Perspective/Opinion

Implementation Science and Medical Education Transformation

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Implementation science – a thoughtful, structured rollout of a new initiative – can help make new programs more successful. In the April 2, 2021 issue of the *Transformational Times*, Drs. Amundson, Webb, Prunuske, and Kalet discussed the use of implementation science methods in the curriculum transformation process. As we move forward with this change, and with the broader transformation of medical education driven by the Kern Institute, let's take some time to reflect on implementation science: why it's important, and what it tells us about how and why to start off right.

Why are we talking about Implementation Science?

Successful implementation and maintenance of evidence-based practices for organizational changes or programs are a necessary precondition at Kern for providing successful programs, driving innovation at MCW and elsewhere, and generating scholarship. But there's no guarantee that merely using an evidence-based practice (EBP) will lead to its adoption. For example, here is a story from Bauer and Kirchner's (2020) article in *Psychiatry Research*:

> "It was, by all estimations, a successful research effort. We had mounted a randomized, controlled clinical trial across eleven sites in the US Department of Veterans Affairs (USVA), testing an organization of care

> called the Collaborative Chronic Care Model (CCM) for bipolar disorder versus treatment as usual. Over three years of follow-up, the CCM showed significant positive impact on weeks in mood episode, mental health quality of life, social role function, and satisfaction with care - all at no increased cost to the healthcare system. In parallel, a two-year, four-site randomized controlled clinical trial of the bipolar CCM in the Group Health Cooperative of Puget Sound (now Kaiser Permanente), showed very similar outcomes at minimal cost, compared to treatment as usual. Both studies were published in the same year in mainstream psychiatric journals that are read and respected by mental health researchers, clinicians, and administrators. The CCM for bipolar disorders began to be endorsed by national clinical practice guidelines in the USVA and in Canada, and the bipolar CCM was listed on the US Substance Abuse and Mental Health Services Administration's prestigious National Registry of Evidence-Based Programs and Practices.
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> **And yet, within a year of the end of the studies, none of the 15 sites had incorporated the CCM into their usual workflow. The clinicians who had participated in the CCM went back to their usual duties, and the individuals with bipolar disorder went back to receiving their usual form of care."** (Emphasis added)

Something *more* than sound evidence is needed for a program to be successful, and implementation science is an approach designed to address the how and the why of getting started right, once the "what" has been defined.

What is Implementation Science?

Implementation science is the systematic study and practice of program implementation to increase chances of acceptance, adoption, fidelity, and success. For a new initiative, this means the program is supported and practiced by a broad range of practitioners and stakeholders. It also means the practice of the program adheres to the program's tenets and dictates. And it means that the program achieves desired outcomes predicted by theory and evidence. Notably, this process involves many similar components of continuous quality improvement (CQI). CQI also involves the continual review of

an ongoing program's implementation, fidelity, and outcomes to adjust the program while it remains in operation.

Basic Stages of Implementation Science

There are numerous specific models of implementation, and all identify similar stages of the process. Here are five basic steps to the process of implementation as guided by implementation science.

Exploration – *Needs, Options, and Partners*

The implementation team is responsible for getting the stakeholders and learning environments ready. They explore and research different EBPs to share. This might involve reaching out to other organizations who have implemented similar practices, literature reviews, and mock learning environment experiences to familiarize stakeholders with what evidence-based approach looks and feels like. The implementation team develops needs-assessments to ready stakeholders for the next stage of Installation.

Installation – *Who, What, When, and How*

During this phase, the implementation team identifies human and operational resources that become part of an implementation plan. This plan lays out who will be using the new program, where it will be used, who will be asked to do their work differently. It anticipates necessary training to prepare others for changes and details how the new program will be evaluated.

Initial Implementation – *Measurement, Meetings, Learning Environment, Support, and Observation*

When practitioners use the innovation for the first time, implementation teams help develop competencies required by the EBP, help administrators adjust organization roles and functions, and help leaders fully support the process. During this process, the team is rolling out the implementation plan, sharing EBPs chosen to implement, and displaying and modeling the use of resources. The team is using valid tools to measure effective EBPs, *look-fors* (things that represent expected

strategies and outcomes), peer support opportunities, plans for observation, and plans for *touch-base/how are things going* meetings.

Full Implementation - *How Many People? Fidelity, Good Outcomes, New Standard of Work*

During this stage, stakeholders involved are using an effective intervention with fidelity and good outcomes. Notably, expected outcomes should be realistic and aligned with theoretical predictions. The new ways are now the standard ways of work and Implementation Teams ensure that the gains in the use of effective practices are maintained and improved over time and through transitions of leaders and staff. This can involve follow-up meetings with staff, and review progress monitoring with educators and administrators to ensure fidelity.

Sustainability - *Financial and Programmatic*

Sustainability planning and activities need to be an active component of every stage. These activities can involve ensuring that the funding streams are established, adequate, and sustainable (*financial sustainability*, e.g., funding for educators, staff, and administrative time) and that the implementation infrastructure is established, reliable, effective, and sustainable (*programmatic sustainability*, e.g., vertical articulation with new stakeholders to identify what worked for which stakeholders).

Attending to People and Culture

Another critical dimension for successful implementation in every stage is the people and cultural changes required. Though we may discuss implementation science as a prescriptive way to implement a new program, we would be remiss if we ignored the fact that any change within an organization requires extraordinary commitment and sacrifice from the individuals who are asked to carry out the change and live with the consequences (both good and bad) from the change. These changes will impact personal mattering, professional identity, feelings of purpose, and other emotional elements and must be treated by all with humility, empathy, and compassion. And as organizations

learn within the implementation, rate of implementation, which can add to the impact of change, is an important consideration. We look forward to exploring these elements of implementation science in a future article.

In sum, Implementation Science can help effectively identify and validate a need, strategically plan for change through implementation plans, and provide structure for data collection and reporting on the impact of the change. Engaging employees at all levels (e.g., faculty, staff, learners, etc.) early in the implementation process is key to aligning an EBP with the values and culture of the organization. In future issues of the *Transformational Times*, we look forward to writing about additional important elements of successful implementation and also about the transformational journey of the MCW curriculum reimagining. Stay tuned!

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