

Mode of Delivery and Pregnancy Outcome in Women with Congenital Heart Disease

A single-center study

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Background

- women with congenital heart disease (CHD) reaching childbearing age
- cardiologists – in general – recommend vaginal delivery due to significant cardiovascular changes at Caesarean section
- C-section rate remains higher in patients with CHD

Method

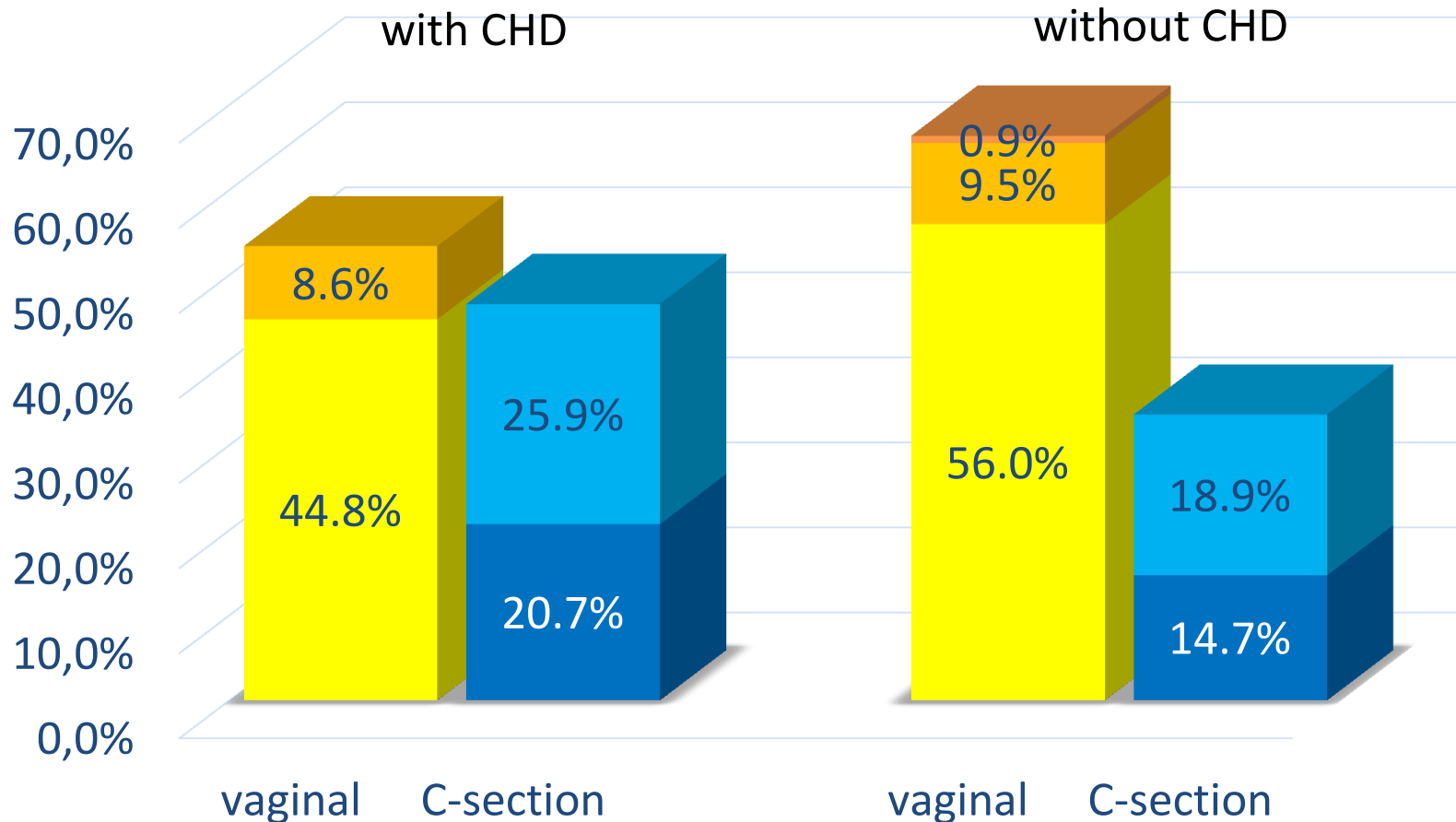
- historical cohort study (2005-2013)
- n=116 patients with CHD ↔ n=348 without CHD
- matching parameters:
maternal age, gravidity, parity, year of delivery

Objectives

mode of delivery, pregnancy outcome and indications for Caesarean section and induction of labor

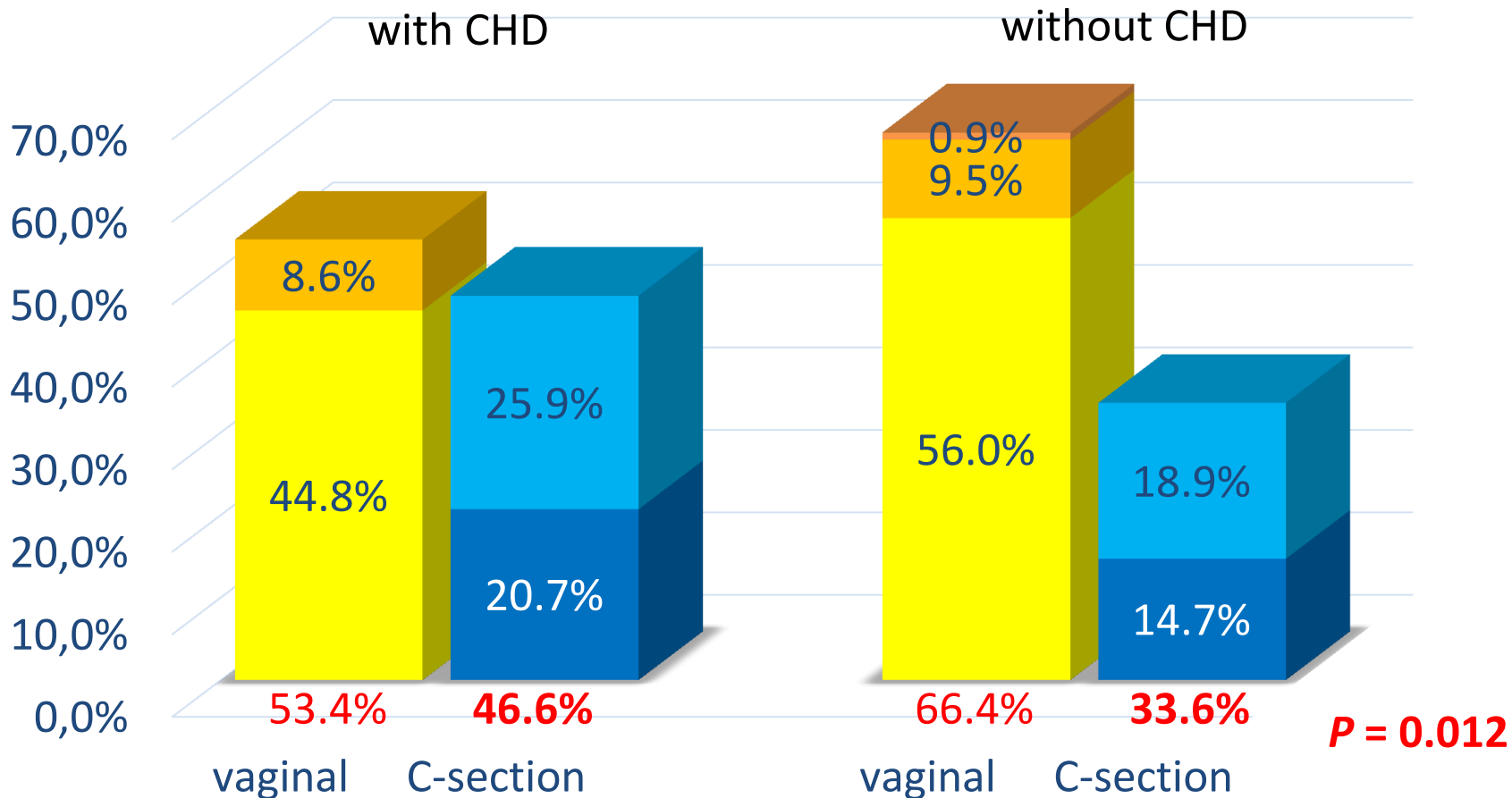
Results (1): Mode of delivery

- spontaneous
- vacuum extraction
- forceps
- primary C-section
- secondary C-section



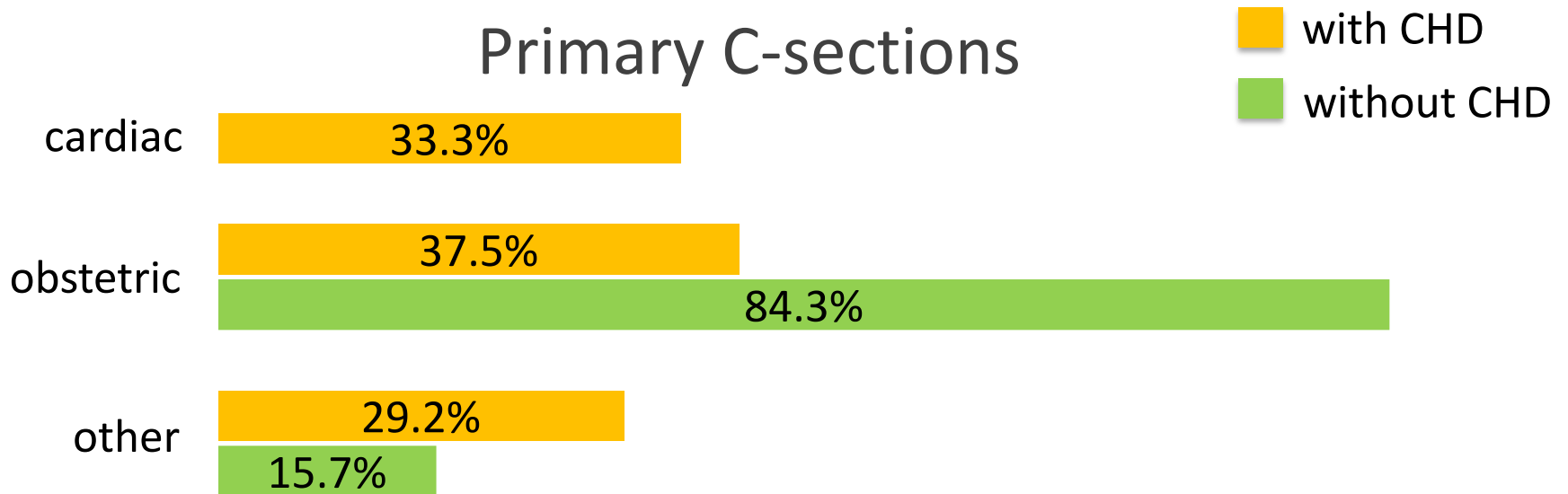
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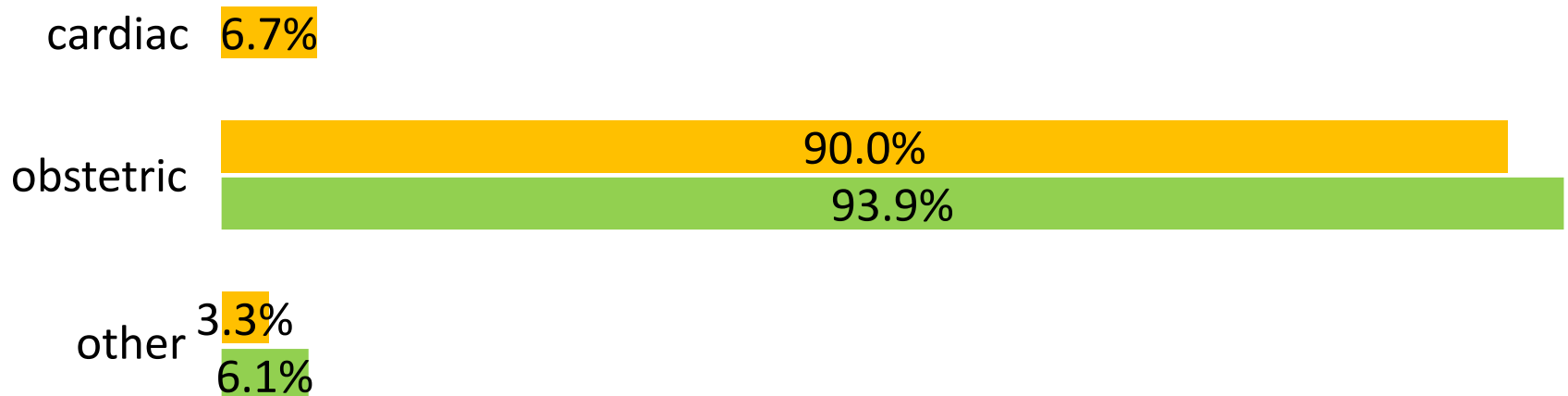


Results (2): Indications for Caesarean sections

Primary C-sections

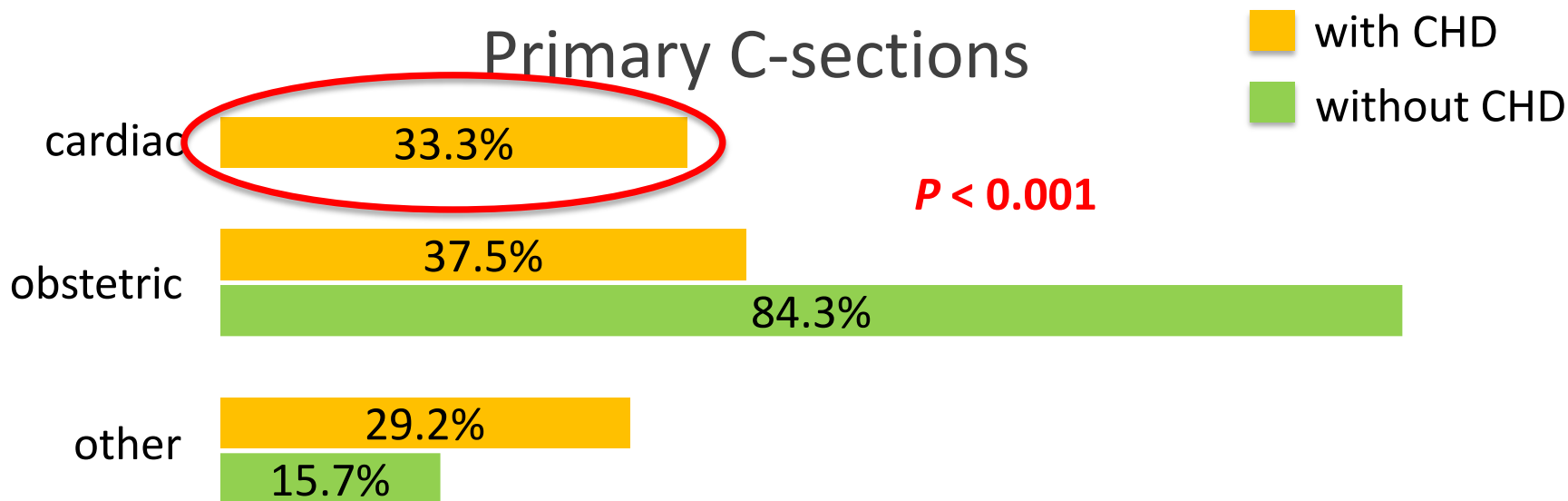


Secondary C-sections

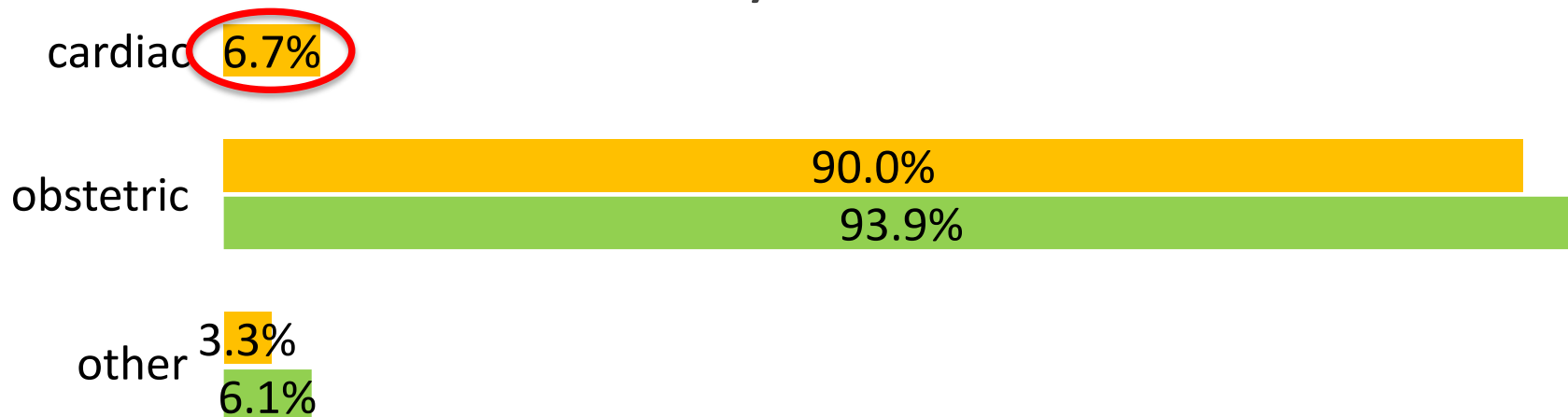


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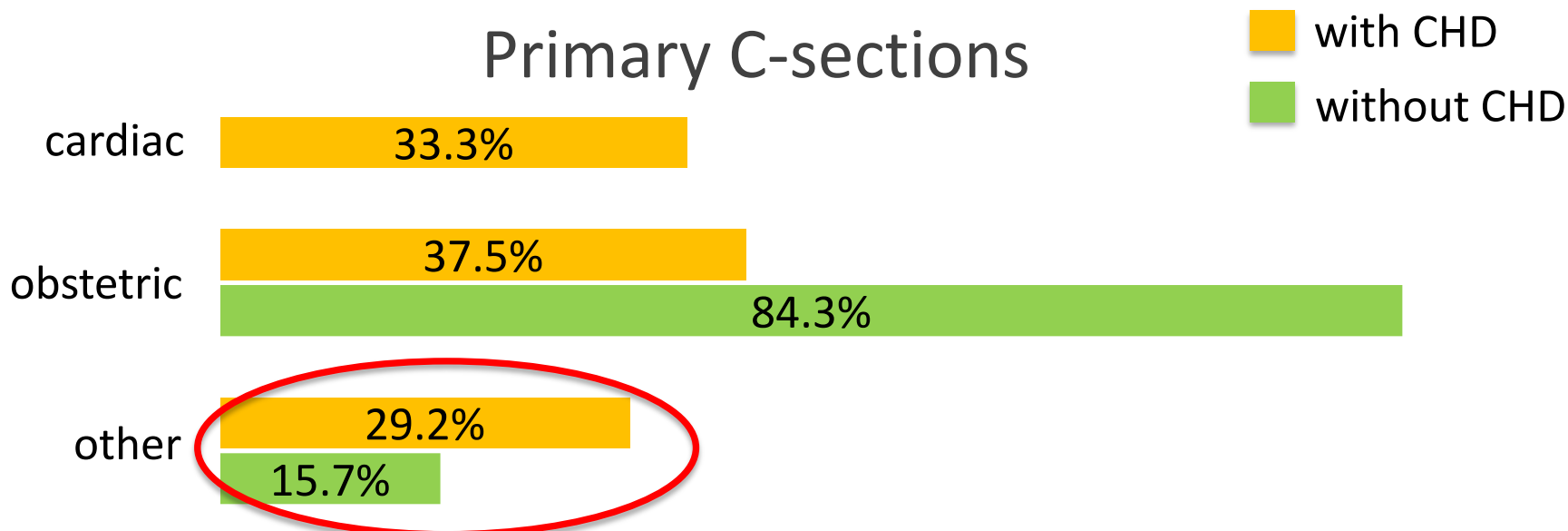


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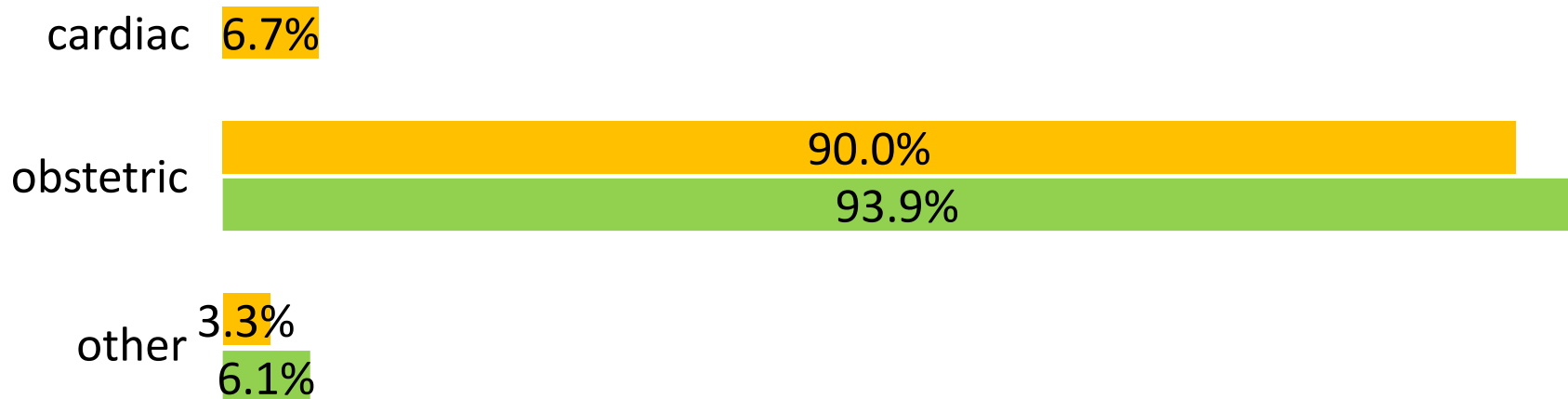


Results (2): Indications for Caesarean sections

Primary C-sections



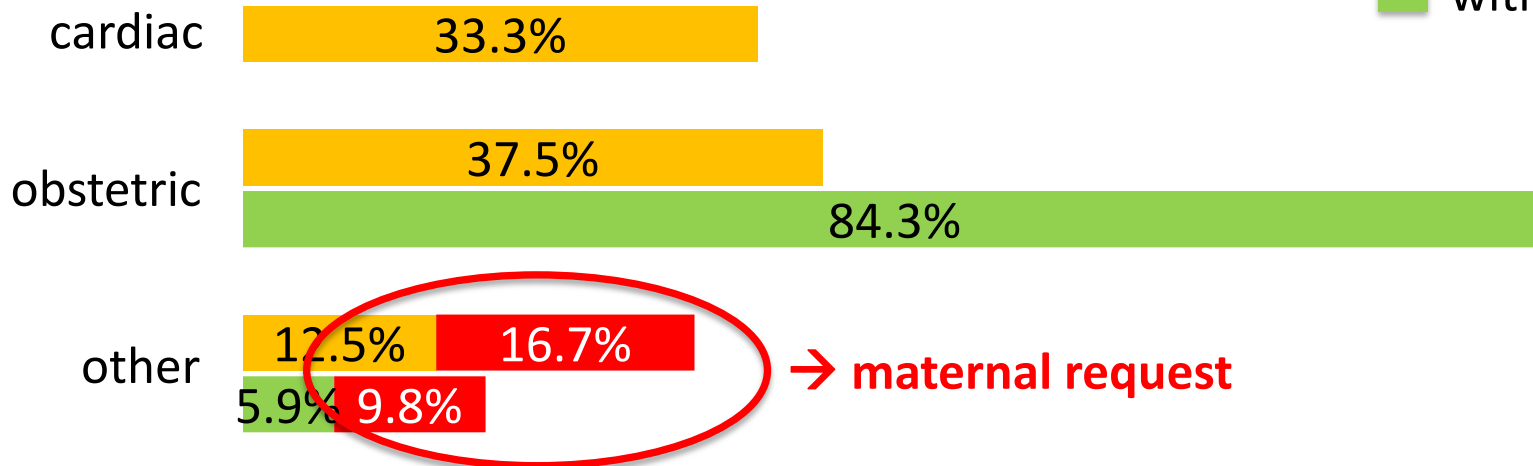
Secondary C-sections



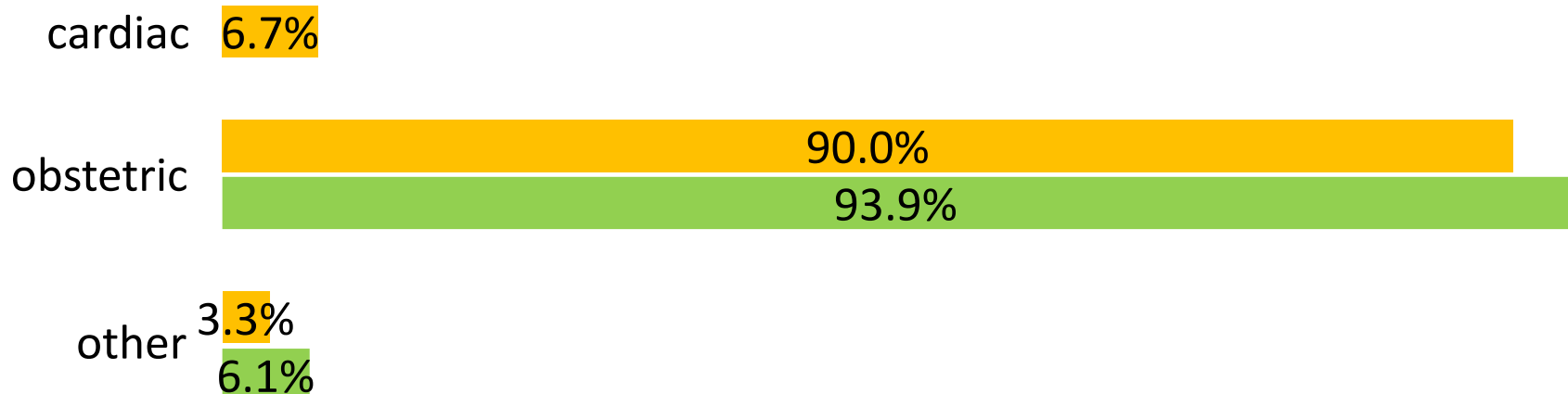
Results (2): Indications for Caesarean sections

Primary C-sections

■ with CHD
■ without CHD



Secondary C-sections



Results (3): Induction of labor

- 45.7% in patients with CHD vs. 27.9% without CHD

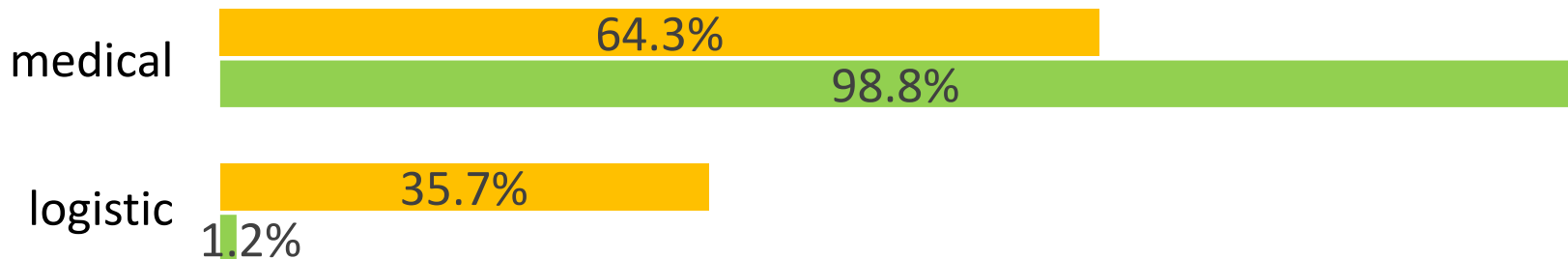
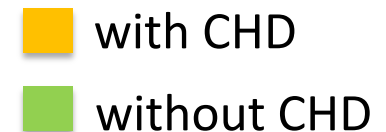
with induction:

63.2% vaginal vs. 36.8% secondary C-section

without induction:

81.1% vaginal vs. 18.9% secondary C-section

Indications for induction of labor



Results (3): Induction of labor

➤ **45.7%** in patients with CHD vs. **27.9%** without CHD

P = 0.001

with induction:

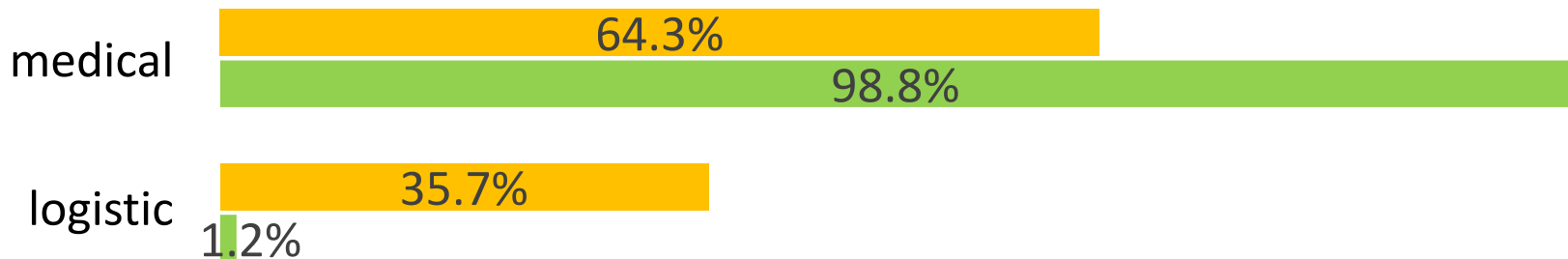
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Indications for induction of labor

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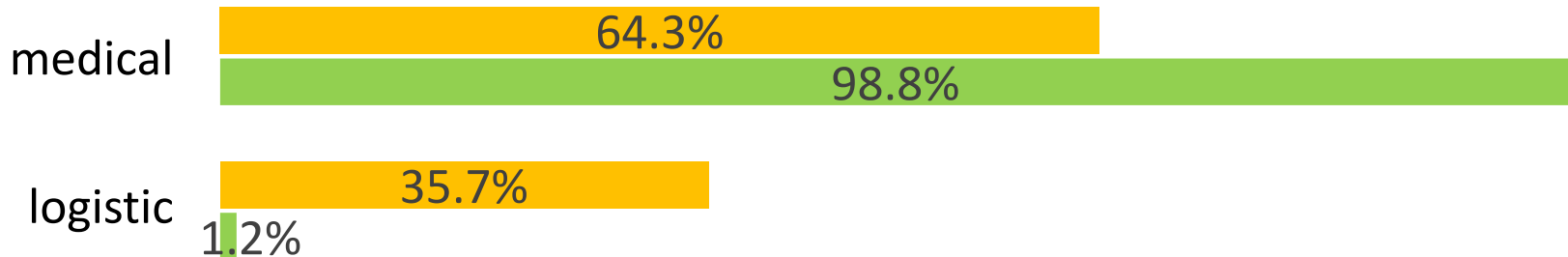
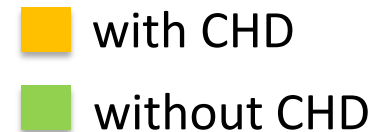
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Indications for induction of labor



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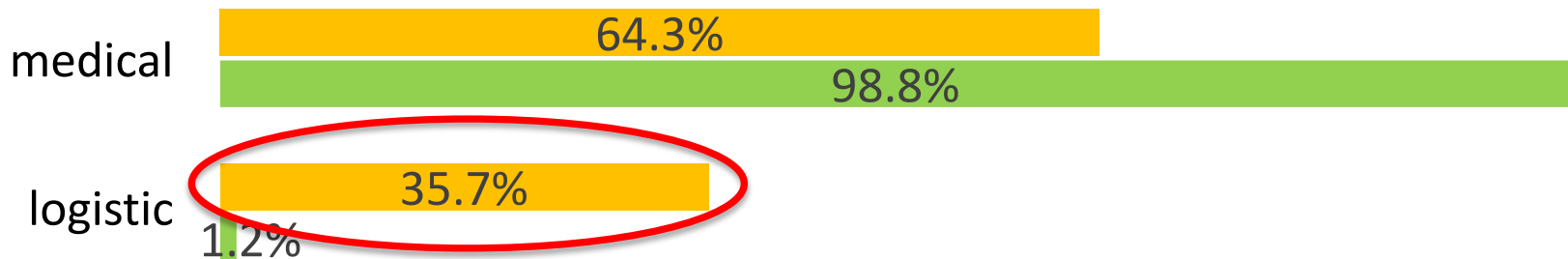
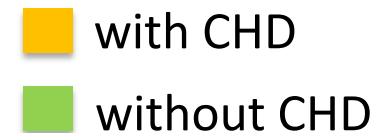
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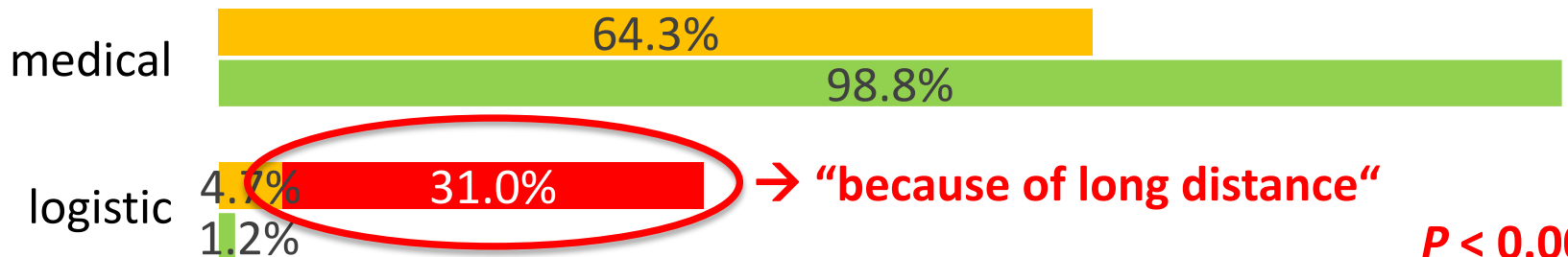
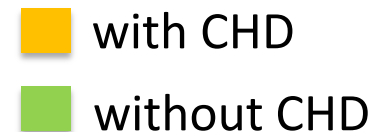
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Indications for induction of labor



P < 0.001

Results (4): Pregnancy outcome

No significant difference:

- postpartum hemorrhage
- pregnancy duration
- preterm delivery
- APGAR score

Significant difference:

- lower mean birth weight ($P = 0.004$)
- more SGA (16.4% vs. 2.3%, $P < 0.001$)

Conclusion

Findings

- higher rate of C-section in CHD patients
- higher rate of induction of labor in CHD patients
- higher rate of C-section following induction
- similar pregnancy outcome:
lower birth weight, more cases of SGA & one case of postpartum hemorrhage in patients with CHD

Conclusion

(Possible) Implications

Primary C-section

- we now try to refuse C-section on request in all pts.

Secondary C-section

- concerns about maternal deterioration resulting in higher rates of “planned vaginal delivery” (i.e. with elective induction) seem unjustified in most cases
- possible reduction of inductions for logistic reasons

Thank you for your attention

