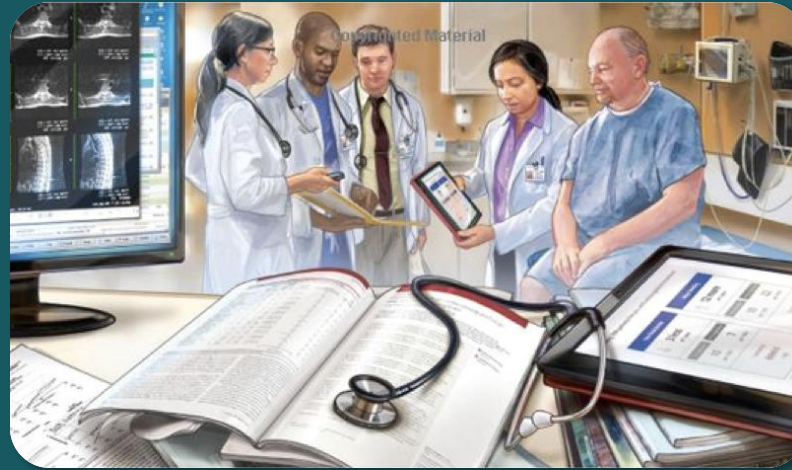# Enhancing the evidence ecosystem
in EMRO and beyond, through MAGIC

For EMRO and NEDtP expert online session April 22, 2025

Per Olav Vandvik, Founder and chief scientist MAGIC Evidence Ecosystem Foundation (MAGIC)

MD, Ph.D, Professor of Medicine, University of Oslo

No disclosures of interest beyond what we aim to achieve through MAGIC

Meet John, hospitalized with a new stroke, ready for discharge

65 yrs old, DM2, CVD (on insulin, metformin, clopidogrel and statins), BMI 33

What about SGLT2-I or GLP1-RA to reduce cardiorenal outcomes?

**How make sure John gets the right treatment, at the right time?
How can we enhance the evidence ecosystem
To make a true impact on policy and practice?**

What if you find this answer? [MATCH-IT](#)

Reflects shift in EBM and our continued focus on decision support tools

OPEN ACCESS

Interpretation and use of a decision support tool for multiple treatment options: a combined randomised controlled trial and survey of medical students

Birk Stokke Hunskaar [iD],[1] Per Olav Løvsletten,[1,2] Ashley Muller,[3,4] Per Olav Vandvik[1,2]

Abstract

Objectives To investigate medical students' ability to interpret evidence, as well as their self-assessed understandability, perceived usefulness and preferences for design alternatives in an interactive decision support tool, displaying GRADE evidence summaries for multiple treatment options (Making Alternative Treatment CHoices Intuitive and Trustworthy, MATCH-IT).

Design A combined randomised controlled trial and survey. Participants were presented with a clinical scenario and randomised to one of two versions of the MATCH-IT tool (A/B), instructed to explore the evidence and decide on a recommendation. Participants answered a questionnaire assessing interpretation, treatment recommendation, self-assessed understandabilit...

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Clinicians need point-of-care decision support tools to understand and balance benefits and harms, including multiple treatment options based on complex evidence from network meta-analysis.

⇒ Practice of evidence-based medicine (EBM) has shifted from critical appraisal of the literature towards efficient use of EBM resources and tools.

⇒ Little is known about how healthcare professionals and trainees can understand and employ such tools.

WHAT THIS STUDY ADDS

Agenda for the online expert session

1. ## Enhancing the evidence ecosystem (40 min)

- More efficient authoring, dissemination and updating of trustworthy clinical practice guidelines
- From silos towards **an enhanced evidence ecosystem**
- Living, trustworthy and accessible evidence and guidance
- Challenges and opportunities EMRO (Q/A)

2. ## Dissemination-adaptation-translation (40 min)

Dr Nicolas Delvaux

Associate Professor, Department of Public Health and Primary Care, KU Leuven
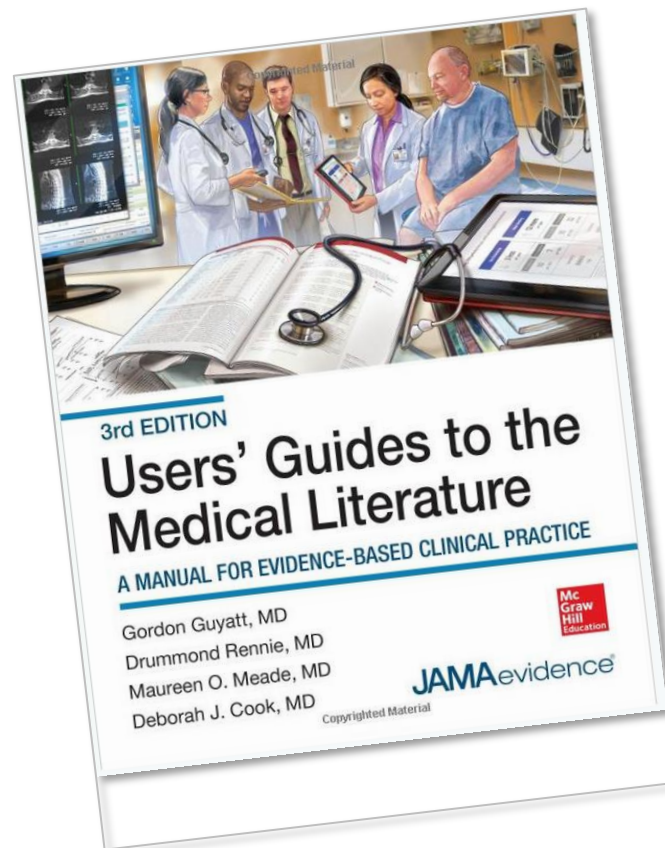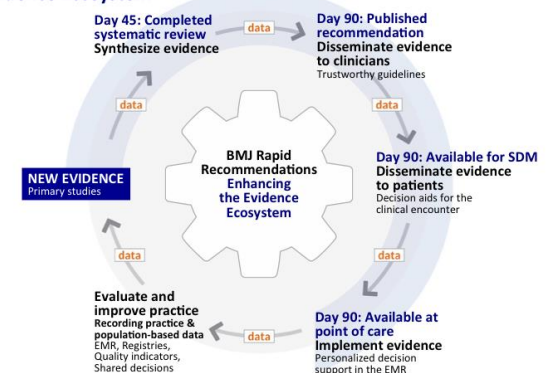
Health care professionals need guidelines

and they have to be trustworthy, timely and accessible
Professional societies need to apply best current standards, methods, and processes
Great advances in EBM and technology/ digitalization add tools to allow this to happen

MAGIC was created to fix problems with guidelines (2010)
building on advances in standards and methods, by adding technology to enhance dissemination at the point of patient care: caring with evidence

Go to www.magicevidence.org to learn more about our current vision and mission

"You have to find people that are fun and nice to work with"

Nurturing the culture of EBM, never forgetting to truly care for our patients
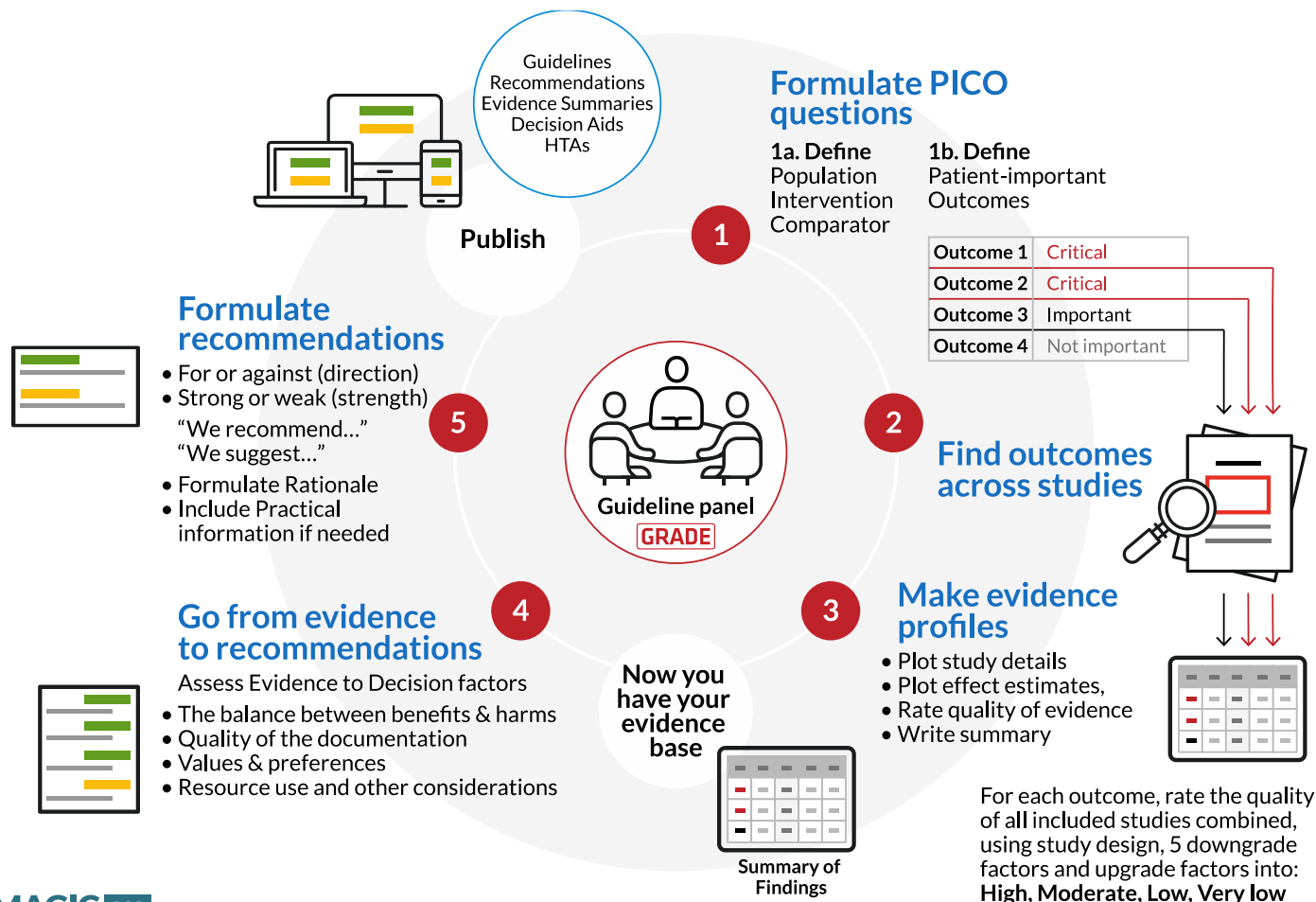

Gordon Guyatt
Co-founder
EBM/GRADE/ MAGIC

Victor Montori
Professor of medicine Mayo Clinic
Founder Patient revolution for kind
and careful care

Moving from evidence to recommendations
Systematic and transparent, applying the right standards and GRADE methods

Guidelines
Recommendations
Evidence Summaries
Decision Aids
HTAs

Publish

Formulate PICO questions

1a. Define
Population
Intervention
Comparator

1b. Define
Patient-important
Outcomes

Outcome 1	Critical
Outcome 2	Critical
Outcome 3	Important
Outcome 4	Not important

①

Formulate recommendations
• For or against (direction)
• Strong or weak (strength)

"We recommend…"
"We suggest…"

• Formulate Rationale
• Include Practical information if needed

⑤

②

Find outcomes across studies

Guideline panel
GRADE

Go from evidence to recommendations
Assess Evidence to Decision factors
• The balance between benefits & harms
• Quality of the documentation
• Values & preferences
• Resource use and other considerations

④

③

Now you have your evidence base

Make evidence profiles
• Plot study details
• Plot effect estimates,
• Rate quality of evidence
• Write summary

Summary of Findings

For each outcome, rate the quality of all included studies combined, using study design, 5 downgrade factors and upgrade factors into:
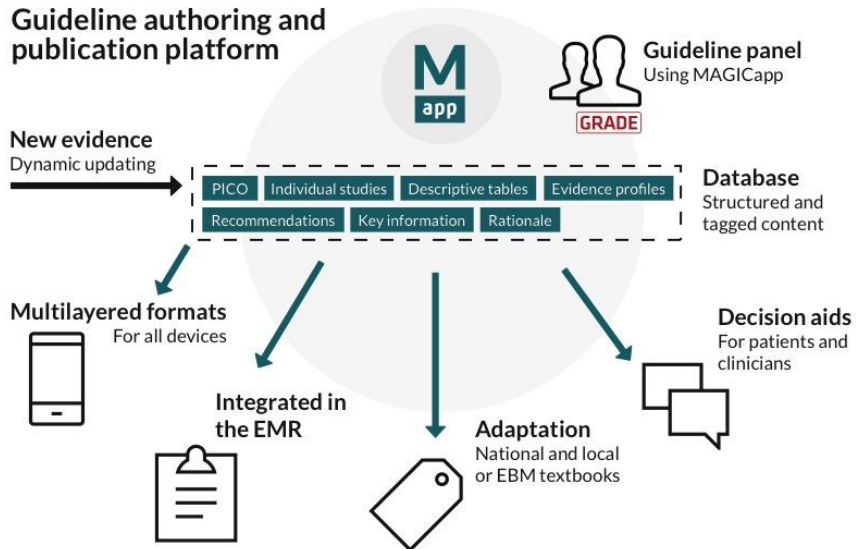**High, Moderate, Low, Very low**

MAGIC app

8

MAGICapp, adding technology to advances in EBM (2013)

Digitally structured, computable, multilayered guideline content
Increasingly used by WHO and others, as allows dynamic updating ++

Version control

PICOs, evidence summaries (including individual outcomes) and recommendations can be exported/ imported and updated one at a time, with full version control

For patients with non-severe COVID-19 at **high** risk of hospitalization

Conditional recommendation for   Updated evidence, no change in recommendation

We suggest treatment with remdesivir *(conditional recommendation for)*.

Why bother with Evidence Ecosystems? (2014)

Recognition that trustworthy guidelines useless if they remain in silos
How can data flow seamlessly from production to impact on care?
MAGIC vision is to enhance the evidence ecosystem, now a mature framework
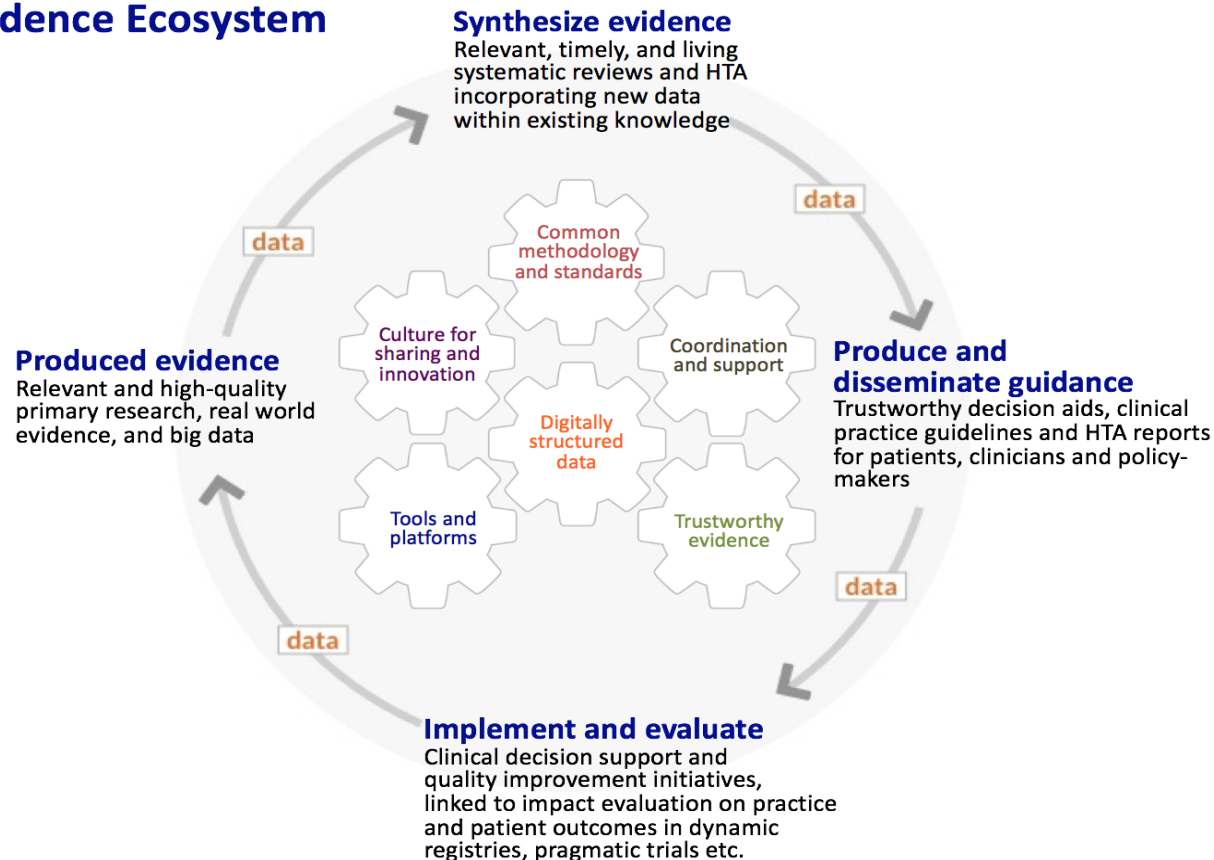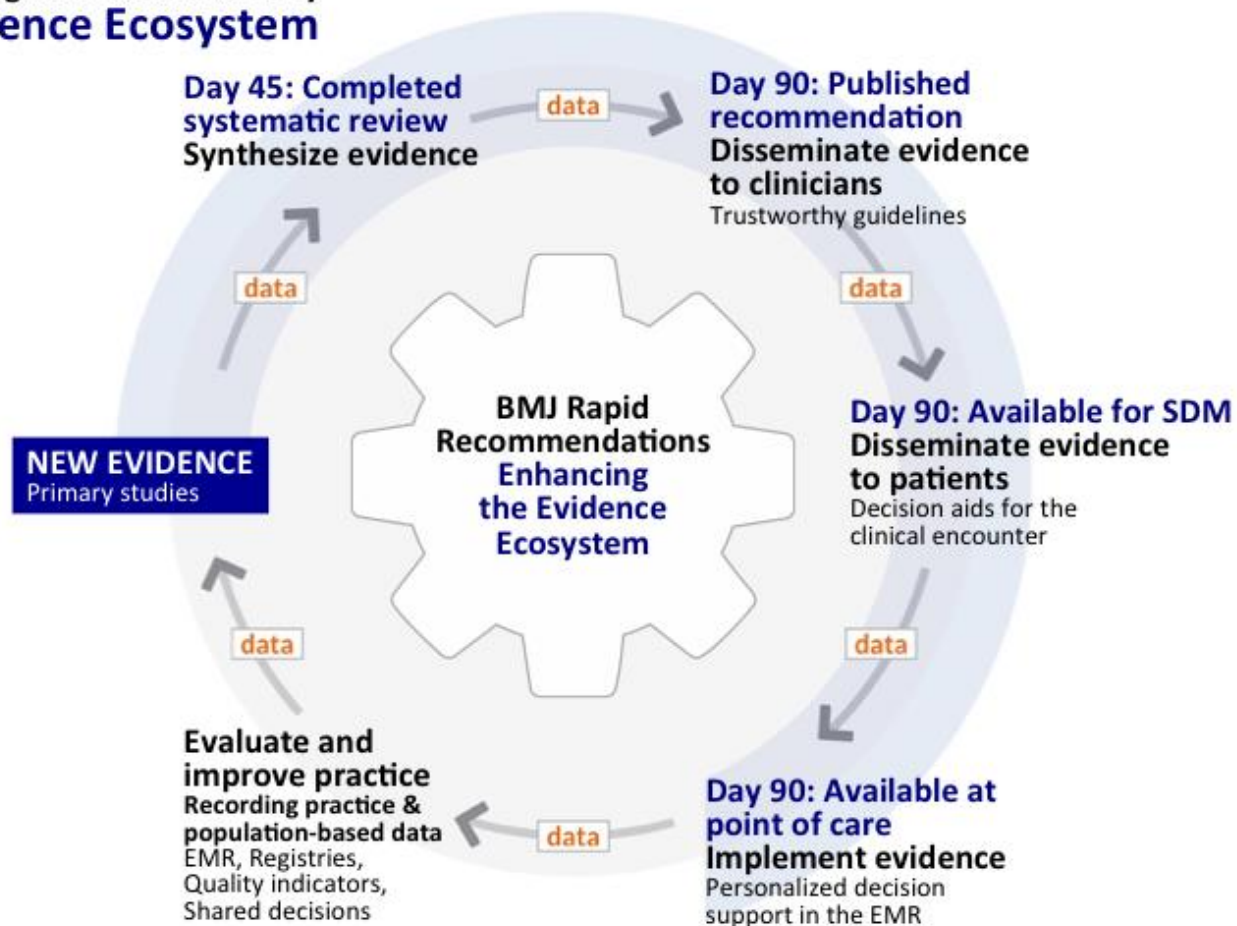
Vandvik PO, Brandt L. Future of Evidence Ecosystem Series: Evidence ecosystems and learning health systems: why bother? *Journal of Clinical Epidemiology.* 2020

Enhance processes for efficiency and reduced waste (2016)

increasing frustration with organizational barriers to innovate the ecosystem

BMJ Rapid Recommendations: Our MAGIC lab, 25 guidelines so far

The Digital and Trustworthy Evidence Ecosystem

Day 45: Completed systematic review
Synthesize evidence

data

Day 90: Published recommendation
Disseminate evidence to clinicians
Trustworthy guidelines

data

data

BMJ Rapid Recommendations Enhancing the Evidence Ecosystem

NEW EVIDENCE
Primary studies

Day 90: Available for SDM
Disseminate evidence to patients
Decision aids for the clinical encounter

data

data

Evaluate and improve practice
Recording practice & population-based data
EMR, Registries, Quality indicators, Shared decisions

data

Day 90: Available at point of care
Implement evidence
Personalized decision support in the EMR

Building partnerships by shared visions, culture and trust (2017-)
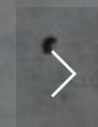
Still core mission of MAGIC: caring for patients with evidence (2021)

Back to John with DM2, CVD and obesity: Should I get a GLP-1 RA?
Doc found a <u>trustworthy guideline</u> with multiple options, based on best current evidence:
<u>NMA-update with 10 000 effect estimates</u>, straight from R to <u>MATCH-IT tool</u>

John chose a GLP1-RA through shared decision-making
How share, re-use and dynamically update such complex evidence?
Indeed, our guideline is out-of-date in 2025!!!

Breakthrough for living evidence: a call for action (2020)

Decision makers need
'living' evidence synthesis

Julian H. Elliott, Rebecca Lawrence, Jan C. Minx, Olufemi T. Oladapo, Philippe Ravaud, Britta Tendal Jeppesen, James Thomas, Tari Turner, Per Olav Vandvik & Jeremy M. Grimshaw

COVID-19 showed that living evidence can work globally

Exemplified by living guidelines from WHO, NICE, Australia and others
Final steps remain (e.g. MAGIC testing new process and module for adaptation+translation)
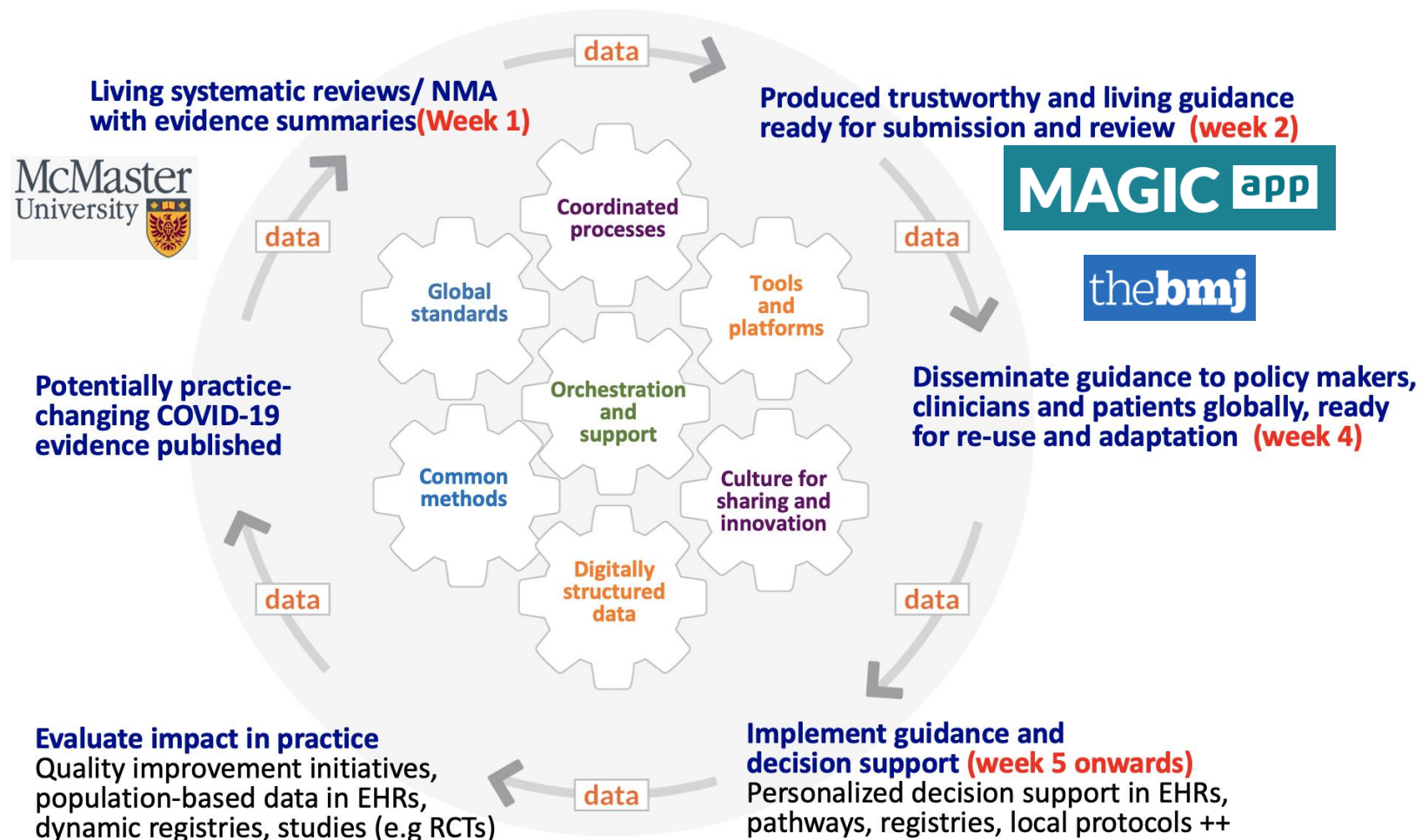
World Health Organization – Therapeutics and COVID-19: living guideline

Exemplifies multiple dissemination mechanisms and multilayered formats
Here website, full content in MAGICapp (on smartphone) with decision aids

Mortality

Among 1000 patients like you, with IL-6 receptor blockers

13 fewer
(severely ill patients)

Standard care	IL-6 receptor blockers
100	87
per 1000	per 1000

Certainty

HIGH

HIGH
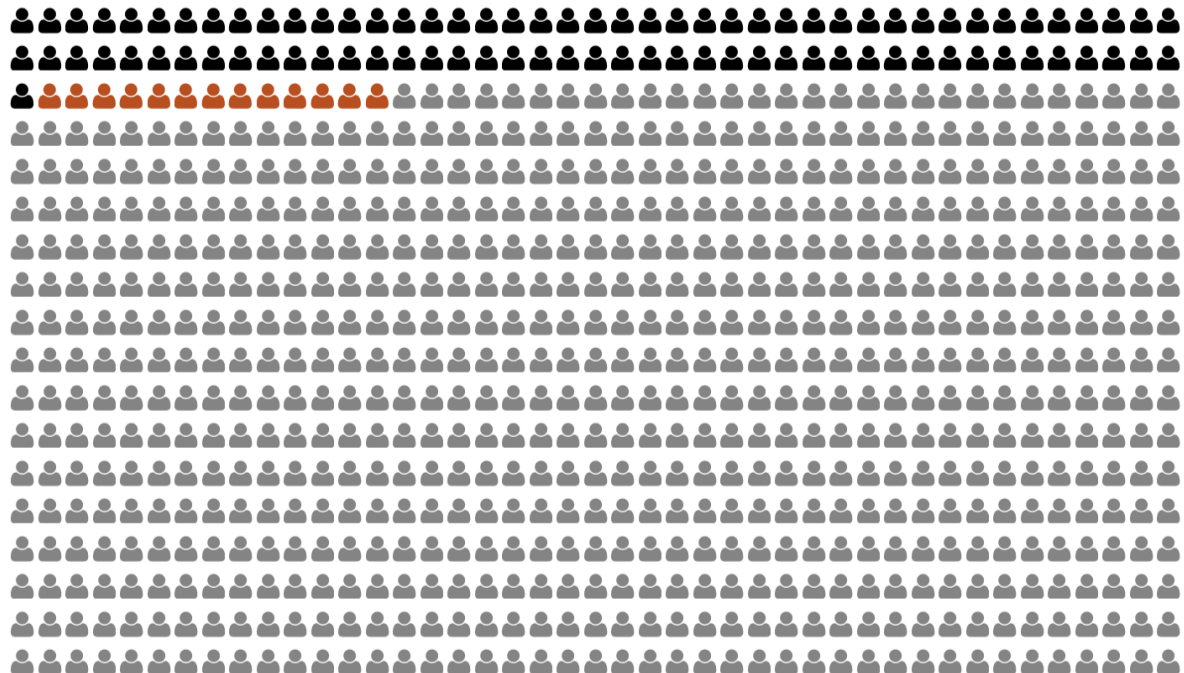
HIGH

VERY LOW

Publishing living evidence in journals remains a challenge

BMJ RapidRecs allowed WHO living guidelines with Infographics
linking out to full content in MAGICapp through widgets
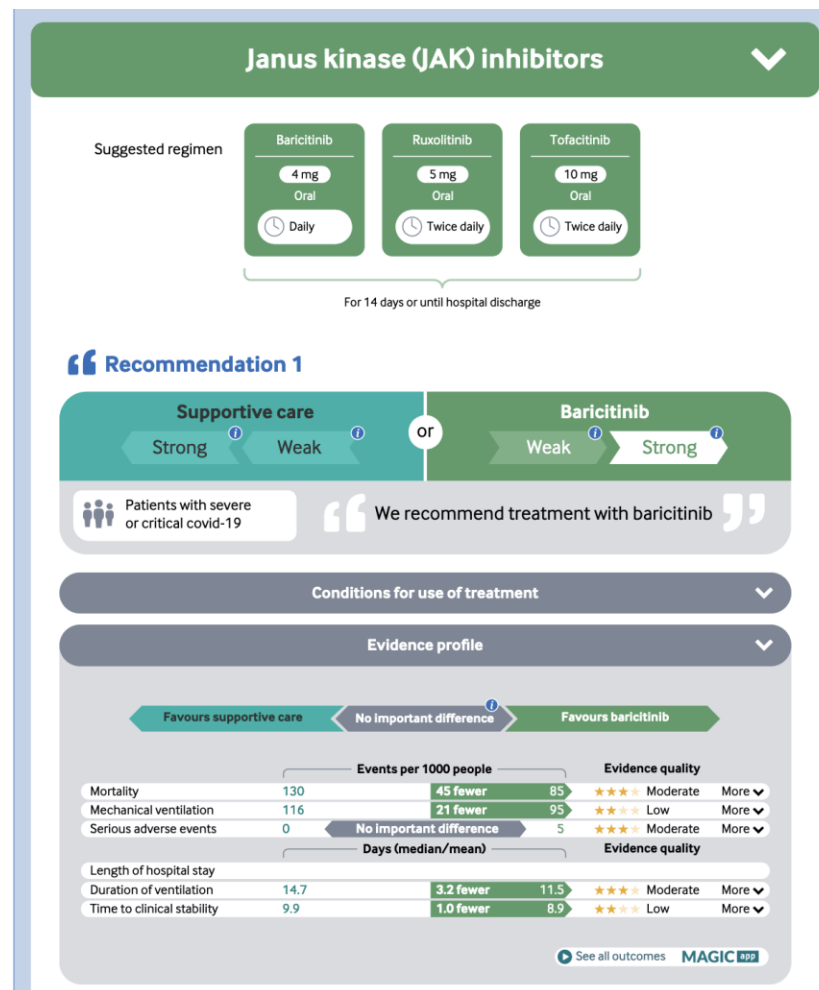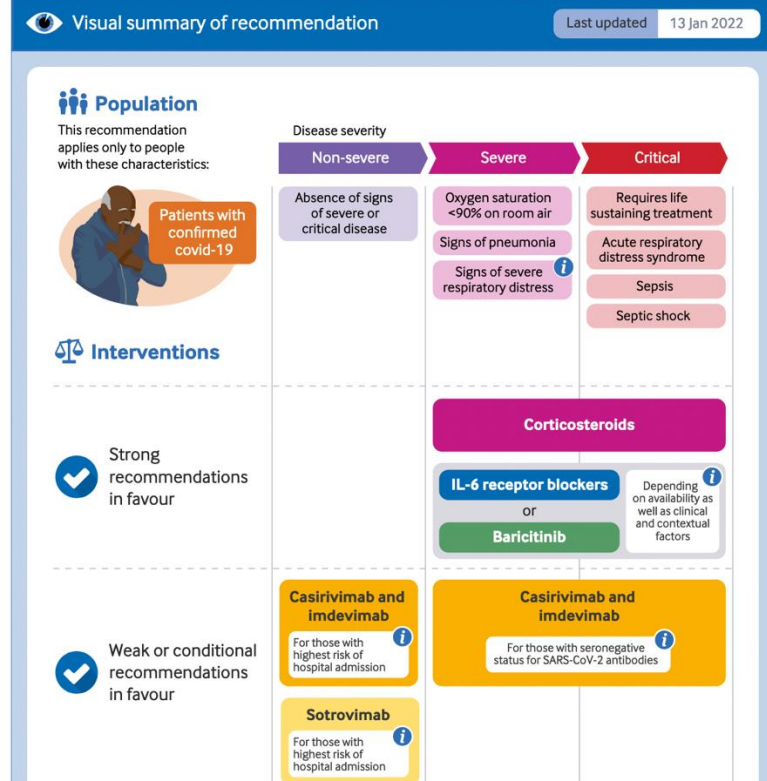
Living evidence synthesis is critical for living guidelines

Global collaboration is feasible, and needed, to succeed

Burning question: How much customization can evidence synthesizers provide?
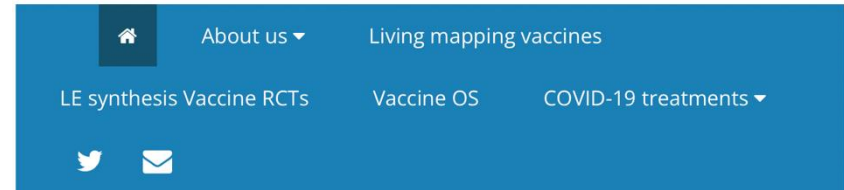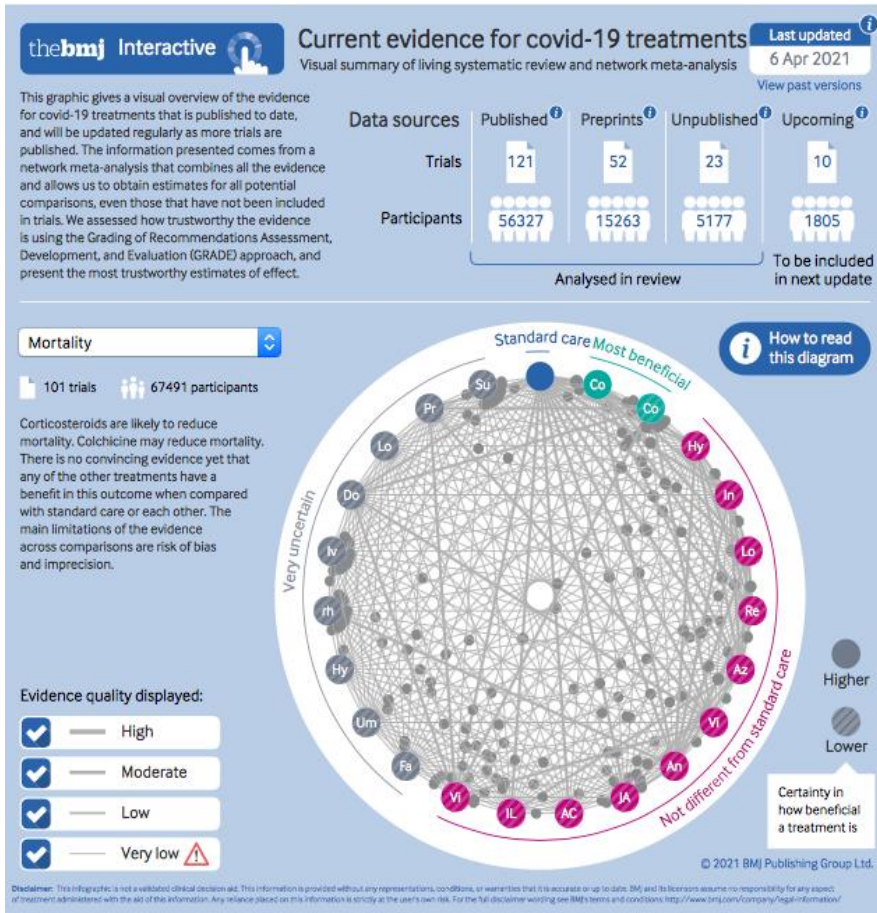
Australian living guidelines for COVID-19

All actors agreed (?) on standards, methods, processes and platforms (June 2020!)
Website prime example of entry point for living evidence, plug-ins to MAGICapp

Trustworthy guidelines great, but ecosystem still broken?

MAGIC experiences confirm common challenges and opportunities (e.g., WHO)
Living evidence should help, but the loop is not closed yet
Ongoing R&D on last steps (e.g., MAGICapp module for adaptation/ translation)

GELA Global Evidence • Local Adaptation

Neonatal and maternal health

MARC SE-Africa

Malaria resistance

OperA Optimising Colorectal Cancer Prevention through Personalised Treatment with Artificial Intelligence

AI enhanced colonoscopies

Trustworthy, efficient and integrated
Evidence Ecosystem

MAGIC app

Synthesize evidence
Relevant, timely, and living systematic reviews and HTA incorporating new data within existing knowledge
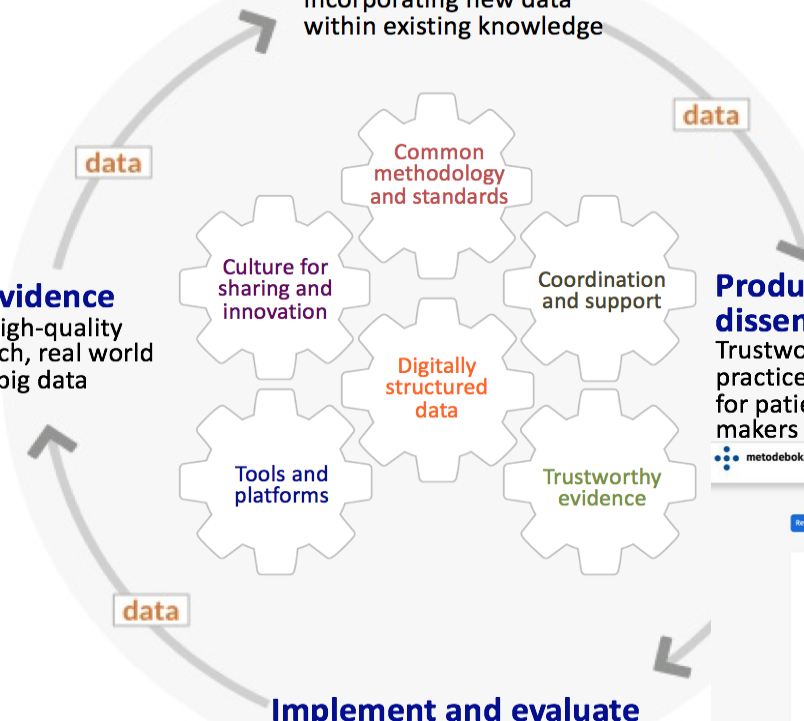
data

Produced evidence
Relevant and high-quality primary research, real world evidence, and big data

data

Common methodology and standards

Culture for sharing and innovation

Coordination and support

Digitally structured data

Tools and platforms

Trustworthy evidence

Produce and disseminate guidance
Trustworthy decision aids, clinical practice guidelines and HTA reports for patients, clinicians and policy-makers

Implement and evaluate
Clinical decision support and quality improvement initiatives, linked to impact evaluation on practice and patient outcomes in dynamic registries, pragmatic trials etc.

data

How to improve dissemination, adaptation and translation? **And implementation**??

4/23/2

20

Progress in last ecosystem steps: Adaptation + implementation

First BMJ RR on precision medicine and closing the loop to show impact on care

Translate, adapt, implement, evaluate
Professional society adopted recommendations before source guideline out

PROAKTIV TDM - ANBEFALINGER

Dette avsnittet omhandler proaktiv TDM, det vil si regelmessig måling av serumkonsentrasjoner og justering av legemiddeldose med mål om å holde serumkonsentrasjonen innen et predefinert terapeutisk område uavhengig av den kliniske situasjonen. Anbefalingene er basert på en strukturert tilpasning av BMJ RapidRec "Proactive therapeutic drug monitoring of biologic drugs in adult patients with inflammatory bowel disease, inflammatory arthritis, and psoriasis: A clinical practice guideline ", som finnes i norsk versjon her. Mer informasjon om kunnskapsgrunnlaget som ligger bak anbefalingene kan finnes ved å trykke på figurene under eller ved å trykkec

Vi foreslår proaktiv TDM ved vedlikeholdsbehandling med infliksimab, men grunnet mangelfullt kunnskapsgrunnlag ikke ved vedlikeholdsbehandling med andre biologiske legemidler. Proaktiv TDM anbefales ikke ved induksjonsbehanding med infliksimab eller andre biologiske legemidler, på bakgrunn av manglende effekt for infliksimab og manglende kunnskapsgrunnlag for de andre biologiske legemidlene.

Med induksjonsbehandling menes den første perioden etter oppstart av et nytt medikament, der målet er å oppnå sykdomskontroll, og helst remisjon. Med vedlikeholdsbehandling menes perioden etter at man har oppnådd sykdomskontroll, og der man ønsker å beholde effekten av medikamentet.

FORORD

Kortversjon av anbefalingene

Introduksjon

Bakgrunn

Praktisk informasjon

Terapeutiske målområder

Komedikasjon med metotreksat og andre csDMARDs

Proaktiv TDM - anbefalinger

Proaktiv TDM - algoritme infliksimab vedlikeholdsbehandling
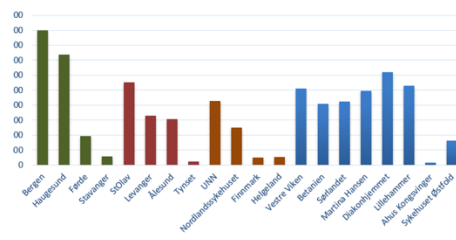
Reaktiv TDM

Kostnader og helseøkonomi

Referanser

Vedlegg

2.2 Proactive TDM in th

The maintenance scenario re
keep the disease controlled.

This recommendation applies

More >

For adult patients with inflam infliximab

Weak recommendation

We suggest proactive TDM

- Patients at high risk of disease consequences from disease fla
- In the absence of risk predictio prognosis, such as high baselir for the particular case of patier
- Proactive TDM has been teste

Anbefaling for voksne pasienter med inflamatorisk leddsykdom som behandles med infliksimab

Weak recommendation

Vi foreslår proaktiv TDM heller enn reaktiv TDM eller ingen TDM.

BMJ Rapid Recommendati
Inflammatory Joint Diseas

References 64   Evidence 5

sienter med inflammatoriske
ske forhold (Norsk revmatologisk   Meny

m som behandles med infliksimab

...M.

vinst av proaktiv TDM.
re vurdere individuelle kjennetegn assosiert
ndling, tidligere tap av behandlingseffekt,

andles med adalimumab eller andre

Back to living evidence and emerging funding

Lots of hype but key point is **dynamic updating** **of trustworthy evidence and guidance** through **global collaboration**

Read more about **alive**

Evidence Synthesis Infrastructure Collaborative

Wellcome's chief executive officer, John-Arne Røttingen, announces that the charitable foundation would back the development of new data and tools for accelerating "living evidence synthesis" with £45 million in funding over five years.
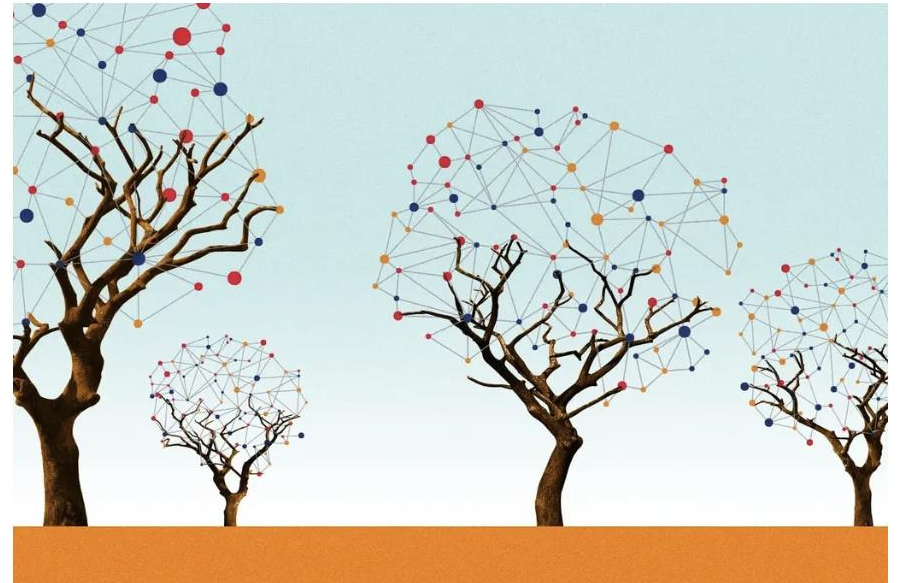
Emerging opportunities for diabetes, obesity and living evidence

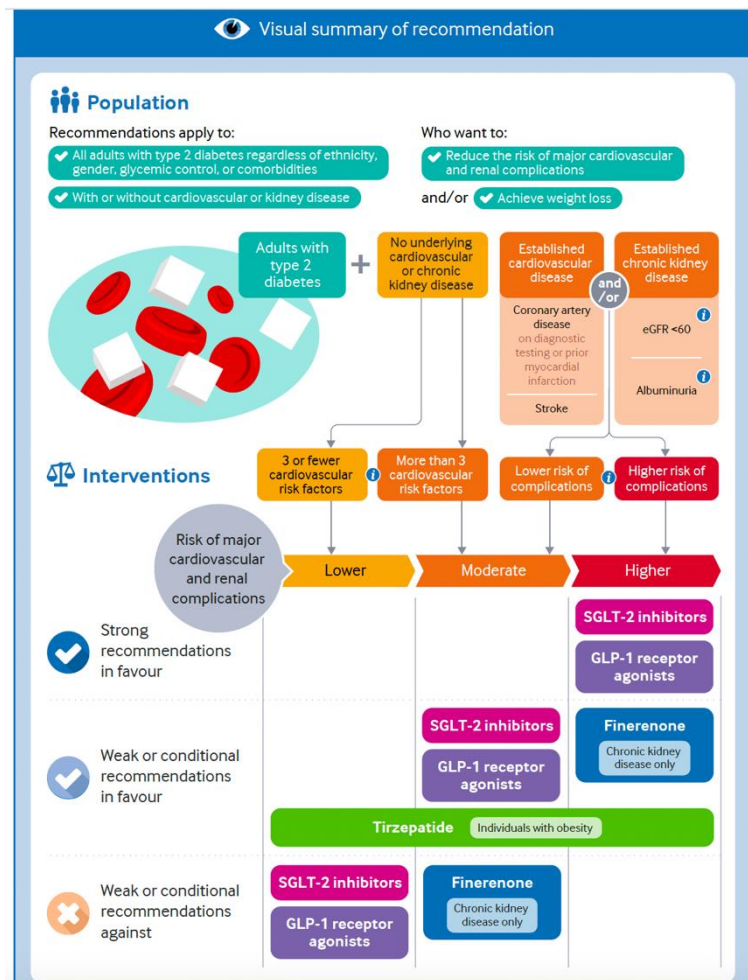Unique opportunity as living NMA ++ is already available. EMRO interested in joining?

Published soon: Living guidelines and NMA for diabetes drugs

BMJ Rapid Recommendations from 2021 updated, 3 risk groups, incl. obesity
Living NMA: 13 drug classes (67 drugs), 26 outcomes (875 RCTs, half a mill pts)
Living SRs on risk prediction models and on values/ preferences

One of many opportunities to demonstrate impact living evidence?

PAHO/WHO living guidelines for DM2 drugs enhancing the evidence ecosystem relevance to WHO PEN, Global Diabetes Compact and Research Agenda

Warrants R&D funding

LSR-NMA
13 drug classes, 26 outcomes 875 RCTs, 498 000 pts

AI enhanced LSRs

LSR prognosis (35 obs studies)

LSR values/preferences (30 studies)

Living Cost Effectiveness Analysis (CEA)

LSR QI strategies (553 RCTs, 412 000 pts)

MAGIC app

Trustworthy, efficient and integrated Evidence Ecosystem

Synthesize evidence
Relevant, timely, and living systematic reviews and HTA incorporating new data within existing knowledge

data

data

Living BMJ Rapid Recommendations

Australian Living Evidence Collaboration
Powered by Monash University

Common methodology and standards

Culture for sharing and innovation

Coordination and support

Produced evidence
Relevant and high-quality primary research, real world evidence, and big data

Digitally structured data

Produce and disseminate guidance
Trustworthy decision aids, clinical practice guidelines and HTA reports for patients, clinicians and policy-makers

Living WHO EML

Tools and platforms

Trustworthy evidence

- **New drugs and lots of trials**
- **Loss patents, prizing, access**
- **Prognosis**
- **Patient values/ preferences**

data

data

Implement and evaluate

Demonstrate country impact?? Is needed
Adaptation + translation
HTA (using EML and CEA)
Active implementation strategies
Monitoring/ evaluation

CDSS in EHR: Works in Finland ++

EBM EDS
CLINICAL DECISION SUPPORT

In summary: An enhanced evidence ecosystem but only half-way there
Need to close the loop. Opportunities also for EMRO. How could it work for you?