

# Enabling Organizational Learning through Event Reporting: A Case Study in a Health Care Context

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**Abstract:** Applying the organizational learning framework, we argue event reporting is an enabler for organizational learning in healthcare contexts in order to reach the optimal patient safety and care quality. The findings in this case study describe how the four different learning activities (intuiting, interpreting, integration, and institutionalizing) occurred in event reporting and suggest several challenges that need to be overcome before a health care organization can transform to a learning organization.

## Introduction

In health care, continuous improvement of quality and patient safety has increased prominence since the Institute of Medicine report that estimates each year 44,000 to 98,000 people die of an iatrogenic injury, either as a main or a contributing cause, and that 1.3 million are injured by medical treatment. A key process in achieving patient safety is the ability to learn from errors. Within a healthcare environment the occasion of a safety event is also a learning opportunity for members and the organization. Not surprisingly, working in a hospital, health care professionals regularly encounter safety events that afford organizational learning opportunities; yet not many of these events are recognized as learning opportunity during the heat of the critical events (Naidu & Oliver, 1999). Therefore, many health care organizations and even some states have required health care professionals to report medical related adverse events as a means to monitor patient care quality and to learn from those events for future prevention. As a result safety event reporting systems are becoming critical parts of health care information systems.

## Event Reporting as an Organizational Learning Process

In organizational development research, organizational learning (OL) is defined by the continuous development of knowledge and capacity, both individually and collectively (Senge, 1990). A learning organization provides continuous learning opportunities, promotes a culture of learning, uses learning to reach goals, and links individual performance with organizational performance ensuring individual learning and enhancing the organization as a whole. According to Argyris and Schon (1978), OL is a process of detection and correction of errors. In their view, individuals are seen as the agents of learning for organizations. In other words, OL is a multi-level dynamic process of continuous knowledge transformation and improvement in organizations. Crossan et al. (1999) suggested four main processes of OL. First, intuiting is the preconscious recognition of patterns and possibilities inherent in a personal experience. Second, interpreting is the explanation of an idea to oneself and to others through words or actions for building shared meanings and understandings. Third, integrating is the mutual adjustment, negotiated action, and shared practice among individuals. Last, institutionalizing is the process of formalizing actions from individual practices to the organizational routines. These processes are embedded in the workplaces and practices of organizational members, and collective knowledge is built through participation and negotiation of meaning among the members. Event reporting systems that invite participation and support communication and collaboration among the staff to resolve and learn from safety events have great promise for improving organizational learning and supporting patient safety.

In health care settings front-line practitioners spend the most time with patients and are most likely to observe safety events. These practitioners, against human and social barriers about reporting safety events, must feel free to report events and be supported in working with managers to identify root causes and safety solutions. It takes a cooperative team to construct a safety culture and to prevent errors from happening again. Collective knowledge and organizational learning are developed through member interactions that include negotiation of meaning. Technology can, and perhaps must be used in hospital settings given the time, distance and role separation inherent in hospital staffs, to mediate and support these interactions by providing timely information, facilitating communication processes, and supporting coordination and cooperation process among members regardless the physical barriers. Additionally appropriate design can turn these interactions into collaborative and organizational learning opportunities. The purpose of this study is to build new knowledge about how health care professionals collaborate in knowledge building for organizational learning and enhancing patient safety as well as in what ways information technology can influence the process of organizational learning.

## Methodology

This case study was conducted in the context of University of Missouri Healthcare (UMHC), that in 2000 developed the electronic event reporting system, Patient Safety Network (PSN), to support healthcare safety. PSN is a web-based application that allows users to include general comments while reporting specific safety-related events. After an event submission, the report is directed to the responsible departments for review and resolution. PSN has been implemented for four years, and it has proven to be a successful system for reporting events (Kivlahan, et al., 2002). In 2005 a design effort was begun to advance PSN from simply a reporting system to a more collaborative problem resolution system with hopes that the new focus could facilitate a stronger culture of safety and support individual and organizational learning for promoting patient safety. A qualitative research design is used to best understand the healthcare context and the ways that healthcare professionals collaborate for knowledge construction in their work practice and activities. The target population included staff members who had event reporting or resolution responsibility, such as managers, staff, etc. In order to rapidly collect rich information of healthcare professionals' experiences, a purposeful sampling approach was chosen. The sampling criteria were the self-reported participation in PSN and the work locations. Two types of areas (ancillary and direct patient) were selected for participation. A total of 12 participants (4 managers and 8 general users) were recruited in four different units. Two individual semi-structured interviews asked the participants to talk about their use of PSN with two months apart. The interim period allowed the researchers to examine the first responses for the follow-up interviews. In the interest of finding the common themes and critical elements, the OL framework was used as a lens for data analysis.

## Results

### Intuiting of Event Reporting through PSN

In general, managers were the most frequent users of PSN as they regularly used it to resolve events while general users use it irregularly to report events that arose infrequently. Both managers and general users recognized the benefits and new opportunities of PSN for event reporting and resolution over the old paper-based system. Moreover, they also appropriated PSN for other patient related activities beyond event reporting. For example, some participants discovered ways of using PSN to seek expertise or help from outside their unit for problem solving.

### Interpreting and Sense Making through PSN

Participants expressed a belief that the use of PSN had improved the efficiency of coordination and communication among individuals and departments for event reporting. Moreover, they found that by submitting an event to PSN, that some professionals in the UMHC who had knowledge, expertise, or resources became engaged to help solve the problem. This result demonstrated an innovative individual learning in PSN for accessing knowledge and expertise from the right people at the right time. However, most meaning negotiation among individuals, such as event investigation and discussion, took place outside PSN. Overall, PSN served as a trigger for initiating more face-to-face or other online communication and discussion but not as an effective mechanism. The implications seem to be that to the extent that communication and collaboration could be supported in PSN that would cut down the costs of using other mechanisms, replicating information that was already in PSN, and create a more complete report of the problem and resolution, which is the foundation for establishing the common ground among individuals.

However, some controversy was reported. Some participants wanted to have anonymous reports, while others argued that showing individual's identity could help establish validity and credibility for an event. Furthermore, managers felt that anonymous reports hindered the meaning negotiation process due to lack of communication and follow-up available under this type of circumstance. Another barrier for building a common understanding about an event is the lack of feedback returned to individuals and that contributions of submitting reports were not well recognized. Many participants saw event reporting as not just something to which they impersonally submitted an event, but rather they felt eager to know the details of what happened because of their submission and to learn how best to deal with the situation in the future. They expressed strong needs for active involvement and engagement in the process of resolution. With a strong intention for active participation and contribution, the lack of feedback or unclear responses seems to be a major limitation that hinders their participation and ability to learn from event reporting. The participants described that when they could not get the feedback they hoped for from the PSN they would turn to other means (email, phone, etc.) to obtain the information that they thought would be helpful and meaningful to them. Moreover, the status that no contributions were recognized or acknowledged by others frustrated the participants, especially when they showed strong intentions to contribute their professional knowledge to help solve a problem. A participant said "Especially when I put in a suggestion about what I think would fix the problem. I look at the list and I look at everyone's resolution, and no one even looks at it or it looks like no one even looks at my suggestion. My suggestion doesn't get seen. That is basically blown off. That's frustrating for me."

## **Integrating of Patient Safety Practice through PSN**

Managers expressed PSN facilitated the negotiation of meanings and helped build common ground among departments as they strove to build a complete picture of an event though sharing information. A manager said “I add their side of story to it, and then that’s the nice part when I go in to look at any resolution all the departments that are included, look at what they put in there so I can see their side of the story. And, sometimes it helps you understand the whole thing in order to help you decide: Hey! We need to get together to look at this further”. Event reporting also provided a chance for managers to discover potential problems for timely training, education, and prevention. However, some challenges were reported when trying to develop collective actions for event reporting and resolution. The lack of integration with other applications was a barrier for building shared work practice and making mutual adjustments in work activities. The participants explained they had to hunt down several different applications and charts to get the information needed for reporting and resolution. Also the hectic and distributed nature of the healthcare work limited the time and effort they had for developing the shared patient safety practice.

## **Institutionalizing of Patient Safety and Learning Culture**

The participants thought of themselves as members of the hospital so they wanted to contribute to positive changes and improvements in the hospital. There were several factors reported that hindered the institutionalization of a blame-free and learning culture. Key among these factors is the lack of feedback from the organization to the contributor. Thus, the participants did not understand in what ways and to what extent their reporting and resolution helped the organization grow and move forward. A manager said “Staff don’t realize that they put a PSN in and something good comes up of it”. The participants were not sure how the reports were used for improving health care quality and enhancing patient safety in the hospital. Similarly, managers also explained that they did not have hospital-wide information that can help them make a higher level solution for patient safety. The lack of feedback limited the formation of learning culture as well as the institutionalization of patient safety practices in the hospital.

## **Discussion and Conclusion**

Several lessons are learned in this study. First, the current PSN has helped make reporting and resolution more efficient and effective by capturing information and supporting flow and coordination. It seems to have positively impacted intuiting, interpreting and integrating, even if only in small ways. Second, while PSN has potential to support some levels of social interaction among users to date it is experienced more as a documentation tool. Third, the participants expressed interest in building personal knowledge and contributing to organizational learning, but the lack of collaboration within PSN made that challenging, and the lack of feedback on submissions frustrated and thwarted the good intentions of the members. Without the ability to interpret and negotiate meanings among individuals, they feel their participation and hence knowledge building ends right after they enter the event data. Fourth, a dynamic tension exists between privacy concerns and recognition of contribution. Fifth, due to the lack of feedback from the departments and the organization, the participants had no sense of collective organizational knowledge being built and no learning cycles of activity were developed for the reporters to advance their knowledge and support organizational performance. To complete the dynamic OL process, feedback is required during the process and the design of information technology must take it into account.

These lessons suggest that the PSN redesign for making greater contribution to OL needs to implement support for collaborative learning, such as feedback and integral communication. Further the redesign should invite members to identify themselves, but respect that in some situations that are not desirable for them. Only in doing so will PSN support individual performance, build collective knowledge, and ultimately improve organizational performance. From an OL perspective, event reporting and resolution can be characterized as an intense knowledge construction activity that can connect healthcare professionals to continuously communicate with each other and learn from events while sharing knowledge and expertise, and to construct a medium which can promote a safety culture in organizations which in turn helps the healthcare organization improve patient safety and care quality.

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