

Tech enablers for living evidence - Covidence & MAGICapp

Living Evidence Network “state of the science” webinar

18 Sep 2019

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Board Member,

Trusted evidence.
Informed decisions.
Better health.



Living Evidence Network

Tech Enablers for Living Evidence II

Anneliese Arno, Community Manager at Covidence



Contents

- What is Covidence?
 - Background
 - Current capabilities
- How does Covidence support Living Evidence?
 - Now
 - Soon
 - Later

What is Covidence?

- Covidence is an online platform for systematic review production
- Our vision is a world shaped by the best evidence possible
- Our mission is to create tools to make systematic reviewing faster, easier, and more enjoyable
- Part of Cochrane toolkit



What can I do in Covidence?

- Covers the systematic review process from screening through the beginning of meta-analysis
- Currently can import EndNote formatted XML, or RIS text files
- Currently can export to RevMan 5 or to Excel

The screenshot displays the Covidence web interface. At the top, the 'Import references' section shows '876 total duplicates removed' and an 'Import' button. Below this is the 'Title and abstract screening' section, which includes a 'TEAM PROGRESS' bar and a summary of screening results: 339 DONE, 711 ONE VOTE, 69 CONFLICTS, and 4115 NO VOTES. A 'RESOLVE' button with the number 69 is present. To the right, a message says 'ANNEIESE, YOU CAN STILL' followed by a 'SCREEN' button with the number 4121. A 'Continue' button is also visible. At the bottom of this section, it states 'You've screened 992 studies so far'. Below the screening section is the 'Full text screening' section, showing '17 excluded' and '184 studies to screen'. At the very bottom is the 'Extraction' section, showing '5 extracted' and '15 studies to extract'.



Checking 4 references for duplicates and study details...

This can take a while, depending on the number of new references in the currently importing file and the existing references in your review.

How does Covidence support Living Evidence?

- Reduction in time to create a review: average 35% efficiency gain
- Supporting review training through partnerships
 - Early career researchers
 - Low and Lower-middle income country partnerships

How does Covidence support Living Evidence?

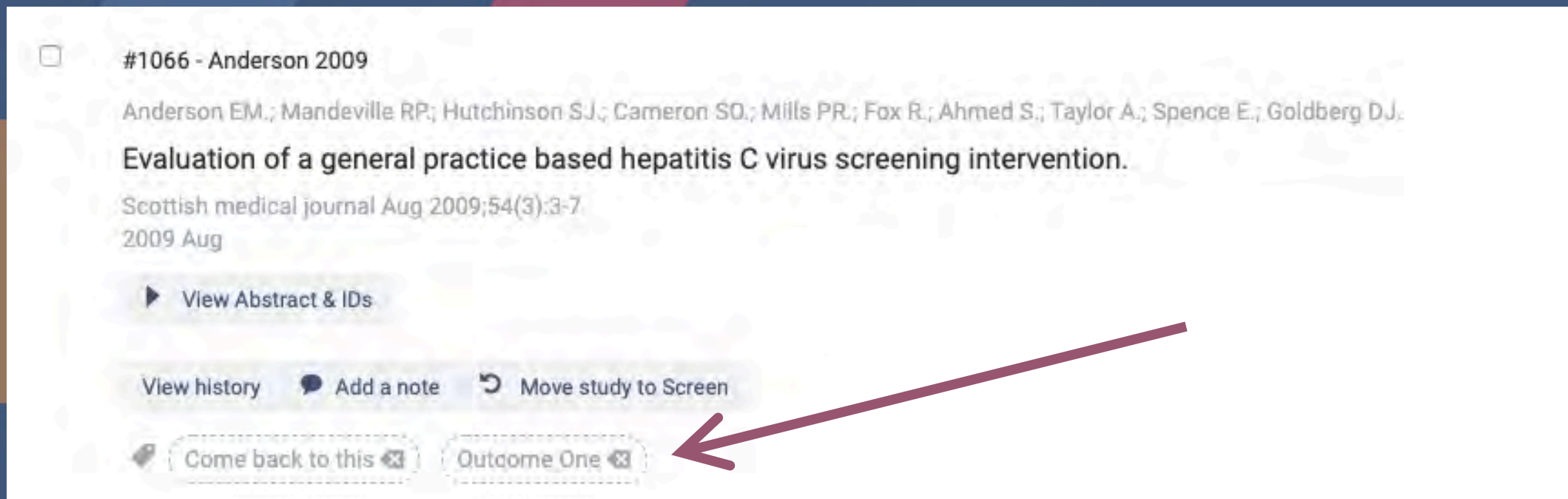
- Available now:
 - Study triage
 - RCT classifier
- In progress:
 - Living PRISMA
 - CRS importer
 - RevMan Web integration
- Longer term ideas



Available now

Some context

- All Covidence reviews have three main stages: Title/Abstract Screening, Full Text Review, and Extraction
- During screening, customised tags may be added to studies



The screenshot displays a study entry in the Covidence interface. At the top, there is a checkbox and the study ID "#1066 - Anderson 2009". Below this, the authors "Anderson EM.; Mandeville RP.; Hutchinson SJ.; Cameron SO.; Mills PR.; Fox R.; Ahmed S.; Taylor A.; Spence E.; Goldberg DJ." are listed, followed by the title "Evaluation of a general practice based hepatitis C virus screening intervention." and the journal information "Scottish medical journal Aug 2009;54(3):3-7" and "2009 Aug". A button labeled "View Abstract & IDs" is visible. Below the title, there are three buttons: "View history", "Add a note", and "Move study to Screen". At the bottom, there are two tags: "Come back to this" and "Outcome One". A red arrow points to the "Outcome One" tag, highlighting the customised tags feature mentioned in the text.

☐ #1066 - Anderson 2009

Anderson EM.; Mandeville RP.; Hutchinson SJ.; Cameron SO.; Mills PR.; Fox R.; Ahmed S.; Taylor A.; Spence E.; Goldberg DJ.

Evaluation of a general practice based hepatitis C virus screening intervention.

Scottish medical journal Aug 2009;54(3):3-7
2009 Aug

▶ View Abstract & IDs

View history Add a note ↺ Move study to Screen

📌 Come back to this Outcome One

Study Triage

- Problem: researchers duplicating effort by having to screen each question separately
- Solution: allow for studies to be included in multiple reviews simultaneously
- Aim: increased data re-use

Study Triage

Tags present during Full
Text Review



Included vote



Study imported to
destination review(s)

The screenshot displays a study triage interface with two study entries. Each entry includes a title, authors, journal information, and buttons for 'Include', 'Exclude', 'View Abstract & IDs', 'Add full text', 'View history', 'Add a note', and 'Move study to Screen'. Below these buttons are 'Destination review' buttons. Red arrows point to these buttons, indicating the flow of the process.

#247 - Baird 1979
Baird IM.; Hughes RE.; Wilson HK.; Davies JE.; Howard AN.
The effects of ascorbic acid and flavonoids on the occurrence of symptoms normally associated with the common cold.
The American journal of clinical nutrition Aug 1979;32(8):1686-90
1979 Aug

View Abstract & IDs Add full text

View history Add a note Move study to Screen

Destination review 1 Destination review 2

#284 - ARMINIO 1956
ARMINIO J.J.; JOHNSTON J.H.; TEBROCK H.E.
Usefulness of bioflavonoids and ascorbic acid in treatment of common cold.
Journal of the American Medical Association Nov 1956;162(13):1227-33
1956 Nov

View Abstract & IDs Add full text

View history Add a note Move study to Screen

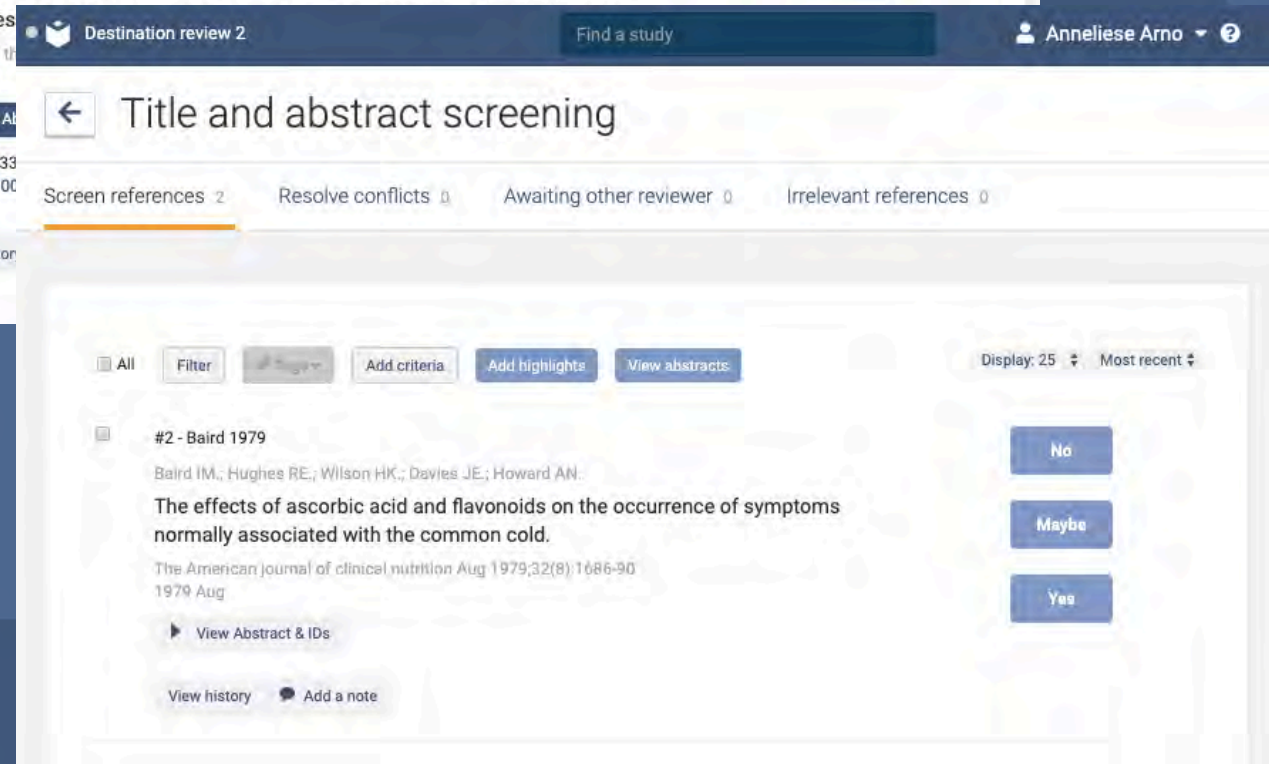
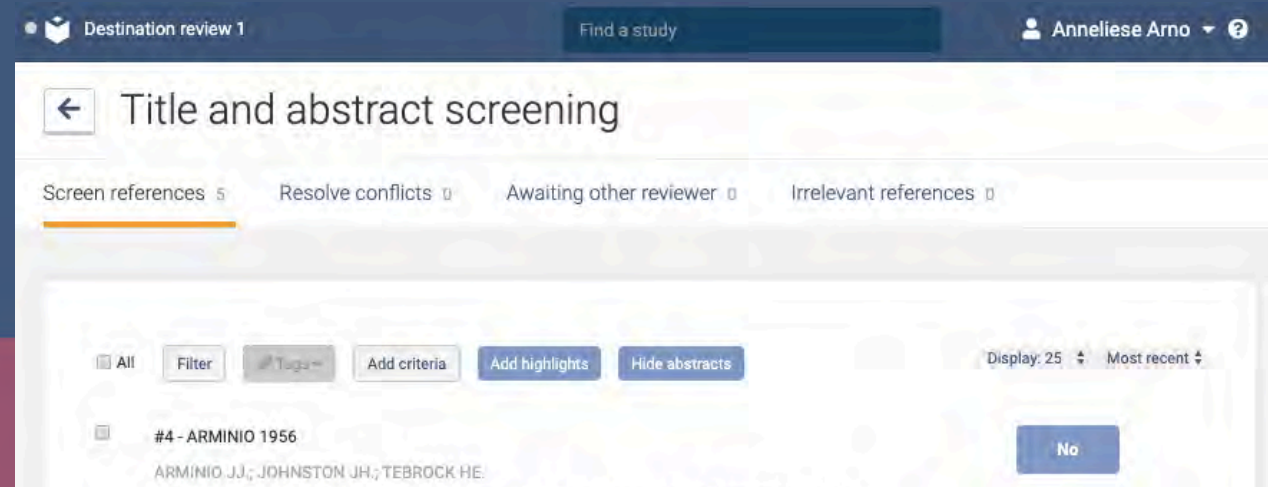
Destination review 1

Study Triage

Currently in use for several living guidelines

To access:

- Contact support@covidence.org
- Name of review
- Names of destination reviews

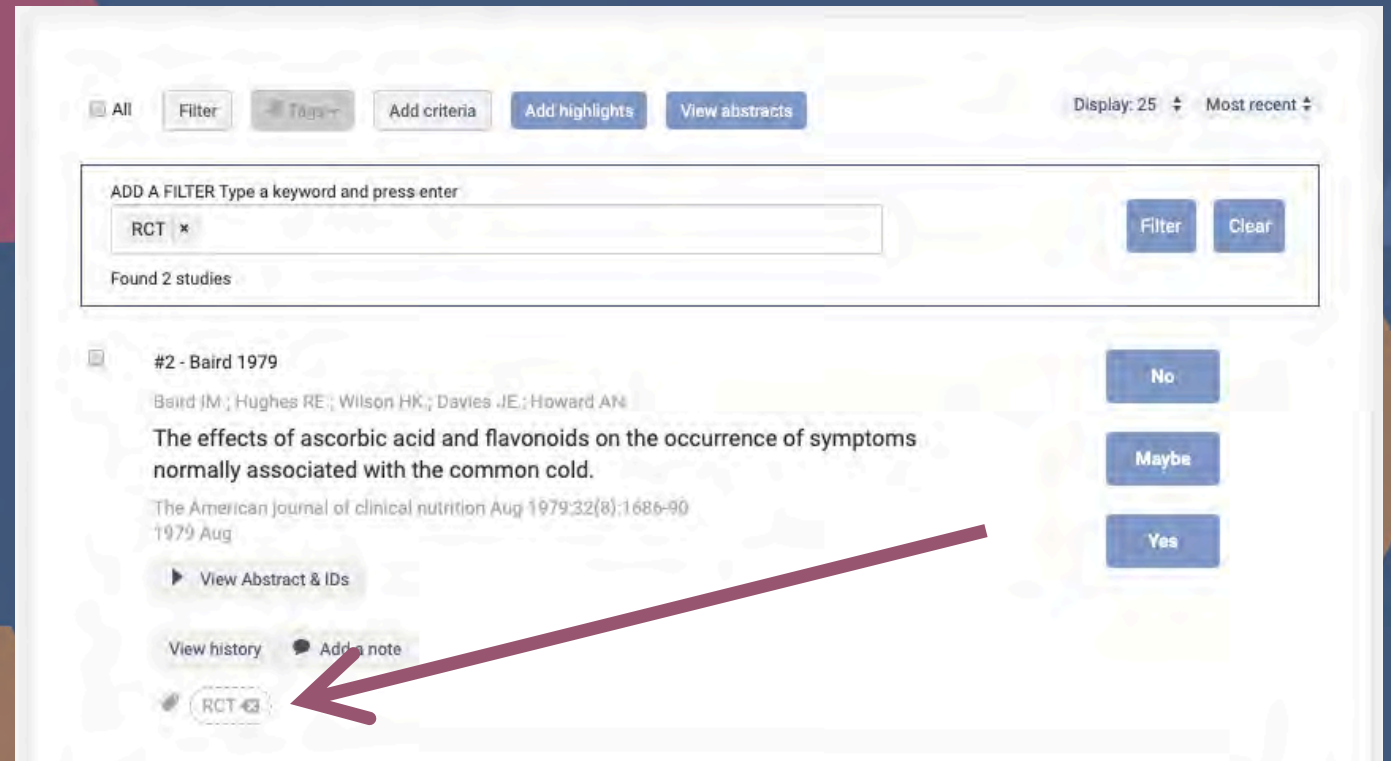


RCT classifier

- Problem: researchers spend too much time on screening
- Solution: Integrate Cochrane-developed machine assistance into Covidence screening
- Aim: faster screening
 - Previously demonstrated at 60-80% reduction in effort

RCT classifier

- Uses natural language processing assign score to studies
- Covidence creates “RCT” tag and applies it to studies with score of 99% or higher
- Tags can be used to filter screening list
- All voting still done by user



RCT classifier

- Currently active on several reviews
- To access:
 - Contact support@covidence.org
 - Name(s) of review(s)



In progress

Living PRISMA

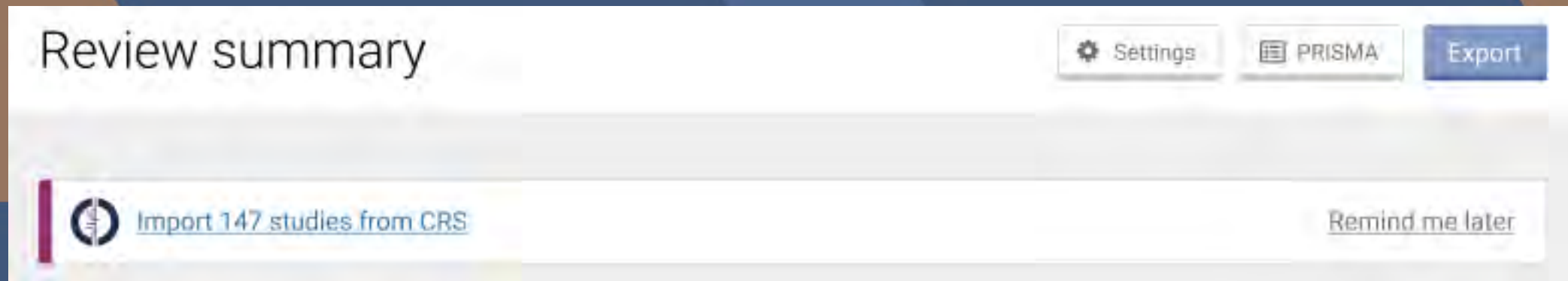
- Problem: reviewers are unsure of rate of eligible study publication
- Solution: store data over time relating to PRISMA flowchart
- Long term aim: allow users to view date-specific PRISMA

Living PRISMA: current state

- Covidence collects information on when citations are imported down to the day
- This data is stored in a spreadsheet
- To access this, please contact support@covidence.org

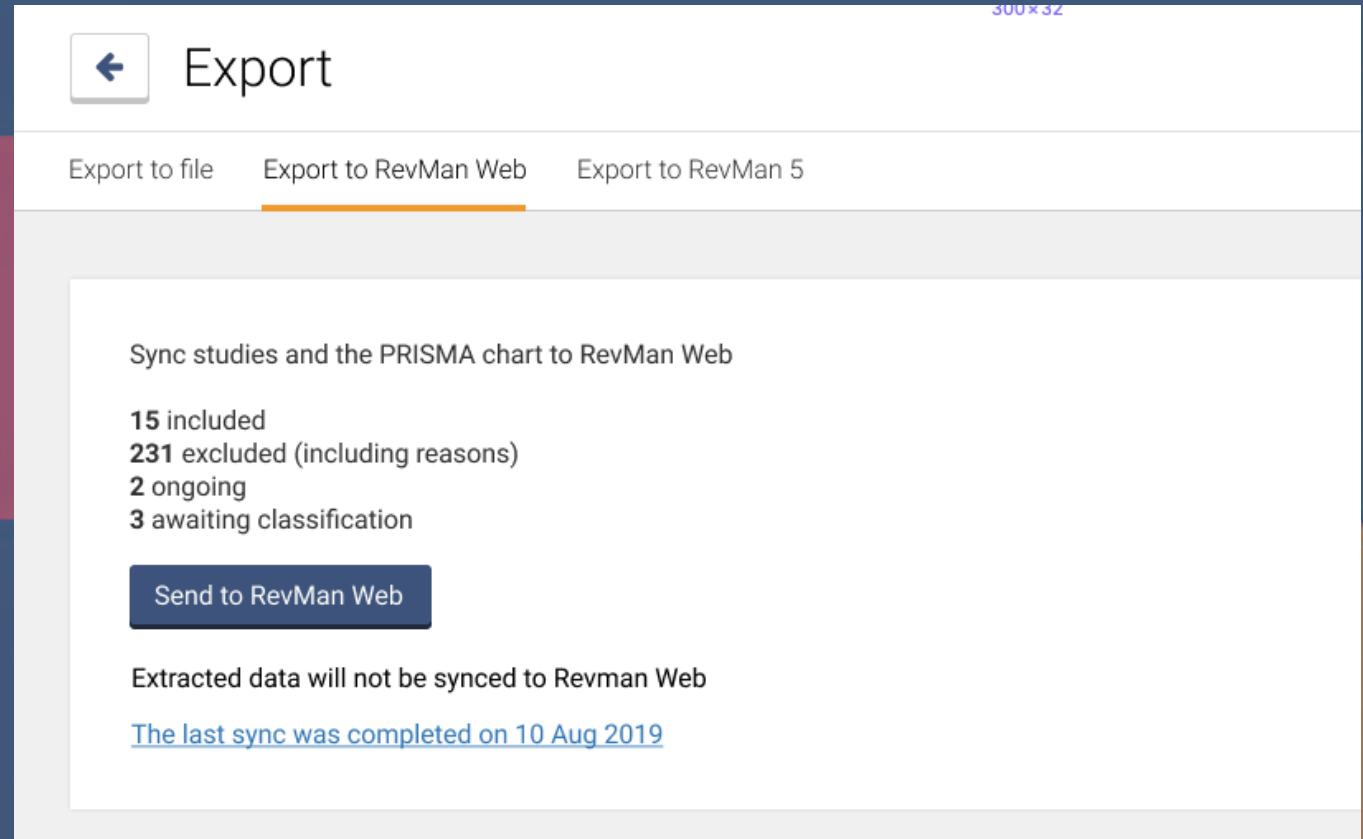
CRS import

- Problem: users are unaware of new studies to screen
- Solution: better integration between Covidence and CRS
- Long term aim: more timely screening updates



RevMan Web

- Problem: reviewers can't easily export data to existing reviews
- Solution: integration between Covidence and RevMan Web
- Aim: increased visibility of currency of data



Longer term ideas

- Covidence as a platform for collaboration
- Sharing of data and work
- Increased visibility of ongoing research
- More machine learning
- Crowd sourcing

Thank you!



Using the MAGICapp to enhance the Evidence Ecosystem



Reproduced from cover page of JAMA, Users' Guide to the Medical Literature, 3rd ed.

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Hospitals of Geneva Switzerland*

*Assistant Professor,
Department of HEI, McMaster University*



@ThomasAgoritsas

Improving patient care through a trusted evidence ecosystem

MAGIC is a non-profit foundation, our goal is to increase value and reduce waste in healthcare through a digital and trustworthy evidence ecosystem. MAGICapp is our core platform in the evidence ecosystem bringing digitally structured guidelines, recommendations and decision aids to patients and clinicians.

Improving patient care through a trusted evidence ecosystem

MAGIC is a non-profit for reduce waste in healthcare evidence ecosystem. MAGIC evidence ecosystem bring recommendations and d

Team



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Christopher Friis Berntzen, MD
Researcher



Irbaz Bin Riaz, MD, MS
Researcher

➤ <https://app.magicapp.org>

M Authoring & Publication Platform

MAGIC authoring and publication platform (MAGICapp) - for guidelines and evidence summaries - is developed through our research and innovation program.

The platform allows authors to write and publish their guidelines and evidence summaries in a highly structured fashion, using the GRADE methodology, new technology and a host of recent developed frameworks. MAGICapp is a web based collaborative tool that does not require any software installation and allows publication on all devices.

All researchers in MAGIC are practicing physicians devoted to evidence-based medicine and clinical epidemiology. We are also members of the GRADE working group and know from first hand experience that writing a guideline is a complex task and that many struggle with the methodology and the processes around.

MAGICapp includes features to guide you through the process of writing and publishing a guideline. A lot of research and effort has gone into improving the user interface of the platform – both for authors and readers.

➤ <https://app.magicapp.org>

I have no financial conflict of interest in relation to this presentation.

My intellectual conflict of interests:

- Board member of the **MAGIC** organization <http://magicproject.org>
- Member of the **GRADE** Working Group <http://www.gradeworkinggroup.org>
- **Deputy editor ACP journal club** – McMaster PLUS Evidence Alerts
- Co-founded the **BMJ RapidRec** <http://www.bmj.com/rapid-recommendations>
- **Living Evidence Network** Steering Group



Trusted evidence.
Informed decisions.
Better health.

Cochrane and MAGIC announce partnership

Cochrane and [MAGIC \(http://magicproject.org/\)](http://magicproject.org/) are delighted to announce the launch of an official partnership, aimed at supporting and further strengthening the use of health evidence within the context of a digital and trustworthy evidence ecosystem for health care.

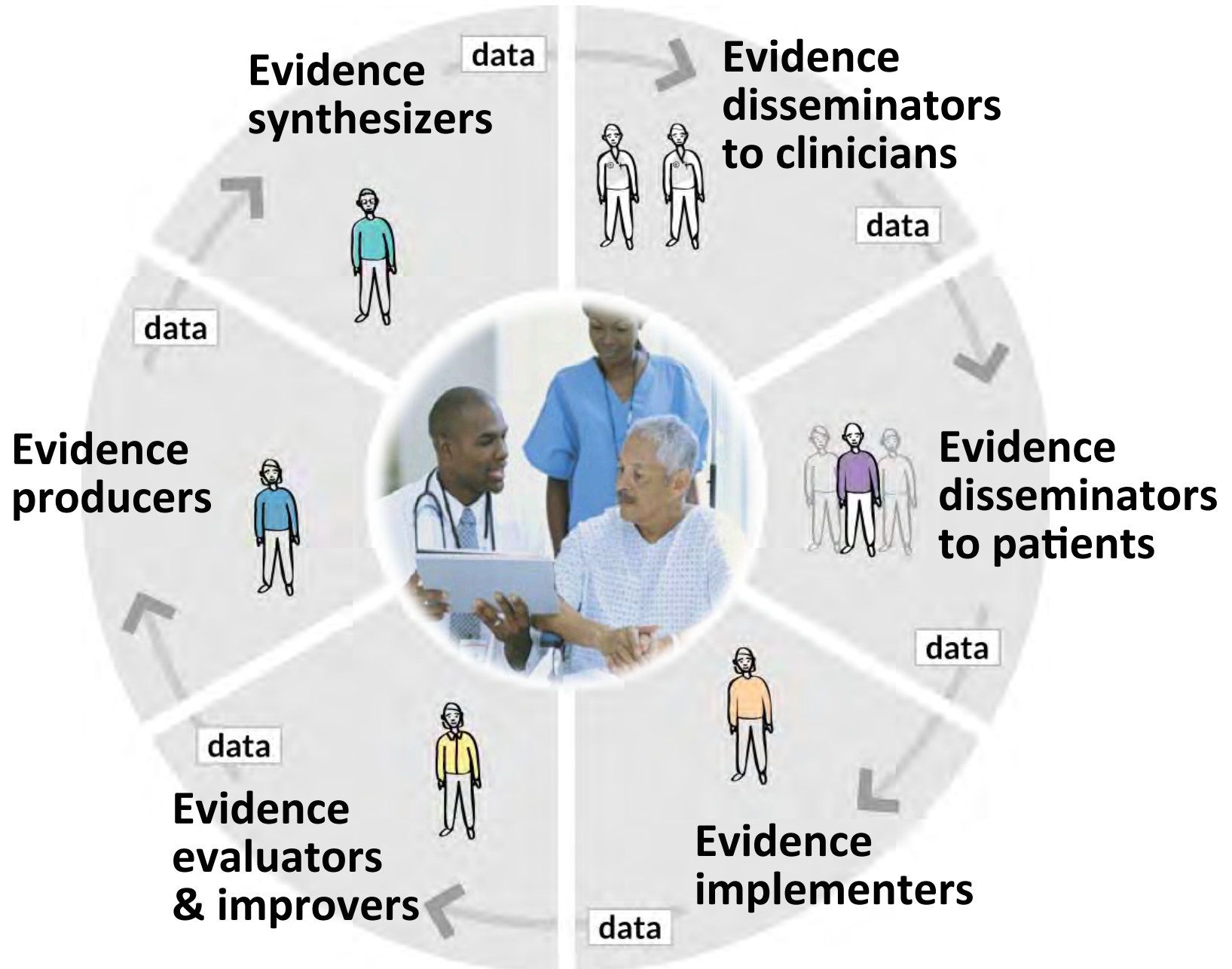


MAGIC (formally known as the MAKing GRADE the Irresistible Choice (MAGIC) organization) is a non-profit research and innovation programme set up to make evidence summaries and recommendations that work for clinicians at the point of care and to facilitate shared decision-making with patients. Established in 2010, the MAGIC project has, among a number of other initiatives, developed the MAGICapp, a web-based platform for preparing guidelines using structured data systems and validated methods.

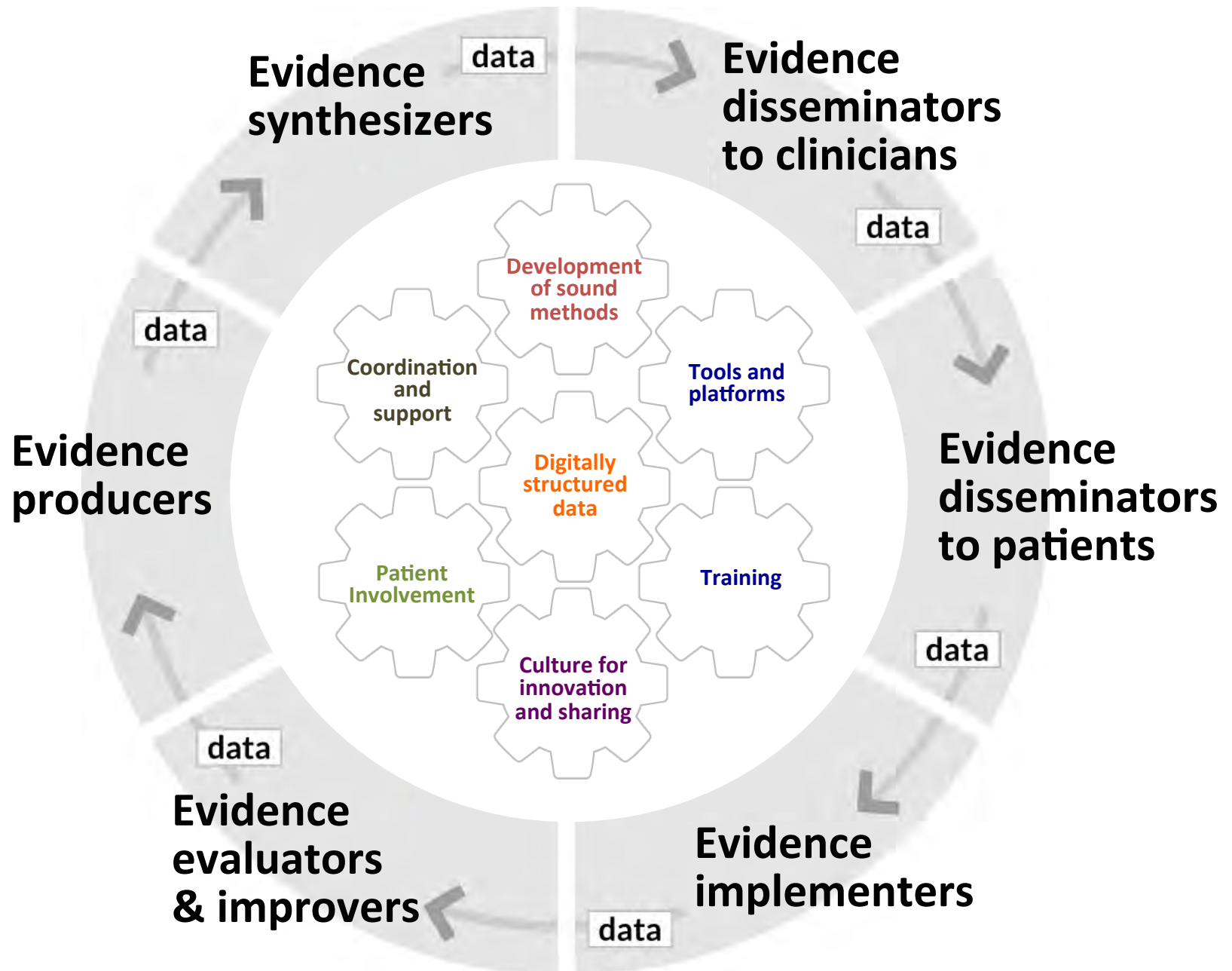
Cochrane and MAGIC wish to continue a history of working together by establishing a formal partnership to harmonize the flow of data from systematic reviews to guidelines development and decision support systems. To this end, the organizations have signed a Memorandum of Understanding to structure and focus our collaborative work for the next three years.

Mark Wilson, Cochrane CEO, said: 'We are delighted to be deepening our relationship with MAGIC through this new partnership. Cochrane and MAGIC share a passion for innovation, collaboration and commitment to making health and healthcare evidence more accessible and usable. I'm excited that by

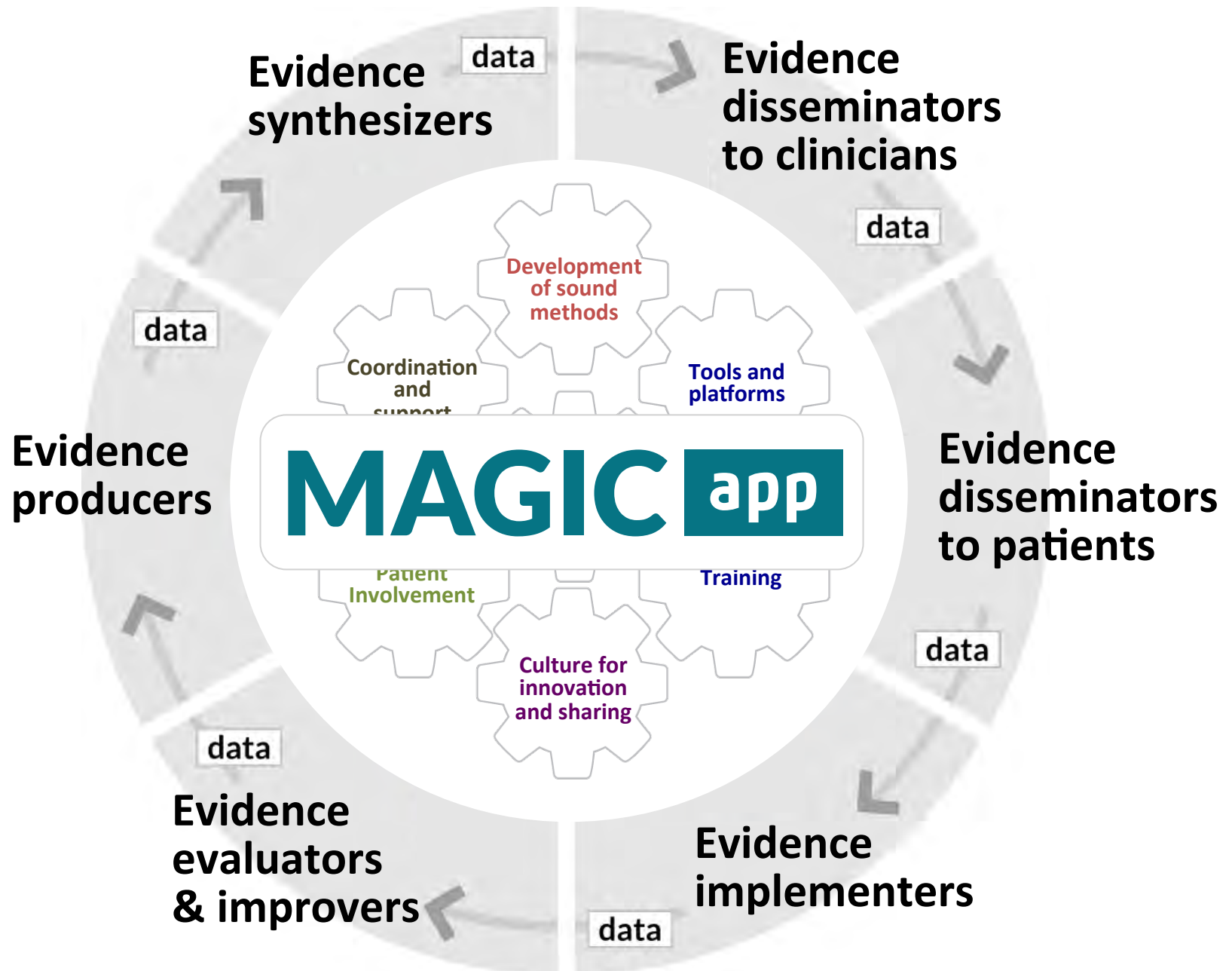
The Evidence Ecosystem



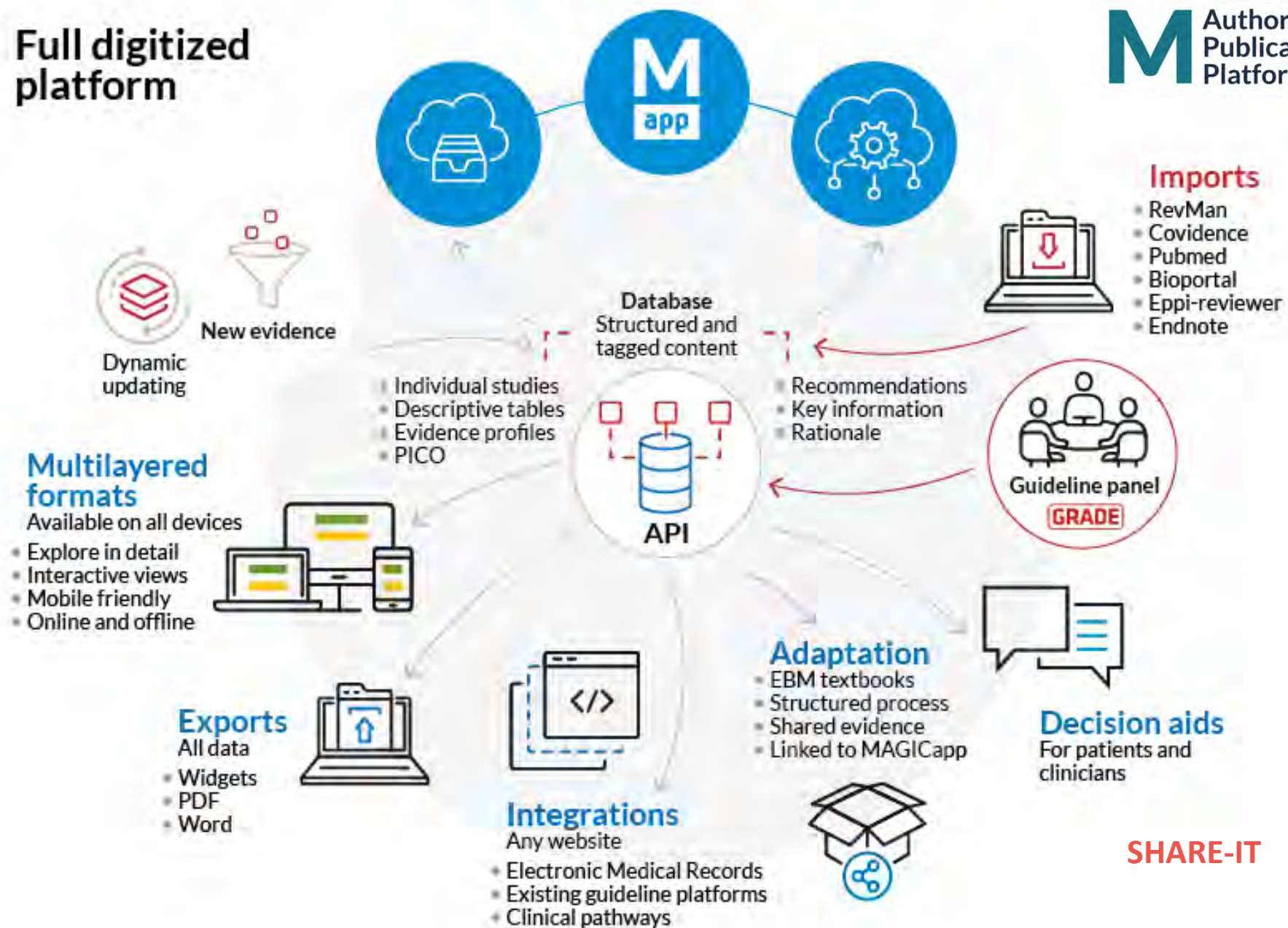
The Evidence Ecosystem



The Evidence Ecosystem



Full digitized platform



SHARE-IT

Guidelines

The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain

The 2017 Canadian Guideline for Opioid for Canadians are the second highest users per opioid-related hospital visits and deaths ha

The guideline's recommendations for clinical researchers and patients, led by the Michael by Health Canada and the Canadian Institute [Medical Association Journal \(CMAJ\)](#).

38 000
Users

49 active
Organisations
and many more testing

140
Public guidelines

The guideline incorporates medical evidence published since the previous national opioid use guideline was made available in 2010. They are recommendations for physicians, but are not regulatory requirements.

The guideline does not look at opioid use for acute pain, nor for patients with pain due to cancer or in palliative care, or those under treatment for opioid use disorder or opioid addiction



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Find recommendations, evidence summaries and consultation decision aids for use in your practice

MAGIC app

A pair of siblings are seen in consultation...

Peter, 14 months
Fever two days
38.9°



Otitis media

Laura, 4 years old

- Cough and fever 5 days
- 39.5°, saturation 96%



Pneumonia

→ **Amoxicillin 80mg/kg/j**

A pair of siblings are seen in consultation...

Peter, 14 months
Fever two days
38.9°

Laura, 4 years old

- Coughs

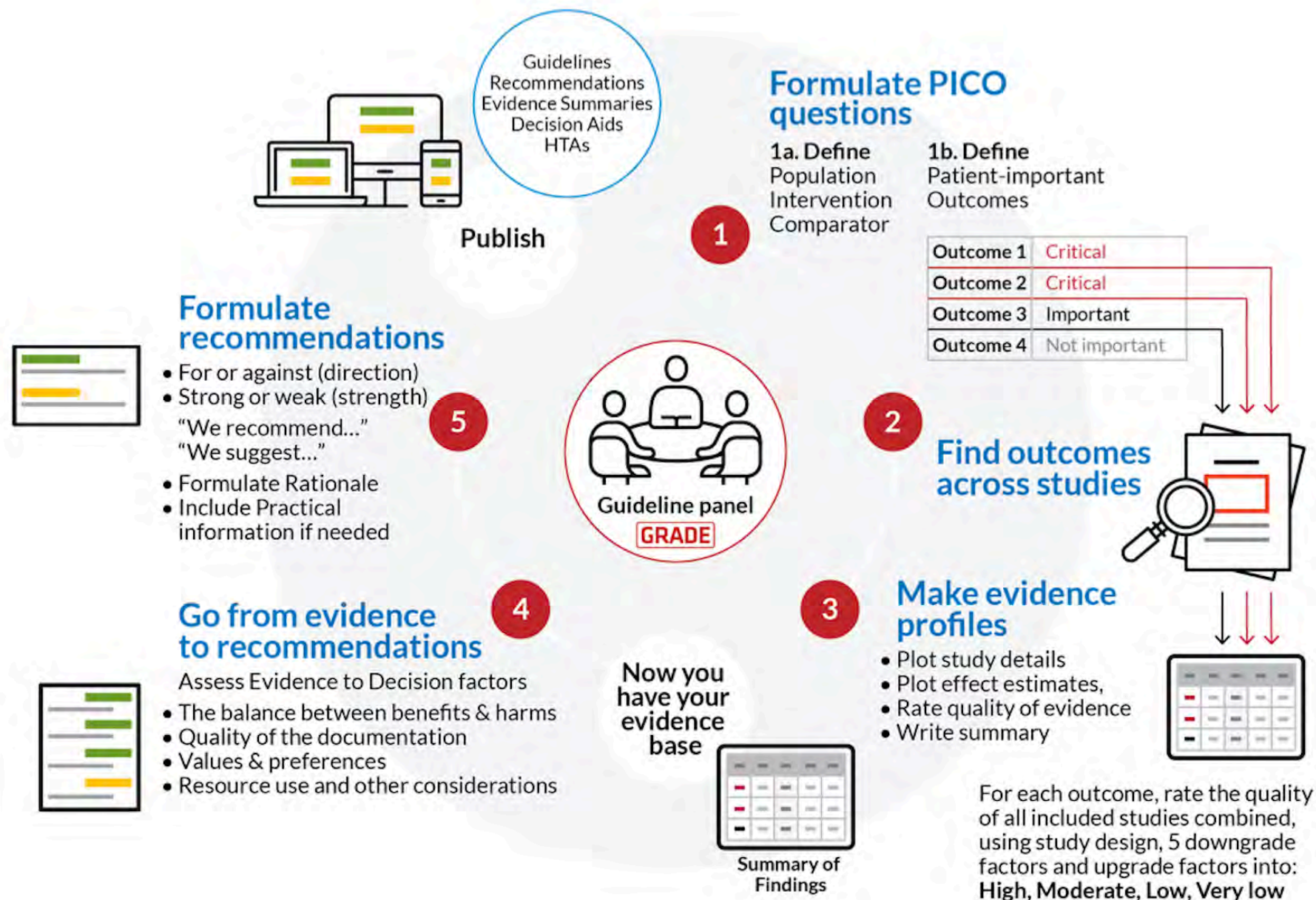
"Doctor, do you think my children should take **probiotics**? Laura had them last time that she had antibiotics, and I think it helped."

How can we get **trustworthy and usable recommendations?**

Pneumonia

→ **Amoxicillin 80mg/kg/j**

Guideline development in MAGICapp



SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

Probiotics as an adjunct to antibiotics for the prevention of antibiotic-associated diarrhea in children

Patient or population: Children given antibiotics

Setting: Inpatient and outpatient

Intervention: Probiotics

Comparison: Control (placebo or no active treatment)

Outcomes	Anticipated absolute effects* (95% CI)		Effect size (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with control	Risk with Probiotics				
Incidence of diarrhea Follow up: range 1 week to 12 weeks	191 per 1000	88 per 1000 (67 to 116)	RR 0.46 (0.35 to 0.61)	3898 (22 RCTs)	⊕⊕⊕○ MODERATE ^{1,2}	
Adverse events Follow up: range 1 week to 4 weeks	35 per 1000	33 per 1000 (15 to 72)	RD 0.00 (-0.01 to 0.01)	2455 (16 RCTs)	⊕○○○ VERY LOW ^{3,4,5}	
Duration of diarrhea Follow up: range 10 days to 12 weeks		The mean duration of diarrhea in the intervention group was 0.6 days fewer (1.18 fewer to 0.02 fewer)		897 (5 RCTs)	⊕⊕○○ LOW ^{6,7}	
Stool frequency Follow up: range 10 days to 12 weeks		The mean stool frequency in the intervention group was 0.3 lower (0.6 lower to 0)		425 (4 RCTs)	⊕⊕○○ LOW ^{8,9}	

* **The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval; **RR:** Risk ratio; **RD:** Risk difference;

🟡 Changed fields | [Undo all changes](#)

① Relative effect of intervention vs. comparator ?

<p>SOURCE OF EVIDENCE</p> <p>Systematic review/ meta ▾</p> <p>Systematic review: Studies: 0</p> <p>▼ Add and show evidence</p>	<p>DATA FROM INCLUDED STUDIES Autofill from added studies ?</p> <p>3,898 patients in 22 Studies.</p> <p>Follow up (in studies) 1-12 weeks</p> <p>Randomized controlled ▾</p>	<p>RELATIVE EFFECT (FROM STUDIES)</p> <p>Relative risk ▾ 0.46</p> <p>CI 95% ▾ (0.35 - 0.61)</p>
---	---	--

② Baseline risk (result of the outcome in the comparison group): No probiotics ?

<p>SOURCE OF EVIDENCE</p> <p>Single/primary stud(ies) ▾</p> <p>Studies: 0</p> <p>▼ Add and show evidence</p>	<p>DATA FROM INCLUDED STUDIES</p> <p>336 control participants in 1 Studies.</p> <p>Follow up (in studies) 1 week after antibiotic</p> <p>Observational (non-randomized) ▾</p> <p># control events 61 (18.15%)</p>	<p>BASELINE RISK/ EFFECT WITH COMPARATOR</p> <p>180</p> <p>per 1000 ▾</p>
---	--	--

③ Expected difference and best estimate of effect with intervention: Probiotics ?

<p>Calculate estimates ?</p>	<p>CALCULATED ESTIMATE WITH INTERVENTION</p> <p>83</p> <p>per 1000 ▾</p>	<p>ESTIMATED ABSOLUTE DIFFERENCE OF INTERVENTION VS. COMPARATOR (CALCULATED)</p> <p>Difference: 97 fewer ▾ per 1000</p> <p>CI 95% ▾ (117 fewer ▾ - 70 fewer ▾)</p>
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Get data from Cochrane (RevMan file)

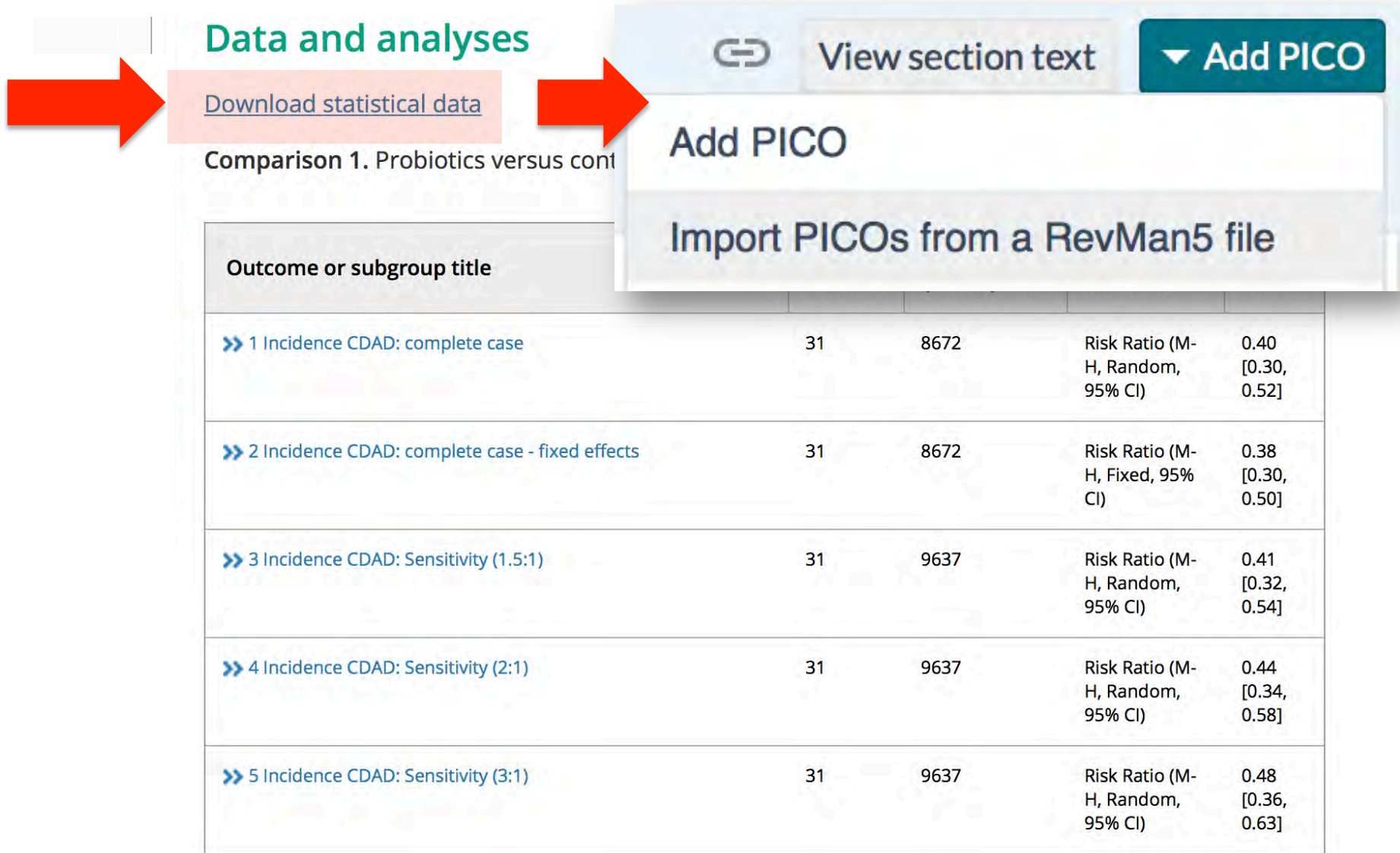
Data and analyses

[Download statistical data](#)

Comparison 1. Probiotics versus control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
» 1 Incidence CDAD: complete case	31	8672	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.30, 0.52]
» 2 Incidence CDAD: complete case - fixed effects	31	8672	Risk Ratio (M-H, Fixed, 95% CI)	0.38 [0.30, 0.50]
» 3 Incidence CDAD: Sensitivity (1.5:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.32, 0.54]
» 4 Incidence CDAD: Sensitivity (2:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.44 [0.34, 0.58]
» 5 Incidence CDAD: Sensitivity (3:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.48 [0.36, 0.63]

Get data from Cochrane (RevMan file)



Data and analyses

[Download statistical data](#)

Comparison 1. Probiotics versus control

Add PICO

Import PICO from a RevMan5 file

Outcome or subgroup title				
>> 1 Incidence CDAD: complete case	31	8672	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.30, 0.52]
>> 2 Incidence CDAD: complete case - fixed effects	31	8672	Risk Ratio (M-H, Fixed, 95% CI)	0.38 [0.30, 0.50]
>> 3 Incidence CDAD: Sensitivity (1.5:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.32, 0.54]
>> 4 Incidence CDAD: Sensitivity (2:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.44 [0.34, 0.58]
>> 5 Incidence CDAD: Sensitivity (3:1)	31	9637	Risk Ratio (M-H, Random, 95% CI)	0.48 [0.36, 0.63]

Get data from Cochrane (RevMan file)

Data and analyses

[Download statistical data](#)

Comparison 1. Probiotics versus control

Outcome or subgroup title

Add PICO

Import PICO from a RevMan5 file

Import PICO and outcomes using a RevMan file

Step 2: Select PICO and Outcomes

< Back Search

☒ **Probiotics versus control**

- ☒ Incidence CDAD: complete case
- ☒ Incidence CDAD: complete case - fixed effects
- ☐ Incidence CDAD: Sensitivity (1.5:1)
- ☐ Incidence CDAD: Sensitivity (2:1)
- ☐ Incidence CDAD: Sensitivity (3:1)
- ☐ Incidence CDAD: Sensitivity (5:1)
- ☐ Incidence CDAD: Subgroup: Inpatient versus outpatient populations - Inpatient
- ☐ Incidence CDAD: Subgroup: Inpatient versus outpatient populations - Outpatient
- ☐ Incidence CDAD: Subgroup: Inpatient versus outpatient populations - Mixed
- ☒ Incidence CDAD: Subgroup: Species: all - *S. boulardii*

2	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.30, 0.52]
2	Risk Ratio (M-H, Fixed, 95% CI)	0.38 [0.30, 0.50]
7	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.32, 0.54]
7	Risk Ratio (M-H, Random, 95% CI)	0.44 [0.34, 0.58]
7	Risk Ratio (M-H, Random, 95% CI)	0.48 [0.36, 0.63]

Strong recommendation

Children 1 month to 2 years old receiving antibiotics for an infection.

Evidence profile				
Summary				
References				
Outcome Timeframe	Study results and measurements	Absolute effect estimates		Certainty in effect estimates (Quality of evidence)
		No probiotics	Probiotics	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.
Severe AAD <2 years	0.46 (0.35 - 0.61) Based on data from 2455 patients in 22 studies Follow up: 1-12 weeks.	18 per 1000	8 per 1000 Difference: 10 fewer per 1000 (CI 95% 12 fewer - 7 fewer)	Low Due to serious inconsistency and indirectness.
GI side effects	Relative risk 1 (CI 95% 0.71 - 1.29) Based on data from 2455 patients in 16 studies Follow up: 1-4 weeks.	35 per 1000	35 per 1000 Difference: 0 fewer per 1000 (CI 95% 10 fewer - 10 more)	Moderate Due to serious indirectness.
Probiotic-related sepsis	Relative risk 1 (CI 95% -) Based on data from 2455 patients in 16 studies Follow up: 1-4 weeks.	0 per 1000	0 per 1000 Difference: 0 more per 1000 (CI 95% 0 - 3 more)	Moderate No probiotic-related sepsis events reported in the 16 of 22 studies reporting adverse events. Rated down due to risk of bias from selective outcome reporting.
Clostridium difficile diarrhea	Relative risk 0.4 (CI 95% 0.17 - 0.96) Based on data from 605 patients in 3 studies Follow up: 2 weeks.	59 per 1000	24 per 1000 Difference: 35 fewer per 1000 (CI 95% 49 fewer - 2 fewer)	Very Low Due to serious imprecision, risk of bias (possible selective outcome reporting), and indirectness in baseline estimate.

Probiotics for children receiving antibiotics for an infection

Children 1 month to 2 years old receiving antibiotics for an infection.

Strong recommendation



GRADE

Benefits outweigh harms for almost everyone. All or nearly all informed patients would likely want this option.

We recommend adjunctive probiotics rather than no probiotics.

Children 2 to 18 years old receiving antibiotics for an infection.

Weak recommendation



GRADE

Benefits outweigh harms for the majority, but not for everyone. The majority of patients would likely want this option

We suggest adjunctive probiotics rather than no probiotics.



Benefits and harms

Benefits of probiotics include a reduced incidence of antibiotic associated diarrhea (AAD), severe AAD, and *Clostridium difficile*-associated diarrhea (CDAD). Among otherwise healthy children, probiotics do not increase the risk of gastrointestinal side effects or of probiotic-related sepsis.

Quality of evidence

For probiotics, we have moderate certainty that the estimated effects for reduced incidence of AAD, gastrointestinal side effects, and probiotic-related sepsis are close to the true effects, low certainty for severe AAD, and very low certainty for CDAD.

Preference and values

Patients and their caregivers are likely to place a relatively higher value on preventing AAD, particularly severe AAD than on the relatively minimal costs and burden of probiotics.

Resources and other considerations

Probiotics are generally inexpensive and accessible throughout the world. Many caregivers with lower disposable income, particularly those without socialized pharmacare or private insurance, may not have the means to afford probiotics.

Weak recommendation

Children 2 to 18 years old receiving antibiotics for an infection.

Evidence profile	Summary	References		
Outcome Timeframe	Study results and measurements	Absolute effect estimates No probioticsProbiotics	Certainty in effect estimates (Quality of evidence)	Summary
AAD 2-18 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.	30 per 1000 Difference: 16 fewer per 1000 (CI 95% 19 fewer - 12 fewer)	14 per 1000 Moderate Due to serious inconsistency.	Probiotics appear to decrease the incidence of AAD by a small amount.
Severe AAD 2-18 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.	3 per 1000 Difference: 2 fewer per 1000 (CI 95% 2 fewer - 1 fewer)	1 per 1000 Low Due to serious inconsistency and indirectness.	Probiotics may decrease the incidence of AAD by a small amount.
GI side effects	Relative risk 1 (CI 95% 0.71 - 1.29) Based on data from 2455 patients in 16 studies Follow up: 1-4 weeks.	35 per 1000 Difference: 0 fewer per 1000 (CI 95% 10 fewer - 10 more)	35 per 1000 Moderate Due to serious indirectness.	Probiotics do not appear to increase the risk of gastrointestinal side effects.
Probiotic-related sepsis	Relative risk 1 (CI 95% -) Based on data from 2455 patients in 16 studies Follow up: 1-4 weeks.	0 per 1000 Difference: 0 more per 1000 (CI 95% 0 - 3 more)	0 per 1000 Moderate No probiotic-related sepsis events reported in the 16 of 22 studies reporting adverse events. Rated down due to risk of bias from selective outcome reporting.	Probiotics do not appear to increase the risk of sepsis.
Clostridium difficile diarrhea	Relative risk 0.4 (CI 95% 0.17 - 0.96) Based on data from 605 patients in 3 studies Follow up: 2 weeks.	59 per 1000 Difference: 35 fewer per 1000 (CI 95% 49 fewer - 2 fewer)	24 per 1000 Very Low Due to serious imprecision, risk of bias (possible selective outcome reporting), and indirectness in baseline estimate.	Probiotics could reduce the risk of CDAD

Further enhancing dissemination: BMJ RapidRecs

Evidence
synthesizers

data

Evidence
disseminators
to clinicians

data

Evidence
disseminators
to patients

thebmj Research Education News & Views Campaigns

BMJ 2016 : 354 doi: <http://dx.doi.org/10.1136/bmj.i5191> (Published 28 September 2016)
Cite this as: BMJ 2016;354:i5191

Reed A Siemieniuk, methodologist¹ 2, Thomas Agoritsas, assistant professor¹ 3, Helen Macdonald, acting head of education section⁴, Gordon H Guyatt, distinguished professor¹ 5, Linn Brandt, methodologist⁶, Per O Vandvik, associate professor⁶ 7

HOW WE MAKE A RAPID REC

The MAGIC app interface shows options for 'No antibiotics' or 'Antibiotics', a 'Find recommendations, evidence summaries and consultation decision aids for use in practice' button, and a table comparing events and harms.

Evidence
evaluators
& improvers

data

Evidence
implementers

The MAGIC app interface shows a 'Find Decision Aids in MAGIC app' button and a grid of icons representing various decision aids.

SHARE-IT

The BMJ RapidRecs



MAGIC Evidence Ecosystem Foundation

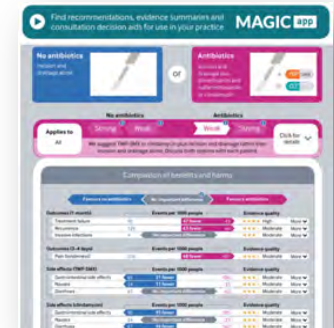


Patient partners



Day 45: Network Submit updated Synthesize evidence Systematic reviews

Day 90: Updated recommendation Disseminate evidence to clinicians Trustworthy guidelines



NEW EVIDENCE Primary studies

EvidenceAlerts



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

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



GRADE

BMJ Rapid Recommendations Enhancing the Evidence Ecosystem

data

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Prostate cancer screening

Screening

www.bmj.com/rapid-recommendations

Corticosteroids for treatment of sore throat

n=14 guidelines in 3 years

n=25 recs

n=18 SR

Primary Care

Antibiotics for uncomplicated skin abscesses

Antiretroviral therapy in pregnant women living with HIV

Drugs
Acute care

Dual vs single antiplatelet therapy

Corticosteroid therapy for sepsis

Altmetric *



Thyroid hormones treatment for subclinical hypothyroidism

Oxygen therapy for acutely ill medical patients

Low intensity pulsed ultrasound (LIPUS) for bone healing

Subacromial decompression surgery for adults with shoulder pain

Arthroscopic surgery for degenerative knee arthritis and meniscal tears *

Strong Recs Against



De-implementation

Atraumatic (pencil-point) versus conventional needles for lumbar puncture

Devices

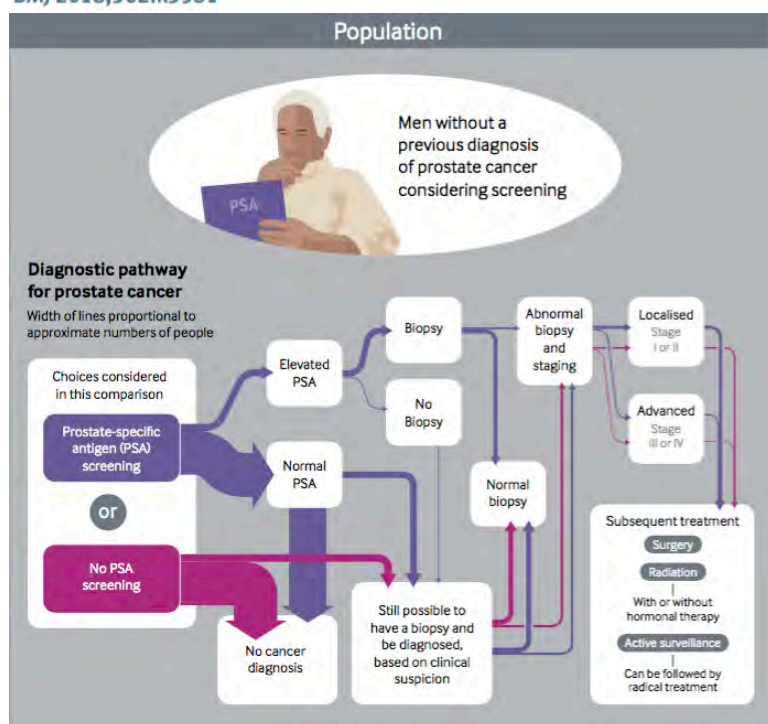
Transcatheter versus surgical aortic valve replacement

Patent foramen ovale closure or drug therapy for management of cryptogenic stroke

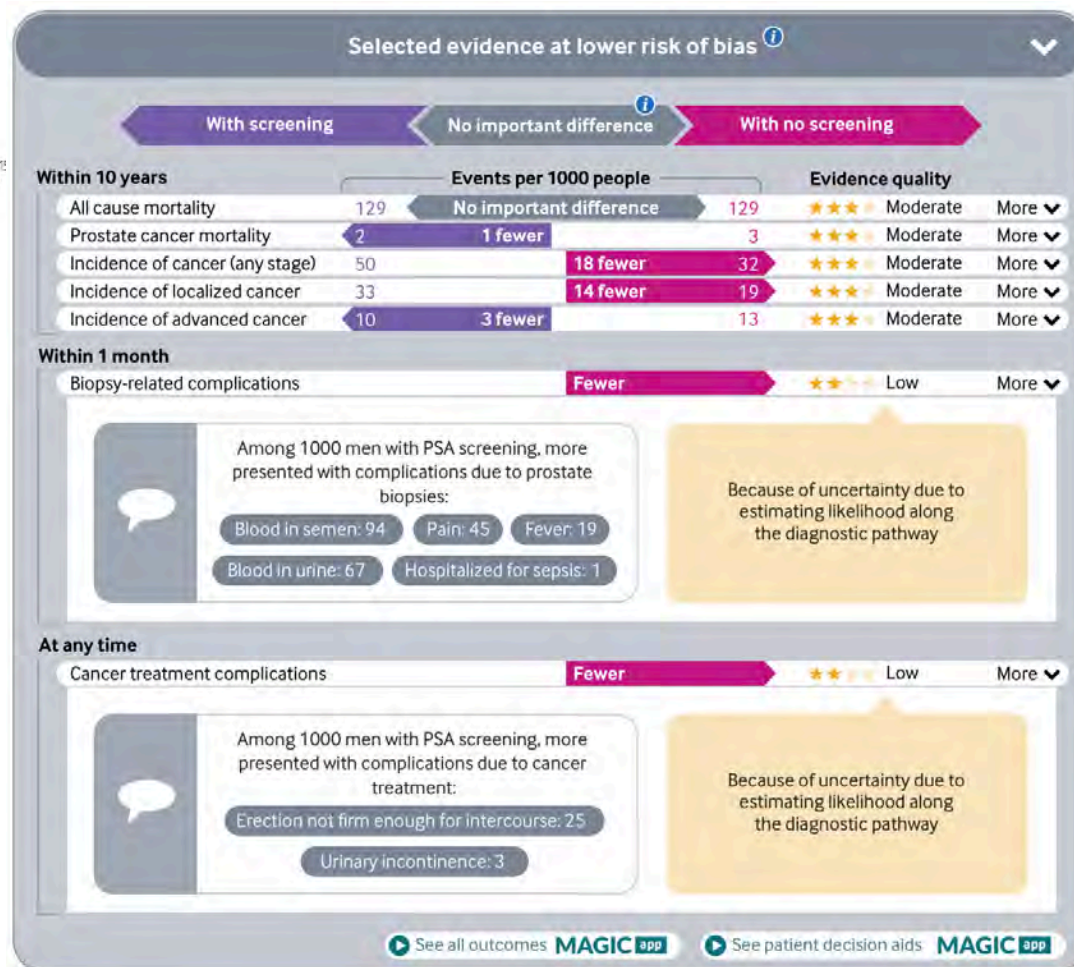
Prostate cancer screening with prostate-specific antigen (PSA) test: a clinical practice guideline

Kari A O Tikkinen,^{1,2} Philipp Dahm,³ Lyubov Lytvyn,⁴ Anja F Heen,⁵ Robin W M Vernooij,⁶ Reed A C Siemieniuk,⁴ Russell Wheeler,⁷ Bill Vaughan,⁸ Awah Cletus Fobuzi,^{9,10} Marco H Blanker,¹¹ Noelle Junod,¹² Johanna Sommer,¹³ Jérôme Stirnemann,¹⁴ Manabu Yoshimura,¹⁵ Reto Auer,^{16,17} Helen MacDonald,¹⁸ Gordon Guyatt,⁴ Per Olav Vandvik,⁵ Thomas Agoritsas^{4,14,19}

BMJ 2018;362:k3581



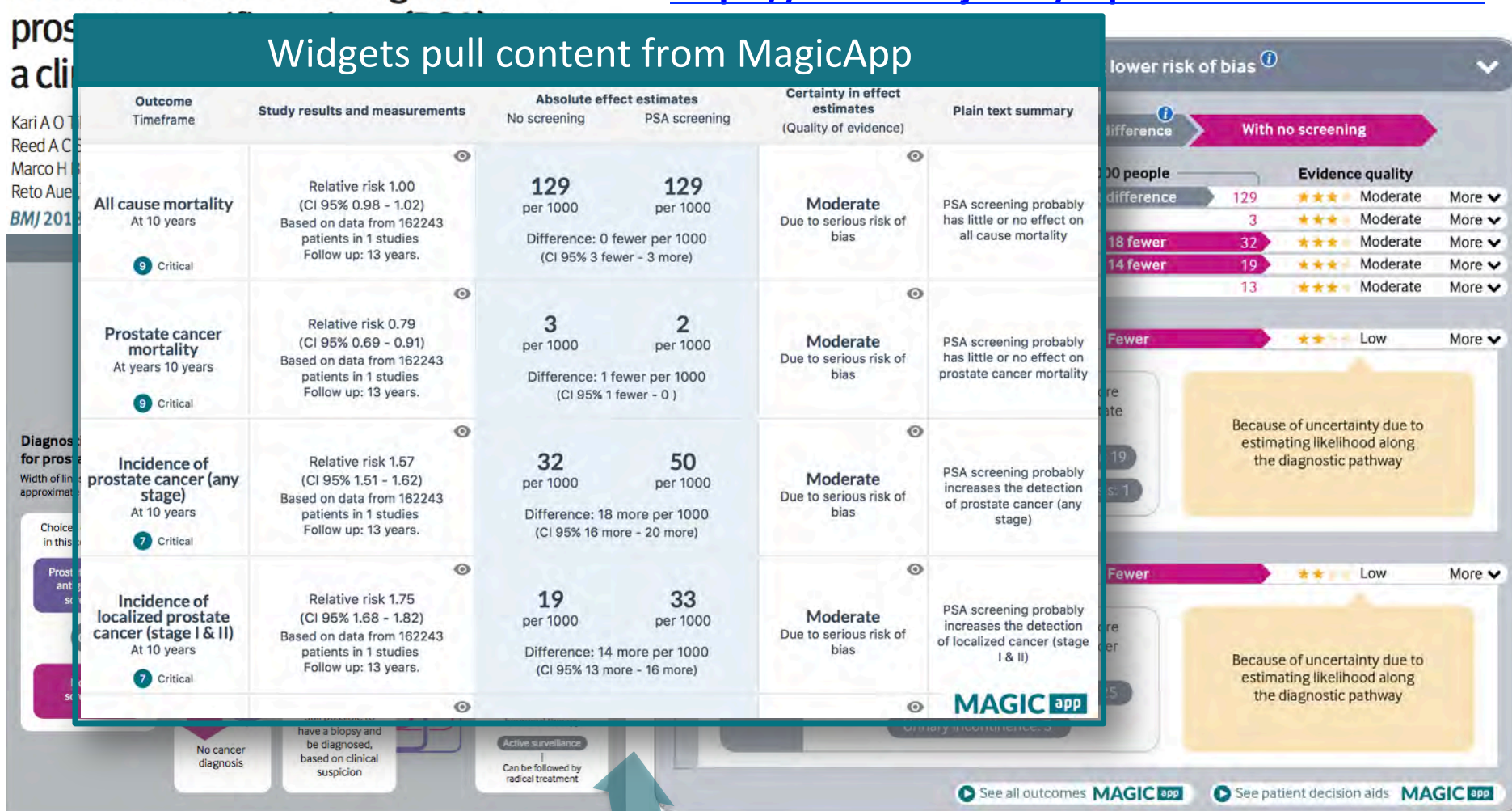
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Find recommendations, evidence summaries and consultation decision aids for use in your practice

MAGIC app

Prostate cancer screening with

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Find recommendations, evidence summaries and consultation decision aids for use in your practice

MAGIC app

Widgets that pull data from MAGICapp to embed on other platforms

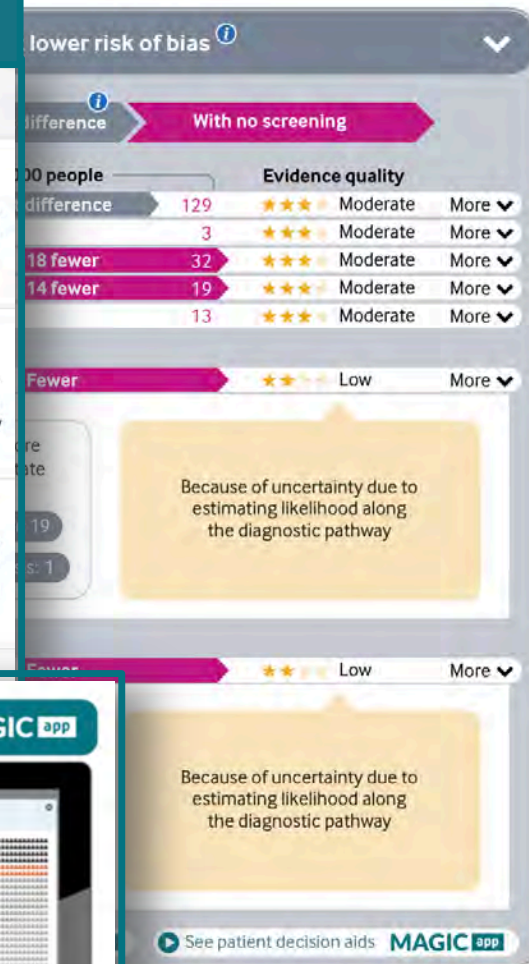
Prostate cancer screening with

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Widgets pull content from MagicApp

Kari A O T
Reed A C
Marco H
Reto Aue
BMJ 2018

Outcome Timeframe	Study results and measurements	Absolute effect estimates		Certainty in effect estimates (Quality of evidence)	Plain text summary
		No screening	PSA screening		
All cause mortality At 10 years 9 Critical	Relative risk 1.00 (CI 95% 0.98 - 1.02) Based on data from 162243 patients in 1 studies Follow up: 13 years.	129 per 1000 Difference: 0 fewer per 1000 (CI 95% 3 fewer - 3 more)	129 per 1000	Moderate Due to serious risk of bias	PSA screening probably has little or no effect on all cause mortality
Prostate cancer mortality At years 10 years 9 Critical	Relative risk 0.79 (CI 95% 0.69 - 0.91) Based on data from 162243 patients in 1 studies Follow up: 13 years.	3 per 1000 Difference: 1 fewer per 1000 (CI 95% 1 fewer - 0)	2 per 1000	Moderate Due to serious risk of bias	PSA screening probably has little or no effect on prostate cancer mortality
Incidence of prostate cancer (any stage) At 10 years 7 Critical	Relative risk 1.57 (CI 95% 1.51 - 1.62) Based on data from 162243 patients in 1 studies Follow up: 13 years.	32 per 1000 Difference: 18 more per 1000 (CI 95% 16 more - 20 more)	50 per 1000	Moderate Due to serious risk of bias	PSA screening probably increases the detection of prostate cancer (any stage)
Incidence of localized prostate cancer (stage I & II) At 10 years 7 Critical	Relative risk 1.75 (CI 95% 1.68 - 1.82) Based on data from 162243 patients in 1 studies Follow up: 13 years.	19 per 1000 Difference: 14 more per 1000 (CI 95% 13 more - 16 more)			



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Decision Aids
Widgets

SHARE-IT Decision Aids

What aspect of your treatment would you like to discuss next?

Diarrhea

Severa diarrhea

GI side effects

Probiotic-related sepsis

Clostridium difficile diarrhea

Practical issues



SHARE-IT Decision Aids

Diarrhea

Among a 1000 patients like you, with Adjunctive probiotic therapy



16 fewer

No probiotic
therapy

30

per 1000

Adjunctive
probiotic therapy

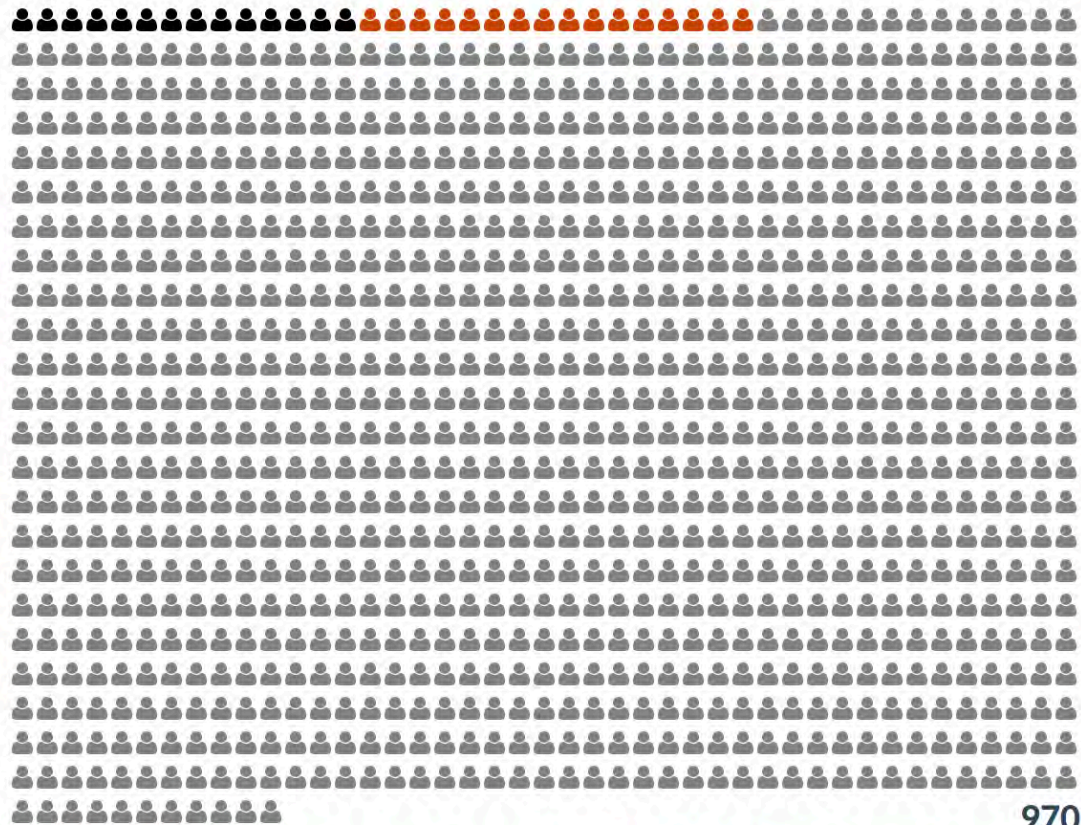
14

per 1000

Certainty



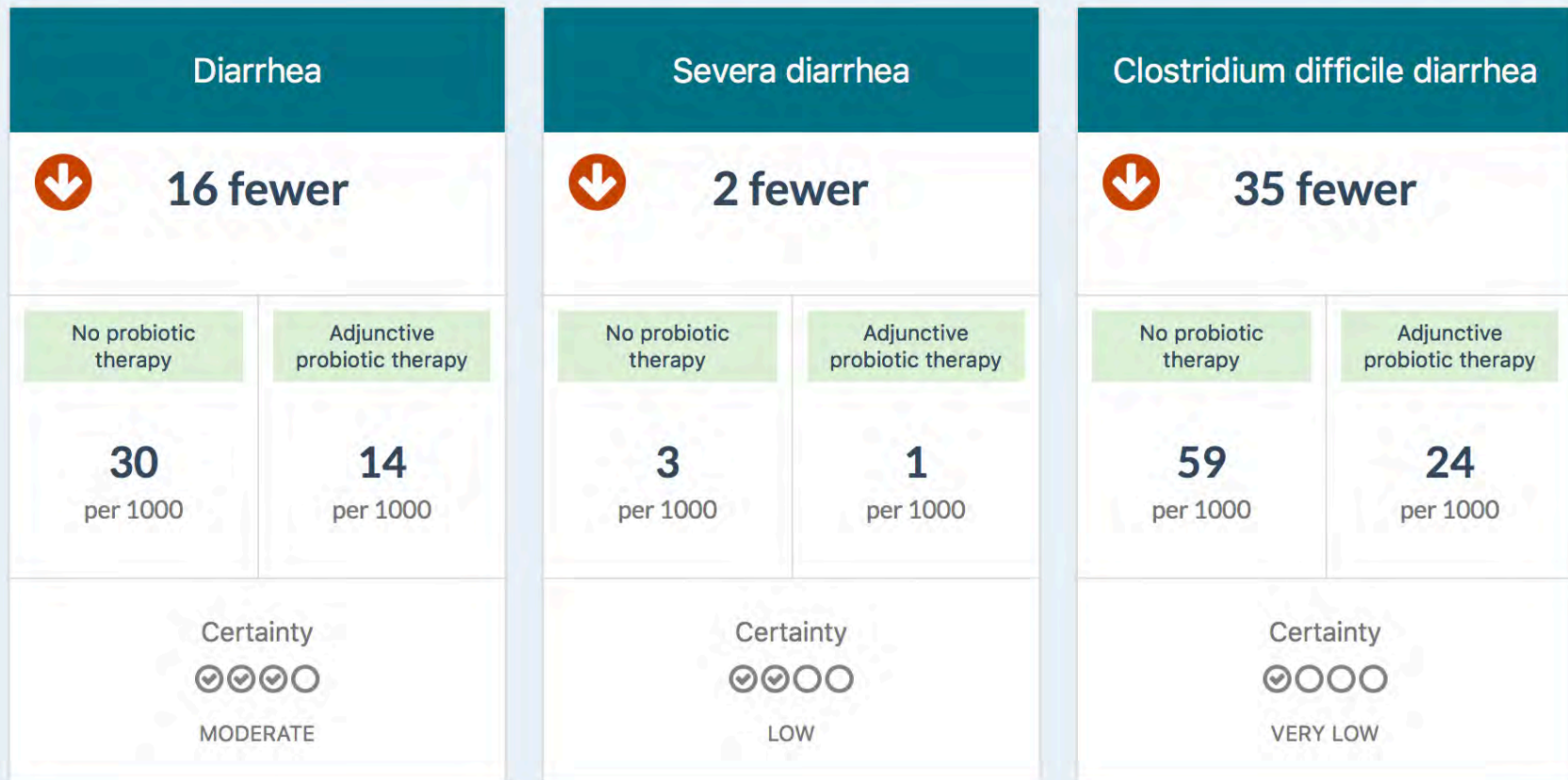
MODERATE



970

SHARE-IT Decision Aids

Among a 1000 patients like you, on average with Adjunctive probiotic therapy



GI side effects

Probiotic-related sepsis

Practical issues

► A-Z

► Categories

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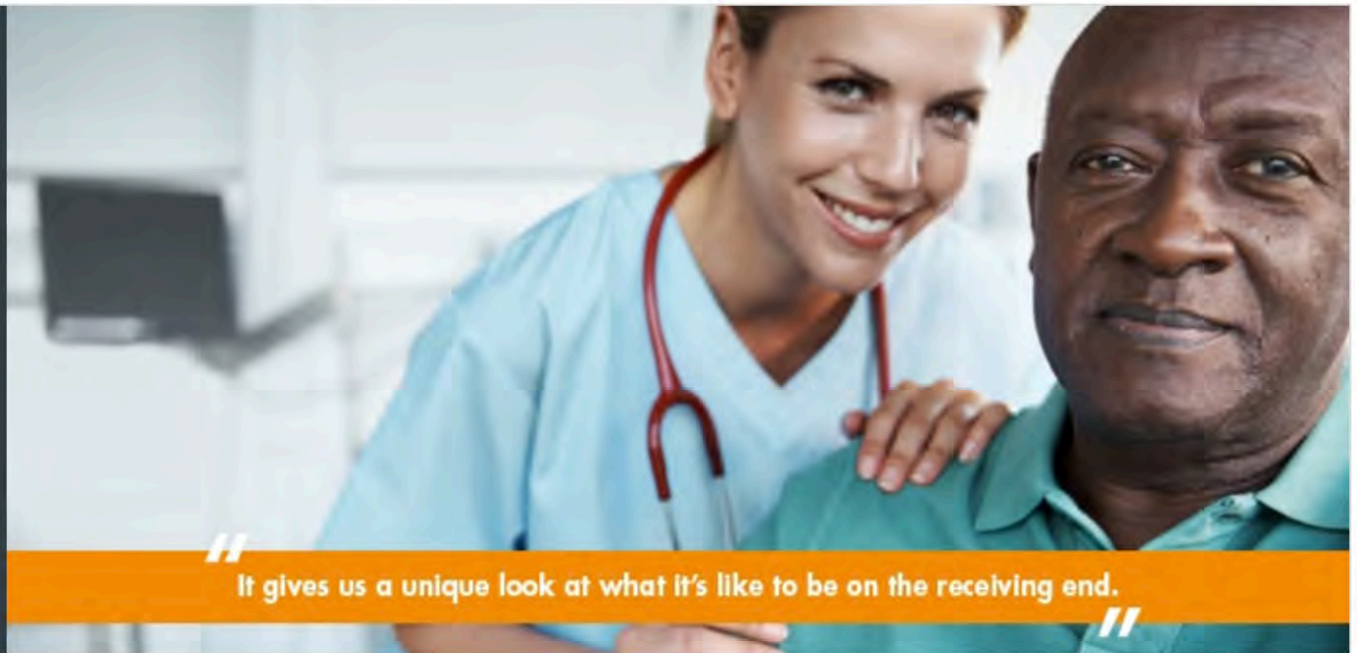
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Patients' experiences shared on film.

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- Trigger films for service improvement
- Patients tell us what makes good healthcare



PEOPLE'S EXPERIENCES OF HEALTH

A problem shared

Reliable health information
from patients, for patients.



SHARE-IT Decision Aids

Practical issues



Medication routine



Tests and visits



Procedure and device



Recovery and
adaptation



Coordination of care



Adverse effects,
interactions and
antidote



Physical well-being



Emotional well-being



Pregnancy and
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Costs and access



Food and drinks



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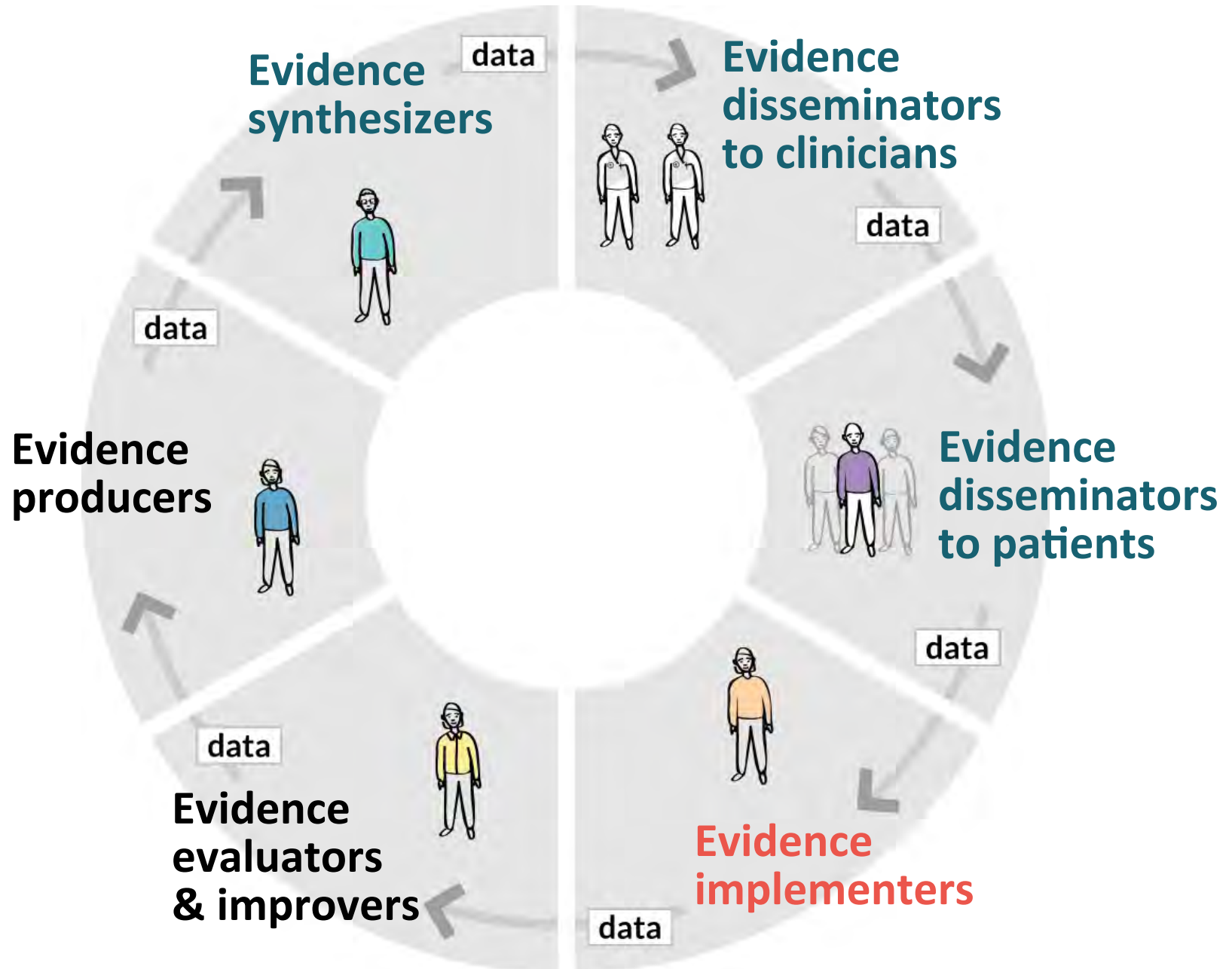


Work and education



Travel and driving

The Evidence Ecosystem

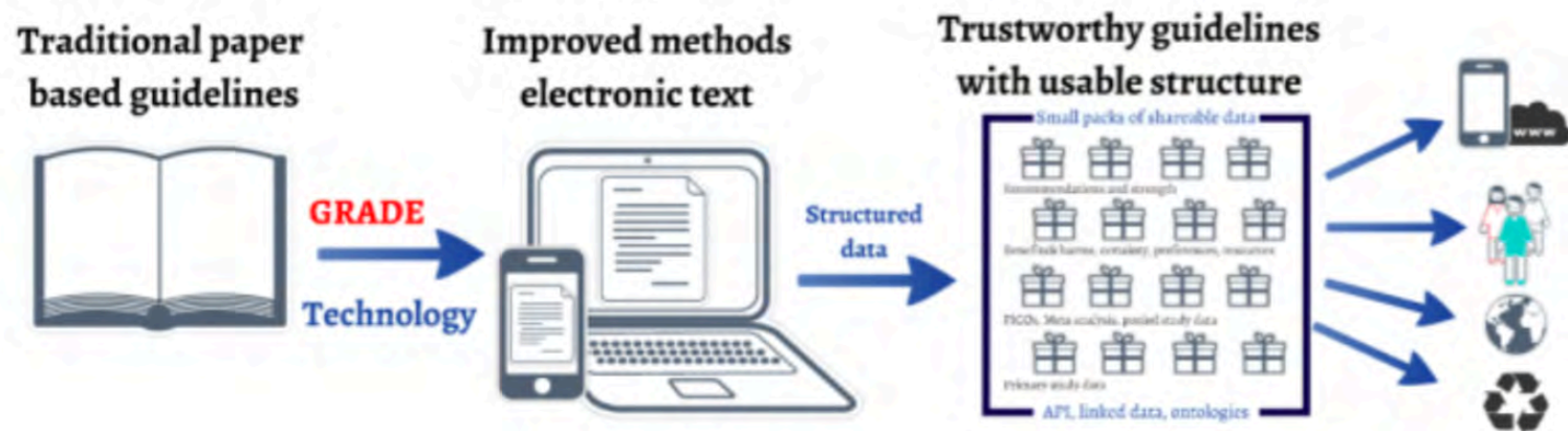


Plugging-in to Electronic Health Records (EHR)

Computerized Decision Support Systems (CDSS)

- take the advice from a published guideline away from its original place of publishing
- are time consuming to create and update
- rely too much on algorithms and reminders, which have limitations

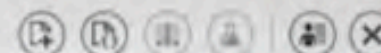
MagicApp moves guidelines from a text-based format to an electronic structure





RANESTAD, Kristin

100480*09896 - 34 år - Kvinne 🇳🇴



← Clinical Decision Support



Excerpt from Norwegian guidelines for antithrombotic therapy and thromboprophylaxis

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1 Venous thromboembolism

Selection of drug for long-term treatment

Weak recommendation

It is less clear whether the benefits outweigh the drawbacks/harms.

For patients without malignancy we suggest warfarin or rivaroxaban for long-term treatment rather than LMWH.

Remark: Dabigatran and apixaban are not registered for use on this indication in Norway at the time of writing (November 2013).

[View less details](#)

Effect and harms Key info Rationale Practical advice Monitoring References 1

Benefits and harms

Long-term treatment with LMWH instead of warfarin in patients with cancer reduced the number of recurrent thromboses from 20 to 19/1000 patients with no significant differences in major bleeding or deaths.

- Rivaroxaban versus LMWH / warfarin: No significant difference for any outcome.
- Dabigatran versus warfarin: No significant difference for any outcome.
- Apixaban versus warfarin: No significant difference for recurrent thromboses or death after 6 months, but significantly fewer major bleeds with apixaban.

Quality of evidence

For LMWH versus warfarin: Considered low. Moderate due to low precision and possible risk of bias.

For NOAC versus warfarin: Moderate due to imprecise effect estimates for mortality and recurrent venous thromboses.

Preferences and values

We believe that most patients will want long-term oral treatment instead of LMWH given the burden of self-injections. Patients who place a high value on avoiding blood monitoring and diet restrictions are likely to prefer rivaroxaban rather than warfarin.

Resources and other considerations

Warfarin, LMWH and rivaroxaban reimbursed. Three months' supply of warfarin (3 tbl daily) € 4.00. Rivaroxaban 20 mg x 1: NOK 2200. LMWH 10000 IU x 1: NOK 7400. (POB 08/01/12)

EMR Data

Found 16 emr codes for current Recommendation.

Neoplasm

SNOMED: 108369006

Liver disease

SNOMED: 235856003

Renal failure

SNOMED: 236423003

Temperature

SNOMED: 246508008 37,7 °C

16-Aug kl 23:14

Body weight

SNOMED: 27113001 60 kg

16-Aug kl 08:37

Pulse Rate

SNOMED: 78564009 89 /min

16-Aug kl 08:38

Antithrombotics

ATC: B01A

Creatinin

SNOMED: LP14355-9 78 mmol/l

16-Aug kl 08:19

Hemoglobin

SNOMED: LP14449-0 11,2 gm/l

16-Aug kl 07:56

Platelets

SNOMED: LP14597-6 256 10⁹/l

16-Aug kl 07:56

Potassium

SNOMED: LP15098-4 3,7 mmol/l

16-Aug kl 08:16

Sodium

SNOMED: LP15099-2

INR

SNOMED: LP20762-8

Blood pressure

SNOMED: LP40259-1 110 / 72 mm(Hg)

16-Aug kl 09:15

C reactive protein

SNOMED: LP41279-8 18 mg/l

16-Aug kl 13:03

Alanine aminotransferase

SNOMED: LP44699-4 45 U/l

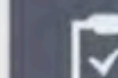
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Dokumenter



Oppgaver



Pasientliste



Arctype Admin



Pasientlisteadmin

Living Evidence: MAGIC “time machine” and track change

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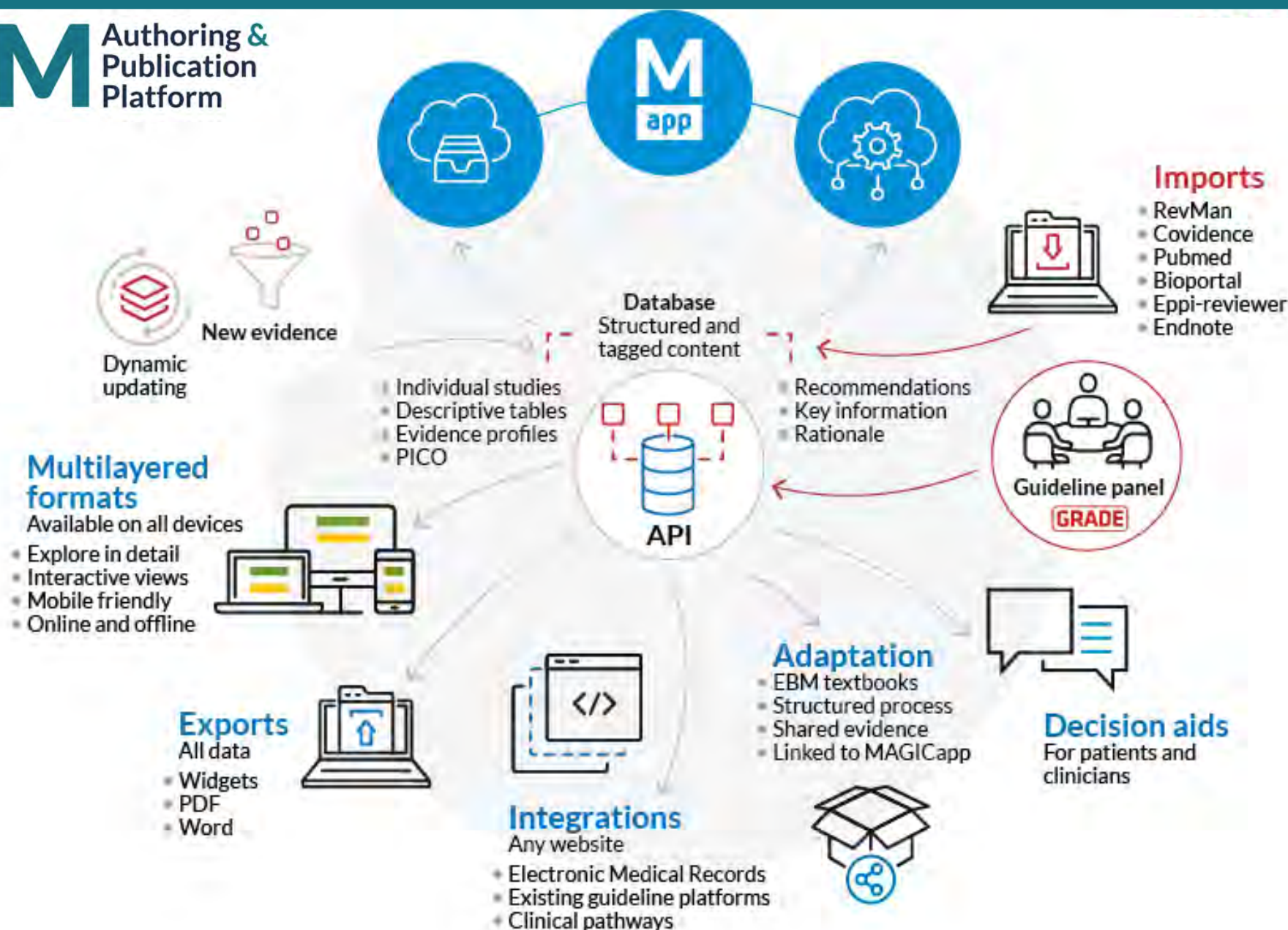
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M Authoring & Publication Platform





Living Evidence Network

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