INTRODUCING IMPLEMENTATION SCIENCE

PER NILSEN, 23 NOVEMBER 2021

DEPARTMENT OF HEALTH, MEDICINE AND CARING SCIENCES,
DIVISION OF HEALTH AND SOCIETY

LINKÖPING UNIVERSITY

Population of **Sweden**: approx. 10m

Linköping, population 150,000
(**5th** largest city in Sweden)

CONTENTS

- ✓ What is “implementation” and implementation research?
- ✓ Origins and development of implementation science
- ✓ What determines implementation success?
- ✓ Using implementation science knowledge in practice

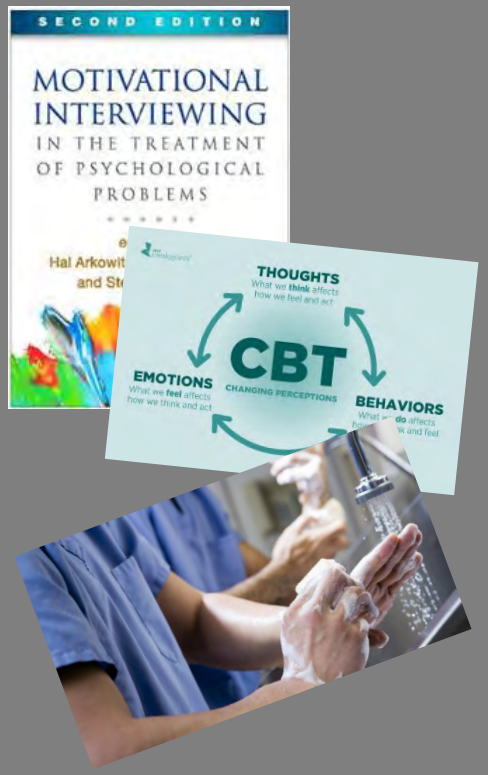
WHAT IS ”IMPLEMENTATION” AND IMPLEMENTATION SCIENCE?

Latin *implere* means ”fill”, ”fill up”, ”complete”

In everyday talk: introduce, use, put into effect, execute, apply, conduct, realize, initiate…

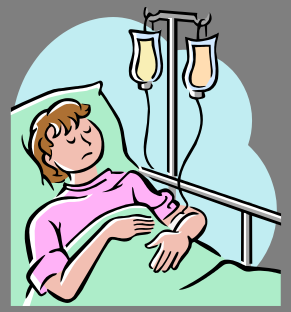
Not a new phenomenon! Translating knowledge and ambitions into reality, e.g. to address societal problems

Implementation is the link between knowledge/research/evidence and patient/population benefits



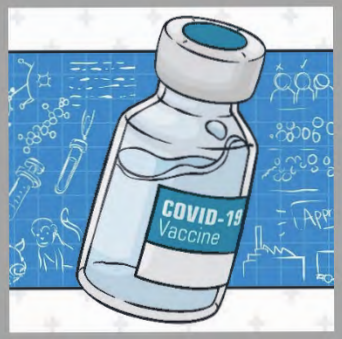
Knowledge, research, evidence, etc.

Routine practice in health care, community services, society, etc.



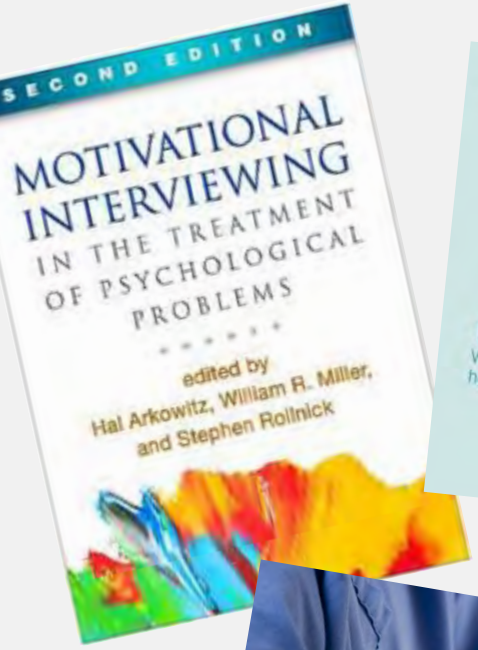
Benefitting patients and populations

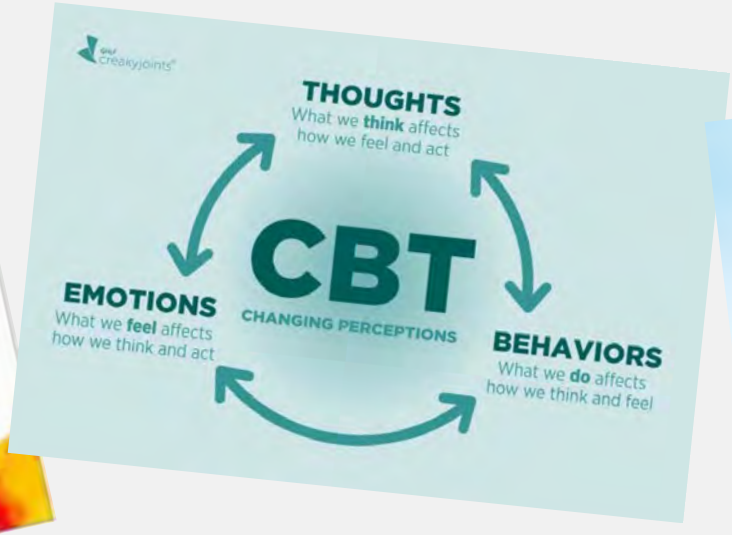
A current example!



What is implemented?

The implementation ”objects”





CLINICAL RESEARCH VS. IMPLEMENTATION RESEARCH

Bauer & Kirchner, 2020:
"...the goal of implementation science is not to establish the health *impact* of a clinical innovation, but rather to identify the **factors that affect its *uptake* into routine use**."

Psychiatry Research 283 (2020) 112376

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Review article

Implementation science: What is it and why should I care?

Mark S. Bauer[a,b,*], JoAnn Kirchner[b,c]

[a] The Center for Healthcare Organization & Implementation Research (CHOIR), Veterans Affairs Boston Healthcare System, and the Harvard Medical School, Boston, MA, USA
[b] The Department of Veterans Affairs Quality Enhancement Research Initiative (QUERI) for Team-Based Behavioral Health, Little Rock AR & Boston MA, USA
[c] The Central Arkansas Veterans Healthcare System, and the University of Arkansas for Medical Sciences, Little Rock, AR, USA

ARTICLE INFO

Keywords:
Implementation
Clinical trials
Dissemination

ABSTRACT

Centuries of experience make it clear that establishing the effectiveness of a clinical innovation is not sufficient to guarantee its uptake into routine use. The relatively new field of implementation science has developed to enhance the uptake of evidence-based practices and thereby increase their public health impact.

Implementation science shares many characteristics, and the rigorous approach, of clinical research. However, it is distinct in that it attends to factors in addition to the effectiveness of the clinical innovation itself,

Bauer et al., 2015:

”This field incorporates a scope broader than traditional clinical research, focusing not only at the patient level but also at the **provider, organization, and policy levels** of healthcare.”

Bauer *et al. BMC Psychology* (2015) 3:32
DOI 10.1186/s40359-015-0089-9

BMC Psychology

DEBATE Open Access

An introduction to implementation science for the non-specialist

Mark S. Bauer[1,7*], Laura Damschroder[2], Hildi Hagedorn[3], Jeffrey Smith[4] and Amy M. Kilbourne[5,6]

Abstract

Background: The movement of evidence-based practices (EBPs) into routine clinical usage is not spontaneous, but requires focused efforts. The field of implementation science has developed to facilitate the spread of EBPs, including both psychosocial and medical interventions for mental and physical health concerns.

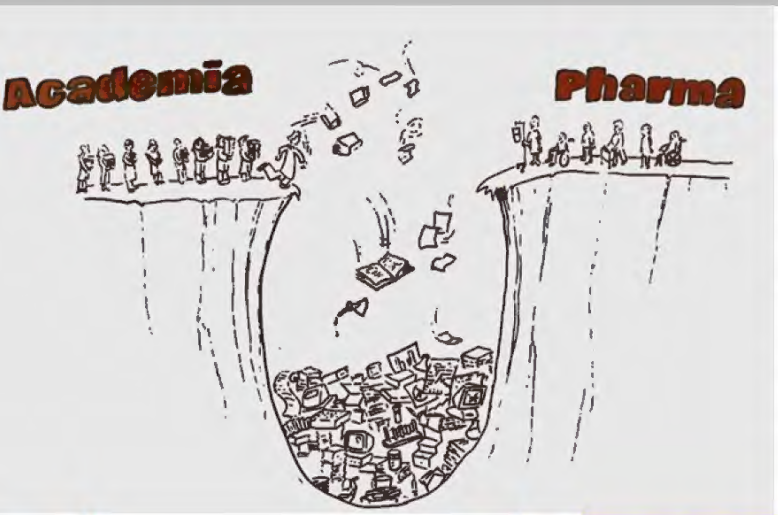
Discussion: The authors aim to introduce implementation science principles to non-specialist investigators, administrators, and policymakers seeking to become familiar with this emerging field. This introduction is based on published literature and the authors' experience as researchers in the field, as well as extensive service as

ORIGINS AND DEVELOPMENT OF IMPLEMENTATION SCIENCE

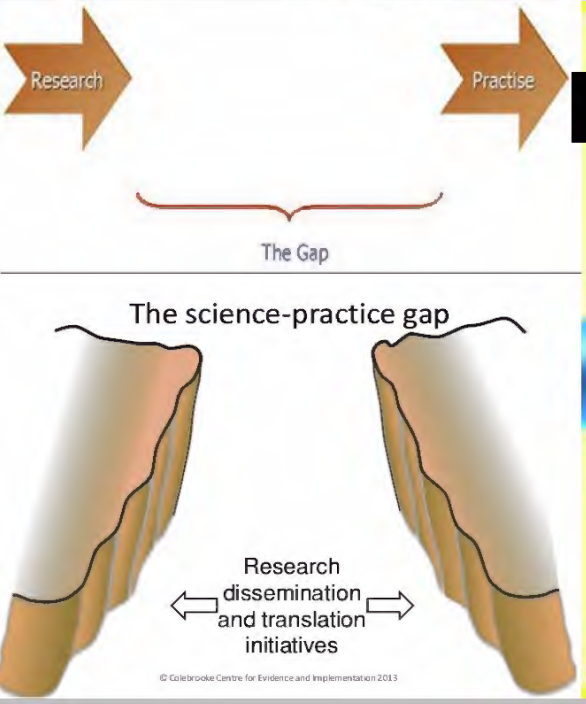
Emerged in the wake of the evidence-based movement

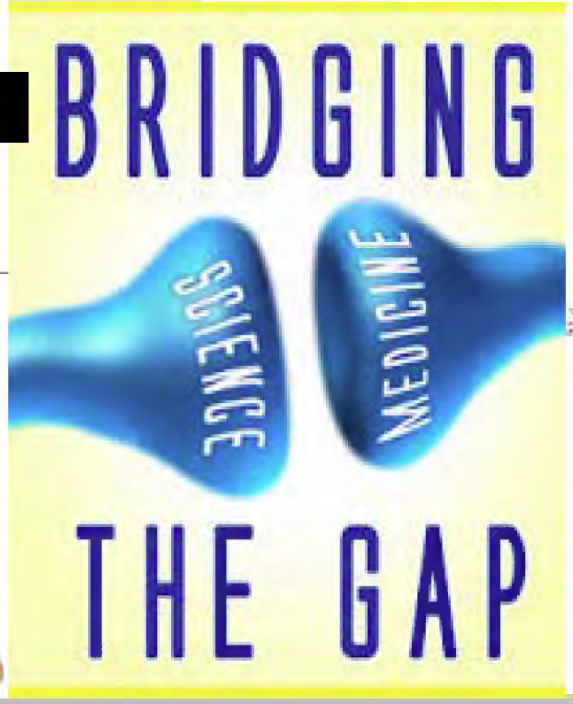
”This new science has arisen mainly from the study of failure.” (Kelly, 2012, p. 3)

EBM (1992)and its broader application EBP “popularized the notion that **scientific findings should be more** comprehensively **implemented** within typical practice” (Chambers, 2012)


Academia
Pharma

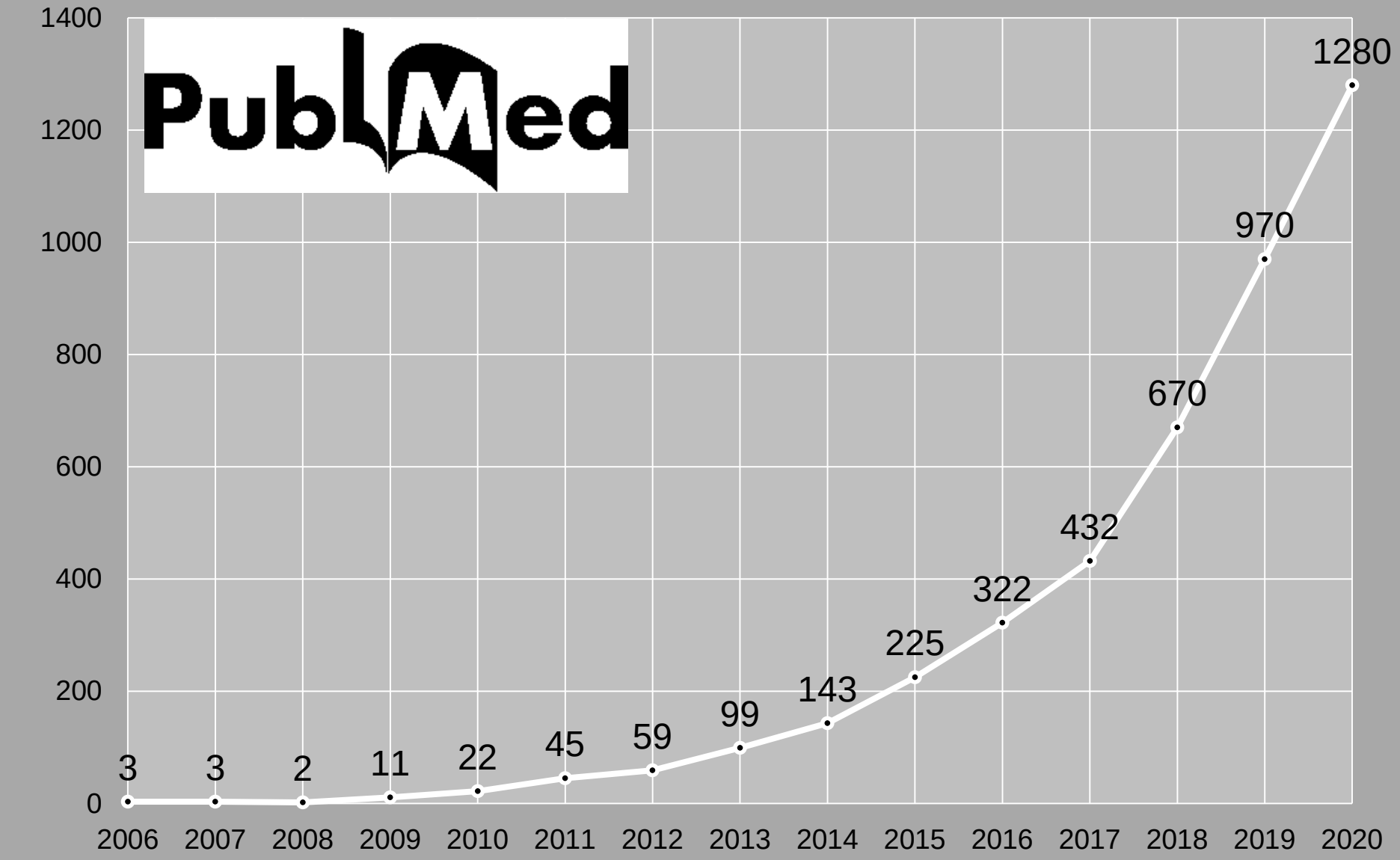
MIND THE GAP


Research
Practise
The Gap
The science-practice gap
Research dissemination and translation initiatives
© Colebrooke Centre for Evidence and Implementation 2013


BRIDGING
SCIENCE
MEDICINE
THE GAP

PERCEPTION
THE SCIENCE GAP
SCIENTISTS & RESEARCHERS
PUBLIC
COMMUNICATION

"Implementation science" in abstract: number of publications in PubMed

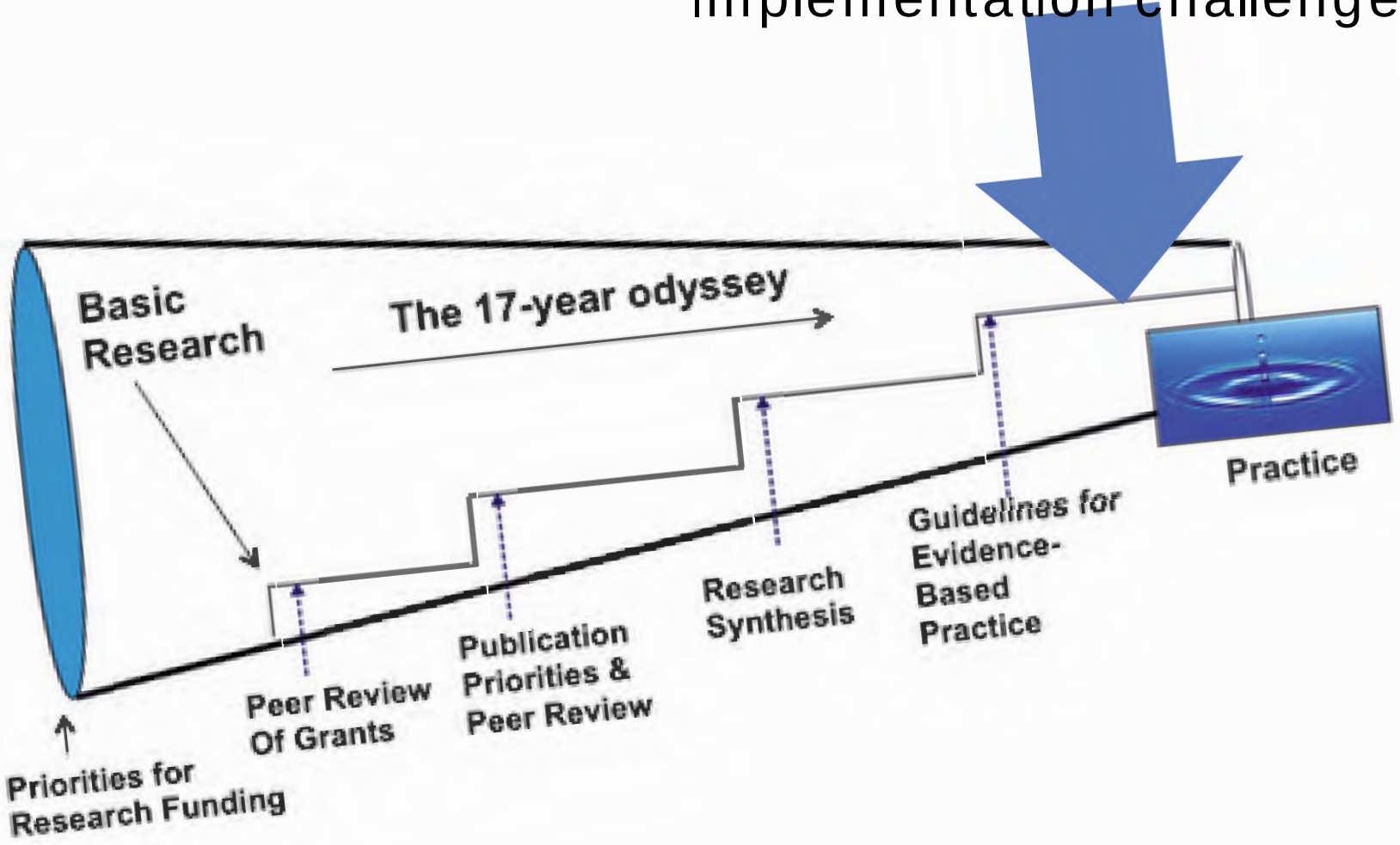


WHAT DETERMINES IMPLEMENTATION SUCCESS?

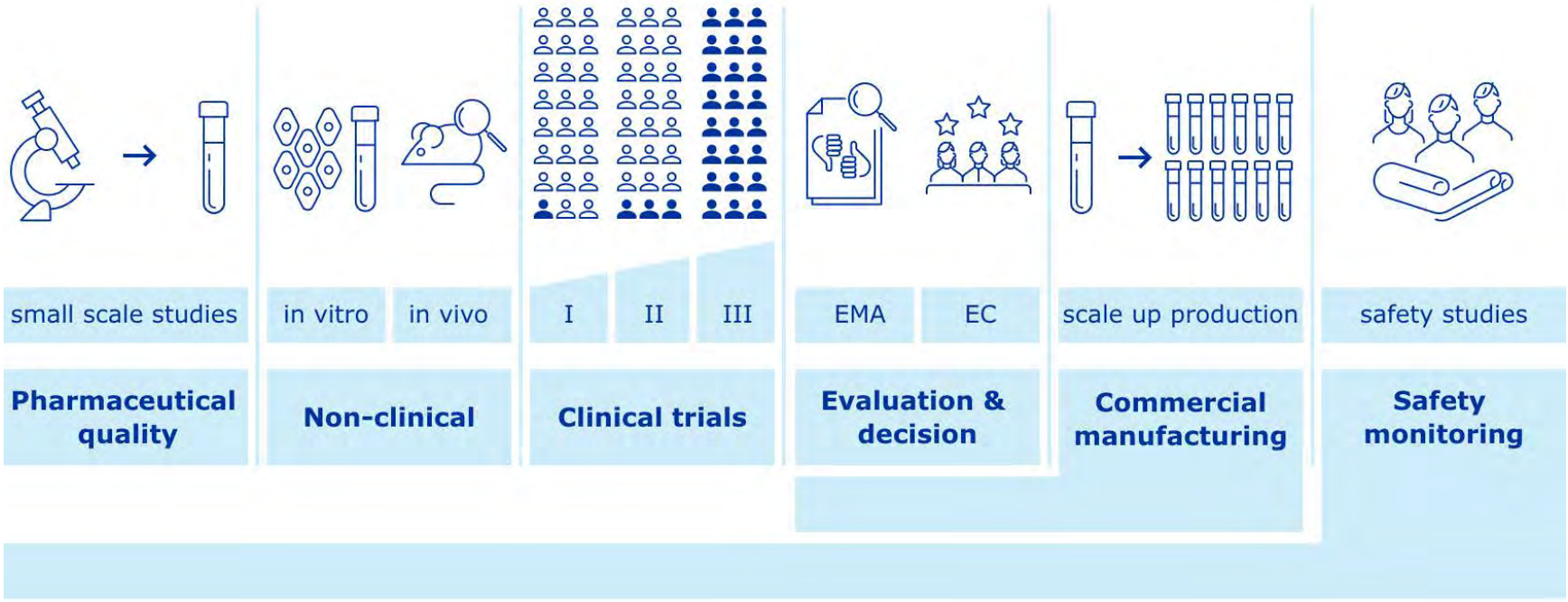
There are two rules for success...

1. Never reveal everything you know

Implementation challenges

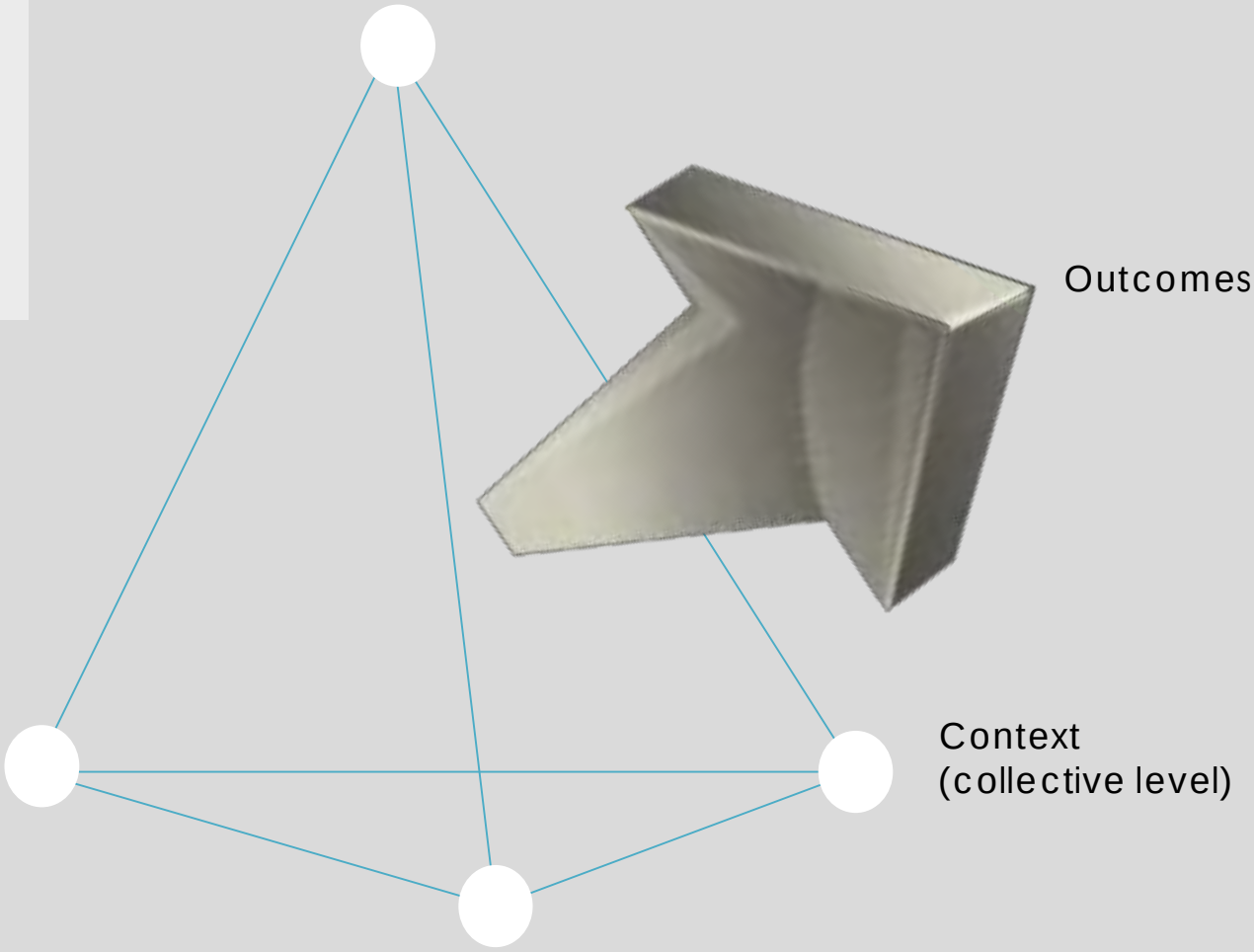


Not always 17 years!

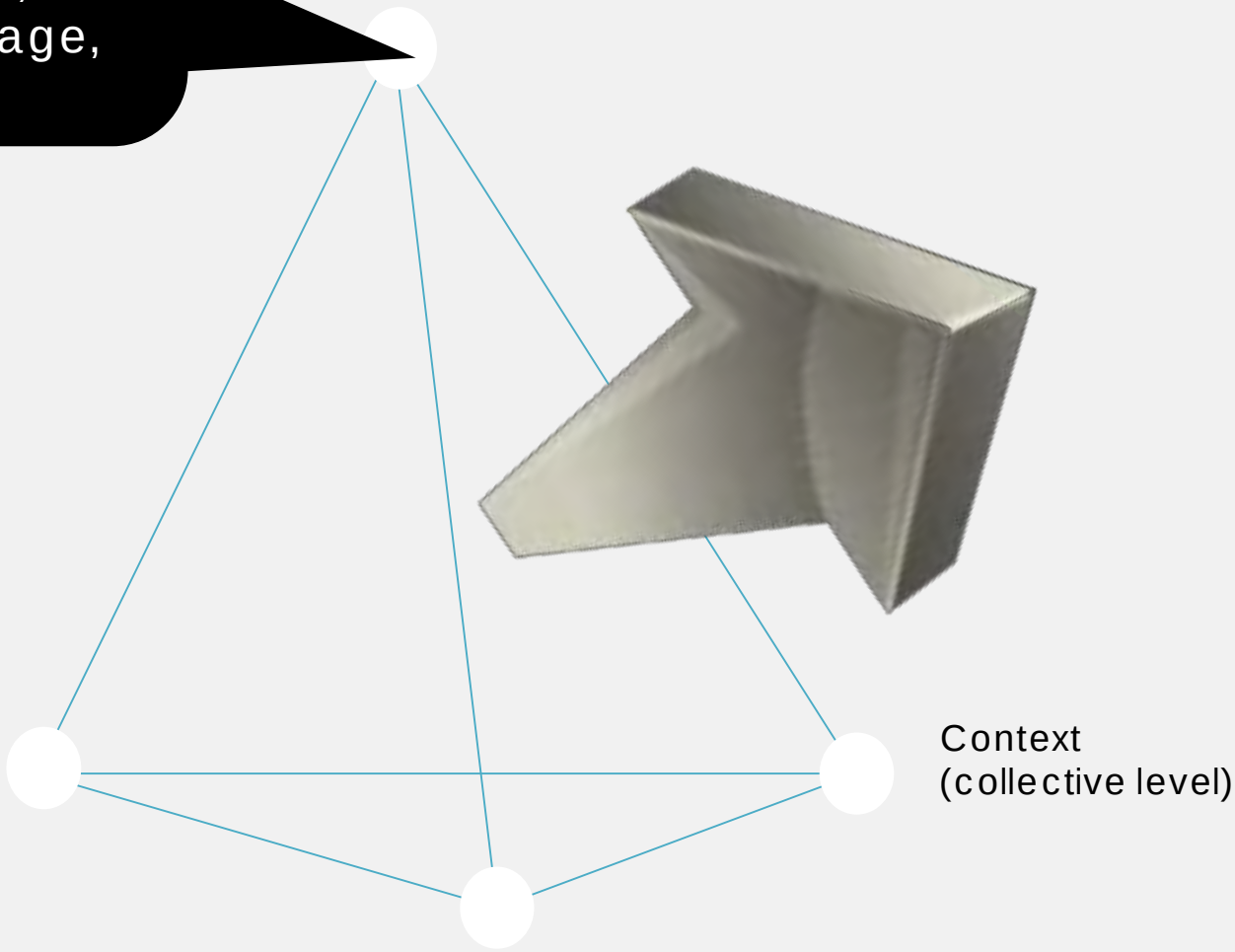


IMPLEMENTATION SUCCESS – DETERMINANTS

Based on:
Diffusion Theory (Rogers, 2003)
PARIHS (Kitson *et al*., 1998)
Fixsen *et al*. (2005)
Greenhalgh *et al*. (2005)
Grol *et al*. (2005)
Nutley *et al*. (2007)
Durlak & DuPre (2008)
CFIR (Damschroder *et al*., 2009)



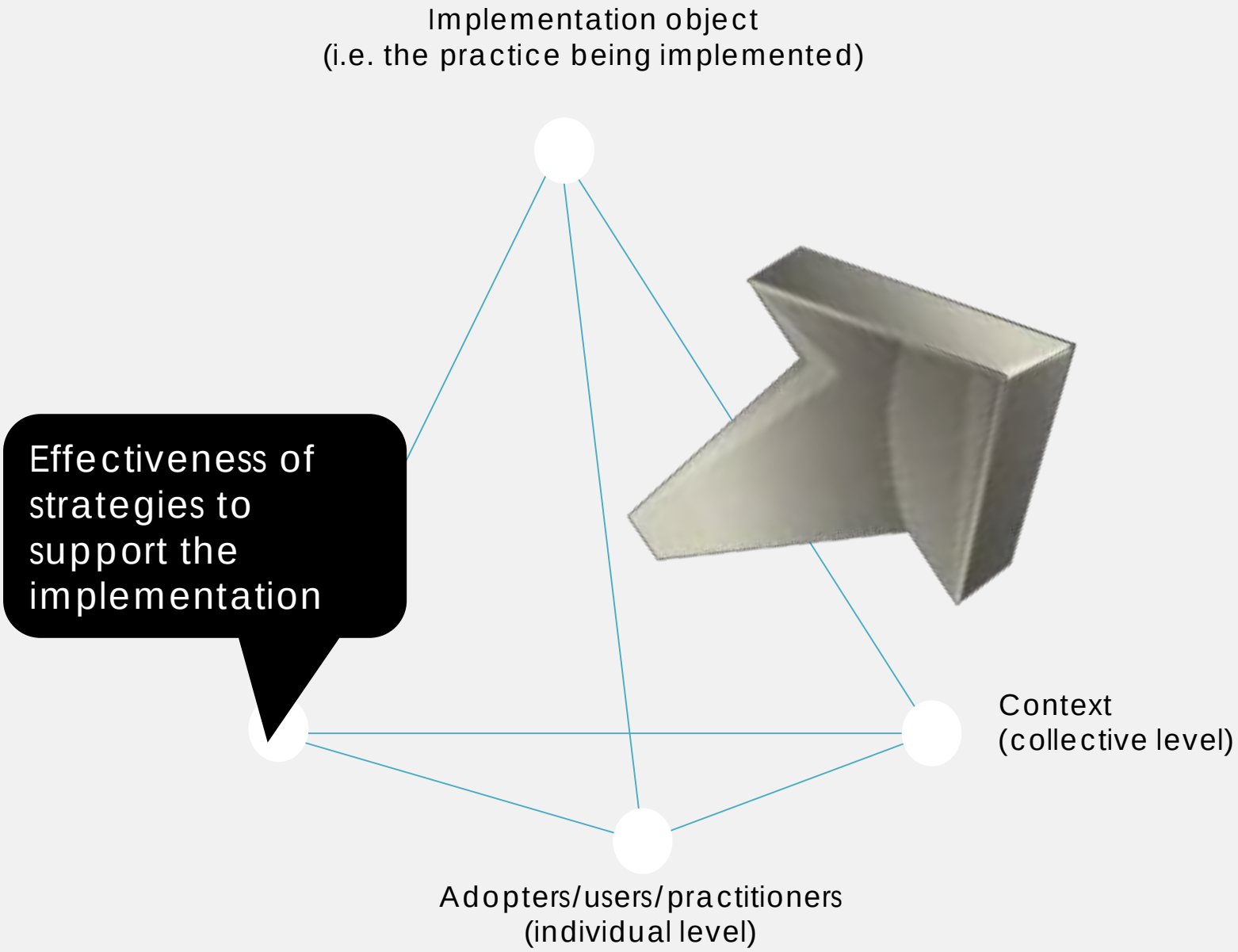
Characteristics of the "implementation object": complexity, compatibility with current practice, relative advantage, etc.

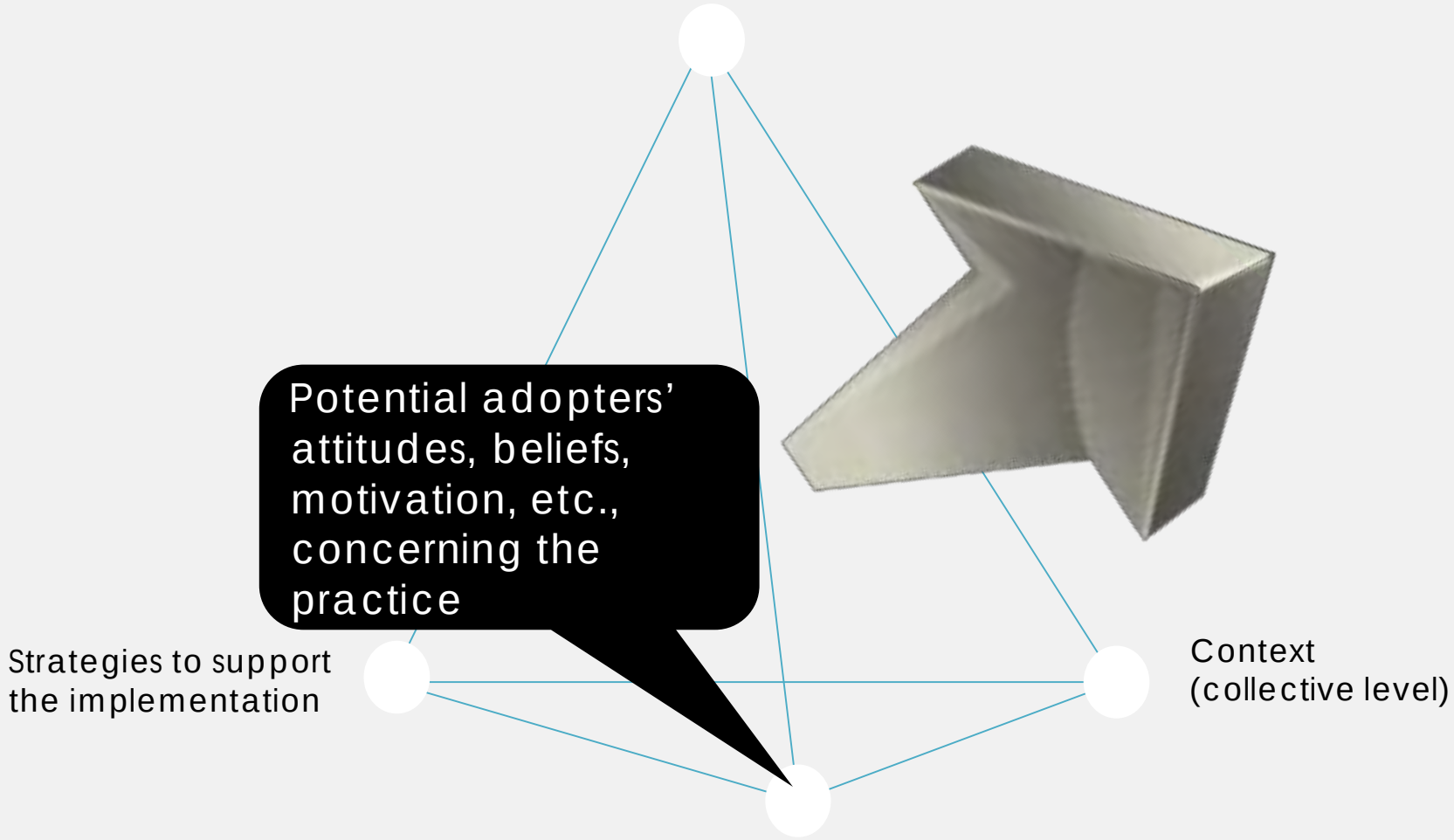


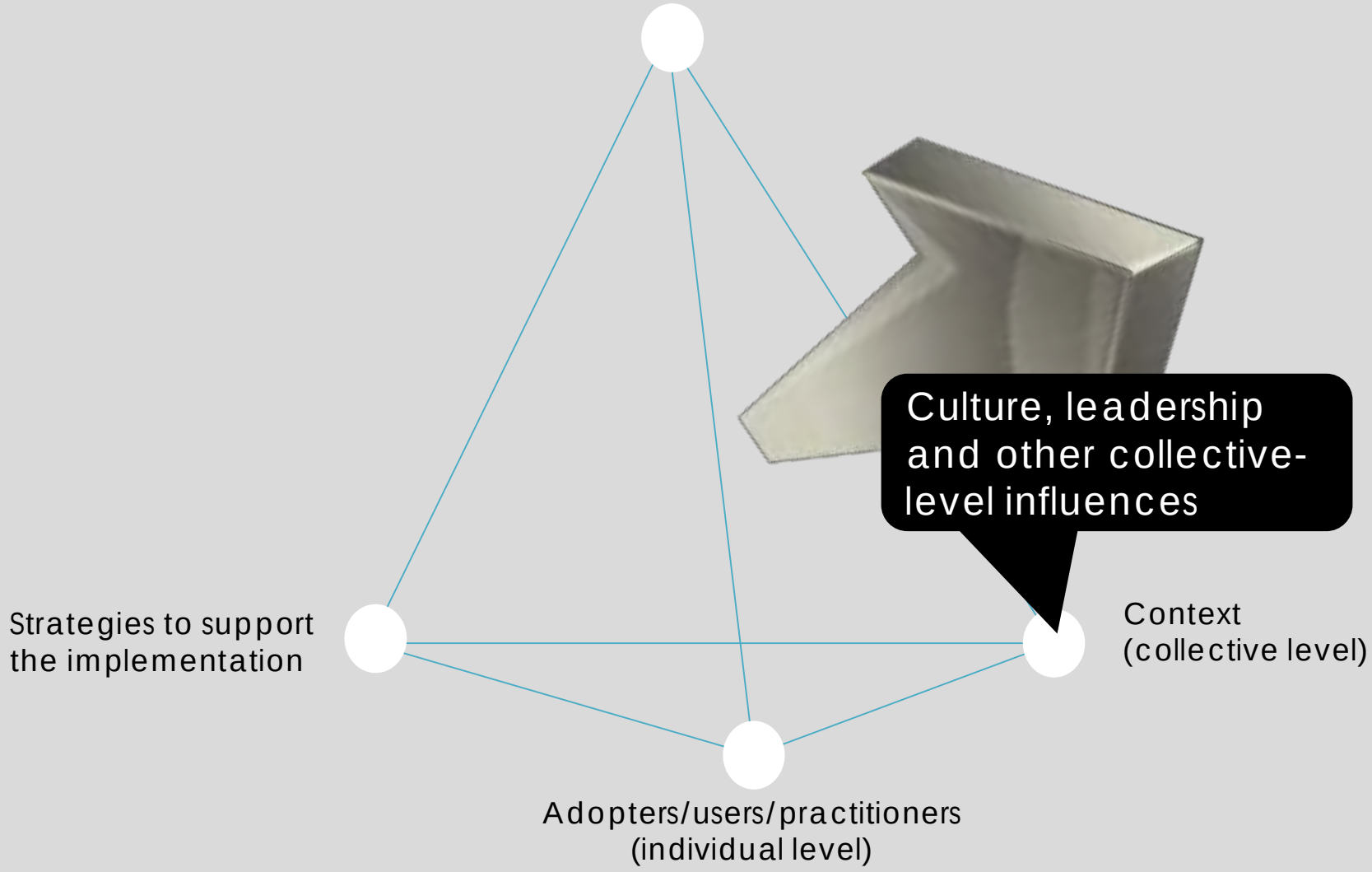
Strategies to support the implementation

Context (collective level)

Adopters/users/practitioners (individual level)


Implementation object
(i.e. the practice being implemented)
Effectiveness of strategies to support the implementation
Context
(collective level)
Adopters/users/practitioners
(individual level)

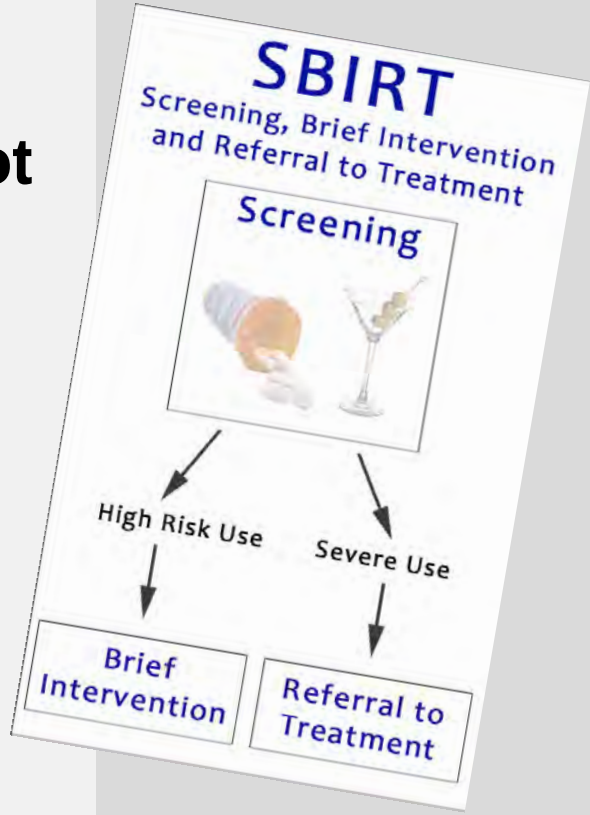

Potential adopters' attitudes, beliefs, motivation, etc., concerning the practice
Strategies to support the implementation
Context (collective level)


Culture, leadership and other collective-level influences
Strategies to support the implementation
Context (collective level)
Adopters/users/practitioners (individual level)

AFTER 40+ YEARS OF RESEARCH, WHY IS **BRIEF ALCOHOL INTERVENTION (BI)** NOT IMPLEMENTED IN HEALTH CARE?

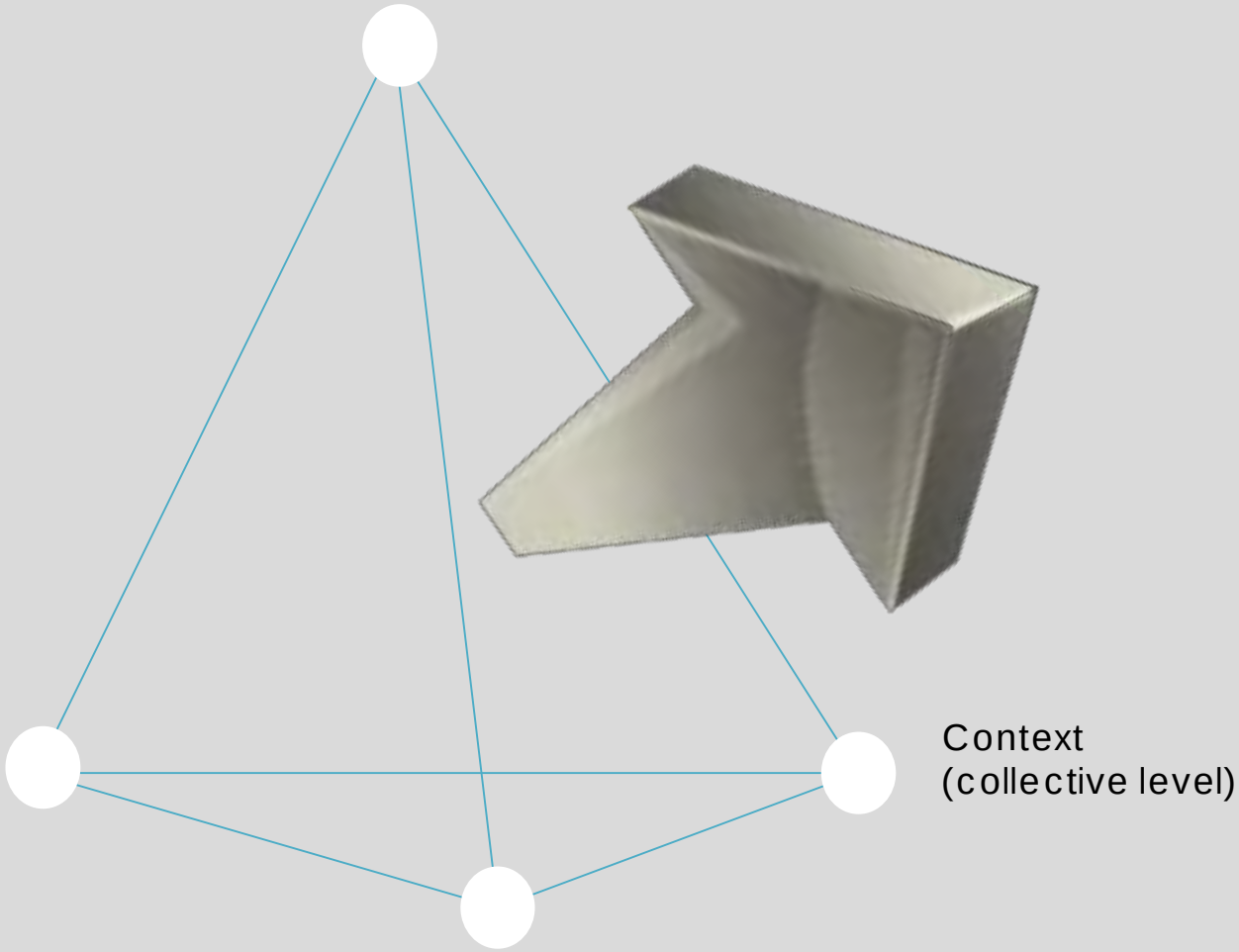
There is **substantial evidence** for the effectiveness of BI

Widespread **implementation** of BI **has not occurred**, with the use of these interventions in routine health care and other settings remaining suboptimal.



WHY?

Implementation object
(i.e. the practice being implemented)

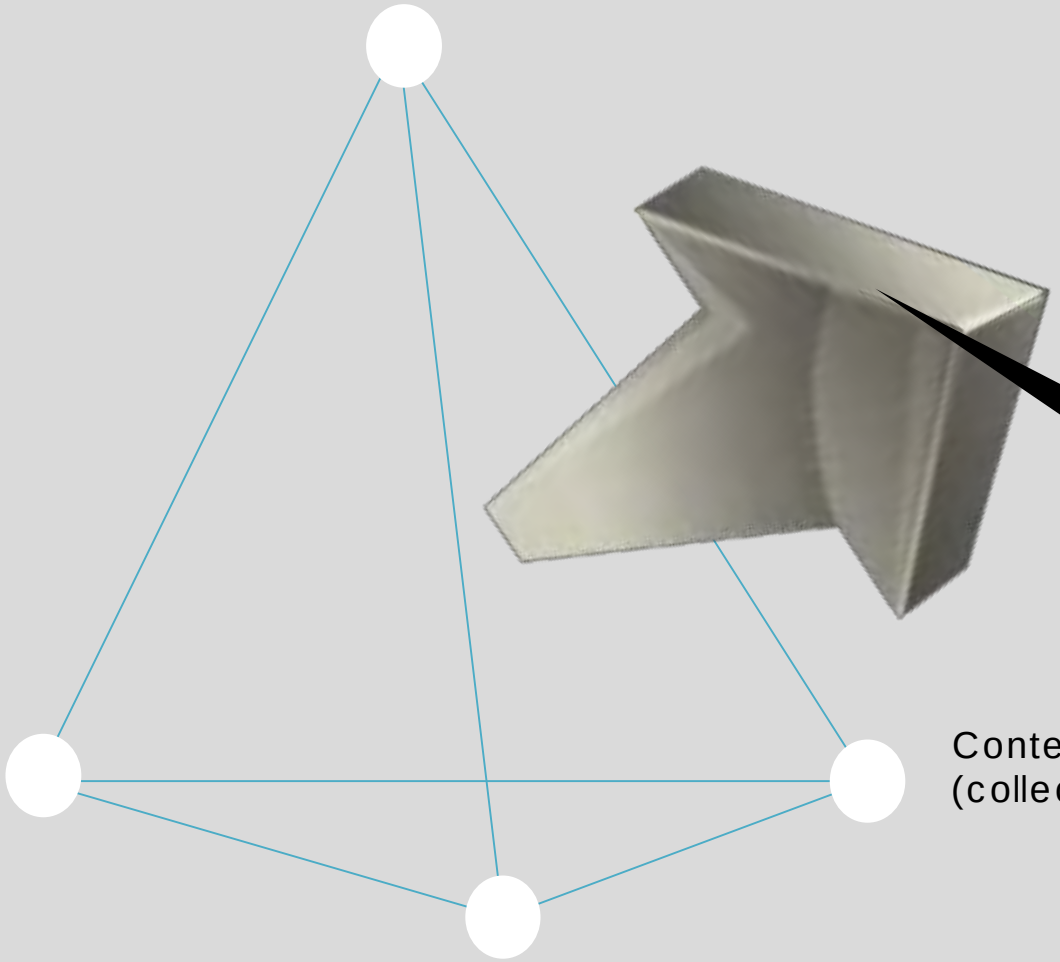


Strategies to support
the implementation

Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation object
(i.e. the practice being implemented)



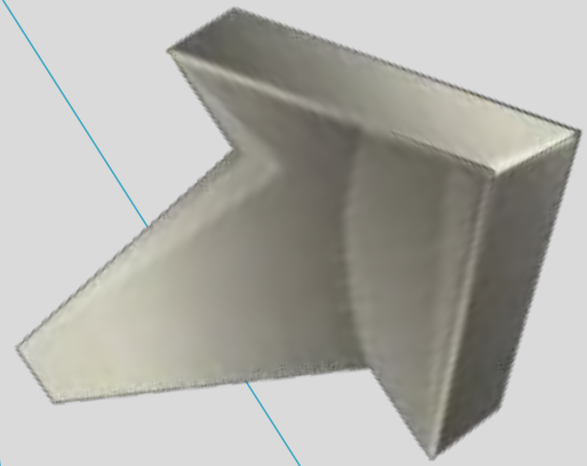
Strategies to support the implementation

Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation object
(i.e. the practice being implemented)

Delivering BI may be perceived as complex and not compatible with existing routines

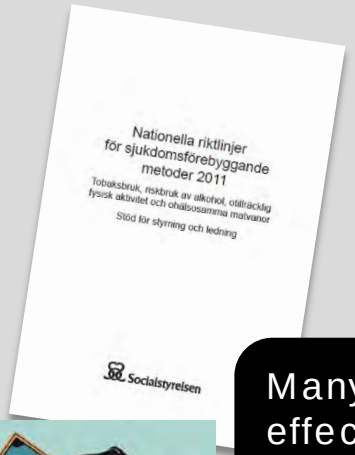


Strategies to support the implementation

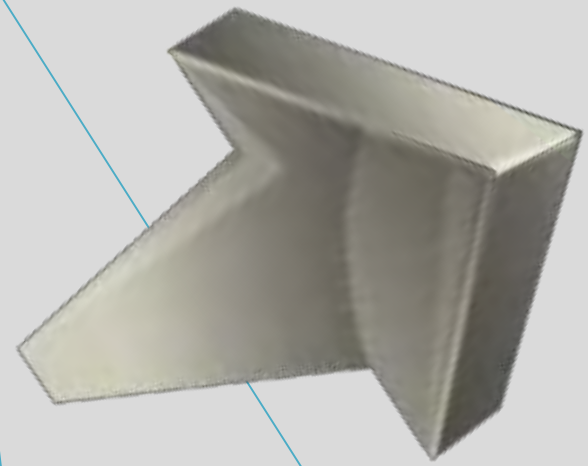
Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation object
(i.e. the practice being implemented)



Many strategies are not effective in supporting BI implementation; training alone is insufficient.



Strategies to support the implementation

Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation object
(i.e. the practice being implemented)

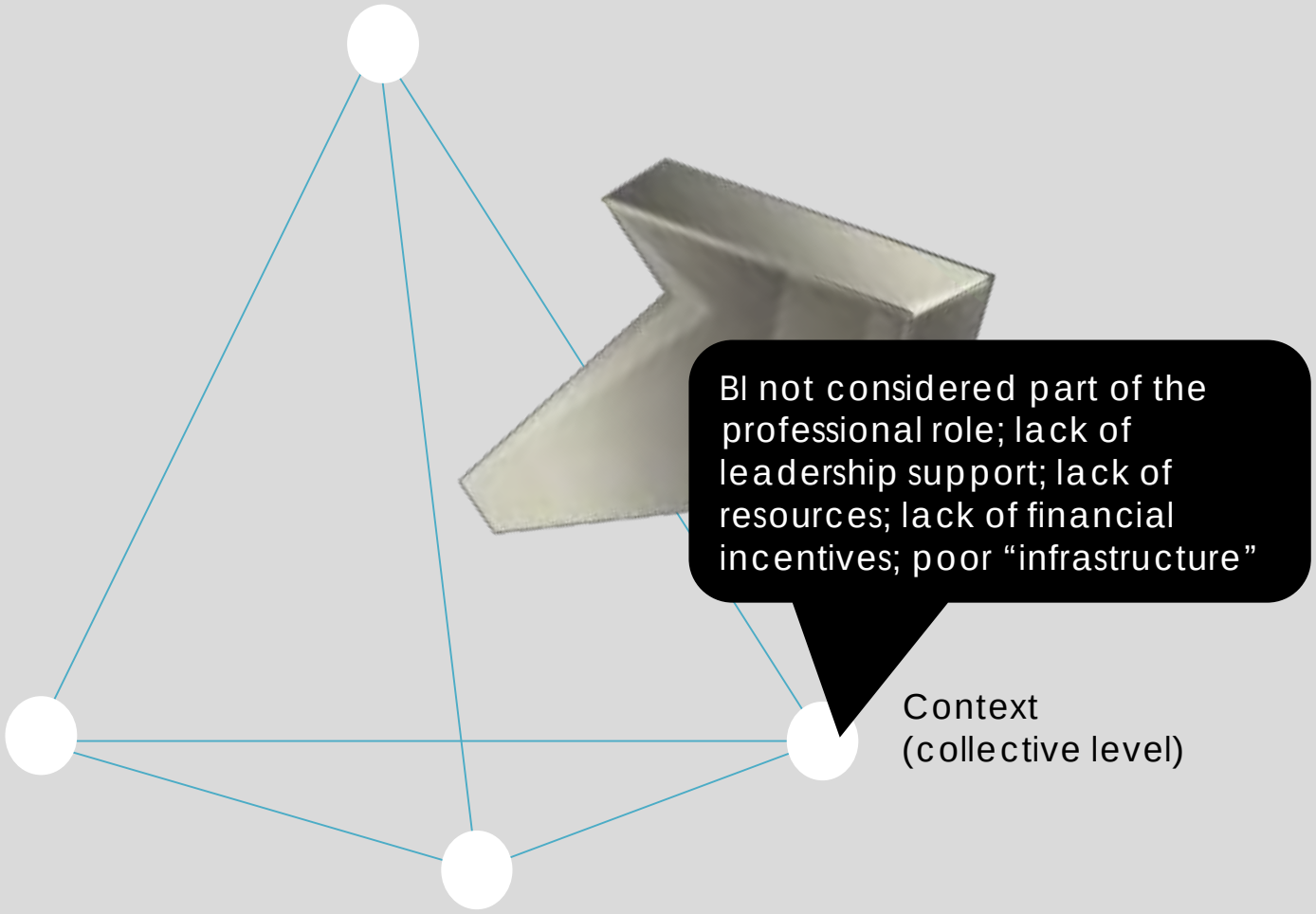
Lack of knowledge about early symptoms of problematic alcohol use; poor confidence in the ability to intervene with alcohol problems; resistance to raising the issue of alcohol with patients who are not seeking help for alcohol-related problems.

Strategies to support the implementation

Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation object
(i.e. the practice being implemented)



Strategies to support the implementation

Context
(collective level)

Adopters/users/practitioners
(individual level)

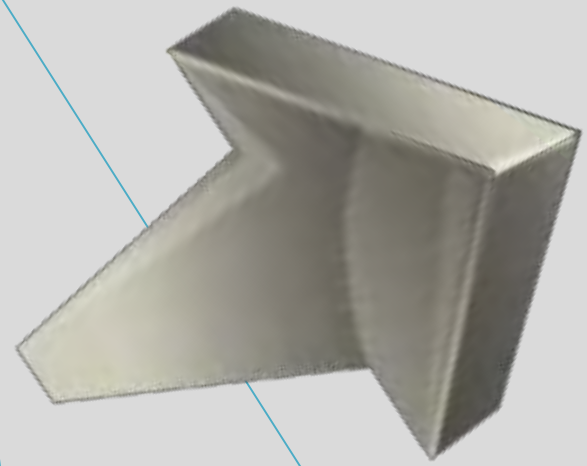
USING IMPLEMENTATION SCIENCE KNOWLEDGE IN PRACTICE

Implementation of EBP requires **behaviour and practice change**, which tends to be challenging due to change resistance, ingrained habits, collective-level influences, and many, many other factors!

Successful implementation depends on…

- numerous determinants (barriers and facilitators)
- determinants at multiple levels
- effective strategies that address the barriers to implementation

Implementation object
(i.e. the practice being implemented)



Strategies to support
the implementation

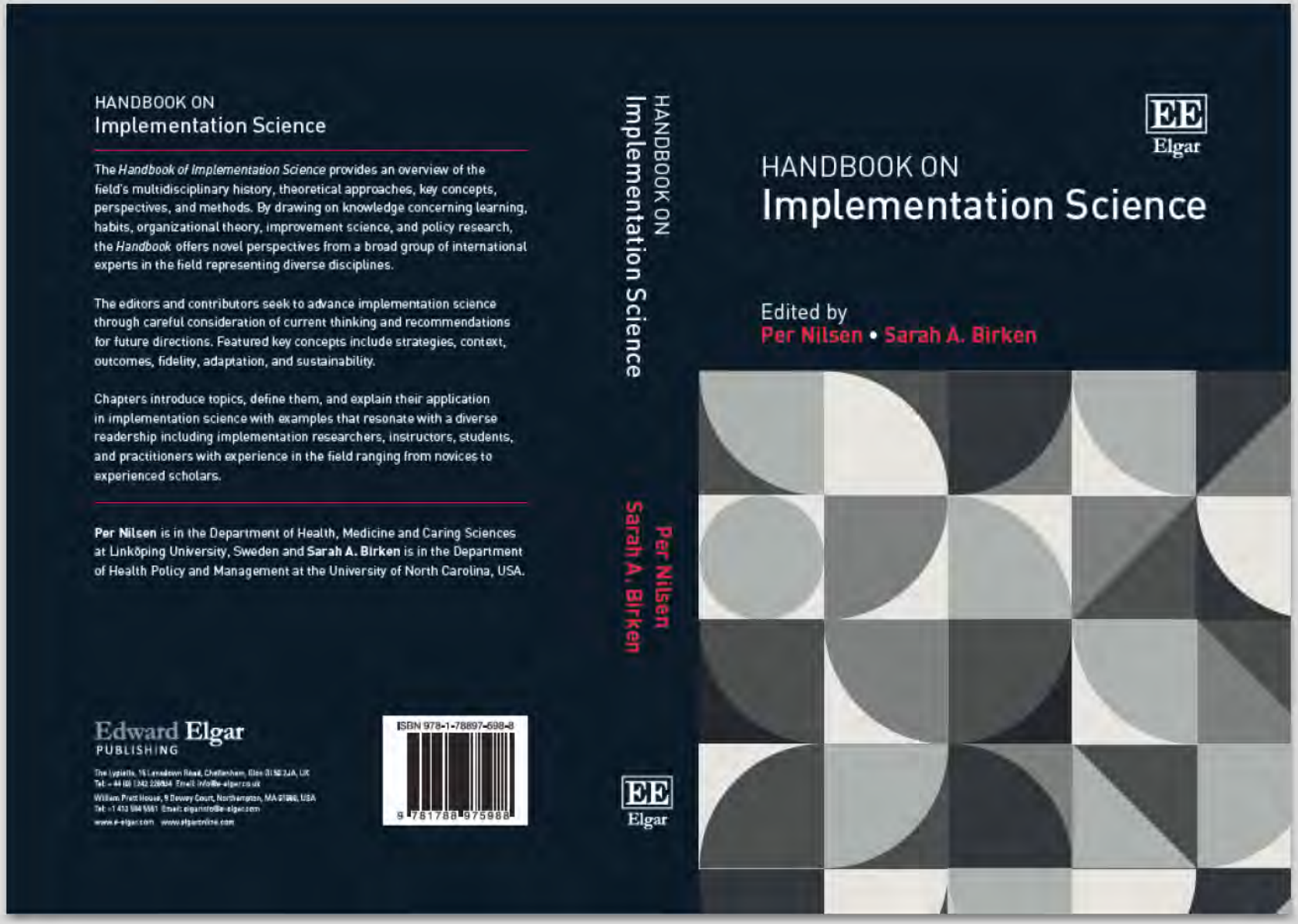
Context
(collective level)

Adopters/users/practitioners
(individual level)

Implementation science…

…can provide knowledge for understanding the challenges of implementation and for developing and selecting strategies to support implementation

…cannot offer quick fixes or identify ”success factors” that *always* work



Most of the content of the lecture is covered in this book.

THE END

PER NILSEN

LINKÖPING UNIVERSITY