Towards a Greater Understanding of Implementation Science in Health Professions Education

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In a previous AM Last Page, we advocated an evidence-informed approach to health professions education (HPE). Here we examine implementation science (IS).

- Educators are faced with the responsibility of ensuring that current best evidence in HPE is routinely used to inform decision-making processes.
- Knowledge translation (KT) is a process used to facilitate the uptake and application of best evidence.
- IS is the scientific study of KT; it encompasses all aspects of research relevant to the study of the methods, theories, and models to promote the uptake of research findings into educational and policy contexts.
- IS seeks to answer questions such as:
  - Why are some teachers more likely than others to adopt a new practice?
  - Why do certain faculty development programs lose effectiveness over time?
  - How can multiple educational interventions be effectively packaged to capture cost efficiencies and reduce suboptimal practices?

We present IS as a four-step process: (1) identify research–practice gaps; (2) identify facilitators and barriers to the uptake of new knowledge/evidence; (3) design interventions to promote uptake; and (4) implement and evaluate impact. For each step, we describe the purpose, methods, and expected deliverables/outcomes. The implementation process should consider the context (e.g., school, clinic, community, emergency department, surgery) and identify the target audience and stakeholders (e.g., learners, faculty, program directors, administrators) early and involve them throughout all stages of the process.

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<th>Step</th>
<th>Purpose</th>
<th>Methods</th>
<th>Outcome</th>
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<td>1. Identifying research–practice gaps</td>
<td>Describe current practice</td>
<td>Knowledge syntheses, Portfolio, Surveys, Guided interviews, Focus groups</td>
<td>List of important gaps, List of current teaching, assessment, and program development activities</td>
<td>Review evidence on strategies for giving residents effective feedback, Identify current feedback practices in residency training programs using questionnaires and focus groups, Confirm presence and nature of the gap between current feedback practices and best practice strategies</td>
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<td>2. Identifying facilitators and barriers</td>
<td>Identify level of the facilitator/barrier: Individual: knowledge, attitudes, motivation, skills, etc.; Organizational: availability of resources, culture, readiness to change, etc.</td>
<td>Use theories to identify and understand facilitators and barriers: motivational, social-cognitive, action theories, etc.</td>
<td>List of facilitators and barriers with explanatory components</td>
<td>Interviews among clinical teachers underpinned by the TDF to identify the individual and organizational supports (e.g., readiness to change; residency training program with resources to support uptake of new practices; protected time to read and discuss evidence on feedback) and barriers (e.g., lack of knowledge on effective feedback strategies; heavy patient caseload) to effective feedback practices</td>
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<td>3. Designing interventions</td>
<td>Design interventions that are: Theory-based and aligned with facilitators and barriers; Targeted to appropriate audience; Contextualized to local learning environment; Feasible, acceptable, sustainable; Developed and implemented in partnership with relevant stakeholders</td>
<td>Select intervention components: Map practice change techniques to facilitators and barriers (modeling, self-monitoring, graded task, skill rehearsal, etc.)</td>
<td>Theory-based tailored intervention ready for implementation</td>
<td>Consider who needs to do what differently, why, when, and how; Involve teachers, department chairs, and residents in designing the KT interventions to promote uptake of new feedback strategies; For example, intervention (feedback) mapped to previously identified barrier (a specific knowledge gap) delivered (online biweekly over four months) by (supervisory clinician) to (a new group of residents)</td>
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<td>4. Implementing and evaluating impact</td>
<td>HPE researchers, implementation scientists, and other stakeholders evaluate intervention outcomes at three levels: Individual: learners, teachers, etc.; Organizational: school, hospital ward, etc.; System: education, health, etc.</td>
<td>Pre-post studies, Quasi-experimental, Controlled trials, Case studies, Cohort studies, Mixed methods</td>
<td>Individual outcomes, Organizational outcomes, System outcomes</td>
<td>Measurable changes in: Knowledge, attitudes, skills, and behaviors regarding effective feedback strategies in residency training programs; Cost-effective and streamlined residency programs, improved learner outcomes, etc.; Accreditation, licensure, quality of care, safety, etc.</td>
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Key messages:
- KT and IS are iterative processes targeted at specific populations, settings, and contexts to promote the systematic uptake of research findings and other evidence-based practices into HPE
- KT and IS can foster environments conducive to building teaching and assessment capacity and students’ lifelong learning
- Added value of medical education must be proven via robust scientific methods employed in IS

References:

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