

Assessing and Improving the Performance and Reliability of Surgical Teams

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Learning is the acquired, relatively permanent or persistent change of behavior or behavior potential resulting from instruction, training, and practice (intentional learning) or experience (incidental learning). In the context of professional training of surgical and anesthesia team members, it is goal oriented and motivated by progress towards independent practice. In the perioperative setting, it is more than just factual acquisition; instead, it is building upon, and being shaped by, previously established knowledge, leading to the development of expertise in a particular domain. Learning in the clinical domain is thus facilitated by the principles of adult learning—or andragogy, as elucidated by Malcolm Knowles—in that learning is a) Autonomous and self-directed; b) Experiential; c) Relevant and goal directed; and d) Heuristic.

Interprofessional learning within the surgical microsystem provides a conceptual and practical framework for assessing and improving the organization and delivery of surgical care. Formed around a common purpose or need and often embedded within larger organizations, a clinical microsystem is a small, inter-reliant group of people working together regularly to care for specific patient groups. This environment socializes the team members, and affords the acquisition of unique set of technical, but mainly nontechnical, skills, and some of which can only be attained with great difficulty outside of the relevant micro-system.

Surgical teamwork depends on a willingness of clinicians from diverse backgrounds to cooperate in varied clinical settings (i.e., clinic, operating theatre, intensive care unit, surgical ward) towards a shared goal, communicate, work together effectively, and improve. To achieve high reliability and consistent performance, each team member must be able to (1) anticipate the needs of the others; (2) adjust to each other's actions and to the changing environment; (3) monitor each other's activities and distribute workload dynamically; and (4) have a shared understanding of accepted processes (clinical sense-making), and how events and actions should proceed (shared mental model).

The talk will review work-place (as-in) assessment of technical and non-technical skills, and discuss the roadmap for future research that includes how expertise is developed and sustained, entrustment of professional activities, and how teamwork training should be structured, delivered, and evaluated to optimize patient safety in the perioperative setting. For teamwork skills to be assessed and have credibility, team performance measures must be grounded in team theory, account for individual and team-level performance, capture team process and outcomes, adhere to standards for reliability and

validity, and address real or perceived barriers to measurement. The interdisciplinary nature of work in the perioperative environment and the necessity of cooperation among the team members play an important role in enabling patient safety and achieving reliability. Training team leaders and surgical teams in this manner will lead to better professionalism, satisfaction, joy at work, and reduced burnout of surgical team members.