

Health Professions Education Institute (HPEI)

WORKS IN PROGRESS

Title: *Impact of Just-in-Time Teaching Screencasts on patient outcomes for an Inpatient Hematology-Oncology Teaching Service*

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Background/Needs Assessment:

Medical trainees have identified hematology and oncology as areas of need for improved education [1,2]; however, the clinical workload of trainees limits the efficacy of traditional teaching models [3]. Just-in-time teaching (JiTT) screencasts are a novel educational intervention that is acceptable among trainees on an adult inpatient hematology-oncology service (IHOS) [4]. Nonetheless, more research is needed to justify implementation. A JiTT format fits well within the conceptual framework of self-determination theory, which states that adult learners have intrinsic motivations to learn based upon drives for competence, autonomy, and relatedness [5]. We hypothesize that the implementation of JiTT screencasts will change trainee behavior based on self-determination theory and improve patient outcomes.

Objectives:

This study will measure whether JiTT screencasts improve higher-level educational outcomes among internal medicine (IM) residents.

Methods/Description of Program:

We have identified a list of common medical problems encountered on an IHOS using retrospective data. We have identified a list of potential patient outcomes that we can

retrospectively measure via the electronic medical record (EMR), for example, time to dexamethasone administration for symptomatic cerebral edema. We will conduct a survey-based needs assessment with IM residents to identify medical problems and corresponding patient outcomes with the most need for an educational intervention. We will utilize these data to produce a JiTT screencast curriculum and administer it to residents. The primary outcome will be the proportion of patients who receive a clinical intervention optimally (e.g., improvement in time to dexamethasone administration) (Kirkpatrick level 3) [6]. Secondary outcomes will include improvement in medical knowledge (level 2b).

Anticipated Results/Evaluation Plan:

We will perform a single-arm, pre- and post-intervention assessment using qualitative and quantitative measures. We will assess learner satisfaction and clinical management comfort level using Likert scale style questions in surveys administered at the end of residents' rotations. We will assess medical knowledge using clinical vignette-style, multiple-choice questions. We will collect retrospective data from the EMR to assess for changes in patient outcomes. We anticipate that learners will have increased knowledge in topics watched and that this will translate into behavioral changes as well as improved patient outcomes.

Next Steps:

Future aims will be to inform the implementation of these screencasts at other academic institutions.

References:

1. Tam, V. C. *et al.* Oncology education in Canadian undergraduate and postgraduate medical programs: a survey of educators and learners. *Curr. Oncol.* **21**, e75–88 (2014).
2. Mohyuddin, G. R. *et al.* A Critical Appraisal and Targeted Intervention of the Oncology Experience in an Internal Medicine Residency. *J. Cancer Educ.* **36**, 1290–1294 (2021).

3. Mangum, R., Lazar, J., Rose, M. J., Mahan, J. D. & Reed, S. Exploring the Value of Just-in-Time Teaching as a Supplemental Tool to Traditional Resident Education on a Busy Inpatient Pediatrics Rotation. *Acad. Pediatr.* **17**, 589–592 (2017).
4. Kuhlman, P. D. *et al.* Just-in-Time Teaching (JiTT) Screencasts: a Randomized Controlled Trial of Asynchronous Learning on an Inpatient Hematology-Oncology Teaching Service. *Journal of Cancer Education* (2021) doi:10.1007/s13187-021-02016-z.
5. Zackoff, M. W. *et al.* Enhancing Educational Scholarship Through Conceptual Frameworks: A Challenge and Roadmap for Medical Educators. *Acad. Pediatr.* **19**, 135–141 (2019).
6. Boet, S., Sharma, S., Goldman, J. & Reeves, S. Review article: medical education research: an overview of methods. *Can. J. Anaesth.* **59**, 159–170 (2012).