the proportional hazards model was confirmed visually using log-log plots and goodness of fit assessment. RESULTS/ANTICIPATED RESULTS: A total of 413 patients were identified for inclusion in the study. The majority of patients (83%) were of non-White race. Bivariate analysis revealed no significant associations between age, BMI, or race with diagnosis of VTE ($p = 0.75$, 0.49, and 0.28, respectively). Patients who had more than 2 risk factors for VTE had a significantly increased likelihood of VTE diagnosis ($p = 0.02$). There was a highly significant association between stage of USC and diagnosis of VTE ($p = 0.005$). Patients with stage III and stage IV cancer were 2.4 and 3.5 times more likely to develop VTE than patients with stage I cancer (95% CI: 1.09–5.30, 1.74–6.83, respectively). Of the 70 patients who were diagnosed with VTE, most were not postoperative (64.3%) and a large proportion developed clots while receiving chemotherapy (35.7%). Patients who developed VTE while on chemotherapy had a median Khorana score of 1 (IQR: 1, 2). In logistic regression modeling examining association of VTE with potential risk factors, covariates selected as significant for inclusion at the $p < 0.25$ level included cancer stage, composite number of risk factors, diabetes, hypertension, cardiovascular disease (CVD), and COPD. Composite risk score was identified to be a potential confounder of the relationship between individual risk factors and development of clot and was therefore left in the model for adjustment. After adjusting for other covariates, only stage 4 disease (OR: 2.66, 95% CI: 1.53, −4.64) and hypertension (OR: 2.90, 95% CI: 1.14–7.36) were associated with development of VTE and were included in the final model. No concerning violation of assumptions of logistic regression or interaction was identified. The Hosmer-Lemeshow goodness of fit test identified that the model was well-fit using 10 groupings ($p = 0.35$) and receiver operator characteristic testing showed that the model had acceptable discrimination with a ROC value of 0.7. The final model was found to classify 83.1% of participants correctly. Regression diagnostics identified 4 potentially influential covariate patterns. These patterns were eliminated from the model and no meaningful differences were noted. Patients contributed a total of 16,414 person months of analysis time in study follow-up. A negative, linear association was noted between stage of cancer and time to clot development. Long-rank testing revealed a significant difference in failure by stage of disease ($p < 0.001$) and presence of hypertension ($p = 0.03$). Cox proportional hazard modeling revealed that after adjustment for other covariates, only cancer stage and the presence of cardiovascular disease were significantly associated with time to failure. Patients with cardiovascular disease had a 2.02-fold increased risk of CVD compared to those without CVD (95% CI: 1.16–3.47). Those with stage 3 and 4 cancer were 3.19 (95% CI: 1.53-6.64) and 8.05 (95% CI: 4.11–15.78) fold more likely to develop VTE compared to those with stage 1 disease, respectively. DISCUSSION/SIGNIFICANCE OF IMPACT: Our study demonstrated that patients with USC are at high risk of developing VTE at all time points after their disease diagnosis, not just those who have undergone recent surgery. This risk is highest for women with hypertension, CVD, and stages III and IV disease. The fact that patients who developed clots on chemotherapy had an average Khorana score of 1, suggesting that they would not have been successfully risk stratified using previously published tools. To the best of our knowledge, this is the first study to report a high hazard for VTE in patients with serious endometrial cancer even several months after surgical staging. Although this is a retrospective study and cannot make inferences about VTE incidence, it generates the hypothesis that extended VTE prophylaxis may be beneficial in this cohort of patients regardless of their latency from surgical staging. Large randomized studies are needed to test this hypothesis.

2479

Acute care research competencies for clinical research professionals: A practitioner inquiry approach and assessment

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OBJECTIVES/SPECIFIC AIMS: Acute care research is a unique area of clinical research that demands specialized skills, knowledge, and talents from empathetic professionals working in the field. Building off existing competencies for clinical research professionals, the Cincinnati Acute Care Research Council (ACRC) developed additional areas of competency for professionals working in the acute care research discipline. METHODS/STUDY POPULATION: Qualitative data obtained from job shadowing, clinical observations, and interviews were analyzed to understand the educational needs and desires of the acute care research workforce. We then utilized Bloom's Taxonomy to build acute care research competencies that are measurable for job performance and build off of foundational clinical research professionals' domains and competencies developed by the Joint Task Force of Clinical Trial Competency. RESULTS/ANTICIPATED RESULTS: Results suggest 35 special interest competencies for acute care clinical research professionals under 8 common domains set by the Joint Task Force of Clinical Trial Competency. Additionally an approved ACRC tactic, from actionable learnings through community assessments throughout 2017, is the creation of a Task Force made up of acute care research Principal Investigators and Clinical Research Directors to focus on the identified training and professional development obstacles in the clinical research enterprise. DISCUSSION/SIGNIFICANCE OF IMPACT: The competencies developed for acute care research should serve as guidelines for training a workforce prepared for the challenges of conducting research with each acute audience, as its own vulnerable population. These competencies will guide development of a multi-pronged program of professional development that will include new hire onboarding, new hire on-job training, and ongoing on-job training.

2485

Advancing research professionals through competency assessments

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OBJECTIVES/SPECIFIC AIMS: Describe the framework for tier advancement of research professionals. Describe the various forms of assessments of competencies. How competencies are used to provide transparency into professional development opportunities. Discuss the results of the first tier advancement opportunity for research staff. METHODS/STUDY POPULATION: These processes were developed at Duke, an academic medical center with over 2000 active clinical research protocols and 300 new clinical trials per year. Roughly 500 employees are categorized into tiered classifications, allowing them opportunities for advancement through competency testing. Approximately 10% opted for tier testing, and their results will be shared. RESULTS/ANTICIPATED RESULTS: Competency assessments were developed for all 42 of Duke's research professional competencies, some using 2 modalities of testing. Almost 12% of the research professionals classified in tiered positions opted to attempt the tier advancement process. Of those, 37 completed, and the vast majority reached their desired tier. Results by competency will be provided. DISCUSSION/SIGNIFICANCE OF IMPACT: The use of objectively assessed competencies is an important step in the development of a workforce. By (1) maintaining alignment with industry standards for competencies, (2) holding staff to a high bar, and (3) offering a consistent approach to career growth, Duke is working to develop and maintain a workforce that supports high quality research.

2345

An electronic roadmap to customized human research training plans

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OBJECTIVES/SPECIFIC AIMS: To respond to the need for a simple tool to answer individual researchers questions: Exactly what training do I need to complete for my study and my role? Where can we go to find a comprehensive record of my research training? METHODS/STUDY POPULATION: Identify the factors that determine what training is required for each role (i.e., PI, coordinator, biostatistician) at the University, their role on the research study, type of funding, population being studied and responsibilities/duties on the research team. Develop an inventory of training required according to federal and local regulations and guidelines. Identify other related factors that ensure ongoing compliance for research professionals (i.e., medical licenses, CVs, immunizations, and credentials). Collaborate with programming professionals to explore and confirm the feasibility of such a Web site. Incorporate formal usability and pilot testing as part of the programming design process. Develop User Guide and Marketing and Launch plan for users and supervisors. Implement phased launch of the site with Google analytics, and evaluate the experience of phase I users. RESULTS/ANTICIPATED RESULTS: Three months user data and evaluation results demonstrated: 149 users created Training Roadmaps on the site. Users were from 67 different department codes, with the Department of Psychiatry the primary user. 20 users responded to a survey three months after launch. Research coordinators were the primary focus for phase I and represented almost half of the users. Survey respondents rated the site ease of use and clarity of the site as its

https://doi.org/10.1017/cts.2018.196 Published online by Cambridge University Press

greatest benefit. DISCUSSION/SIGNIFICANCE OF IMPACT: In September 2017, CTSI launched a new web-based training tool exclusively for University of Minnesota clinical research professionals who work with human participants, and their supervisors. The Human Research Training Web site is a free, easy-to-use tool to help identify and maintain the appropriate training, certification, credentials, and immunizations needed to perform University of Minnesota research with human participants. The Web site offers the University's first systematic way to identify which research training is necessary for each research professional, and a system to track and maintain training compliance. Training records and information from the University of Minnesota's central databases are securely integrated into this tool. Our Web site tool enhances research compliance. Any given study team member's training requirements vary based on several criteria such as: role at the University, role on the research study, type of funding, population being studied and responsibilities/duties on the research study. The research training Web site generates required and optional training based on individuals' responses to these questions. This Web site also links to the training, which decreases error in taking the wrong training. Furthermore, it provides completion data for research training and is a repository for vital study information such as: medical licenses, CVs, and credentials. Supervisors are able to view training and credentials. They are alerted when one of their employee's licenses or certificates are about to expire. Uses-to-date and evaluation feedback have informed the need for a second phase of Web site enhancements. This site will reside in both the CTSI Web site and the HRPP Web site. A link will be sent to all new University research employees upon hiring. The Human Research Training Web site will likely have applicability to other universities in addition to the University of Minnesota.

2015

Behavioral clinical trials: Considerations for design and conduct using the new NIH study protocol template

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OBJECTIVES/SPECIFIC AIMS: (1) To discuss key differences of behavioral clinical trials from trials involving drugs, devices, and biologics and (2) to discuss NIH efforts to provide a study protocol template for use by investigators conducting behavioral clinical trials. METHODS/STUDY POPULATION: A working group was convened by NIH to refine the commonly used protocol template required for investigators conducting Phase 2 or 3 NIH-funded clinical trials. The committee met by phone regularly for 4 months to review, discuss, and refine each section of the template as needed to include aspects relevant to behavioral trials. RESULTS/ANTICIPATED RESULTS: The behavioral trial protocol template draft has been created and is being further modified by feedback from the research community. DISCUSSION/SIGNIFICANCE OF IMPACT: Use of the NIH behavioral trial protocol template is expected to enhance the quality of any behavioral study, because the template and supporting materials were developed with the unique aspects of behavioral research in mind.

2174

Building the next generation of translational researchers in health disparities

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OBJECTIVES/SPECIFIC AIMS: Translational research involves researchers' teams working together to address health issues. However, successful translational researchers in health disparities require a set of competencies and skills. In order to increase the number of new minority investigators in translational research focused on health disparities, the Hispanics-in-Research Capability: SoHP & SoM Partnership and the Puerto Rico Clinical and Translational Research Consortium designed and implemented a webinar series "Fostering the Next Generation of Researchers in Health Disparities." METHODS/STUDY POPULATION: From March 31 to July 14, 2017, this webinar series offered the theoretical perspectives of health disparities, research methodology specific to its study, and intervention strategies to address health disparities in communities through minority investigators. National and local interdisciplinary experts were the presenters. Participants' experience and impact were assessed through a self-administrated questionnaire. RESULTS/ANTICIPATED RESULTS: A total of 78 minority investigators participated in this webinar. Overall, participants indicated that the webinar improved their knowledge and skills about health disparities research. DISCUSSION/SIGNIFICANCE OF IMPACT: Results guide the programs actions plans to enhance and support the translational researchers' capacity. Diverse capacity building initiatives including peer-to-peer education, online course, tailored coaching, and other interventions have been designed to address researchers' needs. This webinar was a pathway to build the next generation of translational researchers in health disparities.

2140

Clinical and translational research (CTR) platform for undergraduate health sciences programs (UHSP) at University of Puerto Rico-Medical Sciences Campus (UPR-MSC) and Universidad Central del Caribe (UCC): Pipeline for students and faculty

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OBJECTIVES/SPECIFIC AIMS: The University of Puerto Rico-Medical Sciences Campus and Universidad Central del Caribe, through the Title V Cooperative Project, devised a clinical and translational research (CTR) platform to pipeline students/faculty of undergraduate health sciences programs into CTR. Educational interventions in CTR—introductory intervention (II) and Annual Symposium (AS)—were designed to promote awareness, stimulate interest of students and faculty in CTR. METHODS/STUDY POPULATION: In the II the participants (n = 159) were surveyed before and after a presentation and panel discussion about CTR. In addition, after the sessions—plenary, panel, and workshop—about CTR, the participants of AS (n = 42) were surveyed for satisfaction and learning experience in CTR. RESULTS/ANTICIPATED RESULTS: Most participants of the II, 134 (84.3%) were students. In total, 58 (58, 36.5%) completed the post II survey. Of these, 53.4% satisfactorily defined the CTR concept Versus only 31.0% that could define CTR in the pre survey, 47 (81.7%) were unable to identify a CTR researcher and 45 (78.3 %) expressed interest in learning about CTR. In total, 28 (28, 66.7%) participants of the AS completed the satisfaction survey, out of which 17 (60.6%) were students. One hundred percent (100%) agreed that the AS served as a vehicle to increase their knowledge in CTR. DISCUSSION/SIGNIFICANCE OF IMPACT: The educational interventions demonstrated to be an effective strategy to promote awareness and stimulate interest of students and faculty in CTR. In addition, the results obtained, provided valuable baseline information for the planning—development of training cycles in CTR.

2199

Critical and creative thinking course: Fundamental for a junior researcher

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OBJECTIVES/SPECIFIC AIMS: Explain the difference between creative and critical thinking. Practice and enhance the critical thinking skills. Display innovative thinking through creative solutions and insights. Critically evaluate evidence in research. Think imaginatively, actively seeking out new points of view. METHODS/STUDY POPULATION: Offer an online course in Critical and Creative Thinking to junior researchers to improve their capacity to think and transforms their ideas in research questions and aims that bring new option to the field of clinical and translational research. Evaluate their improvement through evaluation forms and exercises that show their process to think imaginatively. RESULTS/ANTICIPATED RESULTS: The Scholars will understood the importance of critical and creative thinking in their careers, believed they could apply the insights and knowledge from the course in their grant and paper writing, recognized that they don't always consider if they are being critical or creative in their thinking and actions. DISCUSSION/SIGNIFICANCE OF IMPACT: The course helped the participants to improve their capacity to think and saw a need to develop a more systematic thought processes in their life and work. The junior research will understand the difference between opinion, reasoned, judgment and fact and they will be able to judge the credibility of an information source using criteria such as authorship, currency and potential bias that can improve their grant submission and scientific writing skills.

https://doi.org/10.1017/cts.2018.196 Published online by Cambridge University Press