



Issues Addressed

Leadership from the NNE-CTR's **Administrative Core** has played an active role in an effort designed to build a centralized data resource to support critical research. This effort is known as the **National COVID Cohort Collaborative**.

The NNE-CTR was well positioned to harness its existing expertise to help lead this national effort.



Accomplishments

The NNE-CTR's leadership in the National Cohort Collaborative has:

- Led to the inclusion of data from rural communities, a key priority
- Demonstrated the team's ability to quickly pivot and harness resources and support
- Fostered timely translational research



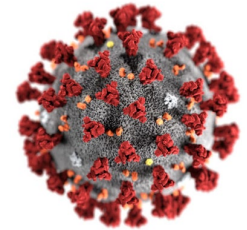
Potential Impact

The NNE-CTR's active involvement in helping to build a national COVID-19 data repository demonstrates an ability to quickly pivot and contribute to emerging needs to advance the diagnosis, treatment, and prevention of disease.

According to Dr. Cliff Rosen, "Having harmonized, timely, and accessible clinical data will advance COVID-19 research and improve translational science."

"As a results of our CTR's efforts, data related to COVID-19 in northern New England are now included in a national dataset designed to support timely research that can save lives and prevent disease."

Cliff Rosen, MD





Issues Addressed

Engaging primary healthcare professionals in research is a priority for the NNE-CTR. The **Administrative Core** has developed important partnerships to foster this work.

In collaboration with the **Northern New England CO-OP: Practice-Based Research Network (PBRN)**, efforts are underway to support rural health research.

" Collaborative initiatives with colleagues through the PBRN will address the health and healthcare challenges of northern New England rurality – this is not an option, but a NNE-CTR responsibility."

Gary Stein, PhD



Accomplishments

The NNE-CTR's investment in this collaborative regional initiative is anticipated to:

- Strengthen the capacity of practices to address needs in underserved rural settings
- Support research that addresses the priorities of rural practices
- Reinforce community engagement
- Submission of collaborative NIH grants with PBRN



Potential Impact

The NNE-CTR's participation and leadership in the PBRN supports a regional approach to promote timely and relevant research addressing rural health challenges.

This collaborative effort draws on the expertise and research infrastructure of its partners to expand the breadth and scope of translational research in northern New England, with a goal of improving health.



Issues Addressed

CTRs are well positioned to engage in timely research, particularly related to COVID-19.

The **Administrative Core** and the UVM Gund Institute served as co-conveners of a \$100,000 Joint Catalyst Award funded by the Gund Institute, UVM Larner College of Medicine and the Maine Medical Center to support a study exploring food security in relationship to local and home food procurement during the pandemic.

"This support has been incredibly helpful for our team to understand the effect of COVID-19 on the rural environment through food systems and on nutrition and health outcomes."

Meredith Niles, PhD



Accomplishments

The NNE-CTR's investment in this research award is anticipated to:

- Document the relationship between food procurement, food security, and health outcomes
- Assess how COVID-19 has impacted food security
- Track how COVID-19 shifts reliance on local and home procurement and the implications of this change



Potential Impact

Given the NNE-CTR's ability to partner and leverage support for research, new rural health challenges during the COVID-19 pandemic were studied.

This collaborative effort supported important research that will expand our understanding of food insecurity during COVID-19 among rural communities. It will also expand our understanding of the food procurement efforts and their relationship to associated health outcomes.

Leveraging Professional Development Opportunities to Enhance Research Capacity

SUCCESS STORY

Professional Development Core



Issue Addressed

The goal of the Professional Development Core (PDC) is to provide robust educational and training opportunities designed to increase the number and productivity of those engaged in clinical and translational research in Northern New England. As part of this work, the PDC held a grant writing workshop to provide hands on training in effective grantsmanship to investigators in the region.



Accomplishments

The grant writing workshop :

- Enhance grant writing capacity among the 57 individuals participated in the training.
- Engaged a diverse group of investigators including: faculty (54%), research/science staff (14%), post-doctoral/graduate students (19%), research navigator/specialists (11%) and other staff (2%).
- 51% of participants submitted 1 or more grants after the workshop for a total of 66 new federal grant applications, with 44% of participants submitting 2 or more applications; to date 32% of submitted grants have been funded.

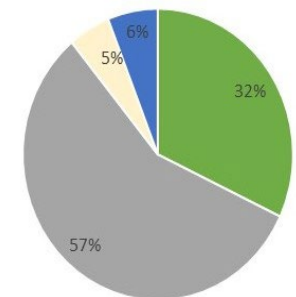


Potential Impact

The grant-writing workshop demonstrates the substantial impact of the NNE-CTR professional development opportunities. As a result of the grant-writing workshop, investigators across the partner institutions have been able to secure over \$4,150,019 in federal funds to support CTR in the region.

"The grant writing workshop directly improved my knowledge of what was expected in an NIH grant application. As a young investigator my biggest challenge was understanding the formatting and specific content expected in large grant applications. After the workshop I have used the guidebook with each of the 3 applications I have submitted since. It gave me the confidence that I could express my ideas and thoughts in a way that could achieve funding and increased my efficiency and ability to submit what I believe are solid applications."

Workshop Participants



■ Awarded ■ Pending ■ Unfunded ■ Unknow Status



Issues Addressed

The NNE-CTR Pilot Projects Core have intentionally engaged new and early state investigators to support clinical and translational research.

In 2019, Dr. Katherine Ahrens, an early-stage investigator, was awarded pilot funding to conduct a feasibility study focused on describing the health care use of pregnant women with opioid use disorder in the CTR region.



Accomplishments

The pilot project supported a multidisciplinary team that included a mentor, researchers, and a clinician. The project was completed in 2020.

- The work was leveraged to secure a three-year NIH R15 -Academic Research Enhancement Award
- The **return on investment** for the project was **5.4 times what was invested** (\$408K to \$75K)



Potential Impact

Initial seed funding and support for research can, and does, translate to enhanced capacity and securing new funding.

This pilot project supported novel research using all payers claims data to expand our understanding of health care utilization among a vulnerable population living in rural states. Finding from this study support the use of medication for addiction treatment during pregnancy to prevent emergency health care use in the first year postpartum.

" Working with my multidisciplinary team on our pilot study gave me the analytic skills, in-depth database knowledge, and project management confidence to write a competitive proposal to the NIH."

Katherine Ahrens, PhD



Development of an OMOP Data Warehouse



Issues Addressed

Electronic medical record (EHR) data was accessible to clinicians but not as much for investigators to easily access and use for research. The **Research Design Core** hired a biomedical informatics data engineer who helped develop an **OMOP research data warehouse**.



Accomplishments

MH EMR data were transformed into an OMOP research data warehouse (RDW) which:

- Allows sharing data, replicating code, and analyzing data while maintaining data privacy
- Enhanced data use, quality, consistency and opportunities to collaborate
- Led to new research using these data
- Enabled collaboration and participation in the National COVID Cohort Collaborative (N3C) with our other CTR partners to investigate COVID therapeutics and outcomes.

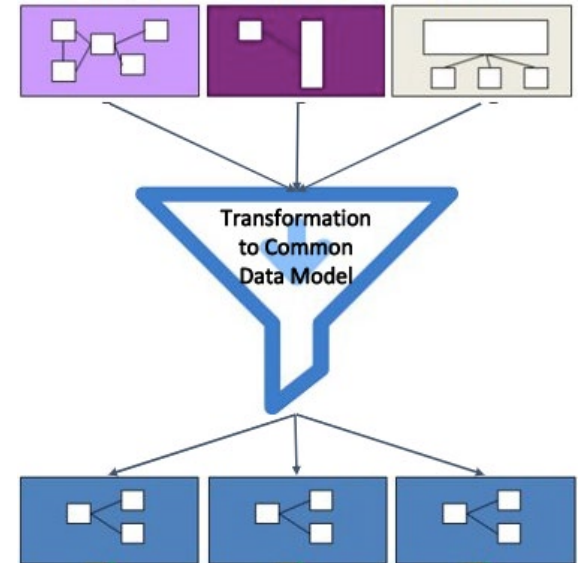


Potential Impact

The development of the OMOP RDW demonstrates an early success in building core infrastructure to expand investigators' access to medical record data for research. Additionally, the RDW will facilitate NNE-CTR researchers' involvement with national and international health care investigations to inform best practices.

"We translated the entire MH EMR data (2 million patients) into the Observational Medical Outcomes Partnership (OMOP) common data model, and that facilitated participation in the N3C Collaborative."

Susan Santangelo, Sc.D.





Issues Addressed

Many rural clinicians are interested in participating in research to improve care for their communities but lack research support. The Rural Health Research and Community Engagement Core links clinicians with research resources to allow them to pursue rural research.

"Rural areas are ripe for this kind of work. To be able to bring research to places that traditionally haven't had as much access is very valuable."

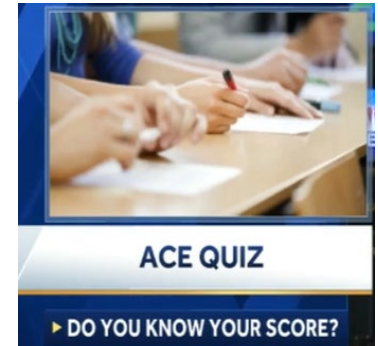
Brian Nolan, MD



Accomplishments

The Rural Core supported rural clinicians to:

- Attend regional research conferences to network with other researchers and create a resource-sharing database to connect rural clinicians and researchers.
- Advance rural Adverse Childhood Experiences (ACEs) research by providing rural research navigation services:
 - Brian Nolan, MD (Western Maine Primary Care – Norway, ME) connected with the Rural Core to involve his clinic and medical residents in the Dartmouth/NNE Co-op Research Network ACEs screening study. Active participation in the Co-op also led to his development of another study of innovative screening methods for diabetic retinopathy.
 - Kimberly Pierce, PA-C (The Health Center – Plainfield, VT) conducted a pilot study of ACEs conversations and their impact on patients' health that led to pursuit of a larger study across FQHCs in rural Vermont and New Hampshire.



Potential Impact

Supports community-engaged research by rural clinicians that addresses the concerns of and improves care for rural patients.

"The Rural Core has been the convener. I didn't have that understanding of the research world, but they were interested, they wanted to help me, and they have helped my work have a broader reach and impact."

Kimberly Pierce, PA-C



Issue Addressed

Northern New England has limited access to contemporary technologies. The **Translational Research Technologies Core's** investment in new technologies allows for in-house innovative research to improve laboratory techniques and efficiency.



Accomplishments

Our investment in new technologies offered researchers the following:

- 10X Chromium system introduced single-cell visualization capabilities
- Custom purification technology aided in sample recovery
- Auto-Stainer allowed multiple staining techniques to be done simultaneously

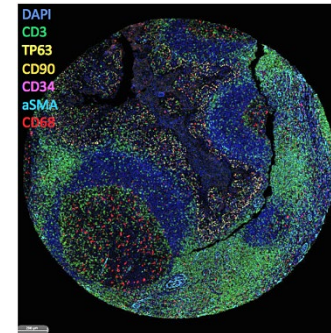


Potential Impact

As a result of the investment of new technologies, investigators in Northern New England are able to initiate state-of-the-art research. Not only can this research be done in-house, but the accelerated generation of data throughput allows researchers to be at the forefront of research in their fields.

"We don't have to go to Boston or somewhere else to do these kinds of experiments. [The technology we need is] actually available here."

Dr. Prachi Ghule



7-color multiplex immunofluorescence assay performed with Autostainer

"VT is a small rural state, so [the investment of new technology] helps us to keep the investigators we work with out there at the cutting edge. The support of these grants make it affordable." *Dr. Julie Dragon*