

Clinical and Translational Research in Rhode Island: Results of a Needs Assessment Survey

A study performed by the Tracking and Evaluation Key Component Activity (KCA) for Advance-CTR

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ABSTRACT

The Advance-Clinical and Translational Research (CTR) program was established in Rhode Island in May of 2016 with an IDeA Program Infrastructure award to collaborating institutions: Brown University, the University of Rhode Island, with the Lifespan, Care New England and Providence VA Medical Center healthcare institutions and the Rhode Island Quality Institute. To support programmatic planning, the Tracking and Evaluation Key Component Activity (KCA) of Advance-CTR developed and implemented a needs assessment survey to identify the obstacles to clinical and translational research at the participating institutions. We describe the methods used and the responses, which identified needs for study design and data analysis support. Support for project development, pilot funding and grants administration showed significant variation, depending on the affiliation of the respondent. The results of the survey are discussed in the context of Rhode Island's significant opportunities to support and develop the capabilities of scientists who engage in translational research.

KEYWORDS: Clinical and Translational Research; IDeA; needs assessment; survey

Brown University and the University of Rhode Island, with the Lifespan, Care New England, and Providence VA Medical Center healthcare institutions and the Rhode Island Quality Institute received IDeA-CTR funding in May of 2016 to establish the Advance-CTR program in Rhode Island. Specific "Key Component Activities" (KCAs) supported by the grant include research support services (i.e., biostatistics, biomedical informatics and clinical research facilities) and award-based initiatives (pilot project awards and mentored career development awards) along with project management KCAs for administration and tracking and evaluation.

In year 1, Advance-CTR's Tracking and Evaluation KCA completed a needs assessment survey of researchers and associated staff to identify obstacles to clinical and translational research at the participating institutions. We aimed to better understand researchers' needs, to improve services and support offered through Advance-CTR, and ultimately to improve clinical and translational research (CTR) and health outcomes in Rhode Island. We focused on: 1. Identifying researchers interested in CTR in Rhode Island; 2. Identifying perceived barriers to conducting CTR in Rhode Island and 3. Exploring which professional development, educational offerings and support services would best assist researchers in carrying out high-quality CTR.

INTRODUCTION

Clinical research is key to improvements in diagnosis and care. The National Institutes of Health defines translational research as: 1. "The process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans" and 2. "...research aimed at enhancing the adoption of best practices in the community."¹ Success in a research field that is both clinical and translational requires resources that are costly and scarce, so it is important that they be distributed efficiently. Infrastructure Development Award for Clinical Translational Research (IDeA-CTR) programs are supported by the National Institute for General Medical Sciences (NIGMS) and aim to develop and integrate resources in the context of the health priorities of each of the 23 IDeA states and Puerto Rico that have historically received less NIH funding than the other 27 states.

METHODS

Study Design

This descriptive study began in the fall of 2016 with instrument development, followed by pilot testing, and survey launch in the spring of 2017. Responses were anonymous, and the survey was exempted from review by the Institutional Review Boards of Brown University and the University of Rhode Island.

Sample

The sampling frame included faculty, post-doctoral fellows, administrators and clinical professionals from the six participating institutions. Individuals who agreed to participate received an electronic link to the survey. Non-respondents received two reminders.

To enhance our sampling outcome, we identified prominent researchers at the Advance-CTR Kick-off Retreat, and asked them to serve as "survey champions" by disseminating the

survey within their organization. We expected that this individual outreach and personal appeal would improve response rates. In addition, we e-mailed individuals in the clinical and translational research community of Rhode Island and featured the availability of the survey in email newsletters, on the Advance-CTR website, and on social media.

Instrument

A literature review was conducted in the fall of 2016 to identify translational research support needs assessment instruments for possible use or adaptation. The National Library of Medicine PubMed database was used to identify relevant publications during January 1, 2000–July 1, 2016. The search yielded 244 citations using the terms (“translational research” and “needs assessment”). Among these, three relevant studies were identified²⁻⁴ to provide guidance on key translational research needs and methods of survey dissemination.

The initial draft included an extensive range of potential questions related to research support needs. These questions were adapted from past surveys of research needs in Rhode Island, published surveys, and activities that had been planned for Advance-CTR. Next, feedback on the draft questionnaire was sought from key stakeholders to improve the relevance of the survey, and to reduce questionnaire length. At a half-day retreat, the draft instrument was distributed to 71 attendees, and discussed in groups of 10–12 individuals who encompassed the diversity of all institutions. Leaders from Advance-CTR’s KCAs were recruited to facilitate discussions and scribes took notes. Participants were asked to hand-write comments on the draft as they discussed each section. After a 45-minute discussion, each group reported on their most salient observations. All notes were collected along with all annotated copies of the draft instrument.

The instrument was subsequently revised into a Google Form version that required 5–10 minutes to complete. Structured items in the instrument addressed characteristics of respondents, specific barriers to CTR, overall satisfaction with current institutional CTR support, level of interest in various services, specific topics of interest, and preferred time frames and venues. One qualitative item asked for comments on barriers to CTR. The full questionnaire is available upon request.

Analyses

Quantitative analyses included descriptive results (frequencies and percentages) for the structured-response items, as well as significance testing with chi-square analyses for differences between respondent subgroups (created based on their affiliation). Qualitative data from the open-ended question regarding perceived barriers were content-analyzed to form inductive categories.

RESULTS

There were 171 Rhode Island-based clinical researchers who completed our survey. We are unable to determine a precise response rate, as our approach relied upon a championing model whereby requests were extended by researchers with peer influence, and also by college deans and department chairs.

The demographic data presented in **Table 1** showed that approximately 50% of respondents were University-based, with 32% of respondents at the University of Rhode Island and 19% at Brown University. The rest of the respondents listed their affiliation as Lifespan, Care New England, or the Providence VA Medical Center. Overall, respondents were predominantly white (82%), female (60%), and 38% held the rank of Assistant Professor. Almost all reported university academic appointments (ranks), though approximately half (49%) listed a healthcare organization as their principal research location. Most respondents (64%) were within 5 years of their terminal degree (MD, PharmD, PhD). When asked about the type of research that most closely aligns with their work, the leading category indicated was “clinical research” (28%), followed by biomedical/pre-clinical (27%), health services research/best practices (16%), clinical trials/efficacy (11%) and population health (10%). Only 2 respondents viewed their research as being primarily translational.

Assessing their institution’s support for translational research, only 17.9% of researchers were either “very” or “extremely satisfied” (**Figure 1**). Most reported being “somewhat satisfied” (62.9%) and nearly 1 in 5 respondents overall (19.2%) indicated that they were “not at all satisfied” with support for CTR. The percentage responding either “very” or “extremely” satisfied with institutional support for CTR was highest at Brown University (28.1%) and lowest at the University of Rhode Island (13.1%).

Figure 2 highlights specific unmet needs for research support that pose barriers to translational research productivity ordered by overall ranking. Pilot project funding, protected time for research, and support for proposal development and grants administration were the most frequently expressed research support needs. Chi-square tests indicated that response frequency differed by institution for 8 of the 13 barriers presented to survey respondents.

Researchers’ interests regarding in-person consultation topics are presented in **Figure 3**, as the percentage responding “somewhat” or “very” interested in each particular topic. Overall, expertise in data analysis and study design drew the most interest, while clinical trial protocol review drew the least. Notably, more than 65% of all respondents were at least somewhat interested in each of the topics listed for in-person consultations. **Figure 4** presents level of interest for various CTR webinar topics: data access and analysis, and research mentoring were the top selected topics.

Table 1. Characteristics of Survey Respondents (N = 171)

	n	%
Affiliation		
Brown University: ¹	32	19%
School of Public Health ²	17	53%
Warren Alpert Medical School	8	25%
Other Brown Department	7	21%
University of Rhode Island:	54	32%
Health Sciences	23	43%
Pharmacy	21	39%
Nursing	6	11%
Academic Health Collaborative	2	4%
Other URI Department	2	4%
Hospital Systems:	83	49%
Lifespan	38	46%
Care New England	32	39%
Providence VA	12	14%
Gender		
Female	103	60%
Male	60	35%
Left Blank	6	4%
Race/Ethnicity		
Asian	12	7%
Black or African American	1	1%
Hispanic or Latin	4	2%
Multiracial	1	1%
White	140	82%
Left Blank or Other	11	6%
Academic Rank		
Assistant Professor	65	38%
Associate Professor	29	17%
Professor	58	34%
Lecturer	1	1%
Postdoctoral Fellow	1	1%
N/A or Left Blank	15	9%
"What type of research most closely aligns with your work?"		
Clinical research	47	28%
Biomedical/pre-clinical	45	27%
Health services research/best practices	26	16%
Clinical trials/efficacy	18	11%
Population health	17	10%
Education	2	1%
Translational research	2	1%
Other	9	5%

¹ Percentage of total respondents affiliated with Brown University
² Percentage of those affiliated with Brown University that are within the School of Public Health

Figure 1. Institutional Efforts in Supporting Clinical and Translational Research: Percentage of researchers who responded being "very" or "extremely satisfied" with their institution's efforts supporting translational research (versus "somewhat" or "not at all satisfied.")

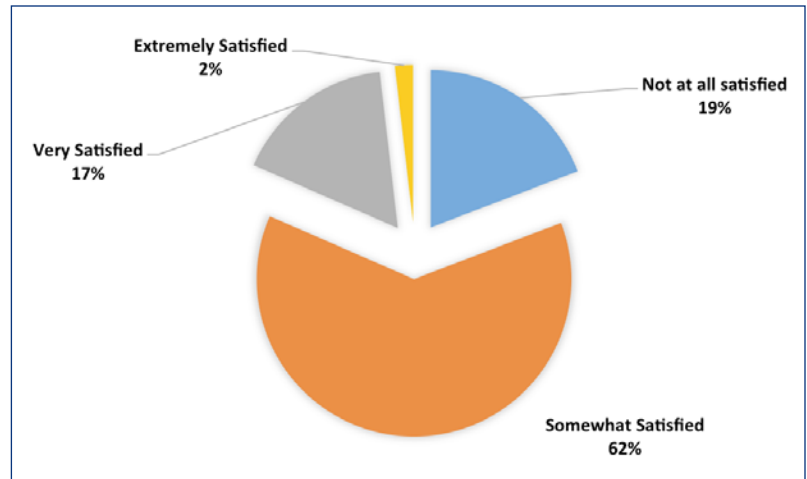
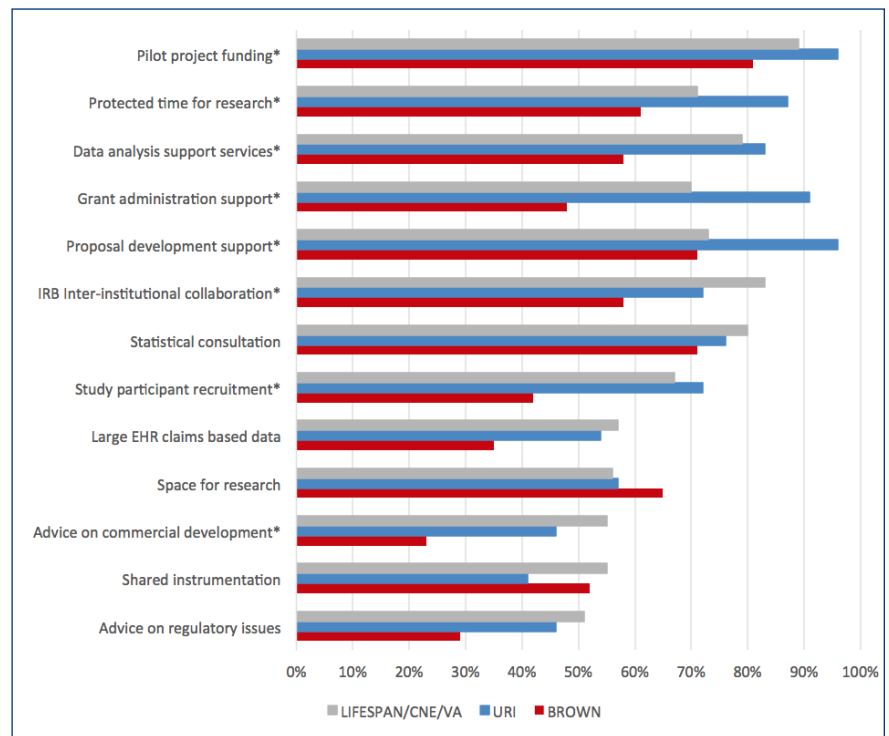
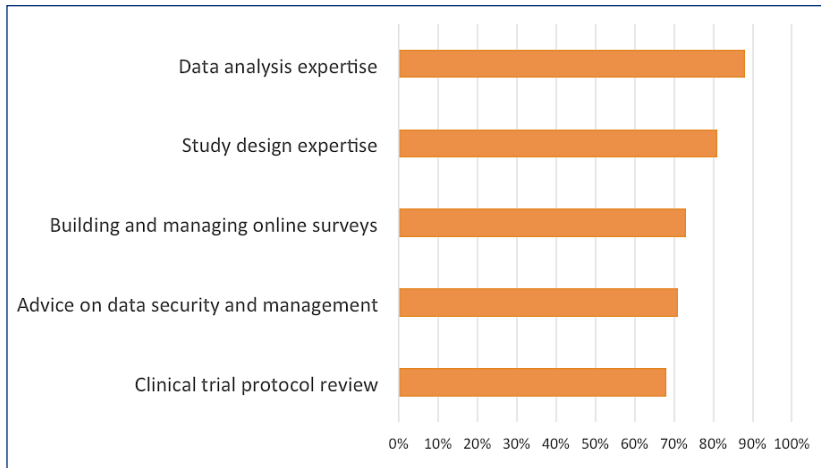


Figure 2. Perceived Barriers to Clinical and Translational Research: Percentage of researcher respondents who view a lack of each of the following to be a barrier to Clinical and Translational Research to some or great extent



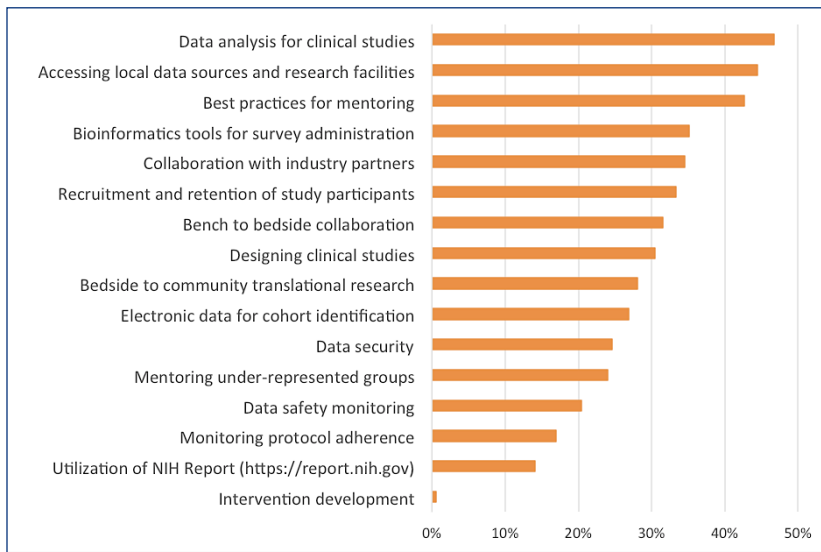
Note. * Chi-Square tests indicated significantly different counts than would be expected, p<.05. Items are presented in order by the percentage of all respondents reporting each item to be a barrier "to a great extent."

Figure 3. Researcher Interest Regarding In-Person Consultation Topics: Percentage responding “somewhat” or “very interested”



Note. * Chi-Square tests indicated no significantly different counts than would be expected for any item, at $p < .05$. Therefore, results are presented for all respondents.

Figure 4. Interest in Educational Webinars: Percentage of respondents indicating interest in the topic below (N = 171)



DISCUSSION

This needs assessment provides important insights regarding the environment for conducting CTR in Rhode Island. The central questions we posed in our introduction formed the basis for our survey design. First, we wanted to know, who are the researchers who might benefit from the supports offered by Advance-CTR? Our survey elicited responses from academic professionals at Brown University and the University of Rhode Island as well as less-experienced researchers and hospital-based professionals whose research interests go beyond the biomedical/pre-clinical level. The needs expressed by our respondents are thus very relevant to the mission of Advance-CTR.

Second, what are the most important barriers to CTR in our state? Across the 5 institutions represented, fewer than 1 in 5 respondents were either “very” or “extremely” satisfied with their institution’s support for CTR. This finding highlights a need for enhanced support for CTR researchers, including access to research funding and support services. The survey participants identified a lack of funding and protected time as principal barriers to conducting CTR. These two barriers are related to the extent that protected time is typically funded by research grants. Support for grant administration, support for proposal development, and data analyses support services were the next highest-reported barriers. Qualitative comments regarding barriers reinforced these quantitative findings, emphasizing the lack of the following: technical support for developing CTR, protected time (particularly for teaching and clinical personnel), mentor and collegial support, internal funding, inter-institutional coordination (e.g. IRB), and necessary laboratory facilities. All are addressable. Importantly, Advance-CTR provides resources targeted to directly address almost all of these needs and barriers.

Third, what professional development and support services would improve researchers’ careers in CTR, enhance research productivity, and ultimately improve health outcomes? The findings regarding barriers as well as those dealing with training and consultation point to the most urgent needs. In addition to internal pilot funding, which is now provided by two of the KCAs, there are several additional support mechanisms that are now available from our service KCAs: (1) help with proposal development, including research and statistical design, IRB coordination, skilled mentoring; and (2) ongoing help with project implementation and completion, including data analysis support and grant administration support. We note that some identified problems call for solutions at other levels: protected time and research space are considerations for the individual institutions represented in our collaborative.

While we were highly satisfied by the extent of participation in this needs assessment survey, there are some limitations to our study. Given our sampling procedure, we cannot be certain that our results are generalizable to the population of relevant researchers in the state. Second, a proportion of those indicating a hospital affiliation likely also hold an academic affiliation, yet we captured only the respondents’ primary affiliation of choice. Lastly, our survey reflects the

views of researchers; it is possible that our results would differ if we had included administrators and others having knowledge of available resources and ongoing efforts to advance CTR within their institutions.

The success of a state's health-related research enterprise has a significant impact on budgets. Research!America (2016) estimates that some \$158 billion was spent on health-care research in the US in 2015, and that about \$1.3 billion of this was spent in Rhode Island.⁵ Translational research can bring major economic benefits through both groundbreaking discoveries that yield new treatments, and through the more cost-effective application of existing preventive or treatment strategies. Academic medical centers across the US have competed to participate in the NIH's \$500 million Clinical and Translational Science Award program, and institutions in smaller states, including Rhode Island, are keen to compete on an equal footing. Institutional Development Awards can provide important impetus but, in the longer run, we (Brown University and the University of Rhode Island, with Lifespan, Care New England and the Providence VA Medical Center) still need to increase our share of the national CTR budget to a level commensurate with our population.

CONCLUSION

This needs assessment survey of health researchers and research-associates identified several opportunities for improving CTR at institutions in Rhode Island. Less than 1 in 5 respondents indicated being either "very" or "extremely" satisfied with their institution's efforts to support clinical and translational research, with lack of funding and a lack of protected time for conducting research identified as top barriers. A lack of support for grant administration and proposal development, and lack of data analysis support services were also identified as frequent barriers. These findings align with Advance-CTR, which provides resources and expertise to promote clinical and translational research in Rhode Island.

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