealistic. Based on these findings, it is argued that nurses relied more on *triage mindlines* than on MTS guidelines when assessing patients, although the guidelines did function as a support system, checklist and system for supervisory control.

In what follows, I review the research on standardisation and triage, provide an overview of the present study's data and methods, and present and discuss its findings.

Standardisation and triage

Medical sociology has a strong tradition of examining the effects of managerialism and managerial tools on the autonomy of healthcare professionals (cf. Berg *et al.* 2000; Germov 2005; Kirkpatrick *et al.* 2009; Light and Levine 1988; Numerato *et al.* 2012; Sheaff *et al.* 2003; Timmermans and Berg 1997, 2003). This section will concentrate mainly on the small but significant literature investigating the ways in which triage nurses (do not) use guidelines. These studies have focused almost exclusively on call-centres, and in particular on the use of the computer-based Clinical Assessment System (CAS) in NHS Direct (the precursor to NHS 111). [2] There is a significant body of evidence of what Lampland and Star (2009: 15) have termed the 'slippage' between standards and their practical application. For instance, Ruston (2006) argued that NHS Direct functions more like a *professional bureaucracy* than a *machine bureaucracy* (Mintzberg 1979), as nurses rely on their professional judgment rather than on guidelines when assessing callers. O'Cathain et al. (2004b) made the more moderate claim that nurses engage in 'dual triage', relying both on their own reasoning and on the guidelines provided when making decisions. Common to these and other studies is the finding that nurses take an 'active' rather than a 'passive' approach (Russell 2012) to guideline implementation by supplementing or replacing guidelines with their own professional discretion.

In analysing triage and standardisation, one key interest is to describe *overt* and *covert* variations of 'active' approaches to guidelines. Overt approaches entails officially giving different urgency ratings and/or advice than those suggested by the guidelines (Greatbatch *et al.* 2005). Covert approaches escape management monitoring and take several forms. In their conversation analysis of nurse-patient interactions, Greatbatch et al. found that nurses

privilege their own knowledge and expertise and 'adapt, tailor, qualify and supplement the dispositions and advice recommended by CAS' (2005: 825). There is also evidence that nurses sometimes draw on their knowledge of the guidelines to 'manipulate' the system into agreeing with their own assessments (Dowding *et al.* 2009; O'Cathain *et al.* 2004b; Ruston 2006). Nurses have also been shown to rely on intuition (Johannessen 2016; O'Cathain *et al.* 2004a; Randell *et al.* 2009) and collegial support (Hanlon *et al.* 2005; O'Cathain *et al.* 2004a; Tjora 2000).

A second key interest of these studies is to explain *why* nurses deviate from guidelines, and several possible explanations have been suggested. First, 'slippage' has been attributed to nurses' status as professionals with specialised knowledge, 'mobility power' and a strong culture of autonomous decision-making (Greatbatch *et al.* 2005; Russell 2012). A second explanation is that nurses deviate because of organisational factors, such as having to assign patients' triage codes in light of resource situation in the ED as a whole (Bjørn and Balka 2007; Johannessen 2016). A third explanation is that guidelines' 'encoded' knowledge only partially reflects and/or is at odds with the knowledge required for performing urgency assessments (Bjørn and Balka 2007; Greatbatch *et al.* 2005; Hanlon *et al.* 2005; Ruston 2006; Tjora 2000). Studies adopting this third explanation report that nurses view guidelines as inflexible, reductionist and ill-adapted to nurses' particular settings (Dowding *et al.* 2009; Johannessen 2016; Murdoch *et al.* 2015; O'Cathain *et al.* 2004b); in some studies, nurses have even argued that strict adherence to guidelines might put certain patients at risk (Ruston 2006).

The reviewed studies provide detailed insights into guideline application in triage nursing, but they are not without limitations. First, as acknowledged by O'Cathain et al. (2004b), studies of telephone triage are not necessarily transferable to services where nurses have face-to-face contact with patients. Second, as these studies predominantly analyse deviations, they have little to say about how guidelines *do* inform nurses' assessments. Third, these studies have tended to neglect one crucial reason for guideline deviation, namely the discordance between guidelines and nurses' clinical reasoning. While previous research has argued *that* nurses rely on their own clinical judgment and *that* there is an incongruence between guidelines' encoded and nurses' situated knowledge, little systematic analytical attention has been paid to *how* nurses' reason about patients' problems and *how* this reasoning informs triage code allocation. To complement the existing research, this study offers a detailed analysis of how nurses use discretion in their clinical reasoning and priority setting in face-to-face triage.

Data and methods

The paper forms part of the author's larger ethnographic project exploring how Norwegian EPCC workers interpret and prioritise patients' needs. Fieldwork was conducted between April 2015 and December 2015. Data in this paper are drawn from a large-scale, urban EPCC located in the city centre, performing more than 50,000 consultations per year, employing more than 100 nurses and physicians and open for 24 hours on every day of the week. The EPCC was divided into a 'frontline' (comprising a reception area, waiting room and two triage booths) and an 'inside' area (consisting of another waiting room, a work station and a series of examination rooms). Triage assessments typically lasted 4–8 minutes, during which a nurse would gather a brief medical history, ask about previous diseases and relevant medications, collect vital parameters (such as pulse, respiratory rate and temperature) and sometimes perform examinations (such as simple neurological assessments).

The 47 fieldwork sessions conducted at this EPCC had an average duration of approximately six hours. Of these, 20 sessions were spent observing nurses in triage and asking them about their assessments, enabling me to learn about their assessments and priority setting in close proximity to actual patients. In total, I observed 349 face-to-face assessments by 2 male and 14 female nurses, a majority of whom were aged between 25 and 35 years. On average, these nurses had worked in this EPCC for 3.5 years (range 1–7 years). I also spent two sessions attending mandatory courses in triage nursing. The remaining sessions provided information about the repercussions of triage assessments throughout the EPCC, serving as an analytical basis for comparison. For the purpose of analytical contrast, I conducted a further nine fieldwork sessions at two other emergency institutions. I also conducted semi-structured interviews with seven nurses, two physicians and two managers, in which triage assessments was a key theme[3] The interviews were transcribed verbatim. During the fieldwork, I scribbled keywords and near-verbatim quotes on a notepad or laptop for subsequent use in writing more elaborate field notes, yielding approximately 1,270 single-spaced pages. As all notes were written in Norwegian, I have translated the extracts included here, making minor grammatical and aesthetic adjustments.

The study was approved by the Norwegian Social Scientific Data Services. To secure informants' internal and external confidentiality (Tolich 2004), names and ages were anonymised. I signed non-disclosure agreements with the participating EPCCs and secured workers' informed consent by distributing an information letter and delivering several short

presentations on the project. When interacting with patients, each EPCC worker I shadowed would ask whether it was acceptable that I witnessed their interaction.

I was interested in discretion prior to entering the field and followed up on this interest because I found that nurses regularly assessed and prioritised patients at odds with MTS prescriptions. Alternating between fieldwork and analysis, I tried to explore as many aspects as possible of triage nurses' discretionary practice. Among others things, this led me to experiment with assessing patients myself, using my own copy of the MTS manual.

During and after the fieldwork, significant parts of the analysis were done in QSR Nvivo 10, sorting all the data into emergent broad-brush codes (Bazeley 2007). This paper is based on 21 broad-brush codes of relevance to nurses' application of guidelines. After familiarising myself with this material, I ordered it into a deductive scheme of 12 codes, the most central of which were 'deviations from MTS', 'MTS restrictions' and 'opinions about MTS'. This coding was then inductively differentiated and iteratively reviewed to explore nurses' discretionary use of guidelines. Although the analysis proceeded without use of any established system for reliability checking, I sought to reduce researcher bias by sharing preliminary drafts with colleagues and informants, delivering oral presentations to members of the field and briefly re-entering the field at a later stage to test tentative conclusions. The results of this process are presented below.

Analysis

This section describes how triage nurses used discretion when assessing and prioritising patients. Following a review of MTS guidelines, I detail how nurses deviated from these when assessing the urgency of patients' complaints. Finally, I describe how nurses sought to override MTS when faced with discrepancies between their own assessment and guideline recommendations.

Manchester Triage System

In the participating EPCC, MTS was the official system for urgency assessments. This is a paper-based licensed triage system comprising 53 flow charts ordered after 'chief complaints' such as abdominal pain, allergy, ear problems and head injury. Each flow chart consists of *discriminators*—clinical signs and symptoms related to the chief complaint. Within each chart, discriminators are ordered in a hierarchy of five colour-coded triage codes: red (most urgent), orange, yellow, green and blue (least urgent). MTS instructs nurses to start from the top of the chart and to rule out discriminators one by one until they find a positive match,

which determines the patient's triage code. This system also instructs nurses to consider discriminators 'without making any assumptions about the [patient's] diagnosis' (Mackway-Jones *et al.* 2014: 11). The top three codes specify maximum waiting times; while red patients are to receive immediate medical attention, orange and yellow patients are to see a physician within ten and sixty minutes, respectively.

Nurses were eligible for triage after working for approximately one year in the EPCC. They would then have to read the MTS book (Mackway-Jones *et al.* 2014), attend a full-day triage course and practise the system for three full shifts under the supervision of a triage instructor.

During the triage course, the instructors, who were themselves nurses, communicated MTS prescriptions somewhat ambiguously. On the one hand, they stressed the importance of adhering to the system; on the other, they encouraged participants to supplement MTS with their professional knowledge and skills. For instance, instructor Isabel made the following claim: 'Manchester triage is made to *guide* triage nurses. It's a tool we use to make the right decisions. We cannot turn off our brain and just fill out the form—we have to think like nurses, all the time'. These diverging messages illustrate a tension between managerial and professional ideology also reported in other studies (Flynn 2002; Russell 2012).[4] The rest of this analysis shows how the triage nurses I observed—especially those who were more experienced—resolved this tension in favour of professionalism.

Discretionary assessments

Shadowing nurses in triage taught me that their assessments were not reducible to MTS prescriptions. Although there was some overlap, nurses commonly departed from the guidelines by collecting supplementary data, engaging in differential diagnostic and holistic reasoning, relying on emotion and intuition and allowing colleagues, patients or patients' relatives to influence them. Each of these elements is considered in turn below.

Supplementary data

In assessing urgency, nurses typically engaged in data collection beyond that prescribed by MTS discriminators. This was especially the case when complaints could not be reduced unambiguously to MTS classifications. While some additions reflected weaknesses in MTS and institutional requirements for triage assessment, others were initiated by the nurses themselves. Examples of the latter include making broader assessment of a patient's medical history and medications and using one's 'clinical gaze' to identify cues that escape the MTS system.

This supplementary work was facilitated in part by SBAR, another standard specifying what nurses should document in triage. SBAR stands for *situation* (a paragraph about the patient's complaint); *background* (relevant medical history and medications); *assessment* (vital parameters and test scores) and *recommendation* (listing of one's chosen flow chart and discriminator). Managers expected thorough documentation according to SBAR to enable nurse coordinators to sort patients within each triage code, which was crucial when patient volume was high. Thus, some deviations from MTS can be understood in light of this partially competing standard.

Differential diagnostics

In addition to SBAR, nurses' supplementary data collection was facilitated by their own diagnostic knowledge. In one interview, Nurse Alice explained nurses' diagnostic approach as follows.

> We're not allowed to diagnose patients; doctors do that. But of course, we know about diagnoses; we know what their symptoms are. It's not like this is unknown to us. So, we're thinking along the lines of 'Could this patient have had a transient ischemic attack, TIA?'—things like that. 'Could he have had neurological manifestations?' With issues like fainting, syncope as we call it, we always ask 'Do you remember what happened before you fainted?' And then you have those patients who don't remember anything happening. That's not reflected in the flow chart; the only thing included there is whether you've been unconscious. And that gives you a yellow priority. But not remembering anything from before the incident […] I would make it an orange priority because you haven't had any pre-warning, which makes one suspect that it could be cardiac-related.

Alice's account suggests that nurses know about correlations between symptoms, signs and diagnoses, and that they use this knowledge to collect additional data of relevance. Her comments were echoed by other nurses in the EPCC, who claimed to regularly use diagnoses as heuristics for assessing symptoms and signs beyond those suggested in MTS. In other words, nurses engaged in *differential diagnostic reasoning*—hypothesising and seeking to rule out or confirm possible diagnoses of the patient's complaint. By suggesting prognoses, diagnoses enable nurses to anticipate the potential development of the patient's condition and so judge how long they can wait before receiving medical attention.

Nurses typically limited their diagnostic hypotheses to acute, severe and treatable conditions, as these, in line with the EPCC's mandate, indicate a need for swift medical intervention. Their diagnostic hypotheses were low in specificity, usually entailing broad disease categories such as myocardial infarction or sepsis, as is common in frontline institutions (Armstrong

2011). For that reason, nurses' prognoses were more impressions than clear-cut predictions, with suspected rather than expected or certain trajectories. Nonetheless, as these suspicions were often considered more accurate than MTS recommendations, they could be significant for priority setting, as illustrated in Nurse Alice's claim about upgrading a patient's priority.

Nurses' differential diagnostic reasoning is clearly at odds with the MTS' prescription to consider only symptoms and signs, not diagnoses. However, triage nurses argued that diagnostic reasoning is a necessary and potentially life-saving supplement because the MTS system is inadequate for certain acute severe conditions. In the words of Nurse Lindsay, 'If you don't know anything and just follow the manual, things might quickly go wrong'.

Holistic reasoning

Nurses also deviated from MTS prescriptions by considering symptoms, signs and risk factors *as a whole*. Consider Nurse Judith's reasoning after she assessed a patient who feared she had meningitis. After the patient left triage, Judith explained:

> I understand her worry about [previously having] fever, headache and neck pain, but at the same time, there was a lot that didn't fit the overall picture. That she had pains in her arms and legs, chest pain, and so on, and that she's better today—that *definitely* goes against meningitis and indicates the flu or similar. And her general wellbeing, that's a good sign—having meningitis often makes you really tired. Even more, she didn't have any *fever*.

It is clear here that Judith weighed symptoms and signs against each other to determine the likelihood of meningitis, and this was a common practice among the nurses I observed. This *holistic* weighing of information was in marked contrast to the prescribed *atomism* of MTS, i.e. considering discriminators one by one. When nurses nonetheless engaged in holistic reasoning, it was because they believed that this would enable more precise priority setting than the individual consideration of symptoms suggested by MTS.

It is worth noting that extra-clinical information often informed nurses' holistic reasoning, as when inferences about patient types intersected with their clinical reasoning. An example of this was Nurse Judith's remark that an elderly male patient's age was a medical risk factor, as well as indicating that his complaint should be trusted because 'He's from a generation where people don't complain'. Her words illustrate how social typifications constituted a form of metadata in judging the credibility of patients' signs and symptoms. Nurses also drew on typifications of this kind to make broader assessments about how patients would cope while waiting to see a physician. For instance, because children, older patients and those considered

mentally unstable were believed to be less able to cope with long waiting times, nurses ensured that these patients were taken care of during their wait, occasionally even upgrading their triage code. In drawing on such extra-clinical information, nurses took account of a broader set of patient-related information than suggested by the MTS. This illustrates how clinical reasoning—even when reductively oriented to threats to a patient's body or mind—depends on 'cognitive resources made available by membership of a wider cultural formation' (Hughes 1977: 139).

Emotion and intuition

Complementing the more explicable sides of nurses' clinical reasoning, the influence of intuition and emotion represented a third deviation from MTS prescriptions. This was most in evidence when nurses sensed that a patient's condition was urgent, even though they were unable to articulate any explicit evidence of that urgency. They referred to this as 'a bad gut feeling' and claimed that this emotional evidence could influence their estimation of a patient's wait time. For instance, Nurse Andre said 'We often make assessments based on our gut feeling. There's a lot of people you feel can't wait for five hours'. His assertion reveals an impressionistic aspect of nurses' prognostication, which goes beyond the affect-neutral image of triage in MTS.

Nurses and managers were somewhat ambivalent about this reliance on emotion and intuition; many believed it could result in arbitrary or biased priority setting, especially amongst neophyte nurses. However, they also claimed that the gut feelings of more experienced nurses were crucial in identifying patients who might otherwise be at risk of falling between the cracks of MTS. On that basis, a 'bad gut feeling' was to some extent an institutionally recognised basis for setting priorities, especially in the case of a more experienced nurse. These views are congruent with other research findings that show intuition to be an essential (if poorly regarded) aspect of expert practice (Benner and Tanner 1987; Gobet and Chassy 2008; King and Appleton 1997).

In summary, triage nurses often relied on their emotions and intuition when setting priorities, and this was seen as a necessary (though not unproblematic) addition to the affect-neutral logic of MTS.

Interaction

A final point of interest about triage nurses' assessments is that they were interactively constructed. For instance, nurses interacted with patients and patients' relatives, who could

significantly influence nurses' assessments by emphasising some issues at the expense of others. Occasionally, those presenting in triage also made explicit attempts to negotiate their triage code. Although these attempts rarely succeeded, they demonstrated that patients and their relatives were far from the passive purveyors of information implied in the MTS manual (see Edwards and Sines 2008 for a similar argument).

Nurses' interactions with colleagues also influenced their assessments. In general, they would confer with colleagues—typically their 'neighbour' in triage or the nurse coordinator—when seeking a second opinion. Colleague interaction was often deliberative, making it difficult to discern a definitive 'source' for the decision and illustrating how triage decision making was often *distributed* (Goodwin 2014; Rapley 2008). None of this is reflected in the MTS manual, which assumes that a single decision-maker is responsible for priority setting.

It is also important to acknowledge that assessments were influenced by interaction with non-human *artefacts* (Nicolini 2012), such as diagnostic technology, frameworks of knowledge, and, most importantly here, the MTS. Despite the deviations described above, it would be an exaggeration to claim that nurses assessed patients wholly independently of guidelines. MTS did in fact regulate nurses' practice by serving as a 'bare minimum' of information to be considered and documented, to which nurses were held accountable by colleagues and superiors. Accordingly, nurses' discretionary assessments were often pigeonholed into the official categories of MTS. Moreover, although nurses rarely, if ever, had the manual in front of them during the triage encounter, they often consulted MTS towards the end of the assessment in case they had forgotten to check for relevant symptoms and signs. Nurses also relied on MTS in situations where they were unsure how to assess patients. Therefore, despite underdetermining and often misrepresenting triage nursing practice, the MTS guidelines clearly influenced nurses' urgency assessments in a sociologically noteworthy sense.

Triage code adjustments

In this section, I will delve deeper into when, how and why nurses' privileged their own assessments over MTS recommendations. To understand *when*, it is necessary to revisit the association of MTS triage codes with target waiting times. When assigning patients to a triage code, triage nurses must ask themselves two questions: Is the recommended waiting time 1) *reasonable* and 2) *realistic* for this particular patient? The first question concerns whether the MTS waiting time accords with the nurse's own assessment; the second concerns whether this waiting time is attainable given the ratio of patients to physicians at the moment of

assessment. When nurses believed the MTS-suggested waiting time to be unreasonable and/or unrealistic, their choice of triage code often deviated from MTS recommendations.

To understand *how* nurses navigated MTS, it is important to consider the organisation's rules for priority setting. While EPCC management allowed nurses to upgrade patients' triage code if they provided a reason in the triage note, downgrading was strictly prohibited. To downgrade patients (or keep their upgrades 'off radar'), nurses had to employ more covert methods, of which I observed three main types. Note, however, that not every nurse was found to engage in covert practice, perhaps because of individual differences among nurses and/or differences in the cases I observed. Nonetheless, it is fair to assume that the prevalence of covert practices was greater than what I, a sociologist 'outsider', was allowed to observe.

Qualifying discriminators

One covert practice involved qualifying discriminators. As mentioned, this was characterised as 'strictly prohibited' by a triage course instructor, but some nurses were observed to do so nonetheless. For instance, when assessing a three-year-old boy, Nurse Alyssa qualified the discriminator 'New abnormal pulse'. The boy's pulse was first measured as 150 and then 100, before stabilising at 118; this was eight points above the discriminator limit for his age group and should have resulted in an orange triage code. However, Alyssa reasoned that the fluctuation, in combination with the boy's dry, warm skin, normal skin colour and otherwise good general condition were strong enough reasons to disregard his slightly increased pulse. On that basis, she gave him a yellow triage code, later explaining that she preferred to consider him 'as a whole' rather than prioritising on the basis of single symptoms, which illustrates the importance of nurses' holistic reasoning. She also added that this was a breach of EPCC policy: 'If it [the pulse] is abnormal, then I'm really not allowed to skip past it'.

This example raises the question of why Alyssa overrode the system. Part of the answer is that triage codes are a scarce commodity that must be rationed; if everyone receives high priority then no one receives high priority. Many nurses referred to MTS as an 'overtriage tool', in that it assigns too high a priority to certain complaints. For that reason, they felt the need to 'correct' MTS, especially in (the relatively frequent) situations of overcrowding, in which waiting times increased and more refined queue ordering was required. It is also worth noting that certain nurse managers expressed some understanding of deviations like Alyssa's. When asked if qualifying discriminators was acceptable in certain cases, Nurse Cindy, who taught triage courses and occasionally performed triage herself, answered as follows: 'I believe it's okay if you have some experience, but it's … It's not what we teach them.' This implies that

deviations like Alyssa's might go unsanctioned even when detected. Cindy's answer also highlights the salience of nurses' experience in downgrading patients. Downgrading was considered more legitimate—and was therefore more typical—among more experienced nurses like Alyssa, who had worked in the EPCC for several years.

Strategically choosing flow charts

Another covert method for acting on one's own assessment was strategically choosing flow charts. For instance, Nurse Anne spent 6.5 minutes assessing a patient with a swollen forehead and concluded that the patient should receive a green triage code. Awarding this code required some reflexivity on Anne's behalf; after the patient had left triage, we discussed this.

> Anne: Sometimes you have to manipulate the system a bit because, according to the manual, she would have been orange.
>
> Researcher: What [discriminator] would she have got?
>
> Anne: If I'd believed this was an allergic reaction, I could have used [the flowchart] *Allergy*, and then she'd get [the discriminator] 'Facial oedema'.
>
> Researcher: So you have to reflect on which flowchart you choose?
>
> Anne: Ideally, one is supposed to get the same priority regardless of the flowchart we use. But it's completely ridiculous for her to see a doctor within ten minutes; that's why I chose the chart *Facial problems* instead.

In the *Facial problems* chart, the patient would be positive for 'Facial swelling', a green discriminator; in the *Allergy* chart, the patient's problem would constitute 'Facial oedema', an orange discriminator. Anne's differential diagnosis excluded an allergic reaction, prompting her to estimate the patient's 'waitability' as significantly longer than the ten minutes suggested by the *Allergy* chart. She therefore chose 'Facial swelling' to ensure a triage code that better aligned with her own assessment. Similar practices allowed nurses to upgrade patients as well. Thus, nurses' knowledge about flowchart discrepancies allowed them to prioritise on the basis of their own discretion.

Oral adjustments

In some instances, nurses were unable or unwilling to engage in workarounds to adjust a patient's formal triage code. This most often related to certain orange discriminators; there were numerous examples of nurses giving orange triage codes despite their conviction that

there was nothing seriously wrong with the patient. One telling example was Nurse Helen's comment after she had assigned two orange codes in a row:

> Both were orange according to the chart, but none were orange in a clinical sense. He checked out on a discriminator used when one suspects stroke, but he had *no* other symptoms. He was a young man born in '84, but he got orange nonetheless. The girl was orange just because she had a high pulse, but I believe that's due to her being anxious. Besides that, she was clinically fine, with perfectly fine parameters.

Although Nurse Helen's assessments conflicted with MTS, she adhered to the system's recommendations. This caution was informed by both patient safety and judicial reasons, clearly illustrating how MTS discriminators could limit nurses' discretionary space. However, Helen had another means of modifying patient priority. After these assessments, she left the booth for a few minutes; on her return, she explained:

> I visited logistics and explained that I registered them as orange, but that they weren't clinically orange – I believe they can wait more than ten minutes. We're supposed to use our head too, in addition to the discriminators. I feel they could have been yellow, but you shouldn't skip those discriminators.

This example shows that while Nurse Helen was unwilling to perform an *inter-code adjustment*—that is, downgrading a patient's triage code— she was comfortable with making an *intra-code adjustment*—assigning the patient a lower priority *within* their triage code. This was done by communicating the discretionary assessment to the clinic's nurse coordinator, so influencing their *internal queue*[5], i.e. their mental representation of patients' relative priority. This queue was more refined than the electronically recorded *external queue*, which ordered patients first by triage code and then by time of arrival. Because the coordinator often told those working 'inside' who should be prioritised, these informal messages could strongly influence patients' wait time before receiving medical attention. A similar practice served to move patients forward in line as well. Thus, such informal interactions allowed nurses to act on their discretionary assessments without appearing to violate guideline prescriptions.

Discussion and concluding remarks

The analysis has shown that nurses take an active approach (Russell 2012) to face-to-face triage, which is congruent with earlier findings on telephone triage. The analysis has also detailed the relationship between guideline deviations and nurses' clinical reasoning, which has been under-analysed in previous research. Nurses assessed patients at odds with MTS guidelines by collecting supplementary data, engaging in differential diagnostic and holistic reasoning, relying on emotion and intuition and allowing colleagues, patients or patients'

relatives to influence their reasoning. Moreover, where nurses' discretionary assessment suggested that the system-prescribed wait time was either unreasonable or unrealistic, nurses sought to override the system by qualifying discriminators, strategically choosing flowcharts or orally adjusting urgency levels. Although the observed characteristics are unlikely to be exhaustive of triage nurses' discretionary practices, the findings show how managerial tools may be significantly at odds with the professional reasoning they seek to regulate. These findings are particularly interesting because most nurses in this EPCC, including those I shadowed, had no experience with triage before being introduced to MTS. Despite their co-occurring socialisation into triage nursing and MTS, they nevertheless employed significant discretion when assessing patients.

However, triage nurses did not operate completely independently of the guidelines. MTS served as a support system and checklist, holding nurses accountable to a minimum of symptoms and signs to be considered in their assessments and documentation. Nurses' assessments therefore synthesised their own professional judgment with system-prescribed considerations; rather than simply disregarding guidelines, they used them reflexively by drawing on some parts rather than others, supplementing or circumventing them when it was considered necessary to ensure fair and correct priority setting. In short, nurses assessed patients' urgency in *negotiation* (Strauss *et al.* 1963) with MTS.

The present findings are difficult to subsume under the existing conceptualisations of triage nurses' use of guidelines. In acknowledging the joint influence of nurse and guideline in triage assessments, the notion of 'dual triage' (O'Cathain *et al.* 2004b) mentioned above might appear promising. However, this idea does not reflect the full extent of how triage nurses supplemented, translated and contravened guidelines. Additionally, the term 'dual' does not do justice to the complexity of these assessments; influences on triage assessments are not just dual, they are multiple.

The findings here are better aligned with the concept of *mindlines*, referring to collectively reinforced, internalised, tacit guidelines (Gabbay and le May 2004, 2011). While Gabbay and le May's (2011: 12) concept was based primarily on observations of doctors, they argued for its application to other professionals as well. On that basis, I propose the term *triage mindlines* to conceptualise how nurses assess patients using internalised guiding principles derived from professional socialisation and personal experience, as well as interaction with colleagues, triage instructors, management, MTS and other sources. These guiding principles can be articulated to some degree, but they also encompass *tacit* knowledge (Polanyi 1967),

such as a nurse's ability to judge a patient's general condition, which is crucially important for identifying those most at risk.[6] Because they encompass a broader range of knowledge than MTS, triage mindlines structure the triage encounter in terms of a more situated, individualised logic than the abstract, procedural prescriptions of MTS.

One likely reason for nurses' greater reliance on triage mindlines than on MTS guidelines is the dual reductionism of rule-based systems. As argued in previous research, such systems exclude nurses' situated, tacit knowledge, and the limited set of information these systems provide cannot account for all the contingencies of everyday work practice (cf. Berg 1997; Dew *et al.* 2010; Greatbatch *et al.* 2005; Heath and Luff 2000; Suchman 1987; Tjora 2000). A second and related reason is that the MTS prescription of atomistic and non-diagnostic reasoning imposes too strict a boundary between nursing and medicine. Nurses' knowledge makes such a boundary difficult to maintain in practice, as evidenced here and in other studies (e.g. Allen 1997; Butler *et al.* 2009; Hughes 1988; Tjora 2000). A third reason for nurses' reliance on triage mindlines is that they must consider several standards (e.g. MTS *and* SBAR) when making triage assessments. As previous research has focused almost exclusively at one standard at a time, this discretionary balancing of several competing standards warrants further research. A fourth reason—differentiating this EPCC from many other EMS organisations (cf. Ruston 2006; Tjora 2000)—is that neither management nor the system's design demanded absolute adherence to the guidelines. Instead, management expected triage nurses to supplement MTS with their professional knowledge and experience, and the paper-based MTS guidelines allowed for significantly more discretion than computer-based triage guidelines typically do (cf. Bjørn and Balka 2007). Moreover, even if management had required nurses to adhere completely to the system, the light monitoring regime for face-to-face triage—as opposed to telephone triage, where nurses often practice in front of superiors and conversations are typically recorded—allowed nurses more freedom to exercise their own discretion. A fifth and final reason relates to nurses' pragmatism. As Timmermans and Berg (2003: 70) argued, healthcare professionals regard guidelines as means rather than ends, adhering to them only if they are considered useful for the task at hand. This was not always the case in the participating EPCC; indeed, in line with findings from other studies (Dowding *et al.* 2009; Ruston 2006), nurses believed that strict adherence to the MTS could pose a risk for certain patients. Their discretionary practice was therefore motivated, at least partially, by a pragmatic focus on helping patients by overcoming the limitations of the system.

That said, the present findings do not imply that the EPCC would be better off without the MTS, or that procedural standards in general are detrimental to patients or healthcare workers. Both managers and nurses were largely satisfied with the system while acknowledging that it had limitations, and that some of these were quite severe. While an assessment of the success of the MTS would require a different research design, the present findings reveal a problematic tension between nurses' reasoning and MTS assumptions about this reasoning. Guideline developers could reduce these tensions by paying closer attention to how professionals reach decisions—for instance, by taking account of nurses' tendency to reason in a differential diagnostic and holistic manner (cf. Edwards 1994). The findings also illustrate some limitations in the regulatory force of procedural standards. As no rule can exhaustively prescribe every aspect of a practice, those developing and enforcing guidelines might usefully adopt Timmermans and Epstein's view that 'The trick in standardization appears to be to find a balance between flexibility and rigidity and to trust users with the right amount of agency to keep a standard sufficiently uniform for the task at hand' (2010: 81). More grandiose ambitions, such as demanding absolute adherence to guideline prescriptions or arguing that, 'There is a need for a uniform triage scale that is suitable for all services' (Azeredo *et al.* 2015), are likely to prove dead ends.

Although confinement to a single research site precludes statistical inference, the present analysis provides an in-depth understanding of guideline application within this particular institutional setting. It seems likely that the findings will prove relevant in understanding the use of procedural guidelines in other settings, especially where relatively experienced professionals work to assess complex (medical) problems under high workloads and less than total monitoring. More generally, the findings here illustrate the difficulties of imposing a managerial logic on professional labour (Flynn 2002; Lam 2000; Townley 2002) and the crucial role of additional skills and knowledge in making guidelines work (Ruston 2006; Timmermans and Berg 2003). These considerations should be kept in mind when designing and implementing guidelines in professional organisations.

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[1] In Norwegian, EPCCs translates as '*legevakt*'.

[2] Exceptions pertaining to face-to-face triage include Dowding et al. (2009) and the studies reviewed by Johannessen (2016). The former includes face-to-face triage as only one of four case studies; the latter reviews descriptive studies that focus more on decision-making in general than on nurses' use of guidelines. Neither provides firm grounds for any conclusions about guideline application in face-to-face triage.

[3] Relevant questions include: 'What are your thoughts on having to use MTS in your assessments?'; 'Beyond MTS, what influences your allocation of triage codes?' and 'What is the most challenging aspect of performing triage?'

[4] A similar ambiguity characterises the MTS book, but the MTS system itself is unequivocally built on an algorithmic and managerial logic.

[5] I learned about this 'internal' queue by shadowing nurse coordinators and probing them about their queue management.

[6] The relevance of nurses' tacit knowledge became apparent whenever I tried to use the MTS manual myself. As a sociologist and non-nurse, my underdeveloped 'clinical gaze' meant that I could not arrive at the same conclusions as the nurses I shadowed.

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