OBJECTIVES/GOALS: The Competency-Based All-Level Training (COBALT) curriculum standardizes learning for clinical research coordinators (CRCs) across multiple institutions within Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI), with flexible, topic-specific training at all experience levels, in both academic and industry-sponsored research. METHODS/STUDY POPULATION: The COBALT curriculum was developed in collaboration with subject matter experts, managers of CRCs, and other clinical research professionals from institutions across the WWAMI region. A thorough assessment of existing training programs within the region helped identify gaps and unmet needs. The curriculum was designed within a user-friendly learning management system that can be accessed across institutions. It has been piloted with diverse groups and committees of CRCs, professionals, and institutional leaders in clinical and translational science. Ongoing evaluation is being conducted qualitatively using built-in assessment surveys, demonstrations, and interviews. RESULTS/ANTICIPATED RESULTS: The anticipated outcome is the creation of a highly standardized and efficient training program for clinical research professionals across multiple institutions in the WWAMI region. This program will be carefully tailored to each professional's level of experience, ensuring personalized skill development. By aligning training with diverse expertise levels, the initiative aims to significantly elevate the quality, consistency, and overall performance of clinical research efforts across the regional research community. DISCUSSION/SIGNIFICANCE OF IMPACT: The COBALT curriculum provides a vetted learning curriculum for CRCs, with a tailorable training plan that helps them collaborate with their supervisors to tailor training to their career goals. This ensures that the curriculum is not only comprehensive but also adaptable to individual needs.

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An algebra assessment and primer for future clinical and translational scientists entering training

Angie Mae Rodday[1,2], Vincent Costello[3], David M Kent[1,2] and Joshua T Cohen[4]
[1]Tufts CTSI; [2]Tufts University School of Medicine; [3]Case Western Reserve University and [4]Tufts University School of Medicine, Center for the Evaluation of Value and Risk in Health at Tufts Medical Center

OBJECTIVES/GOALS: Trainees in clinical and translational science (CTS) take courses in biostatistics, epidemiology, and other quantitative areas. To be most successful, trainees require competency in algebra. We developed a quantitative assessment and study guide to assess trainee's quantitative skills and provide review material to address weaknesses. METHODS/STUDY POPULATION: The Tufts CTS Graduate Program is the training core of the Tufts CTSI and its associated pre- and post-doctoral T32 awards. Approximately 10 trainees with a range of backgrounds (e.g., physicians, medical students, master's-level researchers, and basic science PhDs) and varying math education experiences matriculate each year. We wanted to address the resulting range of quantitative skills to help students succeed in our program. In Spring 2023, we met with faculty teaching quantitative courses to identify core algebra concepts needed to succeed in their classes. A graduate student in computational mathematics with extensive tutoring experience then drafted assessment questions, a comprehensive study guide, and brief cheat sheet. The material was reviewed and revised with input from quantitative faculty. RESULTS/ANTICIPATED RESULTS: We developed a 20-item quantitative assessment covering properties of operators; identity elements and inverses; simplification of arithmetic and algebraic expressions; solving algebraic equations; functions; equations of a line; and exponents/logarithms. A cheat sheet provided trainees with a brief refresher for these topics. A study guide provided more detailed instruction, example exercises and solutions, and referenced publicly available, online resources (e.g., Khan Academy). During the introductory summer course for the Tufts CTS Program, trainees were allowed to use the cheat sheet and were given 1 hour to complete the assessment. Trainees who got questions incorrect were directed to relevant sections in the study guide. We anticipate collecting formal feedback to evaluate the material. DISCUSSION/SIGNIFICANCE OF IMPACT: Trainees must have adequate foundational algebra skills to succeed in CTS graduate programs and as future researchers. Developing a quantitative assessment allowed us to identify areas of weakness resulting from educational disparities or reflecting other aspects of their backgrounds and to provide material to reinforce their preparation.

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Development of science communication rubrics for trainees in clinical and translational science

Angie Mae Rodday[1,2], Nicholas Frank[3], Robert Sege[1,2], Robert J Goldberg[4], Elizabeth Leary[1], David M Kent[1,2] and Joshua T Cohen[5]
[1]Tufts CTSI; [2]Tufts University School of Medicine; [3]Mississippi State University College of Veterinary Medicine; [4]UMass Chan Medical School and [5]Tufts University School of Medicine, Center for the Evaluation of Value and Risk in Health at Tufts Medical Center

OBJECTIVES/GOALS: Trainees in clinical and translational science (CTS) must learn to effectively communicate their research ideas and findings to a range of audiences. As part of our science communication curriculum, we developed ORAL and WRITTEN science communication rubrics for our trainees to use across their courses and research activities. METHODS/STUDY POPULATION: The Tufts CTS Graduate Program is the training core of the Tufts CTSI and its associated pre- and post-doctoral T32 awards. Approximately 10 trainees with a range of backgrounds (e.g., physicians, medical students, master's-level researchers, and basic science PhDs) matriculate each year. Faculty members and staff with expertise in science communication and pedagogy formed a committee to develop the rubrics. Because oral and written communication require different skills, we developed separate rubrics for each. We reviewed our current science communication curriculum, reviewed existing communication rubrics, and identified common mistakes students make. Following pilot testing by students and faculty pilot for one semester, we modified the rubrics based on informal feedback. RESULTS/ANTICIPATED RESULTS: Both rubrics include a section to identify the target audience and specific items organized by theme. Oral rubric themes include presentation content, slides, verbal communication, nonverbal communication, and following instructions. Written rubric themes include overall, manuscript/proposal sections, and following instructions. The rubrics serve as feedback tools for faculty and students to evaluate work others produce and as self-evaluation tools. Feedback elements include a 4-point

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