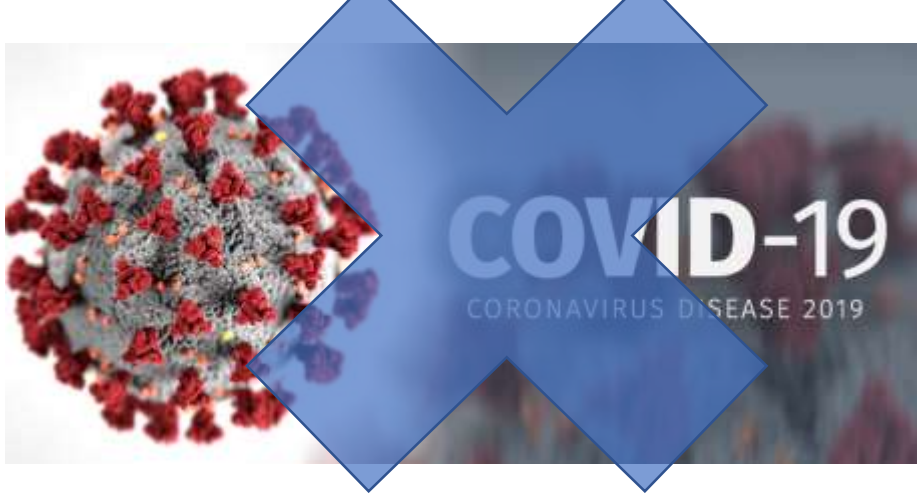


Top ID papers of 2022

NON-COVID!!

Prof Josh Davis, December 2022

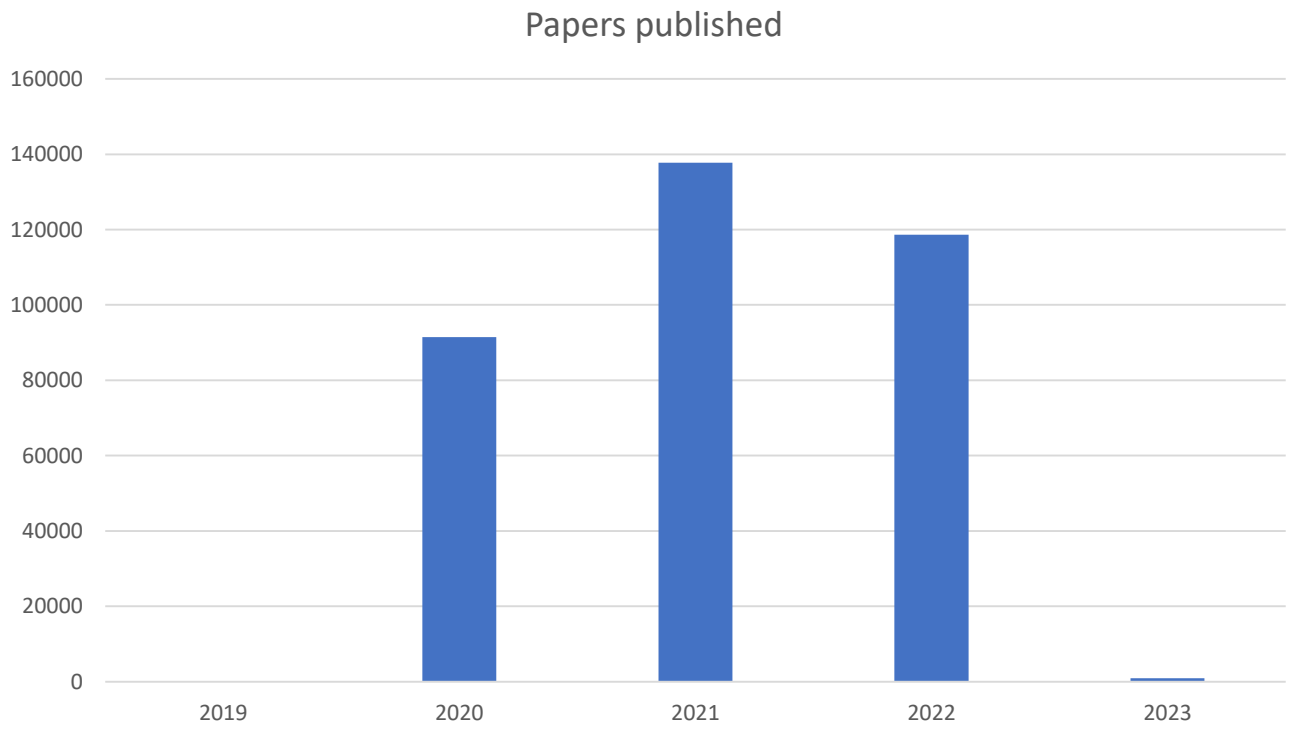
THE UNIVERSITY OF NEWCASTLE AUSTRALIA

menzies school of health research

NSW GOVERNMENT Health Hunter New England Local Health District

HMRI Hunter Medical Research Institute

Number of COVID papers published each year



Criteria

- IMHO
- COVID excluded because >118,000 papers for 2022 alone!
- Published during 2022
- Deal with diagnosis or treatment of infectious diseases
- Relevant to (my) clinical practice
- Practice-changing, paradigm-shifting, or dogma-challenging.
- **In alphabetical order by first author**

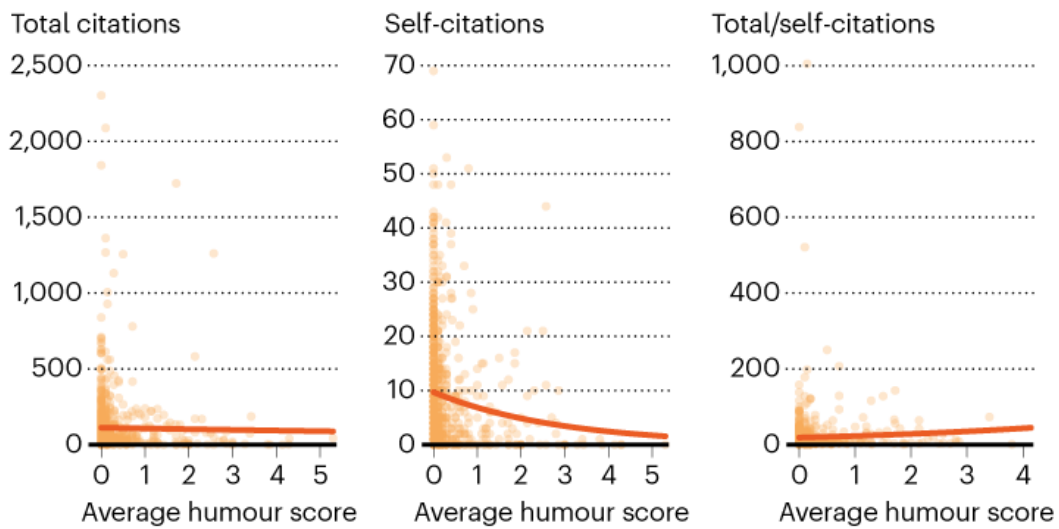
If this title is funny, will you cite me?

Citation impacts of humour and other features of article titles in ecology and evolution

Stephen B. Heard[1,2], Chloe A. Cull[1,3], and Easton R. White[4]

AMUSING ARTICLES

When papers' importance (indicated by self-citations) is controlled for, those with funnier titles are cited more often.



2,439 papers published during 2000 and 2001 in 9 ecology and evolution journals.

Paper title of the year

COVID-19: Clean up on IL-6

PLOS ONE

RESEARCH ARTICLE

History of fecal transplantation; camel feces contains limited amounts of *Bacillus subtilis* spores and likely has no traditional role in the treatment of dysentery

Available online at www.sciencedirect.com

ScienceDirect

Biomedical Journal

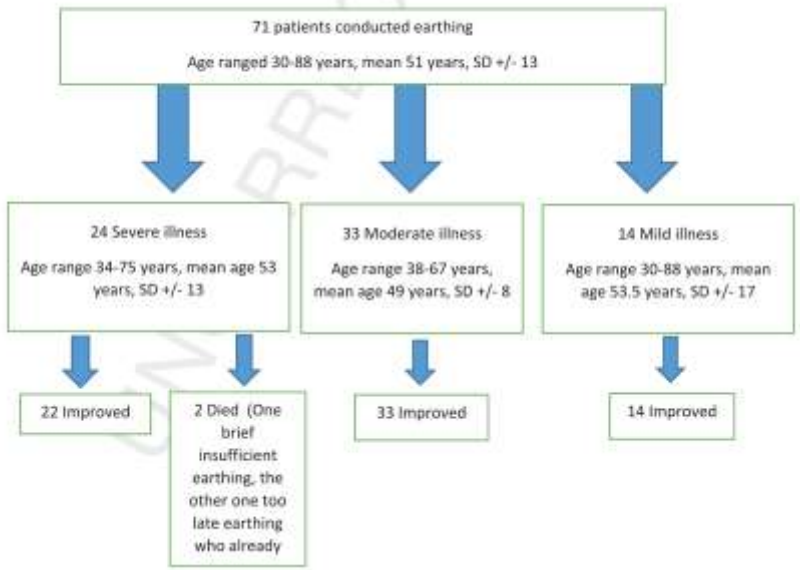
journal homepage: www.elsevier.com/locate/bj

Original Article

Prevention and treatment of COVID-19 infection by earthing

Haider Abdul-Lateef

University of Basrah, College of Medicine, PO Box 601, 42001, Ashar, Basrah, Iraq



Top 10 rated movies/shows 2022 (IMDB)

1. The Batman
2. Dr Strange in the Multiverse . .
3. Thor: Love and Thunder
4. Top Gun: Maverick
5. Black Panther 2
6. The Northman
7. The Gray Man
8. Everything Everywhere All at Once
9. Death on the Nile
10. X

1. Stranger Things
2. House of the Dragon
3. Better Call Saul
4. The Rings of Power
5. Euphoria
6. The Boys
7. Moon Knight
8. The Sandman
9. Ozark
10. Inventing Anna

Bonus recommendations from me and my child:

Avi

Top movie: *The Fallout*

Top TV show: *The Patient*

Josh

Top movie: *Game Night*

Top TV show: *Ozark*

Honourable mentions

First Author	Journal	Design	Key points	Reference
Yuen	*NEJM*	Ph 2 RCT	Bepirovirsen -antisense O/N safe and active vs HBV	387:1957-1968
Newton	*Br J Surg*	RCT	Perianal abscesses should be closed, not packed	109(10):951
Oliver	*BMJ*	Linkage	Skin GAS can cause ARF/RHD (not only throat)	6(12): e007038
Kayentao	*NEJM*	Ph 2 RCT	A MAb is safe and effective at preventing *P.falciparum*	387:1833
Conradie	*NEJM*	RCT	B-P-L effective for XDR TB; use linezolid 600mgx26w	387:810
Hamilton	*CMI*	Retro	Time to positivity does not correlate w/mortality in BSI	28(1):136e7
Llor	*CMI*	RCT	Stopping ABs for RTIs when Dr thinks not needed is safe	28(2): 241

Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection (ChEETAh): a pragmatic, cluster-randomised trial in seven low-income and middle-income countries

NIHR Global Research Health Unit on Global Surgery*

www.thelancet.com Vol 400 November 19, 2022

- WHY
  - Practice changing
- SUMMARY
  - Benin, Ghana, India, Mexico, Nigeria, Rwanda, Sth Africa
  - Clean-contaminated, contaminated, or dirty abdominal surgery
  - Cluster RCT including 81 hospitals and 13,301 patients undergoing surgery. Compared with usual care, routine change of gloves and instruments before wound closure reduced the 30-day SSI incidence from 18.9% to 16.0% (adjRR 0.87 [0.79-0.95], p=0.003)

Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection (ChEETAh): a pragmatic, cluster-randomised trial in seven low-income and middle-income countries

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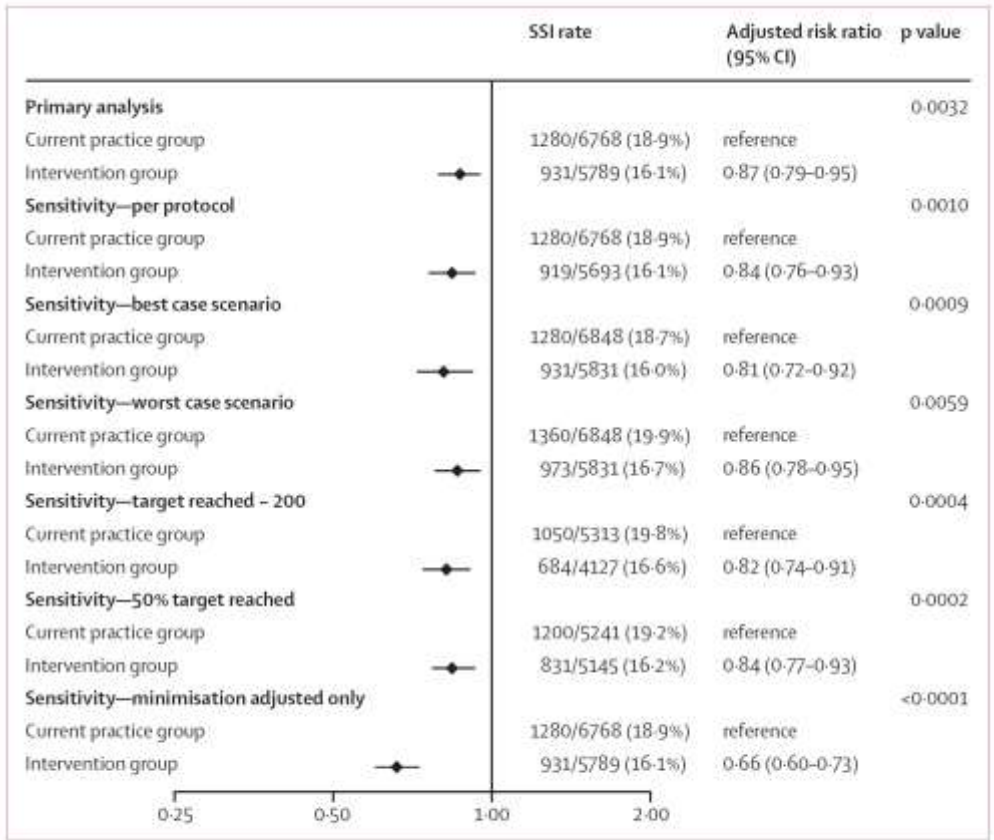

Figure 3: **Primary and sensitivity analyses of the primary outcome**
Intraclass correlation coefficient for primary analysis model=0·06 (95% CI 0·05–0·07). SSI=surgical site infection.

Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection (ChEETAh): a pragmatic, cluster-randomised trial in seven low-income and middle-income countries

*NIHR Global Research Health Unit on Global Surgery**

- WHY
  - Practice changing
- IMPLICATIONS
  - ?Relevant to high-income countries – but SSI rates are 15-20% in this group in HICs

1 GlobalSurg Collaborative. Surgical site infection after gastrointestinal surgery in high-income, middle-income, and low-income countries: a prospective, international, multicentre cohort study. *Lancet Infect Dis* 2018; 18: 516–25.

  - ?Current practice in Australia
  - Pending further data, routine glove and instrument change before closure should become routine globally wherever possible

Clinical and cost effectiveness of single stage compared with two stage revision for hip prosthetic joint infection (INFORM): pragmatic, parallel group, open label, randomised controlled trial

BMJ 2022;379:e071281

Ashley W Blom,[1,2] Erik Lenguerrand,[1] Simon Strange,[1] Sian M Noble,[3] Andrew D Beswick,[1] Amanda Burston,[1] Kirsty Garfield,[3,4] Rachael Gooberman-Hill,[1,2] Shaun R S Harris,[3,4] Setor K Kunutsor,[1,2] J Athene Lane,[3,4] Alasdair MacGowan,[5] Sanchit Mehendale,[6] Andrew J Moore,[1] Ola Rolfson,[7] Jason C J Webb,[1] Matthew Wilson,[8] Michael R Whitehouse,[1,2] on behalf of the INFORM trial group

- WHY
  - (Potentially) Practice changing
  - PJI RCTs are an evidence gap – this one adds 140 to the 1,700 ever randomised to anything for PJI management
- SUMMARY
  - 140 adults with prosthetic hip joint infection requiring revision were randomised to one-stage or two-stage revision
  - In terms of mean WOMAC score (a PROM), one-stage was better than two-stage at 3 months, but no different at 12 months.

Clinical and cost effectiveness of single stage compared with two stage revision for hip prosthetic joint infection (INFORM): pragmatic, parallel group, open label, randomised controlled trial

BMJ 2022;379:e071281

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- WHY
  - (Potentially) Practice changing
  - PJI RCTs are an evidence gap – this one adds 140 to the 1,700 ever randomised to anything for PJI management
- IMPLICATIONS
  - Single-stage revision is rare in Australia but should be done more commonly
  - Infection relapse at 18 months occurred in 9 (14%) 1-stage versus 8 (11%) 2-stage (p=NS, very underpowered).
  - A larger trial, including knees as well as hips, and with infection cure as an endpoint is needed . . . .

RandOmised Arthroplasty infection worlDwide Multidomain Adaptive Platform trial

SILOS	DOMAINS		
	Surgical management	***Antibiotic duration***	***Antibiotic type***
Early PJI	N/A	N/A	Rifampicin versus non-rifampicin
Late acute PJI	DAIR versus revision	Short versus long duration	
Chronic PJI	1-stage versus 2-stage revision		

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

SER-109, an Oral Microbiome Therapy for Recurrent *Clostridioides difficile* Infection

Paul Feuerstadt, M.D., Thomas J. Louie, M.D., Bret Lashner, M.D., Elaine E.L. Wang, M.D., Liyang Diao, Ph.D., Jessica A. Bryant, Ph.D., Matthew Sims, M.D., Ph.D., Colleen S. Kraft, M.D., Stuart H. Cohen, M.D., Charles S. Berenson, M.D., Louis Y. Korman, M.D., Christopher B. Ford, Ph.D., Kevin D. Litcofsky, Ph.D., Mary-Jane Lombardo, Ph.D., Jennifer R. Wortman, M.Sc., Henry Wu, Ph.D., John G. Auniņš, Ph.D., Christopher W.J. McChalicher, B.Ch.E., Jonathan A. Winkler, Ph.D., Barbara H. McGovern, M.D., Michele Trucksis, M.D., Ph.D., Matthew R. Henn, Ph.D., and Lisa von Moltke, M.D.

N Engl J Med 2022;386:220-9.

- WHY
  - Paradigm-shifting
- SUMMARY
  - 182 adults with CDAD post Rx (and with >=3 prev episodes) were randomized to receive SER-109 (oral purified Firmicutes spores) or placebo PO daily for 3 days. CDAD recurrence after 8 weeks was significantly less (12% versus 40%)

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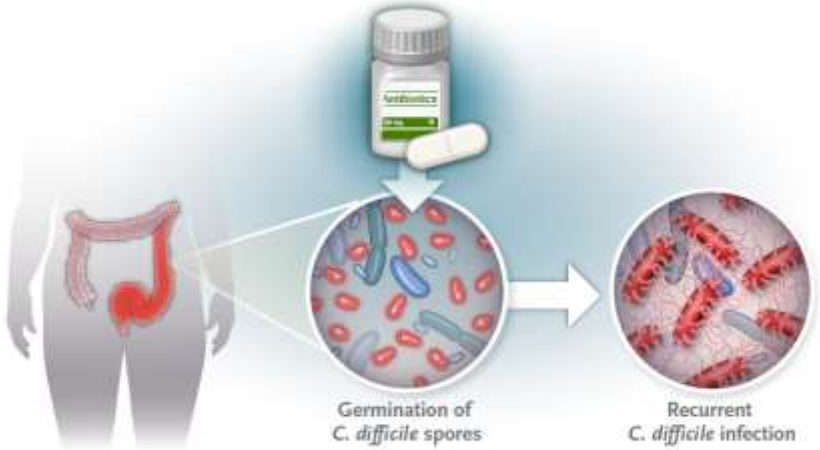

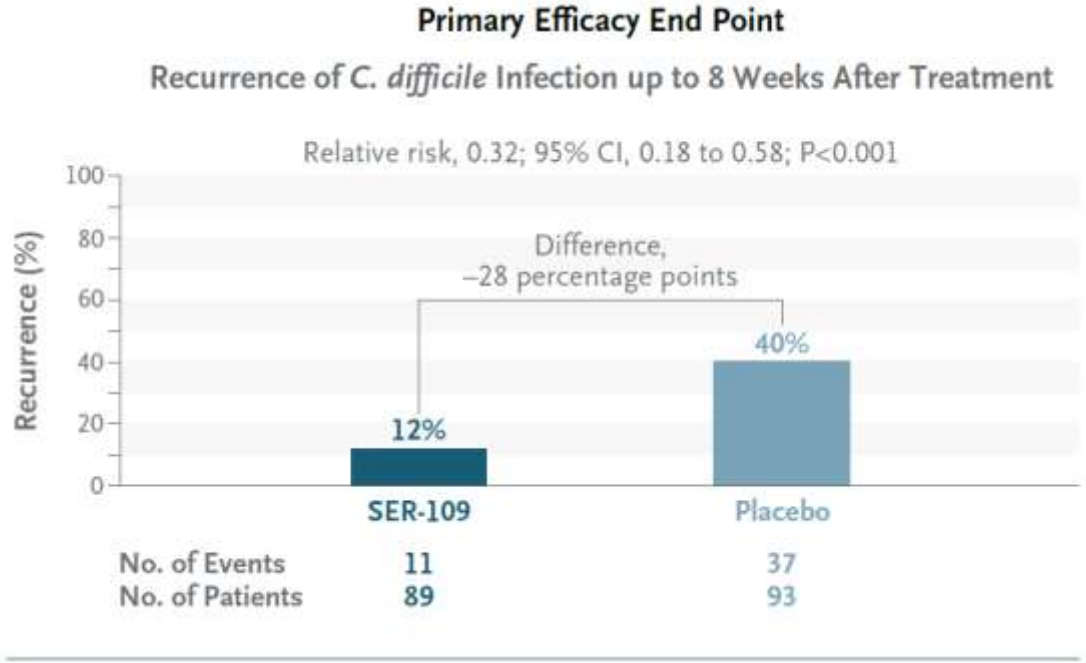

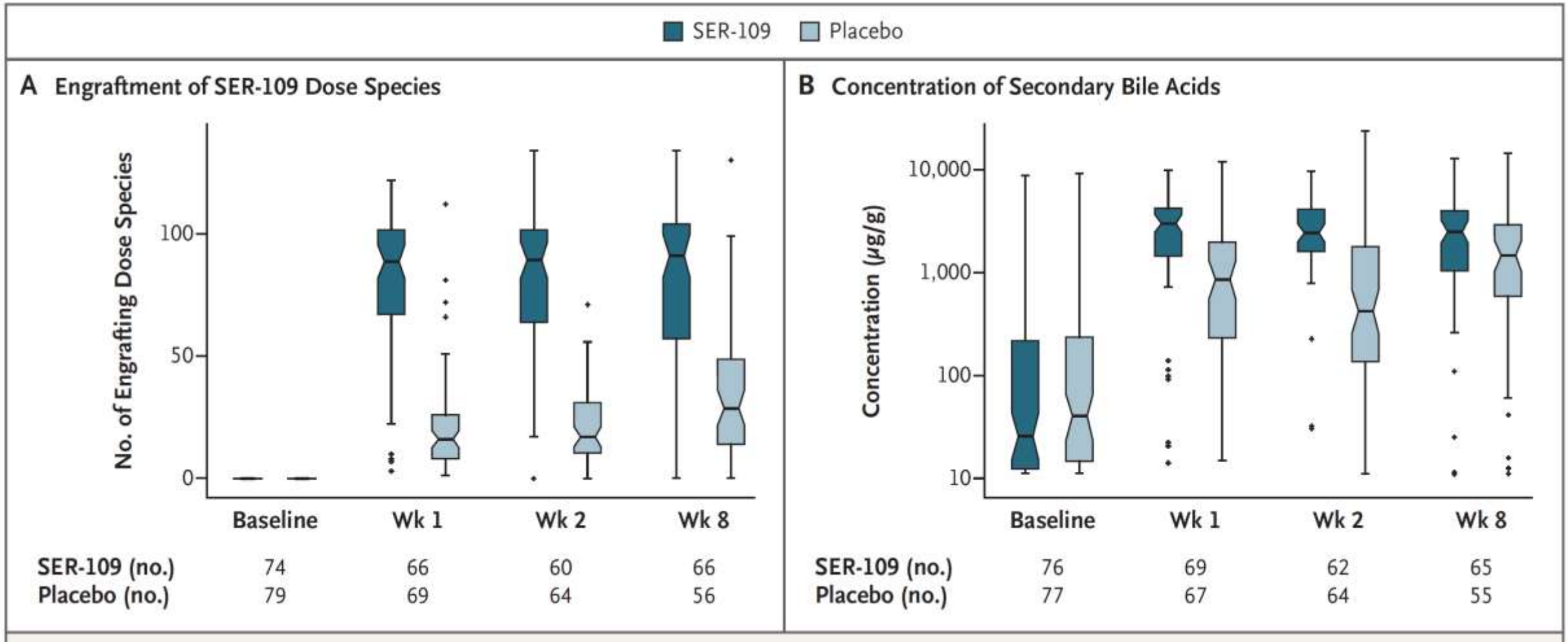
SER-109
Placebo
A Engraftment of SER-109 Dose Species
No. of Engrafting Dose Species
100
50
0
Baseline
Wk 1
Wk 2
Wk 8
SER-109 (no.) 74 66 60 66
Placebo (no.) 79 69 64 56
B Concentration of Secondary Bile Acids
Concentration (μg/g)
10,000
1,000
100
10
Baseline
Wk 1
Wk 2
Wk 8
SER-109 (no.) 76 69 62 65
Placebo (no.) 77 67 64 55

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N Engl J Med 2022;386:220-9.

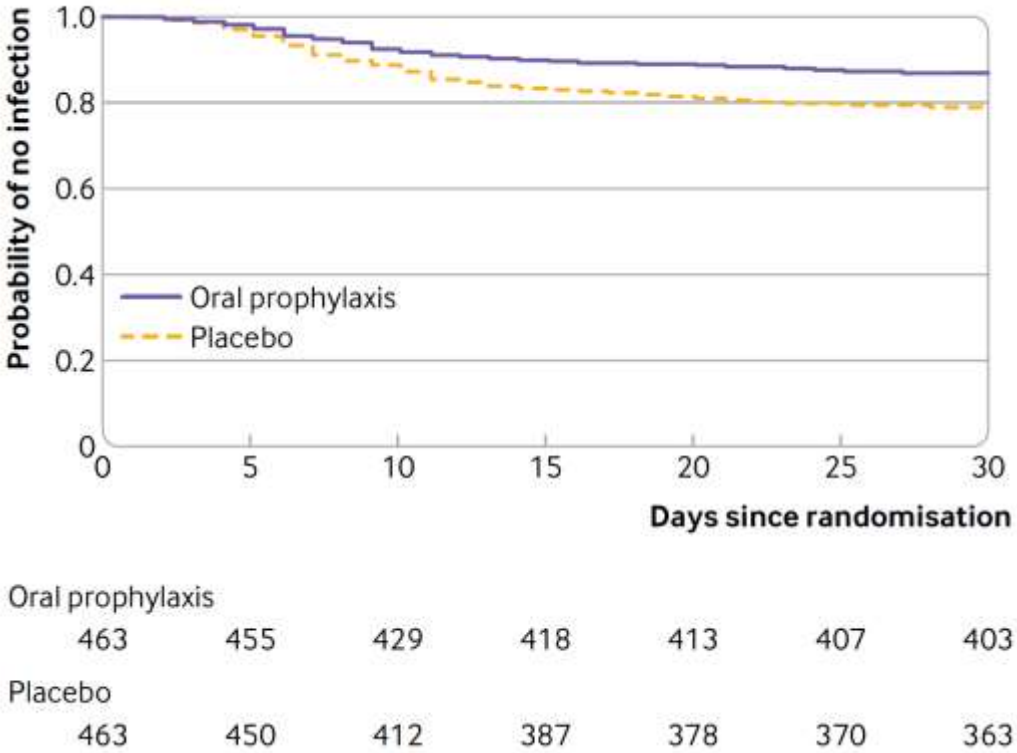
- WHY
  - Paradigm-shifting
- IMPLICATIONS
  - Might replace the need for FMT in high-risk patients, thus avoiding its risks
  - ?Safer than faecal products like PR Rebyota (FDA approved Nov 2022)
  - Will prob be recommended post Vanco/Fidaxo for selected (or all) patients
  - Longer term outcomes not as good as 8 weeks; commercially sponsored trial. Need to see real-world data

Effect of oral antimicrobial prophylaxis on surgical site infection after elective colorectal surgery: multicentre, randomised, double blind, placebo controlled trial

BMJ 2022;379:e071476

Emmanuel Futier,[1,2] Samir Jaber,[3,4] Matthias Garot,[5] Marie Vignaud,[1] Yves Panis,[6] Karem Slim,[7] Jean-Christophe Lucet,[8,9] Gilles Lebuffe,[5] Alexandre Ouattara,[10,11] Younes El Amine,[12] Philippe Couderc,[13] Aurélien Dupré,[14,15] Audrey De Jong,[3] Sigismond Lasocki,[16] Marc Leone,[17] Julien Pottecher,[18] Bruno Pereira,[19] Catherine Paugam-Burtz,[20] on behalf of the COMBINE study group

- WHY
  - Practice changing
- SUMMARY
  - At 11 French hospitals, 960 adults having elective colorectal surgery were randomised to IV+PO AB prophylaxis (ornidazole 1g PO x 1 12h pre-op + cefoxitin 2g IVI 30’ pre-op) or IV+placebo, with no routine bowel prep in either group. The incidence surgical site infection at 30 days was 13% versus 22%, favouring the intervention (Delta -8.6%, 95% CI -13.5% to -3.8%)



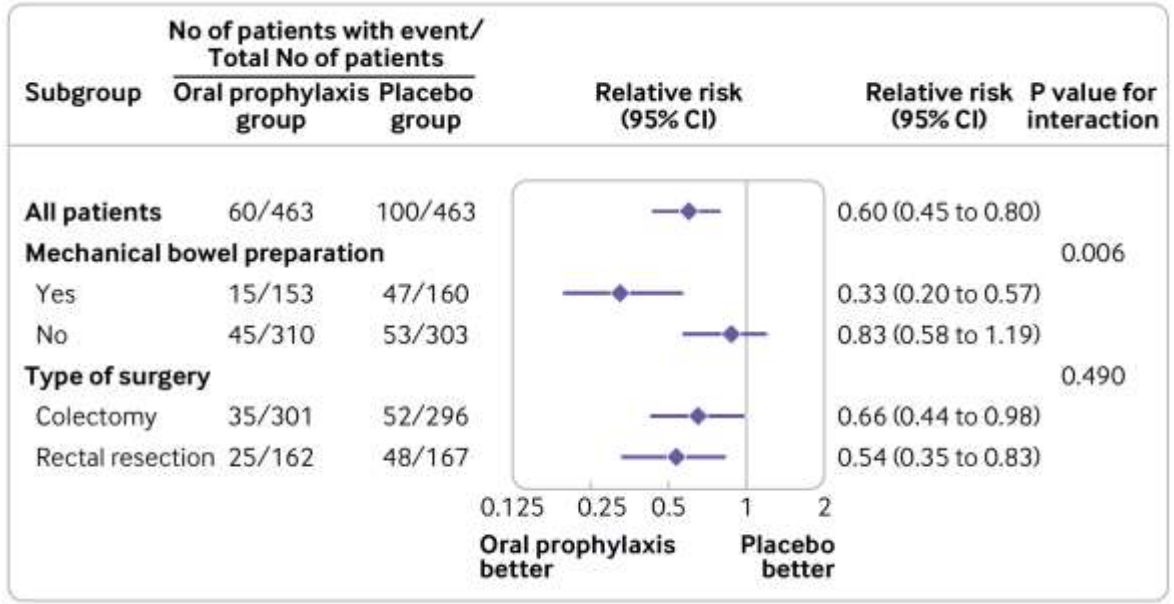


Table 3 | Primary and secondary outcomes of participants in modified intention-to-treat population. Values are numbers (percentages) unless stated otherwise

Outcomes	Oral prophylaxis group (n=463)	Placebo group (n=463)	Relative risk (95% CI)*	P value
Primary outcome				
Any surgical site infection within 30 postoperative days	60 (13.0)	100 (21.6)	0.60 (0.45 to 0.80)	0.001
Secondary outcomes†				
Superficial incisional infection	15 (3.2)	24 (5.2)	0.56 (0.29 to 1.09)	0.09
Deep incisional infection	22 (4.8)	37 (8.0)	0.54 (0.31 to 0.92)	0.03
Organ space infection	23 (5.0)	39 (8.4)	0.53 (0.31 to 0.91)	0.02
SIRS	96 (20.7)	122 (26.4)	0.79 (0.62 to 0.99)	0.045

Effect of oral antimicrobial prophylaxis on surgical site infection after elective colorectal surgery: multicentre, randomised, double blind, placebo controlled trial

BMJ 2022;379:e071476

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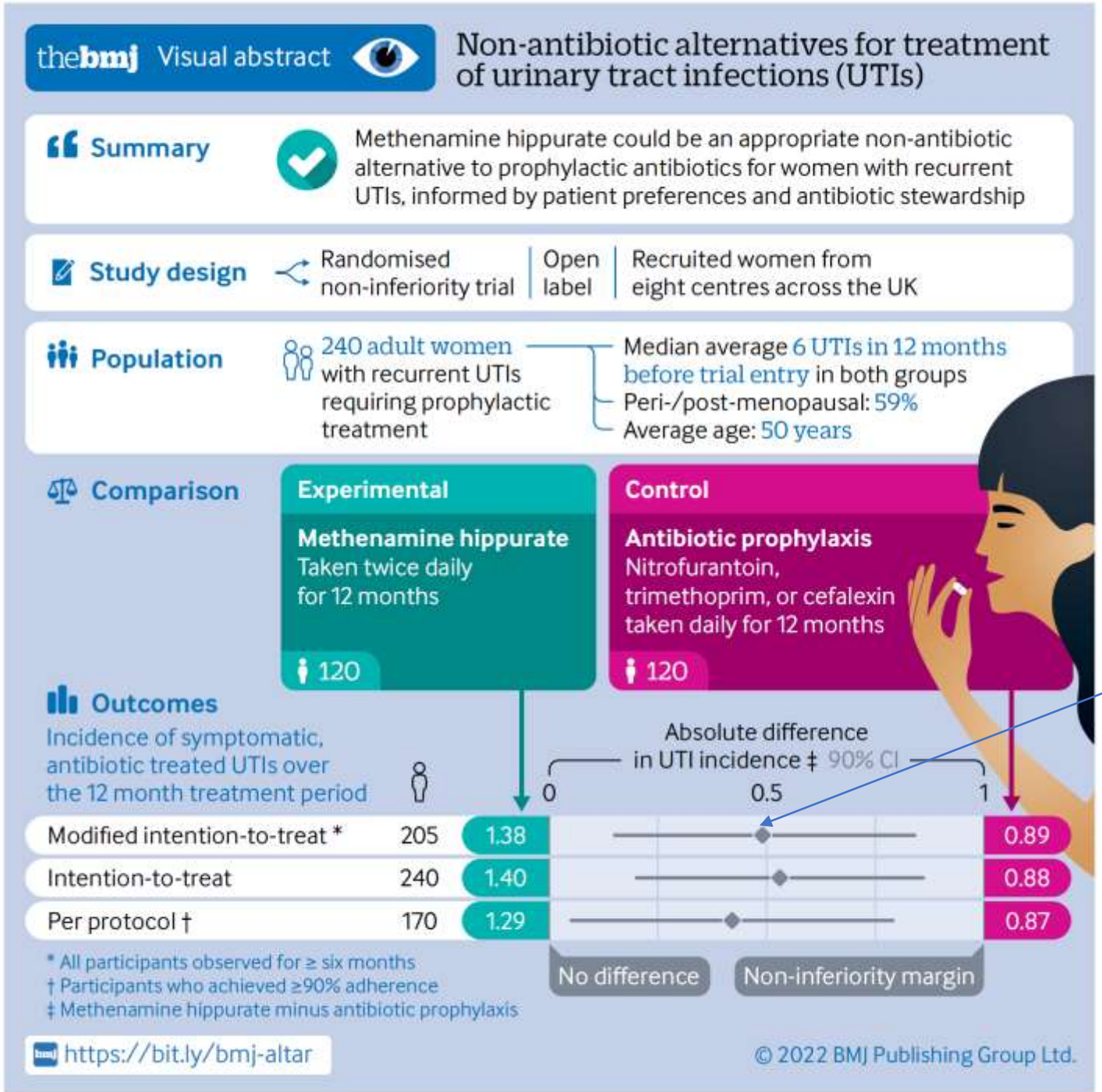
- WHY
  - Practice changing
- IMPLICATIONS
  - Adds to and simplifies previous observational studies and RCTs showing benefit of PO AB prophylaxis (often with >=2 drugs, plus post-op doses, and with no rectal surgery).
  - Addition of a long-acting PO nitroimidazole (e.g. tinidazole) should be routine in colorectal surgery (probably plus bowel prep as well)

Alternative to prophylactic antibiotics for the treatment of recurrent urinary tract infections in women: multicentre, open label, randomised, non-inferiority trial

BMJ 2022;376:e068229

Chris Harding,[1,4] Helen Mossop,[2] Tara Homer,[2] Thomas Chadwick,[2] William King,[2] Sonya Carnell,[3] Jan Lecouturier,[2] Alaa Abouhajar,[3] Luke Vale,[2] Gillian Watson,[3] Rebecca Forbes,[3] Stephanie Currer,[3] Robert Pickard,[4] Ian Eardley,[5] Ian Pearce,[6] Nikesh Thiruchelvam,[7] Karen Guerrero,[8] Katherine Walton,[9] Zahid Hussain,[10] Henry Lazarowicz,[11] Ased Ali[12]

- WHY
  - Challenges dogma. Guidelines recommend avoiding this.
- SUMMARY
  - At 8 UK centres, 240 adult women with recurrent UTIs were randomised to methenamine hippurate 1g BD or antibiotics daily for 12 months (open label). Antibiotic-treated UTIs occurred in 0.89/person-year in AB group vs 1.38 in the hippurate group, difference 0.49 (90% CI 0.15-0.84), non-inferior
  - Powered for non-inferiority, margin being one UTI episode/year



Delta number of UTIs per person per year

Note baseline rate=6.5 UTIs per person per year

Alternative to prophylactic antibiotics for the treatment of recurrent urinary tract infections in women: multicentre, open label, randomised, non-inferiority trial

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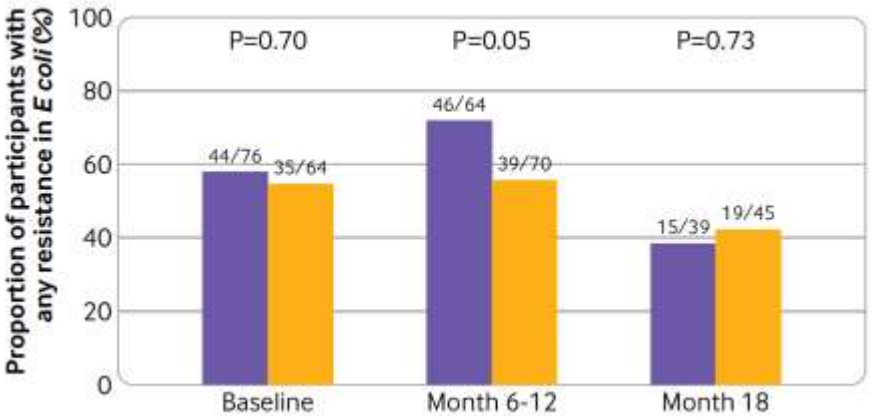
- Note culture-proven UTI:
  - 0.41 (95% CI 0.27 to 0.56) ABs
  - versus 0.53 (95% CI 0.34 to 0.72) for hippurate
  - i.e. Not significantly different
- Note vitamin C not given
  - Lowers urine pH and increases breakdown of MH to formaldehyde
- Note use of consumer advocates to choose non-inferiority margin



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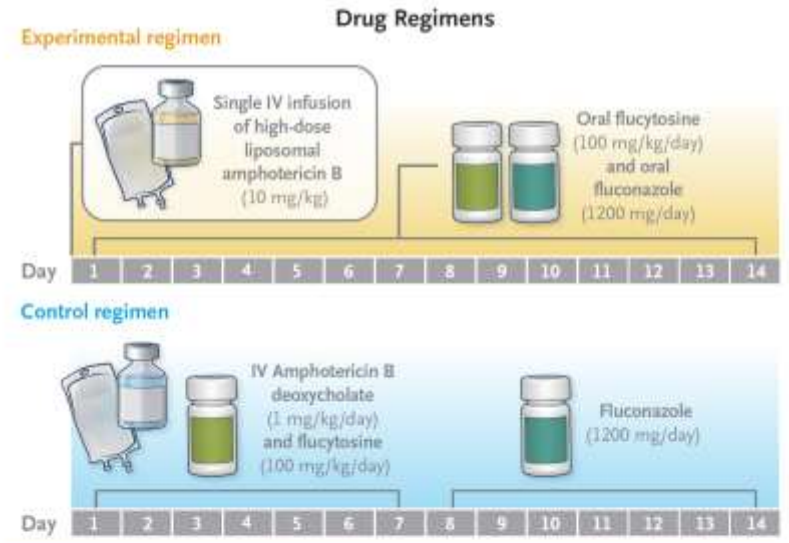
- WHY
  - Strengthens evidence for hippuric acid. Practice changing
- IMPLICATIONS
  - Although hippurate was not as effective as antibiotics (point estimate), it was non-inferior, and both strategies were very effective (both reduced incidence UTIs from 6 to about 1 per year)
  - It should be routinely offered first line before resorting to AB prophylaxis

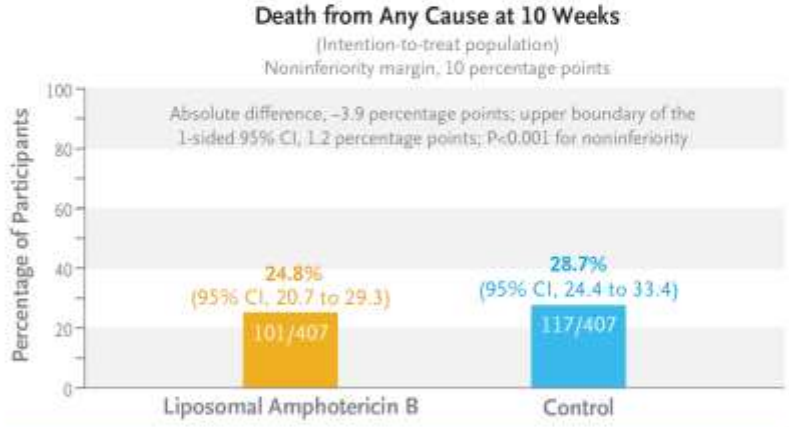
Single-Dose Liposomal Amphotericin B Treatment for Cryptococcal Meningitis

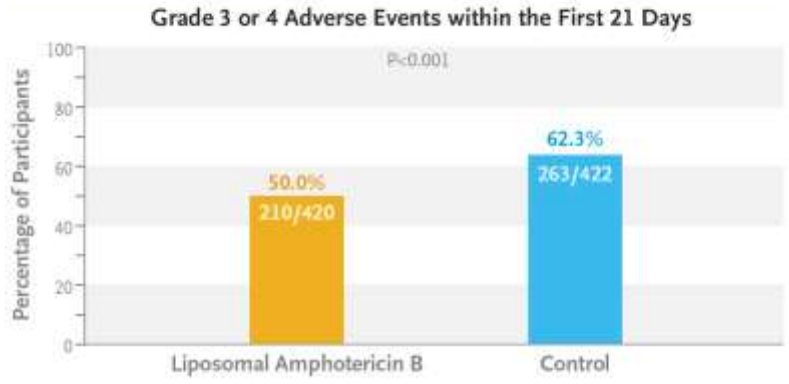
J.N. Jarvis, D.S. Lawrence, D.B. Meya, E. Kagimu, J. Kasibante, E. Mpoza, M.K. Rutakingirwa, K. Ssebambulidde, L. Tugume, J. Rhein, D.R. Boulware, H.C. Mwandumba, M. Moyo, H. Mzinganjira, C. Kanyama, M.C. Hosseinipour, C. Chawinga, G. Meintjes, C. Schutz, K. Comins, A. Singh, C. Muzoora, S. Jjunju, E. Nuwagira, M. Mosepele, T. Leeme, K. Siamisang, C.E. Ndhlovu, A. Hlupeni, C. Mutata, E. van Widenfelt, T. Chen, D. Wang, W. Hope, T. Boyer-Chammard, A. Loyse, S.F. Molloy, N. Youssouf, O. Lortholary, D.G. Lalloo, S. Jaffar, and T.S. Harrison, for the Ambition Study Group*

N Engl J Med 2022;386:1109-20.

- WHY
  - Paradigm-shifting plus practice-changing
- SUMMARY
  - 844 HIV-positive adults with cryptococcal meningitis in Africa (median CD4 count=26) were randomised to a single large dose of L-AmpB (10mg/kg) plus 14 days of 5FC+Fluconazole, OR “standard care” (7 days ABDC 1mg/kg/day + 5FC, then 7 days fluconazole). All cause mortality at 10 weeks was 24.8% (L-AmpB) versus 28.7% (SOC; difference -3.9%, upper bound non-inf margin=+1.2%)

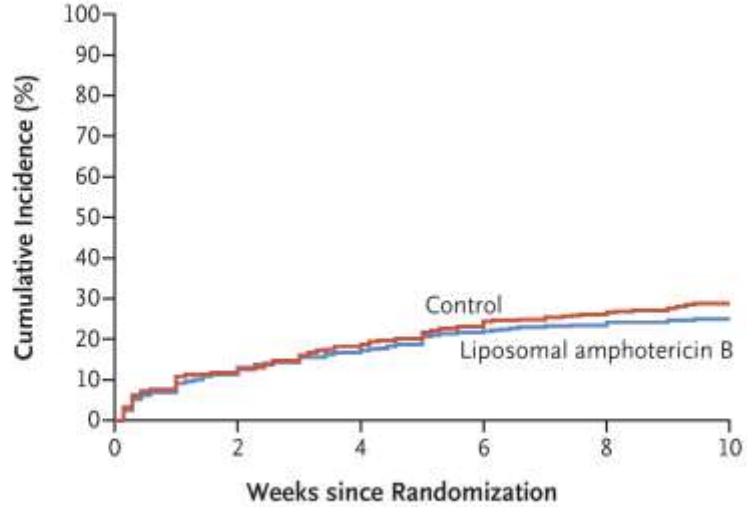






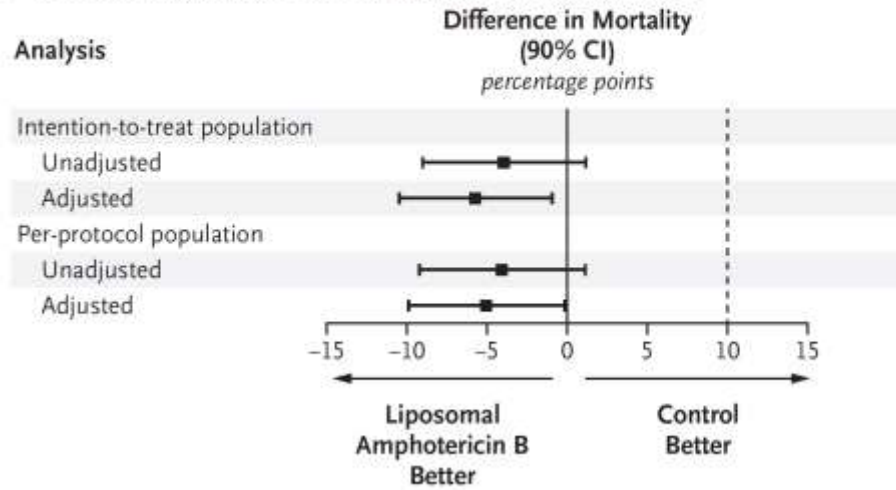
N Engl J Med 2022;386:1109-20.

A All-Cause Mortality at Wk 10



No. at Risk						
Control	407	359	332	311	299	288
Liposomal amphotericin B	407	360	337	317	310	304

B Noninferiority for Differences in All-Cause Mortality at Wk 10



Single-Dose Liposomal Amphotericin B Treatment for Cryptococcal Meningitis

J.N. Jarvis, D.S. Lawrence, D.B. Meya, E. Kagimu, J. Kasibante, E. Mpoza, M.K. Rutakingirwa, K. Ssebambulidde, L. Tugume, J. Rhein, D.R. Boulware, H.C. Mwandumba, M. Moyo, H. Mzinganjira, C. Kanyama, M.C. Hosseinipour, C. Chawinga, G. Meintjes, C. Schutz, K. Comins, A. Singh, C. Muzoora, S. Jjunju, E. Nuwagira, M. Mosepele, T. Leeme, K. Siamisang, C.E. Ndhlovu, A. Hlupeni, C. Mutata, E. van Widenfelt, T. Chen, D. Wang, W. Hope, T. Boyer-Chammard, A. Loyse, S.F. Molloy, N. Youssouf, O. Lortholary, D.G. Lalloo, S. Jaffar, and T.S. Harrison, for the Ambition Study Group*

N Engl J Med 2022;386:1109-20.

- WHY
  - Paradigm-shifting plus practice-changing
- IMPLICATIONS
  - One dose is better than 7!
  - WHO have already changed their guidelines
  - Likely also should apply to HIV positive people with *C.neoformans* in high-income countries (currently under debate – note SOC is different)
  - Should not be applied to *C.gattii* meningitis

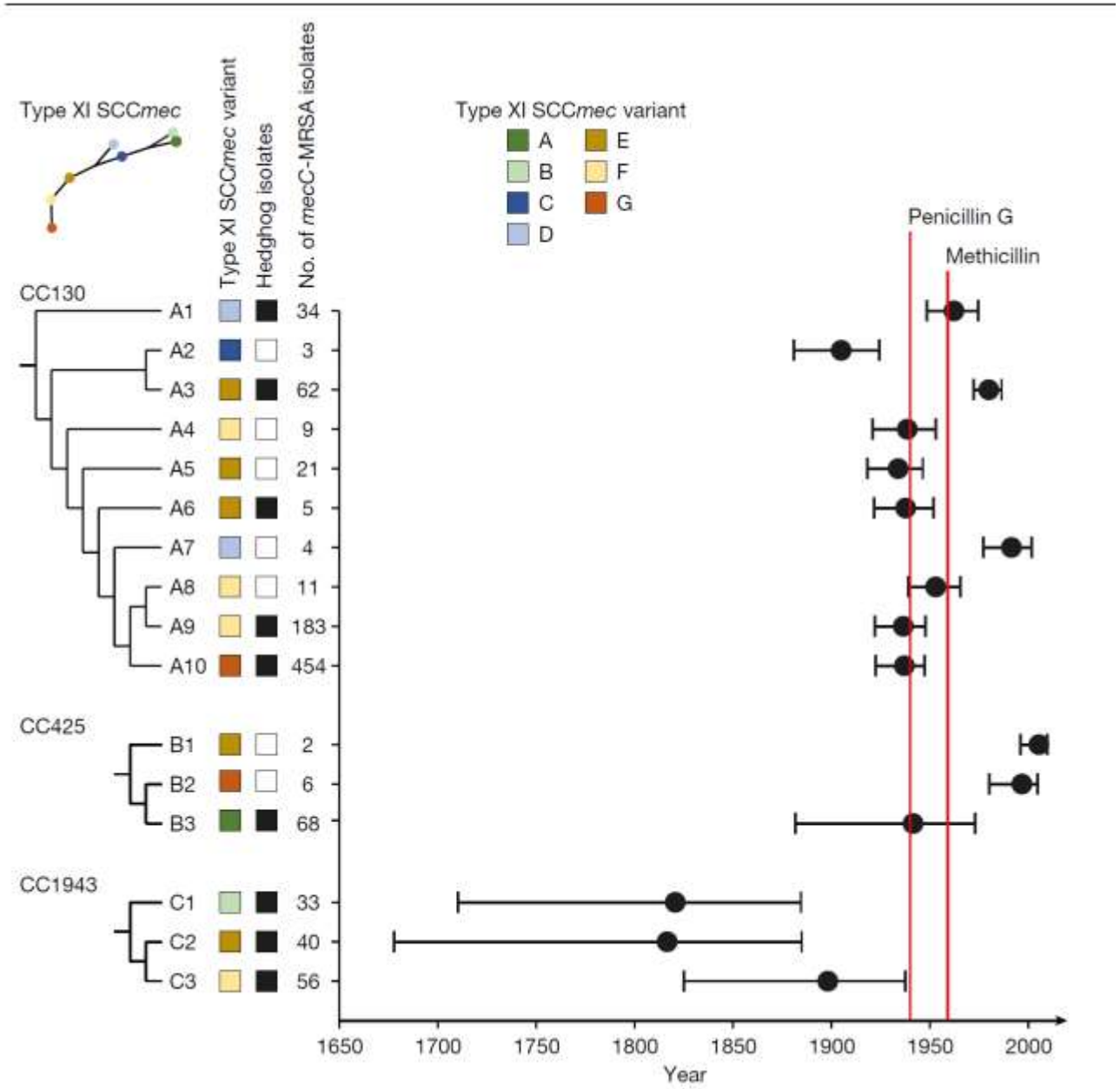
Article

Emergence of methicillin resistance predates the clinical use of antibiotics

Jesper Larsen[1,58], Claire L. Raisen[2,58], Xiaoliang Ba[3], Nicholas J. Sadgrove[3], Guillermo F. Padilla-González[3], Monique S. J. Simmonds[3], Igor Loncaric[4], Heidrun Kerschner[5], Petra Apfalter[5], Rainer Hartl[5], Ariane Deplano[6], Stien Vandendriessche[6,48], Barbora Černá Bolfíková[7], Pavel Hulva[8,9], Maiken C. Arendrup[1], Rasmus K. Hare[1], Céline Barnadas[1,10], Marc Stegger[1], Raphael N. Sieber[1], Robert L. Skov[11], Andreas Petersen[1], Øystein Angen[1], Sophie L. Rasmussen[12,13], Carmen Espinosa-Gongora[14], Frank M. Aarestrup[15], Laura J. Lindholm[16], Suvi M. Nykäsenoja[17], Frederic Laurent[18], Karsten Becker[19], Birgit Walther[20,47], Corinna Kehrenberg[20], Christiane Cuny[22], Franziska Layer[22], Guido Werner[23], Wolfgang Witte[22], Ivonne Stamm[23], Paolo Moroni[24,46], Hannah J. Jørgensen[25], Hermínia de Lencastre[26,27], Emilia Cercenado[28], Fernando García-Garrote[28,49], Stefan Börjesson[29,50], Sara Hæggman[30], Vincent Perreten[31], Christopher J. Teale[32], Andrew S. Waller[33,51,52], Bruno Pichon[34], Martin D. Curran[35], Matthew J. Ellington[36,53], John J. Welch[36], Sharon J. Peacock[37], David J. Seilly[2], Fiona J. E. Morgan[2,54], Julian Parkhill[2], Nazreen F. Hadjirin[2], Jodi A. Lindsay[38], Matthew T. G. Holden[39], Giles F. Edwards[40], Geoffrey Foster[41], Gavin K. Paterson[42], Xavier Didelot[43], Mark A. Holmes[2,55], Ewan M. Harrison[37,44,45,56] & Anders R. Larsen[1,56]

Nature | Vol 602 | 3 February 2022 | 135

- WHY
  - Dogma challenging, paradigm-shifting
- SUMMARY
  - Cross-sectional microbial genomic study of swabs from 276 hedgehogs across 10 European countries plus NZ, found MecC-MRSA in 101 of them (suggesting co-evolution). Phylogenetic analysis (against 786 human and ruminant isolates) found several lineages with MRCA from 1800-1950. A separate analysis of the common hedgehog dermatophyte, *Trichophyton erinacei*, revealed that it produces Penicillin G, accounting for natural selection pressure on *S.aureus*.


Type XI SCCmec
Type XI SCCmec variant
Hedghog isolates
No. of mecC-MRSA isolates
Type XI SCCmec variant
A
B
C
D
E
F
G
Penicillin G
Methicillin
CC130
A1 34
A2 3
A3 62
A4 9
A5 21
A6 5
A7 4
A8 11
A9 183
A10 454
CC425
B1 2
B2 6
B3 68
CC1943
C1 33
C2 40
C3 56
1650
1700
1750
1800
1850
1900
1950
2000
Year

Article

Emergence of methicillin resistance predates the clinical use of antibiotics

- WHY
  - Dogma challenging, paradigm-shifting
- IMPLICATIONS
  - Refutes the narrative that methicillin resistance emerged shortly after methicillin became available
  - Accords with other evidence that basically all antibiotic resistance mechanisms already exist in nature
  - Thus all new antibiotics need to be used very carefully since resistance is inevitable

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Effect of Selective Decontamination of the Digestive Tract on Hospital Mortality in Critically Ill Patients Receiving Mechanical Ventilation
A Randomized Clinical Trial

The SuDDICU Investigators for the Australian and New Zealand Intensive Care Society Clinical Trials Group

JAMA. 2022;328(19):1911-1921. doi:10.1001/jama.2022.17927

- WHY
  - Practice changing – depending on your baseline position!
- SUMMARY
  - Cluster cross-over RCT in 19 Australian ICUs, where 5,982 ventilated patients were randomised (at ICU-level) to receive SDD (PO+NG tobramycin, nystatin and colistin while intubated + 4 days of IV ceftriaxone) or standard care. In-hospital mortality was 27.0% in the SDD group and 29.1% in controls (OR 0.91, 95% CI 0.82-1.02). New MRO acquisition, positive blood cultures and total antibiotic use were all significantly less in the SDD group.

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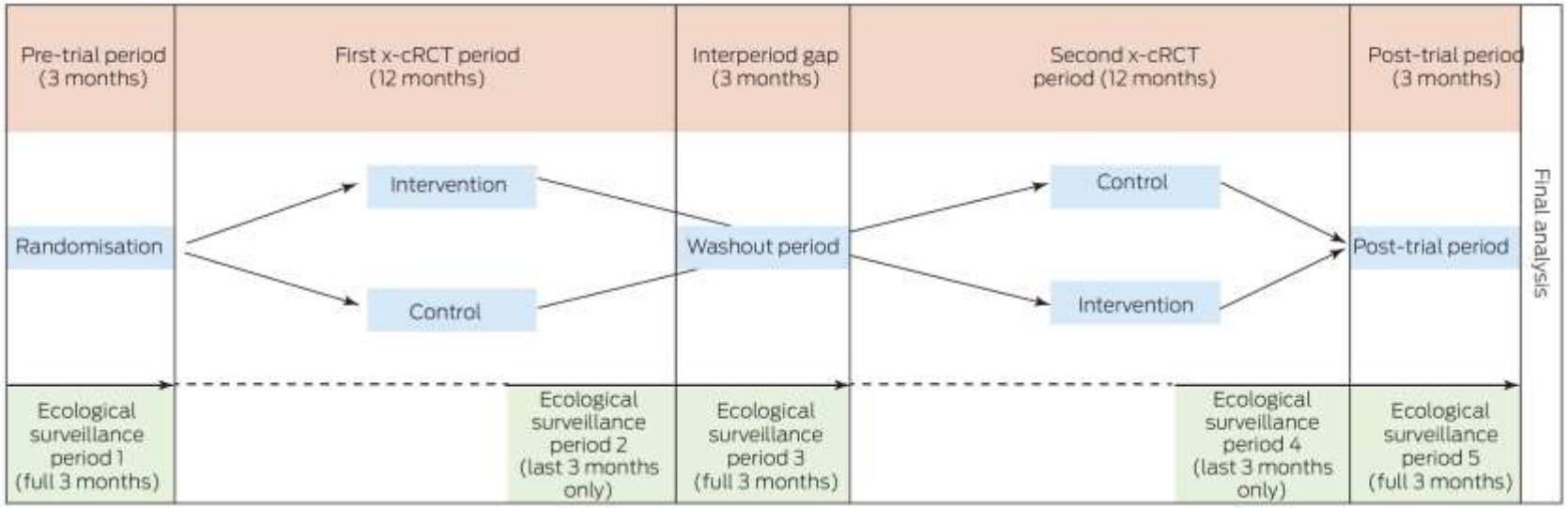
- WHY
  - Prac
- SUMM
  - Clus patients wer tin and colist al mor ., 95% CI 0.82 ntibiotic use were all significantly less in the SDD group.



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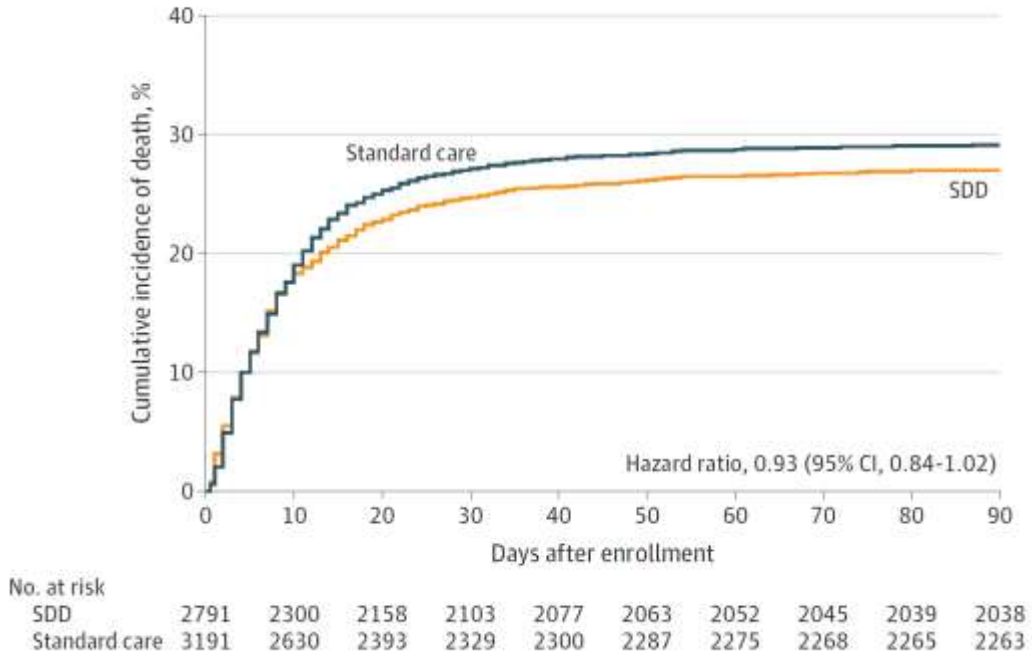
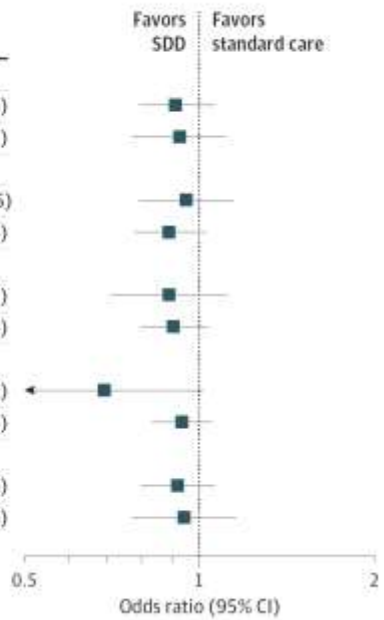
A Probability of in-hospital death within 90 d



B Subgroup analysis for in-hospital death within 90 d

Subgroup	No./total No. (%) SDD	No./total No. (%) Standard care	Difference, % (95% CI)	Odds ratio (95% CI)
Age, y				
≥61	493/1422 (34.7)	613/1660 (36.9)	-2.0 (-5.4 to 1.4)	0.92 (0.79 to 1.06)
<61	260/1369 (19.0)	315/1531 (20.6)	-1.3 (-4.2 to 1.6)	0.93 (0.77 to 1.11)
Sex				
Female	279/1012 (27.6)	343/1190 (28.8)	-0.7 (-4.9 to 3.6)	0.95 (0.79 to 1.15)
Male	474/1779 (26.6)	585/2001 (29.2)	-2.4 (-5.9 to 1.1)	0.89 (0.77 to 1.03)
Admission type				
Operative	163/730 (22.3)	229/923 (24.8)	-1.9 (-6.4 to 2.7)	0.89 (0.71 to 1.12)
Nonoperative	590/2061 (28.6)	699/2268 (30.8)	-1.9 (-5.2 to 1.5)	0.91 (0.80 to 1.04)
Trauma				
Yes	49/378 (13.0)	78/425 (18.4)	-4.2 (-9.8 to 1.3)	0.69 (0.47 to 1.02)
No	704/2413 (29.2)	850/2766 (30.7)	-1.3 (-4.5 to 1.9)	0.93 (0.83 to 1.05)
APACHE II/III score				
Less than median	556/1425 (39.0)	700/1698 (41.2)	-1.9 (-5.3 to 1.6)	0.92 (0.80 to 1.06)
At or above median	197/1366 (14.4)	228/1493 (15.3)	-0.5 (-3.1 to 2.1)	0.94 (0.77 to 1.16)



JAMA | Original Investigation

Association Between Selective Decontamination of the Digestive Tract and In-Hospital Mortality in Intensive Care Unit Patients Receiving Mechanical Ventilation

A Systematic Review and Meta-analysis

JAMA. 2022;328(19):1922-1934. doi:10.1001/jama.2022.19709

Naomi E. Hammond, RN, PhD; John Myburgh, MD, PhD; Ian Seppelt, MD; Tessa Garside, MBBS, PhD; Ruan Vlok, MBBS; Sajeev Mahendran, MD; Derick Adigbli, MD, PhD; Simon Finfer, MD; Ya Gao, MM; Fiona Goodman, BN; Gordon Guyatt, MD, PhD; Joseph Alvin Santos, PhD; Balasubramanian Venkatesh, MD; Liang Yao, MM; Gian Luca Di Tanna, PhD; Anthony Delaney, MBBS, PhD

- Pooled OR for mortality from 32 RCTs=0.91 (95% CrI 0.82-0.99)
- **Posterior probability that SDD reduces hospital mortality=99.3%**

Figure 3. Cumulative Incidence Plot for the Posterior Probability of the Risk Ratio (RR) for Mortality for Selective Decontamination of the Digestive Tract Compared With Standard Care

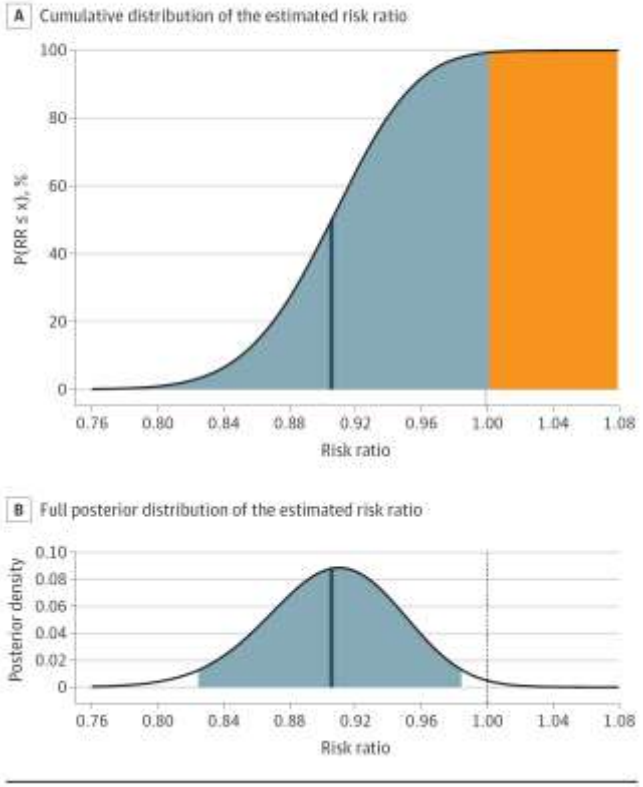
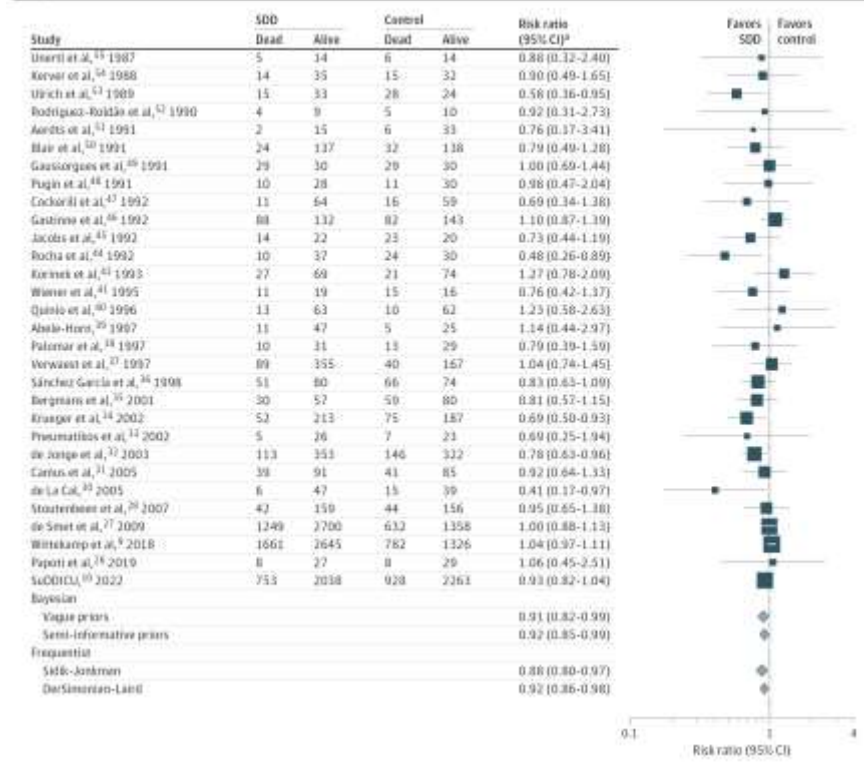


Figure 2. Forest Plot for Hospital Mortality for the Comparison Between Selective Decontamination of the Digestive Tract (SDD) Compared With Standard Care



JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

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- WHY
  - Practice changing – depending on your baseline position!
- IMPLICATIONS
  - SDD almost certainly reduces mortality in ventilated patients, but with a small effect size (~2% absolute mortality reduction)
  - No adverse signal on MRO acquisition but important questions remain
  - You could use this trial to justify your *a priori* opinion that SDD should never be used, OR that it should always be used!

RANDOMIZED CONTROLLED TRIAL

Antiseptic Skin Agents to Prevent Surgical Site Infection After Incisional Surgery

A Randomized, Three-armed Combined Non-inferiority and Superiority Clinical Trial (NEWSkin Prep Study)

Stephen Ridley Smith, PhD,✉ Jon Gani, MD,* Rosemary Carroll, BNurs,† Natalie Lott, MClinEpi,†*
Jacob Hampton, BMed, Christopher Oldmeadow, PhD, CReDITSS Unit,‡*
Mathew Clapham, BMath, CReDITSS Unit,§ and John Attia, PhD‡

- WHY
  - Practice changing, dogma challenging
- SUMMARY
  - 3-arm RCT conducted at 2 Newcastle hospitals where 3,213 adults having incisional surgery were randomised to pre-op skin prep with alcohol-betadine, alcohol-chlorhexidine, or aqueous betadine. In terms of surgical site infection, Alcohol-betadine was **non-inferior** to alcohol-chlorhexidine, and was **not superior** to aqueous betadine.

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TABLE 2. Outcomes by Treatment Arm

Characteristic	Class/Statistic	Chlorhexidine (2%,0.5%) and 70% Alcohol (C-Alc) (N = 1076)	Povidone-Iodine (10%) and 70% Alcohol (PI-Alc) (N = 1075)	Povidone-Iodine (10%) Aqueous (PI-Aq) (N = 1062)	Total	P Value
Post-op SSI	No	954 (88.91%)	958 (89.12%)	926 (87.44%)	2838 (88%)	0.4181
	Yes	119 (11.09%)	117 (10.88%)	133 (12.56%)	369 (12%)	
	Missing	3	0	3	6	

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- WHY
  - Practice changing, dogma challenging
- IMPLICATIONS
  - All major guidelines recommend alcohol-chlorhexidine, based on data from small, heterogeneous and/or industry-sponsored studies.
  - Aqueous betadine is cheaper (vs chlorhexidine) and safer (vs ETOH) and statistically non-inferior so should be included in guidelines as equal first choice
  - There may be a small benefit of ETOH on SSI, but a trial of >15,000 participants would be needed to demonstrate it (if it is true).

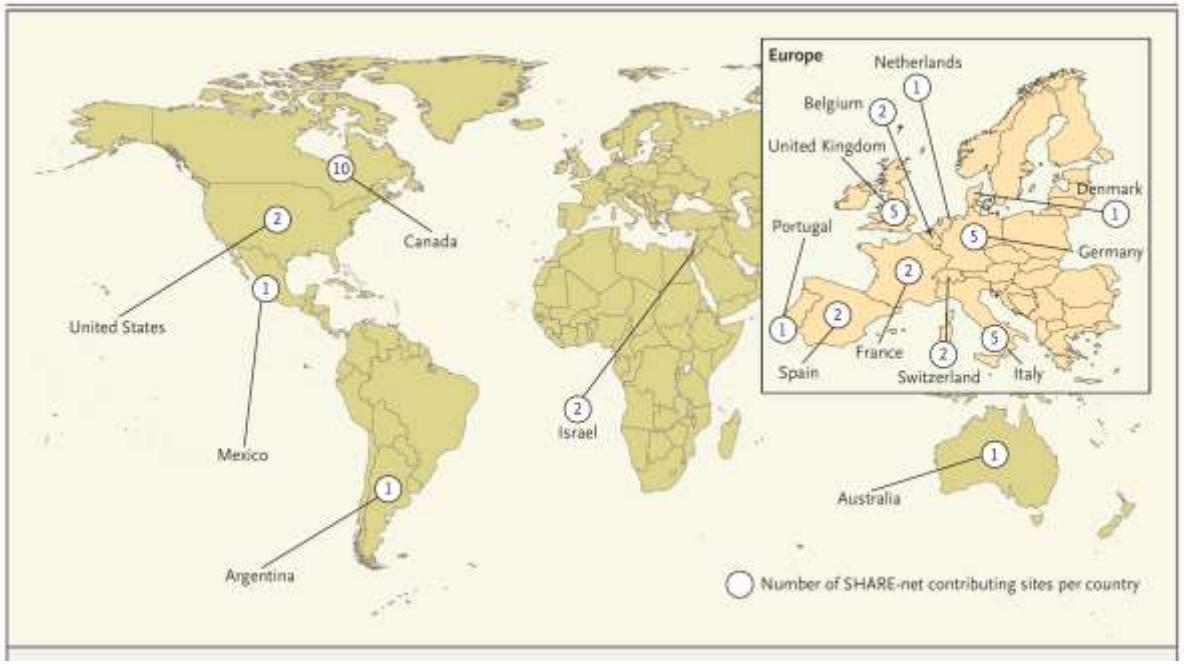
Monkeypox Virus Infection in Humans across 16 Countries — April–June 2022

J.P. Thornhill, S. Barkati, S. Walmsley, J. Rockstroh, A. Antinori, L.B. Harrison, R. Palich, A. Nori, I. Reeves, M.S. Habibi, V. Apea, C. Boesecke, L. Vandekerckhove, M. Yakubovsky, E. Sendagorta, J.L. Blanco, E. Florence, D. Moschese, F.M. Maltez, A. Goorhuis, V. Pourcher, P. Migaud, S. Noe, C. Pintado, F. Maggi, A.-B.E. Hansen, C. Hoffmann, J.I. Lezama, C. Mussini, A.M. Cattelan, K. Makofane, D. Tan, S. Nozza, J. Nemeth, M.B. Klein, and C.M. Orkin, for the SHARE-net Clinical Group*

N Engl J Med 2022;387:679-91.

- WHY
  - Paradigm-shifting – a new and unexpected pandemic
- SUMMARY
  - Before April 2022, monkeypox (now known as “Mpox”) was rare and sporadic outside Africa. Since then, a worldwide outbreak is ongoing. This article describes the clinical features of the 528 infections across 16 countries over the first 8 weeks of the outbreak.


A Evolution of Cutaneous Lesions
a1: Day 11, PCR positive
a2: Day 21, PCR negative
c1: Day 11
b1: Day 6, PCR positive
b2: Day 21, PCR positive
b3: Day 28, PCR negative
c2: Day 21
Day –4
Condomless sexual contact in MSM
Day 0
Single genital lesion treated with IM penicillin as suspected syphilis
Days 4–6
Feeling unwell; additional lesions develop
Day 11
Confirmed monkeypox: facial and genital lesions PCR positive
Day 21
Follow-up 1: facial lesions PCR negative, genital lesions PCR positive
Day 28
Follow-up 2: genital lesions PCR negative


Europe
Netherlands
Belgium
United Kingdom
Denmark
Portugal
Germany
France
Switzerland
Italy
Spain
Canada
United States
Mexico
Argentina
Israel
Australia
Number of SHARE-net contributing sites per country


a
b
c
d
e
f
g
h

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N Engl J Med 2022;387:679-91.

- 98% in gay or bisexual men
- 41% HIV co-infection
- 95% sexually acquired
- 95% presented with rash (mostly <10 lesions)
- Systemic features common (fever 62%, myalgia 31%, headache 27%)
- Hospital admission in 13%, no deaths

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N Engl J Med 2022;387:679-91.

- WHY
  - Paradigm-shifting – a new and unexpected pandemic
- IMPLICATIONS
  - As of 8/12/22, there were 144 cases in Australia, >21,000 in Europe and >29,000 in the USA.
  - New pandemics happen when and how we least expect it!