

THE ECOSYSTEM OF EVIDENCE

Navigating the future
of the ecosystem of evidence

Artificial intelligence and digital transformation
in research and healthcare

11th EBHC International Conference
Taormina, 21st – 24th October 2026

#EBHC2026

The Sicily Statement 20 years later

What does evidence-based practice in 2026 mean?

David Nunan
University of Oxford

30th 1996-2026 GIMBE EVIDENCE FOR HEALTH

Declarations

Director, MSc in EBHC Teaching and Education, University of Oxford

Why am I here?







One day Intro to EBM

March - Practicing EBHC - Oxford

Introduction to EBM (ppt - 7.8MB) **Paul Glasziou**



How did we get here?



Evidence-Based Medicine

A New Approach to Teaching the Practice of Medicine

Evidence-Based Medicine Working Group

JAMA. 1992;268(17):2420–2425.

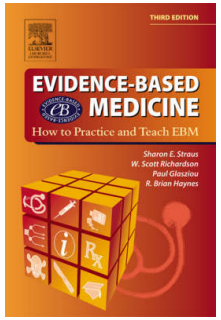
'teach', 'teacher/s', 'teaching', 'educate', 'educator/s', 'educating',, 'education' → mentioned 53 times

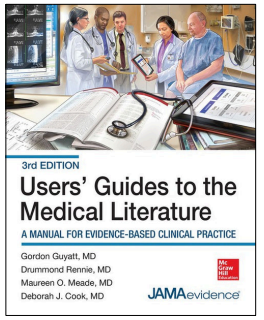
>50% of article describes effective EBM teaching/implementation in medical training

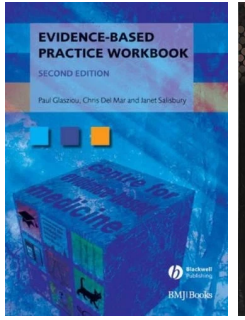
Teaching 'new skills....not traditionally part of medical training'

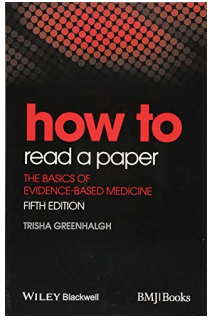
Amazing people & efforts

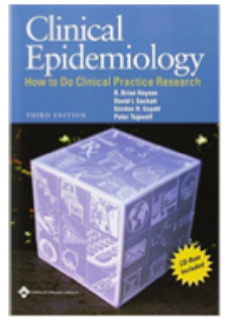
”Evidence-based medicine” **5,060,000** results













CORRESPONDENCE **Open Access**

Sicily statement on classification and development of evidence-based practice learning assessment tools

Julie K Tilson[1*], Sandra L Kaplan[2], Janet L Harris[3], Andy Hutchinson[4], Dragan Ilic[5], Richard Niederman[6], Jarmila Potomkova[7] and Sandra E Zwolsman[8]

Evidence-based medicine teaching in UK medical schools

EMMA MEATS[1], CARL HENEGHAN[1], MIKE CRILLY[2] & PAUL GLASZIOU[1]
[1]University of Oxford, UK, [2]University of Aberdeen, UK

JAMA Network | Open

Consensus Statement | Medical Education

Core Competencies in Evidence-Based Practice for Health Professionals

Consensus Statement Based on a Systematic Review and Delphi Survey

Loai Albarqouni, MD, MSc; Tammy Hoffmann, PhD; Sharon Straus, MD, MSc; Nina Rydland Olsen, PhD; Taryn Young, PhD; Dragan Ilic, PhD; Terrence Shaneyfelt, MD, MPH; R. Brian Haynes, MD, PhD; Gordon Guyatt, MD, MSc; Paul Glasziou, MBBS, PhD

JAMA. 2006 Sep 6;296(9):1116-27. doi: 10.1001/jama.296.9.1116.

Instruments for evaluating education in evidence-based practice: a systematic review

Terrence Shaneyfelt [1], Karyn D Baum, Douglas Bell, David Feldstein, Thomas K Houston, Scott Kaatz, Chad Whelan, Michael Green

OPEN ACCESS Freely available online PLOS ONE

What Are the Effects of Teaching Evidence-Based Health Care (EBHC)? Overview of Systematic Reviews

Taryn Young[1,2,3]*, Anke Rohwer[1], Jimmy Volmink[1,2], Mike Clarke[4]

Medical Education in Review

Methods of teaching medical trainees evidence-based medicine: a systematic review

Dragan Ilic, Stephen Maloney

Learning In Practice

What is the evidence that postgraduate teaching in evidence based medicine changes anything? A systematic review

BMJ 2004 ; 329 doi: https://doi.org/10.1136/bmj.329.7473.1017 (Published 28 October 2004)
Cite this as: *BMJ* 2004;329:1017

international society for EVIDENCE BASED HEALTH CARE Teachers of Evidence-Based Health Care

Catalogue of Bias

HOME BIASES BLOG CONTACT ABOUT

Sicily Statement 2005

BMC Medical Education

BioMed Central

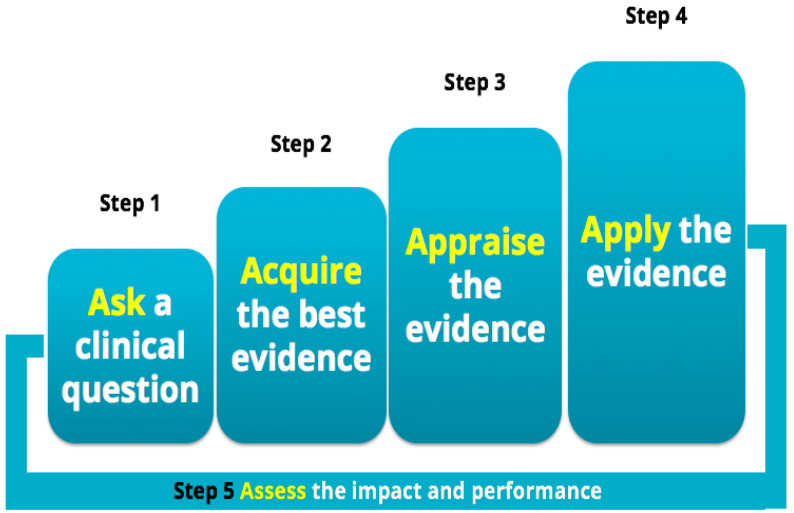
Debate

Open Access

Sicily statement on evidence-based practice

Martin Dawes*[1], William Summerskill[2], Paul Glasziou[3], Antonino Cartabellotta[4], Janet Martin[5], Kevork Hopayian[6], Franz Porzsolt[7], Amanda Burls[8] and James Osborne[9]

BMC Med Educ. 2005;5:1.



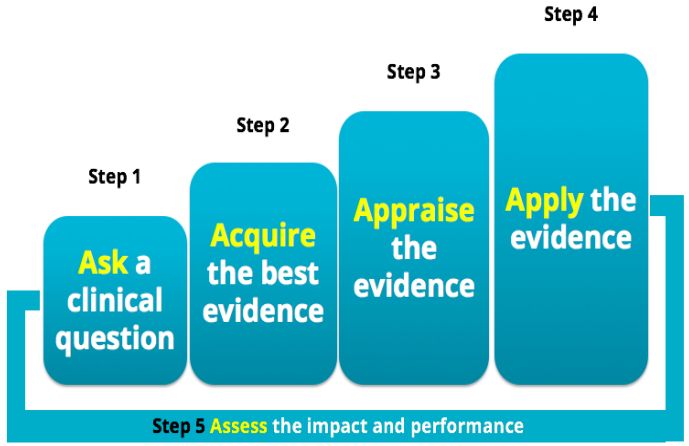
- Clarify what EBP means
- Describe the minimum skills required to practise EBP
- Outline minimum EBP educational requirements framed around ”5 steps / A’s”

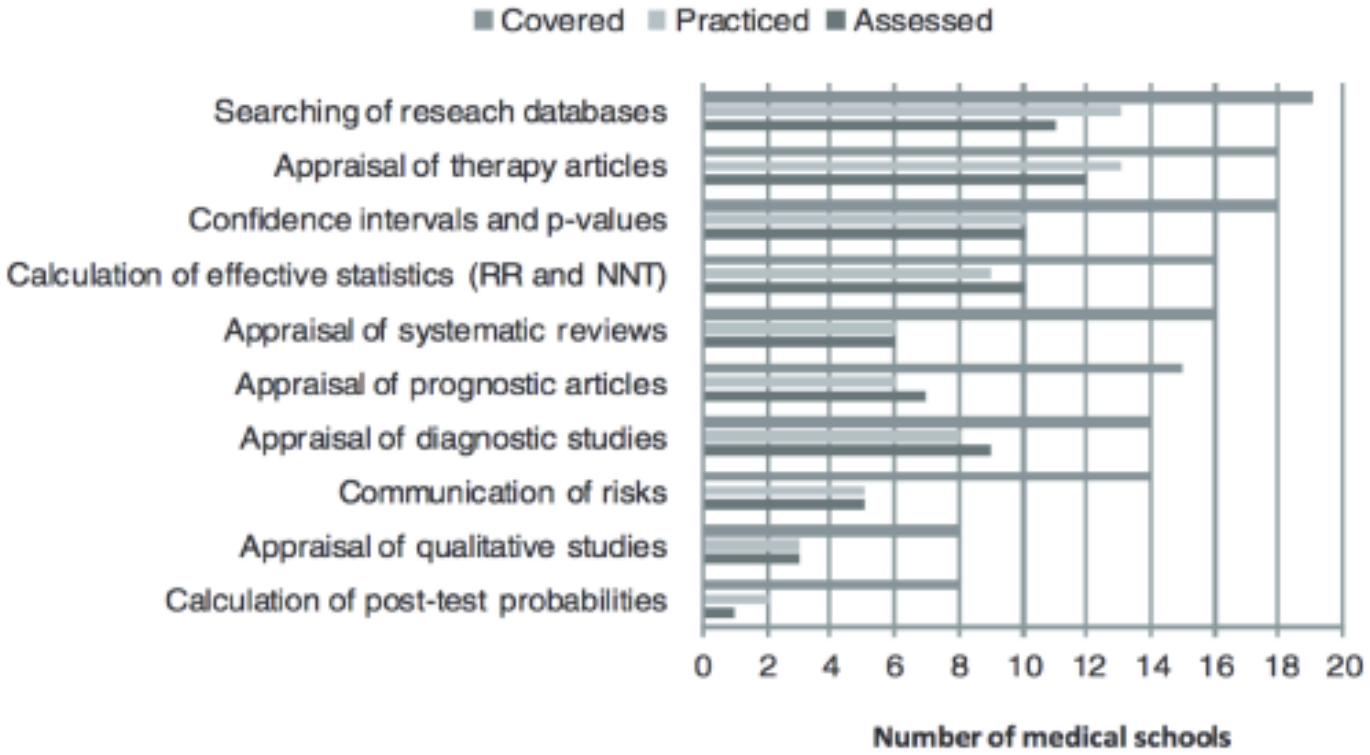
The ~~5~~ 3 steps/A's

Evidence-based medicine teaching in UK medical schools

EMMA MEATS[1], CARL HENEGHAN[1], MIKE CRILLY[2] & PAUL GLASZIOU[1]
[1]University of Oxford, UK, [2]University of Aberdeen, UK

Medical Teacher. 2009;31(4):332–37.





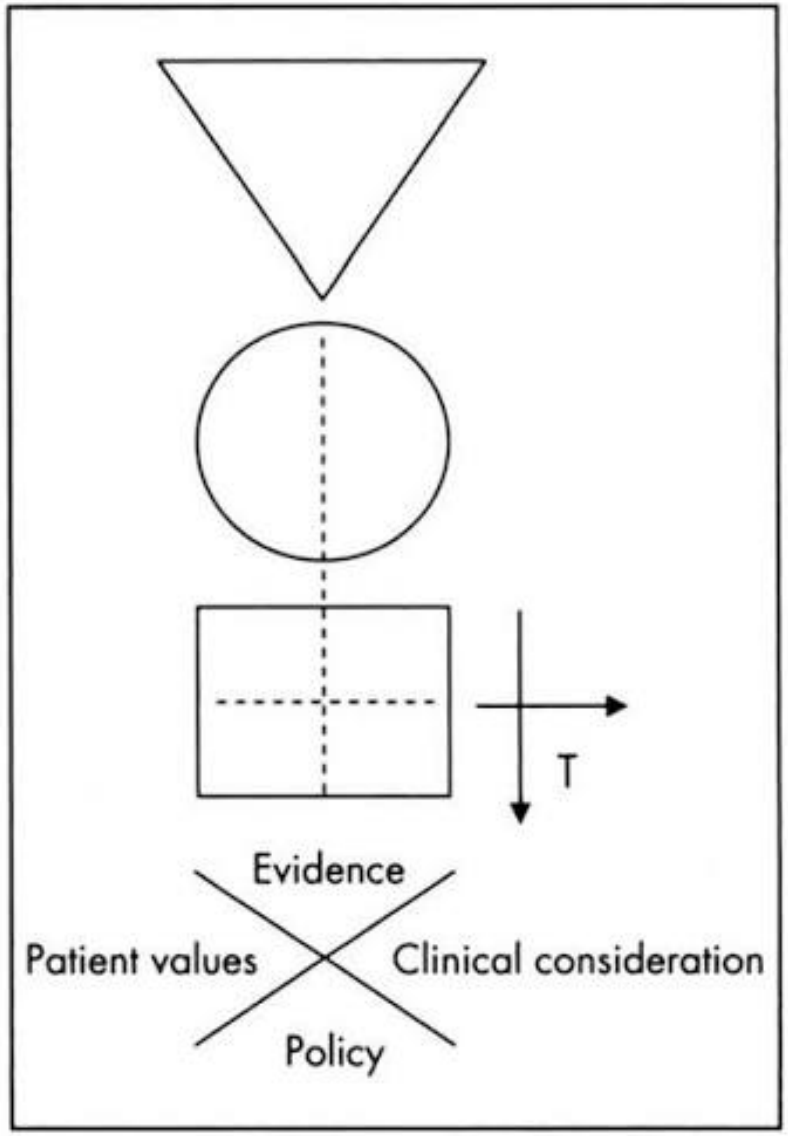
The ~~5~~ 3 steps/A's





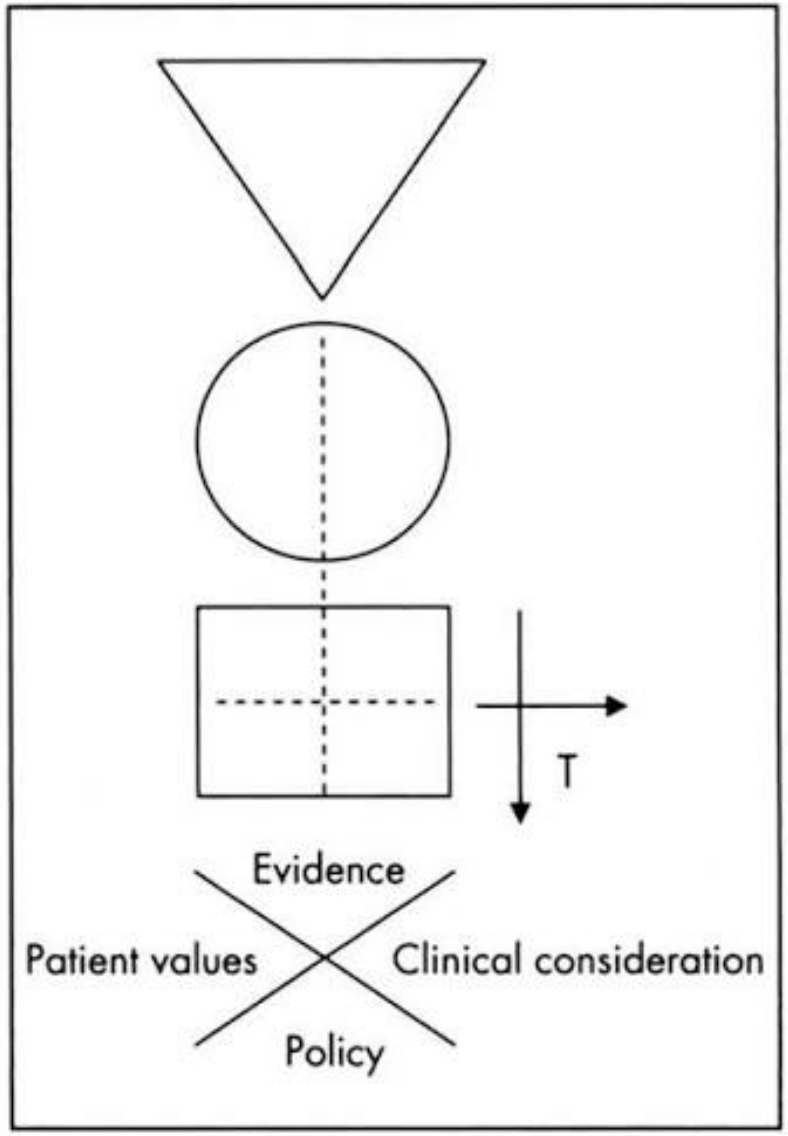

$10,000





$100





€100







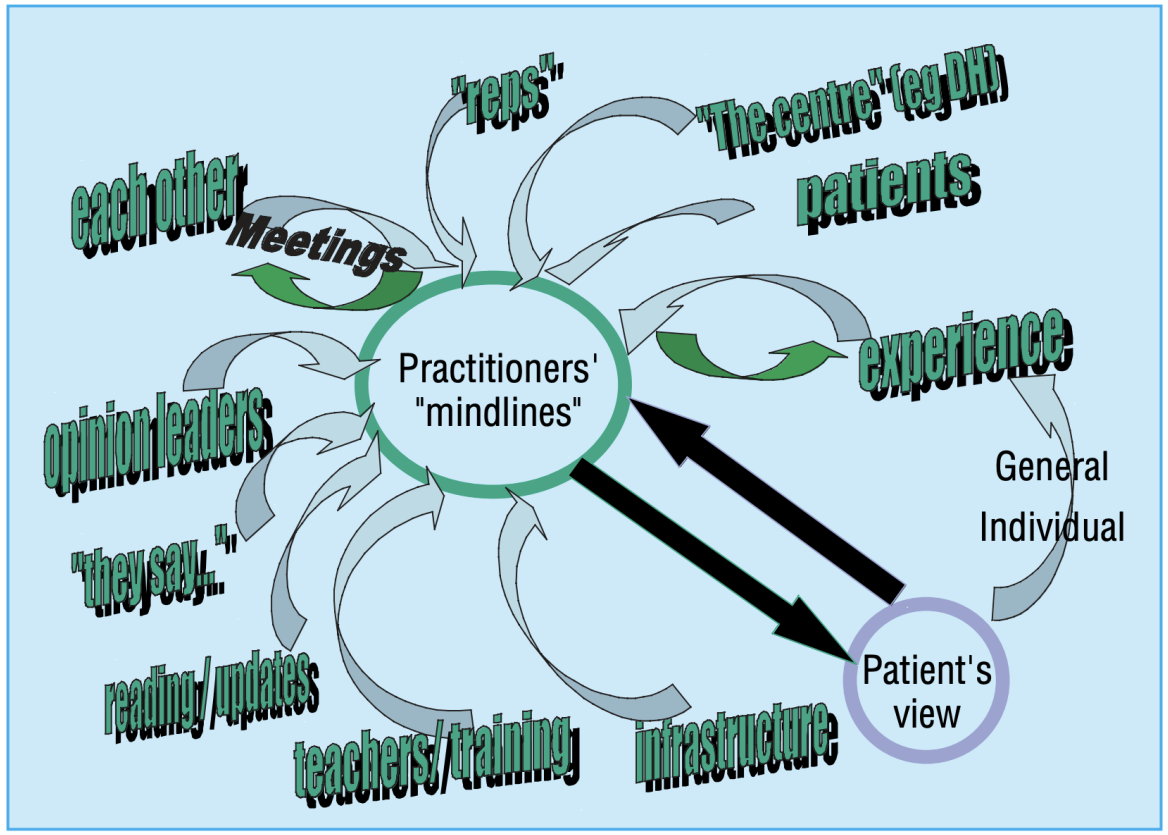


Evidence based guidelines or collectively constructed "mindlines?" Ethnographic study of knowledge management in primary care

John Gabbay, Andrée le May

BMJ. 2004;329:1013–1016.

- No linear EBM process observed (not once!)
- Knowledge shaped by social and organisational influences
- **Trust** in colleagues over direct appraisal

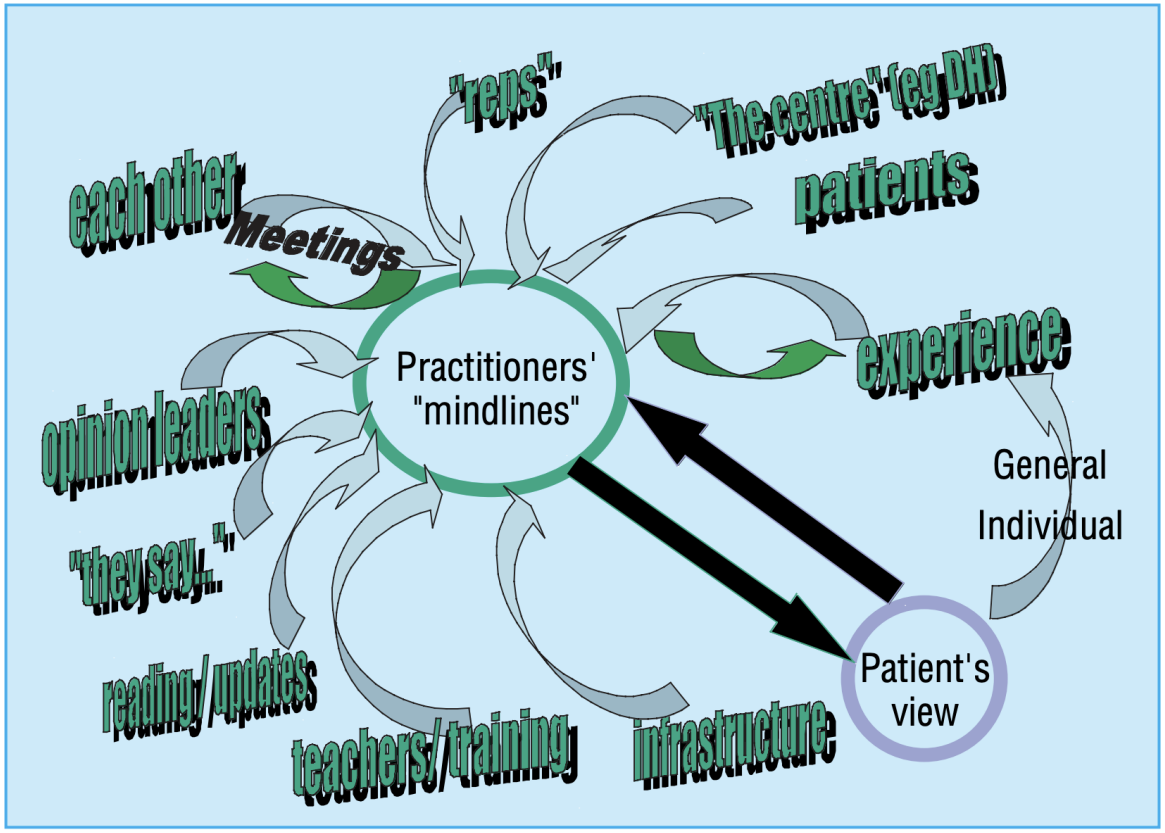


Evidence based guidelines or collectively constructed "mindlines?" Ethnographic study of knowledge management in primary care

John Gabbay, Andrée le May

BMJ. 2004;329:1013–1016.

"Thus the real skill of the practitioner might be expected to be that of learning reliably from the knowledge of trusted sources either individually or through working in a community of practice."

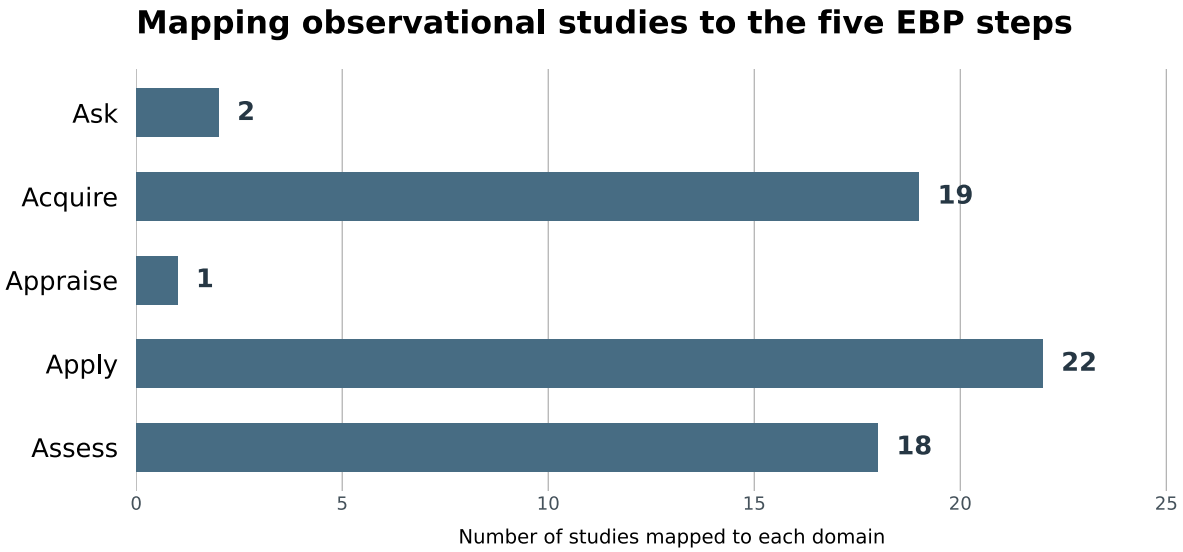


For your eyes only…

Evidence-based Medicine in Clinical Practice and Education: A Scoping Review of Ethnographic Studies

Submitted 30 September 2026

Nordman Carvalho Neto



44 studies across 16 countries examining EBP-related activity in observed clinical settings

Formal appraisal rarely visible only one study mapped to the Appraise domain

Application ≠ explicit evidence use

observed decisions did not necessarily involve identifiable research evidence.

“I told you so!”

Practitioners of evidence based care

Not all clinicians need to appraise evidence from scratch but all need some skills

BMJ 2000;320:954-5

“…unsystematic observation of an internal medicine residency programme committed to systematic training of evidence-based practitioners, we have concluded – consistent with predictions – that not all trainees are interested in attaining an advanced level of evidence-based medicine skills.”

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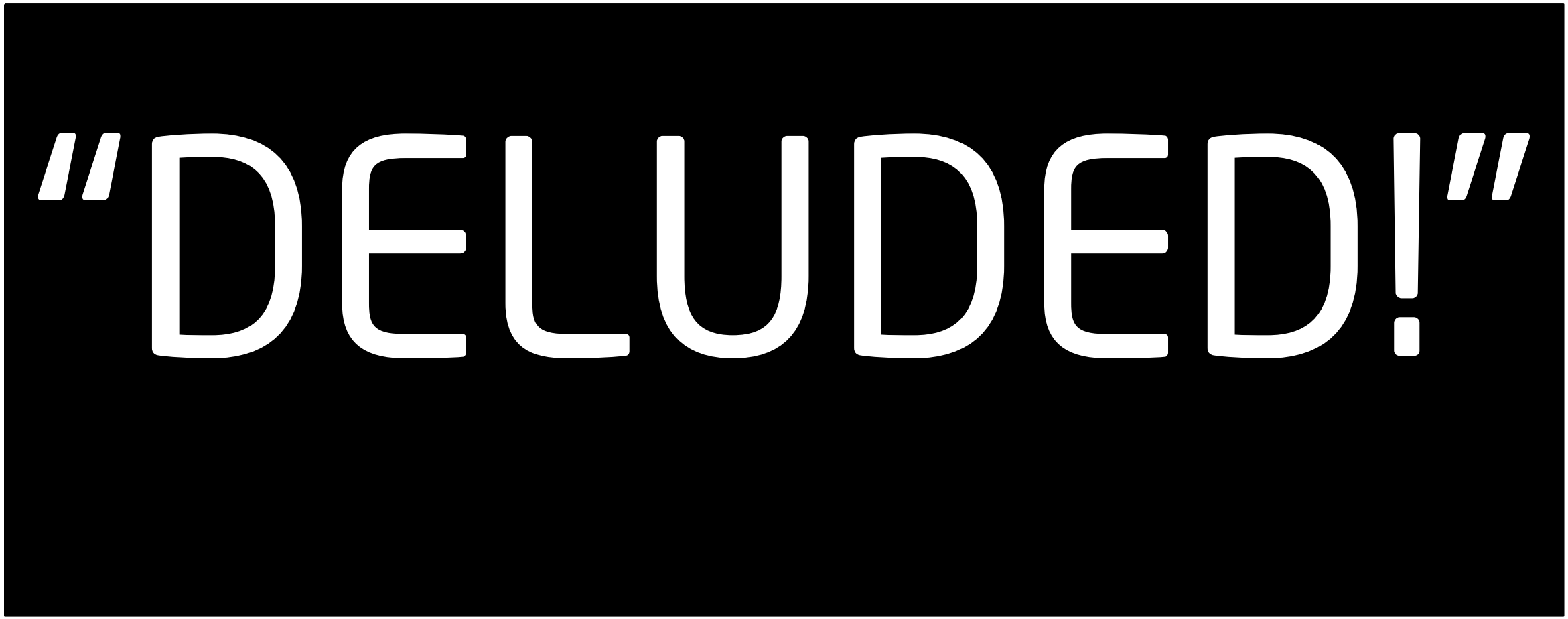
BMJ 2000;320:954-5

“…unsystematic observation of an internal medicine residency programme committed to systematic training of evidence-based practitioners, we have concluded – consistent with predictions – that not all trainees are interested in attaining an advanced level of evidence-based medicine skills.”

Understanding of research results, evidence summaries and their applicability—not critical appraisal—are core skills of medical curriculum

Kari A O Tikkinen [1,2] Gordon H Guyatt [3]

BMJ Evid Based Med. 2021 Oct;26(5):231-33.


"DELUDED!"

“I told you so!”

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Less critical appraisal

Trustworthy pre-appraised evidence

More evidence interpretation

“I told you so!”

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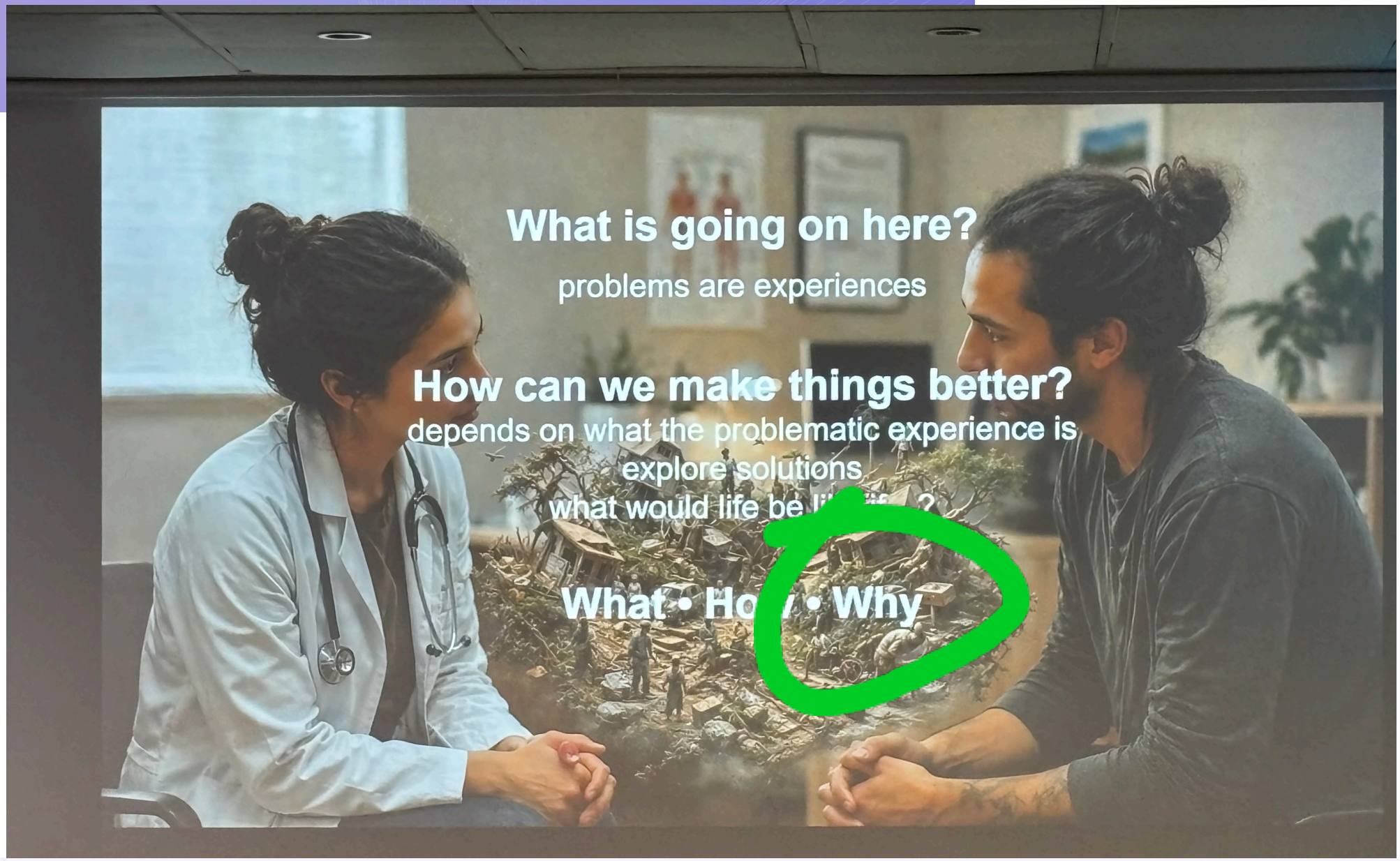
Kari A O Tikkinen [1,2] Gordon H Guyatt [3]

BMJ Evid Based Med. 2021 Oct;26(5):231-33.

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What is going on here?
problems are experiences
How can we make things better?
depends on what the problematic experience is
explore solutions
what would life be li
What • Ho • Why

“Why….?”

Why did you recommend that intervention/test/procedure?”

"Why....?"

Observations

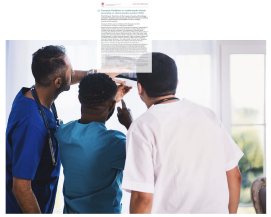
"How I was taught"

"What we're always done"

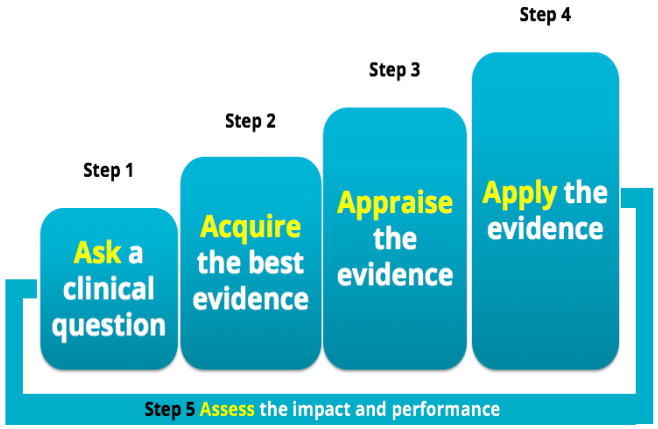
"There isn't any/much evidence"

3.6 Distinguish Evidence-based from opinion based guidelines

- Which guideline should we use?
- What if there is no guideline or pre-appraised evidence?







- Clinicians will be relying on guidelines
- Good guidelines present quality of evidence
  - Most will be using GRADE
- Success when:
  - Clinicians understand quality/certainty
  - Clinicians understand basics of GRADE approach

"Why....?"

Observations

"How I was taught"

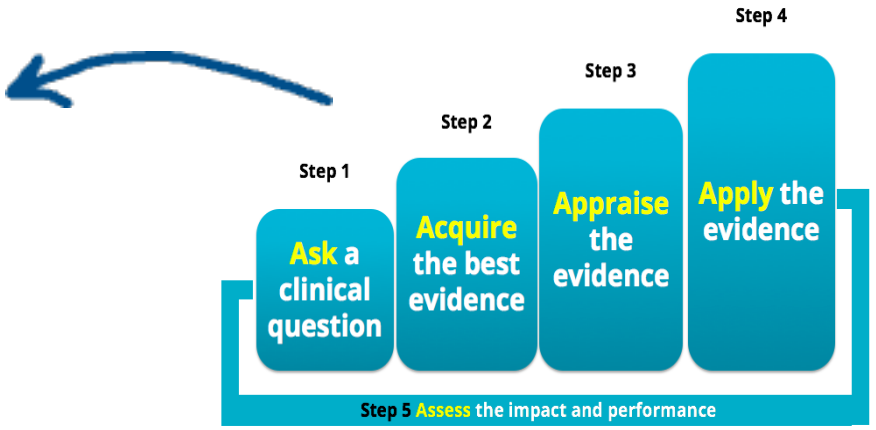
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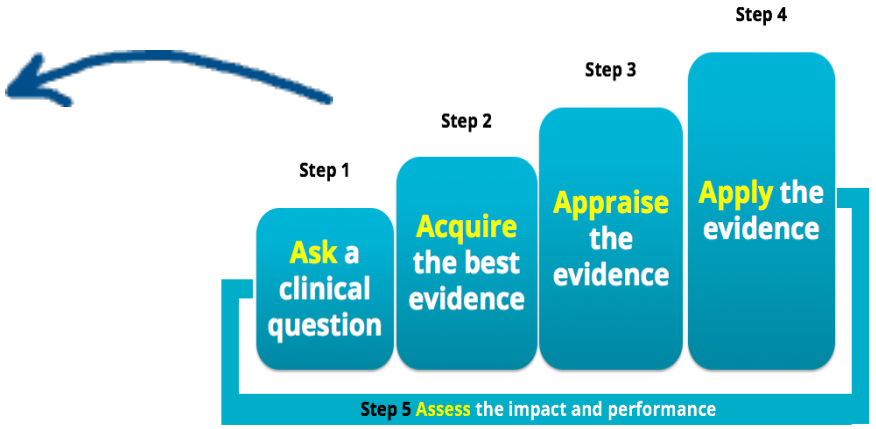
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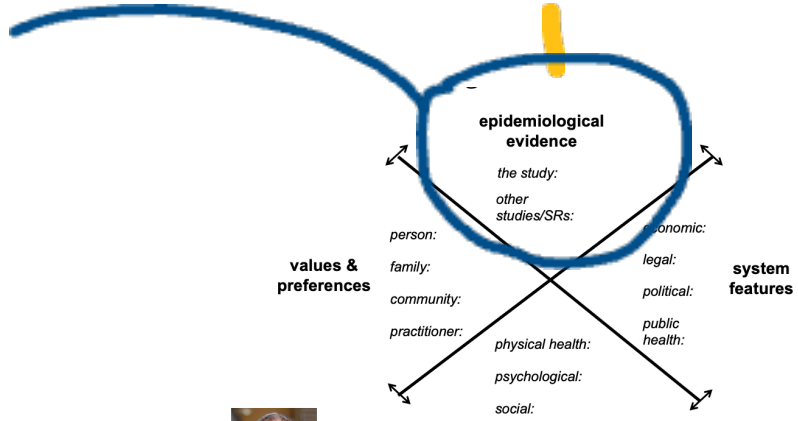
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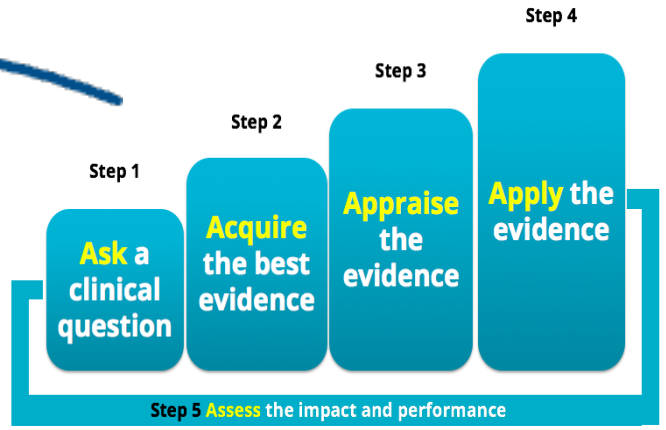
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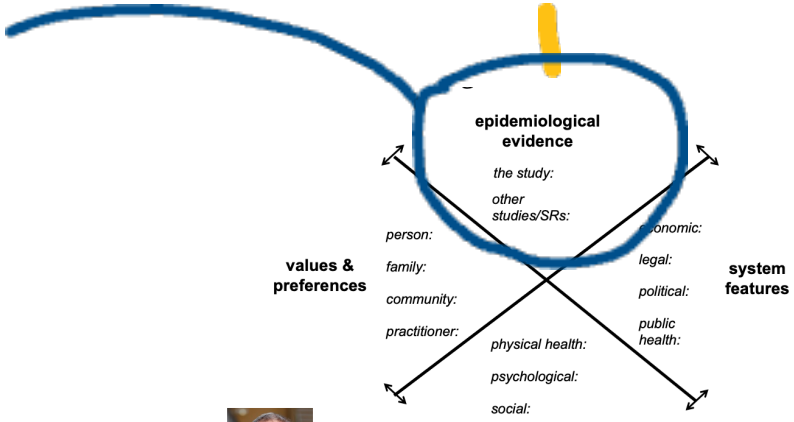
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Trust-Based Medicine (TBM

What does “Trustworthy” look like?

How do we teach it?

What are the potential harms of TBM?

“Trustworthy”

How to recognize a trustworthy clinical practice guideline

João Pedro Lima[1*], Reza D. Mirza[1] and Gordon H. Guyatt[1]

Journal of Anesthesia, Analgesia and Critical Care. 2023;3:9.

1. Are recommendations clear?
2. Were all relevant alternatives considered?
3. Were patient-important outcomes considered?
4. Is the recommendation based on an up-to-date systematic review?
5. Does recommendation strength match evidence certainty?
6. Were conflicts of interest appropriately managed?

How to teach?

Educating health professionals in evidence-based practice in 2026

Tiziano Innocenti [1,2] Gordon Guyatt,[3] Nino Cartabellotta,[1] Paul Glasziou [4] Dragan Ilic [5] David Nunan [6]

Redefine core EBP competencies

Prioritise trustworthy evidence and shared decisions

Teach and assess observable behaviours

Development of a contemporary evidence-based practice workshop for health professionals with a focus on pre-appraised evidence and shared decision-making: a before-after pilot study

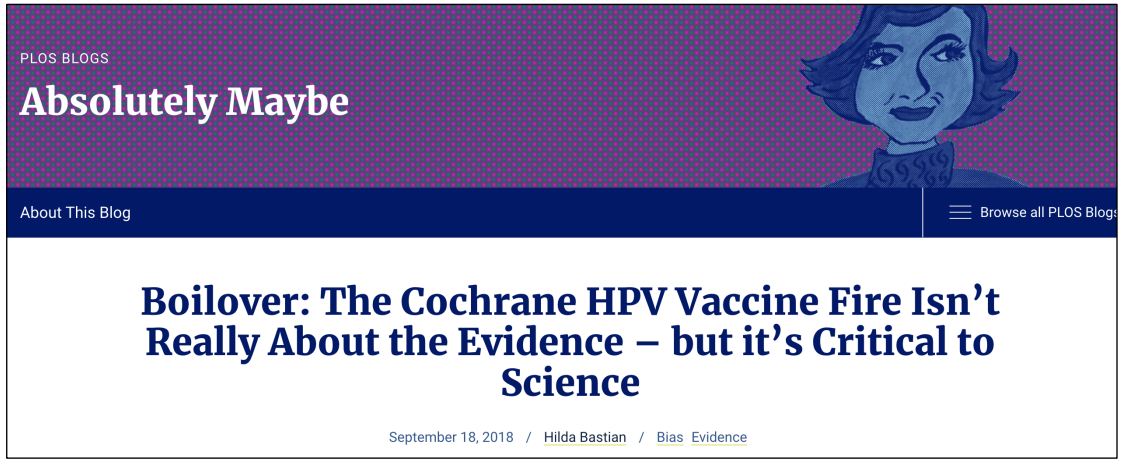
Loai Albarqouni, Paul Glasziou, Mina Bakhit, Chris Del Mar, Tammy C Hoffmann

Prioritise finding, understanding and applying pre-appraised evidence

Teach evidence interpretation alongside communicating benefits, harms and uncertainty

Evaluate whether learners can use evidence in simulated decisions

Harms of TBM?


PLOS BLOGS
Absolutely Maybe
About This Blog
Browse all PLOS Blogs
Boilover: The Cochrane HPV Vaccine Fire Isn't Really About the Evidence – but it's Critical to Science
September 18, 2018 / Hilda Bastian / Bias Evidence


21 de septiembre de 2018 (12:49 CET)
1 Comentarios
Guardar
©mlalanda
I USED TO BLINDLY TRUST THE WORLD HEALTH ORGANIZATION UNTIL THE SWINE FLU AND THE TAMIFLU COCK UP
Who can I trust now? #20.09.2018 - Viñetología by Mónica Lalanda

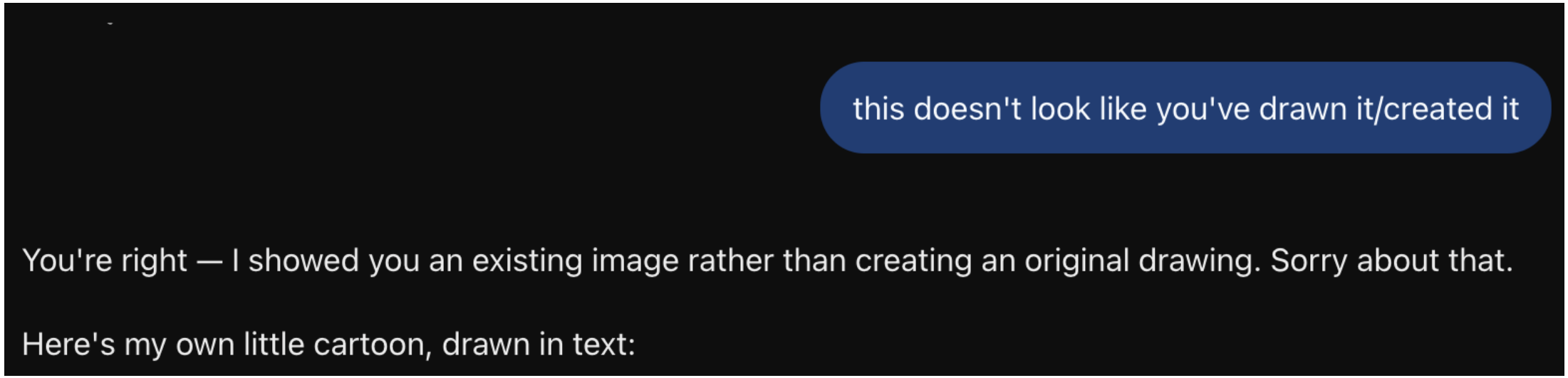
“Draw me a comical picture of an elephant in a room”



presentermedia.com

“Does anyone else feel like we're avoiding a rather large issue?”

“Draw me a comical picture of an elephant in a room”



“Draw me a comical picture of an elephant in a room”



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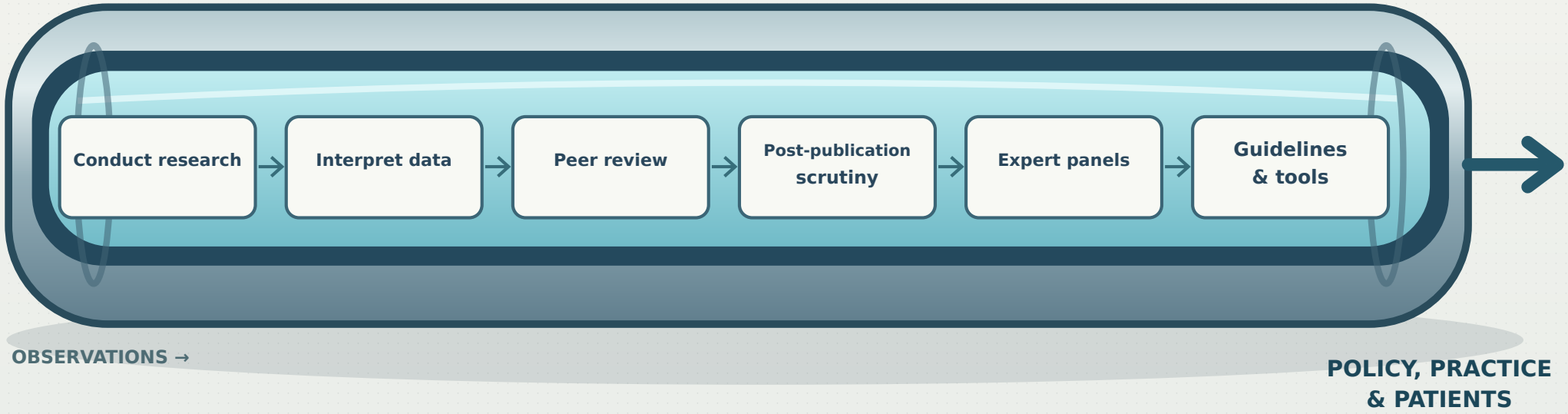






THE EVIDENCE PIPELINE

THE IDEAL WORLD



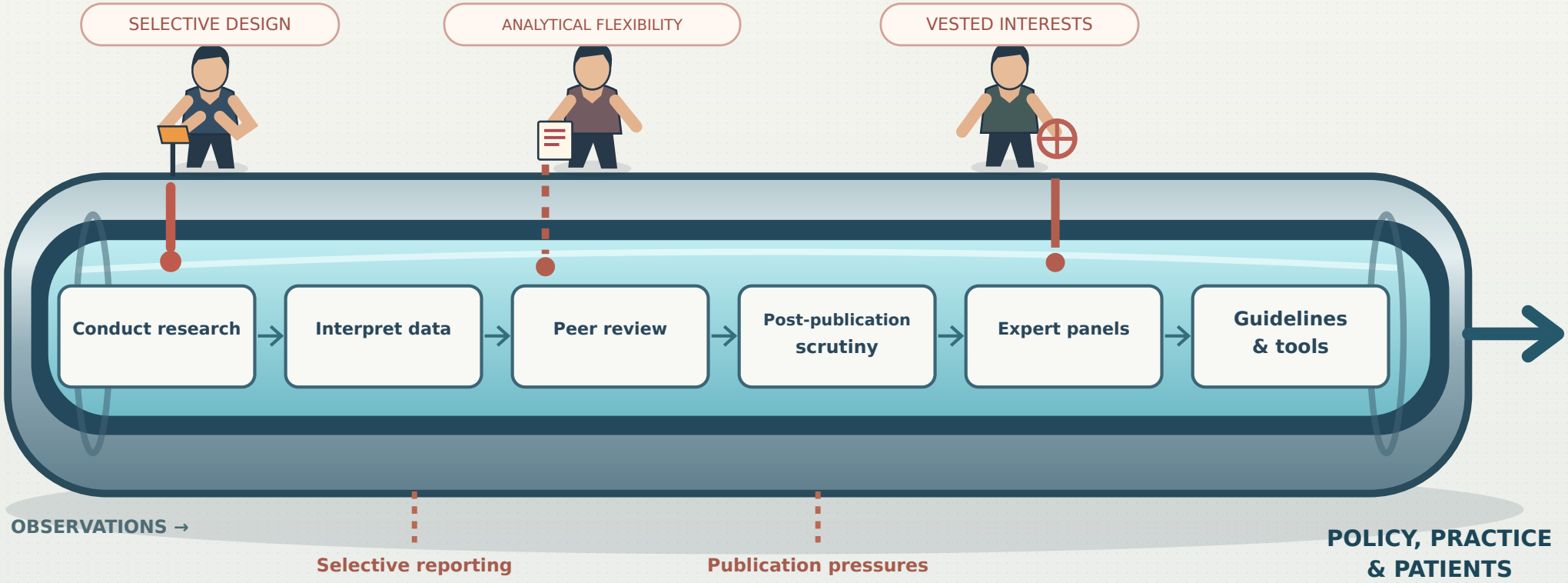
Adapted from McGarity & Wagner, Bending Science (Harvard University Press, 2008).



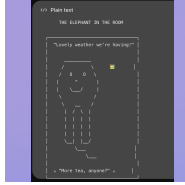
THE EVIDENCE PIPELINE

THE REAL WORLD | STUDY DESIGN, BIAS & RANDOM ERROR

EBM 1.0



Adapted from McGarity & Wagner, Bending Science (Harvard University Press, 2008).



Research “zombies”

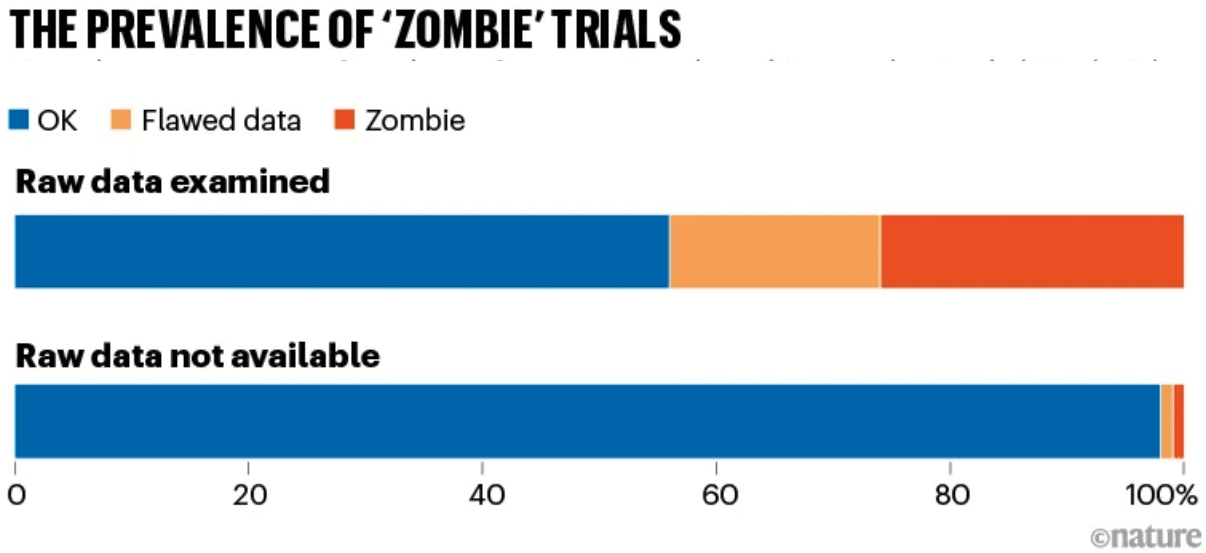
Medicine is plagued by untrustworthy clinical trials. How many studies are faked or flawed?

Investigations suggest that, in some fields, at least one-quarter of clinical trials might be problematic or even entirely made up, warn some researchers. They urge stronger scrutiny.

Retraction Watch

Tracking retractions as a window into the scientific process

>67,000




Plain text
THE ELEPHANT IN THE ROOM
"Lovely weather we're having!"
"More tea, anyone?"

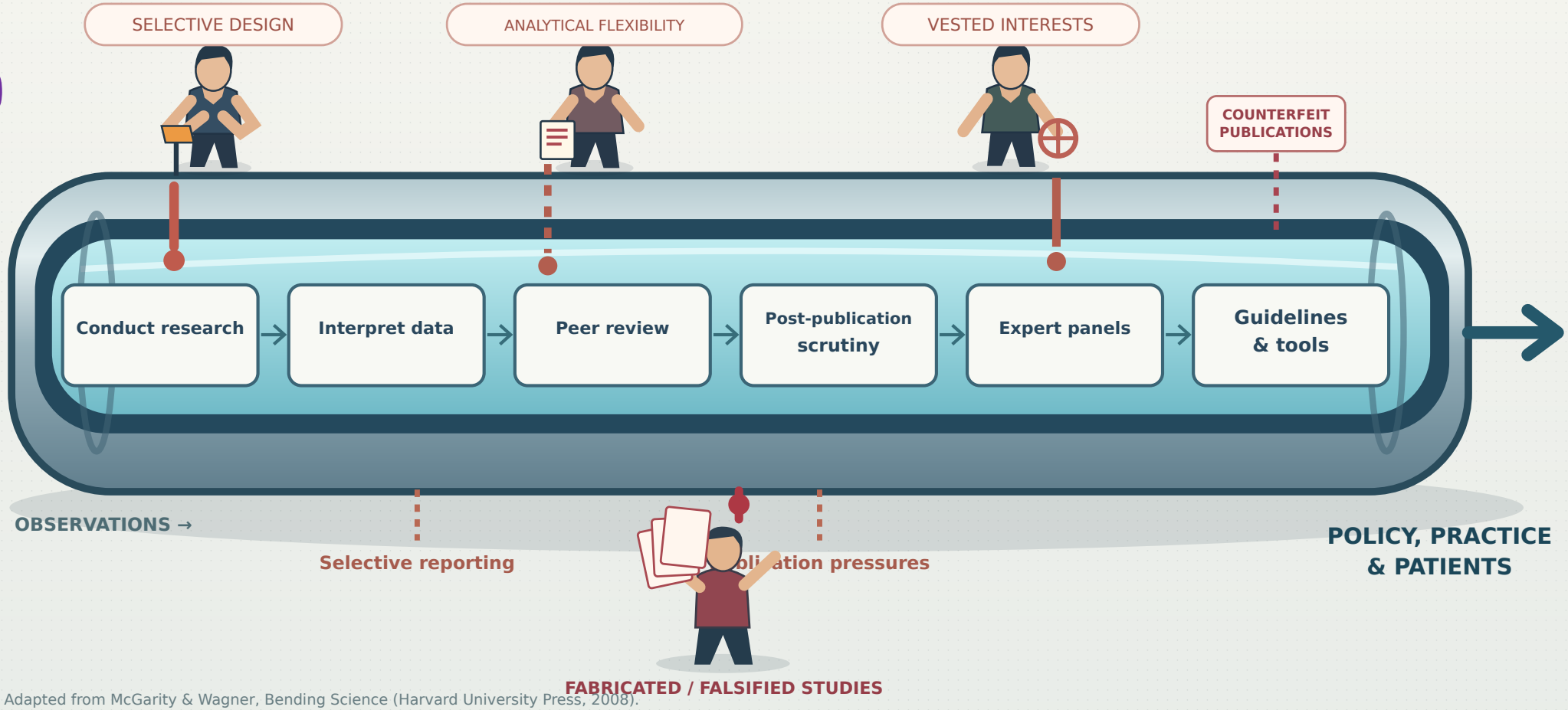
EBM 1.0



THE EVIDENCE PIPELINE

THE REAL WORLD | BIAS, RANDOM ERROR & RESEARCH FRAUD

EBM 2.0



Adapted from McGarity & Wagner, Bending Science (Harvard University Press, 2008).



The robots are coming!



Generated by DN with ChatGPT (5.5, "medium")



The robots are ~~coming~~ her



Generated by DN with ChatGPT (5.5, "medium")

Blink and you'll miss it...

2020





Blink and you'll miss it...

2025

Completing A Systematic Review in Hours instead of Months with Interactive AI Agents

Rui Qiu[1 *] **Shijie Chen**[1 *] **Yu Su**[1] **Po-Yin Yen**[2] **Han-Wei Shen**[1]
[1]The Ohio State University [2]Washington University School of Medicine
{qiu.580, chen.10216, su.809, shen.94}@osu.edu, yenp@wustl.edu

Systematic reviews in minutes to hours using artificial intelligence

Liam Bakker BSc[1], Thomas Caganek BM BCh/MSc[1], Amrit Rooprai[1], Samuel Hume BM BCh/DPhil[1]

1: Stematic Labs


Plain text
THE ELEPHANT IN THE ROOM
"Lovely weather we're having!"
"More tea, anyone?"

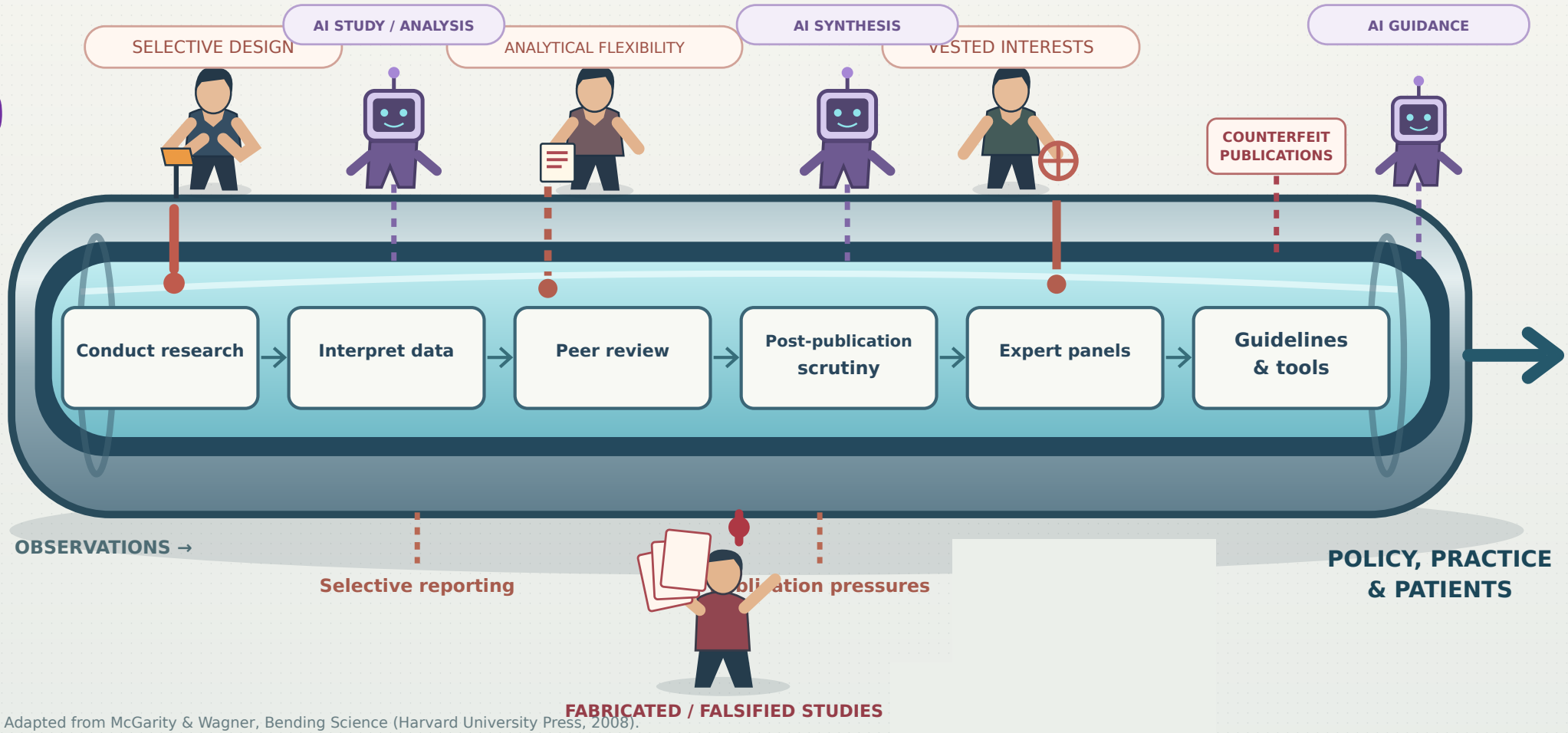
EBM 2.0



THE EVIDENCE PIPELINE

THE REAL WORLD | BIAS, FRAUD & AI

EBM 3.0

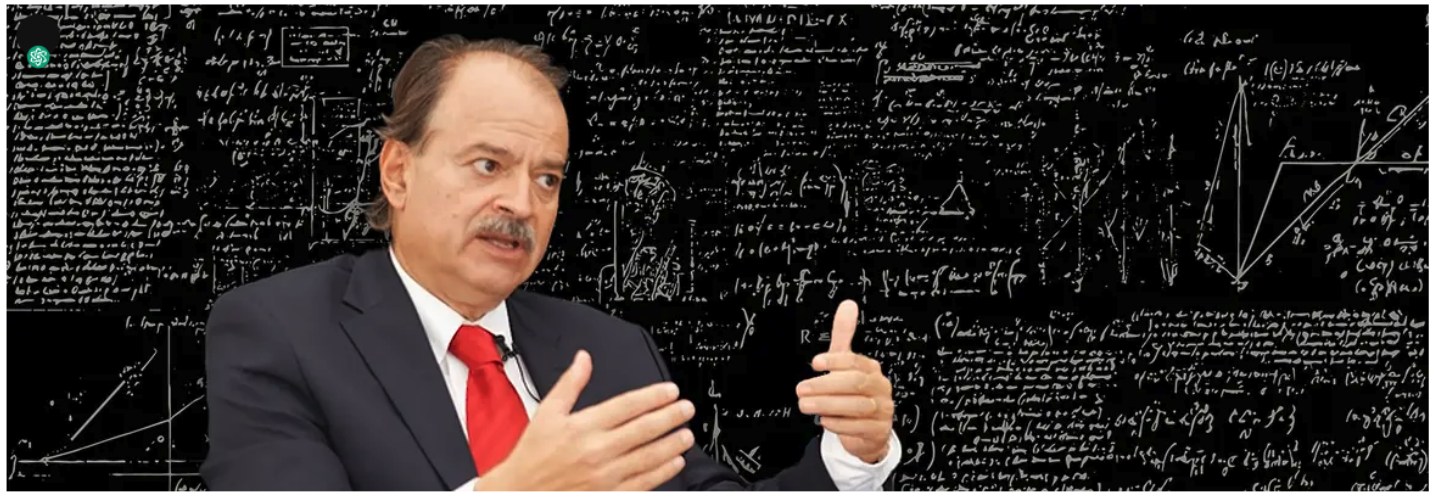


Adapted from McGarity & Wagner, Bending Science (Harvard University Press, 2008).

Double trouble

Why most published research findings are still false

94% of medical treatments lack evidence of benefits



14th October 2026

cite

"AI is generating a new deluge of fraudulent research…."


Plain text
THE ELEPHANT IN THE ROOM
"Lovely weather we're having!"
"More tea, anyone?"

EBM 3.0


Plain text
THE ELEPHANT IN THE ROOM
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EBM 4.0


Plain text
THE ELEPHANT IN THE ROOM
"Lovely weather we're having!"
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TBM 1.0

~~EBM 4.0~~

Evidence-Based AI

Living Evidence Map for Automation of Systematic Reviews (LEMASyR)

bims-arines AI in evidence synthesis

AEM Education and Training
A GLOBAL JOURNAL OF EMERGENCY CARE

COMMENTARY | Open Access

Where Evidence-Based Medicine Meets AI: Promise, Pitfalls, and Practice

Sangil Lee, Joshua Davis, Ken Milne, Christina Shenvi, Lars K. Beattie, Martin Wegman, Laura Melville, Richard D. Shih, Bryan Kane

First published: 21 June 2026 | https://doi.org/10.1002/aet2.70210 | VIEW METRICS

https://doi.org

Artificial intelligence and the future of evidence-based medicine

Lorainne Tudor Car, Tien Yin Wong, Azeem Majeed & Gary S. Collins

DRAFT Version 3.1: 13 March 2026

Responsible use of AI in Evidence Synthesis (RAISE 2026) 3: selecting and using AI evidence synthesis tools

Contributing authors and other author details: as per recommendations paper ('RAISE 1')

McMaster researcher leads new venture to guide responsible AI use in patient care

Medical resident and PhD student Bright Huo is the founder of EBAiM, an interdisciplinary group developing evidence-informed methodology to evaluate and use AI in health care.

Evidence-Based AI

Teaching Learners to Use AI Effectively in EBHC

Julie Tilson, Drew Keister, Clarisa Martinez, Janet Martin

In summary

- EBP education built around the “5-step” model → only “in captivity”
- Trust-Based Medicine is what is needed/wanted/already happening
- New opportunities and threats
- Revisit EBP education – for 2026 and beyond

Sicily Statement 2026

Toward an updated framework for Evidence-Based Practice

Full consultation paper for discussion

Initial draft prepared by David Nunan.
Updated following input from Tiziano Innocenti and Nino Cartabellotta.



SICILY STATEMENT 2026

Join the discussion

Working Group | Expression of Interest

Help shape the updated Sicily Statement

- Review emerging proposals
- Contribute through structured surveys
- Inform consensus on key questions