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Evaluation of the Characteristics of a Workplace Assessment Form to Assess Entrustable Professional Activities (EPAs) in an Undergraduate Surgery Core Clerkship

Vernon R. Curran, MEd, PhD, Diana Deacon, MSc, MEd,† Henry Schulz, MEd, PhD,‡ Katherine Stringer, MBChB,§ Craig N. Stone, MD,¶ Norah Duggan, MD,§ and Heidi Coombs-Thorne, MA, PhD†*

*Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada; †Medical Education Scholarship Centre (MESC), Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada; ‡Faculty of Education, Memorial University, St. John's, Newfoundland, Canada; §Discipline of Family Medicine, Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada; and ¶Discipline of Surgery, Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada

OBJECTIVE: Entrustable Professional Activities (EPAs) are explicit, directly observable tasks requiring the demonstration of specific knowledge, skills, and behaviors that learners are expected to perform without direct supervision once they have gained sufficient competence. Undergraduate level implementation of EPAs is relatively new. We examined the characteristics of a workplace assessment form (clinic card) as part of a formative programmatic assessment process of EPAs for a core undergraduate surgery rotation.

DESIGN: A clinic card was introduced to assess progression towards EPA achievement in the clerkship curriculum phase. Students completing their core eight (8) week clerkship surgery rotation submitted at least 1 clinic card per week. We compiled assessment scores for the 2015 to 2016 academic year, in which EPAs were introduced, and analyzed relationships between scores and time, EPA, training site, and assessor role. We surveyed preceptors and students, and conducted a focus group with clinical discipline coordinators of all core rotations.

SETTING: This study took place at the Faculty of Medicine, Memorial University in St. John's, Newfoundland, Canada.

PARTICIPANTS: Third year medical students ($n = 79$) who completed their core eight (8) week surgery clerkship rotation during the 2015 to 2016 academic year, preceptors, and clinical discipline coordinators participated in this study.

RESULTS: EPAs reflecting tasks commonly performed by students were more likely to be assessed. EPAs frequently observed during preceptor-student encounters had higher entrustment ratings. Most EPAs showed increased entrustment scores over time and no significant differences in ratings between teaching sites nor preceptors and residents. Survey and focus group feedback suggest clinic cards fostered direct observation by preceptors and promoted constructive feedback on clinical tasks. A binary rating scale (entrustable/pre-entrustable) was not educationally beneficial.

CONCLUSIONS: The findings support the feasibility, utility, catalytic and educational benefits of clinic cards in assessing EPAs in a core surgery rotation in undergraduate medical education. (J Surg Ed ■:■■■-■■■. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: entrustable professional activities, workplace assessment, programmatic assessment, undergraduate, surgery, education

COMPETENCIES: Practice-Based Learning and Improvement, Patient Care, Systems-Based Practice, Medical Knowledge, Interpersonal and Communication Skills, Professionalism

Correspondence: Inquiries to Vernon R. Curran, MEd, PhD, Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada A1B 3V6; e-mail: vcurran@mun.ca

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INTRODUCTION

An important strategy for assessing learners in competency-based medical education (CBME) is workplace assessment. With such an approach, experts are engaged in the direct observation of learners to assess their competence in the context of actual care delivery.[1] Entrustable professional activities (EPAs) have been put forward as a means to improve assessment in CBME by operationalizing competencies and milestones in the clinical setting, and focusing assessment on key activities performed by the learner that demonstrate competence. EPAs have been described as tasks or responsibilities that learners are expected to perform without direct supervision once they have gained sufficient competence.[2] EPAs represent explicit, directly observable tasks that require the demonstration of specific knowledge, skills, and behaviors. It has been suggested that EPAs focus on the qualities of the work to be completed, ground outcomes in the tasks of physicians, and offer an approach to CBME that better addresses concerns around integration of competency domains.[3]

As an offshoot of approaches to CBME, EPAs provide a framework to standardize medical education outcomes and advance competency-based assessment.[4] Although primarily implemented at the postgraduate level, undergraduate programs are examining the use of EPAs in clinical assessment.[5] While competencies describe a student's abilities, EPAs are units of professional practice.[6] ten Cate explains that while "competencies are descriptors of physicians, EPAs are descriptors of work," and are therefore "not an alternative for competencies, but a means to translate competencies into clinical practice."[7] Competencies and EPAs can be viewed as interrelated, as one is necessary to explain the other. Together, they form an intertwined matrix for medical education.[8] The Association of American Medical Colleges (AAMC) describes in the 2014 guide "*Core Entrustable Professional Activities for Entering Residency*" the benefits of EPAs as a conceptual framework for medical education, and defines them as 'activities' that make sense to faculty, trainees, and the public.[9] Undergraduate medical education EPAs, such as those proposed by the AAMC, may help to focus student assessment more directly on workplace activities.[3]

Given the novelty of EPAs, particularly with implementation at the undergraduate level, current interest includes examining best-practice approaches and methods for assessing EPA progression and achievement. It has been suggested that EPAs can provide a holistic perspective on learner assessment and a graded supervision approach for learners is recommended in which they progress through EPAs with decreasing levels of supervision.[7,10] Others have called for a more granular approach to progression through EPAs, especially in the earlier years of training,[3,11,12] while some have emphasized the Dreyfus and Dreyfus model of skill acquisition for assessing learners as they progress from novice to expert.[3,4,10] The challenge of effectively assessing EPAs at all levels of medical education has been highlighted by several researchers as traditional assessment tools can be overly subjective and highly variable.[13] Norcini et al.[14] have described assessment of work and assessment of newer competencies, such as EPAs, as a category of assessment that requires further evidence and research to inform future practices and approaches of assessment in these areas.

Norcini et al.[14] have introduced a set of criteria for good assessment that includes: validity or coherence, reproducibility or consistency, equivalence, feasibility, educational effect, catalytic effect, and acceptability. For formative assessment, "catalytic effect" is highlighted as a key criterion of effective assessment that is concerned with providing results and feedback that enhances and fosters education, or in other words supports further learning. Validity-coherence, educational effect, feasibility, and acceptability are also important criteria to consider in the evaluation of formative assessment systems.[14] Educational effect concerns the way in which the assessment motivates learners to prepare in a way that fosters learning. Feasibility evaluates the extent to which the assessment is practical and realistic, while acceptability is concerned with stakeholders' views on the credibility of the assessment process.

A key element for the implementation of core EPAs is learner assessment based on frequent formative assessments that inform entrustment decisions based on aggregate evidence.[15] At our institution, we introduced a new programmatic assessment process across the clerkship phase of the curriculum that involved the adoption and assessment of EPA achievement. We based this new assessment process on the concept of programmatic assessment developed by Cees van der Vleuten; a longitudinal form of assessment using regular aggregates of different low and high stakes assessment methods to assess progression toward competency. These aggregates then form the basis of customized learning plans.[16,17] It is believed that this assessment approach will foster the acquisition of competencies within specific disciplines and the longitudinal progression of competencies across disciplines throughout clerkship, resulting in a competent undifferentiated graduating physician. Central to assessing whether a learner can be entrusted to perform a particular EPA is direct observation of the learner in clinical settings by faculty supervisors.[4] We developed clinic card forms to enable the assessment of medical student progression towards EPA achievement. The purpose of this study was to evaluate the characteristics of this new workplace assessment form and the adoption of EPAs as a means of formative programmatic assessment in our undergraduate medical education curriculum.

MATERIAL AND METHODS

Memorial University of Newfoundland's Faculty of Medicine offers a 4-year undergraduate medical program leading