

TEX-IS Research Network News Notes

Fall 2021



Texas Implementation Science (TEX-IS) Research Network

building capacity across the Texas CTSAs through shared resources, information, and opportunities

Responding to New NCATS Requirement for D&I in CTSAs: 13 JCTS Articles that Pave the Way



This editorial provides a collection of *JCTS* articles that grant writers may find helpful in designing CTSA applications that are responsive to new NCATS requirements for Dissemination & Implementation (D&I) sciences. These articles are presented in brief annotated form to provide a foundation for understanding D&I from experts across the nation who are at the leading edge of D&I in CTSA.

The recently released NCATS PAR-21-293 requires that CTSA include D&I (see Box 1).

<https://grants.nih.gov/grants/guide/pa-files/PAR-21-293.html>

Box 1. NCATS Requirement for Inclusion of Dissemination & Implementation Activities

Element B: Strategic Management: "Each CTSA hub is required to engage in Dissemination and Implementation (D&I) activities to support innovative approaches to identifying, understanding, and developing strategies for overcoming barriers to the adoption, adaptation, integration, scale-up and sustainability of evidence-based interventions, tools, policies, and guidelines."

PAR-21-293: Clinical and Translational Science Award (UM1 Clinical Trial Optional) (nih.gov)

Leveraging the expertise of the NCATS Advancing Dissemination & Implementation Working Group*, *JCTS* published a number of articles reflecting the collective wisdom of D&I thought leaders. Many of the articles were included in the *JCTS* themed issue on D&I. Other *JCTS* articles are also connected to D&I.

The following is an annotated mini review of selected articles that point to essentials in any D&I infrastructure and provide principles, best practices, helpful frameworks, examples, and ideas that have worked. A few key points from each article is included. Because each article is a trove of expert guidance and resources, deeper reading is urged; all articles are open access.

Annotated Bibliography of Recent *JCTS* Articles by Topic



SURVEY OF IMPLEMENTATION RESEARCH IN CTAS

Dolor, Rowena J., Enola Proctor, Kathleen R. Stevens, Leslie R. Boone, Paul Meissner, and Laura-Mae Baldwin. "[Dissemination and implementation science activities across the Clinical Translational Science Award \(CTSA\) Consortium: Report from a survey of CTSA leaders.](#)" *Journal of clinical and translational science* 4, no. 3 (2020): 188-194. <https://doi.org/10.1017/cts.2019.422>

This survey points to the nascence of D&I sciences in CTSA as of 2019:

- *"The most significant finding is that there is a reported lack of understanding of D&I sciences across the CTSA Consortium."*
- *At the time of this survey, D&I science was not a formalized element of the CTSA program.*
- *Many PIs reported that the CTSA Consortium could play a critical role in supporting D&I science efforts in training and workforce development, provision of D&I science resources and tools, and mentorship.*

D&I ACROSS THE TRANSLATIONAL SPECTRUM

Leppin, Aaron L., Jane E. Mahoney, Kathleen R. Stevens, Stephen J. Bartels, Laura-Mae Baldwin, Rowena J. Dolor, Enola K. Proctor et al. "[Situating dissemination and implementation sciences within and across the translational research spectrum.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 152-158.

Dissemination & implementation (D&I) sciences have rapidly matured over the last 15 years; The authors make these key points:

- *Translation, Dissemination, and Implementation are 3 overlapping sciences*
- *The integrated framework and real-world examples for articulating the role of D&I sciences within and across each of the stages of the translational research spectrum*

TEACHING AND WORKFORCE TRAINING IN IMPLEMENTATION

Leppin, Aaron L., Ana A. Baumann, Maria E. Fernandez, Brittany N. Rudd, Kathleen R. Stevens, David O. Warner, Bethany M. Kwan, and Rachel C. Shelton. "[Teaching for implementation: A framework for](#)

[building implementation research and practice capacity within the translational science workforce.](#)"
Journal of Clinical and Translational Science 5, no. 1 (2021).

The authors describe the following:

- *Implementation Competencies*
- *What and how to teach and co-learning opportunities*
- *Competencies for implementation researchers*
- *Competencies for Implementation practitioners*
- *Critical Workforce Skills: Stakeholder engagement; pragmatic studies; team science*
- *Educational infrastructure and resources to further this approach*
- *Presents Teaching for Implementation (TFI) Framework*

Stevens, Kathleen R., Elisabeth de la Rosa, Robert L. Ferrer, Erin P. Finley, Bertha E. Flores, RN, PhD, WHNP-BC2,3, Dana A. Forgione, Polly Hitchcock Noel, Timothy A. Reistetter, Melissa Valerio-Shewmaker, Kevin C. Wooten (2021). "[Bootstrapping Implementation Research Training: A Successful Approach for Academic Health Centers.](#) *Journal of Clinical and Translational Science.*"

Authors describe an Implementation Research training program that can be replicated in CTSA, including:

- *Reports on how to create IR capacity by leveraging external resources in a novel 2-day training for faculty-scientists across the four Texas CTSA*
- *Links are provided to workshop resources such as videos and project design checklists*

DESIGNS AND DEFINITIONS IN IMPLEMENTATION RESEARCH

Hwang, Soohyun, Sarah A. Birken, Cathy L. Melvin, Catherine L. Rohweder, and Justin D. Smith. "[Designs and methods for implementation research: Advancing the mission of the CTSA program.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 159-167.

"Much in the same way that inclusion criteria for patients are often relaxed in an effectiveness study of an EBI to better represent real-world populations, implementation research includes delivery systems and clinicians or stakeholders that are representative of typical practices or communities that will ultimately implement an EBI." Key concepts include:

- *Definition of key terms in Implementation Research*
- *Overview of major research designs such as Hybrid Types 1, 2, 3, stepped wedge*

RECOMMENDATIONS TO CTSA LEADERS

Mehta, Tara, Jane Mahoney, Aaron L. Leppin, Kathleen R. Stevens, Reza Yousefi-Nooraie, Brad H. Pollock, Rachel C. Shelton et al. "[Integrating dissemination and implementation sciences within Clinical and Translational Science Award Programs to advance translational research: Recommendations to national and local leaders.](#)" *Journal of Clinical and Translational Science* (2021): 1-22.

"We propose a set of recommendations for NCATS national and local leaders that are intended to move D&I sciences out of a position of unfamiliarity and ancillary value and into the core identity of who CTSA are, how they think, and what they do, to advance translation and health."

- *Published prior to new NCATS FOA (7-31-21)*
- *With 4 years of collaboration, this NCATS working group recommended methods and processes, workforce development, and evaluation components.*

HEALTH EQUITY

Nooraie, Reza Yousefi, Bethany M. Kwan, Elizabeth Cohn, Mona Au Young, Megan Clarke Roberts, Prajakta Adsul, and Rachel C. Shelton. "[Advancing health equity through CTSA programs: Opportunities for interaction between health equity, dissemination and implementation, and translational science.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 168-175.

"Implementation science is an area of research with high potential to accelerate progress toward achieving health equity goals in both public health and healthcare."

- Highlights interaction and opportunities between health equity and D&I sciences
- Shows how CTSA's can support and facilitate sharper focus on equitable D&I in translational research

LEARNING HEALTH SYSTEMS

Bennett, Nancy M., Elissa Orlando, and Paul Meissner. "[Linking dissemination and implementation science to Learning Health Systems: Opportunities for Clinical and Translational Science Award institutions.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 176-179. doi: 10.1017/cts.2020.15

Learning Health Systems (LHS)—use health IT and data from real-world care-delivery to promote improvement, innovation, and health system change (E.g., Using Epic (EHR) data to improve assessment of Frailty, Bokov et al 2021)

- D&I sciences are rarely fully integrated with LHS efforts.
- Research integration in LHS is an emerging opportunity for CTSA's to grow
- data-driven quality improvement culture and clinical partnership
- informatics capacity and analytic resources

TECHNOLOGY TRANSFER INFRASTRUCTURE

Quanbeck, Andrew, Jane Mahoney, Kim Kies, Kate Judge, and Maureen Smith. "[Building capacity for dissemination and implementation to maximize research impact in a CTSA: The University of Wisconsin story.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 209-215.

The authors describe how one CTSA created a technology transfer model suitable to Implementation Science, describing key elements:

- The Wisconsin D&I Launchpad
- Facilitates D&I of research results between investigators and their community partners
- Business strategies identified (marketing, pricing, and sales forecasting)
- Creating a sustainable business model for scaling programs to new adopters
- Pilot funding

STAKEHOLDER ENGAGEMENT: COMMUNITY, AND PRACTICE BASED RESEARCH NETWORKS (PBRNs)

Meissner, Paul, Linda B. Cottler, and J. Lloyd Michener. "[Engagement science: The core of dissemination, implementation, and translational research science.](#)" *Journal of Clinical and Translational Science* 4, no. 3 (2020): 216-218.

Partnering with CTSA clinical and community entities is critical in successful D&I efforts; these authors identify the science underlying successful stakeholder engagement:

- Stakeholder engagement is acknowledged as central to dissemination and implementation (D&I) of research that generates and answers new clinical and health service research questions.
- There is a recognized science of stakeholder engagement

Riley-Behringer, Maureen, Melinda M. Davis, James J. Werner, L. J. Fagnan, and Kurt C. Stange. "[The evolving collaborative relationship between practice-based research networks \(PBRNs\) and Clinical and Translational Science Awardees \(CTSAs\).](#)" *Journal of clinical and translational science* 1, no. 5 (2017): 301-309.

The Practice-Based Research Networks (PBRNs) paradigm is well-established; these authors point to ways to leverage PBRNs in CTSA:

- Clinicians as CTSA stakeholders and community partners
- PBRNs to organize clinicians as community stakeholders

TEAM SCIENCE

Aarons, Gregory A., Kendal Reeder, Christopher J. Miller, and Nicole A. Stadnick. "[Identifying strategies to promote team science in dissemination and implementation research.](#)" *Journal of clinical and translational science* 4, no. 3 (2020): 180-187.

These authors lay the groundwork for the rationale behind team science:

- D&I research necessitates the use of team science.
- Top strategies are in line with those found to be effective for teams in other fields.

Bisbey, Tiffany M., Kevin C. Wooten, Maritza Salazar Campo, Theresa K. Lant, and Eduardo Salas. "[Implementing an evidence-based competency model for science team training and evaluation: TeamMAPPS.](#)" *Journal of Clinical and Translational Science* 5, no. 1 (2021).

The science of team science provides guidance on keeping a wide range of members focused on mutual gain; authors describe a program to implement:

- Presents a competency model and implementation plan for a team training program specific to science teams
- TeamMAPPS (*Team Methods to Advance Processes and Performance in Science*), an evidence-based teaming program, is described

***FOOTNOTE:**

* NCATS Working Group on Advancing D&I in CTSAs

- D&I subgroup 2017-2019
- Led by Laura-Mae Baldwin, Rowena Dolor, and Paul Meissner
- Major Deliverable: Multiple articles in themed issue of JCTS: D&I Landscape
- Stevens, Kathleen R., and Jonathan N. Tobin. "Introduction to the JCTS special issue on

Dissemination and Implementation Sciences." *Journal of Clinical and Translational Science* 4, no. 3 (2020): 149-151.

- D&I subgroup reauthorized 2020-2022
- Led by Andrew Quanbeck, Aaron Leppin, Tara Mehta, Jane Mahoney
- Continuing to publish consensus guidance manuscripts



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