

*Effective Faculty Calibration
for Implementation of
Evidence-Based Cariology
Practice*

**Harnessing Implementation
Science**



**Sponsored by the ADEA
Section on Cariology**

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Speakers agree that neither they nor members of their immediate family have any financial relationships with commercial entities that may be relevant to their presentation.



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Learning Objectives

- 1) Describe the overall scope and major aims of **Dissemination and Implementation Science**, including defining common outcomes of oral health-related implementation research.
- 2) Identify and apply **strategies** for effectively introducing and implementing new Cariology protocols into clinical practice.
- 3) Develop **new approaches for faculty calibration** in the teaching and clinical practice of caries management.

Webinar Overview

Background on Dissemination and Implementation Science

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graph TD; A[Background on Dissemination and Implementation Science] --> B[Challenges with Faculty Calibration: Clinical Teaching Scenarios]; B --> C[Identifying Barriers to Calibration and Applying Implementation Strategies to Facilitate Calibration]; C --> D[Question and Answer];
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Challenges with Faculty Calibration: Clinical Teaching Scenarios

Surgical intervention?

Selective caries removal?

Identifying Barriers to Calibration and Applying Implementation Strategies to Facilitate Calibration

Question and Answer

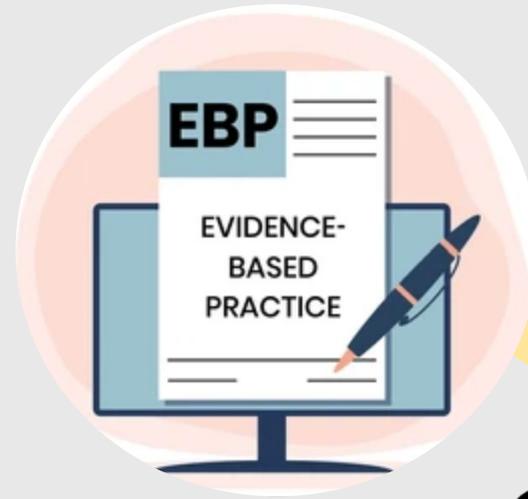


Featured Speaker

Cameron L. Randall, Ph.D.
University of Washington School of
Dentistry



The Evidence- to-Practice Gap



**Average
17 years!**





Why **slow implementation** ...and
what to do about it?

***Dissemination and Implementation
Science***- field of research and
practice in Psychology

Goal: Shrink the evidence-to-practice
gap by facilitating more efficient
adoption and routine clinical use of
evidence-based practice

Dissemination

“an **active** approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies”

(Rabin & Brownson, 2018)

Effective dissemination typically does not occur spontaneously...

Instead, should be **intentional** via:

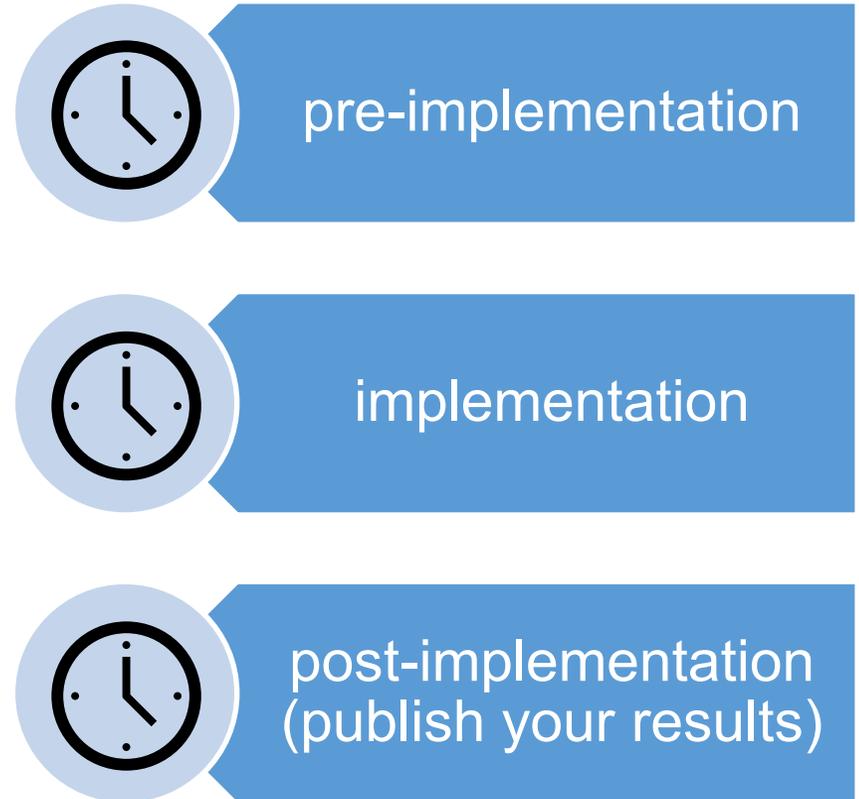
- ✓ Multi-level messaging
- ✓ Stakeholder involvement
- ✓ Theories and frameworks
- ✓ Tailoring of dissemination processes

(Brownson et al., 2013; Randall, 2023)

Implementation

“the **process** of putting to use or integrating evidence-based interventions within a setting”

(Rabin & Brownson, 2018)



(Brownson et al., 2013; Randall, 2023)

Implementation Strategies

“methods or techniques used to enhance the adoption, implementation, and sustainability of an evidence-based practice”

(Rabin & Brownson, 2018)



(Mazza et al., 2013; Michie et al., 2013; Powell et al., 2015; Randall, 2023)

Application in Oral Health



Guideline to manage asymptomatic impacted third molars

- > Feedback
- > Reminders
- > Interactive meetings

(van der Sanden et al., 2005)



Evidence-based antibiotic prescribing

- > Audit and feedback

(Bahrami et al., 2004)



Assessment of and counseling/referral for tobacco cessation

- > Automated reminder in EHR

(Rindal et al., 2015)

Case 1: Is it time for surgical intervention?

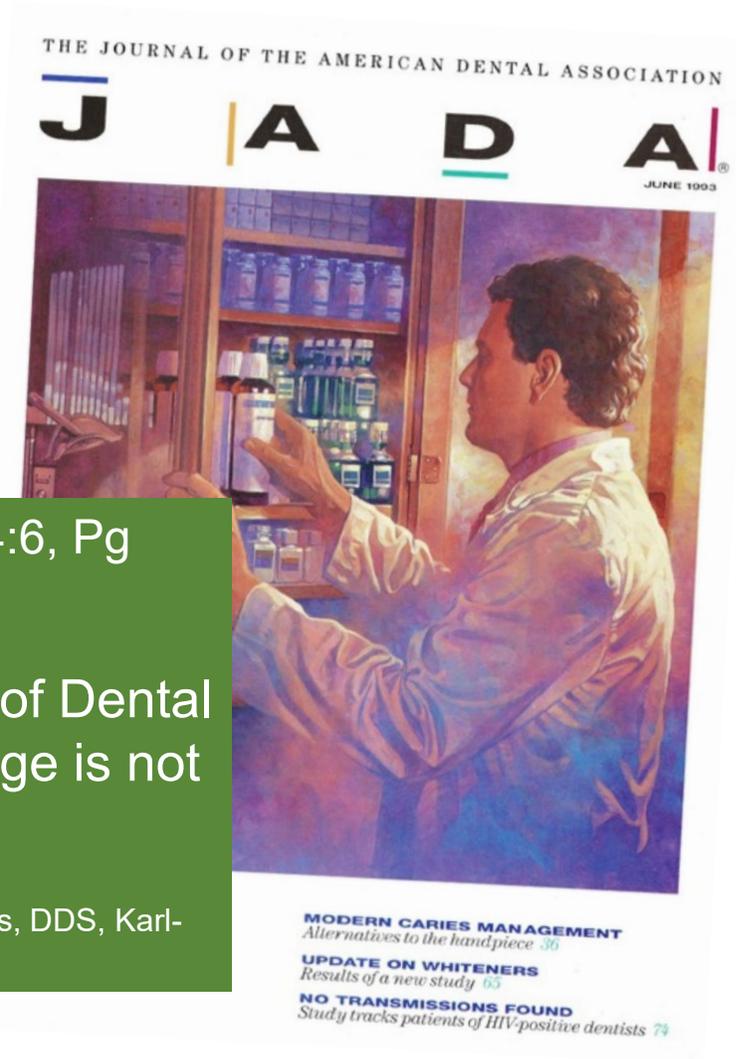
A 32-year-old female presents for recall appointment. No medical concerns. No dental complaints. Patient's last recall exam and hygiene appointment was 12 months ago.

Bitewing radiograph reveals proximal lesions seen here. Similar lesions are seen in other quadrants of her mouth.

Is it time to cut?



Case 1: Is it time for surgical intervention?



Research Article Vol 124:6, Pg
36-44 June 1993

Modern Management of Dental
Caries: the Cutting Edge is not
the Dental Bur

Maxwell Anderson, DDS, David Bales, DDS, Karl-
Ake Omnell, DDS



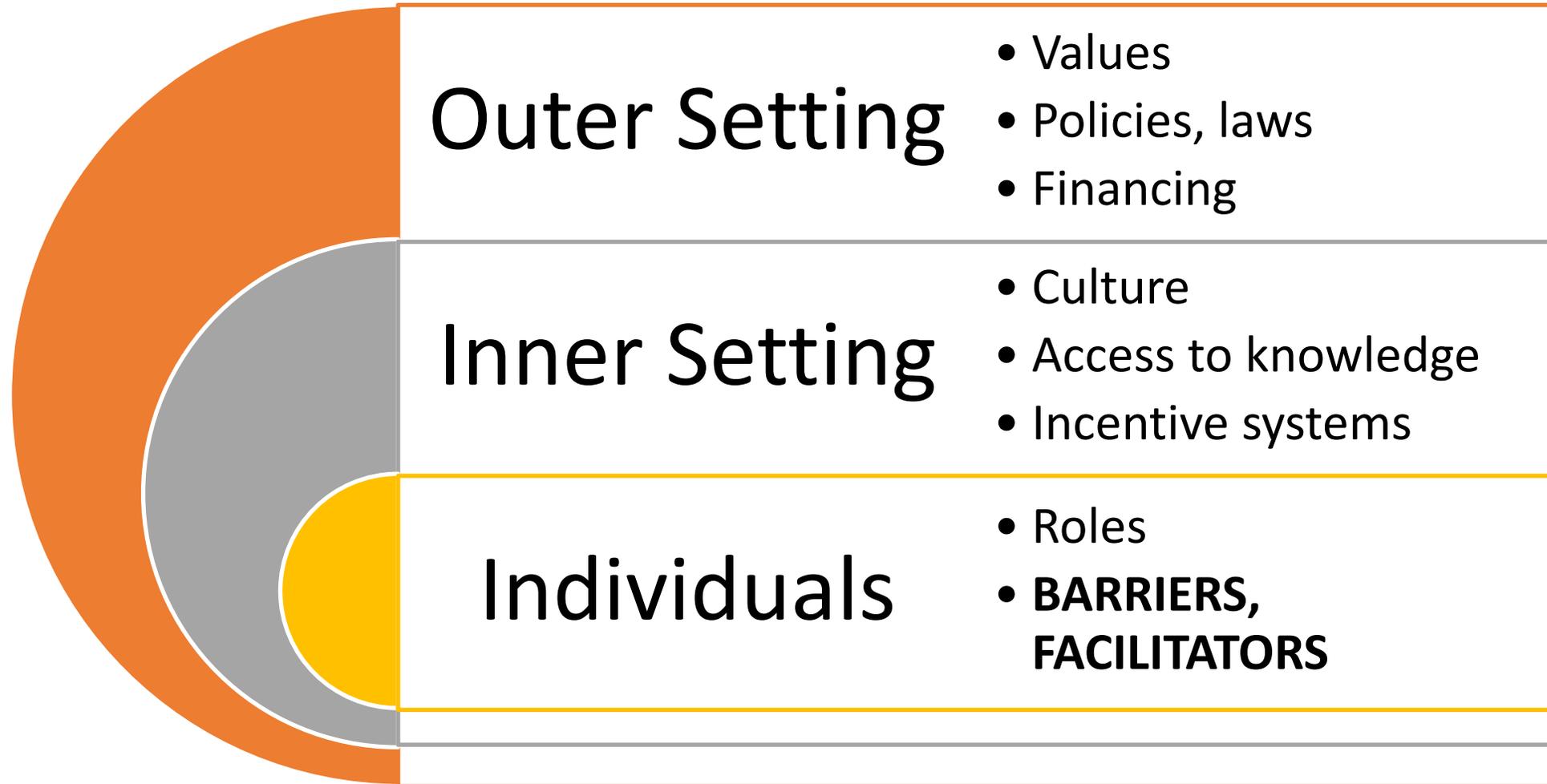
JADA 2015:146(2):79-86
Research Article: System for
Clinical Practice



What common objections do you hear?

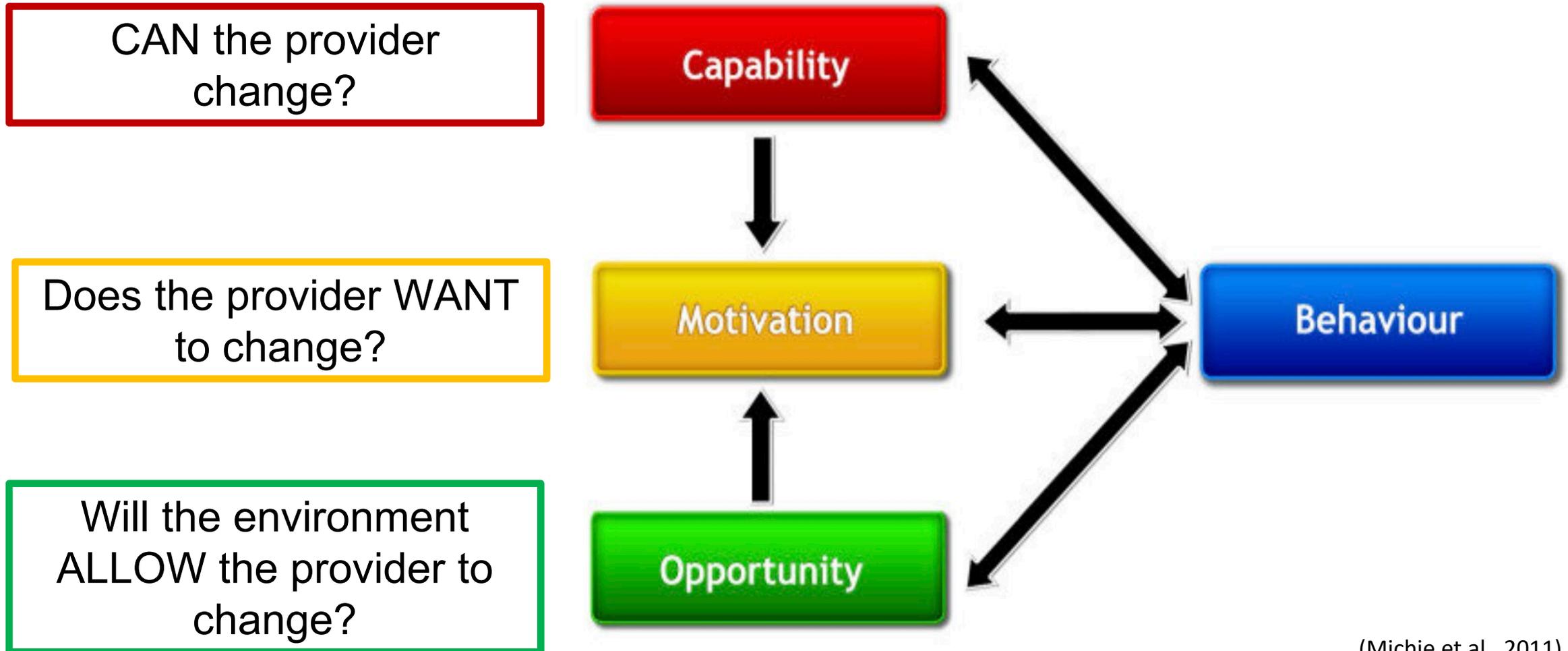
- A. “Interproximal lesions are often larger than they appear on radiograph.”
- B. “Decay does not reverse and can progress rapidly. Should I just ‘watch it grow?’”
- C. “Patients aren’t likely to return unless it hurts – and by then they’ll need a root canal!”
- D. “A patient with multiple lesions is high risk and unlikely to change their behavior. The restorations are inevitable, so why not do it now?”
- E. “Patients are hesitant about some non-invasive therapies, like fluoride.”

Appreciating the Big Picture



(Modified from: Damschroder et al., 2022)

Identifying the Barriers



Identifying the Barriers: Case 1

- A. “Interproximal lesions often appear smaller on radiograph.”
 - B. “Decay does not reverse and can progress rapidly. Should I just ‘watch it grow?’”
 - C. “Patients aren’t likely to return unless it hurts – and by then they’ll need a root canal!”
 - D. “A patient with multiple lesions is high risk and unlikely to change their behavior. The restorations are inevitable, so why not do it now?”
 - E. “Patients are hesitant about some non-invasive therapies, like fluoride and SDF.”
- 1. Provider Knowledge and Skills
 - 2. Beliefs about Patients
 - 3. Patient Preferences
 - 4. Training/Clinical Environment

Identifying Implementation Strategies

Powell et al. *Implementation Science* (2015) 10:21
DOI 10.1186/s13012-015-0209-1

 IMPLEMENTATION SCIENCE

RESEARCH **Open Access**

A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell^{1*}, Thomas J Waltz², Matthew J Chinman^{3,4}, Laura J Damschroder⁵, Jeffrey L Smith⁶, Monica M Matthieu^{5,7}, Enola K Proctor⁸ and JoAnn E Kirchner^{6,9}

Abstract

Background: Identifying, developing, and testing implementation strategies are important goals of implementation science. However, these efforts have been complicated by the use of inconsistent language and inadequate descriptions of implementation strategies in the literature. The Expert Recommendations for Implementing Change (ERIC) study aimed to refine a published compilation of implementation strategy terms and definitions by systematically gathering input from a wide range of stakeholders with expertise in implementation science and clinical practice.

Methods: Purposive sampling was used to recruit a panel of experts in implementation and clinical practice who engaged in three rounds of a modified Delphi process to generate consensus on implementation strategies and definitions. The first and second rounds involved Web-based surveys soliciting comments on implementation strategy terms and definitions. After each round, iterative refinements were made based upon participant feedback. The third round involved a live polling and consensus process via a Web-based platform and conference call.

Results: Participants identified substantial concerns with 31% of the terms and/or definitions and suggested five additional strategies. Seventy-five percent of definitions from the originally published compilation of strategies were retained after voting. Ultimately, the expert panel reached consensus on a final compilation of 73 implementation strategies.

Conclusions: This research advances the field by improving the conceptual clarity, relevance, and comprehensiveness of implementation strategies that can be used in isolation or combination in implementation research and practice. Future phases of ERIC will focus on developing conceptually distinct categories of strategies as well as ratings for each strategy's importance and feasibility. Next, the expert panel will recommend multifaceted strategies for hypothetical yet real-world scenarios that vary by sites' endorsement of evidence-based programs and practices and the strength of contextual supports that surround the effort.

Keywords: Implementation research, Implementation strategies, Knowledge translation strategies, Mental health, US Department of Veterans Affairs

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(Powell et al., 2015; Waltz et al., 2015)

Selecting and Using Strategies: Case 1

BARRIER

Provider Knowledge and Skills

STRATEGY

“Conduct Ongoing Training”

Plan for and conduct training in the clinical innovation in an ongoing way

“Make Training Dynamic”

Vary the information delivery methods to cater to different learning styles and work contexts, shape the training to be interactive

Selecting and Using Strategies: Case 1

BARRIER

Beliefs about Patients

STRATEGY

“Use Train-the-Trainer Strategies”

Train designated clinicians to train others in the clinical innovation

Selecting and Using Strategies: Case 1

BARRIER

Patient Preferences

STRATEGY

“Prepare Patients to be Active Participants”

Prepare patients to be active in their care, to ask questions, and specifically to inquire about care guidelines, the evidence behind clinical decisions, or about available evidence-supported treatments

Case 2: Is selective caries removal acceptable?

A 20-year-old male presents with no medical concerns. No history of pain. No percussion, palpation sensitivity. Normal response to Endo Ice.

Tooth prepared to clean margins 2 mm from DEJ. Bulk of carious dentin removed, but area over pulp horns still soft and wet.

Should remaining dentin be removed?



Case 2: Is selective caries removal acceptable?

Cochrane Library
Trusted evidence.
Informed decisions.
Better health.

Cochrane Reviews ▾ Trials ▾ Clinical Answers ▾ About ▾ Help ▾

Cochrane Database of Systematic Reviews | Review - Intervention

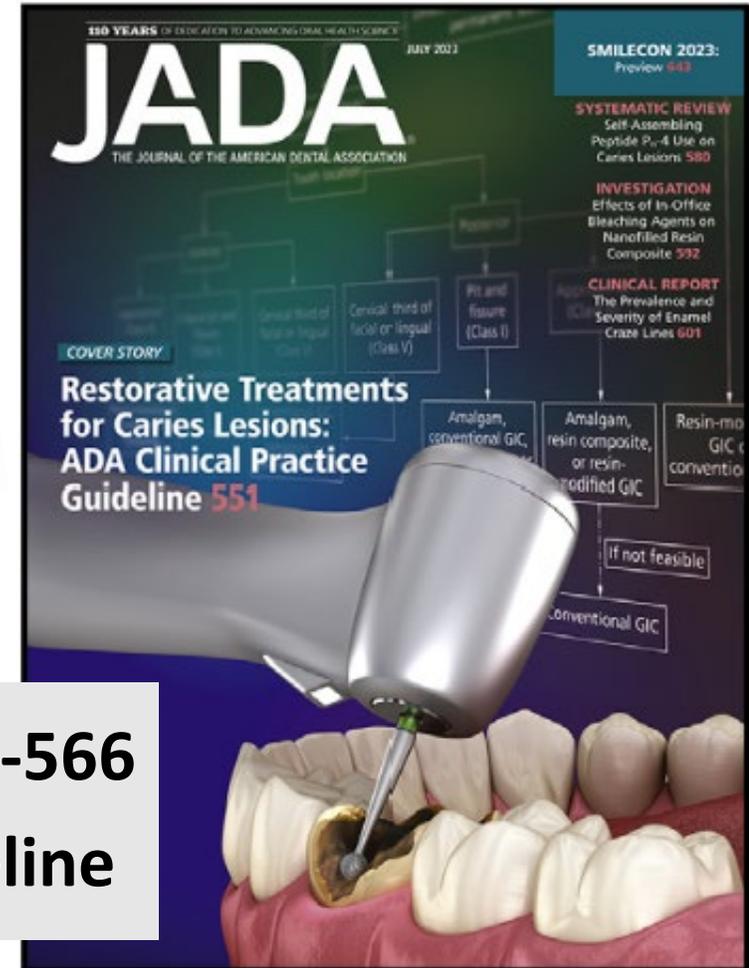
Complete or ultraconservative removal of decayed tissue in unfilled teeth

David Ricketts, Edwina Kidd, Nicola P T Innes, Jan E Clarkson Authors' declarations of interest

Version published: 19 July 2006 Version history
<https://doi.org/10.1002/14651858.CD003808.pub2>

Title Abst

**JADA 2023:154(7):551-566
Clinical Practice Guideline**





Which sound familiar?

- A. “I just feel more comfortable if all the decay is removed.”
- B. “The caries will progress if you leave any behind.”
- C. “What happens tonight or over the weekend if the patient is in pain? We can’t see patients in the teaching clinic outside clinic hours.”
- D. “The next dentist will think you just left decay behind by mistake.”

Identifying the Barriers: Case 2

A. “I just feel more comfortable if all the decay is removed.”

1. Emotion

B. “The caries will progress if you leave any behind.”

2. Provider Knowledge and Skills

C. “What happens tonight or over the weekend if the patient is in pain? We can’t see patients in the teaching clinic outside clinic hours.”

3. Training/Clinical Environment

D. “The next dentist will think you just left decay behind by mistake.”

4. Professional Roles and Norms

Selecting and Using Strategies: Case 2

BARRIER

Provider Knowledge and Skills

STRATEGY

“Create a Learning Collaborative”

Facilitate the formation of groups of providers and foster a collaborative learning environment to improve implementation of the clinical innovation

Selecting and Using Strategies: Case 2

BARRIER

Training/Clinical Environment

STRATEGY

“Develop Resource Sharing Agreements”

Develop partnerships with organizations that have resources needed to implement the innovation

Selecting and Using Strategies: Case 2

BARRIER

Professional Roles and Norms

STRATEGY

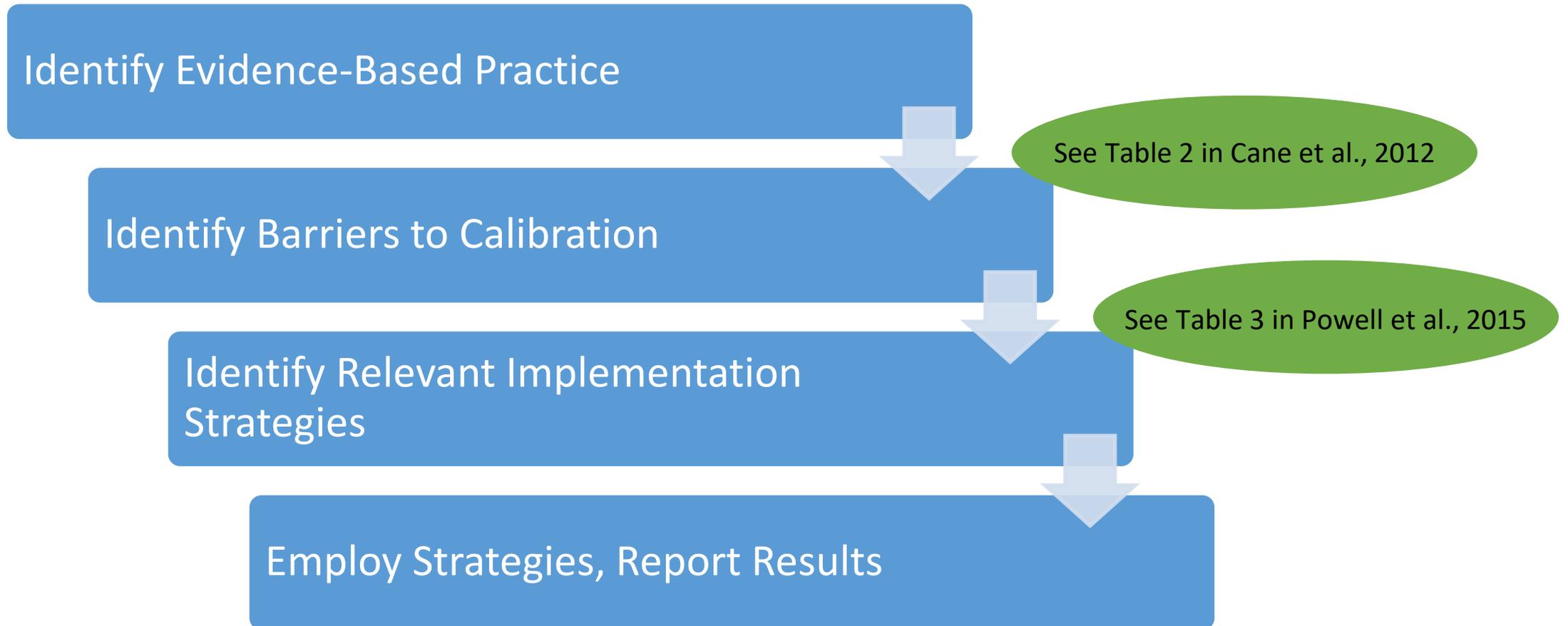
“Identify and Prepare Champions”

Identify and prepare individuals who dedicate themselves to supporting, marketing, and driving through an implementation, overcoming indifference or resistance

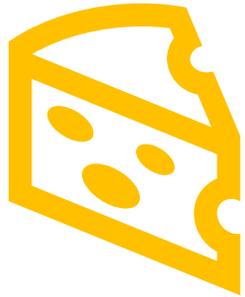
“Inform Local Opinion Leaders”

Inform providers identified by colleagues as opinion leaders or “educationally influential” about the innovation with the goal of them influencing colleagues to adopt it

Summary of Process: Implementation for Calibration



Important Considerations



Use multiple strategies



Consider *your* context, including culture and clinic operations



Refer to and rely on resources from implementation science

Key References

1. Cane, J., O'Connor, D., Michie, S. (2012). **Validation of the theoretical domains framework for use in behaviour change and implementation research.** *Implementation Science*, 7, 37. [SEE TABLE 2].
2. Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., Proctor, E. K., & Kirchner, J. E. (2015). **A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project.** *Implementation Science*, 10, 21. [SEE TABLE 3].
3. Randall, C. L. (2023). **Dissemination and implementation research for oral and craniofacial health: Background, a review of literature and future directions.** *Community Dentistry and Oral Epidemiology*, 51, 119-132.



Panel
Discussion
and Questions