Fake news

Vad är sant, nästan sant och vad vågar man tro/lita på

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Health Policy and Technology
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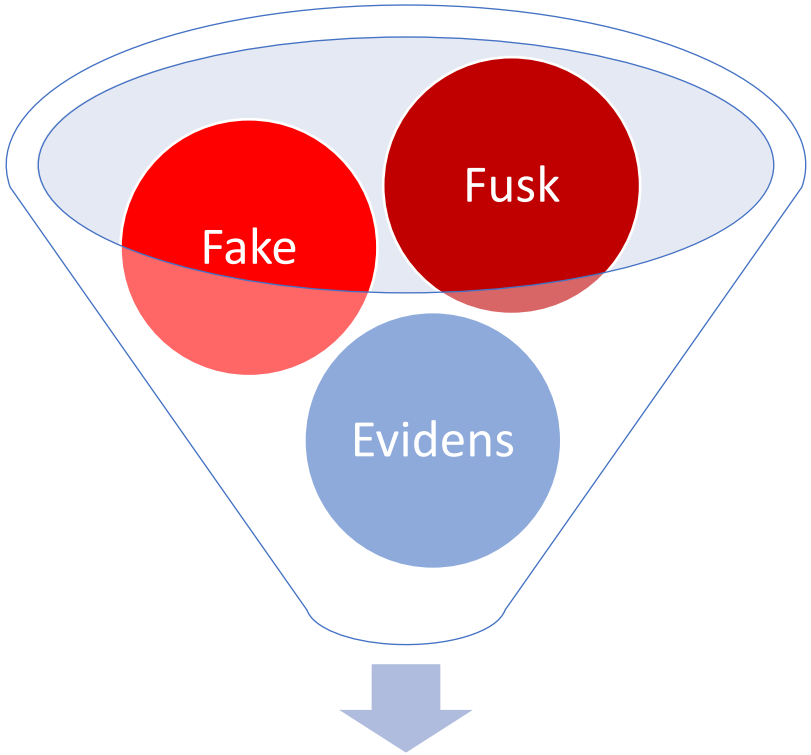
The spread of medical fake news in social media – The pilot quantitative study

Author links open overlay panelPrzemyslaw M.Waszakab WioletaKasprzycka-WaszakcAlicjaKubanekd
https://doi.org/10.1016/j.hlpt.2018.03.002Get rights and content

Highlights

- ***Fake, misleading and over-interpreted health news*** in social media is the potential threat for public health.
- Top links related to common diseases in 40% cases contained misinformation and were shared 451 272 times in the period 2012–2017.
- Analyzing social media could contribute to identification and take action on leading web pages polluting medical information.

Vad vet vi?



News Blog

Breaking Through The Medical Fake News Bubble

November 27, 2018 | by Frank Otto

As recently as 15 years ago, Americans had a fairly limited choice when it came to the news. In many towns, there was one, maybe two, newspapers, the trio of three-letter networks with their news programs. Those with cable might have been getting their first taste of the 24-hour news cycle with the likes of *CNN*. Those without might have used one of their AM presets on a news station. Although you could turn the dial or flip from station to station, chances are most stories shared a lot of the same details and images.

The digital age, however, has made that a distant memory, its arrival bringing a plethora of options beyond the traditional sources—including a host of varying interpretations for each story. That new media world, and the fast-moving spread of news over social media, that has made "fake news" a ubiquitous term.

The Trump Effect: With No Peer Review, How Do We Know What to Really Believe on Social Media?

Justin T. Brady, MD[1] Molly E. Kelly, BA[1] Sharon L. Stein, MD[1]

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Clin Colon Rectal Surg 2017;30:270–276.

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Abstract

Social media is a source of news and information for an increasing portion of the general public and physicians. The recent political election was a vivid example of how social media can be used for the rapid spread of "fake news" and that posts on social media are not subject to fact-checking or editorial review. The medical field is susceptible to propagation of misinformation, with poor differentiation between authenticated and erroneous information. Due to the presence of social "bubbles," surgeons may not be aware of the misinformation that patients are reading, and thus, it may be difficult to counteract the false information that is seen by the general public. Medical professionals may also be prone to unrecognized spread of misinformation and must be diligent to ensure the information they share is accurate.

Keywords

- social media
- surgery
- misinformation

The Trump Effect: With No Peer Review, How Do We Know What to Really Believe on Social Media?

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Keywords

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Retractions in the scientific literature: do authors deliberately commit research fraud?

R Grant Steen

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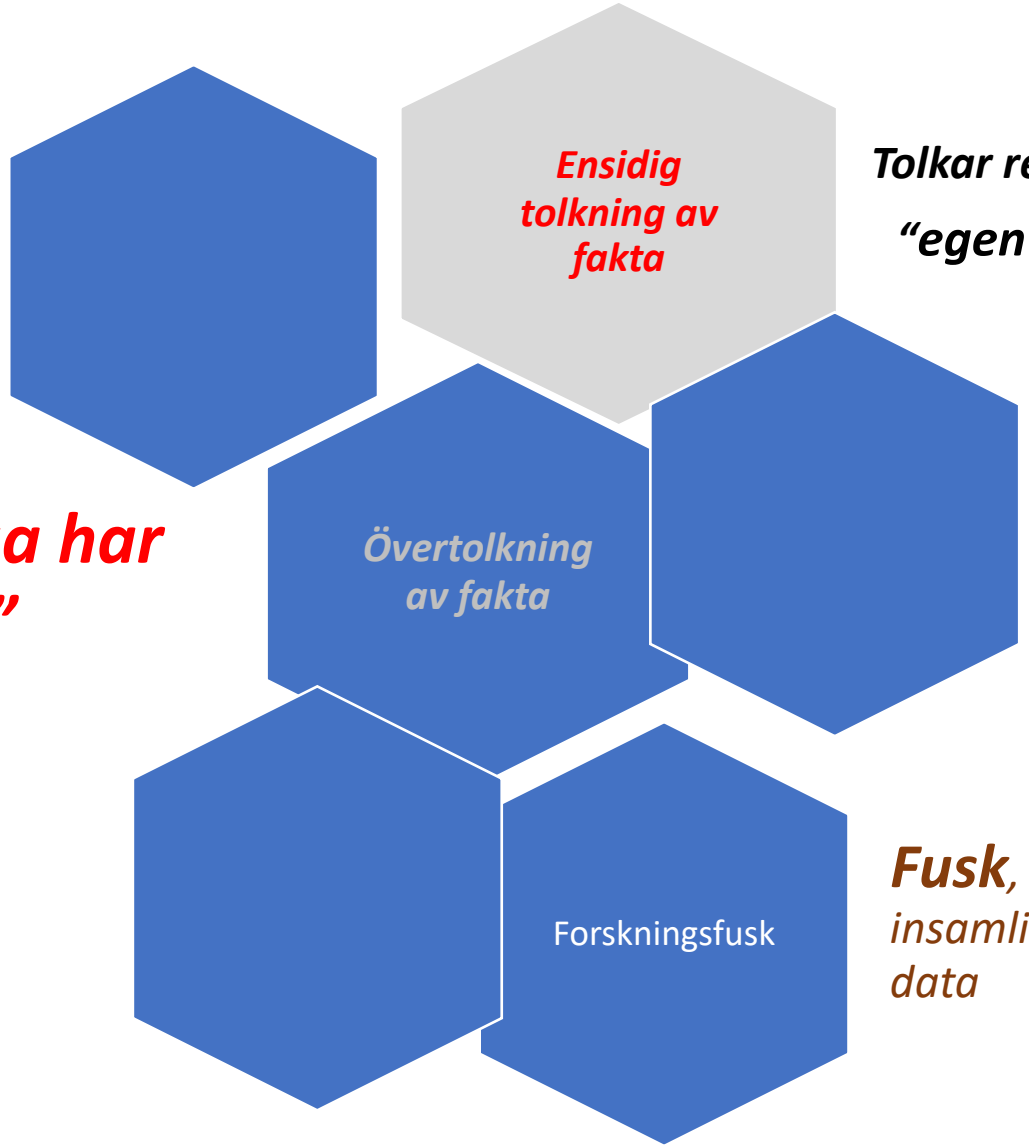
15 November 2010

ABSTRACT

Background Papers retracted for fraud (data fabrication or data falsification) may represent a deliberate effort to deceive, a motivation fundamentally different from papers retracted for error. It is hypothesised that fraudulent authors target journals with a high impact factor (IF), have other fraudulent publications, diffuse responsibility across many co-authors, delay retracting fraudulent papers and publish from countries with a weak research infrastructure.

random and to focus on a few dishonest authors or a few poorly-edited journals or a few countries in which research infrastructure is weak. We tested the 'inadvertent error' hypothesis by determining whether retractions are randomly distributed throughout the literature and found evidence that retractions are, in fact, clustered. Retracted papers are more likely to appear in journals with a high impact factor (IF), are more likely to involve certain 'repeat offender' authors and are more likely to

Fakta



Tolkar resultaten till sin “egen ståndpunkt”

Ämne som många har “åsikter om”

Fusk*, oegentligheter vid insamling/sammanställning av data*

Hofmann *BMC Medical Ethics* (2018) 19:4
DOI 10.1186/s12910-018-0243-z

BMC Medical Ethics

DEBATE Open Access

Fake facts and alternative truths in medical research

Bjørn Hofmann[1,2]

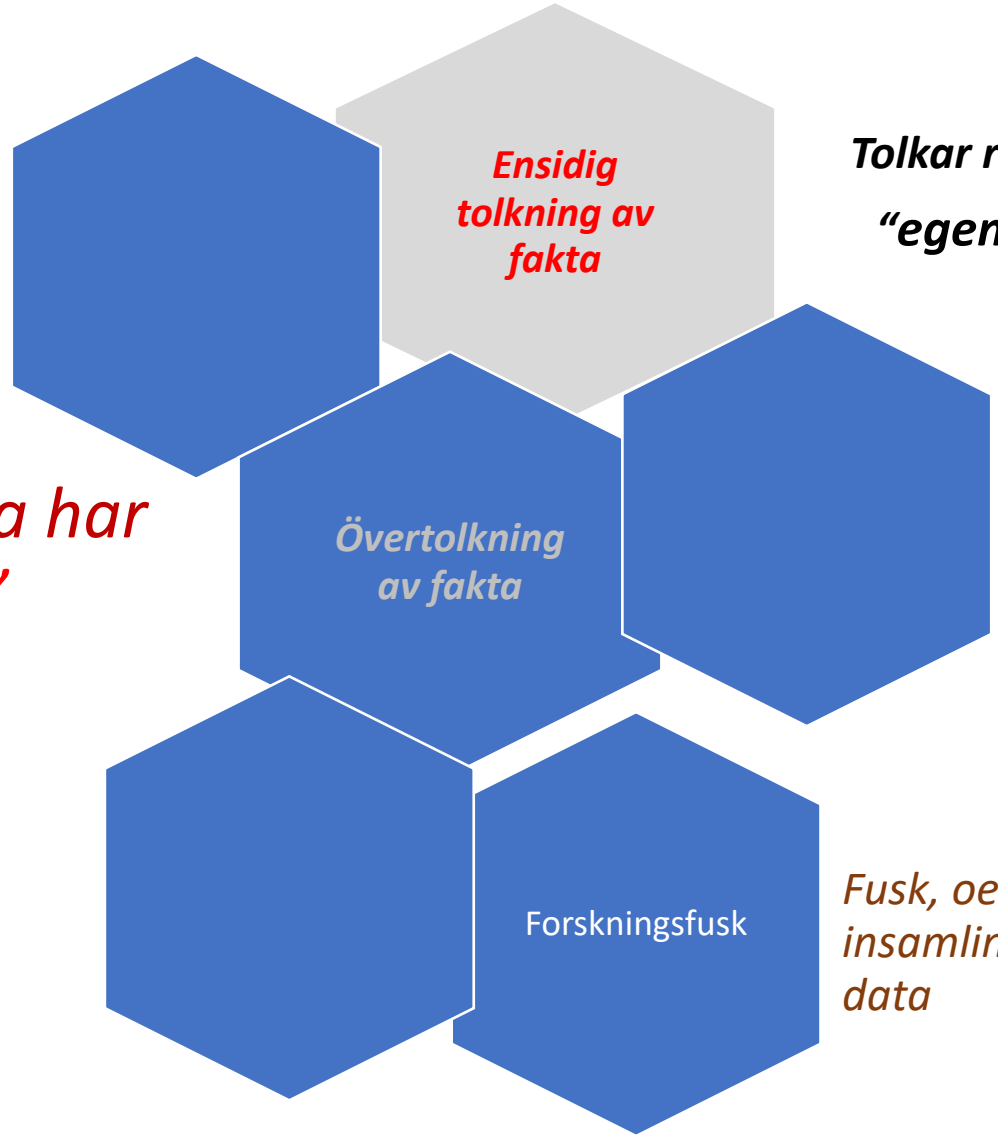
Abstract

Background: Fake news and alternative facts have become commonplace in these so-called "post-factual times." What about medical research - are scientific facts fake as well? Many re ent disclosures have fueled the claim that ngage in *facting interests* instead of ed *polarised research*, where some ve results on the same issue – even when based on the same data. In order to identify and address this challenge the objective of this study is to investigate how polarised research produce "polarised facts." Mammography screening for breast cancer is applied as an example.

Polarised reasearch

Fakta

Ämne som många har
"åsikter om"

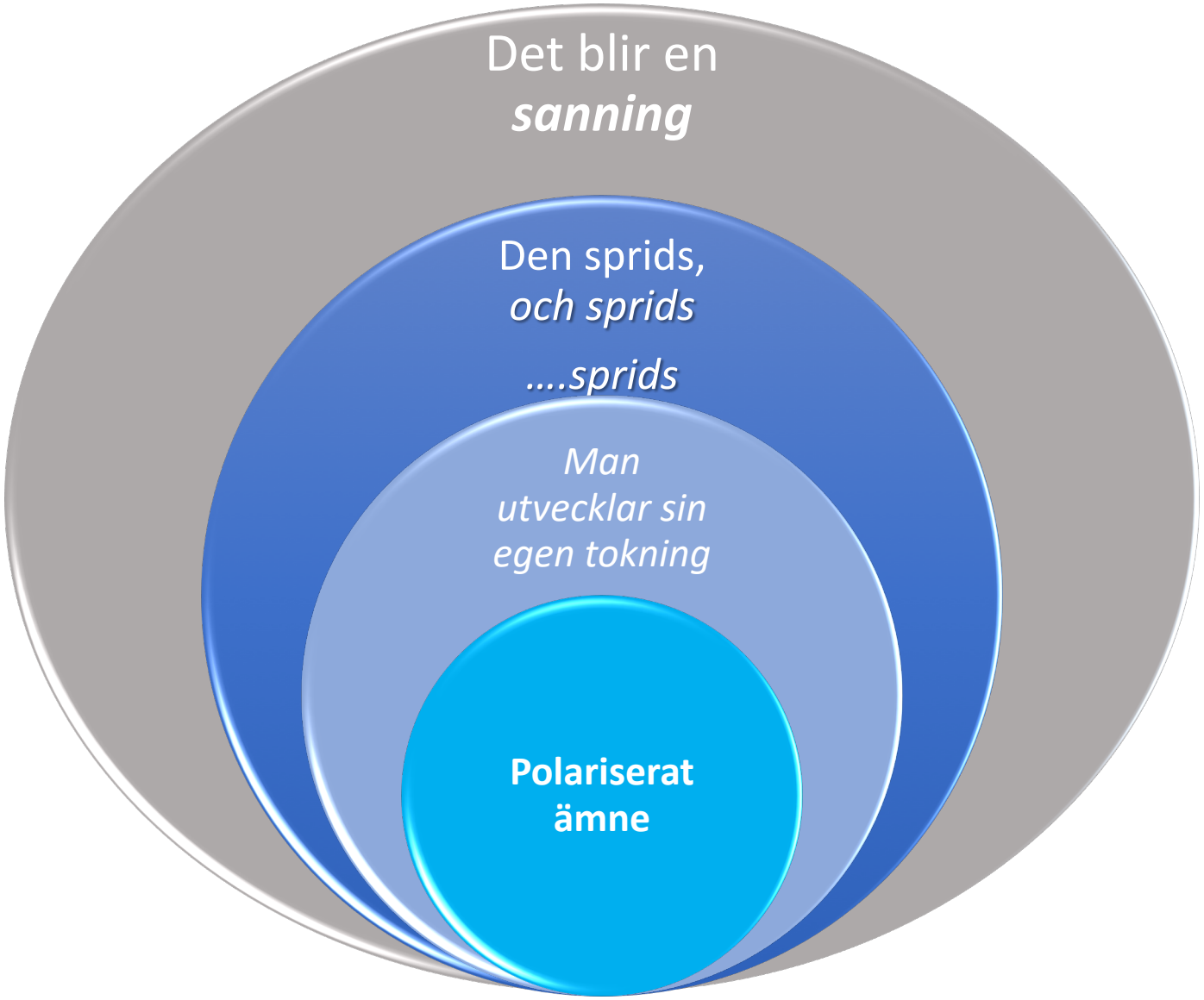


Tolkar resultaten till sin

"egen ståndpunkt"

Fusk, oegentligheter vid insamling/sammanställning av data

Växa fram


Det blir en
sanning
Den sprids,
och sprids
….sprids
Man utvecklar sin egen tokning
Polariserat ämne

Education and debate

Redan 2004 i BJA

Grading quality of evidence and strength of recommendations

Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) Working Group

Clinical guidelines are only as good as the evidence and judgments they are based on. The GRADE approach aims to make it easier for users to assess the judgments behind recommendations

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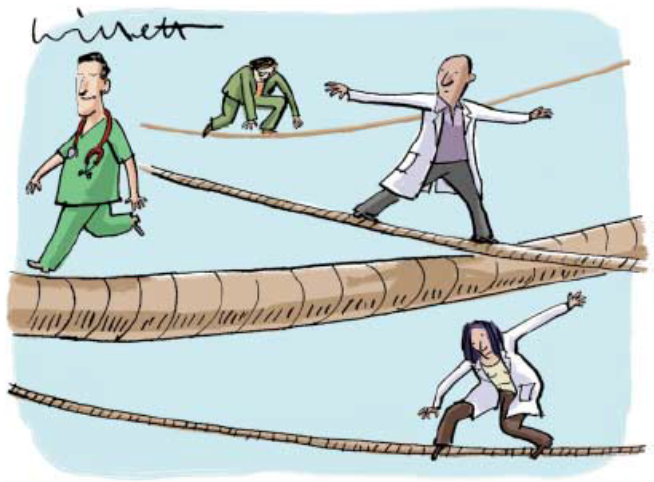
BMJ 2004;328:1490–4

Healthcare workers using clinical practice guidelines and other recommendations need to know how much confidence they can place in the recommendations. Systematic and explicit methods of making judgments can reduce errors and improve communication. We have developed a system for grading the quality of evidence and the strength of recommendations that can be applied across a wide range of interventions and contexts. In this article we present a summary of our approach from the perspective of users of guidelines.



What makes a good guideline?

Judgments about evidence and recommendations are complex. Consider, for example, the choice between

Box 2: Criteria for assigning grade of evidence

Type of evidence
Randomised trial = high
Observational study = low
Any other evidence = very low

Decrease grade if:

- Serious (– 1) or very serious (– 2) limitation to study quality
- Important inconsistency (– 1)
- Some (– 1) or major (– 2) uncertainty about directness
- Imprecise or sparse data (– 1)
- High probability of reporting bias (– 1)

Increase grade if:

- Strong evidence of association—significant relative risk of >2 (<0.5) based on consistent evidence from two or more observational studies, with no plausible confounders (+1)
- Very strong evidence of association—significant relative risk of >5 (<0.2) based on direct evidence with no major threats to validity (+2)
- Evidence of a dose response gradient (+1)
- All plausible confounders would have reduced the effect (+1)

Summary points

Organisations have used various systems to grade the quality of evidence and strength of recommendations

Differences and shortcomings in these grading systems can be confusing and impede effective communication

A systematic and explicit approach to making judgments about the quality of evidence and the strength of recommendations is presented

The approach takes into account study design, study quality, consistency, and directness in judging the quality of evidence for each important outcome

The balance between benefits and harms, quality of evidence, applicability, and the certainty of the baseline risk are all considered in judgments about the strength of recommendations

Box 3: Definitions of grades of evidence

High = Further research is unlikely to change our confidence in the estimate of effect.
Moderate = Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low = Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low = Any estimate of effect is very uncertain.

Faktaruta 10.1
Preliminär evidensstyrka baserad på studiedesign och skäl för ned- eller uppgradering av evidensgraderingen.

SBU

Preliminär evidensstyrka för interventionsstudier:

Evidensstyrka	Studiedesign
Stark (⊕⊕⊕⊕)	Randomiserade studier
Måttligt stark (⊕⊕⊕○)	
Begränsad (⊕⊕○○)	Observationsstudier; kohort- och fall–kontrollstudier
Otillräckligk (⊕○○○)	Fallstudier

Sedan kan evidensstyrkan sänkas eller höjas enligt nedanstående:

Sänk gradering om	Höj gradering om
• Brister i studiekvalitet (maximalt –2) • Bristande överensstämmelse mellan studierna (maximalt –2) • Brister i överförbarhet/relevans (maximalt –2) • Bristande precision (maximalt –2) • Hög sannolikhet för publikationsbias (maximalt –1)	• Stora effekter och inga sannolilka confounders (maximalt –2) • Tydligt dos–responssamband (maximalt –1) • Confounders som inte är med i analysen borde leda till bättre behandlingsresultat i kontrollgruppen, dvs. hög sannolikhet att effekten underskattas

Faktaruta 10.2
Tillförlitlighet enligt GRADE-systemet (uppdaterad 2018).

En systematisk litteraturöversikt väger samman resultat från olika studier. SBU använder det internationellt utarbetade GRADE-systemet (http://www.gradeworkinggroup.org) för att göra en strukturerad bedömning av tillförlitligheten (evidensstyrkan) hos varje sammanvägt delresultat (utfall) i översikten. Den sakliga grunden för värderingen ska redovisas tydligt så att det är möjligt för andra att granska och göra sin egen bedömning.

Bedömningen av tillförlitlighet innefattar, för varje sammanvägt delresultat:

- hur stor risken är för systematiska fel i studierna (engelska: *bias*, snedvridning),
- hur mycket studierna motsäger varandra (engelska: *inconsistency*, bristande samstämmighet),
- i vilken grad som de studerade förhållandena skiljer sig från den aktuella frågan (engelska: *indirectness*, bristande överförbarhet),
- hur stor den statistiska osäkerheten är (engelska: *imprecision*, bristande precision) samt
- hur stor risken är för snedvriden publicering av studier och resultat (engelska: *publication bias*).

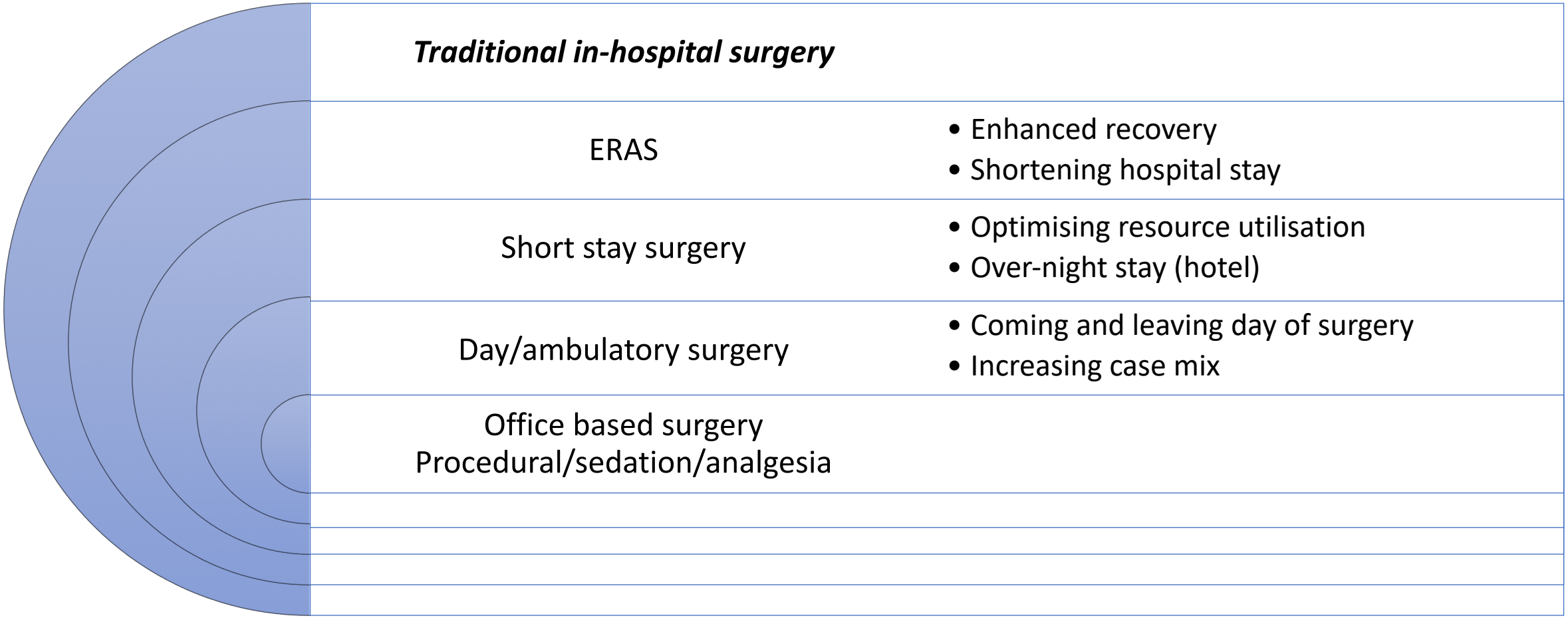
Hänsyn tas också till storleken på delresultatet, eventuellt samband mellan dos och respons samt i vilken riktning som tänkbara snedvridande faktorer kan förväntas verka.

Tillförlitligheten graderas i fyra nivåer:

- Det sammanvägda resultatet har **hög tillförlitlighet** (⊕⊕⊕⊕)
  (Bedömningen är att resultatet stämmer)
- Det sammanvägda resultatet har **måttlig tillförlitlighet** (⊕⊕⊕◯)
  (Bedömningen är att det är troligt att resultatet stämmer)
- Det sammanvägda resultatet har **låg tillförlitlighet** (⊕⊕◯◯)
  (Bedömningen är att det är möjligt att resultatet stämmer)
- Det sammanvägda resultatet har **mycket låg tillförlitlighet** (⊕◯◯◯)
  (Det går inte att bedöma om resultatet stämmer)

När det helt saknas studier som uppfyller inklusionskriterierna anges "studier saknas", utan gradering av tillförlitligheten.

The evolution of surgical pathways



Klassiska debattämnen

- Inhalation eller intravenös anestesi
  - Hur snabbt återhämtar man sig
  - Hur påverkas antalet patienter som inte upplever illamånede
  - Påverkar anestesivalet outcome
    - Hjärtskyddande effecter
    - Njurskyddande effecter
    - Risk för kognitiv påverkan
    - Påverkan på cancer/metastasering
- FiO2 0.8 eller 0.3?
  - SSI
  - Atelektaser
  - Lungskada
- Vätska liberal eller snålt
  - Ödem
  - Njurskada
  - PONV

Oui ou Non? Controversies in Ambulatory Anesthesia

- By Adaora M. Chima, MBBS, MPH, *from the **IARS, AUA and SOCCA 2019** Annual Meetings**

It was a congenial battle of the wills during the SAMBA Innovative Session: Wait, You Can't Do That: Or Can You? Controversies in Ambulatory Anesthesia as Drs. Girish Joshi,

1. Guidelines requiring escorts for patients discharged in ambulatory setting,
2. NPO guidelines for ambulatory anesthesia,
3. The need for upper age limits in ambulatory care settings.

The first debate centered around guidelines requiring that **escorts accompany patients** when discharged from the ambulatory setting with Dr. Urman serving as the moderator for the discussion.

- *Dr. Niraja Rajan held the position that patient escorts are essential to discharge planning in the ambulatory setting. Impaired driving and increased risk of accidents have been demonstrated for up to 17 hours in the recovery period following sedation or general anesthesia, especially with the use of benzodiazepines.*
- *A survey of post-operative patients also revealed >90% incidence of amnesia when asked to recall post-operative instructions given at discharge.*
- *Thirty-one percent reported requiring the help of a caregiver.*

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSIONS:**
- The routine use of high perioperative FIO2 in a general surgical population ***does not reduce the overall incidence of SSI and may have predominantly deleterious effects***. General surgical patients should continue to receive oxygen with cardiorespiratory physiology as the principal determinant.
  - JAMA. 2004 Jan 7;291(1):79-87.

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSIONS:**
- ***Patients receiving supplemental inspired oxygen had a significant reduction in the risk of wound infection***. Supplemental oxygen appears to be an effective intervention to reduce SSI in patients undergoing colon or rectal surgery.
  - JAMA. 2005 Oct 26;294(16):2035-42

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSIONS:**
- ***Patients receiving supplemental oxygen have a significant reduction in risk of surgical site infection***.
  - Can J Surg. 2007 Jun;50(3):214-6.

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSION:**
- ***Supplemental 80% FiO2 reduced postoperative SSI with few risks to the patient and little associated cost***.
  - Am J Surg. 2014 Nov;208(5):719-726.
  - **RETRACTED ARTICLE**

Falskt, sant, nästan sant, nog inte optimalt

- **AUTHORS' CONCLUSIONS:**
- ***As the risk of adverse events, including mortality, may be increased by a fraction of inspired oxygen of 60% or higher, and as robust evidence is lacking for a beneficial effect of a fraction of inspired oxygen of 60% or higher on surgical site infection***, our overall results suggest that evidence is insufficient to support the routine use of a high fraction of inspired oxygen during anaesthesia and surgery. Given the risk of attrition and outcome reporting bias, as well as other weaknesses in the available evidence, further randomized clinical trials with low risk of bias in all bias domains, including a large sample size and long-term follow-up, are warranted.
  - Cochrane Database Syst Rev. 2015 Jun 25;(6):CD008884.

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSIONS:**
- ***Supplemental 80% FiO2 during and for 6 h after open surgery for PPU, which reduces post-operative SSI***, should be considered part of ongoing quality improvement activities related to surgical care, with few risks to the patient and little associated cost.
  - Surg Infect (Larchmt). 2016 Feb;17(1):106-13.

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSION:**
- ***Increased intra-operative inspired fraction of oxygen was not associated with a reduction in SSI***. These findings do not support the practice of increasing F_IO_2 for the purpose of SSI reduction in patients with clean surgical incisions.
  - Surg Infect (Larchmt). 2018 May/Jun;19(4):403-409.

Falskt, sant, nästan sant, nog inte optimalt

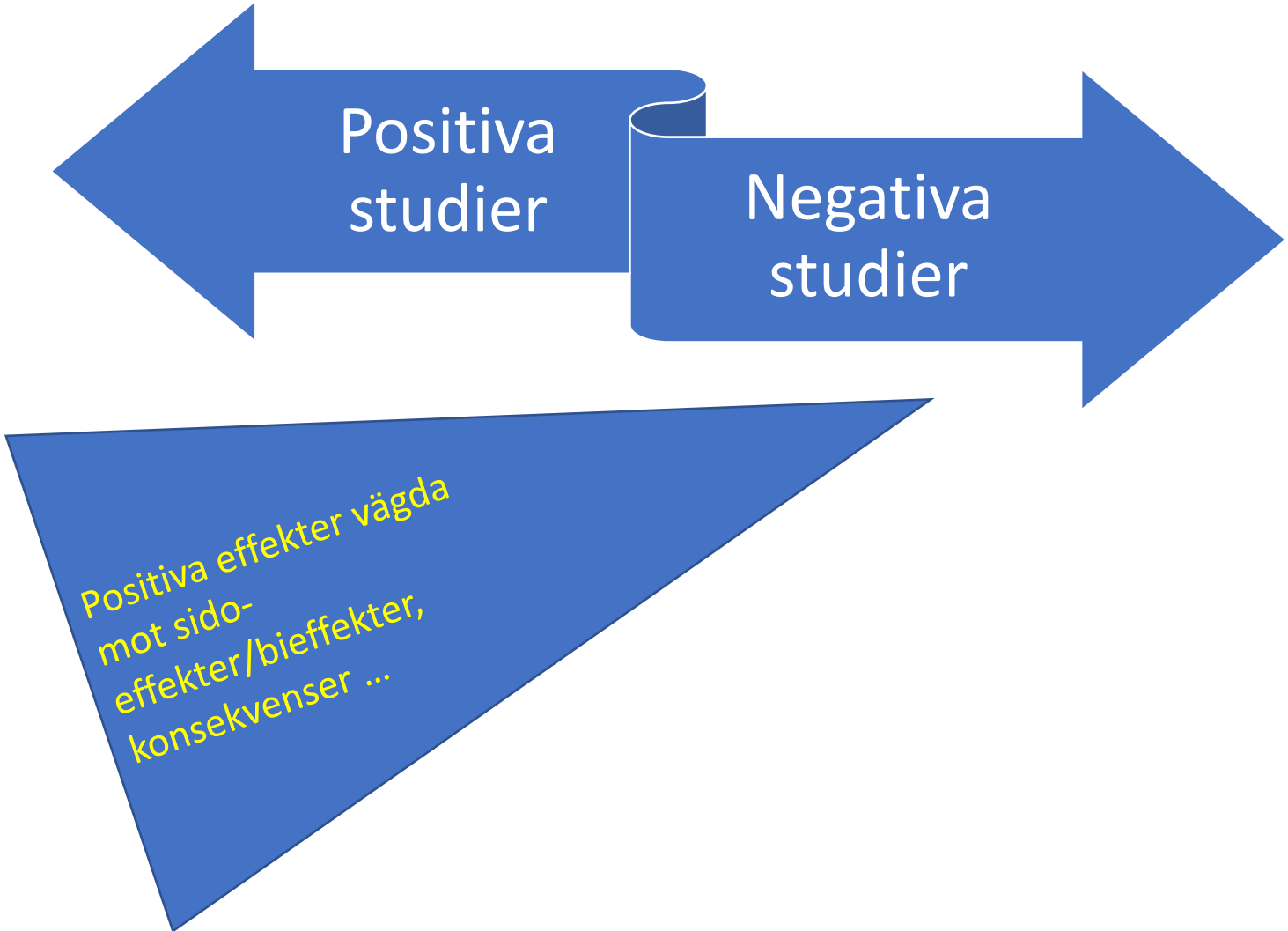
- The first ever Global guidelines for the prevention of surgical site infection (SSI) were published on 3 November 2016, then updated in some parts and published in a new edition in December 2018. They include a list of 29 concrete recommendations on 23 topics for the prevention of SSI in the pre-, intra and postoperative periods, which are based on 28 systematic reviews of the evidence. For the 2018 update, the membership of the guidelines development group (GDG) was broadened to include an additional eight anaesthesiology experts. The 2018 edition of the guidelines includes the revision of the recommendation regarding the use of 80% fraction of inspired oxygen (high FiO2) in surgical patients under general anaesthesia with tracheal intubation and the update of the section on implementation. ***Between 2017 and 2018, WHO re-assessed the evidence on the use of high FiO2 by updating the systematic review related to the effectiveness of this intervention to reduce SSI and commissioning an independent systematic review on adverse events potentially associated with it. Based on the updated evidence, the GDG decided to revise the strength of the recommendation from strong to conditional***.
  - Geneva: World Health Organization; 2018.

Falskt, sant, nästan sant, nog inte optimalt

- **CONCLUSIONS:**
- *The WHO updated analyses did not show definite beneficial effect of the use of high perioperative FiO_2, overall, but there was evidence of effect of reducing the SSI risk in surgical patients under general anaesthesia with tracheal intubation*. However, the evidence for this beneficial effect has become weaker and the strength of the recommendation needs to be reconsidered.
  - Br J Anaesth. 2019 Mar;122(3):325-334.

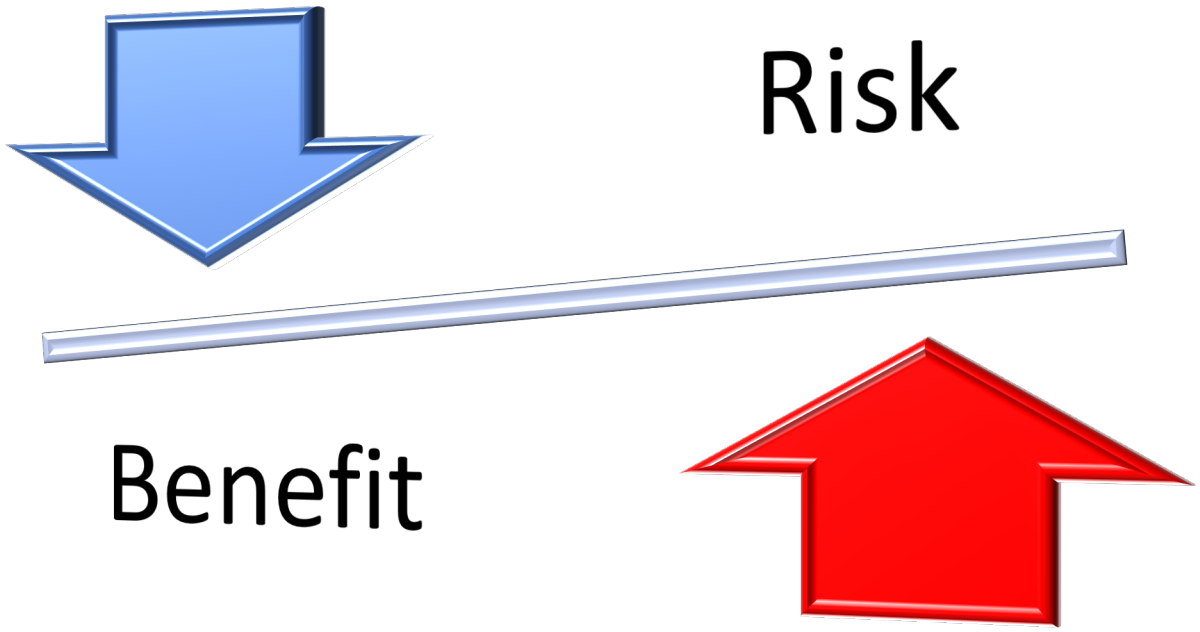
- **CONCLUSIONS:**
- *No definite signal of harm with 80% FiO_2 in adult surgical patients undergoing general anaesthesia was demonstrated* and there is little evidence on safety-related issues to discourage its use in this population.
  - Br J Anaesth. 2019 Mar;122(3):311-324.

Polariserad forskning:
Neutrala objektivka resultat



Allt har 2 sidor

- Nytta risk
- **NNT vs NNH**



Cochrane Library

About Cochrane Reviews

What is a systematic review?

A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question.

Researchers conducting systematic reviews use explicit, systematic methods that are selected with a view aimed at minimizing bias, to produce more reliable findings to inform decision making.

What is a Cochrane Review?

A Cochrane Review is a systematic review of research in health care and health policy that is published in the *Cochrane Database of Systematic Reviews*.

Cochrane Library

Cochrane Database of Systematic Reviews

Supplemental perioperative intravenous crystalloids for postoperative nausea and vomiting (Review)

Jewer JK, Wong MJ, Bird SJ, Habib AS, Parker R, George RB

Figure 1. Study flow diagram.

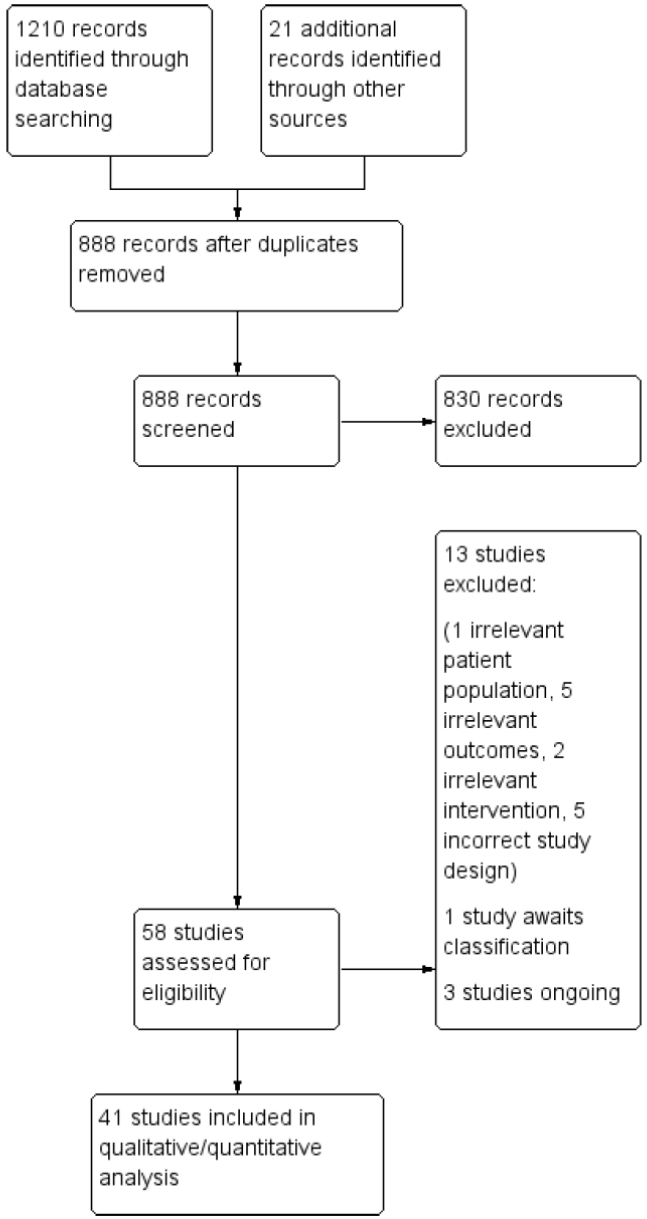


Figure 2. 'Risk of bias' graph.

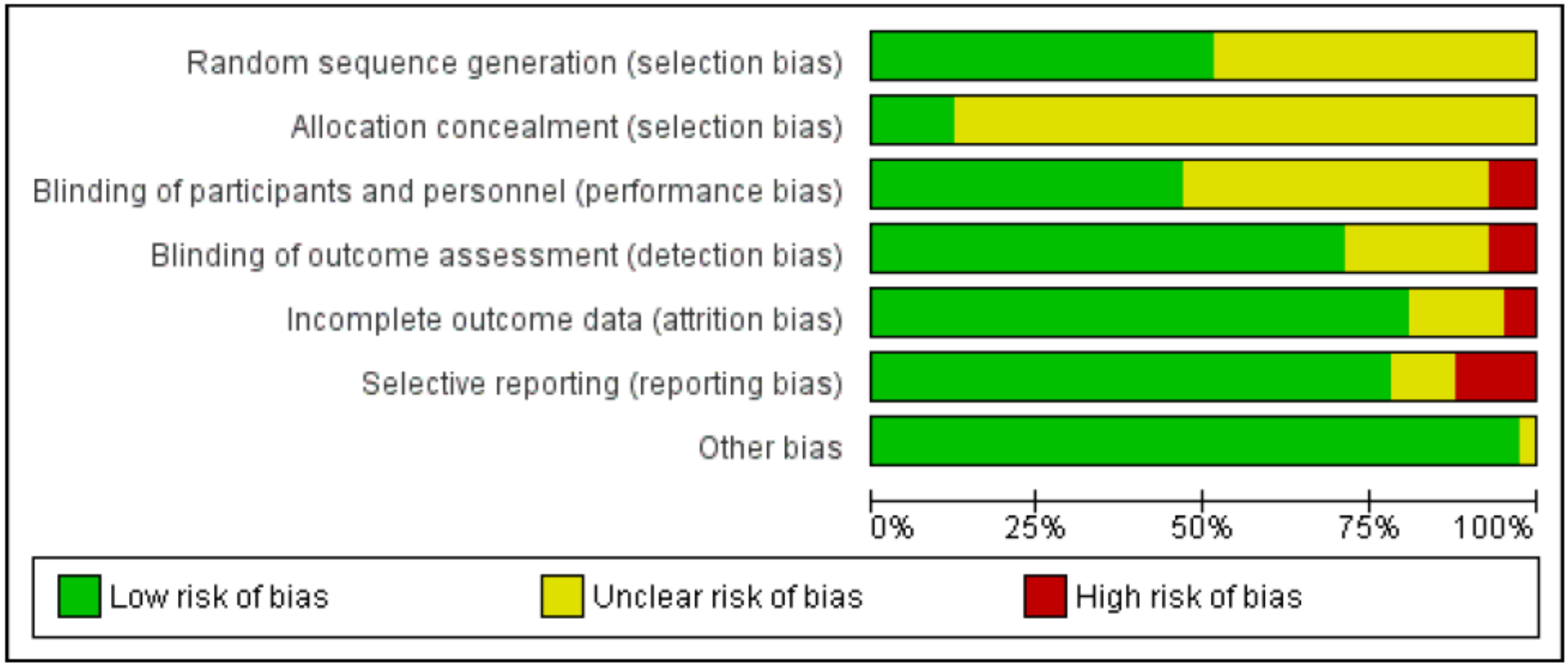


Figure 3. 'Risk of bias' summary

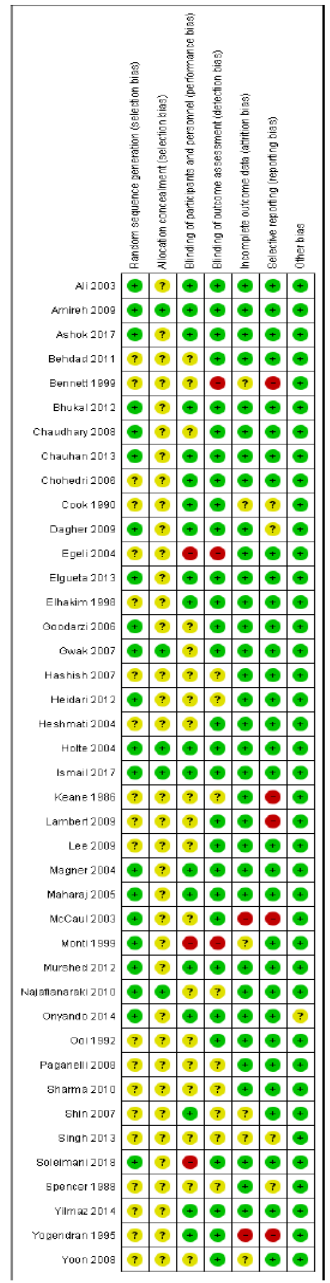
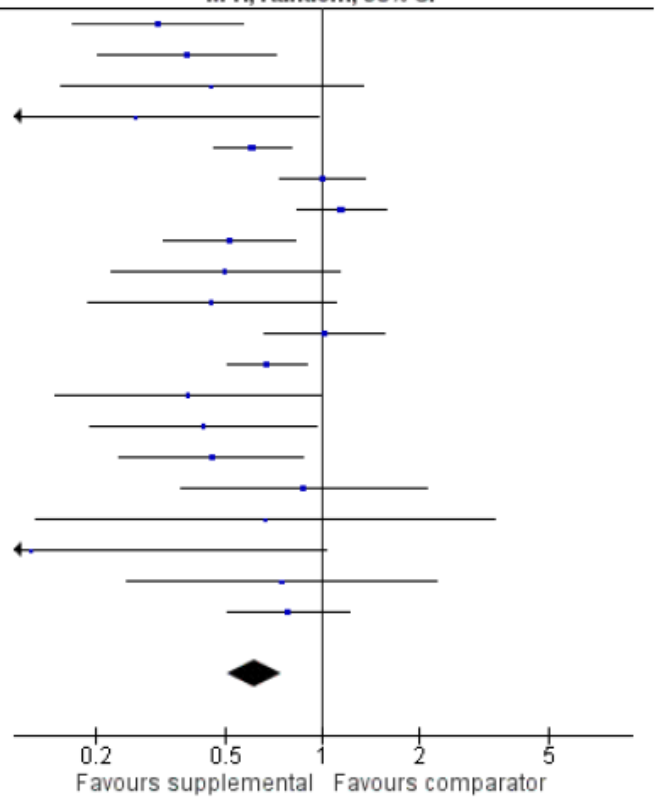


Figure 4. Forest plot of comparison: 1 Supplemental IV crystalloid administration for preventing PONV versus control, outcome: 1.5 Risk of overall PON (when cumulative nausea events were explicitly reported for the entire study period), as measured by the presence of subjective nausea, reported dichotomously or based on a study-defined dichotomous threshold on a continuous scale such as a VAS.

	Supplemental		Comparator			Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI
Ali 2003	9	40	29	40	5.5%	0.31 [0.17, 0.57]
Amireh 2009	8	30	21	30	5.2%	0.38 [0.20, 0.72]
Behdad 2011 (1)	5	33	5	15	2.6%	0.45 [0.15, 1.34]
Behdad 2011 (2)	3	34	5	15	1.9%	0.26 [0.07, 0.97]
Chauhan 2013	40	100	66	100	9.1%	0.61 [0.46, 0.80]
Dagher 2009	32	51	32	51	8.9%	1.00 [0.74, 1.35]
Gwak 2007	47	100	41	100	8.7%	1.15 [0.84, 1.57]
Heshmati 2004	15	45	29	45	6.9%	0.52 [0.32, 0.82]
Ismail 2017	7	50	14	50	3.8%	0.50 [0.22, 1.13]
Lambert 2009	5	23	11	23	3.5%	0.45 [0.19, 1.10]
Magner 2004	26	70	26	71	7.3%	1.01 [0.66, 1.56]
Maharaj 2005	24	41	34	39	9.1%	0.67 [0.51, 0.89]
Monti 1999	5	45	13	45	3.2%	0.38 [0.15, 0.99]
Murshed 2012	6	30	14	30	3.9%	0.43 [0.19, 0.96]
Najafianaraki 2010	10	60	22	60	5.0%	0.45 [0.24, 0.88]
Onyando 2014	7	30	8	30	3.5%	0.88 [0.36, 2.11]
Ooi 1992	2	15	3	15	1.3%	0.67 [0.13, 3.44]
Sharma 2010 (3)	1	30	4	15	0.8%	0.13 [0.02, 1.02]
Sharma 2010 (4)	6	30	4	15	2.5%	0.75 [0.25, 2.26]
Yoon 2008	22	60	28	60	7.3%	0.79 [0.51, 1.21]
Total (95% CI)		**917**		**849**	**100.0%**	**0.62 [0.51, 0.75]**
Total events	280		409			

Heterogeneity: Tau² = 0.09; Chi² = 43.94, df = 19 (P = 0.0010); I² = 57%
Test for overall effect: Z = 4.77 (P < 0.00001)



Footnotes
(1) 10 mL/kg intervention
(2) 20 mL/kg intervention
(3) 30 mL/kg intervention
(4) 20 mL/kg intervention

Figure 5. Forest plot of comparison: 1 Supplemental IV crystalloid administration for preventing PONV versus control, outcome: 1.9 Risk of pharmacologic treatment for PONV.

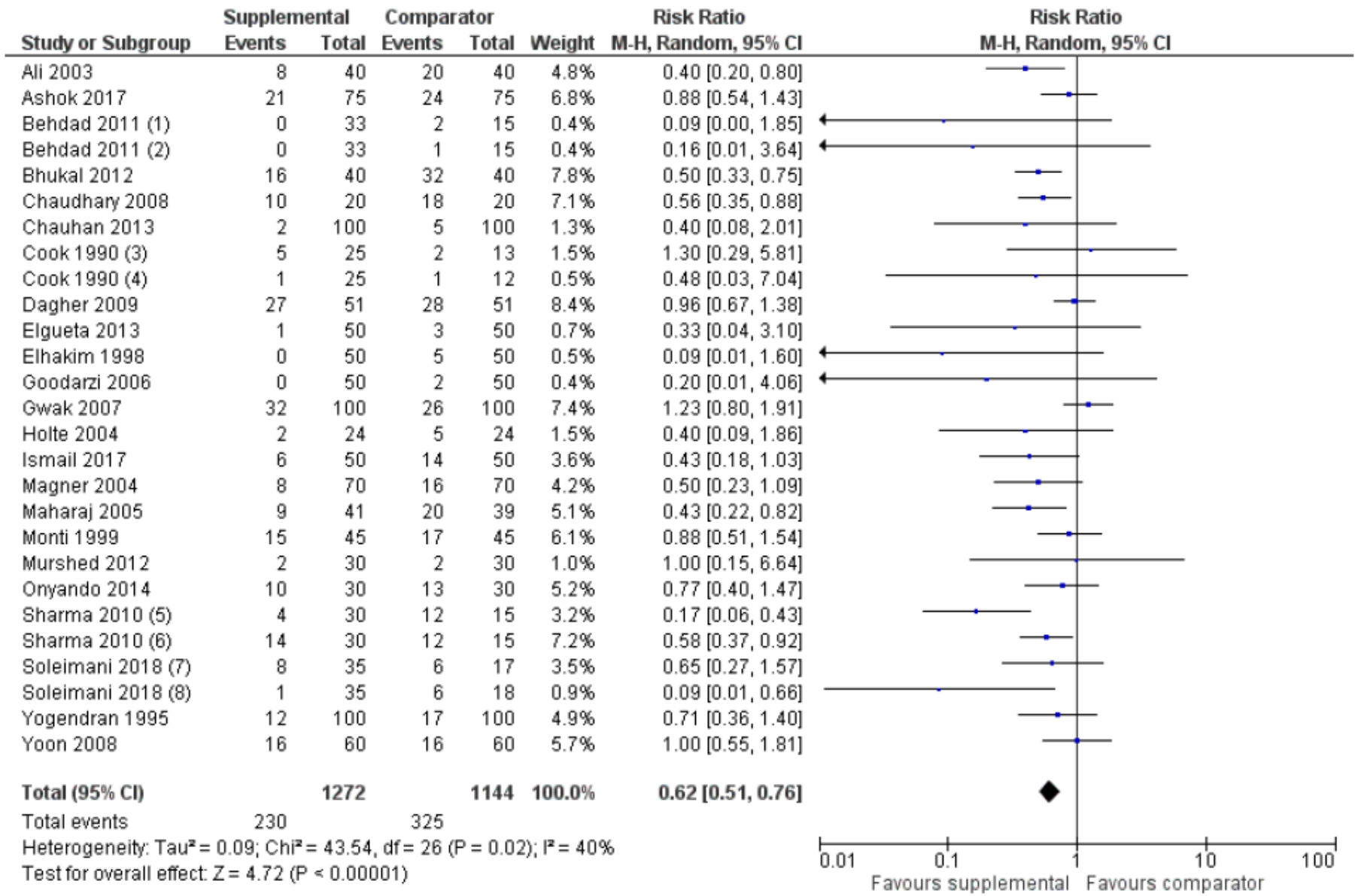
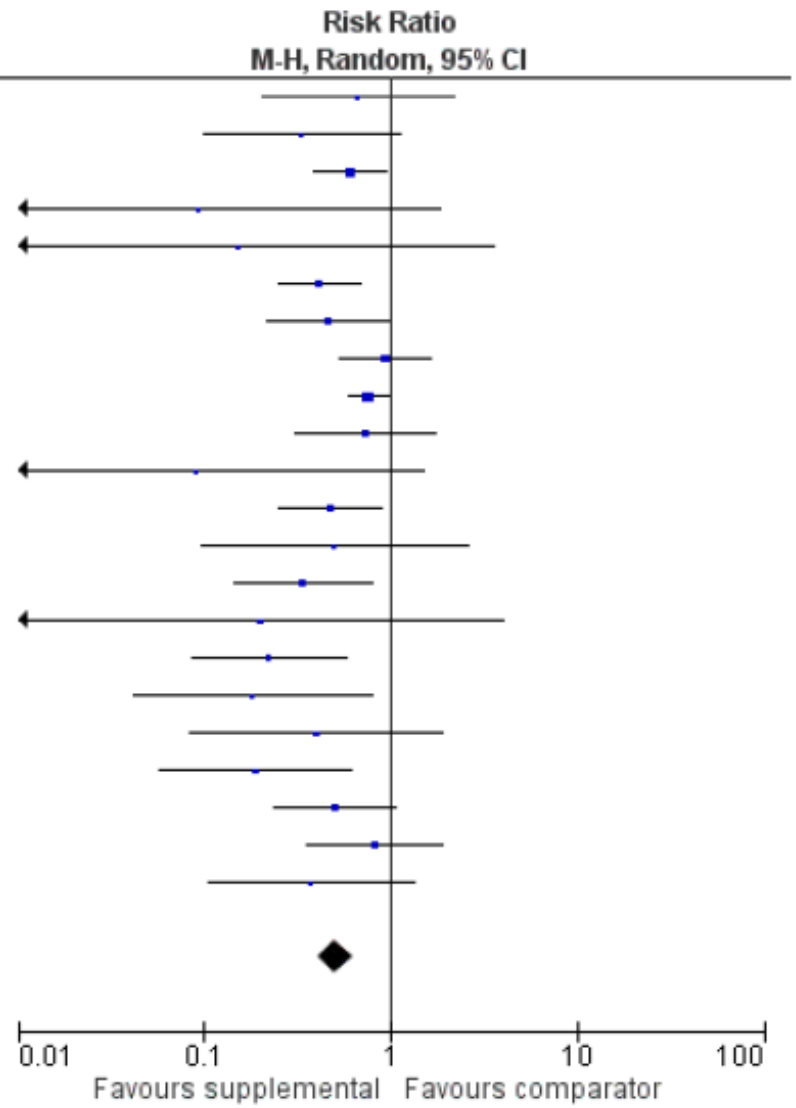


Figure 6. Forest plot of comparison: 1 Supplemental IV crystalloid administration for preventing PONV versus control, outcome: 1.6 Risk of cumulative POV.

Study or Subgroup	Supplemental Events	Supplemental Total	Comparator Events	Comparator Total	Weight	Risk Ratio M-H, Random, 95% CI
Ali 2003	4	40	6	40	2.9%	0.67 [0.20, 2.18]
Amireh 2009	3	30	9	30	2.8%	0.33 [0.10, 1.11]
Ashok 2017	20	75	33	75	10.4%	0.61 [0.38, 0.95]
Behdad 2011 (1)	0	33	2	15	0.5%	0.09 [0.00, 1.85]
Behdad 2011 (2)	0	34	1	15	0.5%	0.15 [0.01, 3.54]
Bhukal 2012	12	40	29	40	9.3%	0.41 [0.25, 0.69]
Chaudhary 2008	6	20	13	20	6.0%	0.46 [0.22, 0.97]
Dagher 2009	16	51	17	51	8.4%	0.94 [0.54, 1.65]
Elgueta 2013	31	50	41	50	14.9%	0.76 [0.59, 0.97]
Gwak 2007	8	100	11	100	4.8%	0.73 [0.31, 1.73]
Heidari 2012	0	15	5	15	0.6%	0.09 [0.01, 1.51]
Heshmati 2004	10	45	21	45	7.4%	0.48 [0.25, 0.89]
Ismail 2017	2	50	4	50	1.6%	0.50 [0.10, 2.61]
Magner 2004	6	70	18	71	4.8%	0.34 [0.14, 0.80]
Monti 1999	0	45	2	45	0.5%	0.20 [0.01, 4.05]
Murshed 2012	4	30	18	30	4.1%	0.22 [0.09, 0.58]
Najafianaraki 2010	2	60	11	60	2.0%	0.18 [0.04, 0.79]
Onyando 2014	2	30	5	30	1.8%	0.40 [0.08, 1.90]
Sharma 2010 (3)	3	30	8	15	3.0%	0.19 [0.06, 0.61]
Sharma 2010 (4)	8	30	8	15	5.8%	0.50 [0.23, 1.07]
Yilmaz 2014	9	80	11	80	5.2%	0.82 [0.36, 1.87]
Yoon 2008	3	60	8	60	2.6%	0.38 [0.10, 1.35]
Total (95% CI)		**1018**		**952**	**100.0%**	**0.50 [0.40, 0.63]**
Total events	149		281			

Heterogeneity: $Tau^2 = 0.07$; $Chi^2 = 30.38$, df = 21 (P = 0.08); $I^2 = 31\%$

Test for overall effect: Z = 6.11 (P < 0.00001)



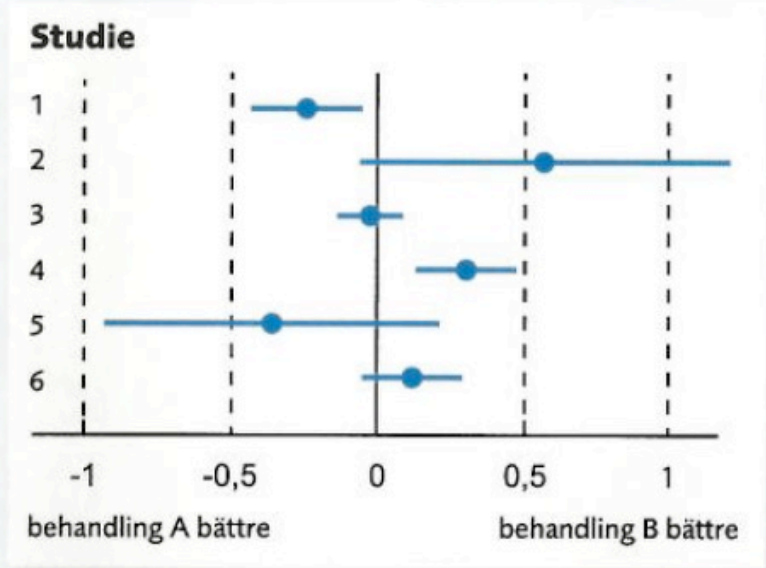
Varför spretar forskningsresultaten?

OLENA YAKOBCHUK / SHUTTERSTOCK

De uppmätta effekterna av en behandling eller insats kan variera från studie till studie trots att undersökningarna tycks gälla samma åtgärd. Spretigheten i resultaten kan bero på slumpen, särskilt i små studier, eller på studiernas utformning. Här ges några exempel.

Tillståndet har avgränsats olika

Studier av ett och samma hälsoproblem eller tillstånd kan ha avgränsat detta på olika sätt. Forskarna kan till exempel ha använt olika diagnoskriterier eller bedömningsinstrument för att rekrytera försöksdeltagare. Varierande gränser, tröskelvärden och mätmetoder är vanligt, exempelvis i studier av benskörhet, urininkontinens och graviditetsdiabetes.



Schematisk bild av ett så kallat skogsdiagram (eng. *forest plot*). I det här exemplet avser varje punkt den genomsnittliga effekten (punktestimatet) på ett utfall enligt en enskild randomiserad studie. Den horisontella linjen visar konfidensintervallet. Deltagarna i varje studie utgör ett slags stickprov på den population som forskarna är intresserade av.

GRAFIK: BJÖRN LUNDKVIST

att skräddarsy behandlingen till individen kan också variera och beskrivs inte alltid tydligt.

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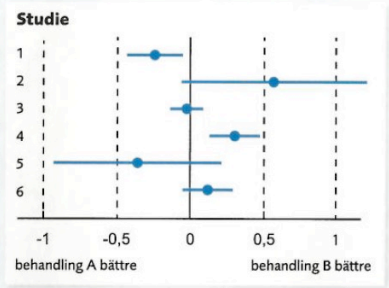

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Varför olika resultat?

- **Tillståndet** - grupperna avgränsas olika
- **Sammanhange**n – förutsättningarna skiljer sig
- **Interventionen** - behandlingen är inte lika
- **Mätmetod** – mätteknik är inte lika
- **Resultaten** har analyserats på olika sätt
  - Olämpliga forskningsrutiner har använts

NNT
… och vad är målet

Implications for research

Current evidence on the use of supplemental intravenous crystalloid administration for preventing PONV is limited by several choices in the assessment of outcomes. Notably, time points for evaluation are inconsistently reported; a uniform choice of early and late time points would make comparison and pooling of results more straightforward. Presenting cumulative data for these time points, for example in the first six postoperative hours and thereafter, would facilitate future meta-analysis.

Further reporting of continuous data for nausea severity (e.g. visual analogue scale, VAS) would allow for better assessment of the clinical impact of prophylactic interventions.

Assessment of duration of post anaesthesia care unit (PACU) stay, unintended hospital admission, and perhaps post-discharge hospital admission would also provide valuable information about the value of this intervention.

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eller inget
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NNT
… och vad är målet

VAS
eller inget
illamående

Tid på Uva
Oplanerad inläggning
Illamående efter hemgång
Återinläggning

NNH

Future studies could also be strengthened by including outcomes evaluating the potential harm of volume administration, such as cardiorespiratory complications, anastomotic dehiscence, and electrolyte abnormalities. Given that these are occur relatively infrequently, surrogate outcomes could also be considered, such as perioperative weight gain, which has been associated with serious adverse events (Brandstrup 2003).

Comparative studies of pharmacologic and non-pharmacologic antiemetic therapies would better allow clinicians to determine the relative utility of interventions such as prophylactic intravenous crystalloid administration. It would also allow for the completion of cost benefit analyses to determine the most efficient means of PONV prophylaxis.

Fakta; sant - falskt

Entydigt resultat i prospektiva randomiserade studier och efter implementering förbättrat outcome

Meta-analys

Systematisk reveiw

Prospektiv Randomiserad dubbelblind studie jämfört med placebo

Prospektiv Randomiserad dubbelblind studie jämfört med aktiv kontrol

Real World study

före efter

Retrospektiva

“big-data”

registerstudier

IJSPT

INVITED COMMENTARY

SYSTEMATIC REVIEW AND META-ANALYSIS: A PRIMER

Franco M. Impellizzeri, PhD[1]
Mario Bizzini, PT, PhD[1]

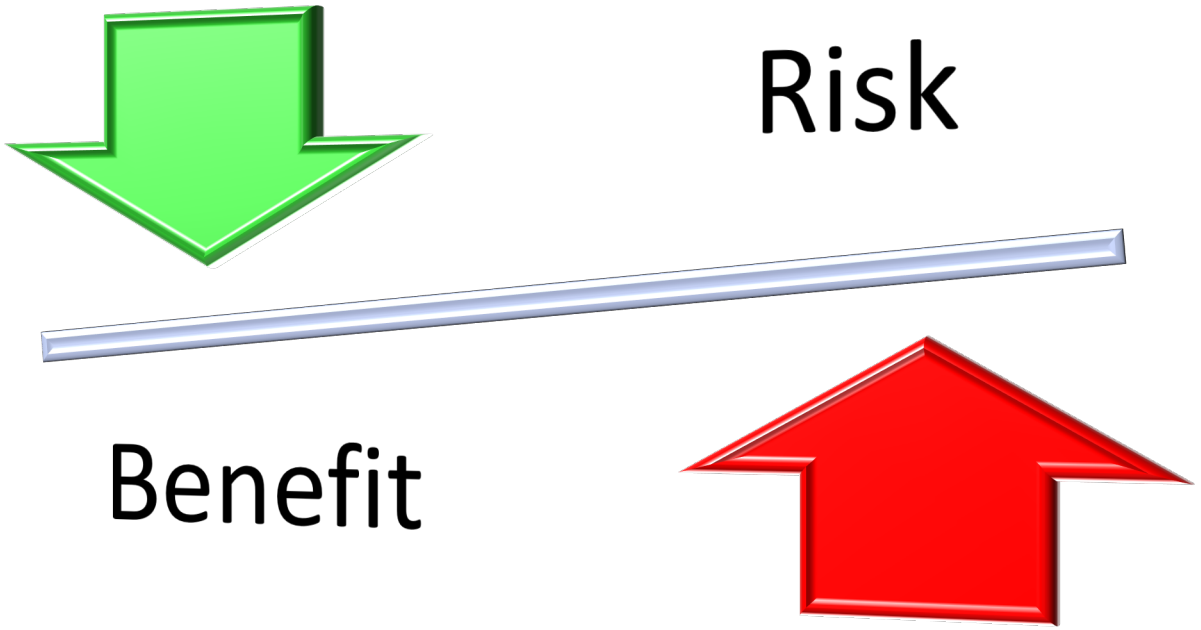
ABSTRACT

The use of an e
clinical expertis
trials (RCTs), sy

Table 1. *Characteristics of narrative and systematic reviews, modified from Physiotherapy Evidence Database.*[37]

	Systematic review	Narrative review
Research question	Strictly formulated	Broadly formulated
Methodology	Clearly defined	Not or insufficiently described
Search strategy	Clearly defined	Not described
Selection of the studies	Clearly defined	Not described
Ranking of the studies	By levels of evidence	Not performed
Analysis of the studies	Clearly described	Not described
Interpretation of results	Objective	Subjective

Fake news



Evidence based medicne

- Grade
- Cochrane review
- Prospektiv randomiserad dubble-blind studie
- Retrospektiv cohortstudie
- Case reports
- *Consensus*

Även consensus rekommendationer får kritik

■ EDITORIAL

"Don't shoot the messengers.....": The new NICE guidance for the prevention of venous thromboembolism in adults – fake news or a real opportunity?

X. L. Griffin,
D. McBride,
C. Nnadi,
M. R. Reed,
N. D. Rossiter

The latest guidance (NG8) from the National Institute for Health and Care Excellence (NICE) for the prevention of venous thromboembolism (VTE) for patients in hospital aged 16 years and older has just been published.[1] The authors have had the opportunity to participate in the development of

ical assessment of risks and should be documented by all following discussions with patients. The present Department of Health Risk Assessment tool is not validated and many of us have issue with it when applied to our patients. The requirement to risk assess continues but any published

Grading of Recommendations Assessment, Development and Evaluation (GRADE)

Source: GRADE (Grading of Recommendations Assessment, Development and Evaluation) Working Group 2007 1 (modified by the EBM Guidelines Editorial Team)

Code	Quality of Evidence	Definition
A	**High**	Further research is very unlikely to change our confidence in the estimate of effect. •Several high-quality studies with consistent results •In special cases: one large, high-quality multi-centre trial
B	**Moderate**	Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. •One high-quality study •Several studies with some limitations
C	**Low**	Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. •One or more studies with severe limitations
D	***Very Low***	Any estimate of effect is very uncertain. •Expert opinion •No direct research evidence •One or more studies with very severe limitations

Sammanfattning & “take home”

- Evidencebaserad medicin skall bygga på väl genomförda prospektiva randomisreade/kontrollerade studier.
- Om flera prospektiva randomiserade studier visar likartade resultat till exempel sammanvägda i en meta-analys är bevisvärdet högt
- Retrospektiva studier har ett lågt bevisvärde och skall företrädesvis användas som grund för prospektiva kontrollerade studier
- *Guidelines/riktlinjer – concensus document*,
  - skall följa men måste uppdateras regelbundet

Sammanfattning & take home

- Läs inte bara konklusionen
- Ta del av metod och patientpopulation
- Var nogrann med hur man studerat, vad som varit primär studievariabel
  - Många gånger är styrkan i fynden som beskriv begränsad.

Tack

Still confused but hopefully on a higher level!

Fake or misintepretation

Ett exempel till

Syrgas och kirurgiska infektioner

Global Guidelines for the Prevention of Surgical Site Infection.

- **Source**
- Geneva: World Health Organization; 2018.
  WHO Guidelines Approved by the Guidelines Review Committee.
- **Excerpt**
- The first ever Global guidelines for the prevention of surgical site infection (SSI) were published on 3 November 2016, then updated in some parts and published in a new edition in December 2018. They include a list of 29 concrete recommendations on 23 topics for the prevention of SSI in the pre-, intra and postoperative periods, which are based on 28 systematic reviews of the evidence. For the 2018 update, the membership of the guidelines development group (GDG) was broadened to include an additional eight anaesthesiology experts. The 2018 edition of the guidelines includes the revision of the recommendation regarding the use of 80% fraction of inspired oxygen (high FiO2) in surgical patients under general anaesthesia with tracheal intubation and the update of the section on implementation. Between 2017 and 2018, WHO re-assessed the evidence on the use of high FiO2 by updating the systematic review related to the effectiveness of this intervention to reduce SSI and commissioning an independent systematic review on adverse events potentially associated with it. ***Based on the updated evidence, the GDG decided to revise the strength of the recommendation from strong to conditional.***

The effects of high perioperative inspiratory oxygen fraction for adult surgical patients.

- Wetterslev J[1], Meyhoff CS, Jørgensen LN, Gluud C, Lindschou J, Rasmussen LS. **Cochrane Database Syst Rev. 2015 Jun** 25;(6):CD008884. doi: 10.1002/14651858.CD008884.pub2.

- **BACKGROUND:** Available evidence on the effects of a high fraction of inspired oxygen (FIO2) of 60% to 90% compared with a routine fraction of inspired oxygen of 30% to 40%, during anaesthesia and surgery, on mortality and surgical site infection has been inconclusive. Previous trials and meta-analyses have led to different conclusions on whether a high fraction of supplemental inspired oxygen during anaesthesia may decrease or increase mortality and surgical site infections in surgical patients.
- **OBJECTIVES:** To assess the benefits and harms of an FIO2 equal to or greater than 60% compared with a control FIO2 at or below 40% in the perioperative setting in terms of mortality, surgical site infection, respiratory insufficiency, serious adverse events and length of stay during the index admission for adult surgical patients.We looked at various outcomes, conducted subgroup and sensitivity analyses, examined the role of bias and applied trial sequential analysis (TSA) to examine the level of evidence supporting or refuting a high FIO2 during surgery, anaesthesia and recovery.
- **SEARCH METHODS:** We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, BIOSIS, International Web of Science, the Latin American and Caribbean Health Science Information Database (LILACS), advanced Google and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) up to February 2014. We checked the references of included trials and reviews for unidentified relevant trials and reran the searches in March 2015. We will consider two studies of interest when we update the review.
- **SELECTION CRITERIA:** We included randomized clinical trials that compared a high fraction of inspired oxygen with a routine fraction of inspired oxygen during anaesthesia, surgery and recovery in individuals 18 years of age or older.
- **DATA COLLECTION AND ANALYSIS:** Two review authors extracted data independently. We conducted random-effects and fixed-effect meta-analyses, and for dichotomous outcomes, we calculated risk ratios (RRs). We used published data and data obtained by contacting trial authors.To minimize the risk of systematic error, we assessed the risk of bias of the included trials. To reduce the risk of random errors caused by sparse data and repetitive updating of cumulative meta-analyses, we applied trial sequential analyses. We used Grades of Recommendation, Assessment, Development and Evaluation (GRADE) to assess the quality of the evidence.
- **MAIN RESULTS:** We included 28 randomized clinical trials (9330 participants); in the 21 trials reporting relevant outcomes for this review, 7597 participants were randomly assigned to a high fraction of inspired oxygen versus a routine fraction of inspired oxygen.In trials with an overall low risk of bias, a high fraction of inspired oxygen compared with a routine fraction of inspired oxygen was not associated with all-cause mortality (random-effects model: RR 1.12, 95% confidence interval (CI) 0.93 to 1.36; GRADE: low quality) within the longest follow-up and within 30 days of follow-up (Peto odds ratio (OR) 0.99, 95% CI 0.61 to 1.60; GRADE: low quality). In a trial sequential analysis, the required information size was not reached and the analysis could not refute a 20% increase in mortality. Similarly, when all trials were included, a high fraction of inspired oxygen was not associated with all-cause mortality to the longest follow-up (RR 1.07, 95% CI 0.87 to 1.33) or within 30 days of follow-up (Peto OR 0.83, 95% CI 0.54 to 1.29), both of very low quality according to GRADE. Neither was a high fraction of inspired oxygen associated with the risk of surgical site infection in trials with low risk of bias (RR 0.86, 95% CI 0.63 to 1.17; GRADE: low quality) or in all trials (RR 0.87, 95% CI 0.71 to 1.07; GRADE: low quality). A high fraction of inspired oxygen was not associated with respiratory insufficiency (RR 1.25, 95% CI 0.79 to 1.99), serious adverse events (RR 0.96, 95% CI 0.65 to 1.43) or length of stay (mean difference -0.06 days, 95% CI -0.44 to 0.32 days).In subgroup analyses of nine trials using preoperative antibiotics, a high fraction of inspired oxygen was associated with a decrease in surgical site infections (RR 0.76, 95% CI 0.60 to 0.97; GRADE: very low quality); a similar effect was noted in the five trials adequately blinded for the outcome assessment (RR 0.79, 95% CI 0.66 to 0.96; GRADE: very low quality). We did not observe an effect of a high fraction of inspired oxygen on surgical site infections in any other subgroup analyses.
- **AUTHORS' CONCLUSIONS:** As the risk of adverse events, including mortality, may be increased by a fraction of inspired oxygen of 60% or higher, and as robust evidence is lacking for a beneficial effect of a fraction of inspired oxygen of 60% or higher on surgical site infection, our overall results suggest that evidence is insufficient to support the routine use of a high fraction of inspired oxygen during anaesthesia and surgery. Given the risk of attrition and outcome reporting bias, as well as other weaknesses in the available evidence, further randomized clinical trials with low risk of bias in all bias domains, including a large sample size and long-term follow-up, are warranted.

The effects of high perioperative inspiratory oxygen fraction for adult surgical patients.

- Wetterslev J[1], Meyhoff CS, Jørgensen LN, Gluud C, Lindschou J, Rasmussen LS. Cochrane Database Syst Rev. 2015 Jun 25;(6):CD008884. doi: 10.1002/14651858.CD008884.pub2.
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The Effects of Intraoperative Inspired Oxygen Fraction on Postoperative Pulmonary Parameters in Patients with General Anesthesia: A Systemic Review and Meta-Analysis.

- Koo CH[1,2], Park EY[3], Lee SY[4], Ryu JH[5,6]. J Clin Med. 2019 Apr 28;8(5). pii: E583. doi: 10.3390/jcm8050583.

- **Abstract**

- High intraoperative inspired oxygen concentration is applied to prevent desaturation during induction and recovery of anesthesia. However, high oxygen concentration may lead to postoperative pulmonary complications. The purpose of this study is to compare the postoperative pulmonary parameters according to intraoperative inspired oxygen fraction in patients undergoing general anesthesia. We identified all randomized controlled trials investigating postoperative differences in arterial gas exchange according to intraoperative fraction of inspired oxygen (FiO_2). A total of 10 randomized controlled trials were included, and 787 patients were analyzed. Postoperative PaO_2 was lower in the high FiO_2 group compared with the low FiO_2 group (mean difference (MD) -4.97 mmHg, 95% CI -8.21 to -1.72, p = 0.003). Postoperative alveolar-arterial oxygen gradient ($AaDO_2$) was higher (MD 3.42 mmHg, 95% CI 0.95 to 5.89, p = 0.007) and the extent of atelectasis was more severe (MD 2.04%, 95% CI 0.14 to 3.94, p = 0.04) in high intraoperative FiO_2 group compared with low FiO_2 group. However, postoperative SpO_2 was comparable between the two groups.
- ***The results of this meta-analysis suggest that high inspired oxygen fraction during anesthesia may impair postoperative pulmonary parameters.***
- ***Cautious approach in intraoperative inspired oxygen fraction is required for patients susceptible to postoperative pulmonary complications.***

Effect of intraoperative high inspired oxygen fraction on surgical site infection, postoperative nausea and vomiting, and pulmonary function: systematic review and meta-analysis of randomized controlled trials.

- Hovaguimian F[1], Lysakowski C, Elia N, Tramèr MR. Anesthesiology. 2013 Aug;119(2):303-16.
- **BACKGROUND:** Intraoperative high inspired oxygen fraction (FIO2) is thought to reduce the incidence of surgical site infection (SSI) and postoperative nausea and vomiting, and to promote postoperative atelectasis.
- **METHODS:** The authors searched for randomized trials (till September 2012) comparing intraoperative high with normal FIO2 in adults undergoing surgery with general anesthesia and reporting on SSI, nausea or vomiting, or pulmonary outcomes.
- **RESULTS:** The authors included 22 trials (7,001 patients) published in 26 reports. High FIO2 ranged from 80 to 100% (median, 80%); normal FIO2 ranged from 30 to 40% (median, 30%). In nine trials (5,103 patients, most received prophylactic antibiotics), the incidence of SSI decreased from 14.1% with normal FIO2 to 11.4% with high FIO2; risk ratio, 0.77 (95% CI, 0.59-1.00). After colorectal surgery, the incidence of SSI decreased from 19.3 to 15.2%; risk ratio, 0.78 (95% CI, 0.60-1.02). In 11 trials (2,293 patients), the incidence of nausea decreased from 24.8% with normal FIO2 to 19.5% with high FIO2; risk ratio, 0.79 (95% CI, 0.66-0.93). In patients receiving inhalational anesthetics without prophylactic antiemetics, high FIO2 provided a significant protective effect against both nausea and vomiting. Nine trials (3,698 patients) reported on pulmonary outcomes. The risk of atelectasis was not increased with high FIO2.
- **CONCLUSIONS:** *Intraoperative high FIO2 further decreases the risk of SSI in surgical patients receiving prophylactic antibiotics, has a weak beneficial effect on nausea, and does not increase the risk of postoperative atelectasis.*

Effectiveness of 80% vs 30-35% fraction of inspired oxygen in patients undergoing surgery: an updated systematic review and meta-analysis.

- de Jonge S[1], Egger M[2], Latif A[3], Loke YK[4], Berenholtz S[3], Boermeester M[1], Allegranzi B[5], Solomkin J[6]. Br J Anaesth. 2019 Mar;122(3):325-334.

- **BACKGROUND:** In 2016, the World Health Organization (WHO) strongly recommended the use of a high fraction of inspired oxygen (FiO_2) in adult patients undergoing general anaesthesia to reduce the risk of surgical site infection (SSI). Since then, further trials have been published, trials included previously have come under scrutiny, and one article was retracted. We updated the systematic review on which the recommendation was based.
- **METHODS:** We performed a systematic literature search from January 1990 to April 2018 for RCTs comparing the effect of high (80%) vs standard (30-35%) FiO_2 on the incidence of SSI. Studies retracted or under investigation were excluded. A random effects model was used for meta-analyses; the sources of heterogeneity were explored using meta-regression.
- **RESULTS:** Of 21 RCTs included, six were newly identified since the publication of the WHO guideline review; 17 could be included in the final analyses. Overall, no evidence for a reduction of SSI after the use of high FiO_2 was found [relative risk (RR): 0.89; 95% confidence interval (CI): 0.73-1.07]. There was evidence that high FiO_2 was beneficial in intubated patients [RR: 0.80 (95% CI: 0.64-0.99)], but not in non-intubated patients [RR: 1.20 (95% CI: 0.91-1.58); test of interaction; P=0.048].
- **CONCLUSIONS:** *The WHO updated analyses did not show definite beneficial effect of the use of high perioperative FiO_2, overall, but there was evidence of effect of reducing the SSI risk in surgical patients under general anaesthesia with tracheal intubation. However, the evidence for this beneficial effect has become weaker and the strength of the recommendation needs to be reconsidered.*

Oui ou Non? Controversies in Ambulatory Anesthesia

- By Adaora M. Chima, MBBS, MPH, *from the **IARS, AUA and SOCCA 2019** Annual Meetings**

It was a congenial battle of the wills during the SAMBA Innovative Session: Wait, You Can't Do That: Or Can You? Controversies in Ambulatory Anesthesia as Drs. Girish Joshi,

1. Guidelines requiring escorts for patients discharged in ambulatory setting,
2. NPO guidelines for ambulatory anesthesia,
3. The need for upper age limits in ambulatory care settings.

The first debate centered around guidelines requiring that **escorts accompany patients** when discharged from the ambulatory setting with Dr. Urman serving as the moderator for the discussion.

- *Dr. Niraja Rajan held the position that patient escorts are essential to discharge planning in the ambulatory setting. Impaired driving and increased risk of accidents have been demonstrated for up to 17 hours in the recovery period following sedation or general anesthesia, especially with the use of benzodiazepines.*
- *A survey of post-operative patients also revealed >90% incidence of amnesia when asked to recall post-operative instructions given at discharge.*
- *Thirty-one percent reported requiring the help of a caregiver.*

Effectiveness of 80% vs 30-35% fraction of inspired oxygen in patients undergoing surgery: an updated systematic review and meta-analysis.

- de Jonge S[1], Egger M[2], Latif A[3], Loke YK[4], Berenholtz S[3], Boermeester M[1], Allegranzi B[5], Solomkin J[6]. Br J Anaesth. 2019 Mar;122(3):325-334.

- **BACKGROUND:** In 2016, the World Health Organization (WHO) strongly recommended the use of a high fraction of inspired oxygen (FiO_2) in adult patients undergoing general anaesthesia to reduce the risk of surgical site infection (SSI). Since then, further trials have been published, trials included previously have come under scrutiny, and one article was retracted. We updated the systematic review on which the recommendation was based.
- **METHODS:** We performed a systematic literature search from January 1990 to April 2018 for RCTs comparing the effect of high (80%) vs standard (30-35%) FiO_2 on the incidence of SSI. Studies retracted or under investigation were excluded. A random effects model was used for meta-analyses; the sources of heterogeneity were explored using meta-regression.
- **RESULTS:** Of 21 RCTs included, six were newly identified since the publication of the WHO guideline review; 17 could be included in the final analyses. Overall, no evidence for a reduction of SSI after the use of high FiO_2 was found [relative risk (RR): 0.89; 95% confidence interval (CI): 0.73-1.07]. There was evidence that high FiO_2 was beneficial in intubated patients [RR: 0.80 (95% CI: 0.64-0.99)], but not in non-intubated patients [RR: 1.20 (95% CI: 0.91-1.58); test of interaction; P=0.048].
- **CONCLUSIONS:** *The WHO updated analyses did not show definite beneficial effect of the use of high perioperative FiO_2, overall, but there was evidence of effect of reducing the SSI risk in surgical patients under general anaesthesia with tracheal intubation. However, the evidence for this beneficial effect has become weaker and the strength of the recommendation needs to be reconsidered.*

Day-case versus overnight stay for laparoscopic cholecystectomy.

- Gurusamy KS[1], Junnarkar S, Farouk M, Davidson BR. Cochrane Database Syst Rev. **2008** Jul 16;(3):CD006798. doi: 10.1002/14651858.CD006798.pub3.

- **BACKGROUND:** Although day-case elective laparoscopic cholecystectomy can save bed costs, its safety remains to be established.
- **OBJECTIVES:** To assess the safety and benefits of day-case surgery compared to overnight stay in patients undergoing elective laparoscopic cholecystectomy.
- **SEARCH STRATEGY:** We searched The Cochrane Hepato-Biliary Group Controlled Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library, MEDLINE, EMBASE, and Science Citation Index Expanded until April 2008 for identifying randomised trials using search strategies.
- **SELECTION CRITERIA:** Only randomised clinical trials, irrespective of language, blinding, or publication status, comparing day-case and overnight stay in elective laparoscopic cholecystectomy were considered for the review.
- **DATA COLLECTION AND ANALYSIS:** We collected the data on the characteristics of the trial, methodological quality of the trials, morbidity, prolonged hospitalisation, re-admissions, pain and quality of life from each trial. We analysed the data with both the fixed-effect and the random-effects models using RevMan Analysis. For each outcome we calculated the risk ratio, weighted mean difference, or standardised mean difference with 95% confidence intervals (CI) based on available case-analysis.
- **MAIN RESULTS: Five trials with 429 patients randomised to the day-case group (215) and overnight stay group (214) were included in the review**. All the trials were of high risk of bias. The trials recruited 49% of patients undergoing cholecystectomy. The selection criteria varied, but most included only patients without other diseases. The patients were living in easy reach of the hospital and with a responsible adult to take care of them. On the day of surgery, 81% of day-case patients were discharged. The drop-out rate after randomisation varied from 6.5% to 12.7%. There was no significant difference between day-case and overnight stay group as regards to morbidity, prolongation of hospital stay, re-admission rates, pain, quality of life, patient satisfaction and return to normal activity and work.
- ***AUTHORS' CONCLUSIONS:*** *Day-case elective laparoscopic cholecystectomy seems to be a safe and effective intervention in selected patients (with no or minimal systemic disease and within easy reach of the hospital) with symptomatic gallstones. Because of the decreased hospital stay, it is likely to save costs.*

Day-surgery versus overnight stay surgery for laparoscopic cholecystectomy.

- Vaughan J[1], Gurusamy KS, Davidson BR. **Cochrane Database Syst Rev. 2013** Jul 31;(7):CD006798. doi: 10.1002/14651858.CD006798.pub4.

- **BACKGROUND:** Laparoscopic cholecystectomy is used to manage symptomatic gallstones. There is considerable controversy regarding whether it should be done as day-surgery or as an overnight stay surgery with regards to patient safety.
- **OBJECTIVES:** To assess the impact of day-surgery versus overnight stay laparoscopic cholecystectomy on patient-oriented outcomes such as mortality, severe adverse events, and quality of life.
- **SEARCH METHODS:** We searched the Cochrane Hepato-Biliary Group Controlled Trials Register and the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library, MEDLINE, EMBASE, Science Citation Index Expanded, and mRCT until September 2012.
- **SELECTION CRITERIA:** We included randomised clinical trials comparing day-surgery versus overnight stay surgery for laparoscopic cholecystectomy, irrespective of language or publication status.
- **DATA COLLECTION AND ANALYSIS:** Two authors independently assessed trials for inclusion and independently extracted the data. We analysed the data with both the fixed-effect and the random-effects models using Review Manager 5 analysis. We calculated the risk ratio (RR), mean difference (MD), or standardised mean difference (SMD) with 95% confidence intervals (CI) based on intention-to-treat or available case analysis.
- **MAIN RESULTS:** **We identified a total of six trials at high risk of bias involving 492 participants undergoing day-case laparoscopic cholecystectomy (n = 239) versus overnight stay laparoscopic cholecystectomy (n = 253)** for symptomatic gallstones. The number of participants in each trial ranged from 28 to 150. The proportion of women in the trials varied between 74% and 84%. The mean or median age in the trials varied between 40 and 47 years.With regards to primary outcomes, only one trial reported short-term mortality. However, the trial stated that there were no deaths in either of the groups. We inferred from the other outcomes that there was no short-term mortality in the remaining trials. Long-term mortality was not reported in any of the trials. There was no significant difference in the rate of serious adverse events between the two groups (4 trials; 391 participants; 7/191 (weighted rate 1.6%) in the day-surgery group versus 1/200 (0.5%) in the overnight stay surgery group; rate ratio 3.24; 95% CI 0.74 to 14.09). There was no significant difference in quality of life between the two groups (4 trials; 333 participants; SMD -0.11; 95% CI -0.33 to 0.10).There was no significant difference between the two groups regarding the secondary outcomes of our review: pain (3 trials; 175 participants; MD 0.02 cm visual analogue scale score; 95% CI -0.69 to 0.73); time to return to activity (2 trials, 217 participants; MD -0.55 days; 95% CI -2.18 to 1.08); and return to work (1 trial, 74 participants; MD -2.00 days; 95% CI -10.34 to 6.34). No significant difference was seen in hospital readmission rate (5 trials; 464 participants; 6/225 (weighted rate 0.5%) in the day-surgery group versus 5/239 (2.1%) in the overnight stay surgery group (rate ratio 1.25; 95% CI 0.43 to 3.63) or in the proportion of people requiring hospital readmissions (3 trials; 290 participants; 5/136 (weighted proportion 3.5%) in the day-surgery group versus 5/154 (3.2%) in the overnight stay surgery group; RR 1.09; 95% CI 0.33 to 3.60). No significant difference was seen in the proportion of failed discharge (failure to be discharged as planned) between the two groups (5 trials; 419 participants; 42/205 (weighted proportion 19.3%) in the day-surgery group versus 43/214 (20.1%) in the overnight stay surgery group; RR 0.96; 95% CI 0.65 to 1.41). For all outcomes except pain, the accrued information was far less than the diversity-adjusted required information size to exclude random errors.
- ***AUTHORS' CONCLUSIONS:*** *Day-surgery appears just as safe as overnight stay surgery in laparoscopic cholecystectomy.* ***Day-surgery does not seem to result in improvement in any patient-oriented outcomes such as return to normal activity or earlier return to work****.*
- ***The randomised clinical trials backing these statements are weakened by risks of systematic errors (bias) and risks of random errors (play of chance).*** *More randomised clinical trials are needed to assess the impact of day-surgery laparoscopic cholecystectomy on the quality of life as well as other outcomes of patients.*

Day surgery versus overnight stay laparoscopic cholecystectomy: A systematic review and meta-analysis.

- Tang H[1], Dong A[2], Yan L[2]. Dig Liver Dis. 2015 Jul;47(7):556-61.
- **BACKGROUND:** Laparoscopic cholecystectomies are being increasingly performed as a day surgery procedure.
- **AIM:** To systematically assess the safety and efficacy of laparoscopic cholecystectomy as a day surgery procedure compared to overnight stay.
- **METHODS:** Randomized controlled trials and clinical controlled trials involving day surgery laparoscopic cholecystectomy were included in a systematic literature search. Two authors independently assessed the studies for inclusion and extracted the data. A meta-analysis was conducted to estimate the safety and feasibility of day surgery compared to overnight stay laparoscopic cholecystectomy.
- **RESULTS: Twelve studies were selected for our meta-analysis.** The meta-analysis showed that there was no significant difference between the two groups on morbidity (P=0.65). The mean in-hospital admission and readmission rates were 13.1% and 2.4% in the day surgery group, respectively. The two groups had similar prolonged hospitalization (P=0.27), readmission rate (P=0.58) and consultation rate (P=0.73). In addition, there was no significant difference in the visual analogue scale score, postoperative nausea and vomiting scale, time to return to activity and work between the two groups (P>0.05).
- ***CONCLUSIONS:*** *Currently available evidence demonstrates that laparoscopic cholecystectomy can be performed safely in selected patients as a day surgery procedure, though further studies are needed.*

- Anesthesiology is defined by the American Society of Anesthesiologists as: "*The practice of medicine dedicated to the relief of pain and total care of the surgical patient before, during and after surgery*."
  - Anesthesiologists are involved in around 90 percent of the more than 40 million surgical procedures that are carried out under anesthetic each year in the United States.
- This involvement may include direct care of the patient or supervision of Certified Registered Nurse Anesthetists (CRNAs) or Anesthesia Assistants, who also play a key role in the field.

You are feeling sleepy

Losing consciousness under anaesthesia is not so much flipping a light switch as turning down a dimmer switch