Bridging the Gap between Work-as-Imagined and Work-as-Done

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To improve the safety and quality of healthcare, we try to understand and improve how healthcare providers accomplish patient care "work." This work includes synthesizing information from a patient's history and physical examination or from a handoff; performing tests or procedures; administering medications; and providing information so that patients can make the best choices for themselves. Sometimes this work flows very well and everyone is pleased with the results. Sometimes this work does not unfold in the way that was anticipated. Perhaps the patient's condition is more complicated than usual, or perhaps a needed resource—a medication, a piece of equipment, available operating room time, or a consultant—is not readily available. Perhaps there is time pressure, or we encounter distractions and interruptions. Healthcare providers often complete tasks that are necessary for patient care despite obstacles in their path, and without necessarily reporting, let alone fixing, those obstacles.

Efforts to improve healthcare work will not succeed without recognizing that there is a difference between a theoretical construct of "work-as-imagined" and the reality of "work-as-done" (see Figure). Work-as-imagined is the illusory ideal state. Hollnagel describes work-as-imagined as what designers, managers, regulators, and authorities believe happens or should happen, which becomes the basis for design, training, and control. In contrast, work-as-done is what truly occurs and what people actually do during patient care.[1]
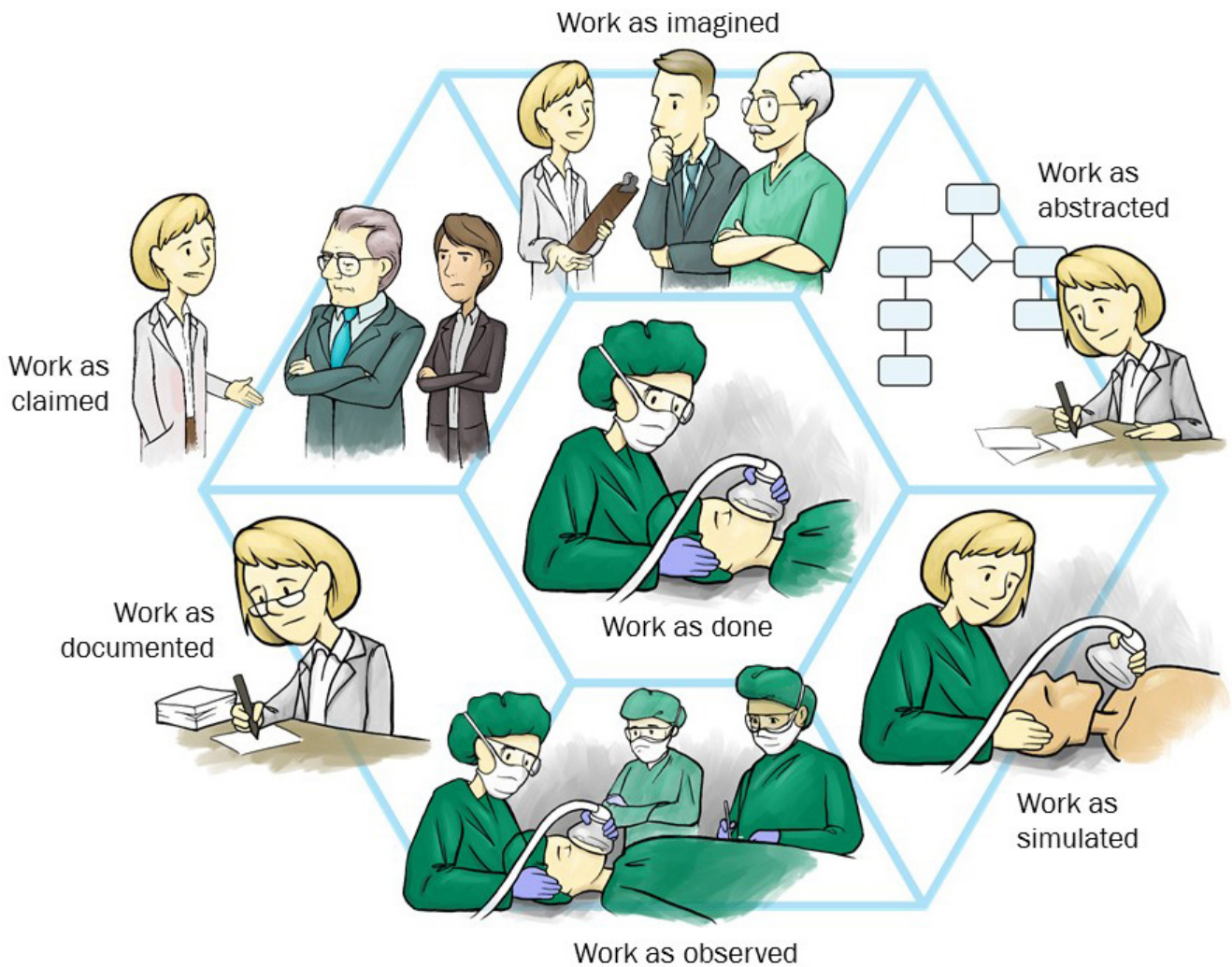
Although a complete and perfect understanding of work-as-done is a worthy goal, healthcare delivery is a complex adaptive system that is in constant evolution with fluid, dynamic changes.[2-6] Complete understanding is an unattainable ideal. Work-as-imagined provides information based on conceptual processes; it can offer a valuable hypothetical construct of the work in question, and may be used to develop theoretical concepts and generalizable guidance. Work-as-imagined may not reflect actual conditions that impact patient care at the "sharp end," the point in patient care that directly impacts patients. However, exploring the gap between work-as-imagined and work-as-done does afford opportunities to look at work through a variety of lenses, each of which provides complementary information. Each lens has attributes and limitations; a preliminary exploration of several potential lenses, such as "work-as-documented" and "work-as-observed," follows.

With the blossoming of computer science, discrete event simulation can be used to analyze patient flow, predict demands for services, and mathematically model the impact of interventions on patient care processes. Standardized parameters for process components can be manipulated to calculate the effect of increasing patient volume or restructuring patient flow processes (e.g., change the triage process, add an ultrasound machine). Discrete event simulation can facilitate analysis of nonlinear interactions between variables and their intermediary agents; this could be considered "work-as-abstracted."[7]

"Work-as-observed" occurs when care providers know they are being watched, whether informally by trainees or colleagues during patient care, or formally, such as during evaluations (e.g., certification examinations) or as participants in research. The well-known Hawthorne effect posits that participants modify their actions when they know they are being observed.[8] As a consequence, the work that occurs during, for example, executive walkrounds, may not fully represent the work that occurs in normal situations.

Documentation, fundamentally linked to patient care activities, serves many masters. Documentation is used to communicate meaningful patient care information, support

Figure. Facets of the Work Process

Work as imagined

Work as abstracted

Work as claimed

Work as done

Work as documented

Work as simulated

Work as observed

billing, and provide medicolegal information. The accuracy and completeness of "work-as-documented" may be impacted by the skills and memory of the person documenting, the ease or challenge of the documentation process, and the temporal distance between the patient care event and the opportunity to document. When a scribe is added to the documentation process, opportunities for incomplete understanding and miscommunication may arise. Understanding work-as-done by using administrative databases, chart audits, and trigger tools[9-12] relies on work-as-documented.

Claims are written demands for compensation for medical injury, which may be submitted by patients and their families because they have been advised

to sue; because they perceive physician dishonesty; because they seek information, resources for future medical costs, or revenge; or for other reasons.[13,14] "Work-as-claimed" is a lagging indicator, often reflecting occurrences that are several years old.[13,15] The relationship between medical malpractice events and medical malpractice claims is complicated and nonlinear.[14] Some claims are without merit, whereas the majority of patients who sustain a medical injury as a result of negligence do not sue.[13]

Simulation uses manikins or other equipment to replicate patient care experiences, allowing healthcare workers to practice their skills without direct risk to patients.[16] Simulations conducted in situ, in actual patient care settings, provide a way to study and improve patient care processes while concurrently enhancing both team and individual patient care skills.[17] A limitless variety of patient care processes can be simulated. Simulations may range from simple tasks such as transporting a patient into a new patient care area or conducting a handoff, to complex tasks such as preparing to implement a new electronic health record module, implementing and maintaining a patient on extracorporeal membrane oxygenation (ECMO), activating a protocol for massive transfusion, or conducting a disaster drill.[18-21] "Work-as-simulated," including skilled debriefing, may come the closest to replicating work-as-done, particularly for uncommon events.[22]

Because healthcare delivery is a complex adaptive system, understanding work-as-done is a daunting task, and no single perspective will provide the whole truth. In an extensive review of the advantages and limitations of different methods used to monitor patient safety, Sun asserts, ". . . different methods for detecting patient safety problems overlap very little in the safety problems they detect. These methods complement each other and should be used in combination to provide a comprehensive safety picture of the health care organization."[23] Recognizing the attributes and limitations of each patient safety lens can help facilities develop a more comprehensive and realistic understanding of work-as-done, which can then inform efforts to improve patient safety.

NOTES

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THE PENNSYLVANIA PATIENT SAFETY AUTHORITY AND ITS CONTRACTORS

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