

# Clinical and Economic Impact of Adhesiolysis During Repeat Cesarean Delivery

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## Abstract

**Aims:** To estimate adhesiolysis rates at cesarean delivery (CD) and to estimate costs and clinical implications of performing adhesiolysis at repeat CD.

**Methods:** Propensity score-matched analysis comparing cost and complications between repeat CD patients with and without adhesiolysis.

**Results:** Adhesiolysis was performed in 0.5% of primary and 6.1% of repeat CD patients. Using propensity scores, 10,261 repeat CD women with adhesiolysis were matched to 10,261 controls. Hospital cost (\$5,739 vs. \$5,448), length of stay (2.97 vs. 2.88 days), and operative time (84.0 vs. 74.2 minutes) were significantly higher in the adhesiolysis group than in the nonadhesiolysis group ( $P < 0.01$  for all comparisons), as was the overall complication rate (6.3% vs. 3.5%).

**Conclusions:** Adhesiolysis rates were higher in repeat vs. primary CD patients. Among repeat CD patients, costs and complications were higher in the adhesiolysis group. Preventive measures at first CD may reduce subsequent adhesion formation, adhesiolysis, and complications.

## Background

- Adhesions may have serious sequelae, including pain, infertility, and small bowel obstruction.
- After cesarean, 35%-50% of women develop adhesions.
- Patients with adhesions who undergo subsequent cesarean are at risk for injury.
- **Objective:** To quantify the costs and clinical implications of adhesiolysis at repeat cesarean.

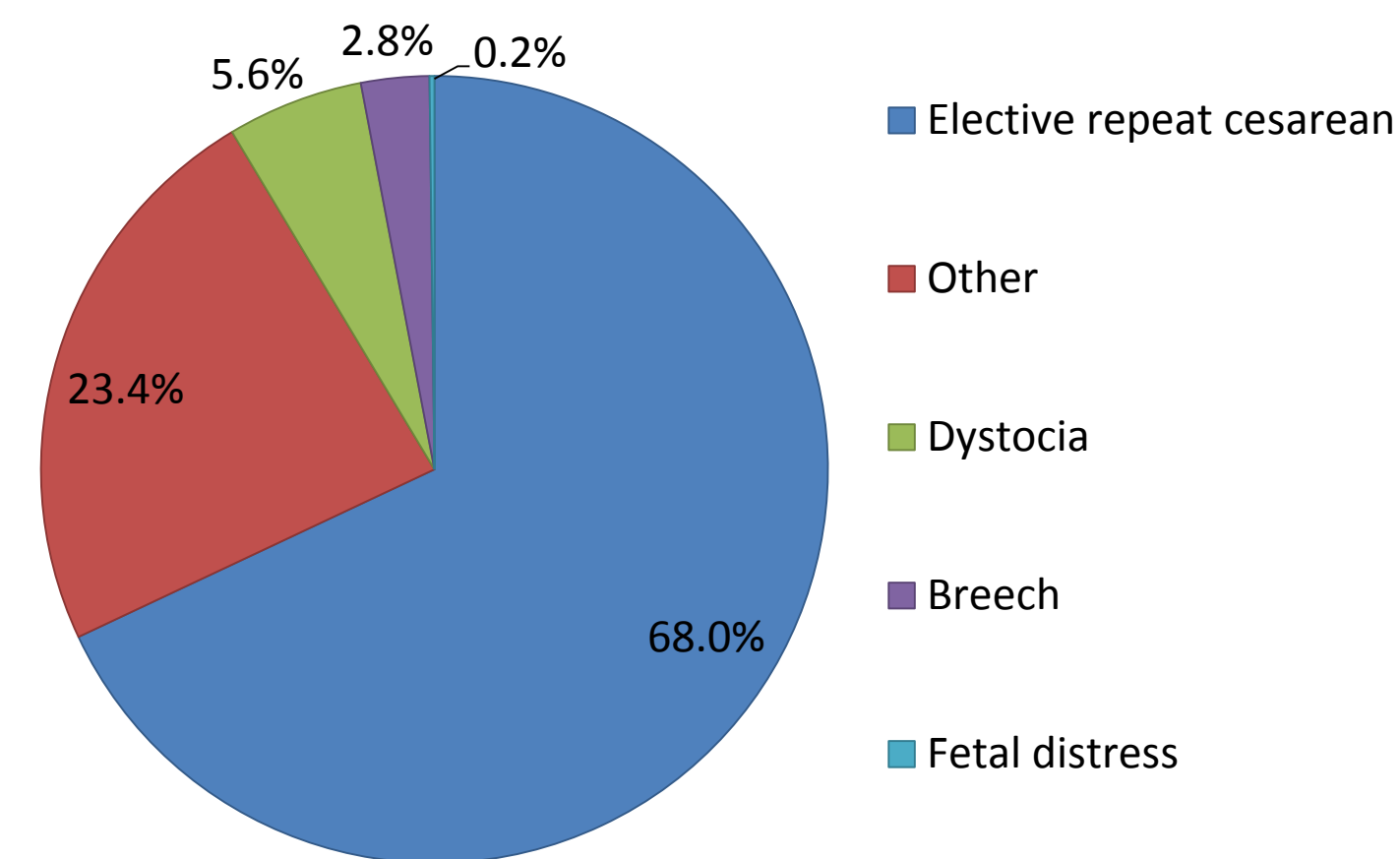
## Methods

- Data source: discharge data from the Premier Perspective Database for over 500 hospitals.
- Study design: Propensity score-based matched cohort study of adhesiolysis and control patients having repeat cesarean. Matched in 1:1 ratio by age, race, comorbidities, indication for cesarean, region, hospital type, and surgeon specialty.
- Inclusion: discharged in 2007 or 2008 with diagnosis of cesarean;  $\geq 15$  years old.
- Exclusion: length of stay (LOS) >30 days; twins or higher-order multiples; diagnosis of adhesions but no adhesiolysis.

## Results

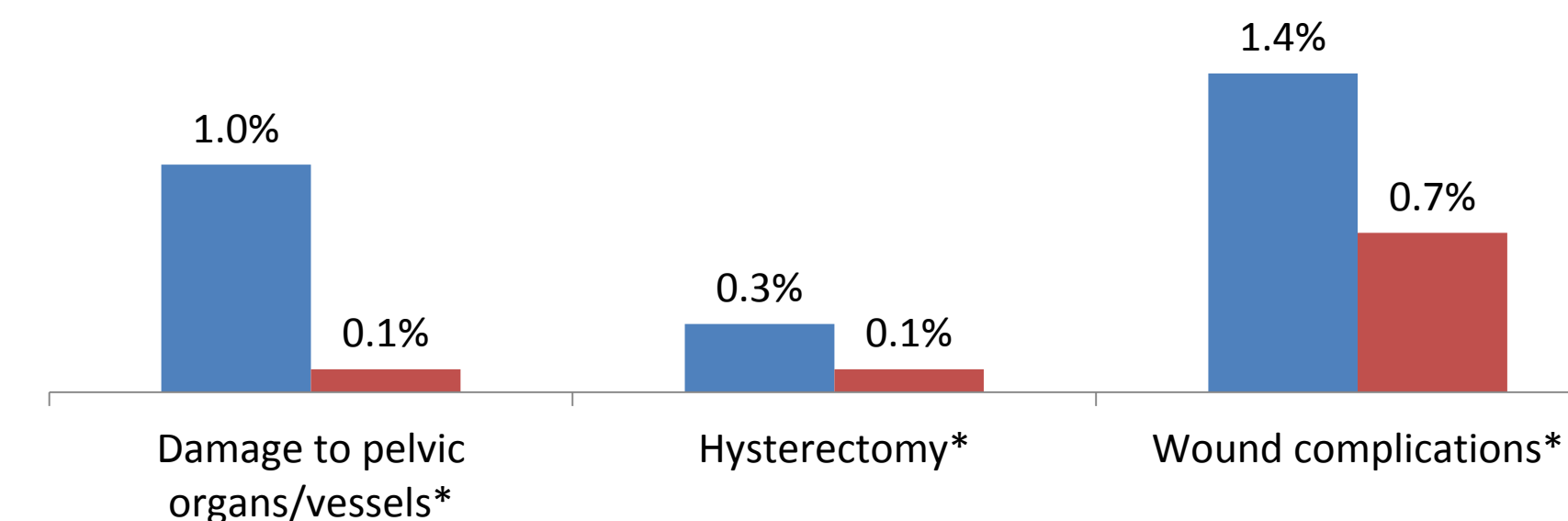
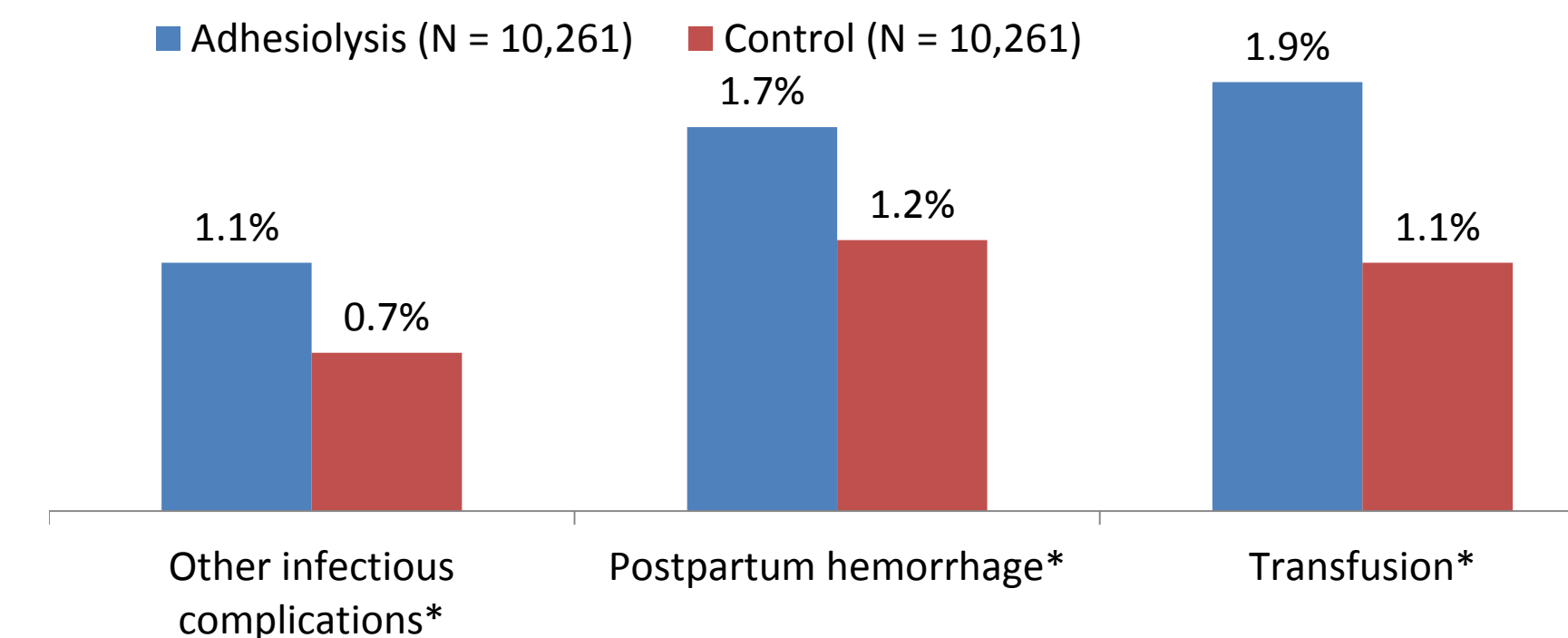
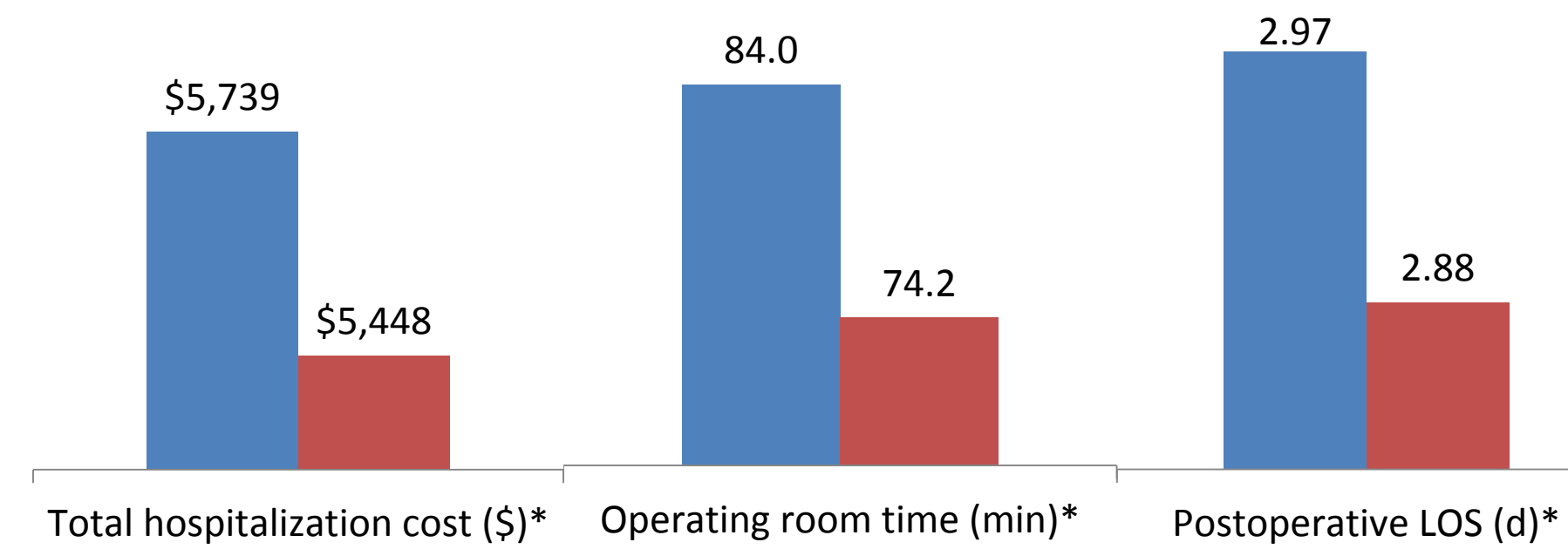
- 166,980 repeat cesarean patients identified; 10,261 (6%) with adhesiolysis.
  - In 223,129 primary cesareans, 1,056 (0.5%) had adhesiolysis
- Adhesiolysis patients matched 1:1 with controls. Well matched on all characteristics.
- Both groups
  - Mean age, 29.9 y
  - 39% black, 21% white, 14% Hispanic, 26% other
  - 40% Medicaid/charity, 60% commercial insurance

### Indication for 20,522 Repeat Cesareans\*



\*after matching, therefore same proportions in 10,261 adhesiolysis and 10,261 control patients

### Utilization and Clinical Outcomes After Repeat Cesarean



\*comparison statistically significant at  $p < .001$

## Limitations

Data were collected for billing purposes, some clinical data were not available. Study of adhesiolysis, not adhesions. Data may not be representative of broader US population.

## Conclusions

- Study groups were well matched on all relevant characteristics.
- Total cost was almost \$300 higher, operating room time was 10 minutes longer, and LOS was extended by several hours in the adhesiolysis group.
- Cesarean hysterectomy occurred twice as often in women with adhesiolysis.
- Adhesiolysis patients were more likely to have other serious complications, including damage to pelvic organs or vessels, wound complications, infections, postpartum hemorrhage, and transfusions.
- Lysing adhesions increases the length and difficulty of surgery, and the resultant intraoperative and postoperative complications increase both LOS and cost.

Research funded by Ethicon, Inc.