



# Implementation Science in the Cancer Care Continuum

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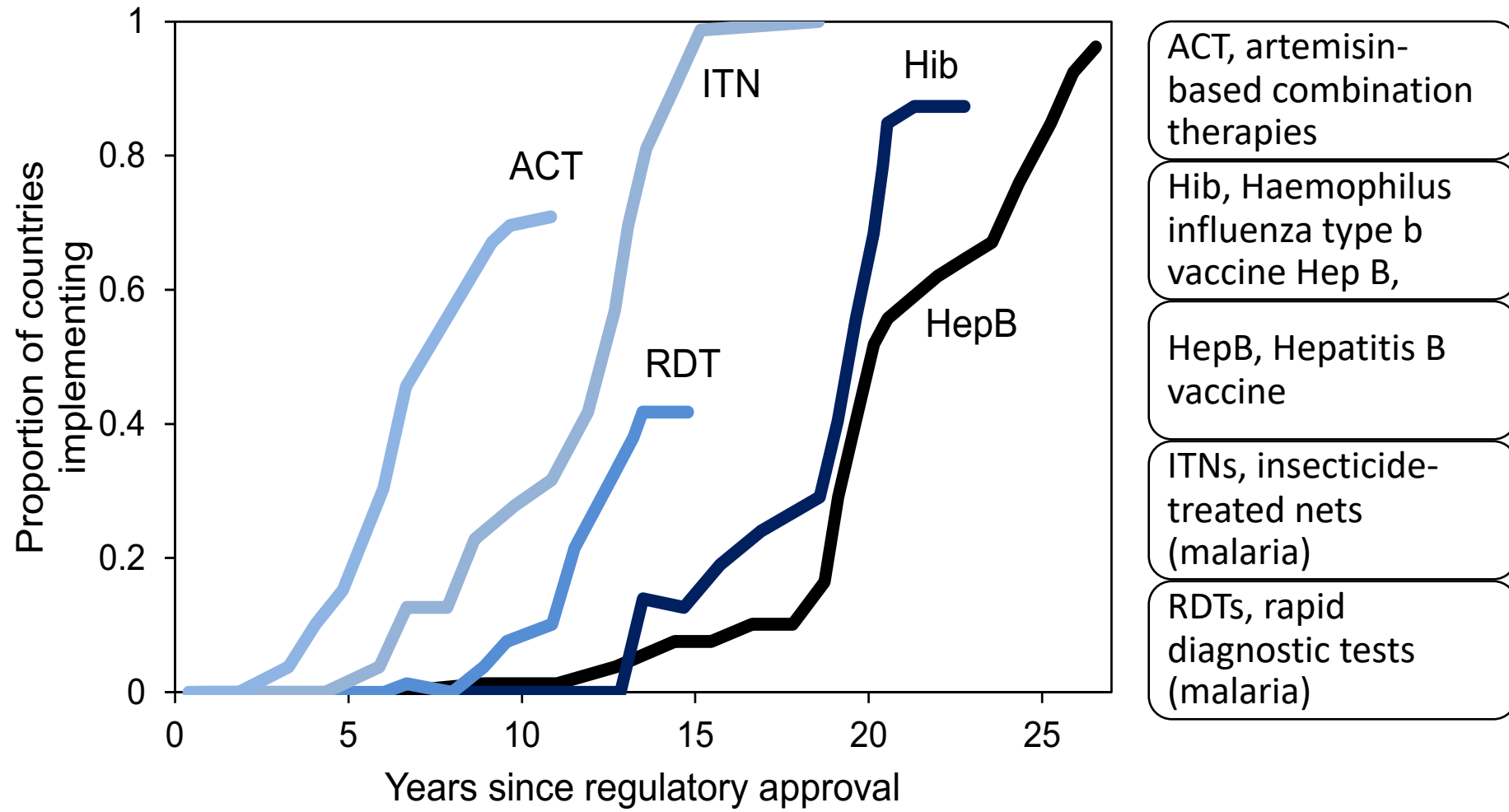
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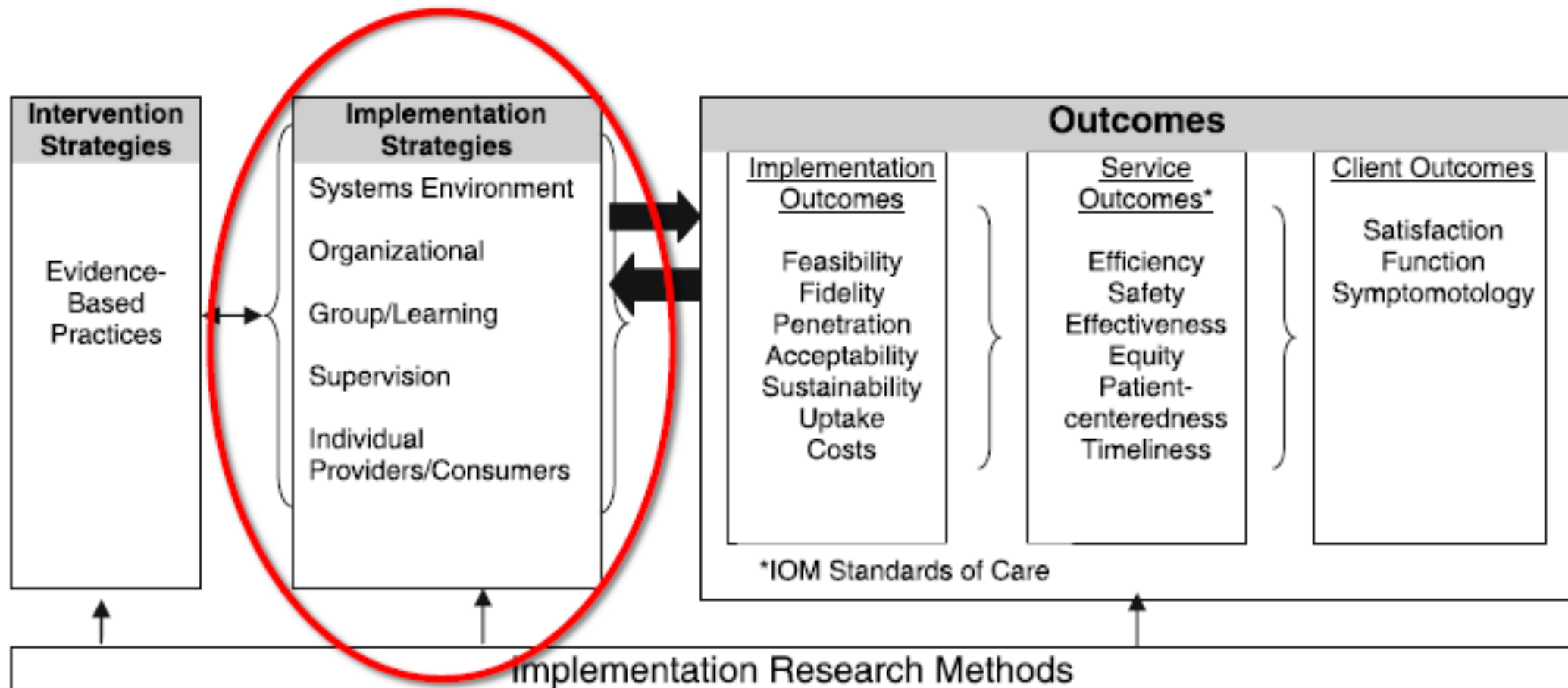
# THE PROBLEM: TRANSLATING EVIDENCE INTO POLICY AND PRACTICE – WHY SO VARIABLE? WHY SO SLOW?



# What is implementation Science

- Scientific study of the use of systematic strategies to adopt and integrate **proven/evidence based interventions** and apply it in the real world of the clinic or community
- The goal is to **improve patient outcomes** and **benefit population health**
- It focus on diseases where proven/evidence based interventions exists and where such interventions would significantly improve patients outcomes and population health
- Integral to policy development and execution
- Requires active and ongoing engagement with all stakeholders throughout the process to optimize chances of success

# Implementation research takes what we know and turns it into what we do



# What are proven/evidence based interventions

- Definition: Any action or set of actions that have been shown to be effective in improving individual or population health outcomes
- EBI may target individual behaviors or changes at the environmental level including:
  - Interpersonal levels e.g. Service Providers, Care Providers, Teachers
  - Organizations e.g. Schools, Worksites, Clinics
  - Policy level e.g. public policy
- Types of EBIs
  - General Interventions – broad approaches to change that fall within a particular category and may be implemented at various levels, e.g. mass media
  - Specific interventions – policies and programs that have peer-reviewed, documented evidence of efficacy or effectiveness. NCI provides access to packaged programs that may serve as specific interventions through Research-Tested Interventions Programs website (RTIP)

# Evaluation of EBI

- Application of the RE-AIM criteria to test the effectiveness, fidelity and maintenance of EBI
  - Reach
  - Effectiveness
  - Adoption
  - Implementation
  - Maintenance
- Another approach to evaluating EBI is application of PRECIS Criteria (Pragmatic-Explanatory Continuum Indicator Summary) which assesses the balance between multiple qualities valuable in experimental studies compared to practical real-world settings

# Factors to consider when choosing an EBI

- Strength of the evidence and the potential for impact
- Fit of the EBI to local needs and resources
- Health problems under consideration and the factors that influence it
- Organizational capacity to implement the intervention
- Is the population being used for interventions similar to that where the intervention was developed?

# Intervention fidelity and adaptation

- Fidelity is the degree to which an intervention is implemented as prescribed in original protocol
- It is more readily applied to Specific rather than General EBIs
- Monitoring fidelity is important and key elements that are used are:
  - Adherence
  - Dose/Exposure
  - Quality of delivery
  - Participant responsiveness
  - Program differentiation



# Adaptation

- Adaptation is defined as the degree to which an EBI is changed or modified by a user during adoption and implementation to suit the needs of the setting or to improve its fit to local conditions
  - Adaptations are planned
  - Adaptations are purposeful
- Categorization of adaptations
  - Who made the modifications
  - What was modified
  - What was the level of delivery where modification occurred
  - What contexts were modified
  - What contents were modified

# Balancing fidelity and adaptation

- Both fidelity and adaptation are important
  - High fidelity is associated with better outcomes
  - Alternatively high fidelity may not be realistic or desirable
- Systematic approach to evaluation has the following steps
  - Assess the target population
  - Understand the EBI
  - Select the intervention
  - Consult experts and the literature
  - Consult stakeholders
  - Decide what needs to be adapted
  - Implement the adaptation
  - Train staff
  - Pilot test the adapted EBI
  - Implement
  - Evaluate

# Role of theoretical models

- Theoretical frameworks help inform EBI development and implementation
- EBIs that are based on theoretical frameworks are more likely to be successful because
  - They focus the mind on key aspects of EBI development
- Numerous frameworks
  - Diffusions of innovation
  - RE-AIM
  - Consolidated Framework for Implementation Research (CFIR)

# Systematic intervention planning

- Systematic intervention planning can be used to integrate information from theories, empirical evidence and new data
- An example is the PRECEDE-PROCEED
  - Developed to provide systematic method for applying theories
  - Consists of a planning, implementation and evaluation phase
- Another example is Intervention Mapping
  - Based on principle of participatory planning
- Critical questions to consider
  - Who is responsible for adoption of intervention
  - Who will deliver it
  - What do they have to do to deliver the intervention
  - What factors influence program adoption
  - How can these be influenced

# Current focus of implementation Science in Cancer

- NCI started giving Administrative Supplements for D & I research in 2001
- Cancer Control Planet website (<https://cancercontrolplanet.cancer.gov/planet/>) was launched in 2003
- NCI launches D and I Training Institute in 2011
- The Cancer Moonshot program recommends that priority should be on
  - Expand use of proven cancer prevention and early detection strategies
  - Minimize cancer treatment's debilitating side effects – focused on the implementation of evidence-based symptom management strategies

# NCI Implementation Science concept notes and funding announcements

- RFA-CA-17-041 - Approaches to Identify and Care for Individuals with Inherited Cancer Syndromes (U01)
  - The purpose of this FOA is to increase case ascertainment and optimize delivery of evidence-based healthcare for individuals at high risk of cancer due to an inherited genetic susceptibility.
- RFA-CA-17-038 & 039 - Accelerating Colorectal Cancer Screening and follow-up through Implementation Science (ACCSIS): Coordinating Center (U24)
  - The purpose of this FOA is to promote research in colorectal cancer screening, follow-up, and referral-to-care among target populations for whom screening rates are below national standards
- RFA-CA-17-042 & 043 Research Centers for Improving Management of Symptoms During and Following Cancer Treatment (UM1)
  - The purpose of this specific FOA is to promote research on the implementation and evaluation of integrated symptom monitoring and management systems for use in cancer care delivery through a Research Consortium.

# Goals of IR

- Optimize health-care delivery
- Improve uptake of research findings
- Ideally an effective process can be generalized to other settings
- Multi-stakeholder engagement to jointly address problems
- Inform policy development for sustainable solutions

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