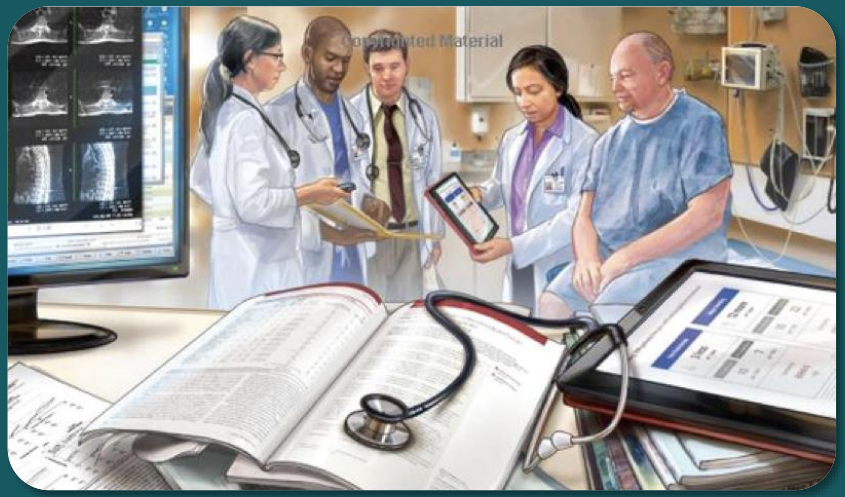
MAGIC making GRADE the irresistible choice

M app

Digital and Trustworthy Evidence Ecosystem Fact or Fiction?



Per Olav Vandvik, MD, Ph.D

Disclosures: Head of MAGIC (non-profit), BMJ Rapid Recs and the Ecosystem project

McMaster University

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NICE National Institute for Health and Care Excellence

Norwegian Institute of Public Health

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UNIVERSITÉ DE GENÈVE FACULTÉ DE MÉDECINE

The evidence ecosystem, a hot topic these days

Global Evidence Summit
Using evidence. Improving lives.
12-16 Sept 17 | Cape Town, South Africa

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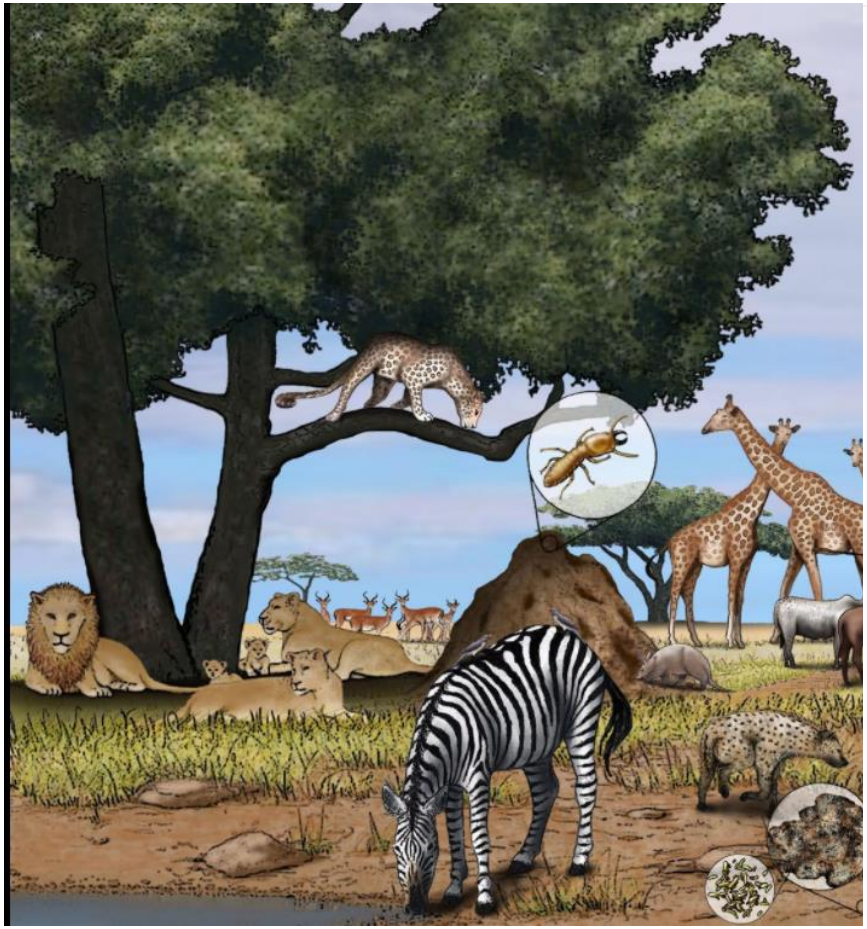
Plenary 2:

BREAKING DOWN THE SILOS: Digital and trustworthy evidence ecosystem

Thursday 14 September, 9-10.30am

This plenary will set out to understand how explicit links between actors are needed - and now possible - to close the loop between new evidence and improved care, through a culture for sharing evidence combined with advances in methods and technology/platforms for digitally structured data.

Ecosystem: African Savanna



Healthy, well-balanced ecosystems are made up of multiple, interacting food chains, called food webs. Carnivores (lions, hyenas, leopards) feed on herbivores (impalas, warthogs, cattle) that consume producers (grasses, plant matter). Scavengers (hyenas, vultures) and decomposers/detritivores (bacteria, fungi, termites) break down organic matter, making it available to producers and completing the food cycle (web). Humans are part of the savanna community and often compete with other organisms for food and space.

The following list defines and provides examples of the feeding (trophic) levels that comprise food webs:

- **Producer:** organism on the food chain that can produce its own energy and nutrients. Examples: grasses, Jackalberry tree, Acacia tree
- **Primary consumer/herbivore:** organism that eats mainly plants. Examples: cows, impalas, warthogs, zebras
- **Secondary consumer/carnivore:** organism that eats meat. Examples: leopard, lion
- Omnivore: organism that eats a variety of organisms, including plants, animals, and fungi. Examples: humans, aardvarks
- **Decomposer/detritivores:** organisms that break down dead plant and animal material and waste and release it as energy and nutrients in the ecosystem. Examples: bacteria, fungi, termites
- **Scavenger:** animal that eats dead or rotting animal flesh. Examples: vultures, hyenas
- **Insectivore:** organism that mostly eats insects. Example: Red-billed oxpecker

2016: Time for a post-guidelines era in health care?

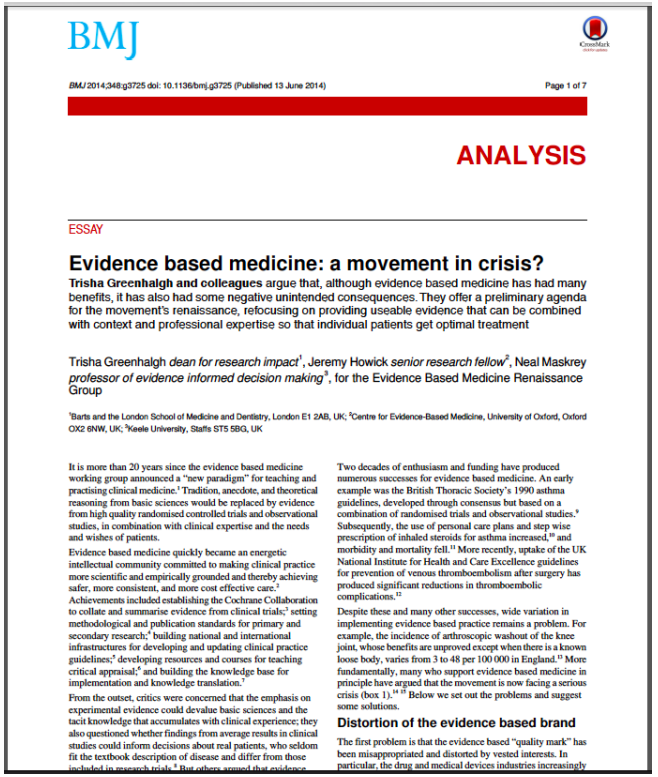
Major limitations EBM and guidelines

Developers

- Not trustworthy, ignore other knowledge
- Resource-demanding, extreme duplication

Policy-makers, clinicians and patients

- Available, useful, understandable ?
- Allow shared, personalized decisions?
- Up to date?
- Integrated in the electronic health record?



BMJ

BMJ 2014;348:g3725 doi: 10.1136/bmj.g3725 (Published 13 June 2014) Page 1 of 7

ANALYSIS

ESSAY

Evidence based medicine: a movement in crisis?

Trisha Greenhalgh and colleagues argue that, although evidence based medicine has had many benefits, it has also had some negative unintended consequences. They offer a preliminary agenda for the movement's renaissance, refocusing on providing useable evidence that can be combined with context and professional expertise so that individual patients get optimal treatment

Trisha Greenhalgh *dean for research impact*[1], Jeremy Howick *senior research fellow*[2], Neal Maskrey *professor of evidence informed decision making*[3], for the Evidence Based Medicine Renaissance Group

[1]Barts and the London School of Medicine and Dentistry, London E1 2AB, UK; [2]Centre for Evidence-Based Medicine, University of Oxford, Oxford OX2 6NW, UK; [3]Keele University, Staffs ST5 5BG, UK

It is more than 20 years since the evidence based medicine working group announced a "new paradigm" for teaching and practising clinical medicine.[1] Tradition, anecdote, and theoretical reasoning from basic sciences would be replaced by evidence from high quality randomised controlled trials and observational studies, in combination with clinical expertise and the needs and wishes of patients.

Evidence based medicine quickly became an energetic intellectual community committed to making clinical practice more scientific and empirically grounded and thereby achieving safer, more consistent, and more cost effective care.[2] Achievements included establishing the Cochrane Collaboration to collate and summarise evidence from clinical trials;[3] setting methodological and publication standards for primary and secondary research;[4] building national and international infrastructures for developing and updating clinical practice guidelines;[5] developing resources and courses for teaching critical appraisal;[6] and building the knowledge base for implementation and knowledge translation.[7]

From the outset, critics were concerned that the emphasis on experimental evidence could devalue basic sciences and the tacit knowledge that accumulates with clinical experience; they also questioned whether findings from average results in clinical studies could inform decisions about real patients, who seldom fit the textbook description of disease and differ from those included in research trials.[8] But others argued that evidence

Two decades of enthusiasm and funding have produced numerous successes for evidence based medicine. An early example was the British Thoracic Society's 1990 asthma guidelines, developed through consensus but based on a combination of randomised trials and observational studies.[9] Subsequently, the use of personal care plans and step wise prescription of inhaled steroids for asthma increased,[10] and morbidity and mortality fell.[11] More recently, uptake of the UK National Institute for Health and Care Excellence guidelines for prevention of venous thromboembolism after surgery has produced significant reductions in thromboembolic complications.[12]

Despite these and many other successes, wide variation in implementing evidence based practice remains a problem. For example, the incidence of arthroscopic washout of the knee joint, whose benefits are unproved except when there is a known loose body, varies from 3 to 48 per 100 000 in England.[13] More fundamentally, many who support evidence based medicine in principle have argued that the movement is now facing a serious crisis (box 1).[14 15] Below we set out the problems and suggest some solutions.

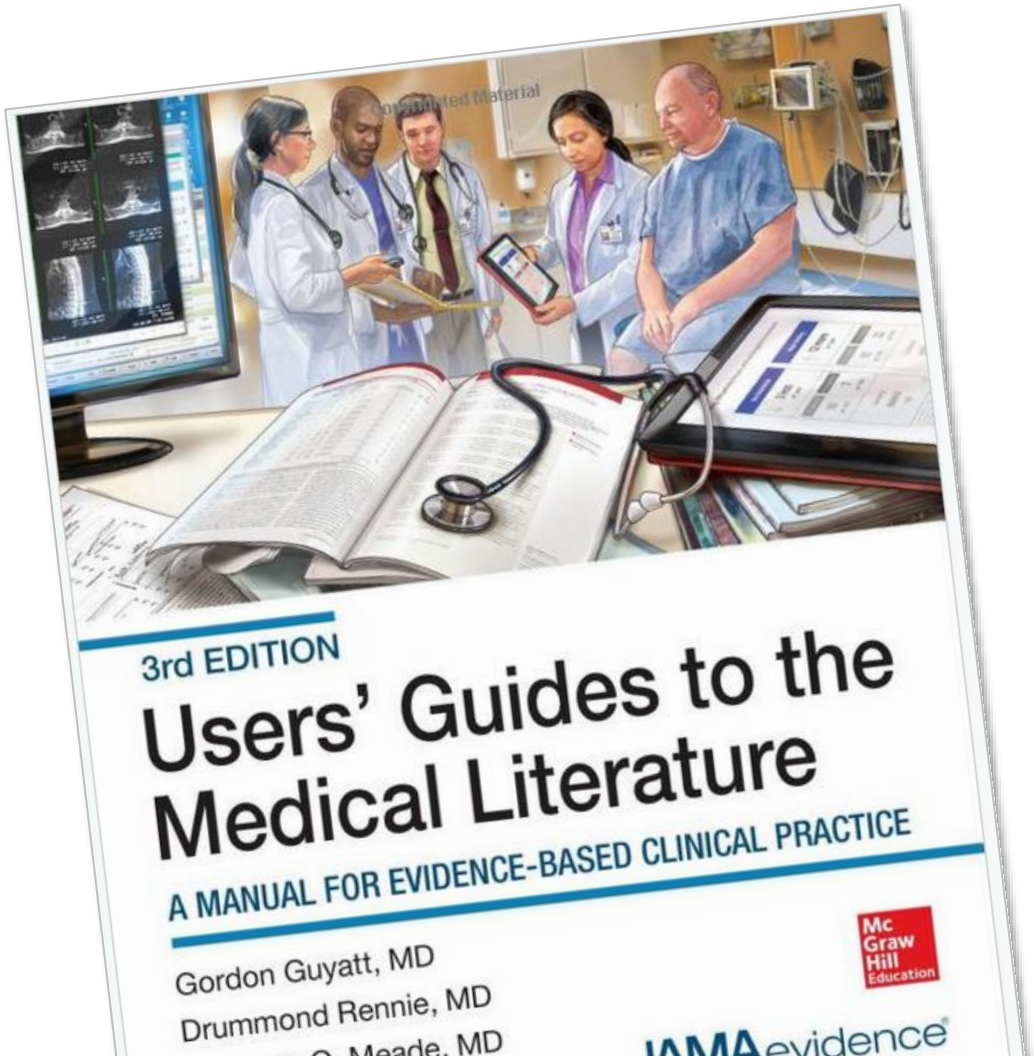
Distortion of the evidence based brand

The first problem is that the evidence based "quality mark" has been misappropriated and distorted by vested interests. In particular, the drug and medical devices industries increasingly

Time to respond to calls from the opponents?

Major challenges with EBM, systematic reviews, HTA and guidelines but also advances in standards, methods and tools

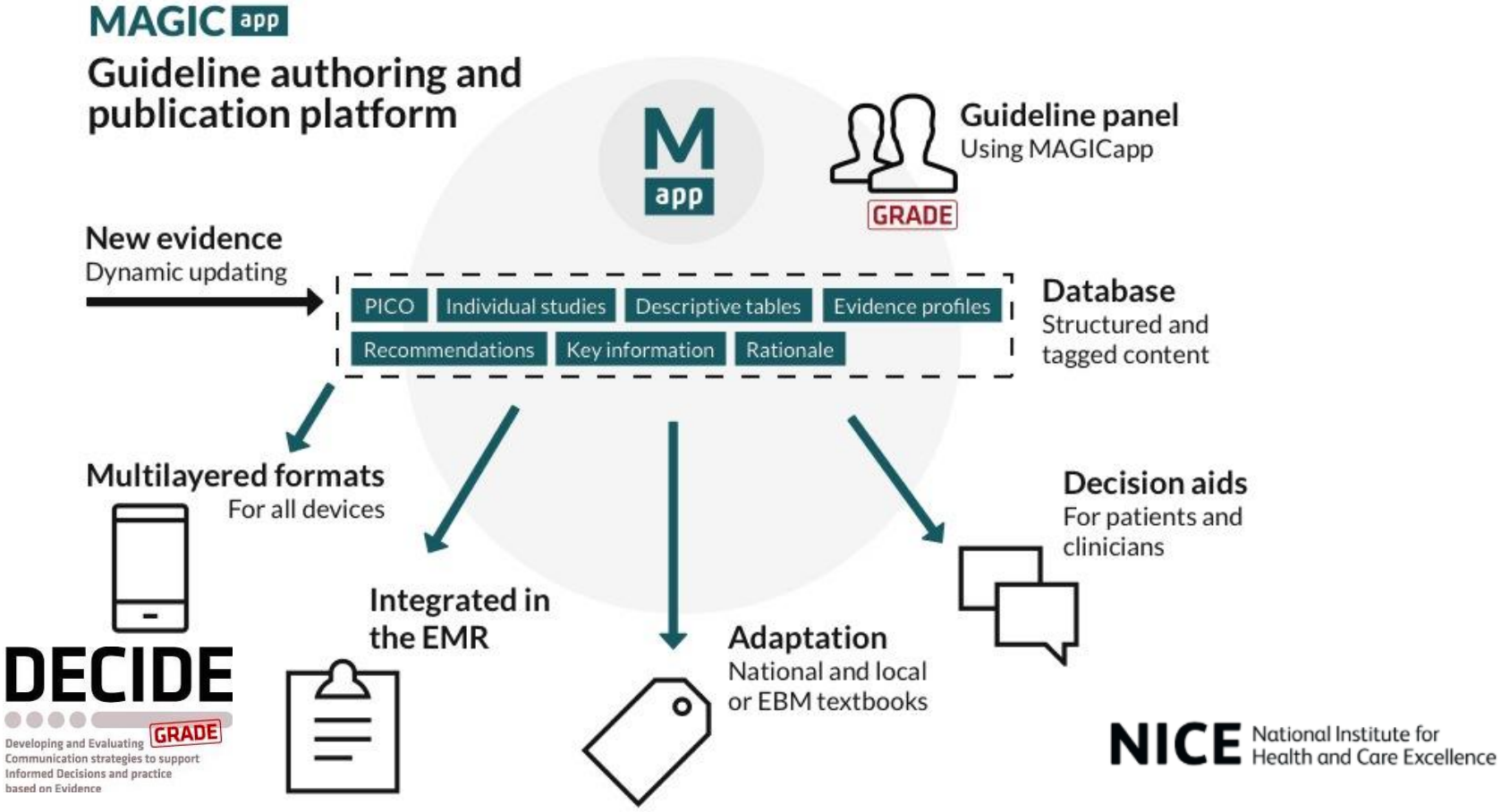
CLINICAL PRACTICE GUIDELINES WE CAN TRUST



GRADE

Can technology help? Platforms and tools ready for use

(e.g., www.magicapp.org)



Helsedirektoratet Norwegian Directorate of Health

Sundhedsstyrelsen

Australian Government National Health and Medical Research Council NHMRC

stroke foundation

ADA American Dental Association®


DIGITIZE OR DIE
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What can we learn from the Brazilians in Belo Horizonte?

Brazil 1-7 Germany – World Cup Semi-Final – 8th July 2014

Challenges beyond guidelines, for patients and society

to increase value and reduce waste in health care and research

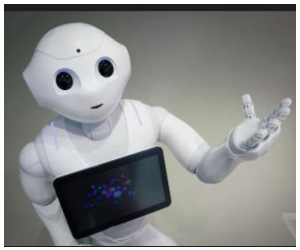
THE LANCET
A new Lancet Series

increasing value
reducing waste
in research

Cochrane

HTAi

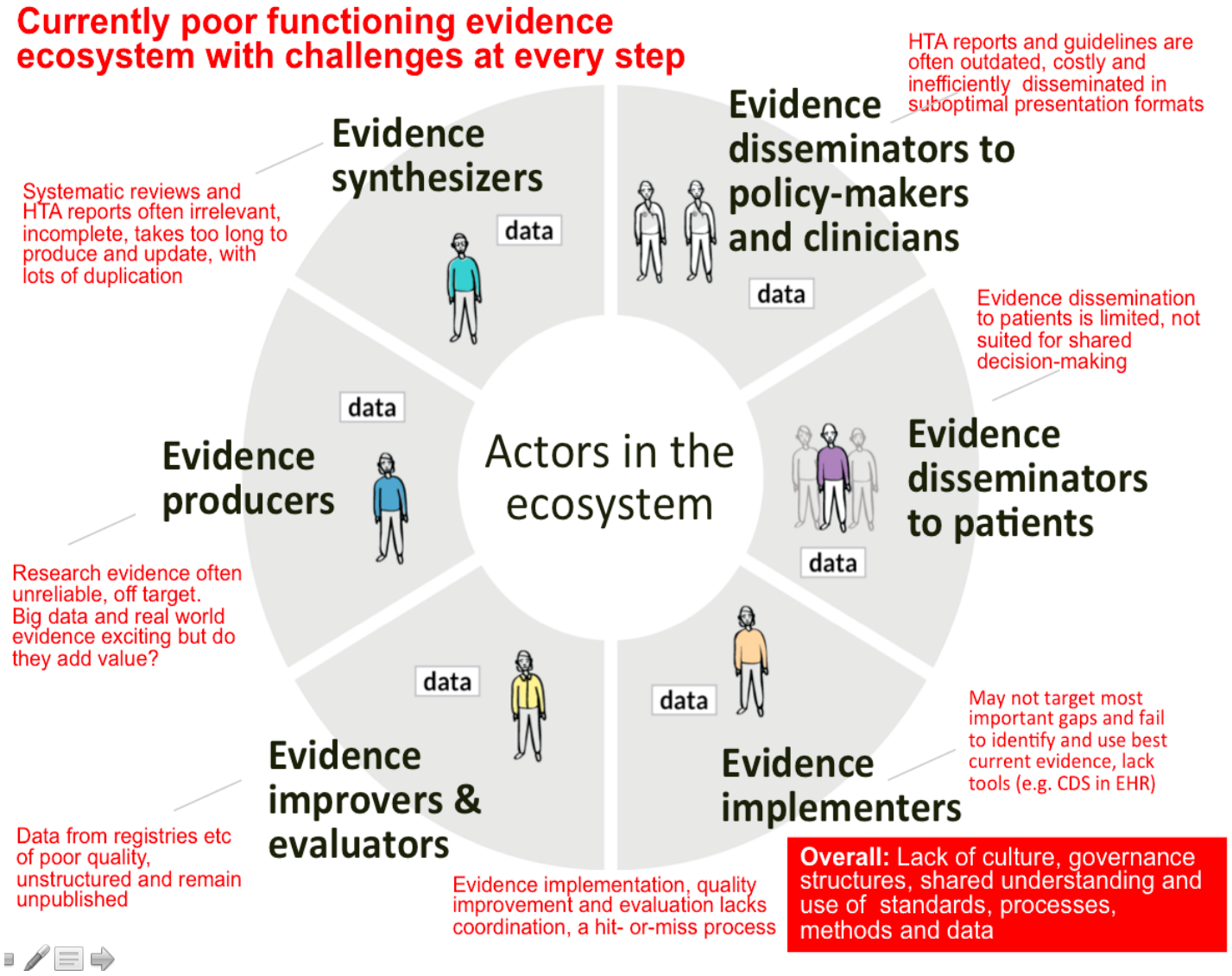
Guidelines International Network



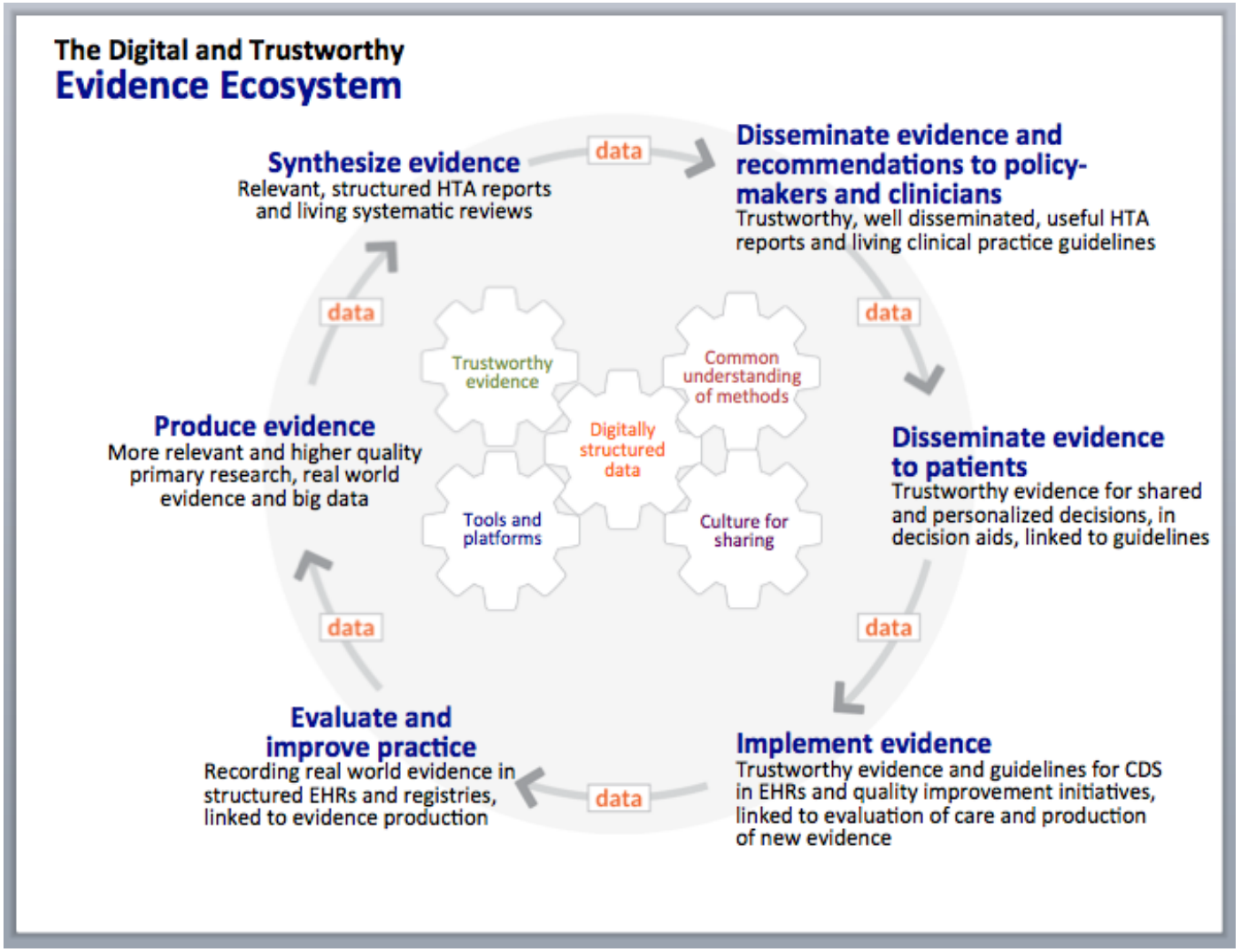
RIGHTCARE

International Forum on
QUALITY & SAFETY
in HEALTHCARE
Paris 2014

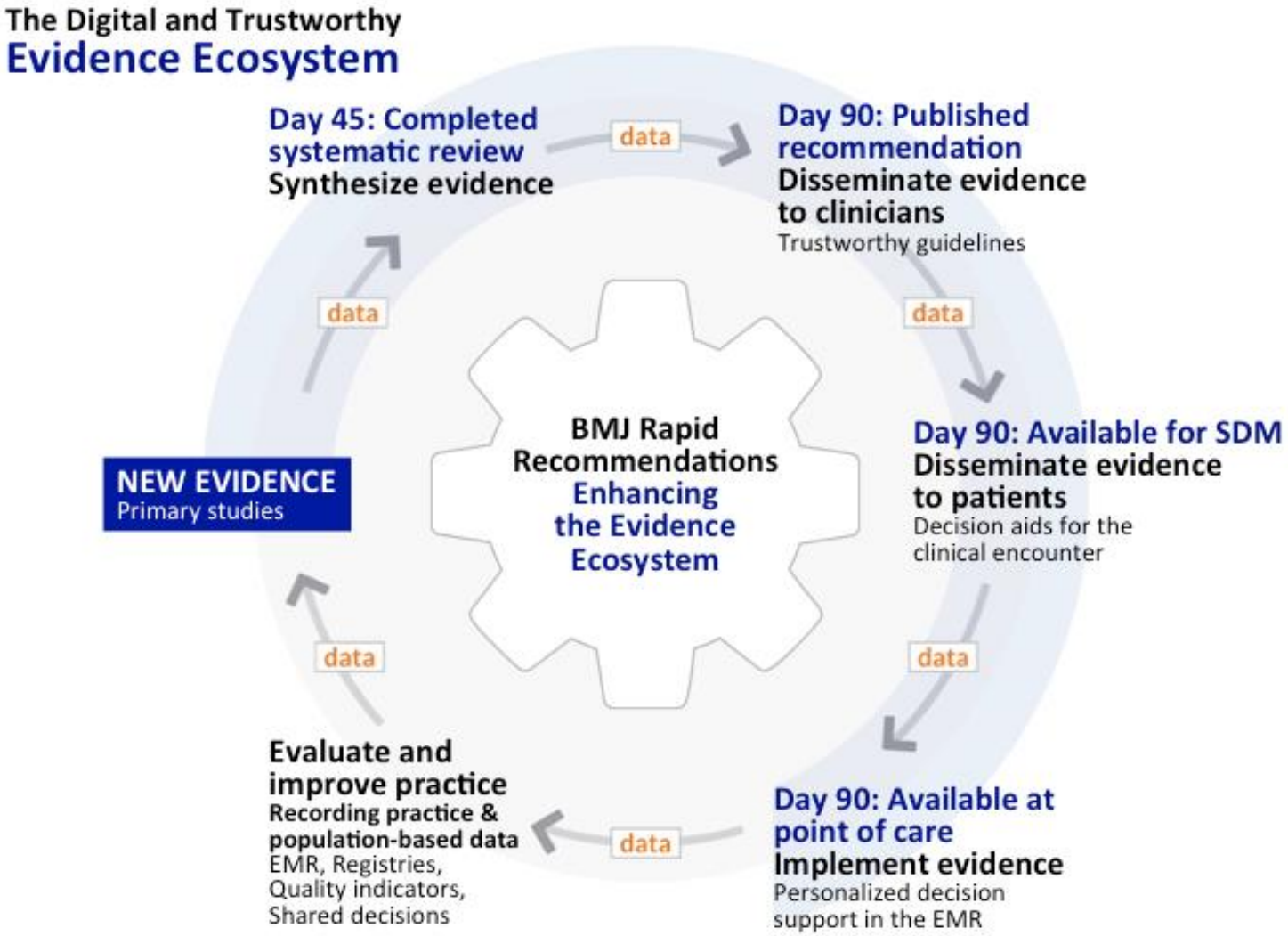
The current evidence ecosystem is broken



Solutions, in an emerging digital and trustworthy evidence ecosystem to increase value and reduce waste in health care and research



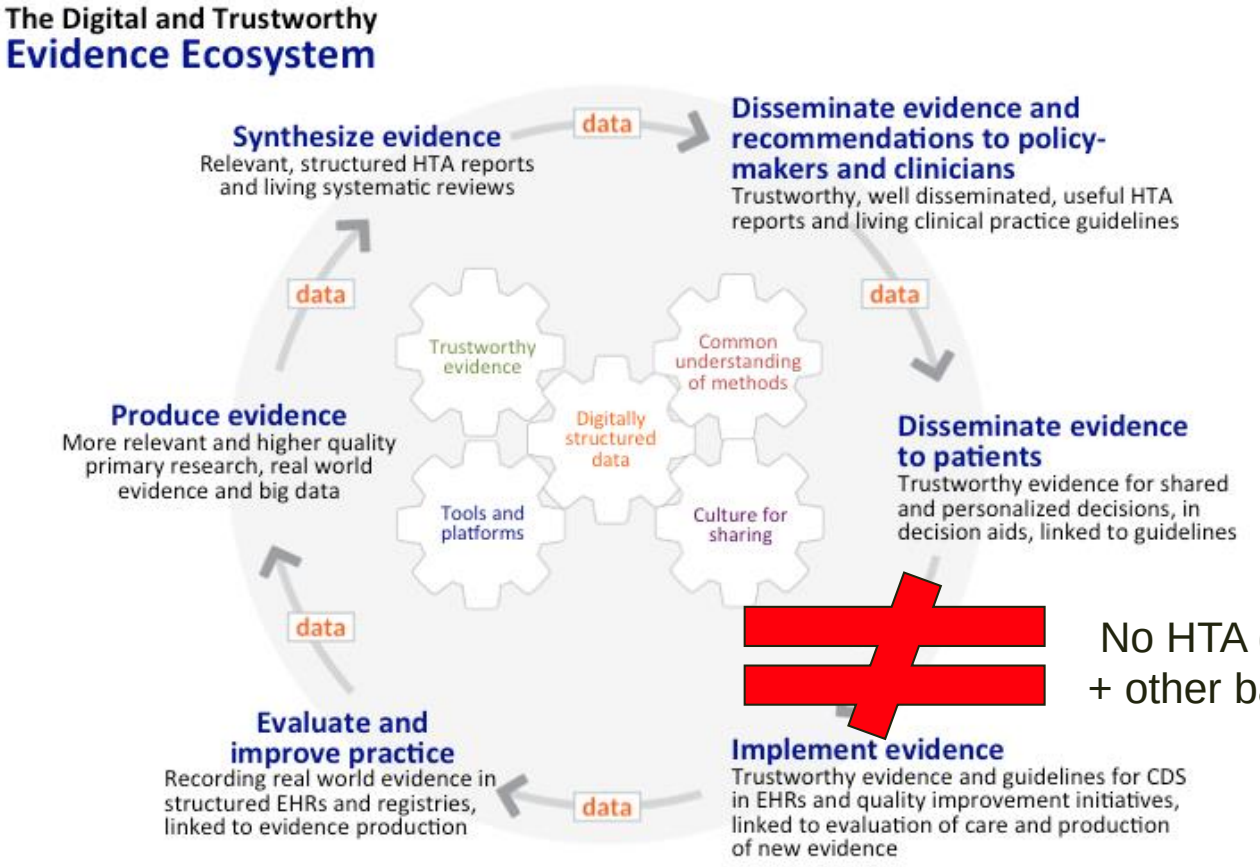
Some hurdles to overcome: Organizations fit for purpose?



BMJ Rapid Recommendations: Let´s check it out…*

* All papers open access and for you to scrutinize, adapt and use for your purposes

The Evidence Ecosystem: Fact of fiction for TAVI?



No HTA (cost-effective?)
+ other barriers

Heart

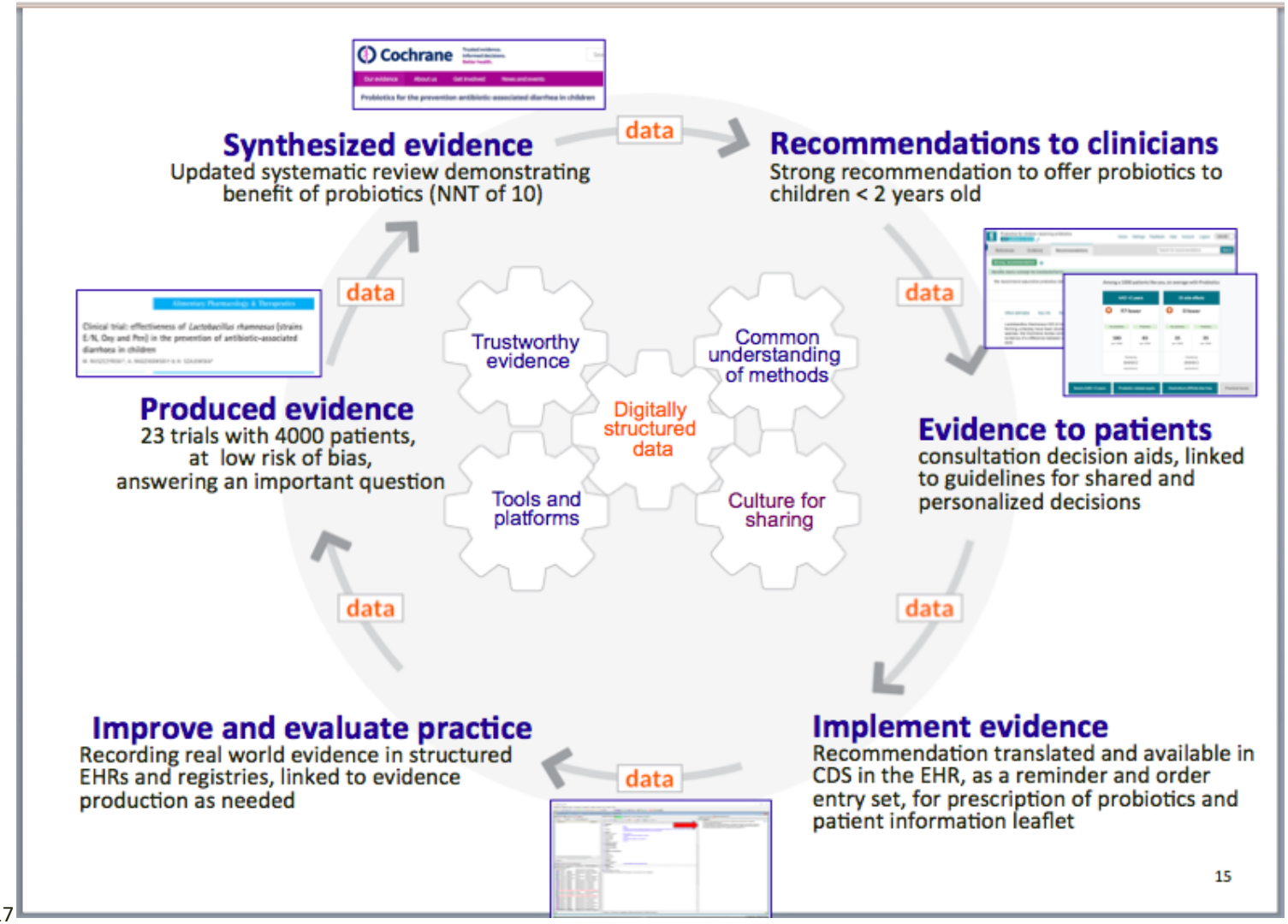
Evidence, experts, trustworthy guidelines and WikiRecs

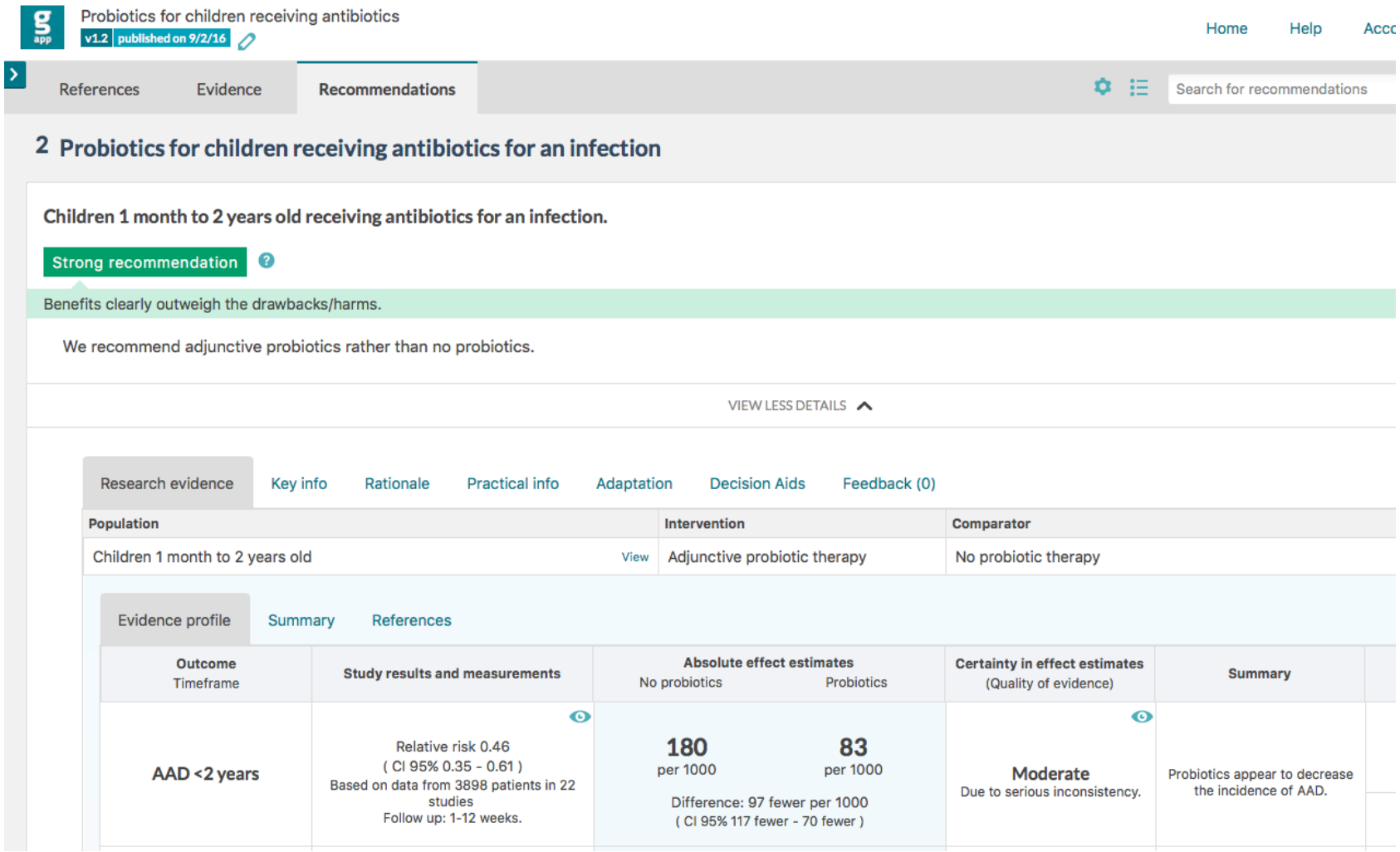
Catherine M Otto, Frederick A Spencer and Per Olav Vandvik

How far can we come with all the actors and platforms in place?

Evidence Ecosystem: Fact of fiction

for Probiotics in children taking antibiotics?




Probiotics for children receiving antibiotics
v1.2 published on 9/2/16
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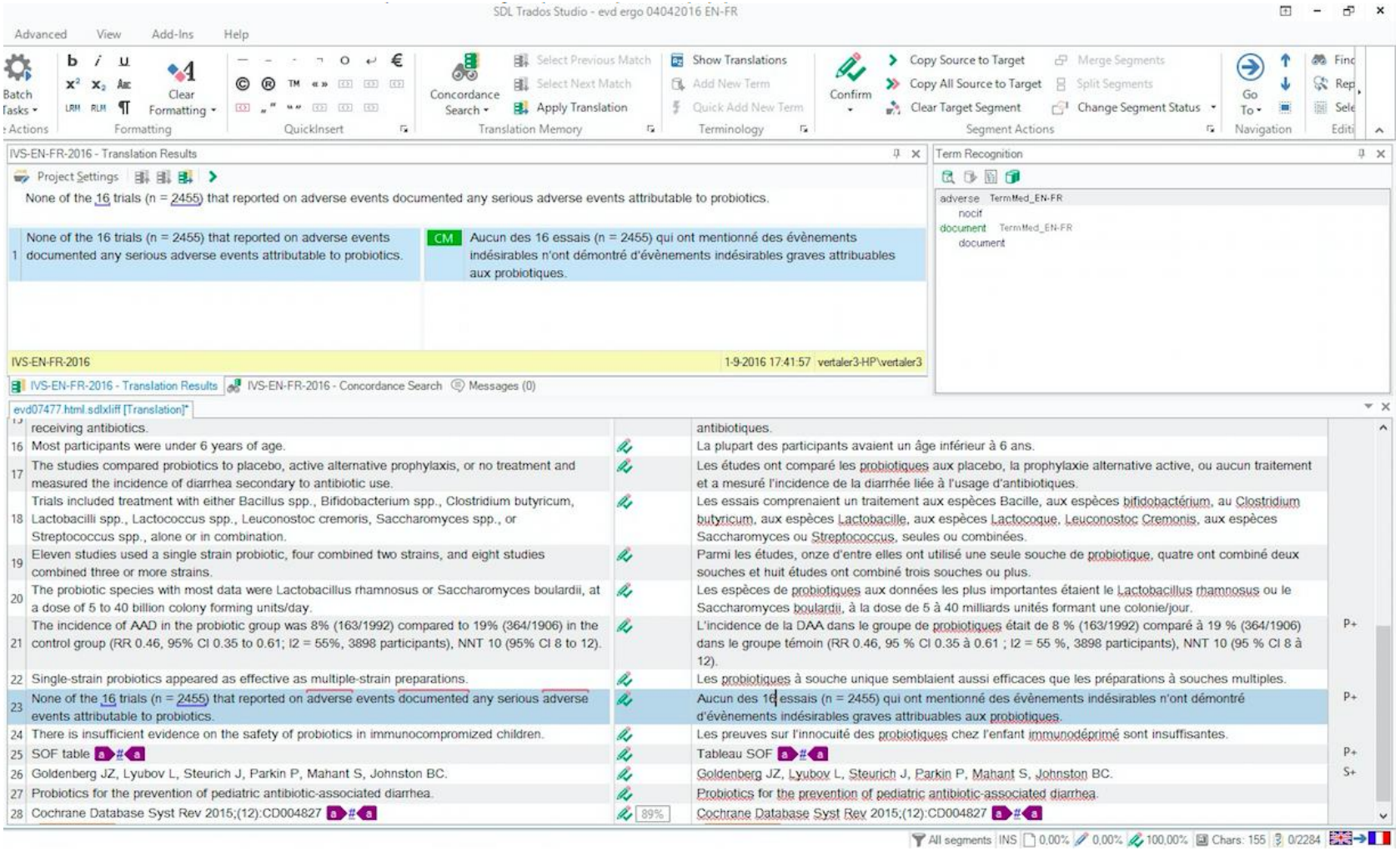
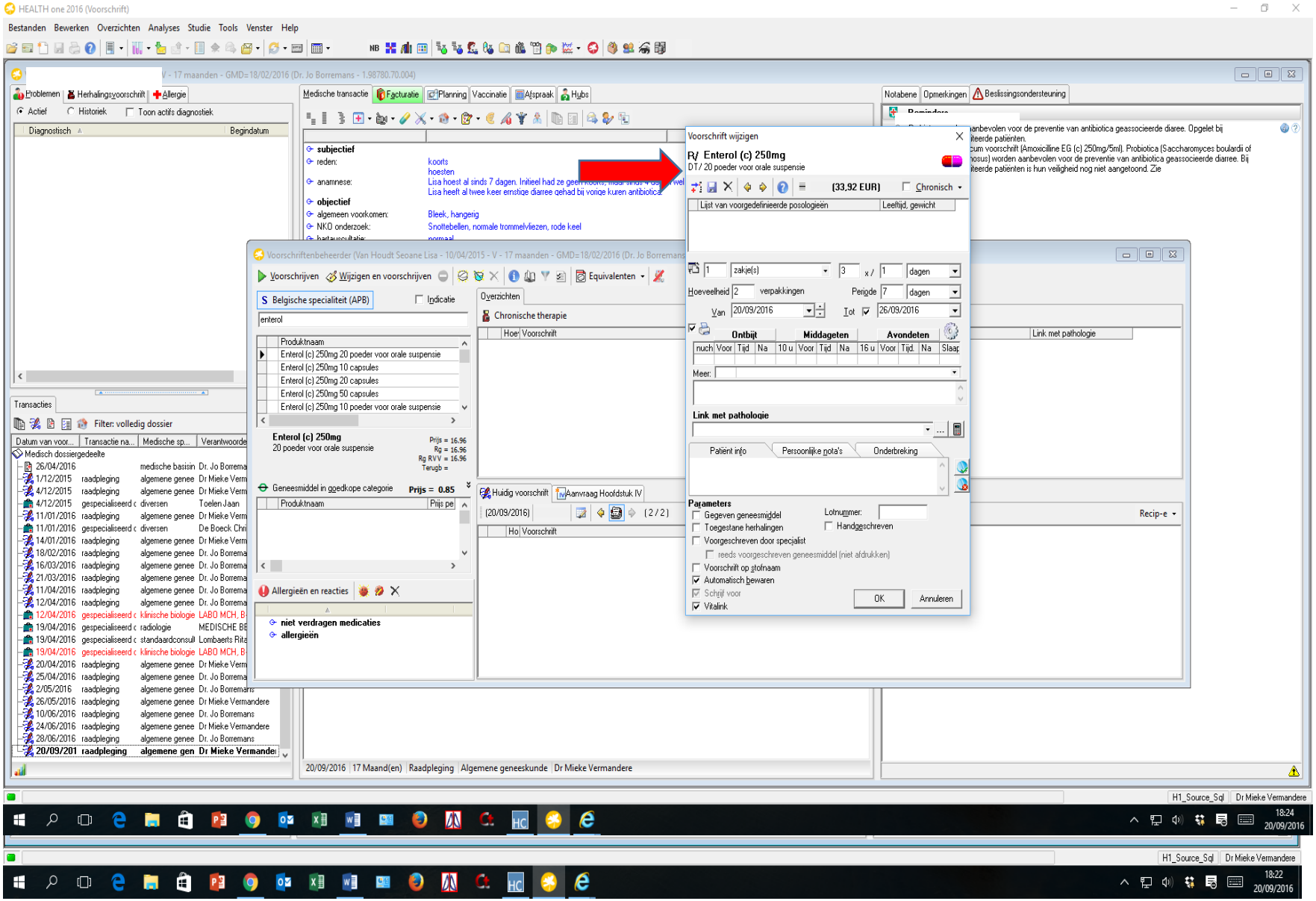
2 Probiotics for children receiving antibiotics for an infection
Children 1 month to 2 years old receiving antibiotics for an infection.
Strong recommendation
Benefits clearly outweigh the drawbacks/harms.
We recommend adjunctive probiotics rather than no probiotics.
VIEW LESS DETAILS
Research evidence
Key info
Rationale
Practical info
Adaptation
Decision Aids
Feedback (0)
Population
Intervention
Comparator
Children 1 month to 2 years old
View
Adjunctive probiotic therapy
No probiotic therapy
Evidence profile
Summary
References
Outcome
Timeframe
Study results and measurements
Absolute effect estimates
No probiotics
Probiotics
Certainty in effect estimates
(Quality of evidence)
Summary
AAD <2 years
Relative risk 0.46
(CI 95% 0.35 - 0.61)
Based on data from 3898 patients in 22 studies
Follow up: 1-12 weeks.
180
per 1000
83
per 1000
Difference: 97 fewer per 1000
(CI 95% 117 fewer - 70 fewer)
Moderate
Due to serious inconsistency.
Probiotics appear to decrease the incidence of AAD.

WikiRecs - EBM guidelines - translation, adaptation - CDSS in the EHR



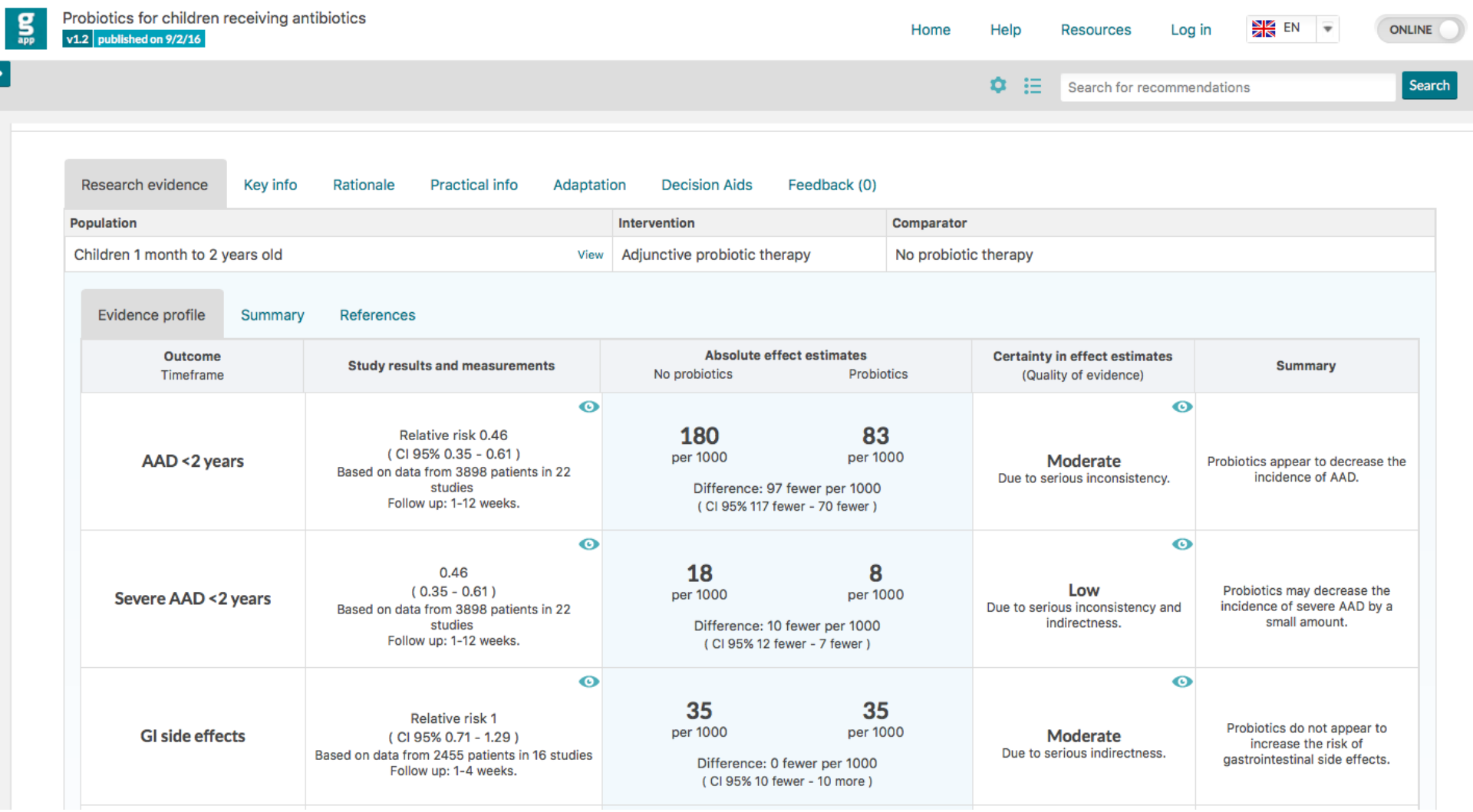
To practice: Meet “Stella Artois” 17 months old, with pneumonia prescribed with antibiotics in Belgian primary care

Doctor prescribes antibiotics in the EHR….

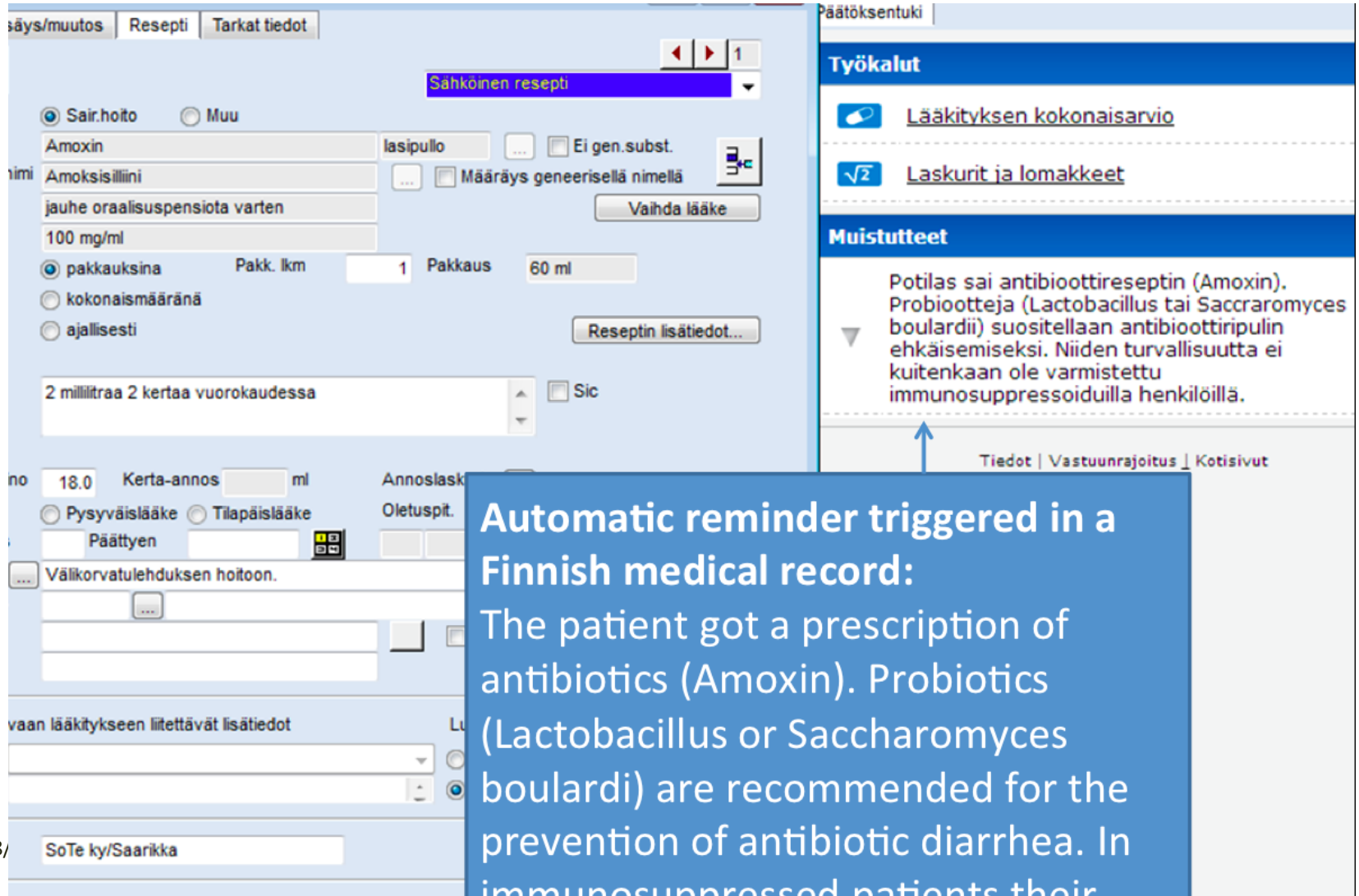


Drilling back to the Evidence if needed

EBM guidelines – MAGICapp - all the way to the meta-analysis?



And same goes for Finland

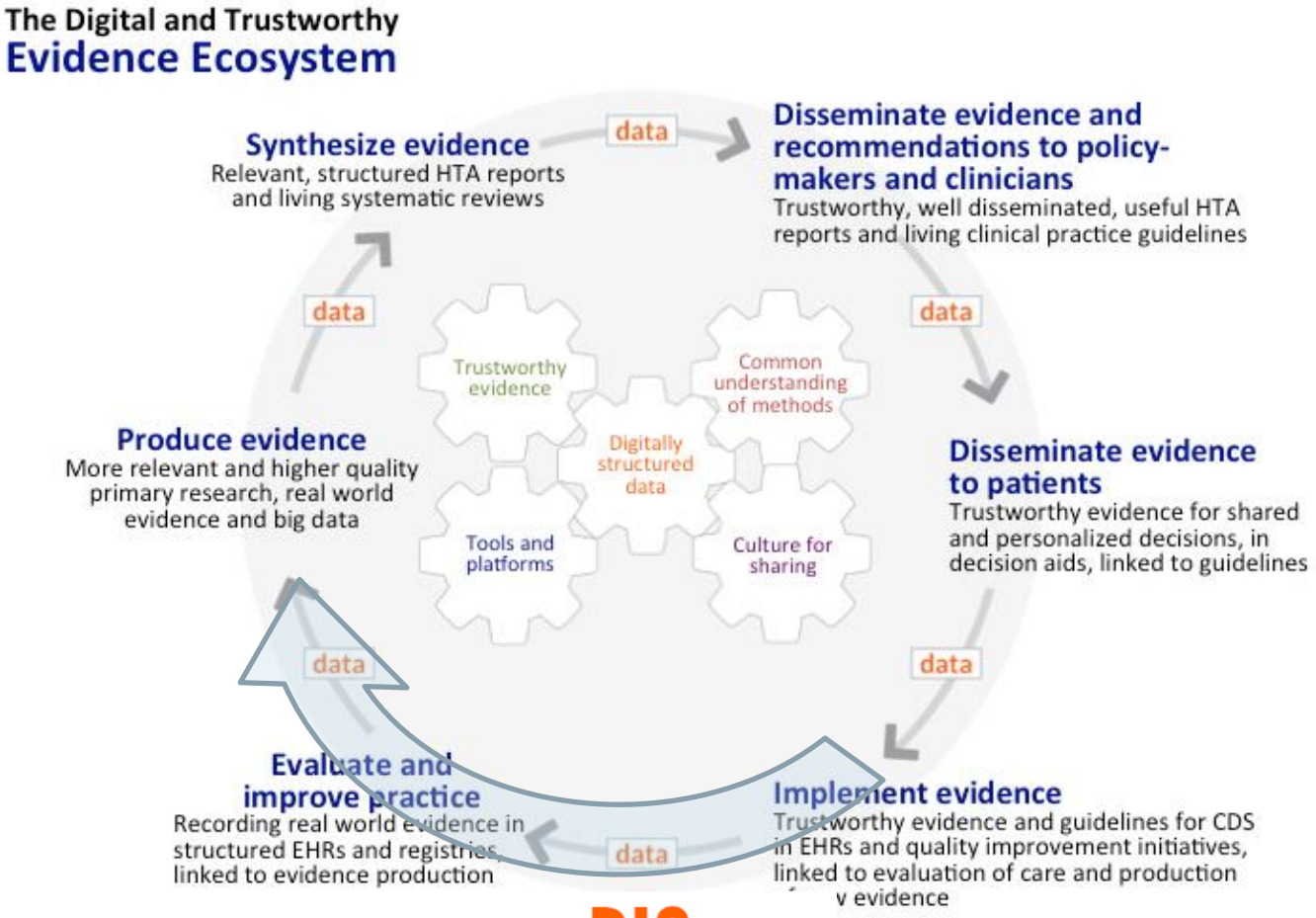


Automatic reminder triggered in a Finnish medical record:

The patient got a prescription of antibiotics (Amoxin). Probiotics (Lactobacillus or Saccharomyces boulardi) are recommended for the prevention of antibiotic diarrhea. In immunosuppressed patients their

Acting on – and implementing - the evidence, together

No lack of challenges, but also exciting opportunities



PERSPECTIVE

The Randomized Registry Trial — The Next Disruptive Technology in Clinical Research?

Michael S. Lauer, M.D., and Ralph B. D'Agostino, Sr., Ph.D.

N Engl J Med 2013; 369:1579-1581 | October 24, 2013 | DOI: 10.1056/NEJMp1310102

IMPLEMENTATION SCIENCE

Implementation Science

In summary:

- Better methods, processes and tools and available in an emerging **Digital and Trustworthy Evidence Ecosystem in health care**

- More of a fact than a fiction, despite the challenges

- **People:** culture for sharing work, evidence and understanding of research methods, including different sources of knowledge

- **Technology:**
  - Rapidly evolving platforms with digitally structured data. G-I-N, Cochrane and others joining forces
  - Real world evidence, big data and genomics: huge potential but..

- BMJ-RapidRecs as a model: Will organizations get the work done or do we need a disruptive innovation, in health care like elsewhere?