Purpose: To address medical students’ need for actionable feedback, institutions have designed and implemented work-based assessment (WBA) tools for formative assessment of students’ clinical performance. However, WBA tools are often misused or underused due to poor user buy-in, misconception of purpose, and inadequate user training. Improving use of WBA tools requires understanding of their role within the system in which they are situated. Cultural historical activity theory (CHAT) provides a framework for analysis of tool usage within systems. CHAT considers how tensions among rules and norms, relationships within the community, division of labor, and beliefs about the purpose of an activity (e.g., WBA tool use) both shape and are shaped by a system’s culture (e.g., formative assessment and feedback culture in clerkships). This study explored medical students’ experiences with a WBA tool in core clerkships to identify components of a feedback activity system and tensions among these components.

Methods: In this qualitative study, investigators conducted semistructured interviews with clerkship students at the University of California, San Francisco. Students in 2 different clerkship years (2019 and 2020) experienced different iterations of a WBA. The WBA tool was designed to provide students with formative feedback through discussion with a supervisor, documented with the tool for display in a student dashboard to guide future learning. The year 1 WBA version required tool completion by supervisors via the school’s evaluation system on a computer. The year 2 WBA version enabled either student or supervisor initiation and documentation accessed via a QR code on a smartphone, outside the summative evaluation collection system. Interview questions informed by CHAT solicited students’ experiences with the WBA tool. Investigators used CHAT to guide thematic analysis of interview transcripts and identify tensions within the systems that shaped the formative assessment and feedback culture.

Results: Thirty-five students participated in interviews. Investigators identified 5 primary system tensions that shifted with time and tool iteration: misinterpretation of WBA as summative assessment, cumbersome tool design causing delayed feedback, concern of burdening supervisors with WBA tasks, WBA requirement as checkbox activity, and WBA within clerkship-specific learning culture. In year 1, use of a computer-based WBA interface that resembled formal evaluations exacerbated these tensions. Students described WBA feedback as largely unhelpful due to delayed supervisor completion, supervisor misunderstanding of tool purpose, and technical difficulties. Students perceived dissatisfaction among classmates and supervisors with the year 1 WBA version. In year 2, tool modifications including a mobile interface separate from formal evaluations and increased student autonomy through learner-initiation capabilities resolved tensions around inefficient tool technology and reduced tensions around burdening supervisors and fulfilling school requirements. Students perceived greater acceptance of the WBA by students and supervisors, especially in clerkships in which supervisors promoted tool use. Year 2 WBA version better achieved its intended purpose of formative assessment.

Discussion: Using CHAT to explore changes in a feedback system over time with WBA tool iteration revealed elements important to future design of WBA tools and systems for formative assessment. Priorities include differentiating technology platforms for formative and summative assessment, designing technology for tool efficiency, promoting supervisor acceptance of WBA, and affording students autonomy to initiate and document feedback encounters. Further investigation of feedback systems from other perspectives is needed to identify and alleviate tensions that inhibit achievement of formative assessment in clerkship environments.

Significance: Addressing factors within feedback activity systems that influence WBA implementation such as tool design, user convenience, and learner-initiated feedback is essential to enhance feedback to students and promote culture change to support formative assessment.

Using Activity Theory to Explore How Changes in a Work-Based Assessment Tool Can Alter Feedback Systems in Clerkships

Lauren B. Phinney, MD, Angelina Fluet, Bridget C. O’Brien, PhD, Lee Seligman, MD, and Karen E. Hauer, MD, PhD

Reference:
Factors that contribute to residents' perception of autonomy and its relationship to clinical decision-making opportunities and motivation to learn are incompletely understood. Examining these relationships may augment the professional development of residents despite the current conditions of increased supervision. This study explored relationships between residents' opportunities to make clinical decisions and their feelings of ownership over patient care with autonomy, motivation to learn, and burnout.

Methods: We recruited residents from 3 different pediatric programs in 2019–2020 for semistructured interviews using critical incident technique and explored experiences related to remembered moments of decision making. We invited participants to complete the Maslach Burnout Inventory (MBI) to trigger reflections on experiences of burnout. We analyzed data through an iterative, inductive process in which 2 investigators coded interview transcripts to generate themes. We used Dedoose (UCSF, San Francisco, California) software for analysis. Institutional review boards approved this study.

Results: Thirty-eight residents participated in interviews. We identified 3 major themes:

1. Decision-making opportunities can be diminished by (a) learning environment (culture, subspecialist involvement), (b) patient factors (complexity, acuity), and (c) resident factors (seniority, knowledge, confidence).

2. Sense of ownership is most affected by (a) relationship with patients and families and (b) inclusion in decision making.

3. Cultivation of purpose is attributed to (a) relationships with families, team, and supervisors, and (b) finding and holding a voice.

Residents defined patient care ownership as the doctor who takes care of the patient, regardless of who makes the decisions. The degree of patient care ownership residents felt varied by institution.

Residents described burnout more often when they perceived decreased ownership of patient care, increased subspecialty involvement (often related to patient complexity), or other structural factors such as lack of ancillary staff.

Discussion: Our study showed that in pediatric residency training, autonomy, and supervision are not necessarily mutually exclusive. Residents reported feeling ownership of patient care even in the absence of perceived autonomy. Being the primary communicator with patients and families and having space to participate in the decision-making process was critical to residents feeling ownership over clinical care of a patient. Furthermore, the role of primary communicator allows residents to build relationships with patients and families, which for many constituted a critical factor in their ability to find joy at work and stave off burnout.

At all 3 institutions, team composition, and patient complexity were contributing factors. At institutions where subspecialists were the primary decision makers or present on daily rounds, residents felt less of a sense of patient care ownership and even a loss of purpose, often describing that they were nothing but a conduit for decisions. As such, characteristics of individual supervisors appeared less important than such structural factors.

Significance: Residents' ability to feel ownership over patient clinical care is essential for professional development, but this is diminished by several factors outside of residents' control, including institutional culture and patient complexity. Lessons learned from this study can aid in shifting the focus from allowing resident autonomy to promoting resident ownership of patient care despite increased supervision.

Correspondence should be addressed to Margaret Robinson, Department of Pediatrics, University of California, San Francisco, 550 16th St., San Francisco, CA 94158; email: Margaret.robinson@ucsf.edu.

Author affiliations: M. Robinson, S.M. van Schaik, University of California, San Francisco; J. Bowen, Washington State University Elson S. Floyd College of Medicine; M. Aylor, Oregon Health & Science University

Funding/Support: Association of American Medical Colleges Western Group on Education Affairs (WGEA).

Other disclosures: None reported.