

Clinical Pearl: “This is a Great Idea, So Let’s Just Do It”: Implementation Science

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This is a great idea, so let’s just do it! Why can’t we just implement this new NICU discharge checklist into the EPIC electronic medical record and get started? We can set up a short staff and caregiver survey starting pre-intervention, and then also use the same survey post-implementation to judge the effect on staff and caregiver satisfaction.

Joe, you will need to present this to nursing leadership, the clinicians, and don’t forget legal, and the survey needs to be written at the appropriate educational level. What about intrinsic bias, and have you done your power calculations to figure out how many surveys you will need to show a statistically significant effect? Does it need to be reviewed by the IRB or is this a QI project to improve clinical care?

There is a relatively new discipline; at least it is new to me, called implementation science. I just learned about it yesterday at a Grand Rounds presentation by Dr. Meghan Lane-Fall, an anesthesia-critical care physician from the University of Pennsylvania. Parenthetical my, I have been working with her on a quality improvement panel presentation for Society for Critical Care Medicine (SCCM) for the 2020 meeting.

So, what exactly is implementation science? My first impression, as I was listening, was that it is a name for a process for what I have been trying to implement in NICU and pediatric resident class quality improvement projects for the last five years here. The strategy I have used for has been “just do it!”. This implementation approach has met with some success and a somewhat random process, which has taken a long time.

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Here is the definition of implementation science from an article by Dr. Lane-Fall and co-authors: “scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and hence to improve the quality and effectiveness of health services and care” (1,2). As Dr. Lane-Fall also notes, implementation science is a

term used in the United States. However, this is also referred to as “dissemination and implementation research” and “knowledge translation” (2). What is helpful in this introductory article is the “subway line” approach, which helps to explain implementation science further and also distinguish it from other related disciplines (Figure). (2)

Thinking about implementation science in a simplistic way, your practice of interest should have been shown to be effective before you move ahead to do your implementation studies. The effectiveness or efficacy should be established. In order to be able to make an informed decision about the effectiveness of the practice, the investigators will need to have a sufficient research knowledge base. The implementation science part of the subway diagram is in green in the figure for your reference.

In her presentation, she explained the design of the study about how to redesign patient handoffs when the patient, in this study, adults, comes to the intensive care unit from the operating room. A team bedside meeting, which included the patient, nurse, intensive care physician, surgeon, anesthesiologist, and respiratory therapist, was convened, and the patient was discussed and examined in a systematic, standardized fashion. On average, this meeting took about 7-8 minutes, and the researchers studied patient data omissions, staff satisfaction qualitatively, and direct observation. The project was entitled Handoffs and Transitions in Critical Care (HATRICC), and over time, the bedside meetings were referred to as “let’s HATRICC this patient!” The protocol significantly improved information exchange with a concomitant increase in handoff duration (3).

I am going to spend some more time reviewing the literature about implementation science before I start to apply what I have learned from Dr. Lane-Fall. However, I have a number of NICU QI projects and will review the status of each of them with this new and valuable information in mind.

As the NICU QI physician, I believe learning more about implementation science is a definitely worthwhile endeavor and should improve the overall quality of our projects and the care of our infants and their families. It may also improve the overall clinical provider satisfaction as well in this university clinical environment.

As Meghan says, as she and her colleagues work through the process and things seem to be going well, “I am cautiously optimistic!”. I will be “pleasantly persistent” in learning more and then applying implementation science.

References

1. Lane-Fall MB, Curran GM, Beldas RS. Scoping implementation science for the beginner: locating yourself on the “subway line” of translational research. *BMC Medical Research Methodology* 2019; 19:133 <https://doi.org/10.1186/s12874-019-0783-z>.
2. Eccles MP, Mittman BS. *Welcome to implementation science*.



Graphic has been tested with colorblindness filters to ensure readability.

* In some cases it may be appropriate to move forward with a hybrid Type 1 trial in the absence of effectiveness evidence (e.g., very strong efficacy, indirect evidence supportive of potential effectiveness in context of interest, and/or strong momentum supporting implementation in a health care context).

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- Implement Sci.* 2006;1:1-1.
3. Lane-Fall MB, Pascual JL, Peifer HG et al. A partially structured postoperative handoff protocol improves communication in 2 mixed surgical intensive care units. *Ann Surg* 2018; XX:XX, Month 2018.

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