

Completeness of reporting in observational studies

Effects of prior formal training in research methodology

José Andrés Calvache MD MSc FIPP

Department of Anesthesiology – Universidad del Cauca, Colombia

Department of Anesthesiology, Erasmus MC Rotterdam, The Netherlands

Background

- Observational studies account for the majority of publications in health care.
- STROBE statement (*Strengthening the Reporting of Observational Studies in Epidemiology*) was published in 2007 with the aim of **improving the reporting, completeness and use of observational research**.
- Completeness ranges widely
 - Title, Introduction and Abstract have the highest proportions of completeness
 - Methodology and Results sections are the lowest completeness ratings

NEJM, JAMA, Lancet, BMJ, Arch Internal Medicine, CMAJ	69% (95% CI 59 – 79%)
European dermatology journals	57% (range 18 – 98%)
Oncology journals	Range 70 – 90%
Observational studies on hand surgery	38% (range 10 – 54%)

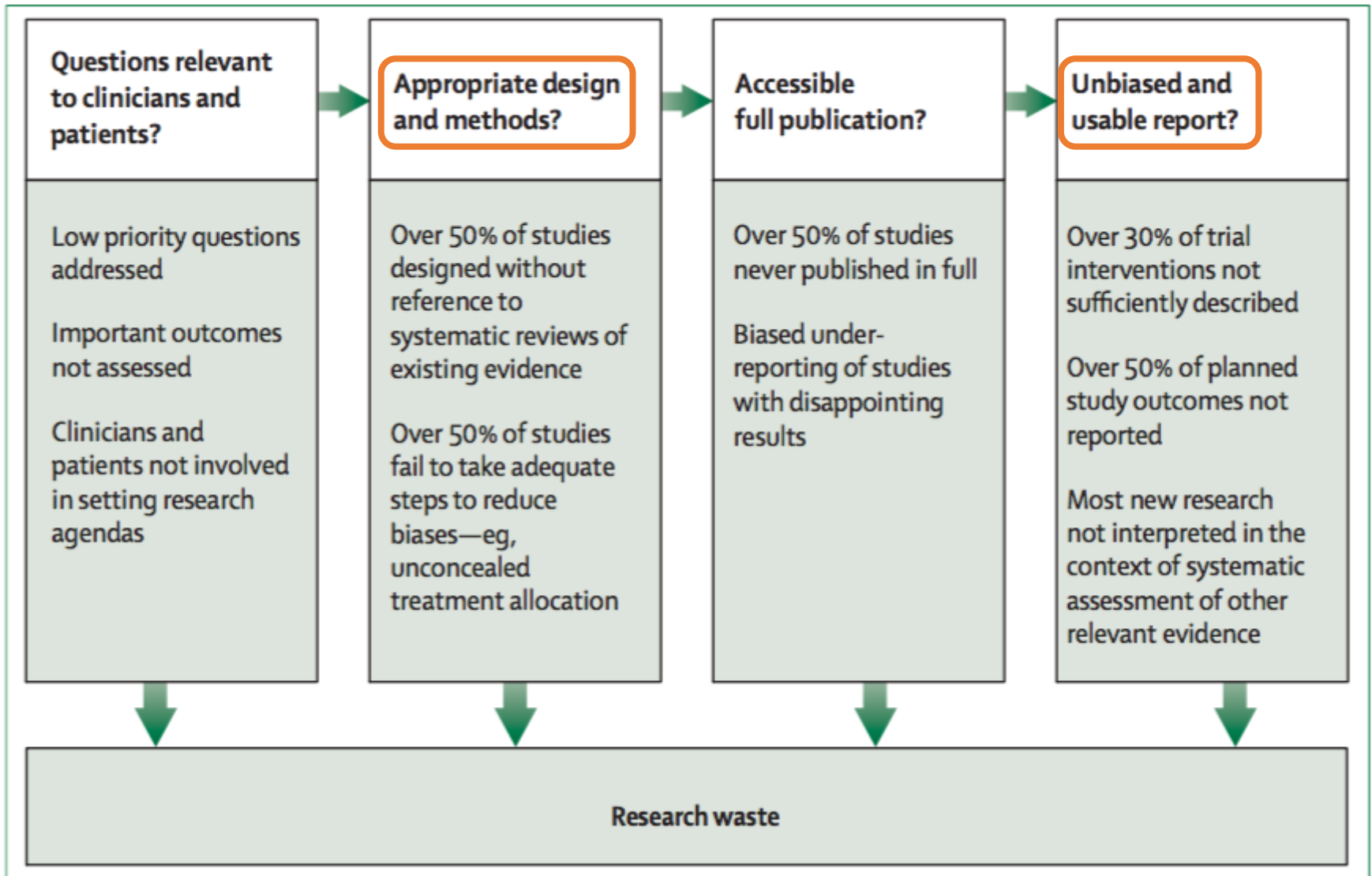


Figure: Stages of waste in the production and reporting of research evidence relevant to clinicians and patients

Iain Chalmers, Paul Glasziou. Avoidable waste in the production and reporting of research evidence. *Lancet* 2009; 374: 86–89

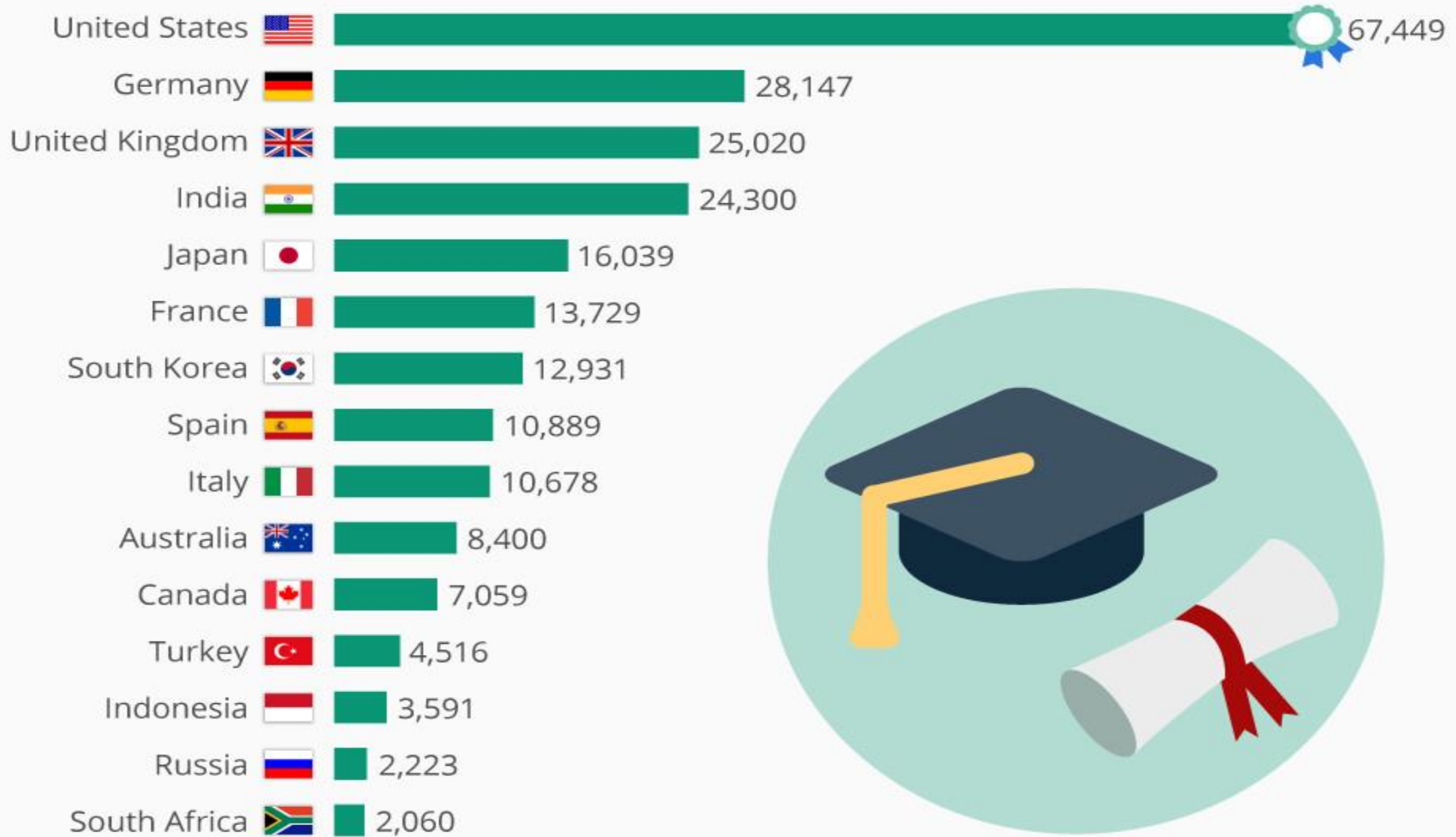
Background

- Methods section requires detailed knowledge of epidemiology and biostatistics, which is not always widely available or accessible.
- In developing countries like Colombia, there is still a limited number of researchers with formal training in methodology or research-related areas.

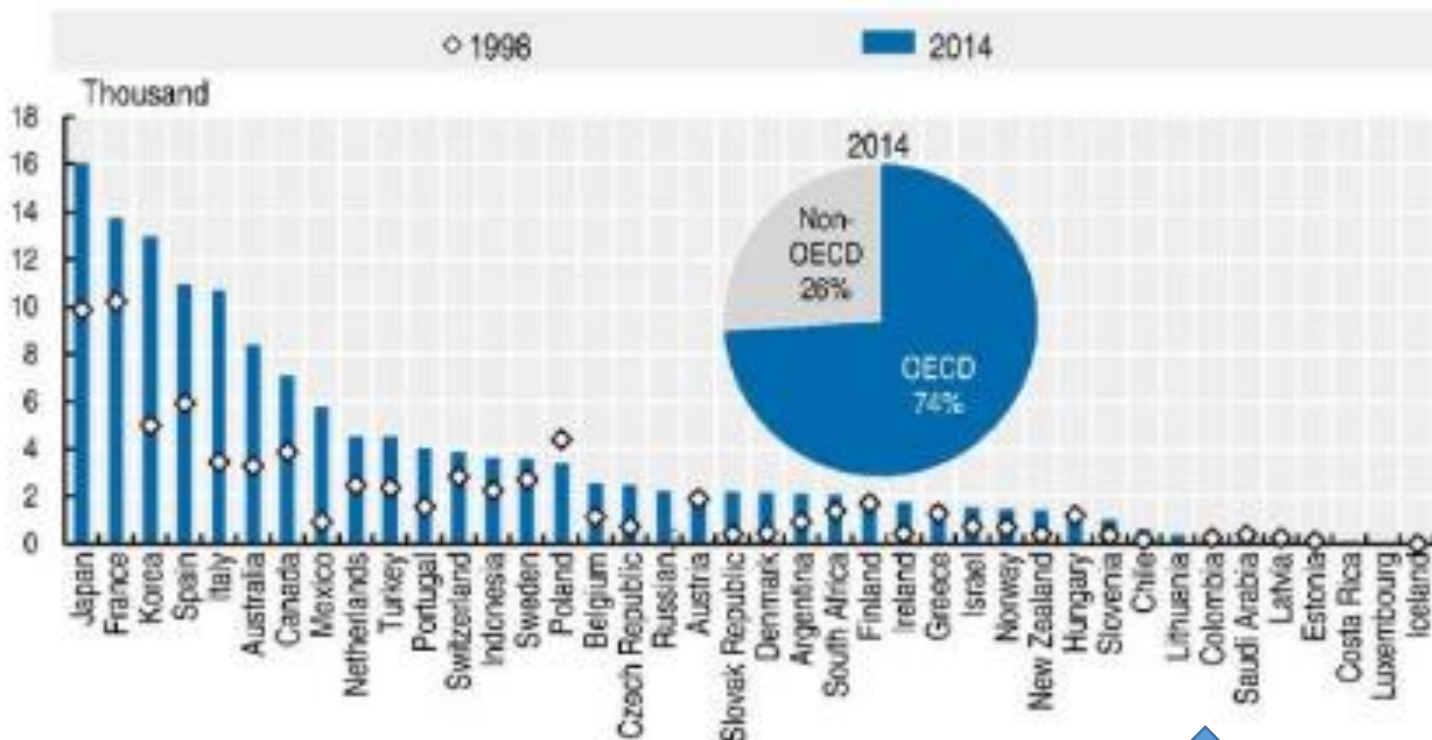
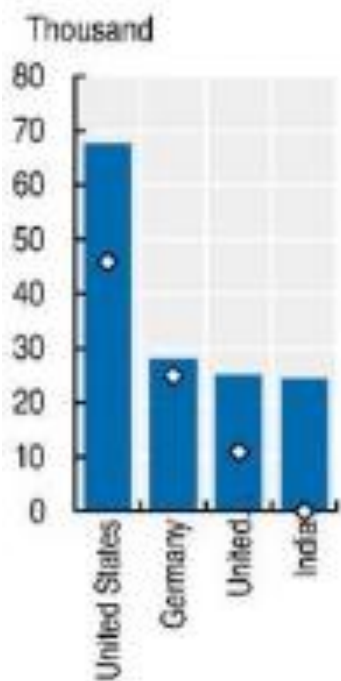


The Countries With The Most Doctoral Graduates

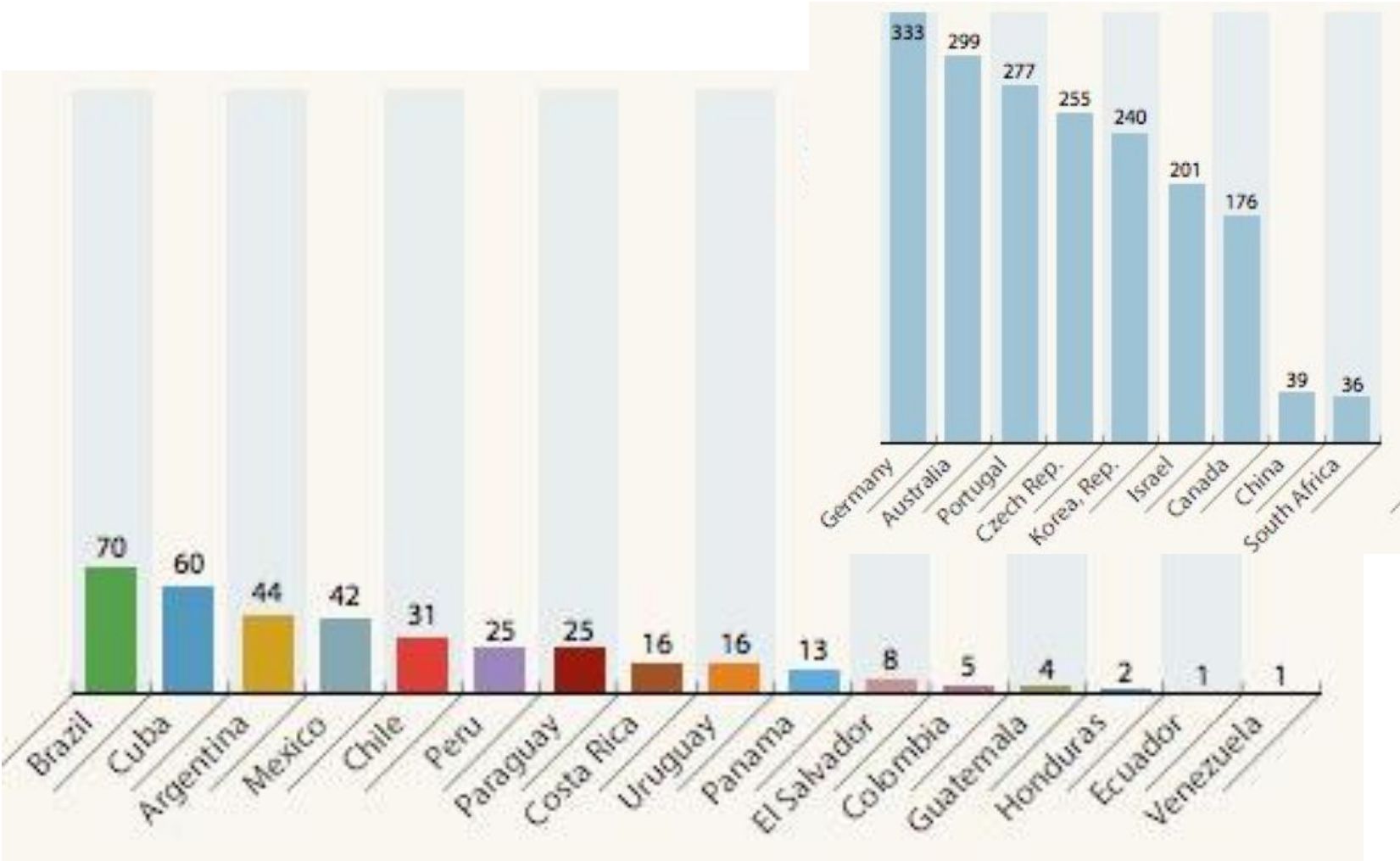
Number of doctoral graduates (all fields) in 2014




New doctoral degrees 2014



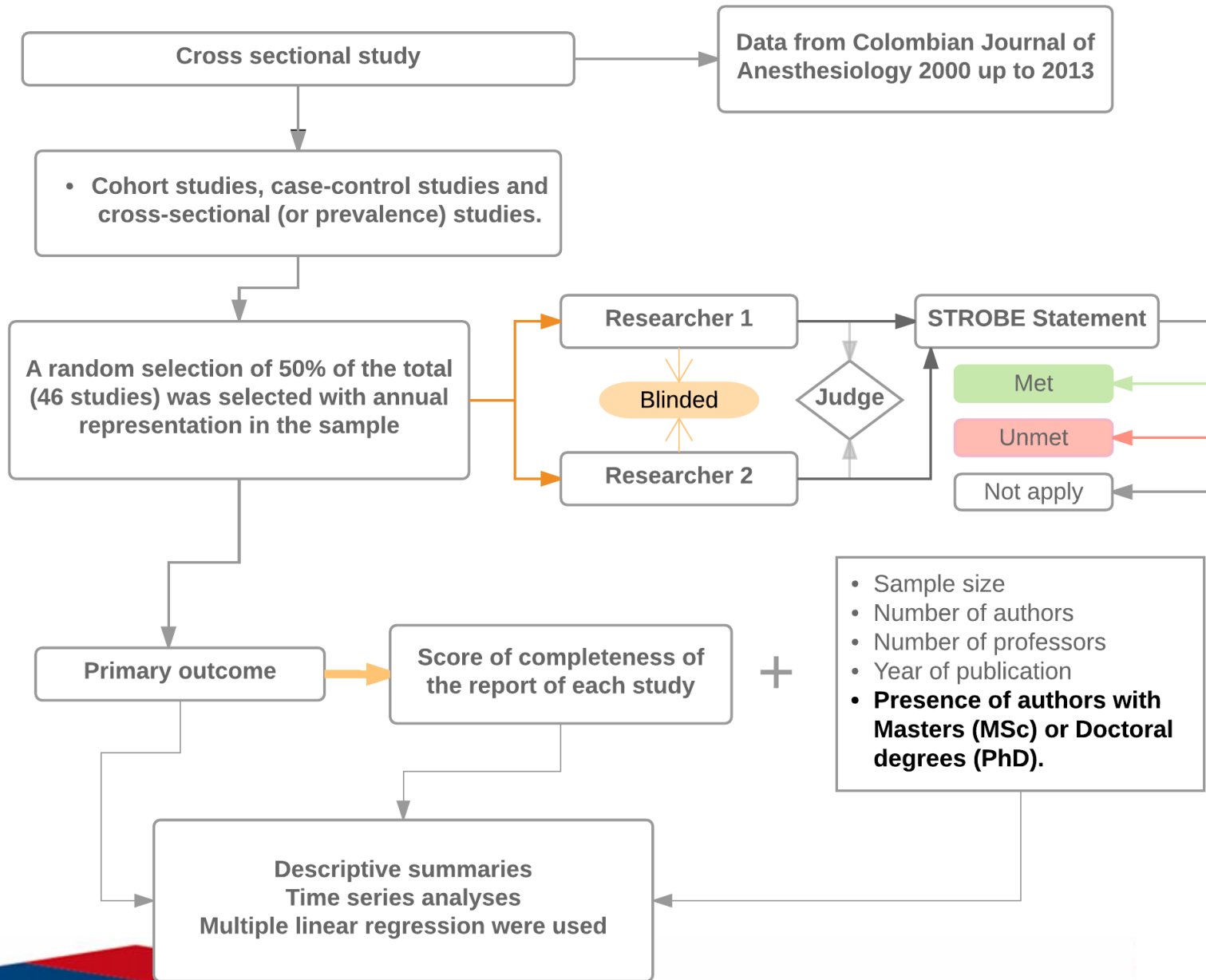
Brazil has the most PhD graduates per million inhabitants in Latin America



Aims

- To determine the completeness of reporting of observational studies published in Colombian Journal of Anesthesiology (2000-2013), using STROBE statement.
 - To test if the presence of an author with formal training (MSc or PhD) increases the average completeness of the observational studies.
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Methods



Results

Table 1 – General characteristics of the studies included

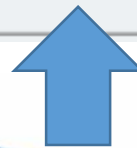
	Frequency (%) Mean $\mu \pm 1$ SD Median [IQR]
<i>Total number of authors</i>	$\mu = 3.7 \pm 2$ Median = 3 [3–5]
<i>Number of faculty</i>	$\mu = 1.7 \pm 1$ Median = 1 [1–3]
<i>Study sample size</i>	Median = 212 [65–260]
<i>Presence of author with masters degree or PhD</i>	18 (78)

Results

- Completeness was 57%, 95% CI [48 – 66%].
 - Title and Introduction (89% each) ICC=above 0.7
 - Methods and Results (below 50%) ICC=below 0.5

Adjusted effect of the variables on report completeness for observational studies published in RCA between 2000 and 2013

Variable	B coefficient	Standard error	p value
Year of publication	0.345	0.420	0.43
Number of authors	1.169	1.073	0.29
Number of faculty	-3.988	1.995	0.06
Sample size	0.003	0.009	0.73
Presence of author with Masters or PhD degree	10.310	2.452	0.03




Limits


- Training of the research team.
- Failure to study the entire population of observational studies, which reduce the confidence of our estimates.
- However, our objective was to document problems with reporting in order to promote improvement and adherence to checklists.



Bottom line

- Completeness of observational studies published in Colombian Journal of Anesthesiology is 57%.
 - Methodology and Results are sections with the greatest deficiencies in reporting.
 - Formal degree-training in research influence positively the completeness of reporting.
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Acknowledgements

- Department of Anesthesiology – Universidad del Cauca, Colombia
 - Department of Anesthesiology, Erasmus MC Rotterdam, The Netherlands, professors M. Klimek and RJ Stolker
 - Professor Douglas Altman to valuable discussion of further ideas related with case reports
 - Prof P. Glasziou, A. Burls and J. Emparanza for counseling me 10 years ago.
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Thanks

jacalvache@unicauca.edu.co



@jacalvache