

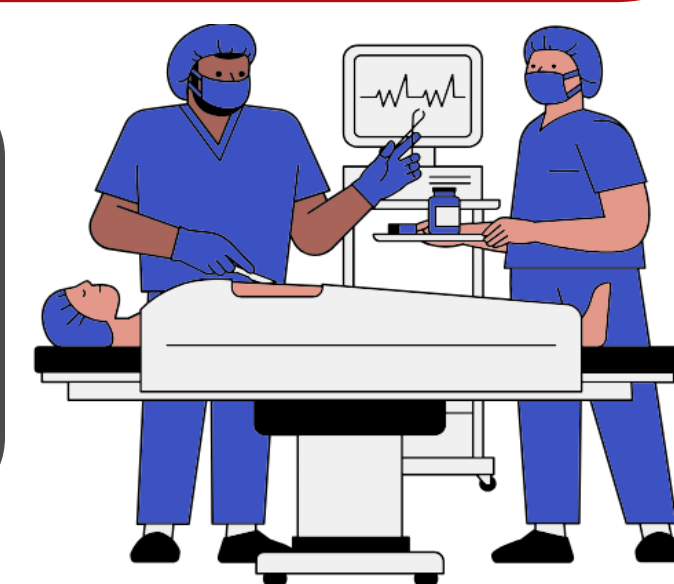
# Evaluation of the Appropriateness of Surgical Antibiotic Prophylaxis through a Point Prevalence Survey in a Teaching Hospital

Speranti G. (1), Mengato D. (2), Giunco E.M. (2), Berti G. (3), Conte E. (4), Vittadello F. (5), Carollo C. (6), Boschetto M. (7), Baldo V. (3), Giron M.C. (1), Venturini F. (2).

(1) Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Padova, Italy (2) Hospital Pharmacy Unit, Azienda Ospedale-Università Padova, Padova, Italy (3) Project and Clinical Research Unit, Azienda Ospedale-Università Padova, Padova, Italy (4) Department of Cardiac, Thoracic, Vascular Sciences, and Public Health, University of Padova, Padova, Italy (5) General Surgery Unit, Sant'Antonio Hospital, Azienda Ospedale-Università Padova, Padova, Italy (6) Anesthesiology and Intensive Care Unit, Department of Medicine-DIMED, University of Padova, Padua, Italy (7) Medical Management Unit, Azienda Ospedale-Università Padova, Padova, Italy

## Background and importance

Surgical antibiotic prophylaxis (SAP) plays a crucial role in preventing surgical-site infections (SSI), but deviations from guidelines remain common. Continuous monitoring of prophylactic practices is essential within Antimicrobial Stewardship (AMS) programmes to promote rational antibiotic use and reduce resistance selection.



## Aim and objectives

To evaluate the appropriateness of SAP in two surgical units of a teaching hospital, identify main deviations from guidelines, and provide evidence to support targeted AMS interventions.

## Materials and methods

A Point Prevalence Survey (PPS) was conducted within a single-centre cross-sectional study. Data were collected from adult patients undergoing surgery in the Cardiac Surgery Unit (CSU) and General Surgery Unit (GSU). SAP appropriateness was assessed by a multidisciplinary team based on six predefined indicators, following official guidelines.

- Indication
- Antibiotic selection
- Dosage
- Preoperative timing
- Intraoperative redosing
- Postoperative duration



Associations with postoperative outcomes were explored, including:



SSI

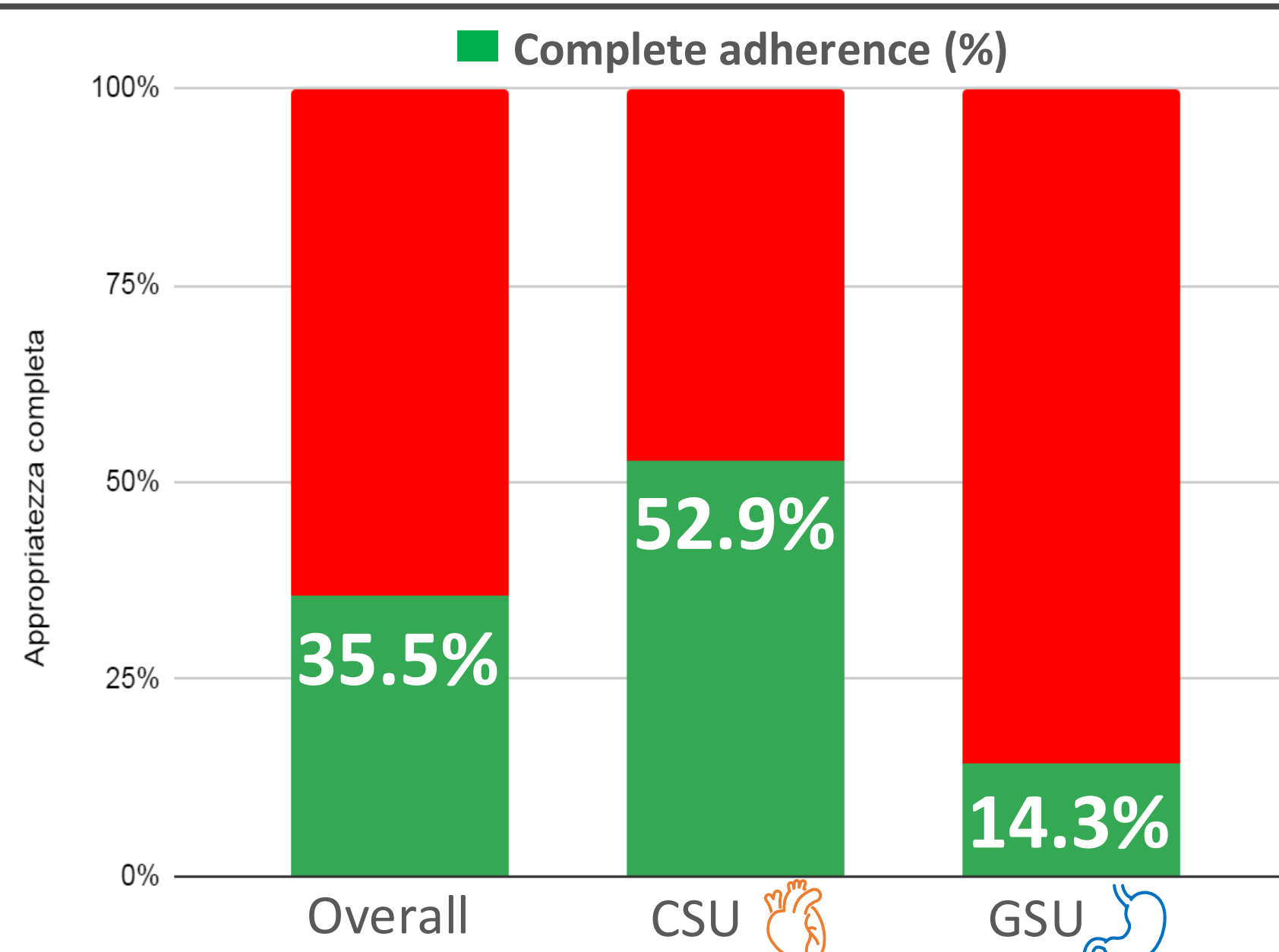
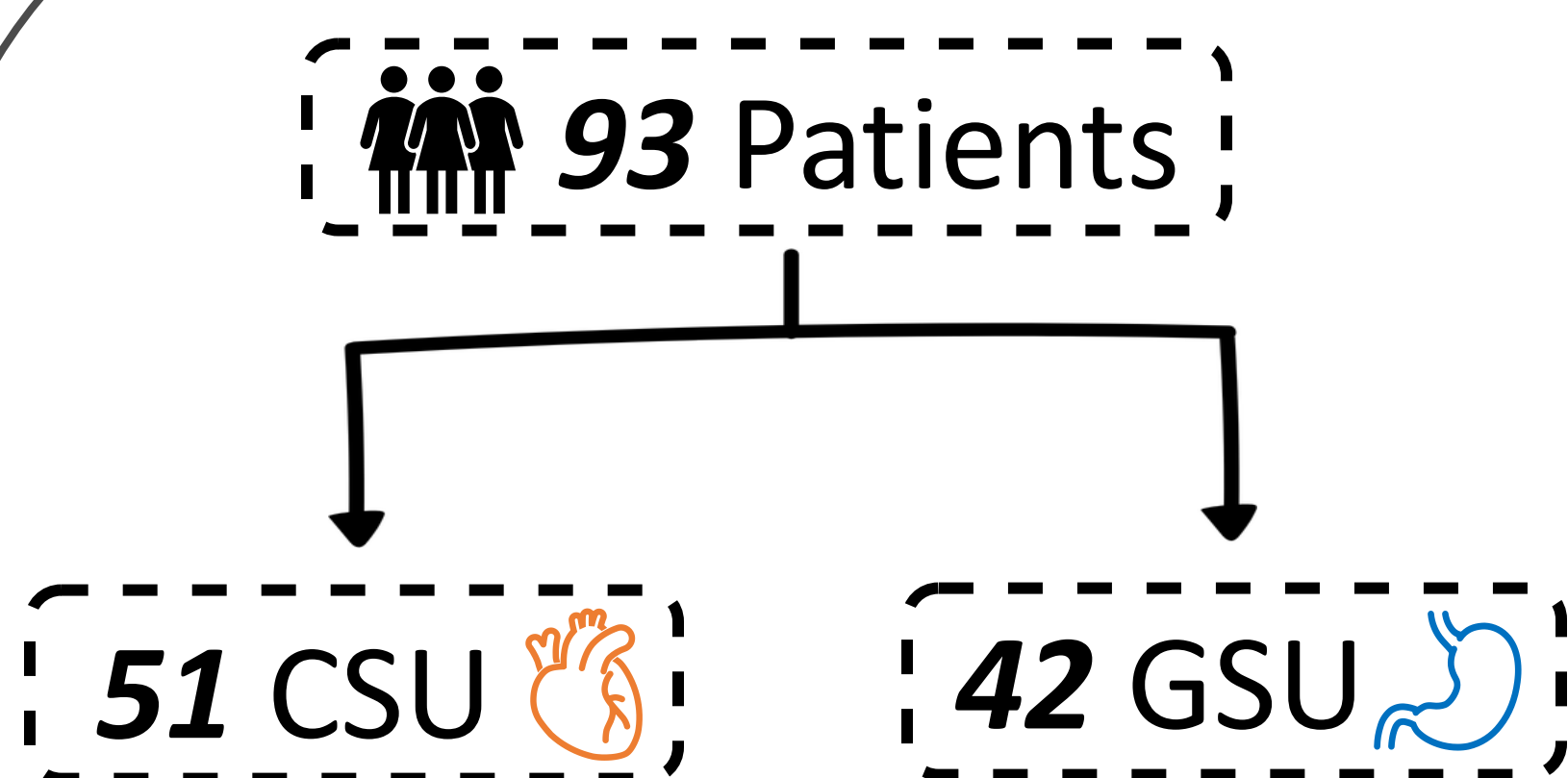


Healthcare associated infections (HAI)



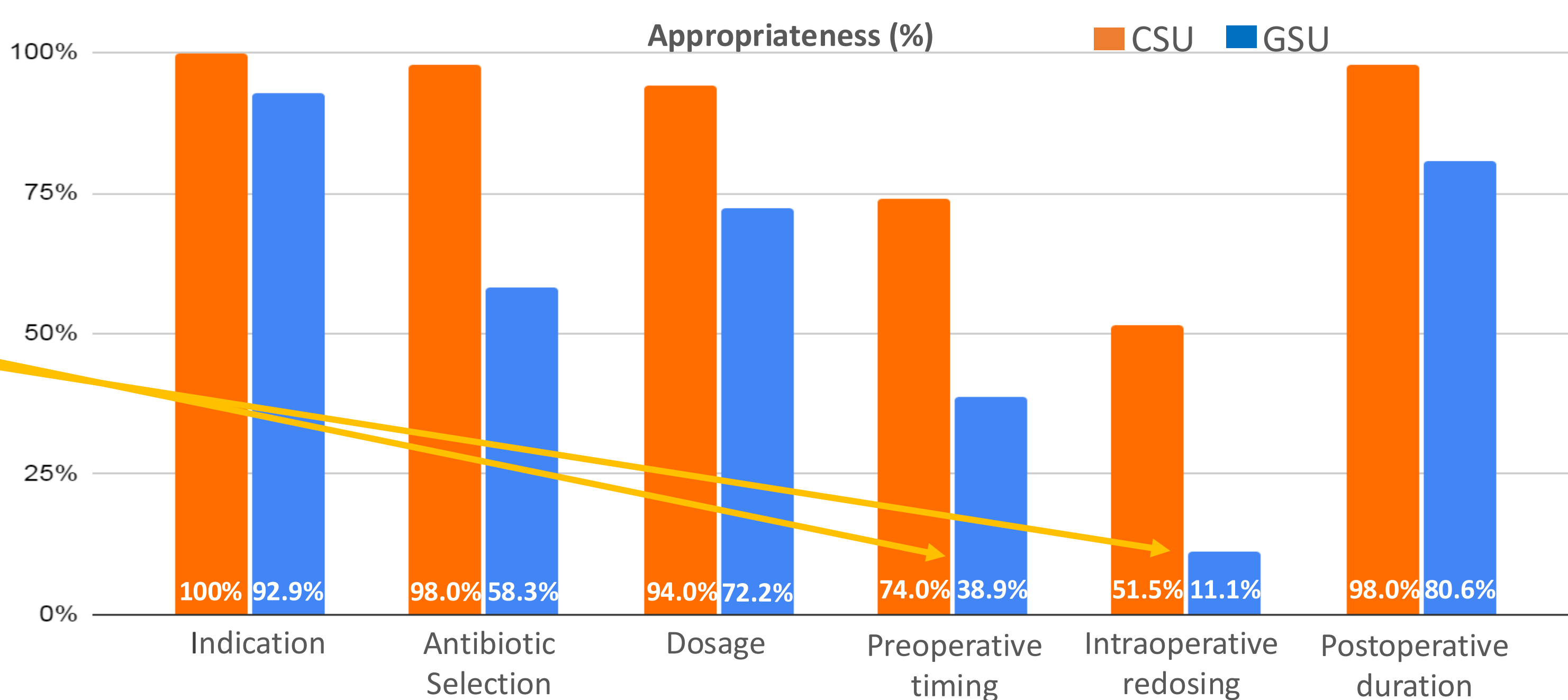
Length of stay

## Results



**35.5%**  
 Complete adherence to all six indicators

A significant difference emerged between the two units, with a higher adherence rate observed in the CSU ( $p < 0.001$ ).



### Timing-related challenges in SAP

The greatest opportunities for improvement were identified in **administration timing** and **intraoperative redosing**, confirming these steps as key targets for AMS interventions.

### Impact of adherence on patient outcomes

Full adherence was associated with **improved** postoperative outcomes

- ↓ Lower SSIs rates (OR: 0.22, 95% CI 0.01-1.03)
- ↓ Lower HAIs rates (OR: 0.72, 95% CI 0.43-1.22)
- ↓ Shorter hospital stays ( $\beta = -1.1$  days, 95% CI -3.0 to -0.8)

## Conclusion and relevance

The PPS proved to be an effective tool not only for monitoring SAP appropriateness, but also for guiding **targeted improvement strategies**. Implementation of **standardized protocols, real-time auditing, and AMS-driven education** could contribute to a progressive improvement in adherence over time.

## Contact data

daniele.mengato@aopd.veneto.it  
 giuliosperanti@gmail.com

