The Union - NAR
Postgraduate Course
Implementation Science 101

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Implementation Science

- Implementation science: study of methods to promote the systematic delivery of a service in routine clinical practice

- Time from discovery to implementation
  - Hand hygiene: 150 years
  - TPT: recommended by WHO for >20 years (1998 guidelines)
  - Estimated median of 17 years from scientific advance to systematic uptake
  - Even if implementation is good at each step result can be under implementation
    - TB screening 90%; TB test sensitivity 90%; TB treatment initiation 90%; TB treatment completion / cure 90% ➔ 65% of people with TB completion/cure

[Bauer et al BMC Psych 2015; Brownson, Dissemination & Implementation Science Research in Health 2017]
Elements of implementation science

- Challenges in bringing innovations to scale
- Why and how something works or fails with scale-up is important
- Increase the impact of innovation / evidence based interventions
- Close gap between evidence and practice
- Real world context
- Generalizability
- Partnership with implementing organizations
1. What is the intervention
2. What are the barrier(s) to scale-up (implementation determinants)
3. What are the most critical determinants to scale-up
4. What strategy / strategies may work to address the determinants & achieve implementation
5. How is this strategy expected to work (mechanism of action)
6. How will this strategy be tested
7. How will implementation be measured
Generalizability – external validity
Consistency and clarity and specification
Robust measurement
Theory / mechanism of change

Implementation science

QI
M&E
Some definitions

- **Intervention**: the evidence-based health service that is expected to improve individual or population-level health (TPT, TB screening, infection control, etc.)
- **Implementation strategy**: the (theory-based) approach to achieve implementation of the intervention to a specific population or location (by affecting a specific determinant or determinants)
Causal model diagrams

Actor

• Who is providing the implementation strategy
  • Trainer
  • Administrator
  • Payor / regulator
Action

• The action taking place
  • Training
  • Audit and feedback
  • Regulatory change
Action target

• Clinicians
  • Ideally specify further – i.e. clinician knowledge
• Managers
• Policy makers
Temporality

• When and in what sequence
Dose

• How much
• How long – i.e. training session
• How frequent – i.e. audit and feedback
Justification

• Which implementation determinant is being targeted
• what is the proposed mechanism of change
Causal model diagrams

Implementation outcomes

• Acceptability
• Adoption
• Appropriateness
• Costs
• Feasibility
• Fidelity
• Penetration / Reach
• Sustainability
Summary

• Collaborative
• Systematic
• Characterize implementation determinants
• Collaboratively develop an acceptable strategy to address a determinant(s)
• Specify the strategy
• Specify the mechanism of change
• Identify relevant and measurable implementation outcomes