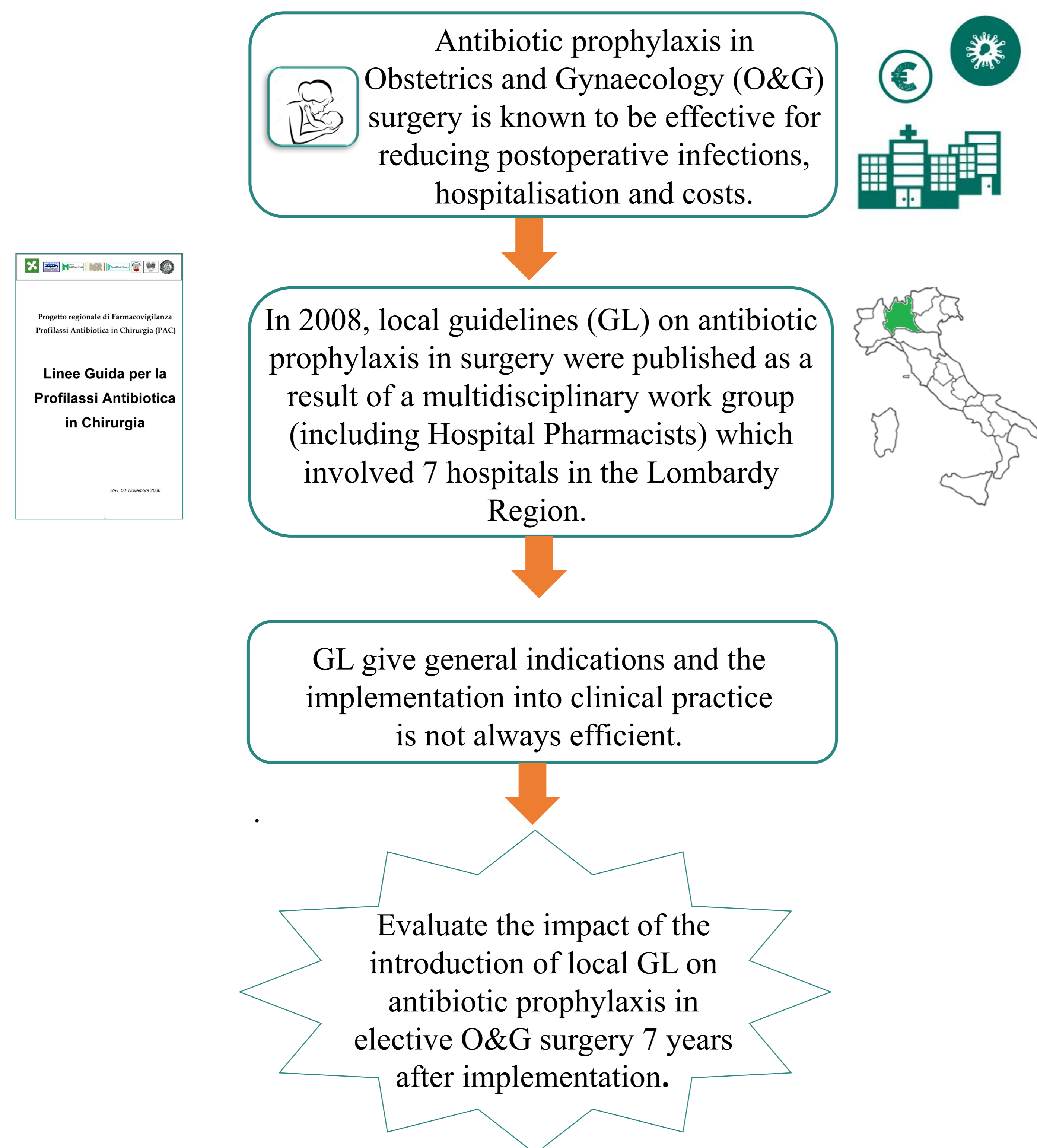


# IMPACT OF ANTIBIOTIC PROPHYLAXIS GUIDELINES IN OBSTETRIC AND GYNAECOLOGY SURGERY: A RETROSPECTIVE MULTI-CENTRE STUDY

C. Panciroli<sup>1</sup>, S.E. Campbell Davies<sup>2</sup>, M.M. Dragonetti<sup>3</sup>, A. Luoni<sup>1</sup>, G. Muserra<sup>2</sup>, P. Tadini<sup>3</sup>, A. Bignamini<sup>4</sup>, P. Minghetti<sup>4</sup>.  
 1ASST Grande Ospedale Metropolitano Niguarda, Pharmacy, Milan, Italy.  
 2ASST Fatebenefratelli Sacco - Fatebenefratelli and oftalmico hospital, Pharmacy, Milan, Italy.  
 3San Raffaele hospital, Pharmacy, Milan, Italy.  
 4University of Milan, Hospital Pharmacy School, Milan, Italy.

44CPS-07

## <Background and Purpose>



## <Material and Methods>

A multi-centre retrospective study was conducted involving 3 centres which had implemented the GL in 2008 and were still in use.



Figure 1. Analyzed period and Hospitals involved

Medical records of patients undergoing elective surgical procedures in 2006 (pre-guideline) and 2015 (post-guideline) Procedures:  
 - Elective cesarean section  
 - Abdominal and vaginal hysterectomy

Information about:

- Patients
- Surgeries
- Post-operative infections
- Antibiotics.



Figure 3. FileMakerPRO database: PACMAN

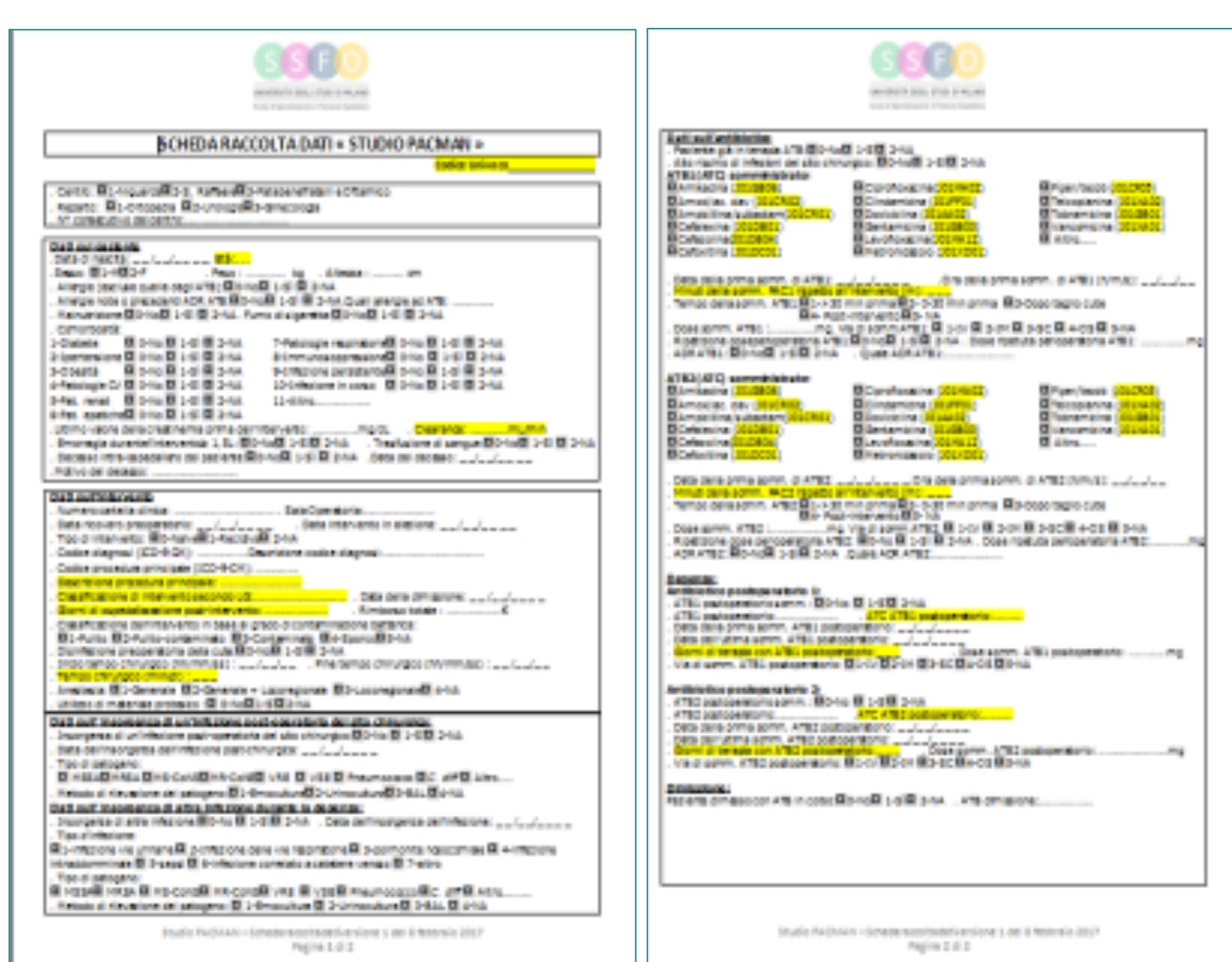
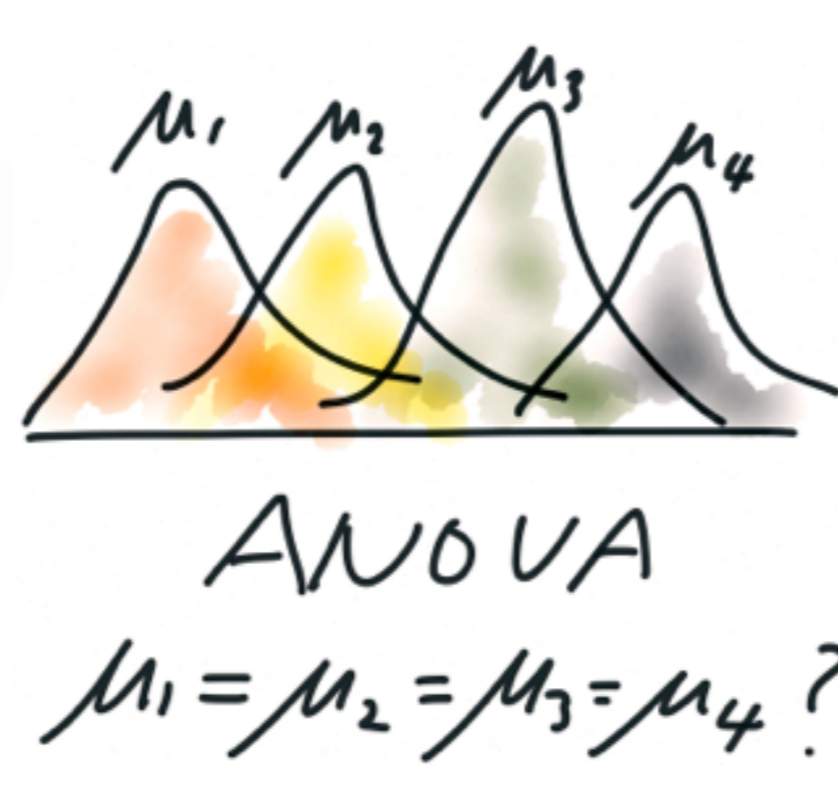


Figure 2. Case report form

### Statistic Methods

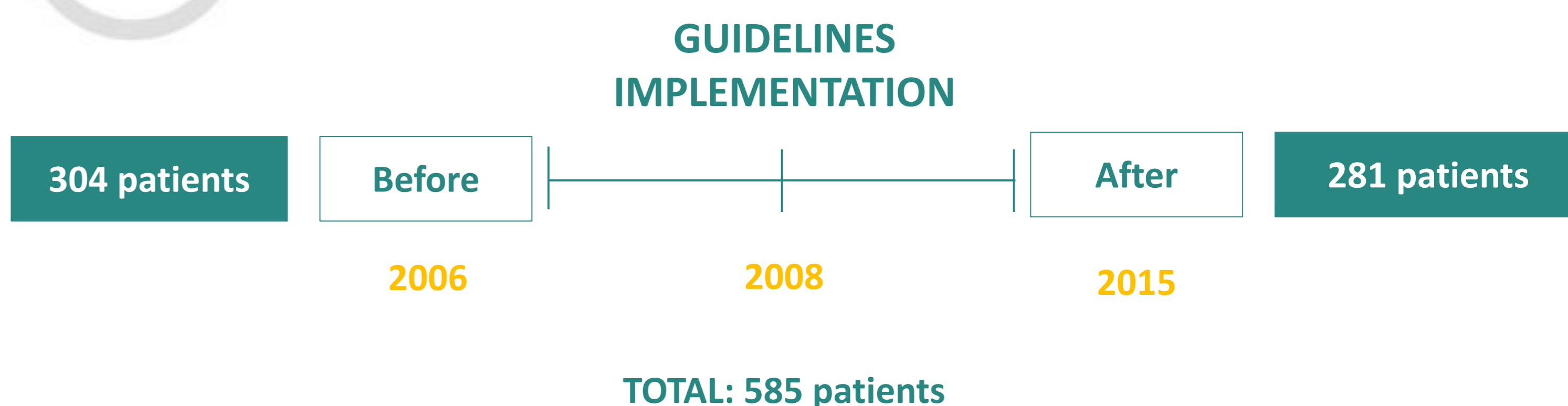
Statistical analysis was performed by using SPSS and R. Comparisons were analysed using chi square tests, multivariable logistic regression and analysis of variance. The effect estimate was reported in risk ratio (RR) and pooled using a random effects model.



## <Results>



A total of 585 patients who underwent elective O&G procedures (caesarean section and vaginal hysterectomy) were analysed: 304 procedures for 2006 and 281 surgeries for 2015.



“Adequate” antibiotic prophylaxis substantially changed after guideline implementation (RR 1.21; 95% CI 1.14-1.29, p<0.001); variation was more significant in elective caesarean section (hysterectomy vs. caesarean section: OR 4.059, 95% CI 2.028-8.126, p<0.001).

| Adequate antibiotic prophylaxis (%) |                 |                 |                |
|-------------------------------------|-----------------|-----------------|----------------|
| Hospital                            | Befor GL (2006) | After GL (2015) | P (chi square) |
| Gynaecology Niguarda n/tot (%)      | 93/99 (93,9%)   | 98/98 (100,0%)  |                |
| San Raffaele n/tot (%)              | 96/97 (98,9%)   | 105/107 (98,1%) |                |
| FBF n/tot (%)                       | 46/100 (46,0%)  | 62/71 (87,3%)   |                |
| Subtotal                            | 235/296 (79,4%) | 265/276 (96,0%) | <0,001         |

Table 1. Adequate antibiotic prophylaxis before and after introduction of the local guideline (LG)

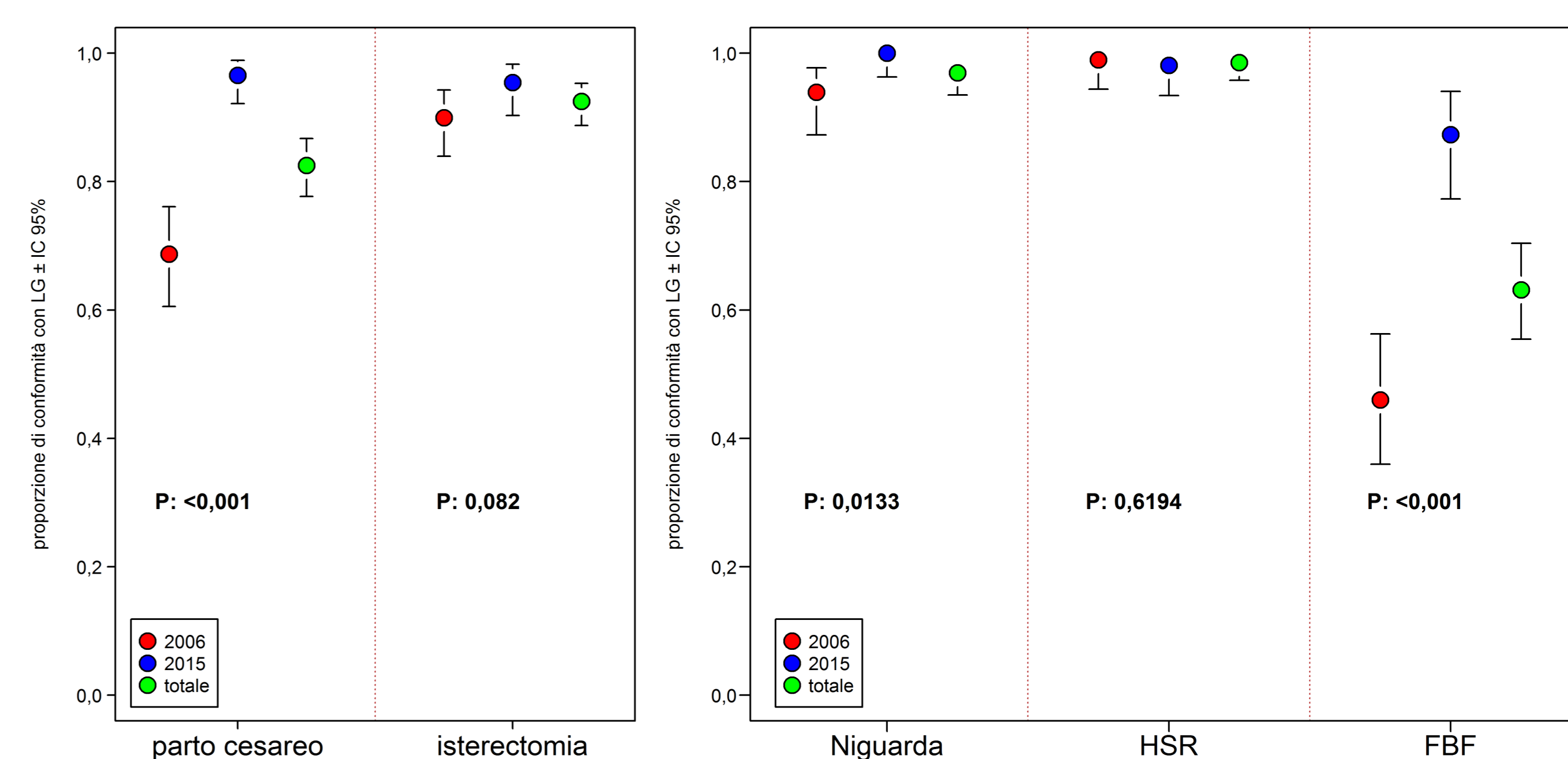


Figure 4. Proportion of compliance of the prophylaxis with the LG by periods, procedure and center

Guideline implementation has resulted in an important improvement in terms of compliance to all elements of antibiotic administration: selection (7.2% for 2006 and 56.9% for 2015), dosing (20.4% for 2006 and 84.6% for 2015) and duration of prophylaxis (57.6% for 2006 and 81.5% for 2015).

| Elements of antibiotic prophylaxis          | Befor GL (2006)                | After GL (2015)                  | P (chi square) |
|---|--------------------------------|----------------------------------|----------------|
| Antibiotic selection, n/tot (%) [IC 95%]    | 22/304 (7,2%) [4,7%; 10,6%]    | 160/281 (56,9%) [51,1%; 62,6%]   | <0,001         |
| Antibiotic dosing, n/tot (%) [IC 95%]       | 60/294 (20,4%) [16,1%; 25,3%]  | 230/272 (84,6%) [79,9%; 88,5%]   | <0,001         |
| Time of administration, n/tot (%) [IC 95%]  | 127/153 (83,0%) [76,5%; 88,3%] | 186/221 (84,2%) [78,90%; 88,50%] | 0,766          |
| Duration of prophylaxis, n/tot (%) [IC 95%] | 175/304 (57,6%) [52,0%; 63,0%] | 229/281 (81,5%) [76,6%; 85,7%]   | <0,001         |
| All four items, n/tot (%) [IC 95%]          | 5/304 (1,6%) [0,5%; 3,8%]      | 15/281 (4,2%) [1,6%; 8,7%]       | 0,014          |

Table 2.. Compliance to all elements of “adequate” antibiotic prophylaxis before and after the introduction of the local GL

## <Conclusions>



Our data suggest that the introduction of the local guideline on antibiotic prophylaxis in surgery substantially improved the use of antibiotics in O&G units 7 years after publication. The success of guideline implementation could have been influenced by the active participation of Hospital Pharmacists in periodically training healthcare workers and auditing after the publication.