The European Society
of Regional Anaesthesia
& Pain Therapy
ESRA ITALIA

ESRA ITALIAN CHAPTER

30° NATIONAL MEETING

13-15 NOV 2025

NAPOLI
HOTEL RAMADA

Presidents:
Giuseppe Servillo, Fabrizio Fattorini

MZ EVENTS

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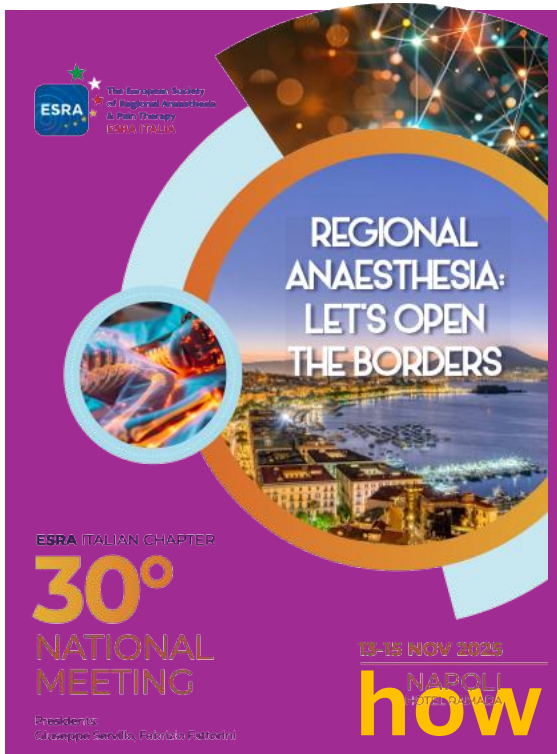
Francesca Rubulotta



MD, PhD, MBA, FRCA,FICM,

Chair of iWIN

www.iwinideal.com

Università di Catania

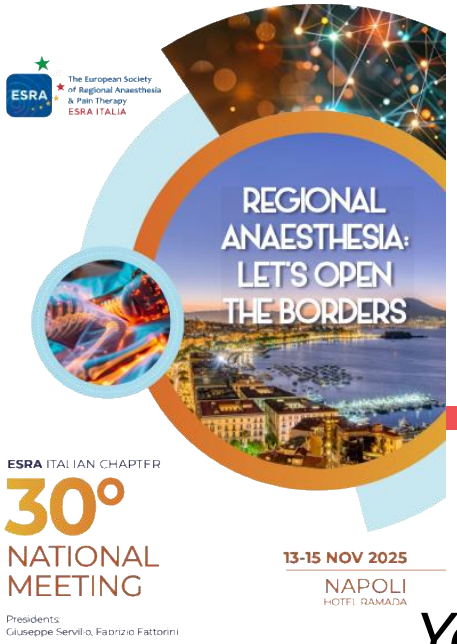
From idea to publication;

how clinical scientific project is born

Francesca Rubulotta

INNOVATION DIVERSITY EQUALITY ADVOCACY LEADERSHIP

No disclosure



Università di Catania

SCUOLA DI SPECIALIZZAZIONE IN

ANESTESIA, RIANIMAZIONE, TERAPIA INTENSIVA E DEL DOLORE

You are welcome to share details of this presentation responsibly and

with due credit on social media

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McGill
Department of Critical Care Medicine

The European Society of Regional Anaesthesia & Pain Therapy
ESRA ITALIA

WHY?

HOW?

Special Thanks to:
Franco Carli
Michelle Chew
Mattheu Komorowski

1952

2025

The European Society of Regional Anaesthesia & Pain Therapy
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From idea to publication

WHY?

HOW?

From BED to BENCH

Purpose:

To outline the process of transforming a clinical observation into a published research study in regional anesthesia.

Phase 1: The Spark - Identifying a Clinical Question

The Bedside Observation:

Emphasize from *real-world* clinical experiences.
Examples: novel technique idea, variable success rates, patient variability, unusual complication, potential benefits.
Frame it as a "**clinical puzzle**" that needs solving.

VTS: Visual training strategies

Characteristics of a Good Clinical Question:

FINER Criteria: *F*easible, *I*nteresting, *N*ovel, *E*thical, *R*elevant.

Why is "novel" important? (Avoiding duplication, advancing knowledge)

Example of turning a vague observation into a focused question:
Vague: "Some blocks work better than others and may improve outcome."
Focused:"**Is there a role for regional anesthesia in the ERAS program?**»
More Focused: Is there a role for epidural in ERAS program for colon surg?

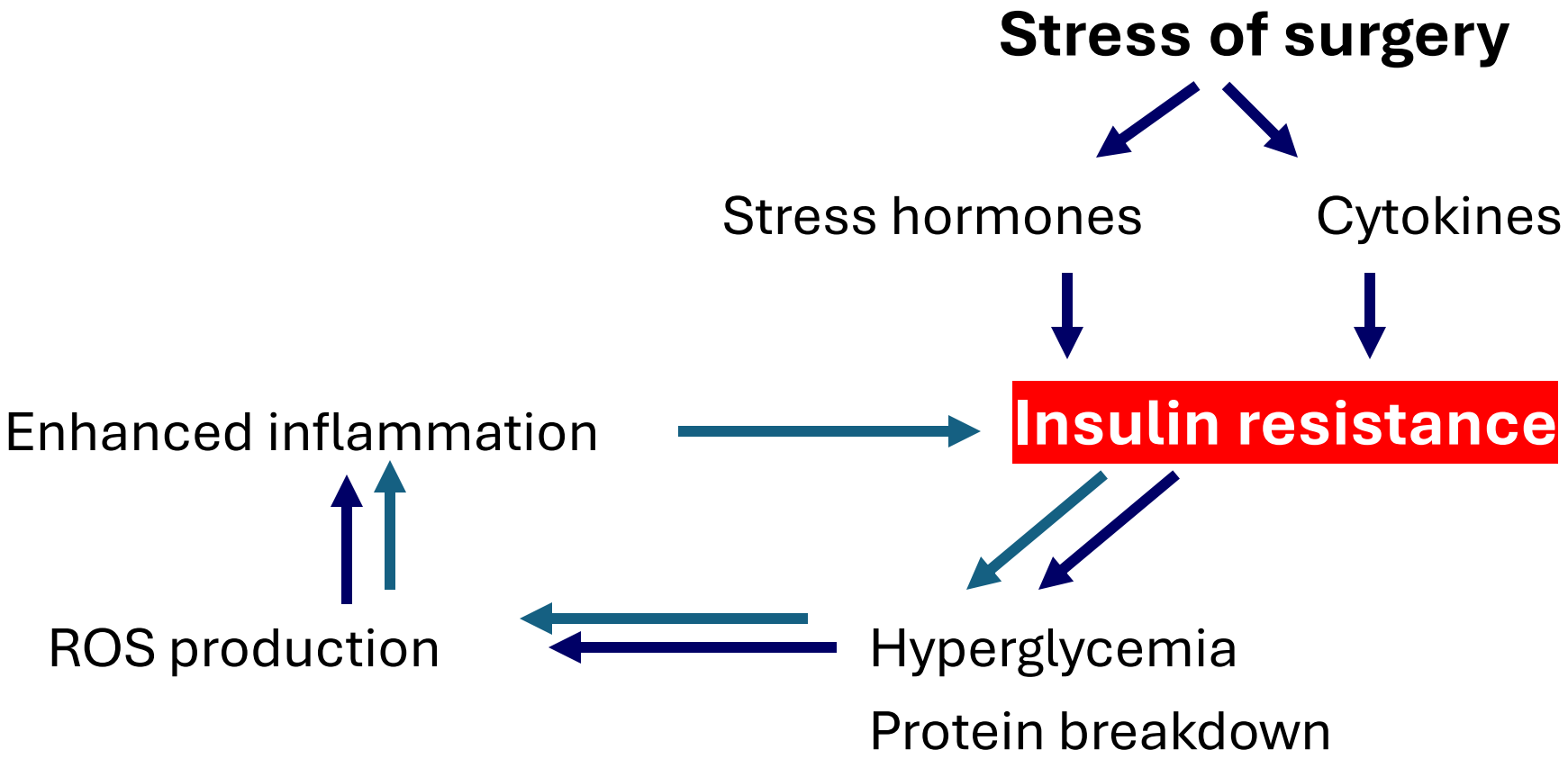
Literature Review - Initial Exploration: preliminary literature search.
Identify what is *already known*.
Pinpoint the *knowledge gaps* that your research can address.
Use databases like PubMed, Cochrane Library, Google Scholar.

Is there a role for regional anesthesia and analgesia in the ERAS program?

ERAS: modifying surgical stress pathophysiology

- Insulin resistance is the mechanism affecting recovery
- Insulin resistance is central to stress metabolism
  - Reduces healing and muscle function recovery
  - Closely related to common postoperative complications
- ERAS is made up of elements modifying insulin resistance

Pathophysiology



Pain after abdominal surgery

NSAIDs/Coxibs

Tylenol

Steroids

Somatic Pain

- Incisional pain
- Open > Laparoscopic

Conduction blockade

Inflammation

- CO_2 irritation
- Surgical manipulation
- Open > Laparoscopic

IV Lidocaine

Opioid

α_2 agonists

NMDA antagonists

Shoulder Pain

- Laparoscopic
- Diaphragmatic irritation

Neuropathic Pain

Rectal procedures
Thoracic surgery

Gabapentinoids

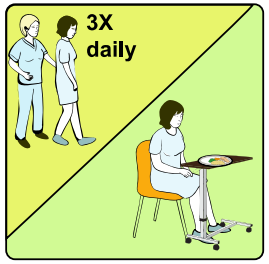
Visceral Pain

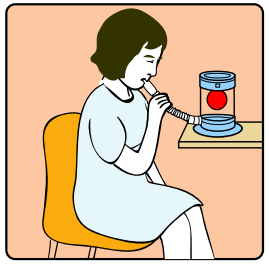
- Surgical manipulation
- Pneumoperitoneum (distension)

Conduction blockade

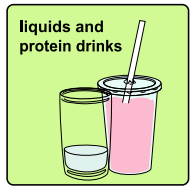
Beyond analgesia

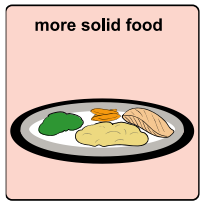
Nausea/Vomiting

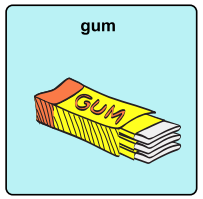




Sedation





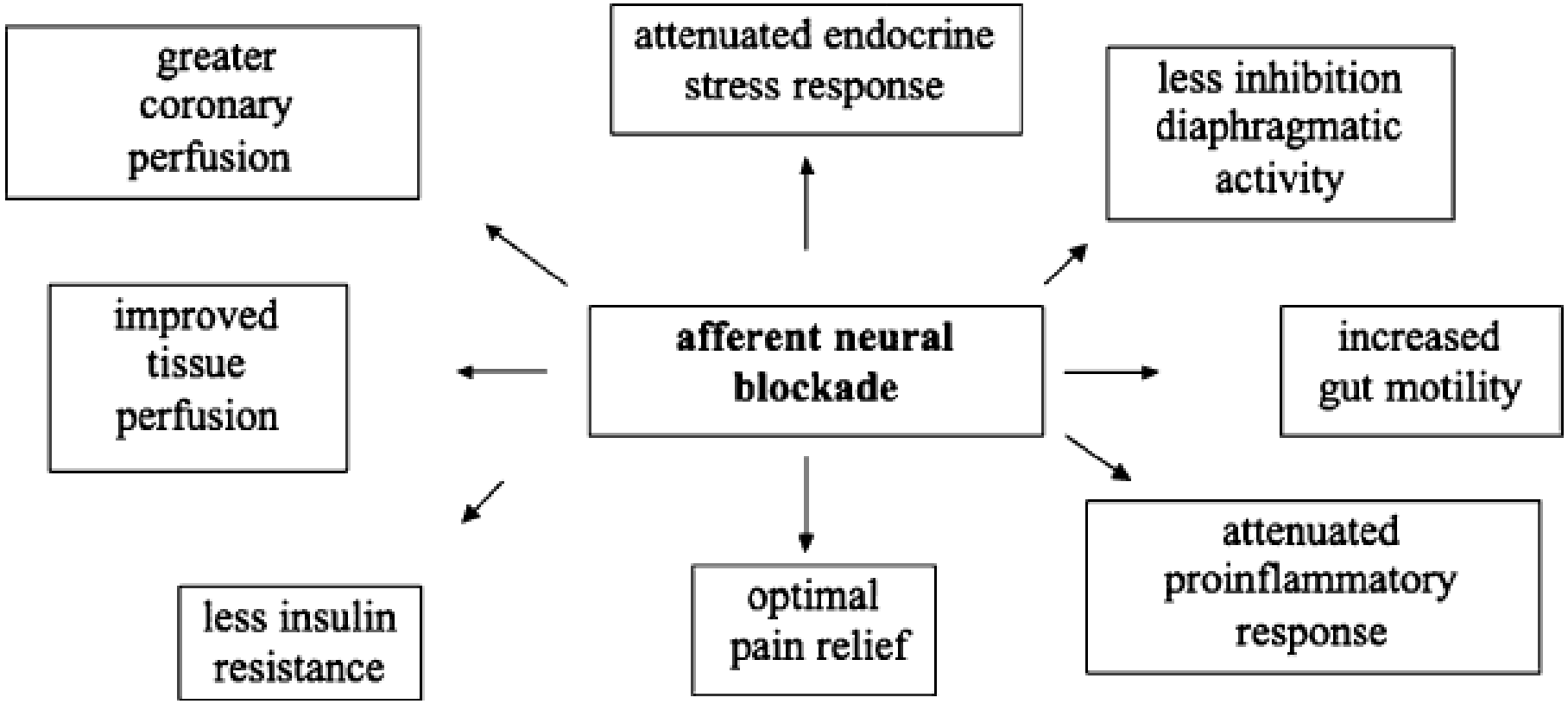


Ileus

Respiratory depression

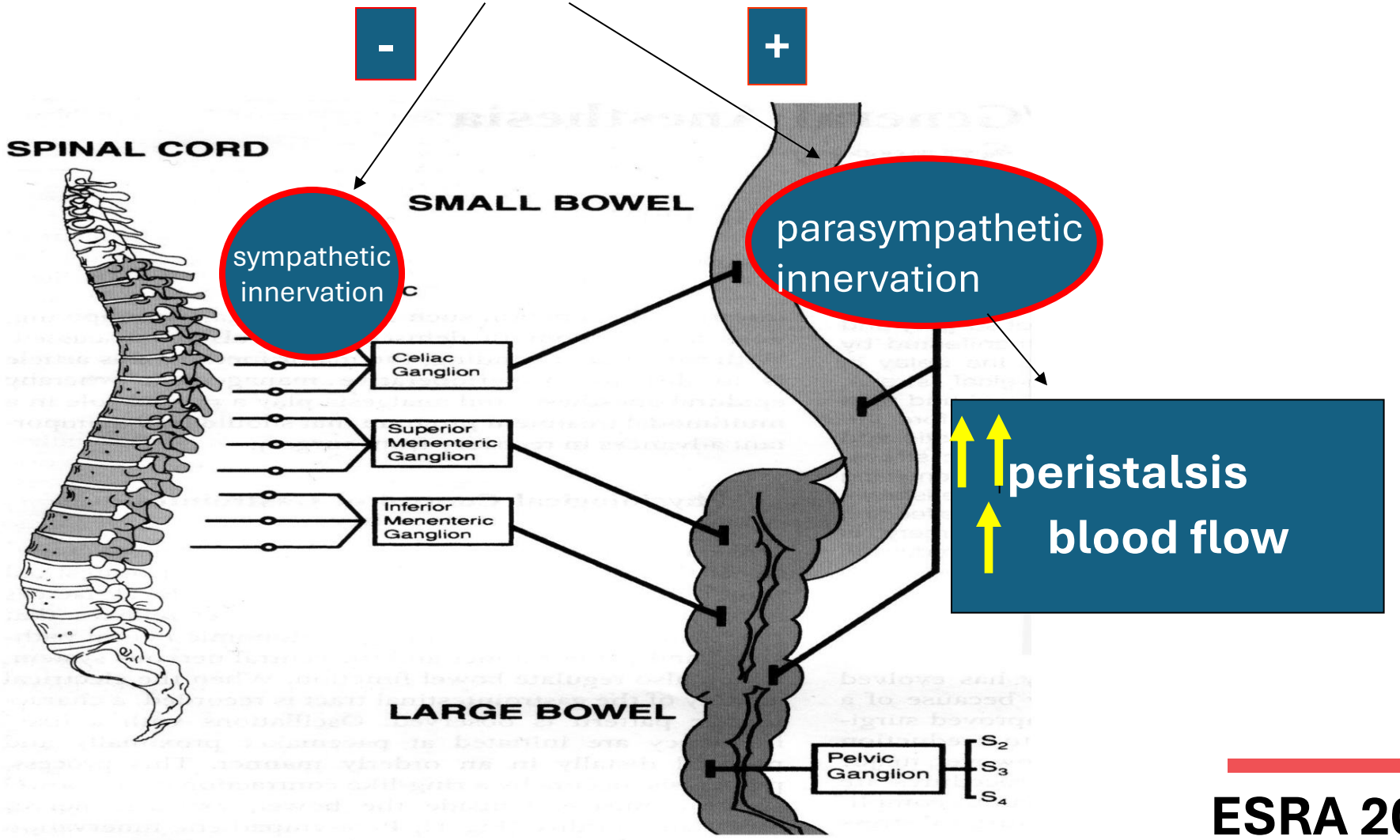
Urinary Retention

Epidural for surgery

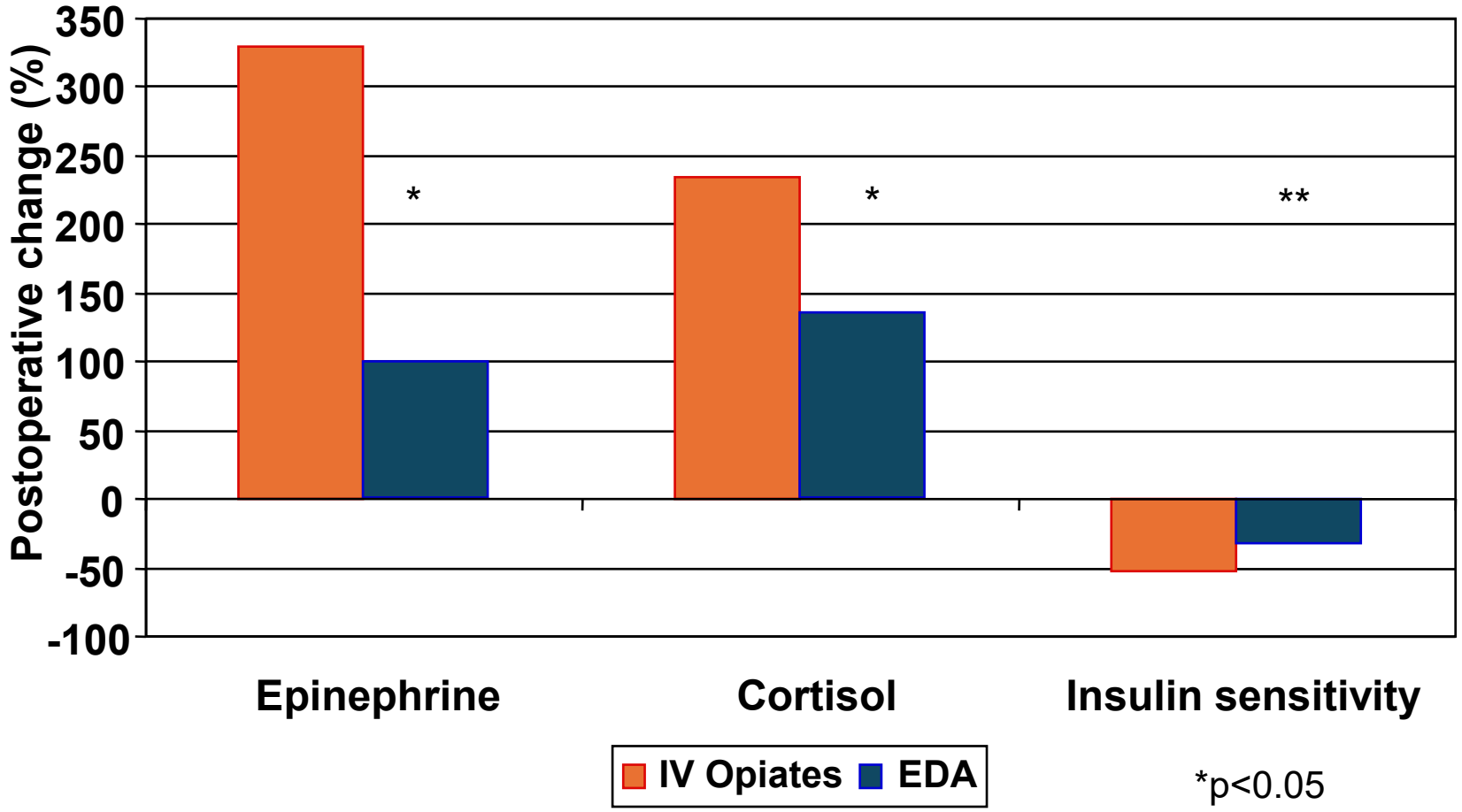


Thoracic epidural

local anesthetics



Epidural reduces postoperative insulin resistance



*p<0.05
**p<0.01

Uchida, Br J Surg 1988

Is there a role for regional anesthesia and analgesia in the ERAS program?

Phase 2: Study Design and Methodology

Choosing the Right Study Design: Journals have instructions for Authors

Observational Studies: Case reports/series, cohort studies, cross-sectional studies.

Experimental Studies: Randomized controlled trials (RCTs), quasi-experimental studies, step wedged, adaptative platfom trials .

Defining Variables & Outcomes:
Independent Variable: What you are manipulating (e.g., insuline resistence).
Dependent Variable: What you are measuring (e.g., post-operative pain, hyperglicemia).
Primary Outcome: The main outcome of interest (pain scores,)
Secondary Outcomes: Additional outcomes (side effects, LOS, complications)
Sample Size Calculation: Why it is crucial!
Avoid Type I (false positive) and Type II (false negative) errors.
Mention online calculators or statistical consultation.

Methodology: observational

Lattermann R, Carli F, Wykes L, Schricker T.
Epidural blockade modifies perioperative glucose production without affecting protein catabolism. Anesthesiology. 2002 Aug;97(2):374-81.

The aim of the study was to test the hypothesis that epidural blockade inhibits this hyperglycemic response by attenuating endogenous glucose production.

Methodology: experimental

Lattermann R, Carli F, Wykes L, Schricker T.
Perioperative glucose infusion and the catabolic response to surgery: the effect of epidural block. Anesth Analg. 2003 Feb;96(2):555-62, table of contents.

Methodology: observational

Lattermann R, Carli F, Wykes L, Schricker T.
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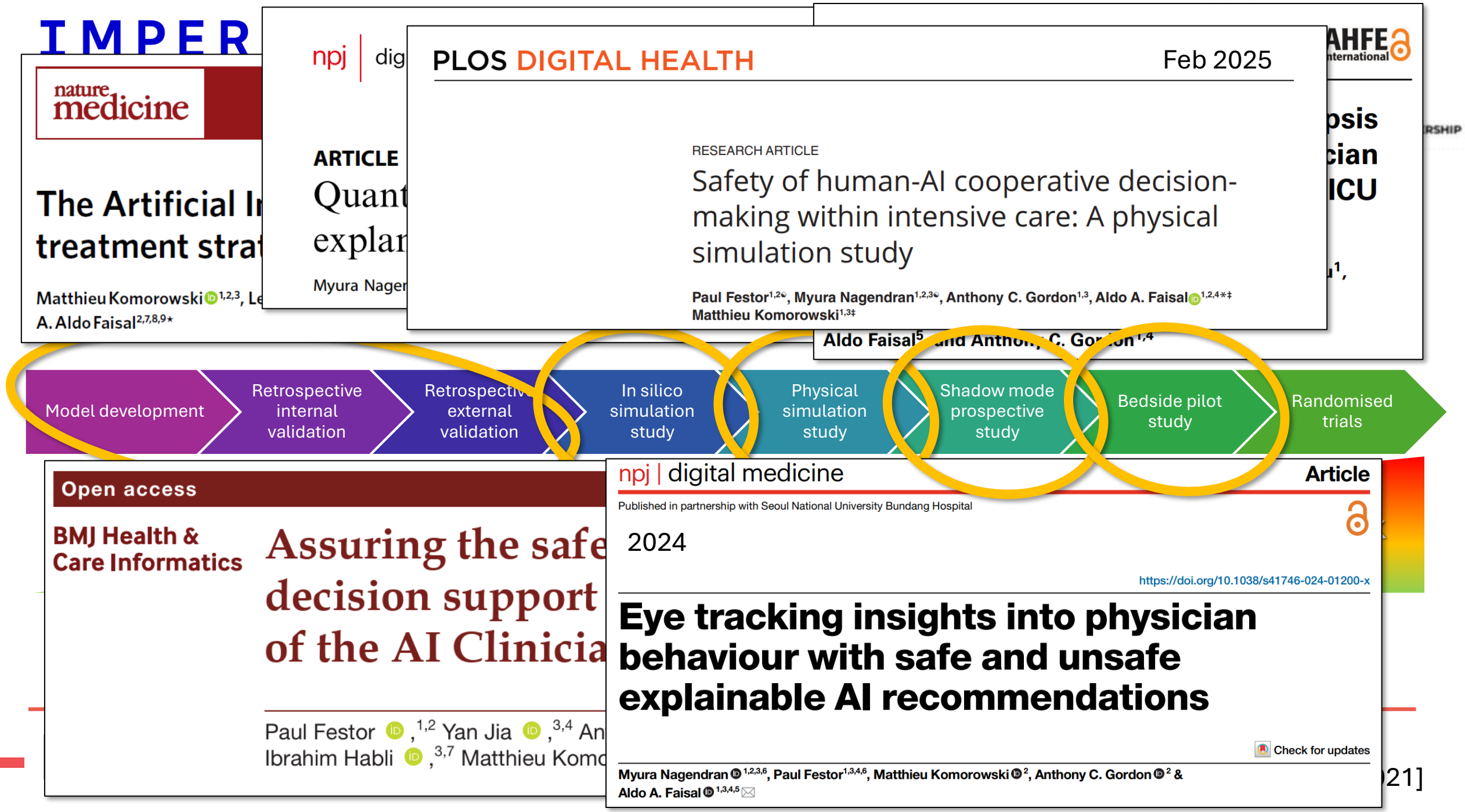
Methodology: experimental

Carli F, Mayo N, Klubien K, Schricker T, Trudel J, Belliveau P.
Epidural analgesia enhances functional exercise capacity and health-related quality of life after colonic surgery: results of a **randomized trial**.
Anesthesiology. 2002 Sep;97(3):540-9. doi: 10.1097/00000542-200209000-00005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Matthieu Komorowski[1,2,3], Le
A. Aldo Faisal[2,7,8,9*]
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ARTICLE
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Myura Nager
PLOS DIGITAL HEALTH
Feb 2025
RESEARCH ARTICLE
Safety of human-AI cooperative decision-making within intensive care: A physical simulation study
Paul Festor[1,2], Myura Nagendran[1,2,3], Anthony C. Gordon[1,3], Aldo A. Faisal[1,2,4*‡]
Matthieu Komorowski[1,3‡]
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ICU
RSHIP
Aldo Faisal[5]
Model development
Retrospective internal validation
Retrospectiv external validation
In silico simulation study
Physical simulation study
Shadow mode prospective study
Bedside pilot study
Randomised trials
Open access
BMJ Health & Care Informatics
Assuring the safe
decision support
of the AI Clinicia
Paul Festor ,[1,2] Yan Jia ,[3,4] An
Ibrahim Habli ,[3,7] Matthieu Komo
npj | digital medicine
Article
Published in partnership with Seoul National University Bundang Hospital
2024
https://doi.org/10.1038/s41746-024-01200-x
Eye tracking insights into physician behaviour with safe and unsafe explainable AI recommendations
Check for updates
Myura Nagendran[1,2,3,6], Paul Festor[1,3,4,6], Matthieu Komorowski[2], Anthony C. Gordon[2] &
Aldo A. Faisal[1,3,4,5]

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IMPERIAL

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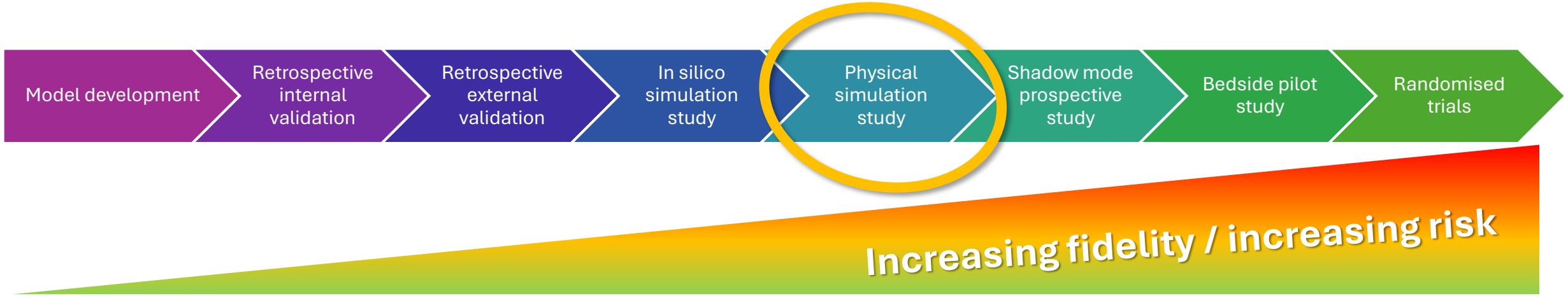
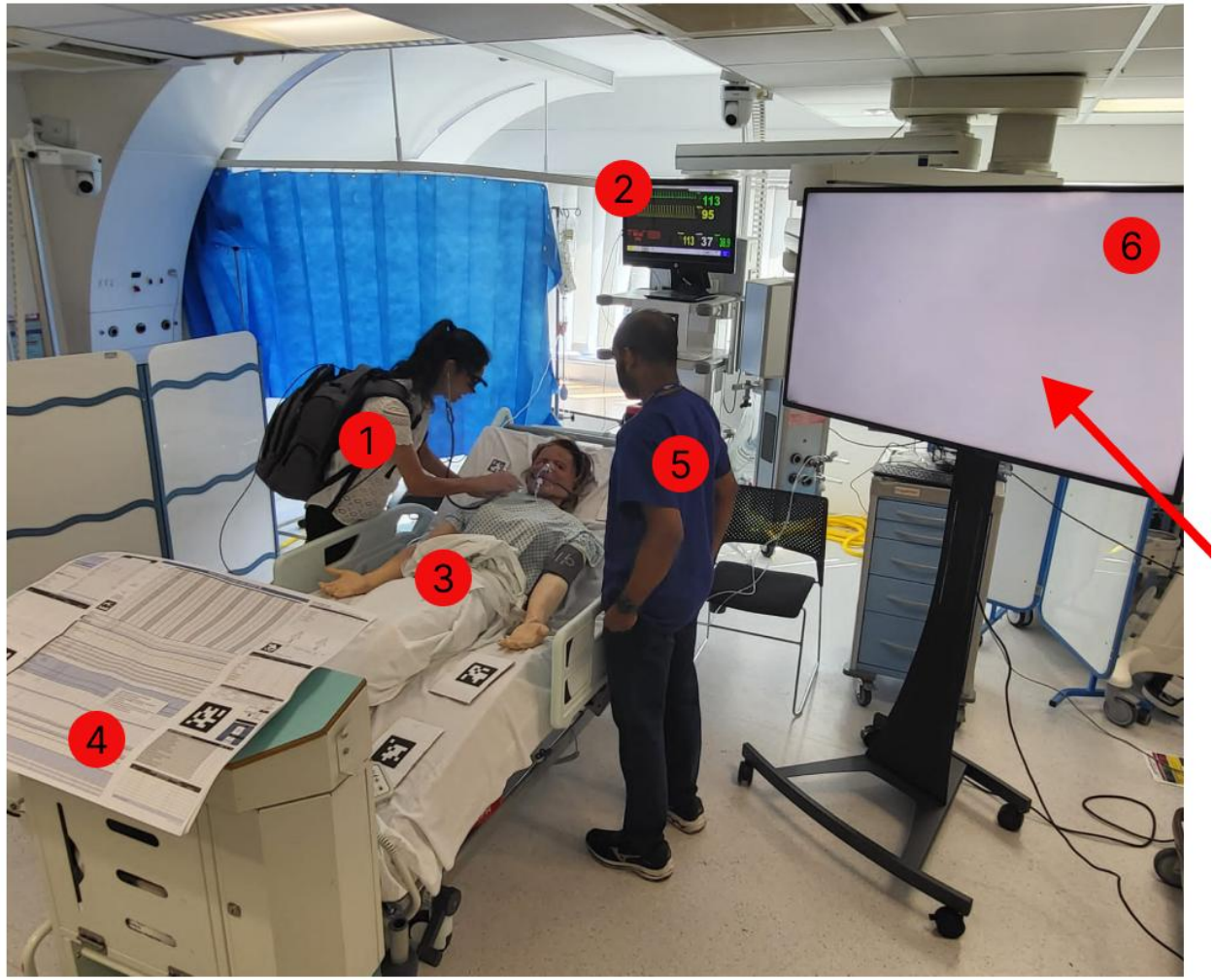
How can we validate an AI System?



[Antoniou, CMAJ 2021]

IMPERIAL

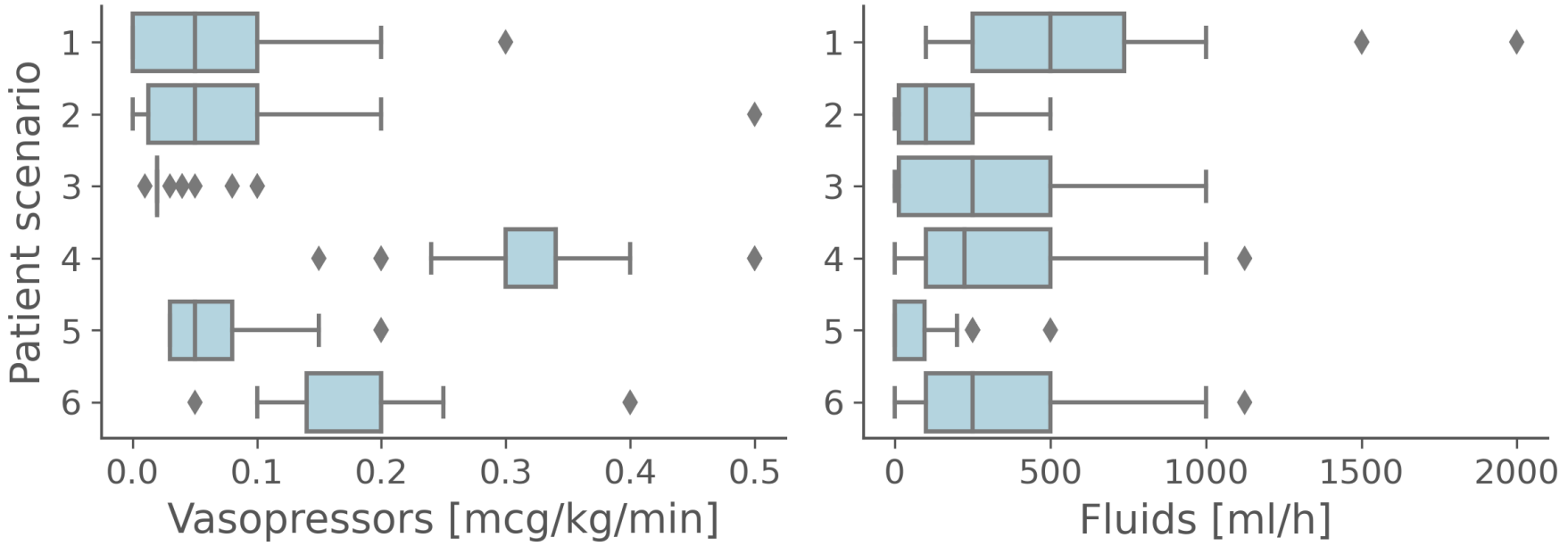
AI Clinician safety evaluation



- Simulated ICU ward round of 6 patients with sepsis
- With AI Decision Support System
- 1/3 of AI suggestions voluntarily unsafe
- Eye tracking

(1) Subject
(2) Bedside monitor
(3) Patient mannequin
(4) ICU bedside information chart
(5) Bedside nurse
(6) AI screen.

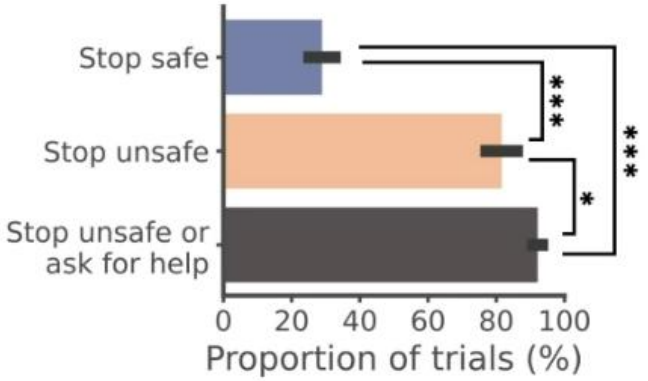
Clinical practice variability

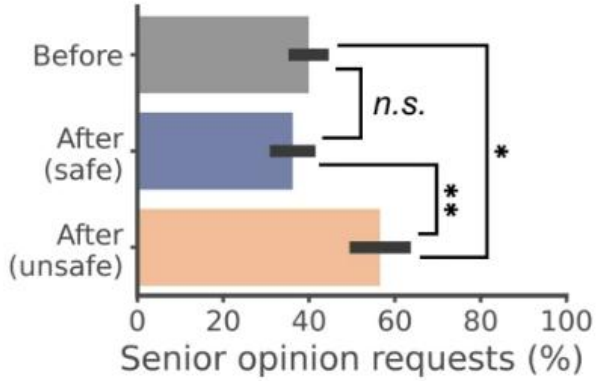


Distribution of the initial vasopressors (left) and fluids (right) recommendations by the study participants prior to seeing the AI recommendations, for each of the six patient scenarios.
N=38 ICU doctors

[Nagendran, npj Digital Med 2024; Festor, PLOS Dig Health 2025]

AI safety evaluation with eye tracking

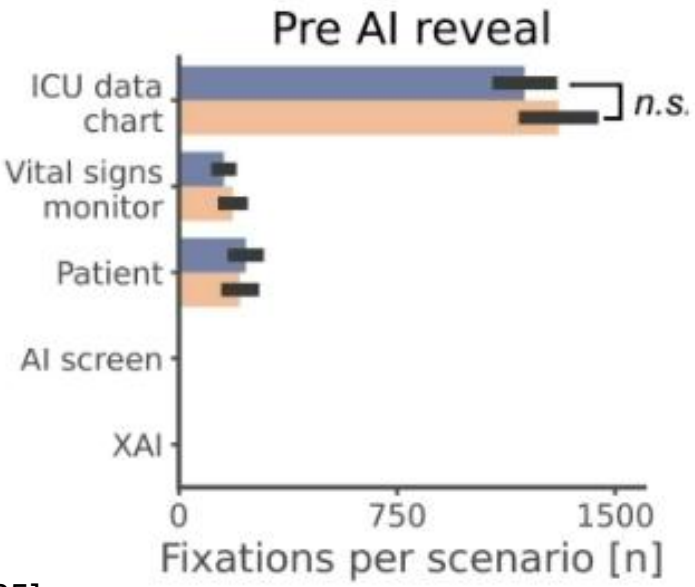


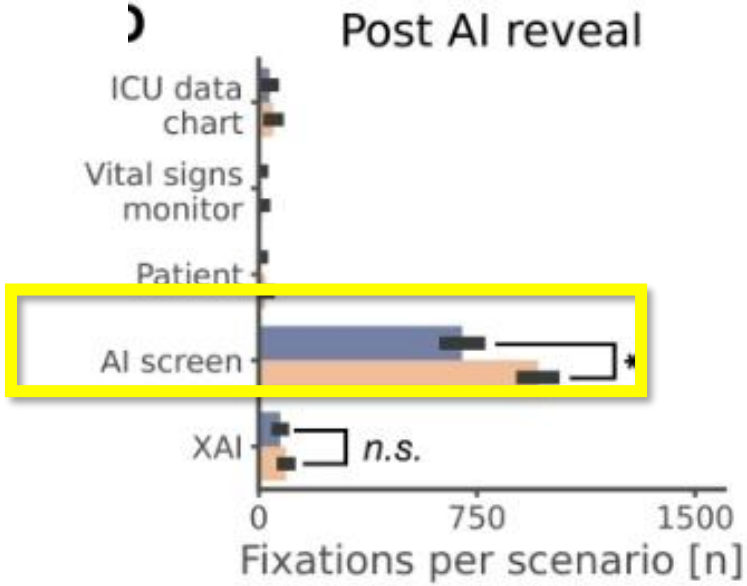


- N= 38 doctors
- 456 decisions assessed

Safe | Unsafe

- Longer time spent looking at AI screen for unsafe AI suggestions
- Little time spent on AI explanations
- The field of RL needs better explanations





[Nagendran, npj Digital Med 2024; Festor, PLOS Dig Health 2025]

Randomised, Embedded, Multi-factorial, Adaptive Platform Trial

COVID-19

The Randomised, Embedded, Multi-factorial, Adaptive Platform Trial for Community-Acquired Pneumonia (REMAP-CAP)

Prepardness and network of networks

Phase 2: Study Design and Methodology

Choosing the Right Study Design: Journals have instructions for Authors

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Defining Variables & Outcomes:
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Primary Outcome: The main outcome of interest (pain scores,)
Secondary Outcomes: Additional outcomes (side effects, LOS, complications, catabolic effect)
Sample Size Calculation: Why it is crucial!
Avoid Type I (false positive) and Type II (false negative) errors.
Mention online calculators or statistical consultation.

Two conditions must be met:

First statistical

then clinical significance

What does statistical significance mean to you?

Just tells you whether or not your data does not support the null hypothesis

- That the p-value is less than 0.05
- That the likelihood of the null hypothesis is less than 5%
- That two populations differ from each other
- That one can be confident that two samples are different

The p-value

- If $p<0.05$ the null hypothesis is rejected

- The smaller the p-value, the more 'evidence' we have that the null hypothesis is probably wrong = significant result
- If $p>0.05$, we do not have enough evidence to reject the null hypothesis
- P-value is NOT used to determine if the observed difference is due to chance or random sampling error. It only tells you about the observed data's level of agreement with the null hypothesis

Why 0.05?

- Ronald Fisher (1925 ’Statistical methods for research workers’) but also by other statisticians at that time
- Proposed the 5% probability as a rough guide of the strength of evidence against the null hypothesis
- If $p<0.05$ then one should repeat the experiment
- If subsequent studies show $p<0.05$ (significant *p* values), one could conclude that the observed effects were unlikely to be solely the result of chance.

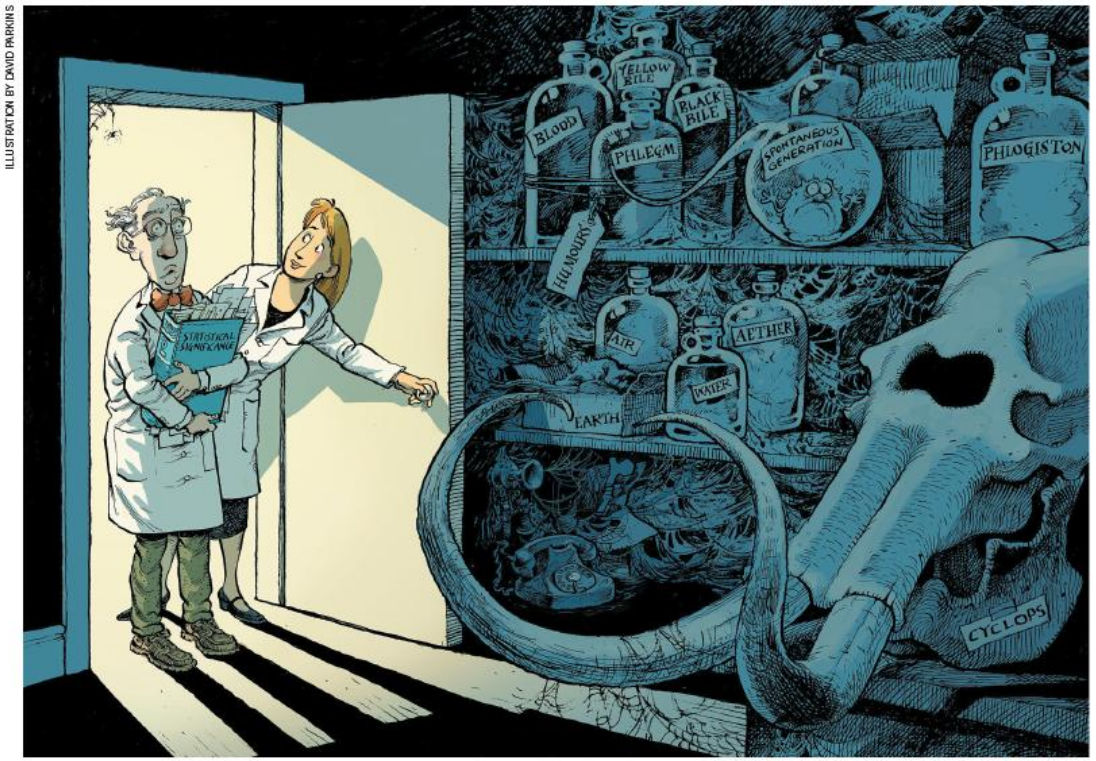
Original Investigation

Evolution of Reporting *P* Values in the Biomedical Literature, 1990-2015

David Chavalarias, PhD; Joshua David Wallach, BA; Alvin Ho Ting Li, BHSc; John P. A. Ioannidis, MD, DSc

JAMA. 2016;315(11):1141-1148. doi:10.1001/jama.2016.1952

- Reporting p-values doubled from 7.3% to 15.6% from 1990 to 2014
- 96% reported at least one 'statistically significant' p-value
- Effect size reported in 13.9%
- Confidence intervals reported in 2.3%
- At least one effect size AND at least one CI in 1.8%



Retire statistical significance

Valentin Amrhein, Sander Greenland, Blake McShane and more than 800 signatories
call for an end to hyped claims and the dismissal of possibly crucial effects.

21 MARCH 2019 | VOL 567 | NATURE | 305

We are not calling for a ban on p-values.
We are calling for a stop to the use of *P* values in the conventional, dichotomous way
— to decide whether a result refutes or supports a scientific hypothesis

Other approaches for statistical ’compatibility’

- **Report the p-value BUT**
- **Emphasize uncertainty of point estimates and effect sizes**
- **Measure the effect size (mean difference, risk ratio, odds ratios etc)**
- **Report and discuss confidence (compatibility) intervals**

Clinical (or biological) significance?

- **Not the same as statistical significance**
- **Results may be statistically significant but not clinically significant and vice versa**
- **Is there an important response/change for the patient?**
- **Much more subjective**
- **Determined by relevance, values, risk/benefit profiles, alternative Rx, resource requirements etc.**

Two conditions must be met:
First ~~statistical~~ significance
compatibility/p~~lausibility~~ then clinical
significance meaning

Pripp PH. Tidsskr Nor Legeforen nr. 16, 2015; 135: 1462 – 4

Ethical Considerations: Informed consent process.
Institutional Review Board (IRB) approval.
Privacy and data security.
Importance of equipoise (genuine uncertainty about which treatment is better).

Detailed Methodology:
Explain Postoperative pain management
block technique (landmark, ultrasound, etc.)
Standardize protocols.
Anesthesia (sedation, monitoring).

Data Collection: Develop a system for organized data collection.
Statistical Analysis Plan: Consult a statistician *before* data collection.

Phase 3: The Bench - Implementing the Study

Patient Recruitment:

Develop clear inclusion/exclusion criteria.

Recruitment strategies (avoid coercion).

Importance of accurate screening and enrollment.

Data Integrity: Implement quality control measures.

Double-check data entry.

Address missing data appropriately.

Monitor for protocol deviations.

Blinding (if applicable): Explain the purpose of blinding and how it will be maintained.

Timeline Adherence: Project management skills.

Phase 4: The Pen - Data Analysis and Manuscript

Preparation. Statistical Analysis:

Presentation of data (tables, figures).
Interpretation of results.

Manuscript Writing:
IMRaD Format: Introduction, Methods, Results, and Discussion.

Introduction: Clearly state the problem, justify the study, and state the hypothesis.

Methods: Detailed enough for replication.

Results: Present the facts *without* interpretation.

Discussion: Interpret the results, compare to existing literature, acknowledge limitations, and propose future research directions.

Select the right journal: Consider impact factor, target audience, journal scope, and submission guidelines.

Figures and Tables:
Professional, clear, and easy to understand.
Follow journal guidelines.
Citations: Use a consistent citation style (e.g., Vancouver).

Phase 5: The Press - Submission and Publication

Submission Process:

Adhere to journal guidelines meticulously.

Write a compelling cover letter.

Disclose any conflicts of interest.

Peer Review:

Be prepared for feedback (accept criticism gracefully).

Address reviewer comments point-by-point.

Be polite and respectful in your responses.

Revision and Resubmission:

Make all requested changes.

Write a response letter addressing each point raised by the reviewers.

Acceptance and Publication: Celebrate!

Post-Publication: Share your work (conferences, social media, etc.)

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Common pitfalls in research results

ESRA 2025

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www.iwinideal.com

Pitfalls

- Putting too much faith in the words "**peer-reviewed**".

- Too many people assume that the words "peer-reviewed" mean something like "**perfect, accurate**, with no flaws or fallacies", when in reality "peer-reviewed" just means the research is ready to be published, tested, confirmed and reconfirmed by the academic community.

- PEER TRAINING??? PEER Selection??? PEER rewarding???

Pitfalls

- Make sure results match the population you treat (70 Kg male healthy volunteers the standard)

- or intent to treat.

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Department of
Critical Care Medicine

Health-related differences between women and men

The 70-kg white male was the paradigm for medical practice

Women any weight were systematically excluded from clinical trials.

In a relatively short period, sex and gender-based analyses have contributed to an exponential growth in our knowledge about health-related differences between women and men.

Effect of patient sex on general anaesthesia and recovery

- Conclusions
- Patient sex is an independent factor influencing the response to anaesthesia and recovery after surgery.
- Women emerged faster from general anaesthesia but their overall quality of recovery was poorer. Female sex hormones, particularly progesterone, might be involved
-

BMJ NEUROSCIENCES AND NEUROANAESTHESIA EDITOR'S CHOICE| VOLUME 106, ISSUE 6, P832-839, JUNE 2011

Pitfalls

- Make sure results match the population you treat or intent to treat. (70 Kg male healthy volunteers the standard)

- Make sure not to confuse ‘significant’ and ‘important’. A systematic review into the effects of gastric protection in MV patients …
- **Re-EValuating the Inhibition of Stress Erosions (REVISE)**

Intensive Care Med (2007) 33:718–720
DOI 10.1007/s00134-007-0551-0

CLINICAL COMMENTARY

Francesca Rubulotta
Antonino Gullo
Fulvio Iscra

Recommendations for ulcer prophylaxis in the treatment of patients with severe sepsis and septic shock: a dog chasing its tail?

correlation and causation.

Pitfalls

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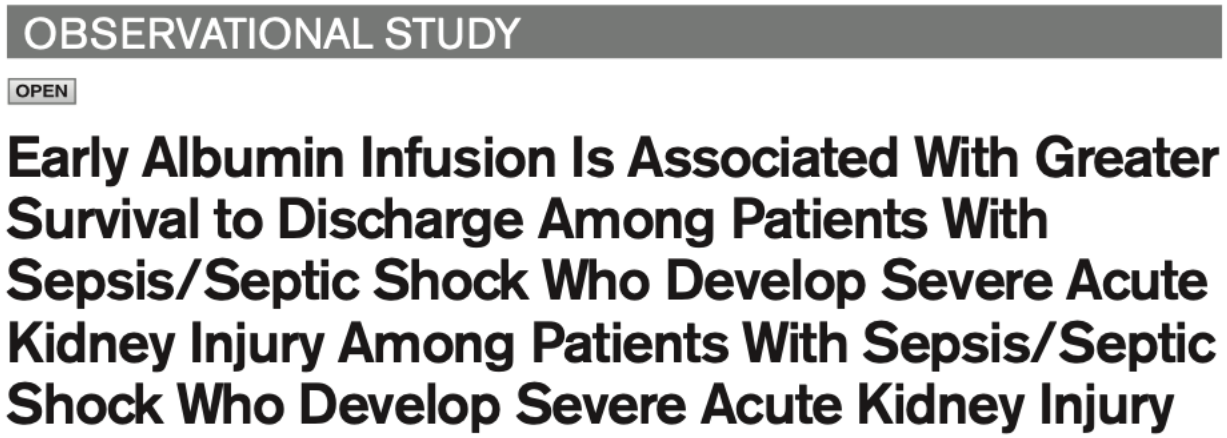
- Make sure not to confuse ‘significant’ and ‘important’. A systematic review into the effects of gastric protection in MV patients …


OBSERVATIONAL STUDY

OPEN

Early Albumin Infusion Is Associated With Greater Survival to Discharge Among Patients With Sepsis/Septic Shock Who Develop Severe Acute Kidney Injury Among Patients With Sepsis/Septic Shock Who Develop Severe Acute Kidney Injury

ss Erosions (REVISE)

en correlation and causation.

INNOVATION DIVERSITY EQUALITY ADVOCACY LEADERSHIP

INTERNATIONAL WOMEN IN INTENSIVE AND CRITICAL CARE NETWORK

Pitfalls

- Make sure not to treat all research as **linear**

- **Limit** research that focuses on **one extreme or another**.
- Whilst we all know that too much sodium can cause an increased risk of heart problems, it's often overlooked that too little sodium can cause similar problems…
- Research isn't always a perfectly linear scale.

Pitfalls

- Exhibiting confirmation bias.

- If you already hold a strong view, then you're automatically more likely to search for information that confirms it.
- As hard as it can be, it's important to keep an open mind to being, well, wrong! **K Maitand Study FEAST NEJM 2011** Fluid boluses significantly increased 48-hour mortality in critically ill children with impaired perfusion in these resource-limited settings in Africa.

- Remember to take multiple studies into consideration, and that research should initially be about finding information, **not about cherry-picking** the statistics or quotes that support your argument.

F

ADULT

Pitfalls

- Falling for the use[illegible]s and ignoring the actual research.
- Think back to the '[illegible]sm' example. Many people fell for the use of sc[illegible]rds and didn't stop to think critically about othe[illegible]Plenty of studies have been done confirming th[illegible] likely to trust information that's presented tc[illegible]ific or technical sounding jargon – even if the i[illegible]r inaccurate.

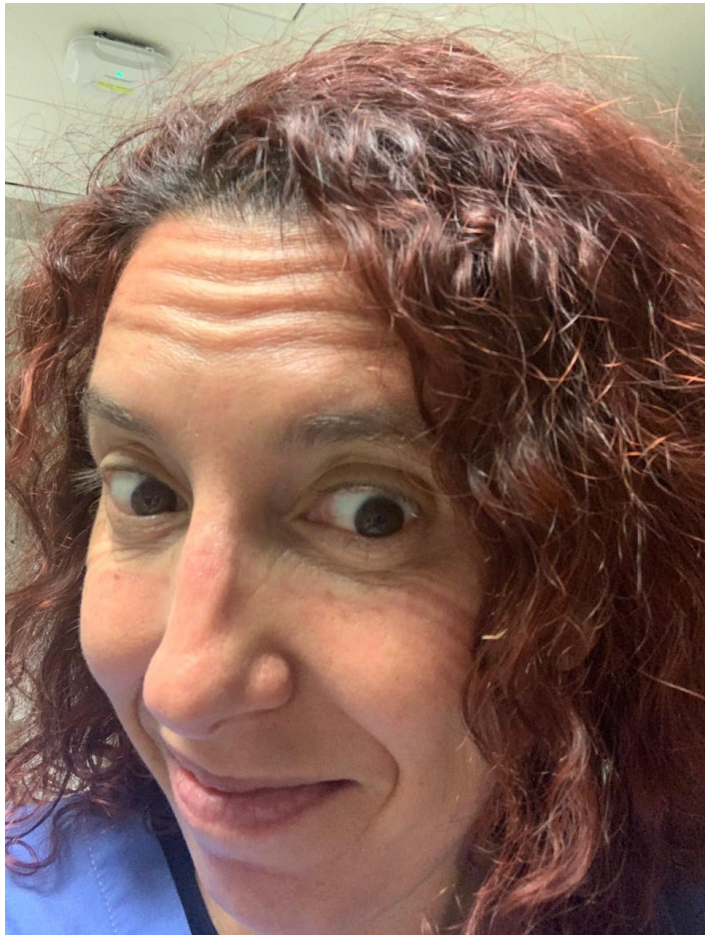
L'elisir d'amore

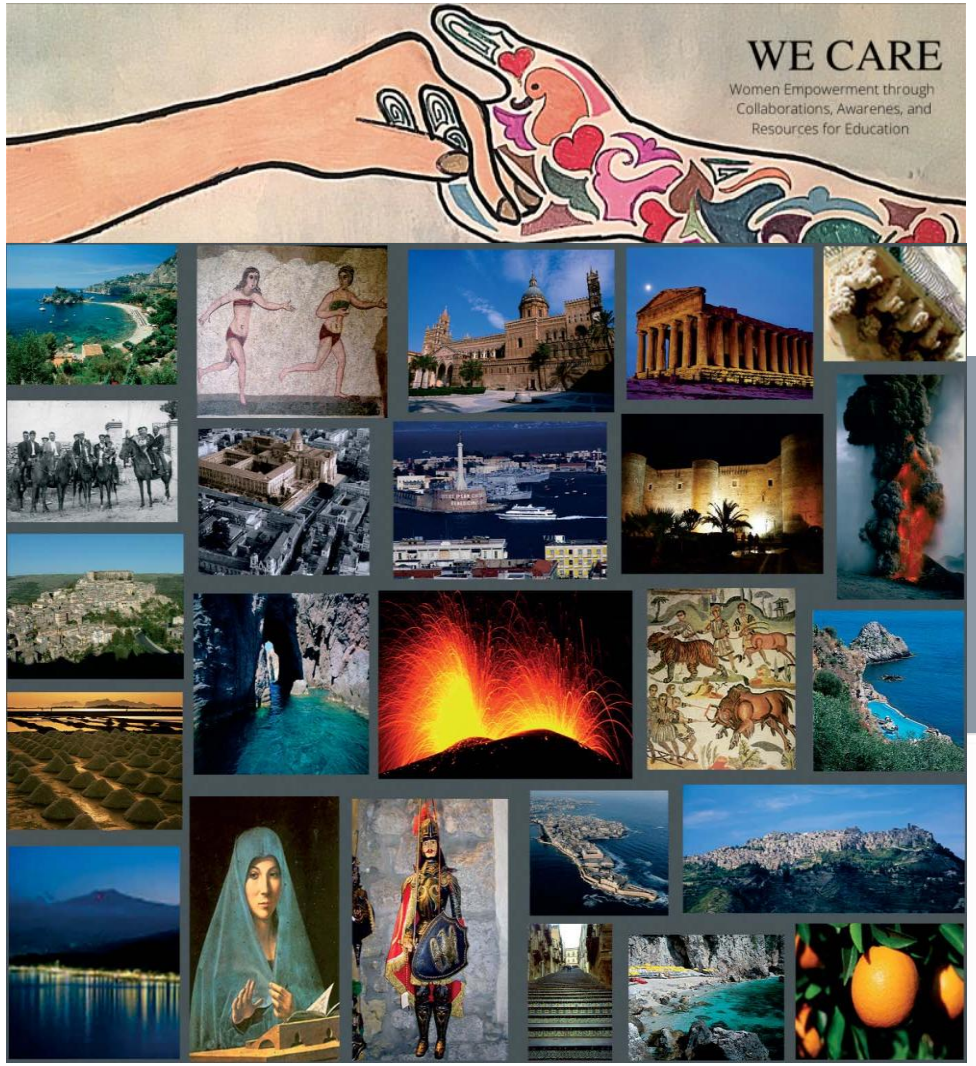
Take Home Message

- Patients selection (gender biases)
- Interpretation (no cherry-picking)
- Adaptation to real needs (fluids in sepsis)
- Public involvement (lesson from MMR and the Pandemic)

Call to Action: I Encourage the audience to start their own research projects.

Questions ?





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