Time pressure and teamwork: a quest for quality improvement in hospitals

Harten, A. van

Illustration 10: The quest

Summary

Time Pressure and Teamwork, A Quest for Quality Improvement in Hospitals

RATIONALE

Since the publication of the report 'To err is human' (Kohn et al., 2000) many studies on teamwork in hospitals were performed. Research showed that hospitals with low avoidable mortality rates do not necessarily distinguish themselves by having fewer incidents, but rather by their ability to rescue patients in the event of an incident. Teamwork plays a crucial role in this. Research showed also that hospitals fail to realise enduring improvement of patient safety. Theorists plead for a different paradigm in which hospitals are seen as complex adaptive systems and quality improvement (including job satisfaction), learning, and patient involvement are inseparable. Teamwork is seen as a crucial component for adaptability and thus quality and safety. Time pressure is usually seen as one of the complicating factors in a complex system and as a barrier for realizing improvements. It is generally regarded as an unavoidable constraint.

This thesis questions the inevitability of time pressure and aims to gain a deeper understanding of the nature of time pressure and how it relates to improving quality and safety in hospital teams. Furthermore, it aims to find a way for ongoing improving quality and safety with less time investment and without experienced time pressure.

To realise the first aim, we conducted an ethnographic and an observational study in two surgical interprofessional teams in an academic hospital (Study 1 and 2). To realise the second aim, we conducted two participatory action research studies (PAR) at a paediatric ward of an education hospital (Study 3 and 5). To gain a deeper understanding of the role of the action researcher in the change process at the paediatric ward we performed first-person action research (Study 4).

FIRST STUDY: TIME PRESSURE IN SURGICAL TEAMS, A HELP OR A HINDRANCE TO PATIENT SAFETY?

Aim: Patient safety relies on the development of mindful routines in the operating room. Time pressure is often viewed as an unavoidable challenge to maintaining these routines, arising from the workload placed on teams. Our goal is to explore the nature of time pressure and its influence on the development of mindful routines.

Method: This naturalistic case study was conducted with a surgical team in a Dutch academic hospital, utilizing ethnographic methods such as participant observation, interviews, and field notes. Over the course of 103 hours, the researcher closely observed the team in action. The analysis combines insights from habit theory with principles of mindful organizing.

Results: The team culture reflected deference to speed, a strong preoccupation with productivity, a tendency to avoid conflict, and a high value placed on maintaining affective

relationships. Conflicting priorities emerged due to differing safety norms, concerns about time, and varying beliefs about what actions contribute to saving time. Addressing these conflicting priorities, however, was rarely done. Creating shared Situational Awareness[2] (SA) helped to prevent or mitigate time pressure, though it was not a consistently embedded routine. The newly introduced routine of a day start briefing in the interprofessional team was often compromised under time pressure. However, saving time later on that day was also mentioned as the motivation for performing the new routine. Established habits, such as the time out before incision or the morbidity and mortality meetings were insensitive to time constraints, even if participants did not value them highly.

Conclusion: Rather than being workload-driven, time pressure emerged as a co-constructed outcome of conflicting priorities and the preservation of affective relationships. The imperative to save time motivated the creation of shared SA and the formation of new mindful routines.

Further research: We hypothesized that improving an existing routine, such as mortality and morbidity meetings, by broadening stakeholder involvement and addressing prevailing concerns, is likely more feasible than creating a new routine. This is because established routines are inherently more resilient to time pressure. Additionally, we proposed that the motivation to save time could support the adoption of mindful routines, as long as shared SA is essential for achieving those time savings.

SECOND STUDY: AN OBSERVATIONAL STUDY OF DISTRACTIONS IN THE OPERATING THEATRE.

Aim: Several studies suggest a negative impact of interruptions and distractions on anaesthetic, surgical and team performance in the operating theatre. This study aimed to gain a deeper understanding of these events and why they remain part of everyday clinical practice.

Method: We used a mixed methods observational study design. We scored each distractor and interruption according to an established scheme during induction of anaesthesia and the surgical procedure for 58 general surgical cases requiring general anaesthesia. We made field notes of observations, small conversations and meetings.

Results: We observed 64 members of staff for 148 h and recorded 4594 events, giving a mean (SD) event rate of 32.8 (16.3) h^{-1}. The most frequent events observed during induction of anaesthesia were door movements, which accounted for 869 (63%) events, giving a mean (SD) event rate of 28.1 (14.5) h^{-1}. These, however, had little impact. The most

2 SA is the process of perceiving and interpreting the situation at hand and anticipating at what comes next.

common events observed during surgery were case-irrelevant verbal communication and smartphone usage, which accounted for 1020 (32%) events, giving a mean (SD) event rate of 9.0 (4.2) h^{-1}. These mostly occurred during periods of low workload in a sub-team. Participants varied in their experiences, ranging from seeing these as severe disruptions to viewing them as welcome distractions that helped keep healthcare professionals active during low workload periods, while also reinforcing social connections between colleagues. Mostly, team members showed no awareness of the need for silence amongst other sub-teams and did not vocalise the need for silence to others.

Conclusion: Case-irrelevant verbal communication and smartphone usage may serve a physical and psychological need. The extent to which healthcare professionals may feel disrupted depends on the situation and context. When a team member was disrupted, a resilient team response often lacked.

Further research: Minimizing disruptive social interactions could be an effective strategy for fostering habits of cross-monitoring and mutual support between surgical and anaesthetic sub-teams. Further research is necessary to explore ways to bridge cultural divides and develop resilient interprofessional behaviours.

THIRD STUDY: INTERPROFESSIONAL LEARNING AND IMPROVING AT THE PAEDIATRIC WARD

Aim: We aimed to understand how interprofessional workplace teams can learn and improve every day from practice variability.

Method: Participatory Action Research (PAR) at a paediatric ward in a Dutch educational hospital into improving shared SA in bedside ward rounds. Methods included 115 semi-structured interviews and participant observations of the interactions. The action research team consisted of a representation of all stakeholders and the first author, who introduced Safety-II concepts to reflect on their practice.

Results: The exchange of perspectives between parents, nurses and physicians, increased awareness of mutual expectations and experiences prompting individual learning. To foster collective learning at the ward, the research team introduced standards aligned with participants' concerns and encouraged daily discussions about the ward round. This approach facilitated daily mutual perspective taking, expectation alignment, and recognition of practice variability thereby enhancing unit-wide learning and improving. While aiming at increasing shared SA, multiple improvements emerged simultaneously and unexpectedly including time management, professional pride, and job satisfaction. However, participants also discovered that lessons learned did not automatically spread to newcomers.

Conclusion: Everyday learning in hospital units can be enhanced through daily interprofessional interactions about expectations and supported by procedural standards. Fostering daily interactions and initiating standards that met the concerns of participants, required the research team to spend considerable time on addressing conflicting priorities. PAR proved to be a valuable and adaptive approach for learning and improving engaging all stakeholders in a complex setting.

FOURTH STUDY: THE PARTICIPATORY ACTION RESEARCHER: A STARLING IN THE MURMURATION

Aim: We aimed to explore how a participatory action researcher supported transformation across first-, second-, and third-person inquiry levels, informed by social complex adaptive systems (SCAS) theory and theory on desires.

Method: All authors analysed the narratives as critical friends using the method of thinking with theory to deepen our understanding of the dynamics at play.

Results: We use the metaphor of a starling in a murmuration to describe the researcher's role: not in control but subtly influencing direction by alternately following and bending the existing interaction patterns. By initiating overlapping circles of interaction, she enabled the emergence of interference leading to improvements at the ward.

Conclusion: We conclude that the PAR researcher seized opportunities to act as a messenger for workplace issues related to belonging and authority. This way she paved the way for direct interaction between professional silos on the work floor and parents. Addressing these issues released the energy among nurses and physicians in the research team to engage in constructive conflict. From this conflict, initiatives emerged, interfered, and transformed ward practices.

By enduring the discomfort of participating in constructive conflict, alternating between yielding and confronting connection, PAR researchers can influence transformation without controlling it.

Our findings contribute to action research theory by demonstrating the usefulness of SCAS theory in revealing patterns and interconnectedness of first-, second- and third-person inquiry, and to SCAS theory by showing how desires for belonging and authority drive cross-professional interaction.

FIFTH STUDY: MAKING QUALITY IMPROVEMENT A HABIT AT THE PAEDIATRIC WARD

Aim: Retaining improvements and continuing daily learning and development after the conclusion of a project is reportedly uncommon. Therefore, our aim was to explore how interprofessional healthcare teams in hospitals can cultivate a habit of ongoing learning and improvement in their daily work.

Method: We decided to do follow up Participatory Action Research (PAR) in the paediatric ward. We collected data in meetings, field notes, interviews, and short interprofessional evaluations, emails and telephone conversations. The theory of social complex adaptive systems was used as a lens for analysing the data.

Results: The team retained daily learning because the research team developed the skills for organising periodical evaluative rounds and formulating changing challenging goals fitting the actuality. The skills and insights in the research team evolved in a process of transformative learning in which they changed their assumptions on the nature of learning, the length of time needed for successful change and the relevance of addressing relational tensions in the team. Finally, they recognised that the availability of a facilitator is crucial for developing skills and knowledge and thus capacity building.

Conclusions: To facilitate a reflective routine of regular interactive evaluations among colleagues and parents of patients, the participating research team needed to engage in transformative learning themselves. Experiencing the value of learning and progress motivated them for sustaining the interactive evaluative routine after closure of the research. However, to persist in the learning process, the team needed a facilitator who transferred missing skills and knowledge and addressed relational tensions. Improvements can become habitual, thereby eliminating time pressure, but learning—particularly transformative learning—cannot, as it requires a disruption of habitual ways of thinking and acting.

CONCLUSIONS ON IMPROVING QUALITY AND SAFETY WITHOUT TIME PRESSURE

The objective of the five studies was to gain a deeper understanding of the phenomenon of time pressure and then to explore whether a change strategy could facilitate sustainable and continuous improvement without a significant time investment and without time pressure.

We understand time pressure as a phenomenon collectively created within and by the team around conflicting priorities between participants such as: being fast and productive, avoidance of waiting, finishing on time, or timely decisions. These priorities often stem

from underlying and unconscious drives for belonging (inclusion) and position (authority). Time pressure can jeopardise team collaboration. But time pressure also often served as a catalyst for creating shared situational awareness (SA) within the team, since this reduces time pressure. Shared SA is crucial for effective team collaboration, quality of care and adaptability of care. We observed that daily mindful routines persist under time pressure and do not themselves create time pressure. We refer to routines as mindful when they are not performed mechanically but contribute to shared situational awareness within the team. Cross-monitoring, where team members observe each other's work and provide support, is an example of such a routine. However, while a routine may be resistant to time pressure, embedding or modifying a routine is not.

In developing a quality improvement strategy that minimises time pressure, the participatory action research team focussed on daily learning within interprofessional teams in the workplace. Interprofessional learning in the workplace does not develop informally or spontaneously; it requires the stimulus of an interprofessional research team, project group, or committee that progressively fosters sustainable learning and formulates objectives aligned with the concerns and aspirations of all stakeholders. The development of this role within the research team proved to be a process of transformative learning, alternating between unsettling liminal phases of uncertainty and consolidating phases in which results could be harvested. Participatory Action Research (PAR) proved to be a method well suited to sustainable learning and improvement in social complex adaptive systems (SCAS) because it shares the same principles of transformation: epistemic justice, interaction among all stakeholders, and decentralised control. The facilitator played an indispensable role in fostering these principles.

The facilitator stimulated exchange between different interaction circles and various stakeholders on the nursing ward, thereby creating opportunities for positive interferences that drive change throughout the system. Connecting the interaction circles required the facilitator at times to align and move along to build relationships (connecting), and at other times to confront (confronting) to ensure that the issues most relevant to those involved were addressed. Moving along sometimes also meant acknowledging hierarchical relationships. The issues at stake often related to the drives for inclusion and authority. This applies to both the professionals on the floor and the facilitator. Unconscious drivers and embodied knowledge can both influence the facilitator's actions in the moment. Therefore, the facilitator must reflect on when their own needs for inclusion and authority take precedence and when embodied knowledge, built over years of experience, comes into play—both of which always respond faster than conscious thought.

Although daily learning and improvement in the workplace required little clock time (Chronos) and provided greater benefits than initially expected, it did demand attention and appropriate timing (Kairos) and often began with a disruption of existing expectations

or assumptions. Because it required disruption, effort and focus, it was also experienced as a time burden. This was even more pronounced for the time invested by the research team. Therefore, while good habits can evolve into routines that do not impose time pressure, learning, by definition, never becomes a habit because it necessitates navigating through an uncertain liminal phase. Thus, we conclude that change does not necessarily require a significant amount of time from healthcare professionals, but it almost always imposes time pressure.

STRENGTHS AND LIMITATIONS

A limitation is that all sub studies were conducted at team level. We suggested that PAR might prove to be the logical intervention for change in social adaptive complex systems at a larger scale, however, to change a sector, there might be needed more than just local initiatives and more than just action research. A strength is that 'productive interactions' are key for knowledge infrastructures and policy transformations. We shed light on productive interactions. Sharing knowledge and collaborative learning across local initiatives seems a fruitful approach to be further explored

A limitation of case studies is that they provide local contextual knowledge, which is not always easy to transfer to other settings. However, the strength lies in the possibility to develop deeper insights into the case. In naturalistic case studies, the emphasis is more on naturalistic or situated generalisation than on transferability. In situated generalisation the reader, as an active agent, connects the findings—depicted through rich descriptions—to their own context and tacit, situated understanding thereby creating a vicarious experience.

Moreover, when findings pertain to deeply personal aspects, such as desires for belonging and hierarchy, they are often the most universal because they are intrinsic to the human condition. Nonetheless, the specific manifestations of these desires will vary across different teams and contexts.

PRACTICAL IMPLICATIONS AND FURTHER RESEARCH

Our research suggests the need for organisational strengthening at team level. The role of the facilitator fostering the transformational learning process by connecting different perspectives emerged as a crucial condition. Having long-term support, combined with the transfer of knowledge and skills, is essential when a department or team wants to develop mindful routines, tolerance for ambiguity and the skill to address group dynamics. This requires organisations to set up this kind of support.

Organisational strengthening also demands something from the health / hospital sector as a whole. An initial exploration of training opportunities for this role in the Netherlands reveals that the sector has few training programmes or existing (master's) programmes that do develop facilitator skills. Available programmes primarily focus on educating policymakers rather than facilitators or action researchers. Ensuring the availability of appropriate training and sufficient participation requires joint efforts from educational institutions and hospitals. Previous attempts have failed due to low enrolment.

A common solution to create situational awareness across disciplinary boundaries, necessary for patients with comorbidity, is to organise meetings. However, if we imagine implementing such meetings for all categories of complex patients, the system will get stuck. We therefore advocate for further research into the application of SCAS theory to cross-departmental care for complex patients. This approach centres on self-organisation and exchange. We may discover how to facilitate exchanges across silo boundaries without fixed structures, fixed times, or fixed content. This requires the creation of a liminal space for transformative learning in guiding actors.

Furthermore, this study focused on improving quality and patient safety within the team's own sphere of influence. However, not all desirable improvements can be achieved at this level. It would be interesting to explore the applicability of insights from social complex adaptive systems, habit formation, and drives at the organisational level rather than at the team level.

REFERENCES

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). *To Err is Human: Building a Safer Health System* (0309068371). National Academic Press (US). https://www.ncbi.nlm.nih.gov/pubmed/25077248