

# Latin American Surgical Outcomes Study

# 234 million major surgical procedures worldwide

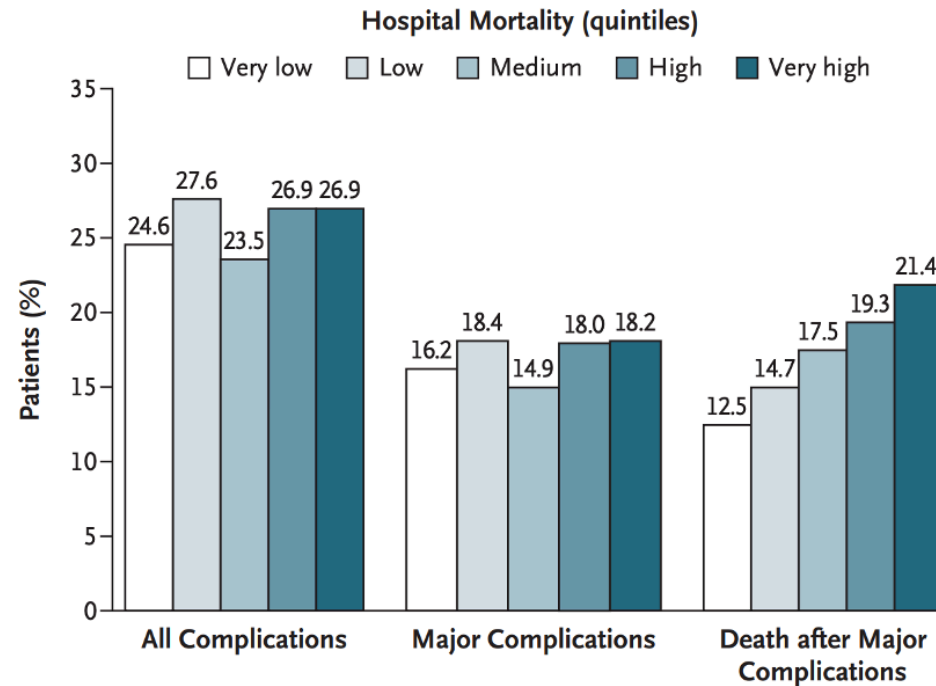
## True mortality rate is not known

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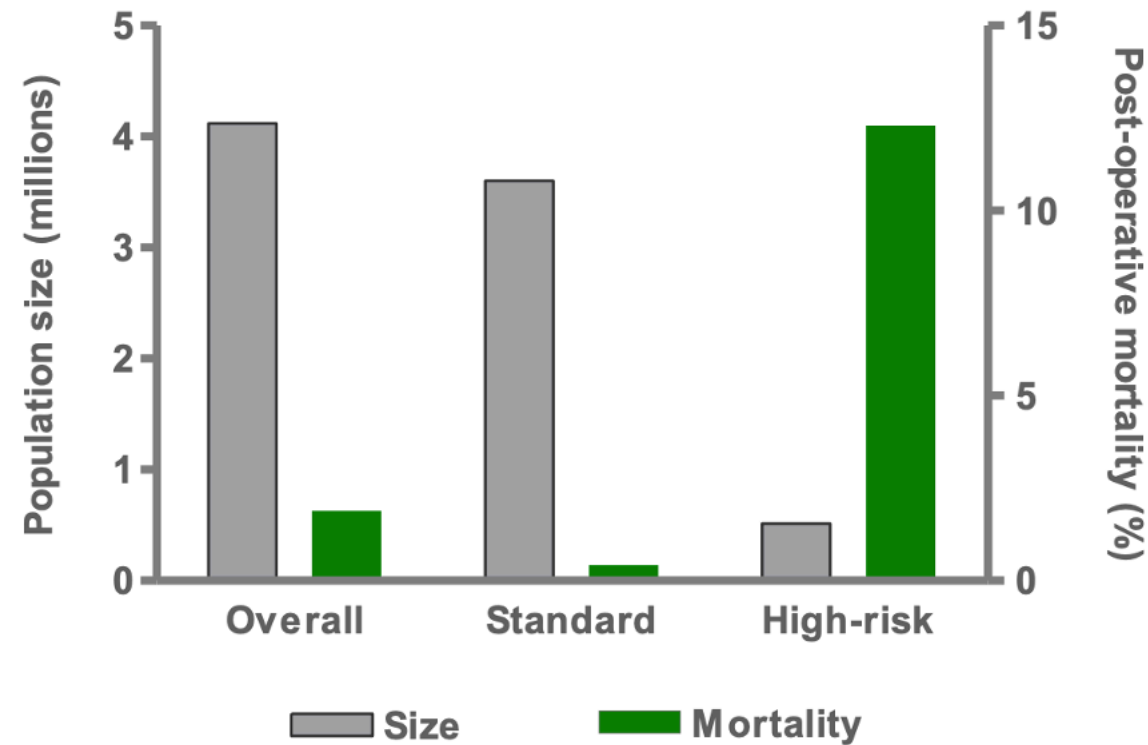
A preventable death rate of 1% would result in  
**2.3 million avoidable deaths** each year

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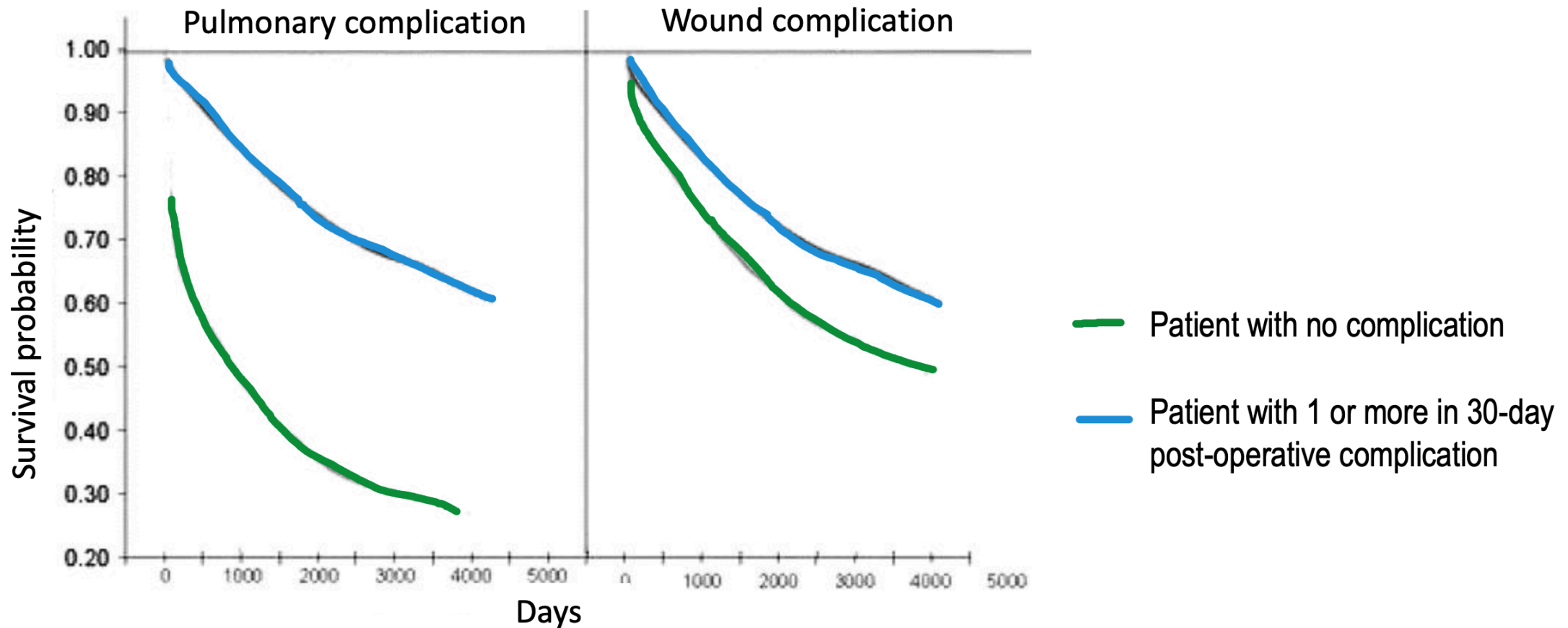
# Mortality variation suggests preventable death after surgery



# 80% of surgical deaths are from the high-risk population



# Surgical complications decrease long-term survival



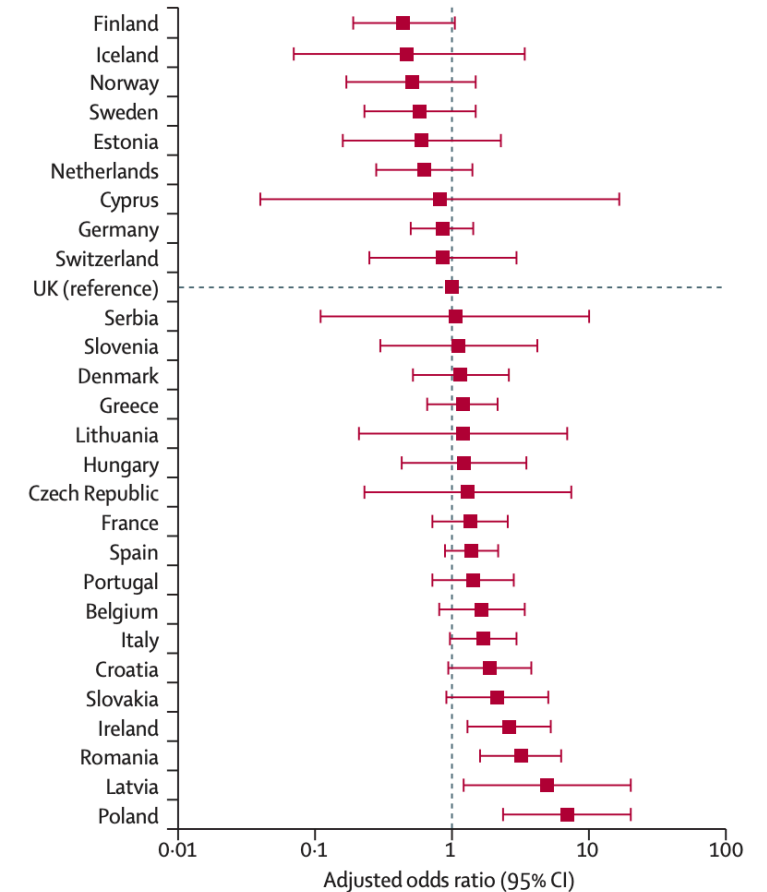
# Mortality after surgery in Europe: a 7 day cohort study

Rupert M Pearse, Rui P Moreno, Peter Bauer, Paolo Pelosi, Philipp Metnitz, Claudia Spies, Benoit Vallet, Jean-Louis Vincent, Andreas Hoeft, Andrew Rhodes, for the European Surgical Outcomes Study (EuSOS) group for the Trials groups of the European Society of Intensive Care Medicine and the European Society of Anaesthesiology\*

## International variation in adjusted mortality risk

Odds ratios adjusted for

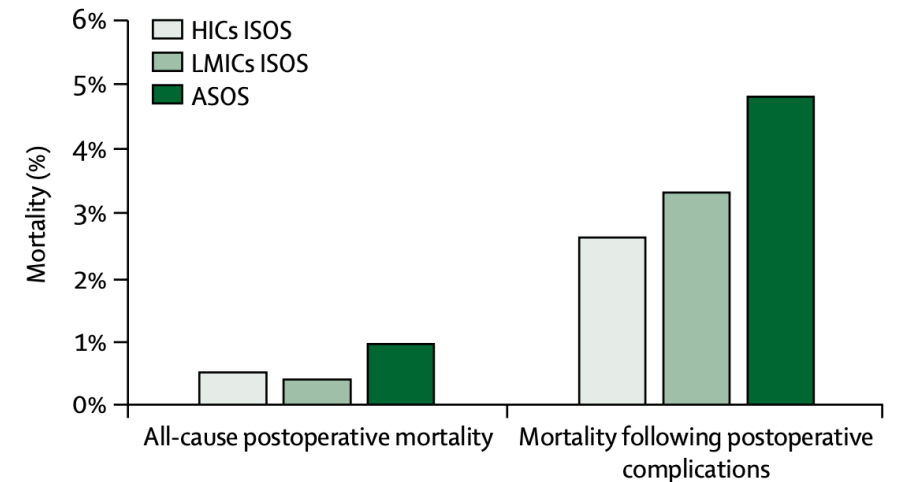
- country
- age
- ASA score
- metastatic disease
- urgency of surgery
- grade of surgery
- surgical procedure



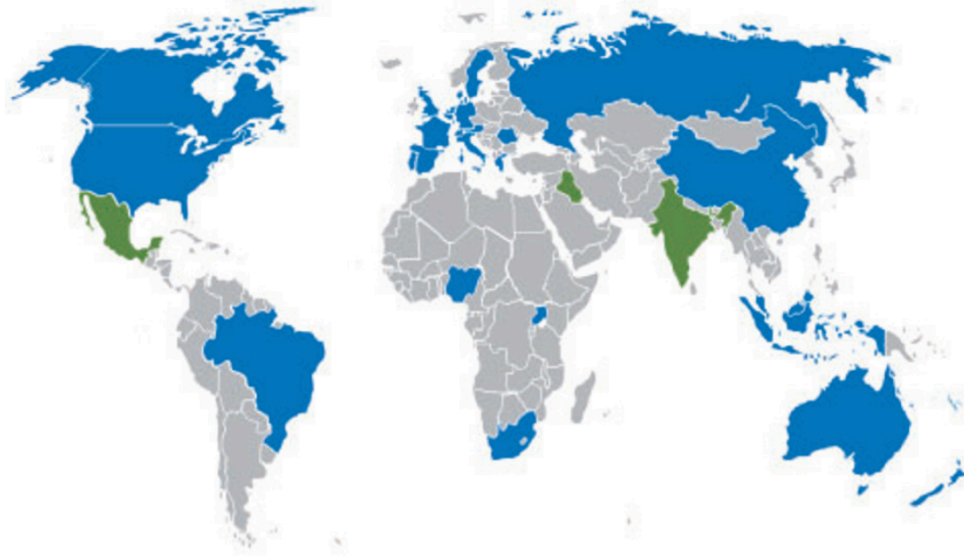
## Perioperative patient outcomes in the African Surgical Outcomes Study: a 7-day prospective observational cohort study

**Patients in Africa were twice as likely to die after surgery when compared with the global average for postoperative despite being younger with fewer co-morbid diseases.**

ASOS study  
25 countries



# Global patient outcomes after elective surgery: prospective cohort study in 27 low-, middle- and high-income countries



**1 in 35** patients who experienced a complication subsequently died without leaving the hospital



# Why we need the Latin American Surgical Outcomes Study?

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Latin America describes a geographic area including 25 nations

Countries within the region have some of the highest income disparity worldwide.

Provision of healthcare varies widely and it is unclear how these disparities relate to outcomes for individual patients undergoing surgery.

# Health care expenditure per capita accompanies the same heterogeneity seen with every date from Latin America.

Healthcare Expenditure per capita (US\$)

Bahamas	2,013.38
Uruguay	1,590.05
Chile	1,455.61
Barbados	1,164.54
Panama	1,131.66
Argentina	1,127.91
Trinidad and Tobago	1,123.42
St. Kitts and Nevis	992.59
Cuba	986.94
Costa Rica	909.67
Antigua and Barbuda	875.17
Brazil	848.39
Mexico	519.61
Ecuador	516.25

Healthcare Expenditure per capita (US\$)

Colombia	513.16
Dominica	490.82
Suriname	474.13
St. Lucia	464.71
Dominican Republic	461.54
Paraguay	400.39
Peru	369.08
St. Vincent	329.26
Jamaica	320.98
Guyana	295.56
El Salvador	288.52
Belize	285.99
Guatemala	259.62
Bolivia	223.60
Honduras	176.25
Nicaragua	173.77
Haiti	64.25

# Health care expenditure evolution from 2013 to 2018 in healthcare in Latin America countries

Guyana	43.47%
Panama	43.11%
Cuba	38.37%
Bolivia	37.92%
Guatemala	32.37%
Dominica	30.85%
Jamaica	29.84%
Dominican Republic	28.36%
Nicaragua	25.57%
Bahamas, The	25.11%
Chile	23.41%
Antigua and Barbuda	23.05%
Peru	15.63%
St. Kitts and Nevis	13.12%
Trinidad and Tobago	10.88%
Paraguay	10.82%
Belize	10.75%
Costa Rica	10.21%
Haiti	10.08%
St. Vincent and the Grenadines	8.54%
Grenada	8.27%
El Salvador	6.51%
Uruguay	6.21%
Suriname	4.95%

## % Difference 2013 to 2018

Ecuador	-0.42%
Honduras	-1.12%
St. Lucia	-3.67%
Barbados	-5.56%
Colombia	-11.02%
Brazil	-13.53%
Mexico	-18.45%
Argentina	-20.66%
Venezuela, RB	-63.16%

# Why we need the Latin American Surgical Outcomes Study?

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To understand how complications relate to deaths

Potential for large number of preventable deaths

Stimulate further research and public audit

# Why we need the Latin American Surgical Outcomes Study?

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Our aim is to conduct a seven-day cohort study of adults undergoing in-patient surgery in Latin America to provide detailed data describing post-operative complications and associated mortality.

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# Lasos: Study desing

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- Highly pragmatic design
- Observational seven day cohort study
- Follow-up until hospital discharge
- Web-site entry of anonymous patient data

# Lasos: objectives

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## **Primary:**

- Incidence of 30-day in-hospital complications after elective surgery

## **Secondary:**

- 30-day in-hospital mortality associated with complications
- Relationship between complications and use of critical care
- Effect of complications on duration of hospital stay



# Lasos: inclusion criteria

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- All adult patients ( $\geq 18$  years) undergoing in-patient surgery during the seven day study period
- Start: 08:00 [enter date] 2022 Finish: 07:59 [enter date] 2022

# Lasos: Local investigator role

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Ensure ethics / IRB approval if required

Supervise daily data collection

Timely upload of data via internet

Act as guarantor for data accuracy

# Lasos: Data collection

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- Collect data on ALL eligible patients during cohort week
- Baseline data in operating room
- Follow patients in hospital for complications (max 30 days)
- Easier if anaesthetists and surgeons both contribute
- Anonymous internet based entry from paper case records
- Basic data describing hospital uploaded once to website

# Lasos: Data analysis

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- Each hospital team can download data when complete
- Hospital teams may be asked to check data after entry
- Data presented by geographical region (groups of nations)
- Statistical modelling to describe relationships
- Only hospitals with 20 valid patients will be included

# Lasos: Taking part

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- Every investigator is a named member of the LASOS group
- Every investigator can download certificate of participation
- Local investigators receive data for their hospital
- LASOS investigators have priority for secondary studies

# Lasos: Summary

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- Important study of surgical outcomes
- Pragmatic design providing preliminary data
- Aim to support further research and audit

# Lasos: Steering committee

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- ***Luciana Cadore Stefani (Brazil)***
  - *Adrian Alvarez (Argentina)*
  - *Antonio Ramos De la Medina (Mexico)*
  - ***Ludhmila Hajjar (Brazil)***
  - *Martha Beatriz Delgado Ramirez (Colombia)*
  - *Maria Jose Carmona (Brazil)*
- Rupert Pearse (UK)***

# LASOS

Latin American Surgical Outcomes Study