

Grand Rounds
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Incidence of Post-abortion Complications and Emergency Department Visits Among Nearly 55,000 Abortions Covered by the California Medi-Cal Program

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Disclosures

- No conflicts of interest or disclosures

Limited data on abortion complications

- There is no surveillance system for abortion-related morbidity
- There are no national estimates on complication rates
- Published data from small studies on abortion-related complication diagnoses and treatments range from 1.3% to 4.4% (+/- 1%)
 - data from eight papers published between 1990-2009

Difficulty calculating complication rates

- Complication rates vary by:
 - Procedure type
 - Gestational age
- Studies differ by:
 - Protocols used to detect complications
 - Length of follow up
 - Follow-up rate
 - Definitions/classifications of complications

How to define an abortion complication?

- Definitions may be based on:
 - Patient symptoms
 - Clinical diagnoses
 - Treatments
 - Inappropriate care
- Rates change over time as service delivery standards and protocols change.

Abortion mortality varies by gestation and over time

Abortion
Complications and
ED Visits Covered
by Medi-Cal

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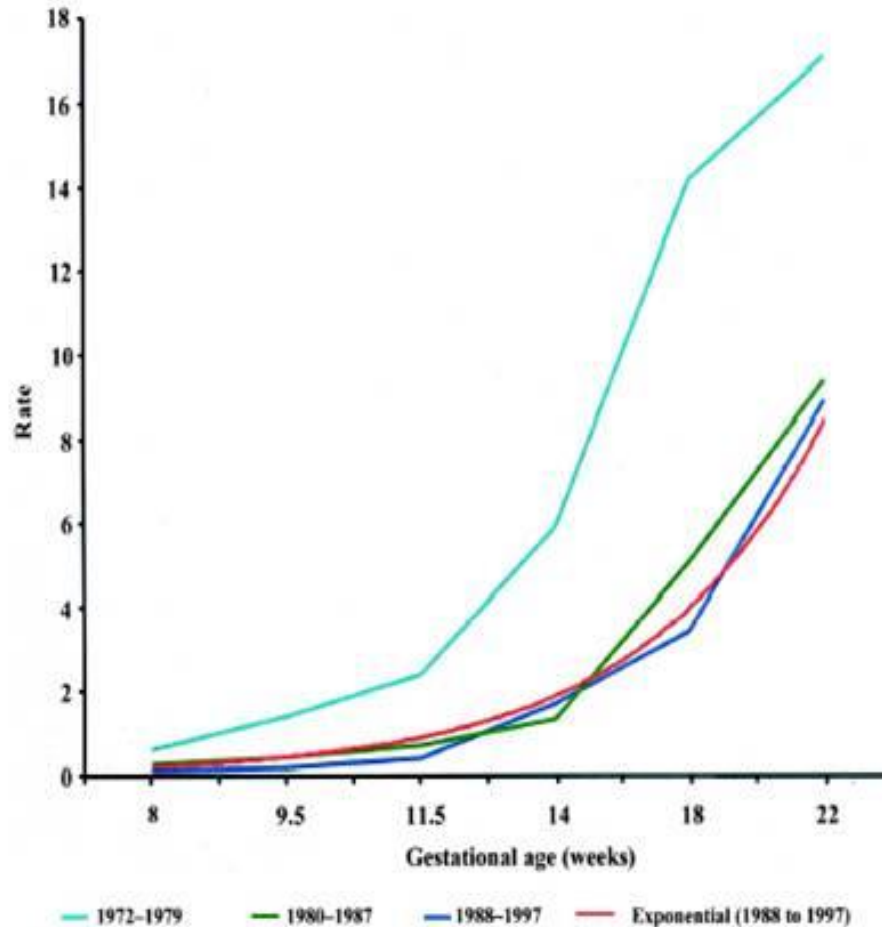


Figure 1. Legal induced abortion mortality rates with plot of exponential model, by gestational age—United States, 1972–1979, 1980–1987, and 1988–1997.

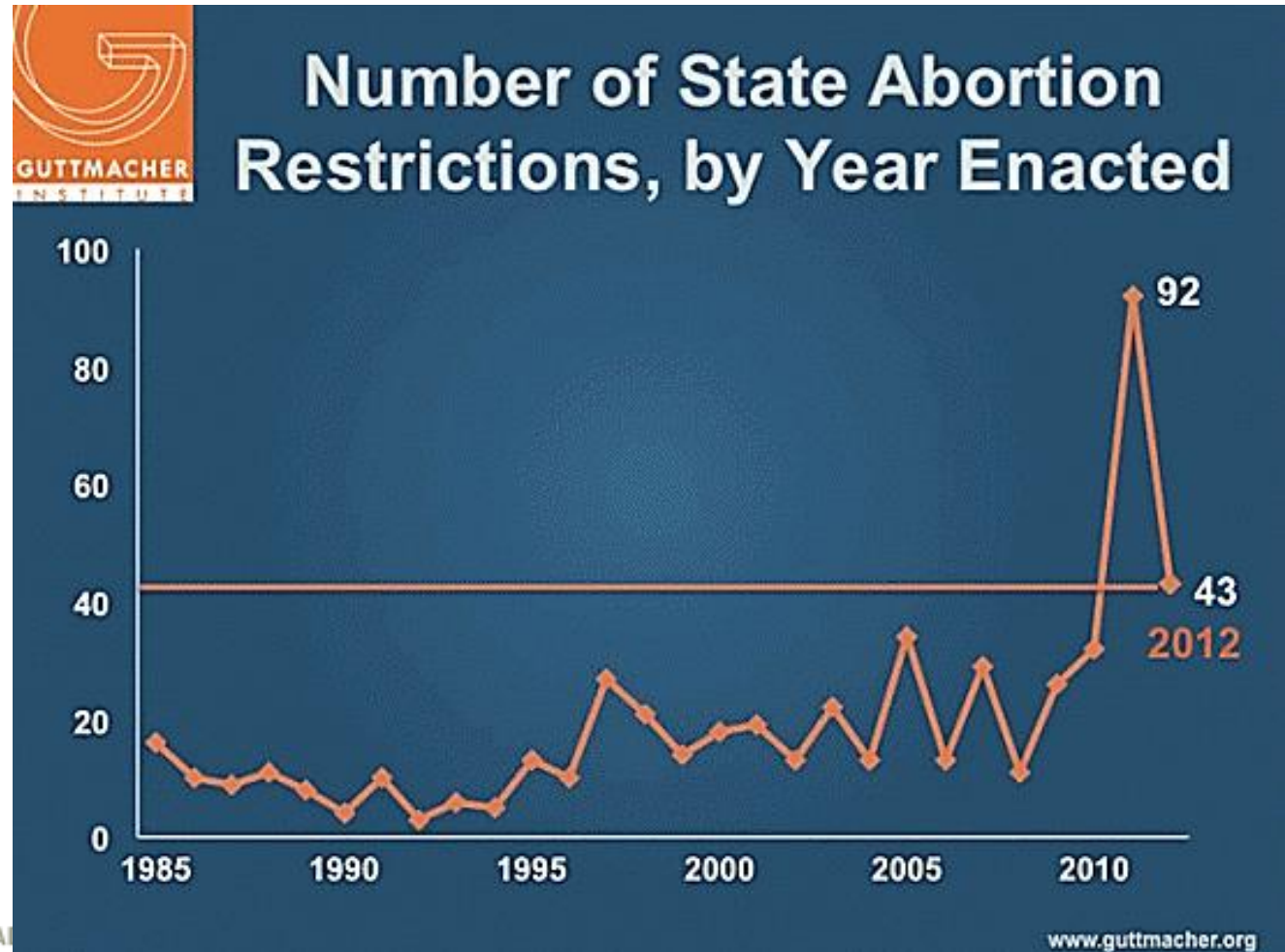
Bartlett. Abortion-Related Mortality. Obstet Gynecol 2004.

Why study abortion complications?

- Provide evidence base to inform new abortion regulations
- Investigate “Emergency Department dumping”

Politicization of abortion complications

- Dramatic increase in legal restrictions on abortion in state legislatures.



Politicization of abortion complications

- Many restrictions are passed with the stated intention of making abortion safer.
 - Provider admitting privileges
 - Transfer agreement requirements
 - Ambulatory surgical center upgrades

“This unanimous decision is a vindication of the careful deliberation by the Texas Legislature to craft a law to protect the health and safety of Texas women.”

--Attorney General Greg Abbott

Emergency Department (ED) Visits

- Perception of “ED Dumping”
 - Abortion care is concentrated in urban centers.
 - Women are more likely to seek care or reassurance for their symptoms near their home.
- There are no studies on the use of EDs after an abortion.



- California represents 18% of the nation's abortions.
- California is one of only 17 states which uses state funds to cover abortion.
- Medi-Cal funded almost 94,000 induced abortions in 2010.
 - These comprised about 40% of total induced abortions in California (Jones et al 2008).
- The Medi-Cal program offers presumptive eligibility for low-income women who believe they are pregnant
 - “A Qualified Provider is allowed to grant immediate, temporary Medi-Cal coverage and care to pregnant patients pending their formal Medi-Cal application.”

Study Aims

- **Complications:** To estimate the incidence of post-abortion complications and their total provider reimbursements
 - **Procedure type**
 - Medication Abortion
 - Other 1st tri
 - 2nd tri or later
 - **Sources of care**
- **Emergency Department Visits:** To estimate the proportion of post-abortion ED visits due to abortion complications

Process of Obtaining Data

Request: Data on every Medi-Cal funded abortion in 2010 and 2011 and all billing records up to 6 weeks after the procedure (regardless of reason for care).

- Jan 2010: First communications with California Department of Health Care Services
- May 2010: First official data request (approved)
- Oct 2010: DHCS Committee for the Protection of Human Subjects (approved)
- Jan 2011: UCSF CHR (approved)
- April 2011: Concerns about data request from Data Research Committee
- May 2011: Second official data request (approved)
- June 2011: Invoice for \$7,500 received
- August 2011: DATA received!
- Renewals and paperwork continue, now via CalProtects

Data Security

- Many protections promised



The Data

- Medi-Cal fee-for-service records, 2009-2010
 - 659,361 records
 - 54,911 abortions
 - 50,273 beneficiaries
- Presumptive eligibility records, 2009-2010
 - 404,685 records
 - 70,065 abortions in 2009-2010
 - 69,744 patients
- Total abortions: ~125,000 (62,500 per year)
- **This analysis includes only fee-for-service**

MCAI ID	Birth Date	Service Date
123456789	07/05/00	06/11/09
123456790	07/05/00	06/12/09
123456791	07/10/00	06/12/09
123456792	07/11/00	06/14/09
123456793	07/12/00	06/16/09
123456794	07/13/00	06/16/09
123456795	07/14/00	06/17/09
123456796	07/15/00	06/18/09
123456797	07/16/00	06/18/09
123456798	07/17/00	06/19/09
123456799	07/18/00	06/19/09
123456800	07/19/00	06/19/09
123456801	07/20/00	06/13/09
123456802	07/21/00	06/14/09

Beneficiary Variables

- Encrypted ID number
- Date of birth
- Longitude and latitude and zip code
- Race
- Date(s) of service
- Diagnoses
- Procedures/Treatments
- Family planning indicator

Provider Variables

- Provider number (NPI number)
- Longitude and latitude and zip code (NPI address)
- Facility type: Outpatient, Inpatient, Medical/Physician
- Amount reimbursed per procedure

Method for identifying complications

First we flagged certain abortion records based on:

1. Evaluation of ICD-9 and Procedure Codes known to represent abortion complications within 6 weeks
2. Evaluation of Emergency Department visits within 6 weeks
3. Evaluation of repeat abortions within 6 weeks

Method for Classifying Complications

- Used systematic classification scheme developed for our HWPP study
- Clinical consultants identified complications by reviewing the each flagged record and classified into the following diagnoses:
 - Incomplete abortion
 - Continuing pregnancy
 - Hemorrhage
 - Infection
 - Uterine perforation
 - Anesthesia-related
 - Other/Undetermined

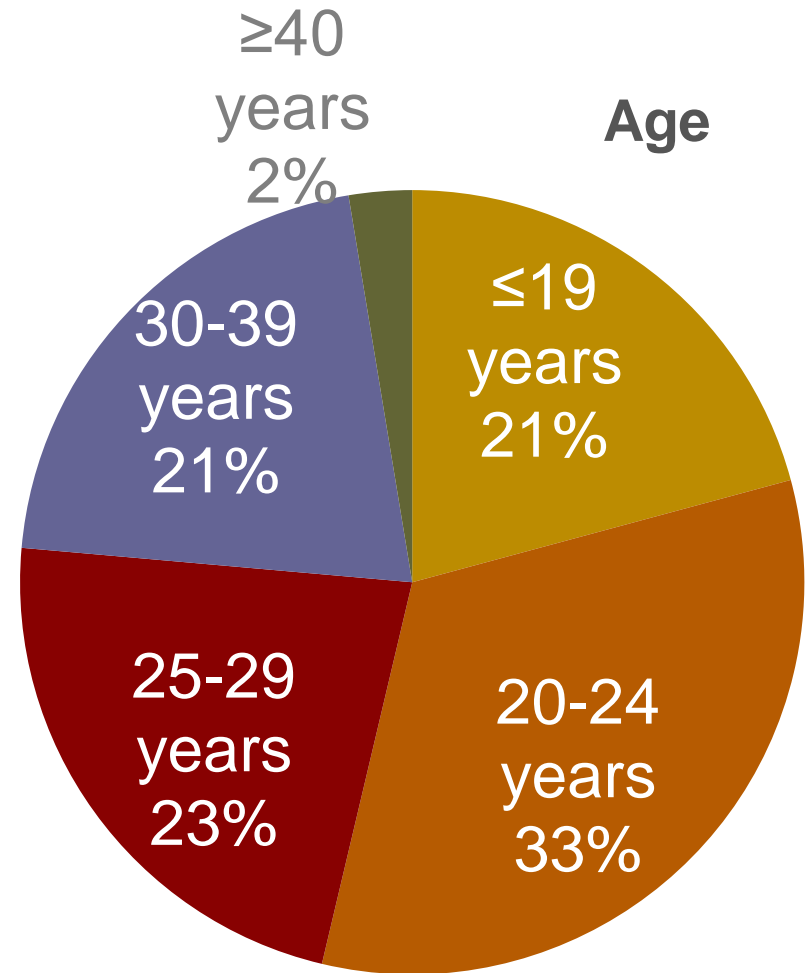
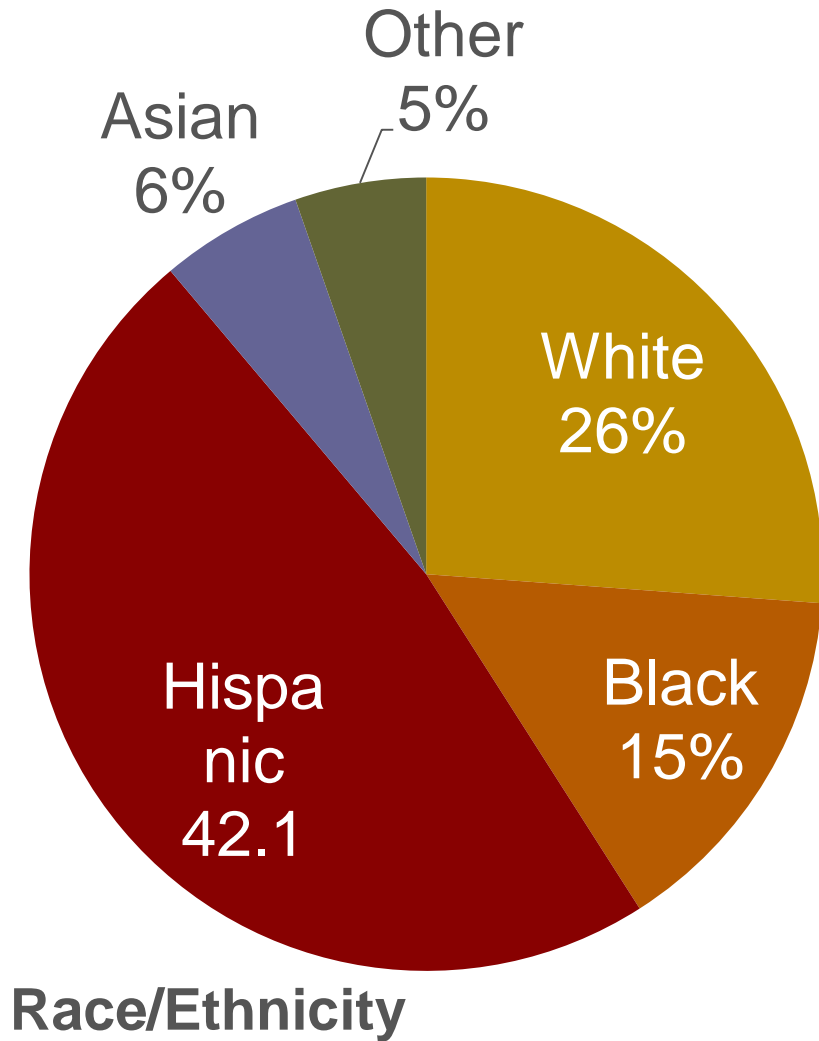
Methods: Data Analysis

- For each complication, we examined the records and determined diagnosis and treatment
- Estimated major and minor complications
- Estimated complication rates and adjusted relative risk by age, race/ethnicity, urban/rural residence, type of procedure, and type of facility

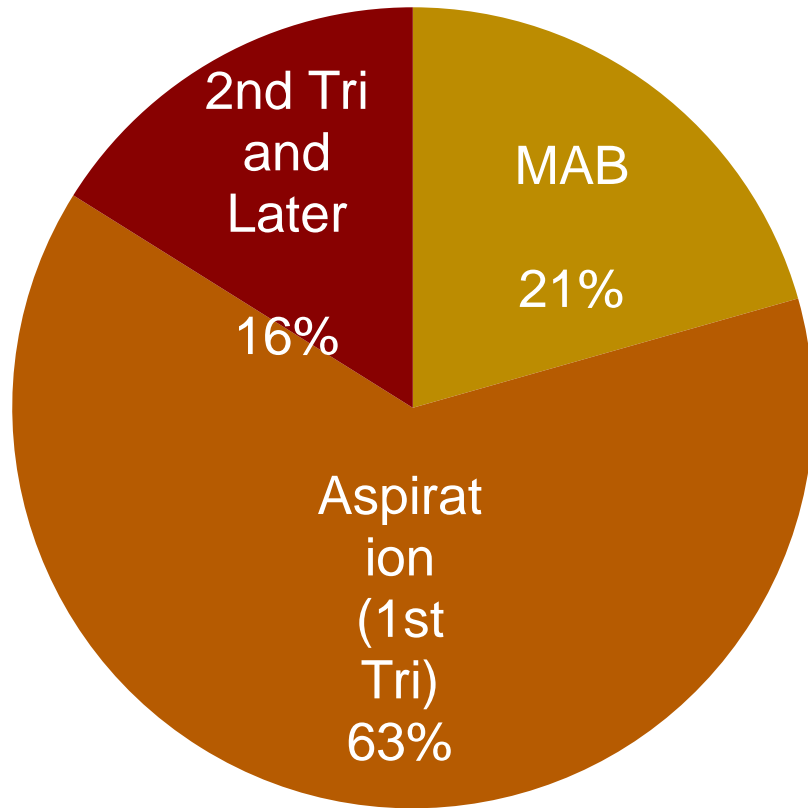
Definition of a Complication

- Major – One of the following within 6 weeks, due to the abortion:
 - Surgery
 - Blood Transfusions
 - Hospitalizations
- Minor – All other complications

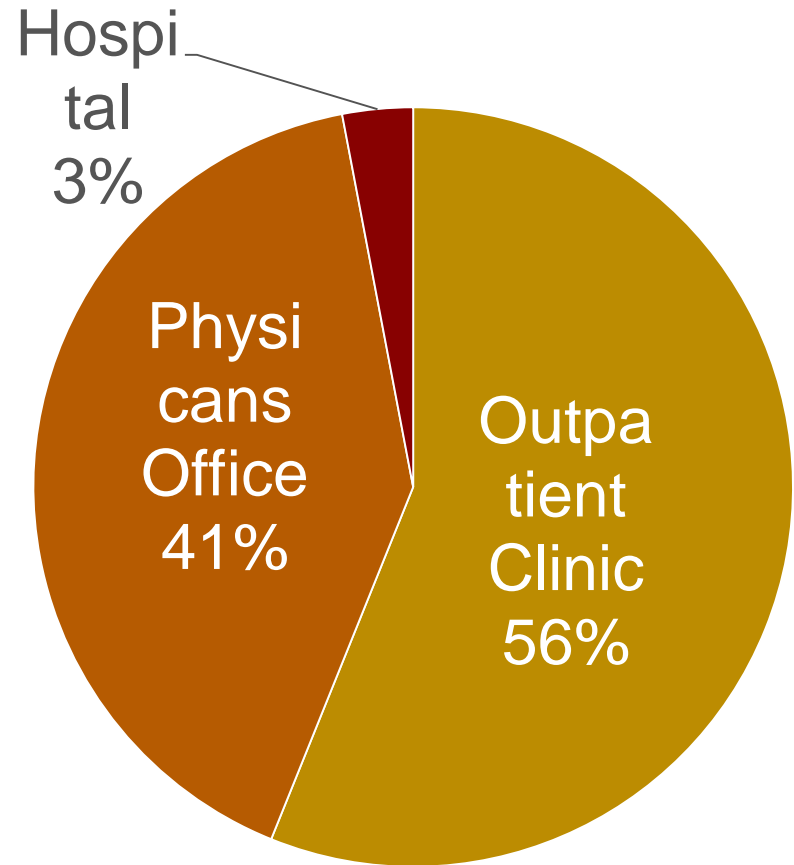
Results: Demographics of the Sample



Results: Characteristics of the Procedure



Type of Procedure

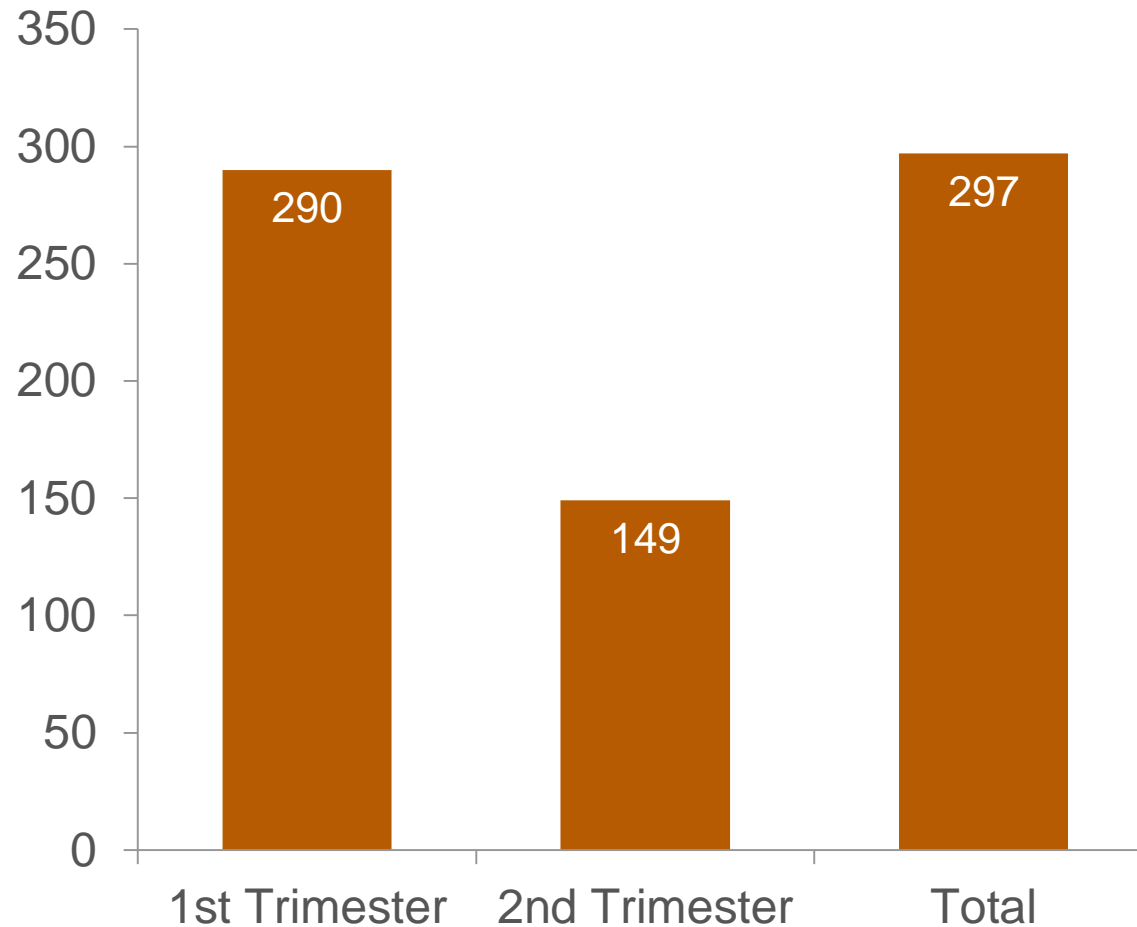


Source of Care

Number of providers of Medi-Cal Fee For Service abortion

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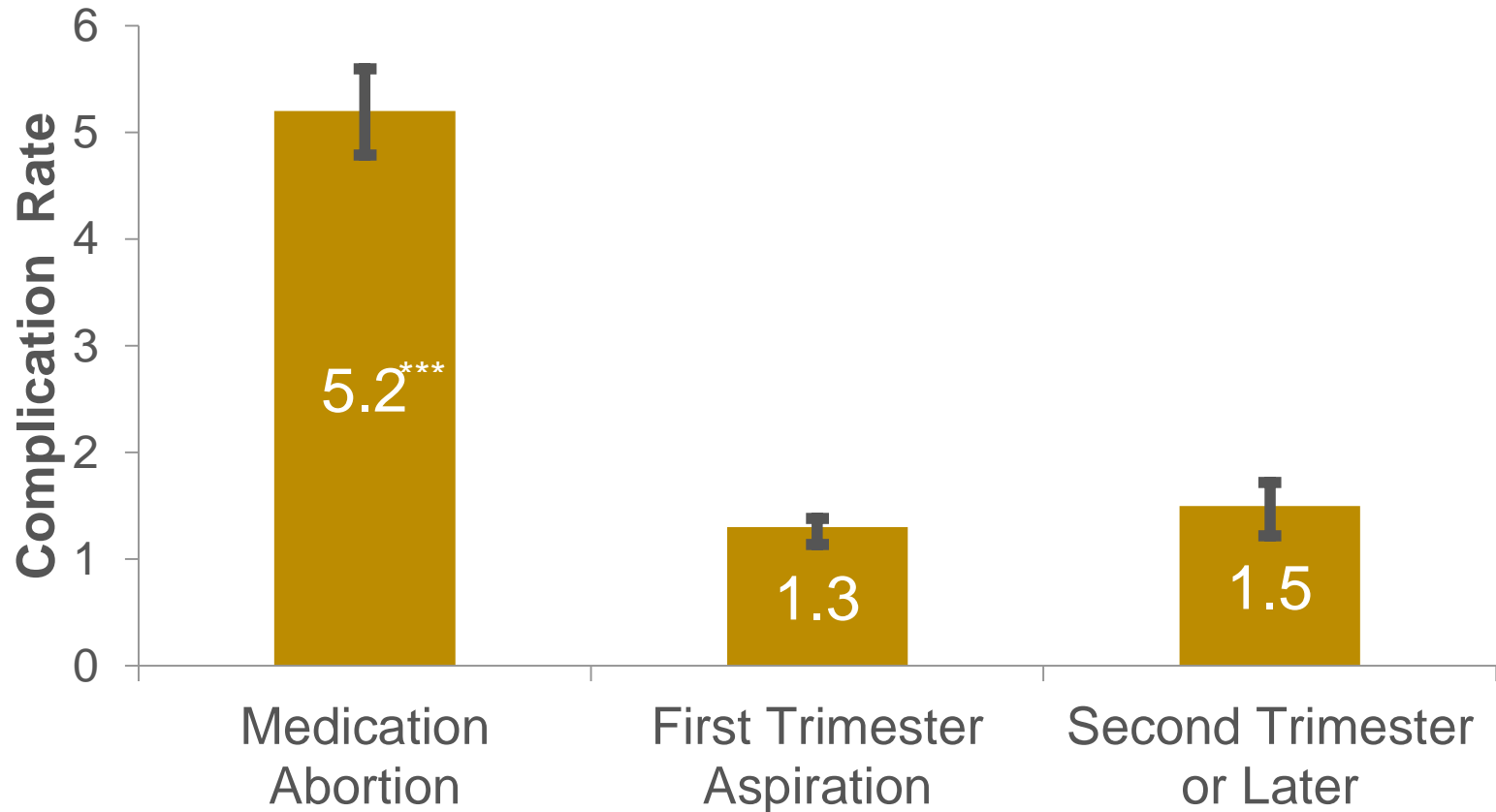
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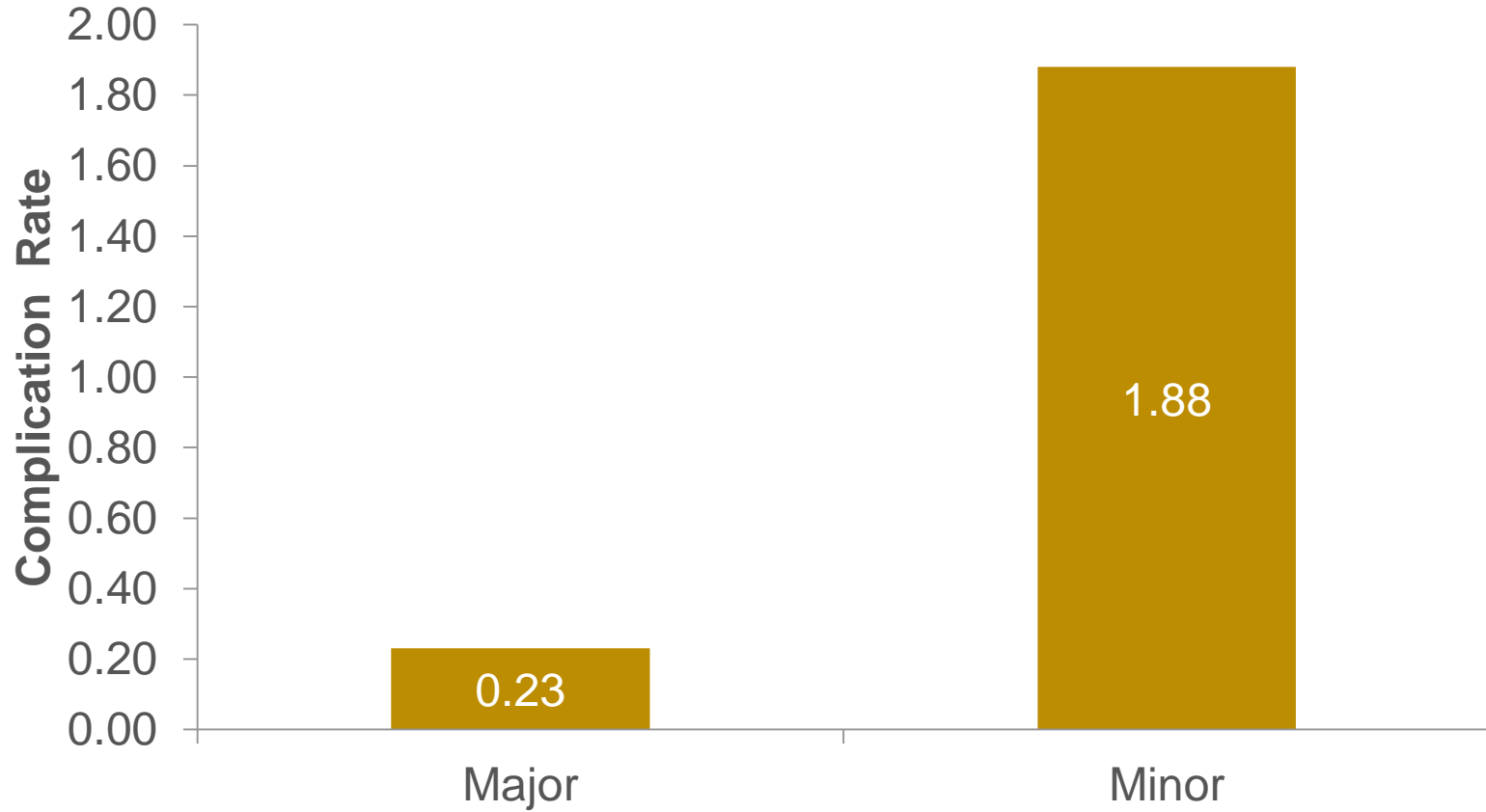
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Results: Complications, by Procedure Type

Total complication rate is 2.1%
(95% CI 1.99 – 2.23)
(n=1,156)



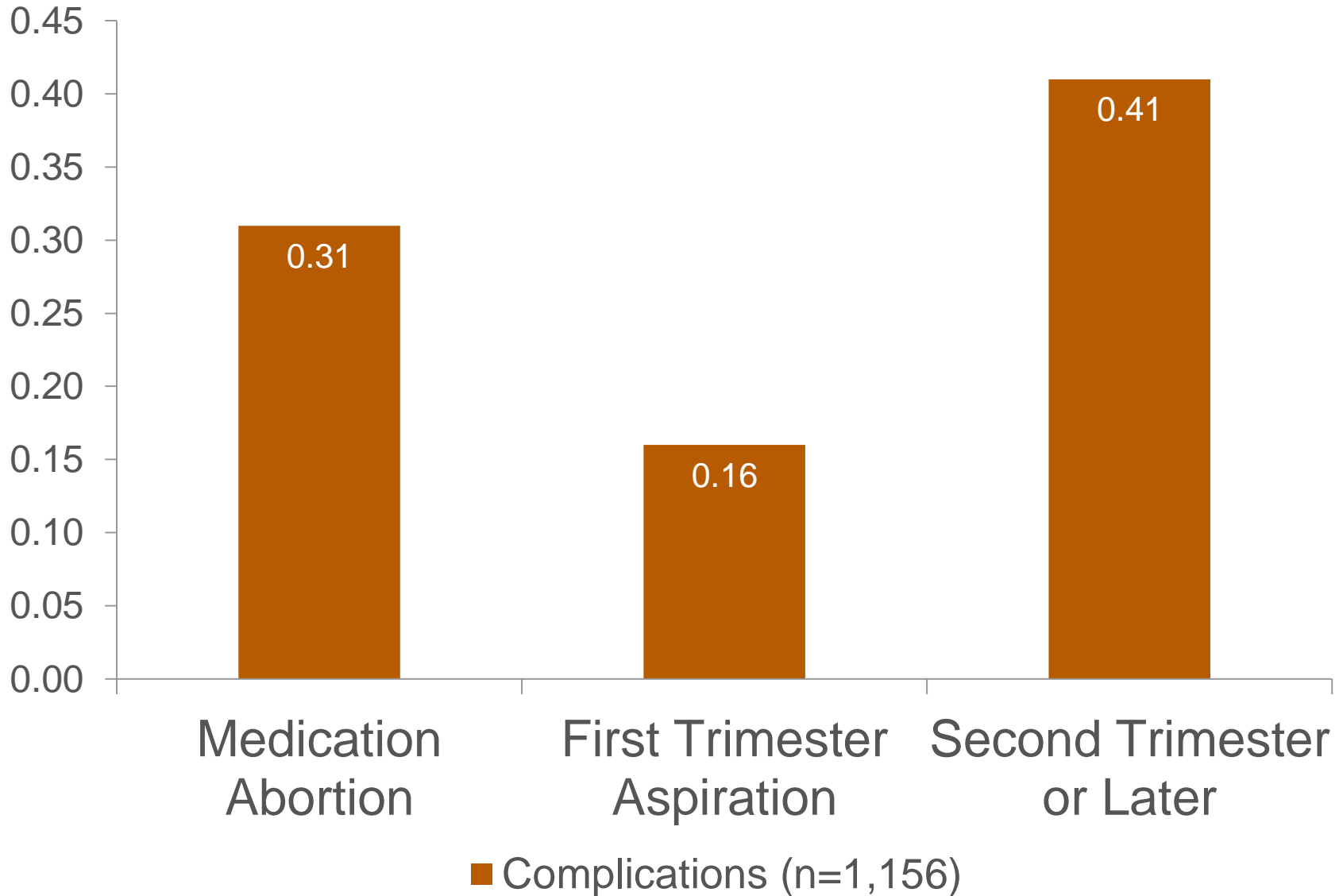
Rate of Major and Minor Complications



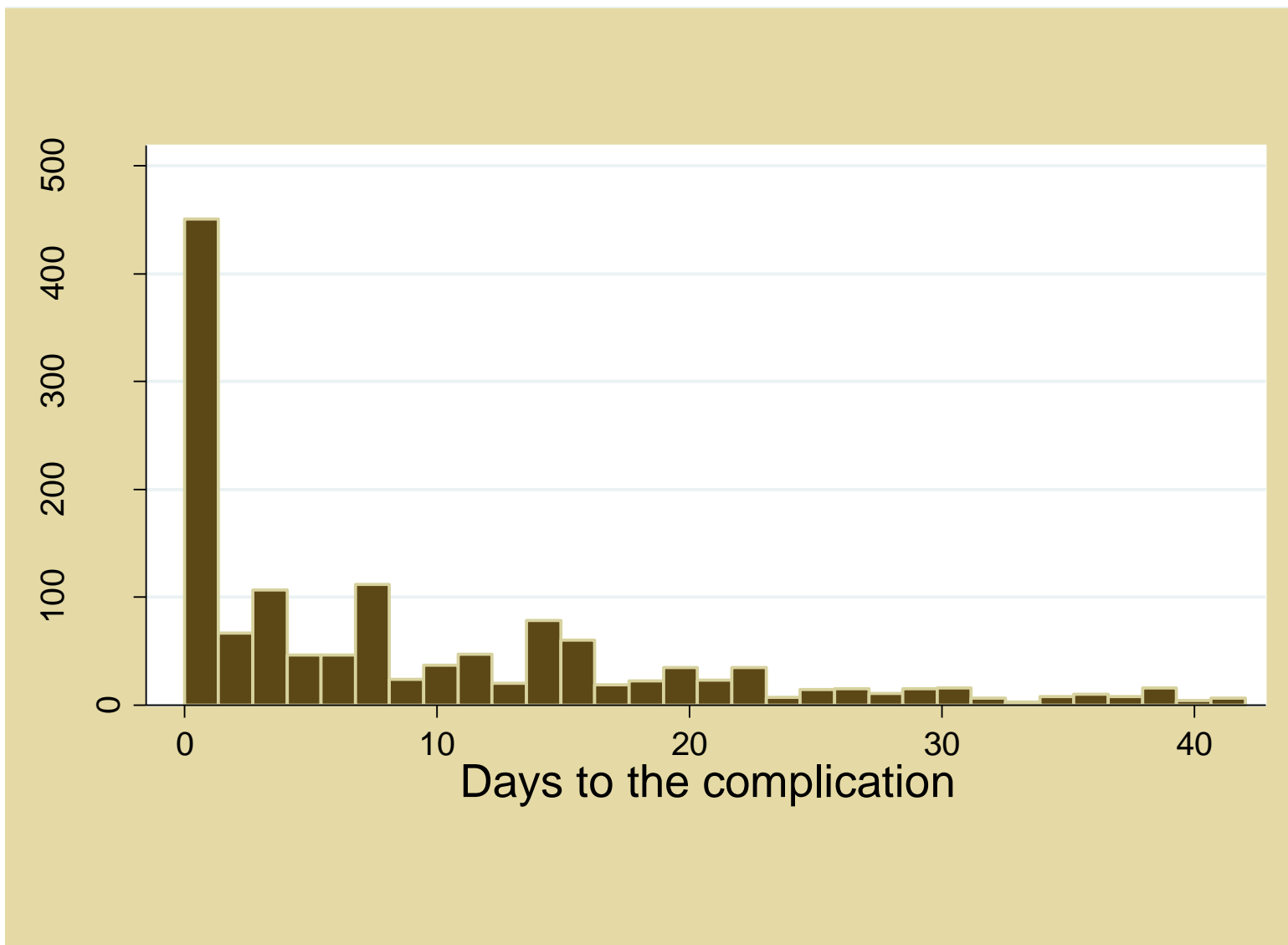
Major complications, by type

- Of the 0.23% major complication rate
 - Surgery: 0.02% (n=13)
 - Blood Transfusions: 0.09% (n=50)
 - Hospitalizations: 0.20% (n=108)

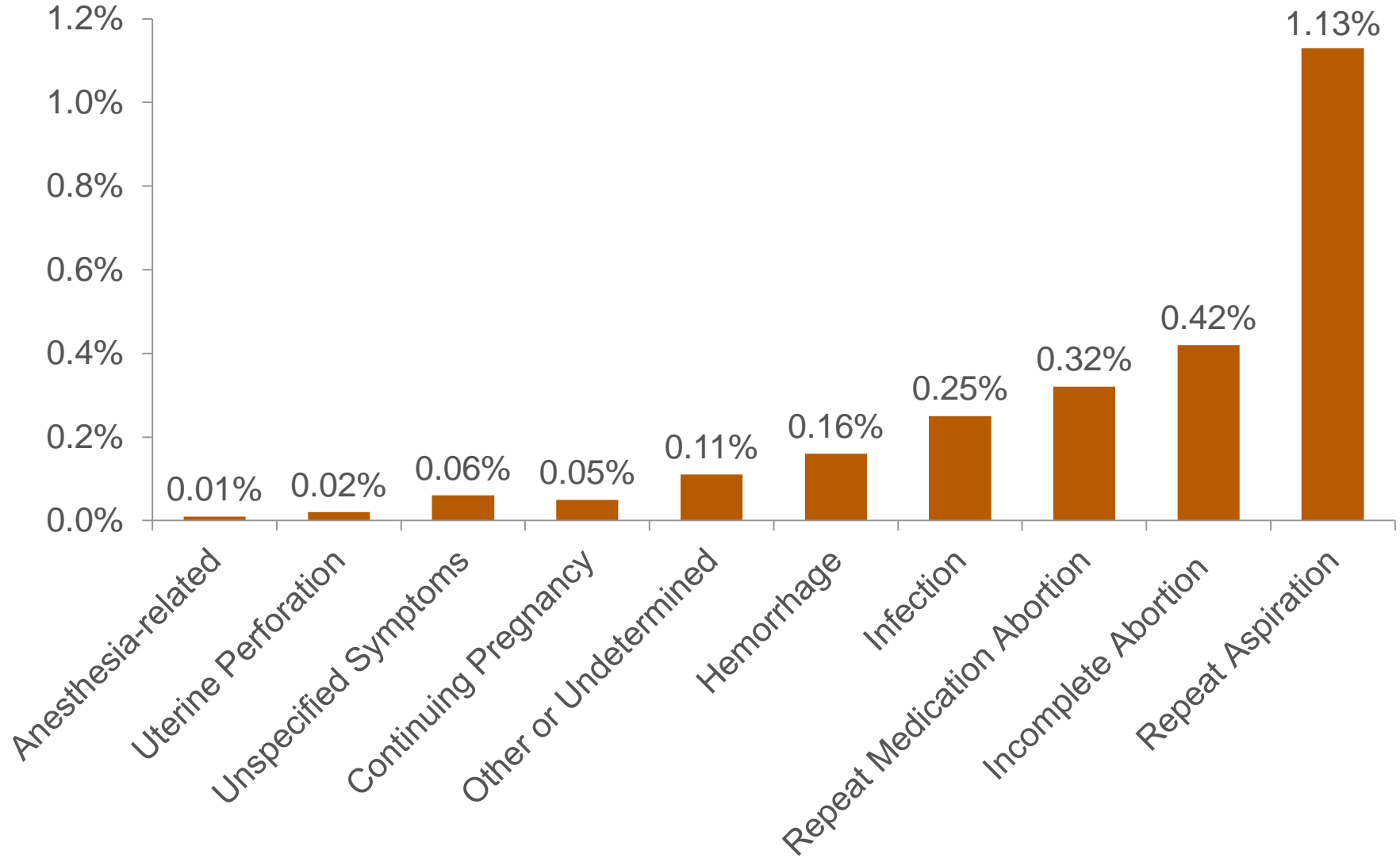
Major Complications, by Procedure Type



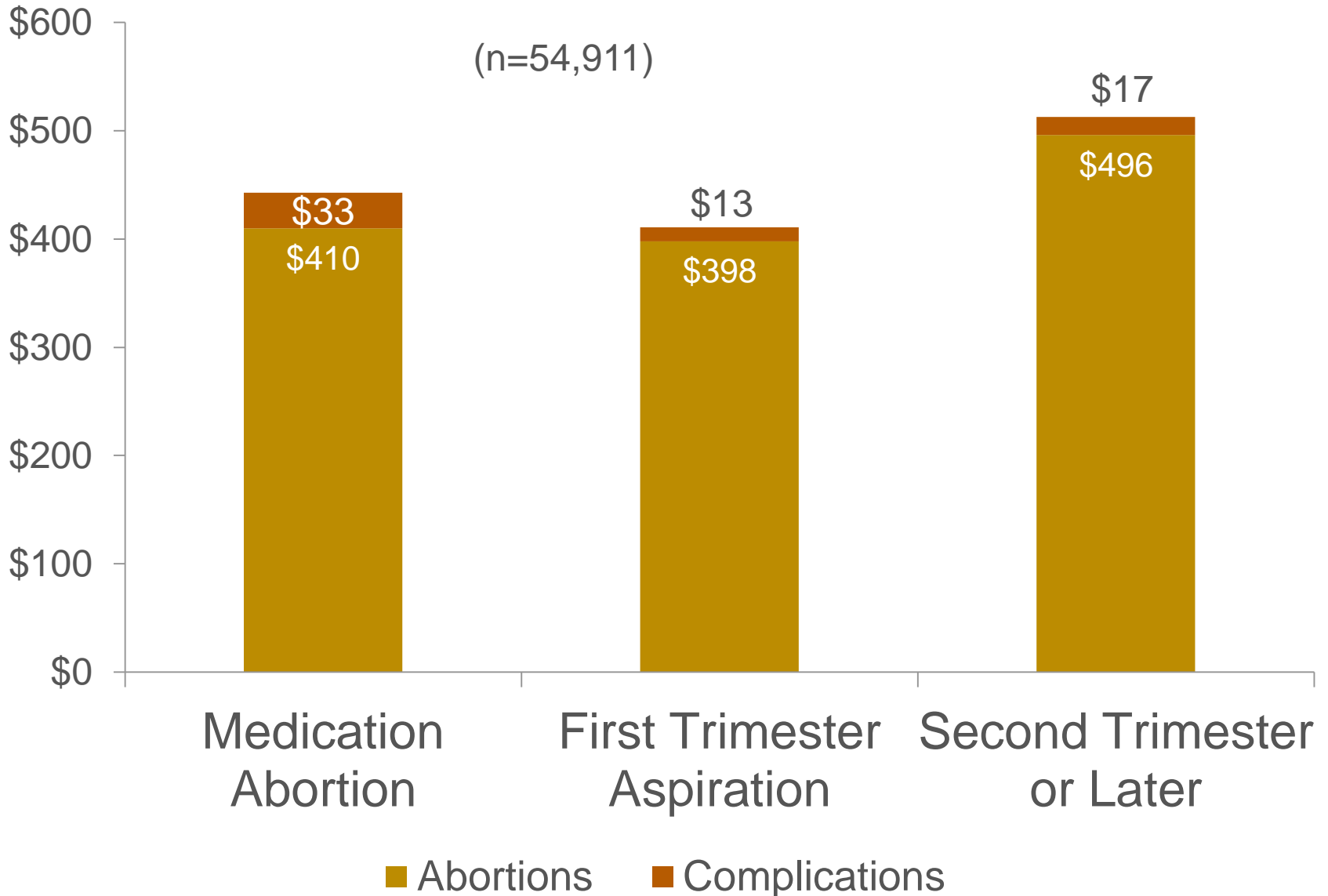
Number of Complications by Days after procedure



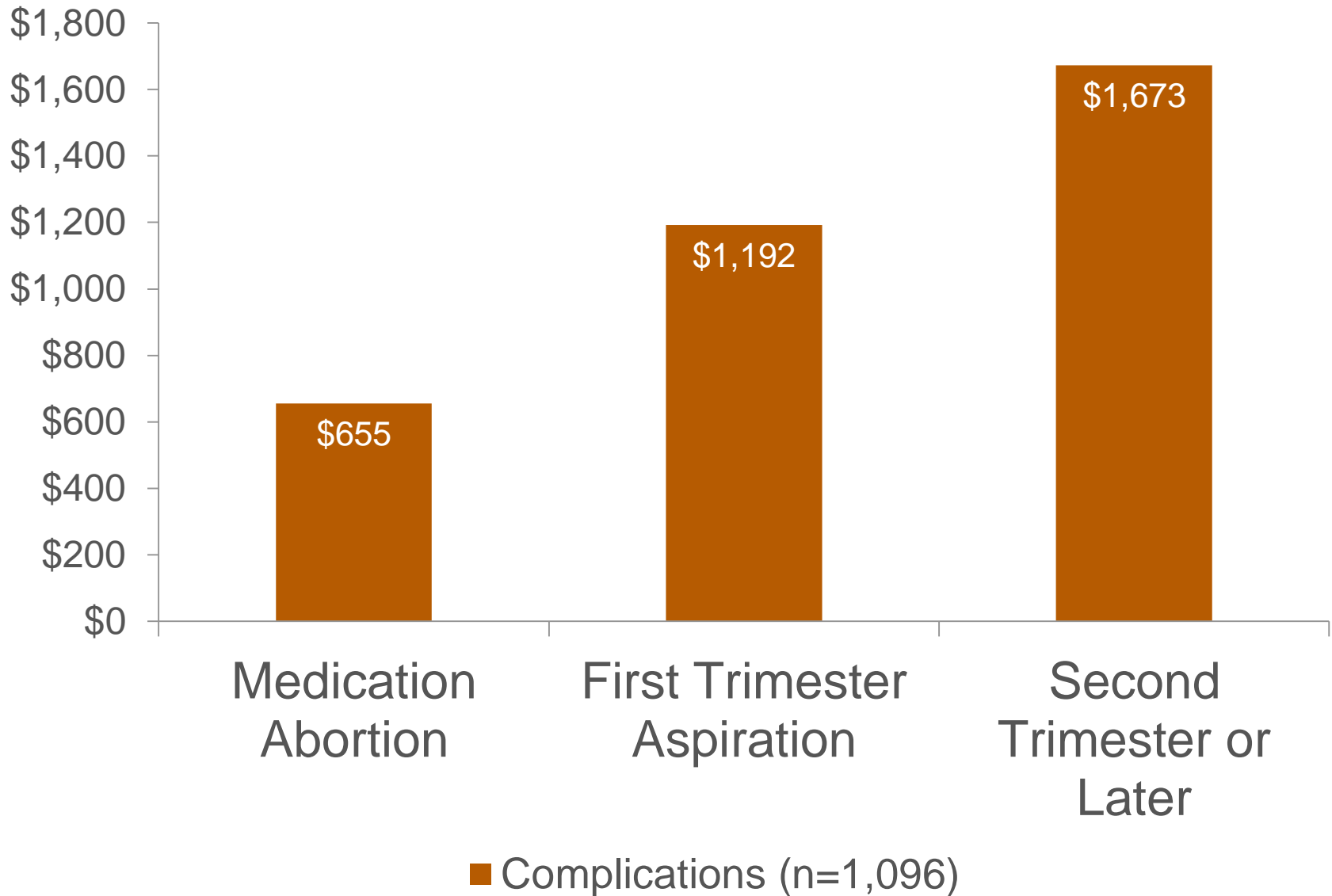
Complications by Diagnosis



Mean Reimbursement Amounts by Procedure Type

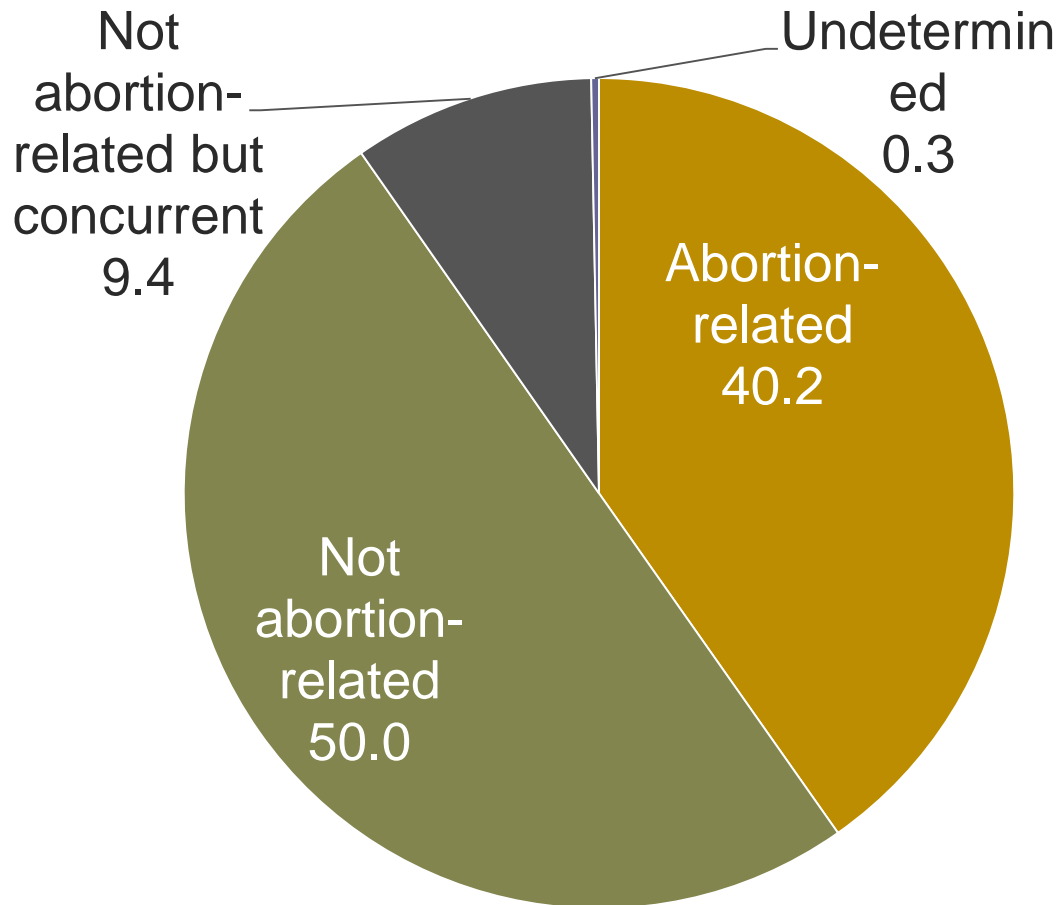


Mean Reimbursement Amounts for complication cases

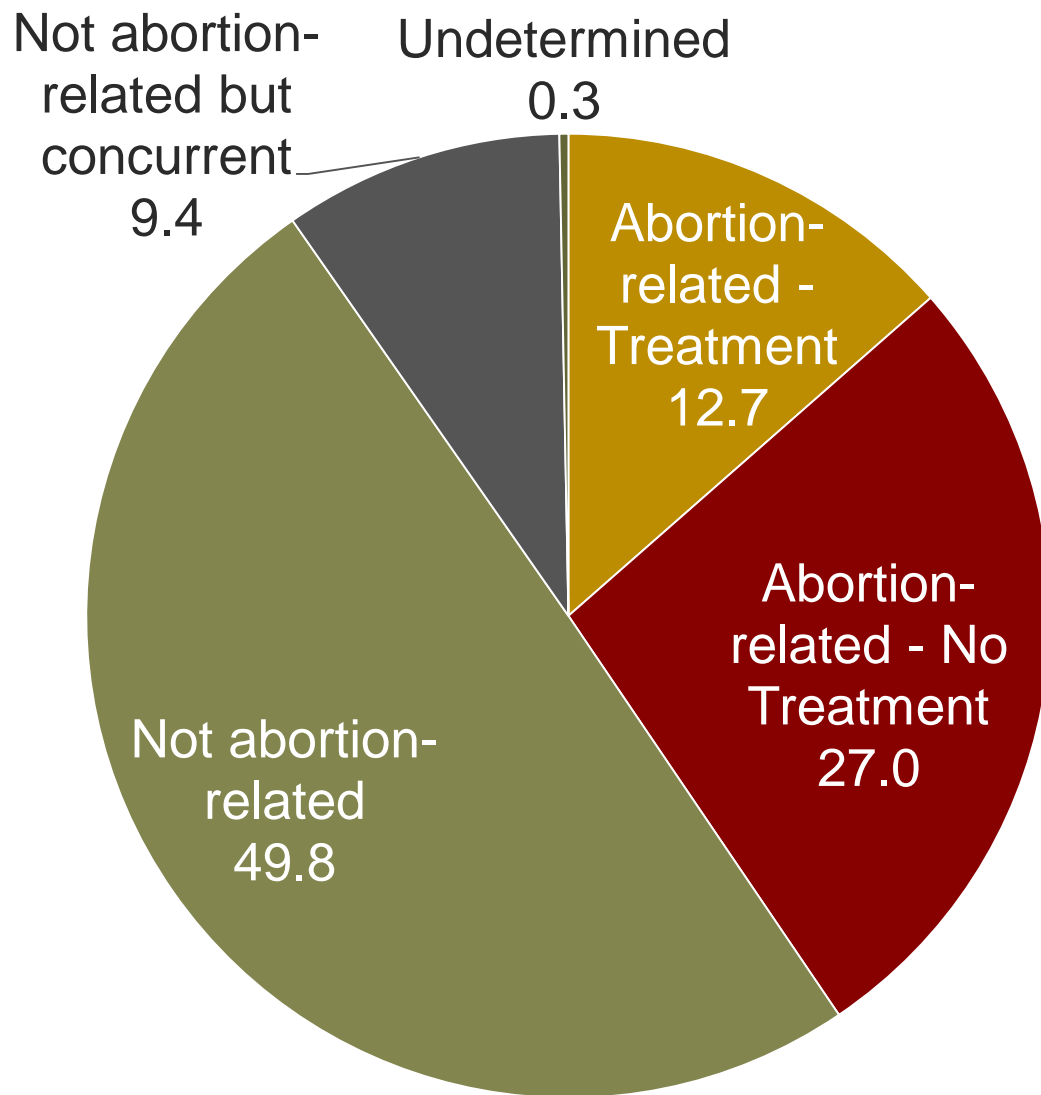


Results: Emergency Department Visits

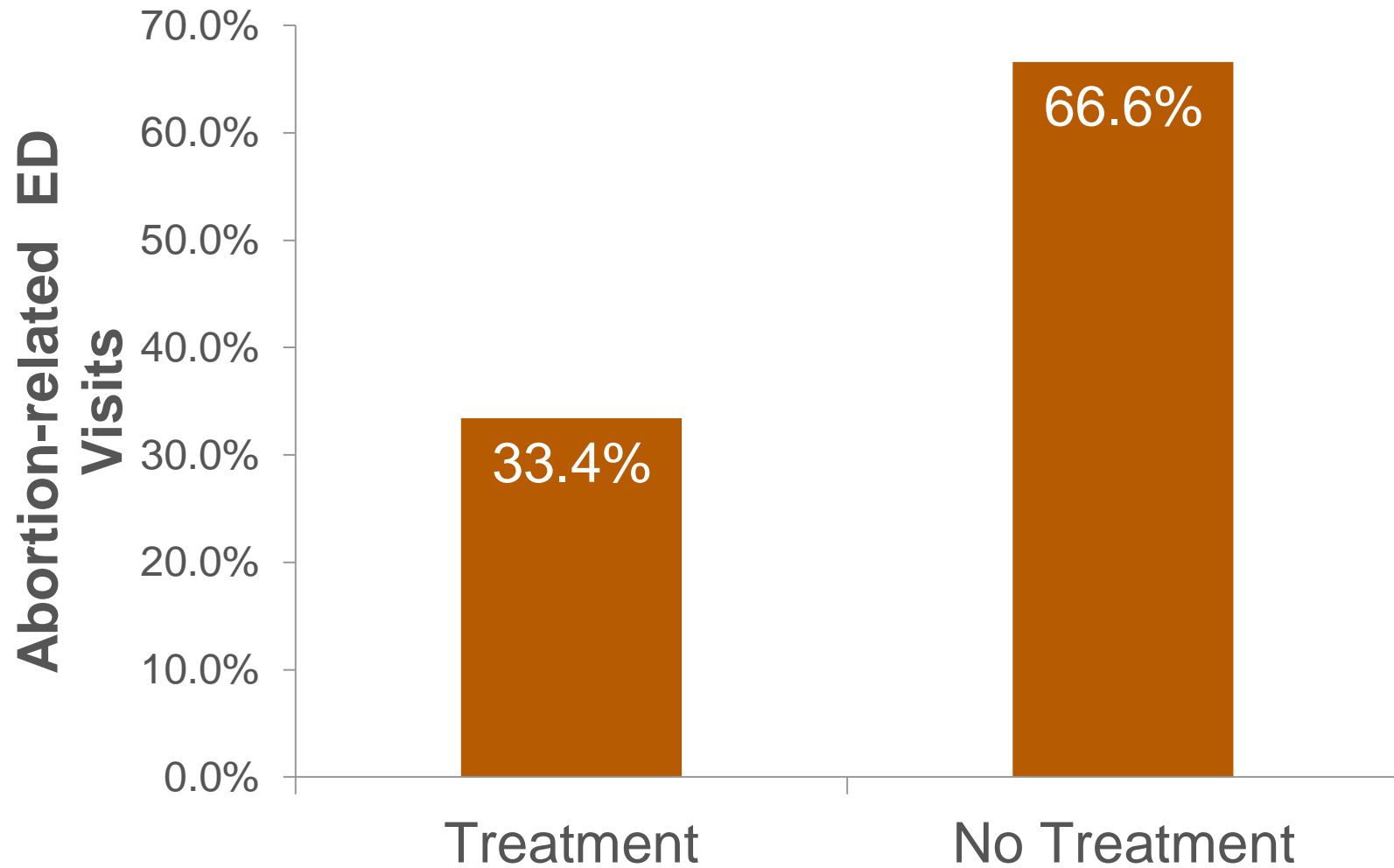
Among all abortions in the sample, 6.4% were followed by an emergency department visit within 6 weeks (n=3,531)



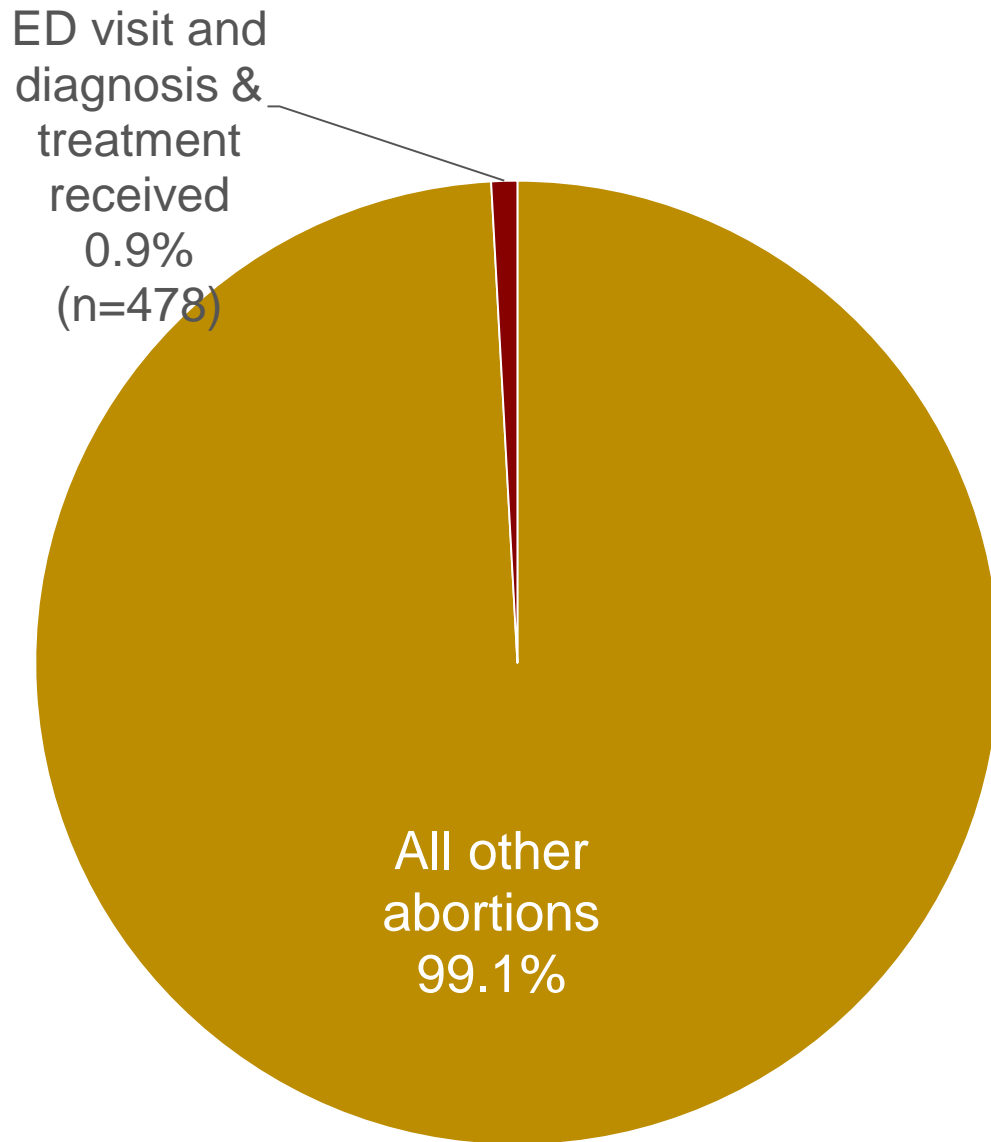
Results: Emergency Department Visits



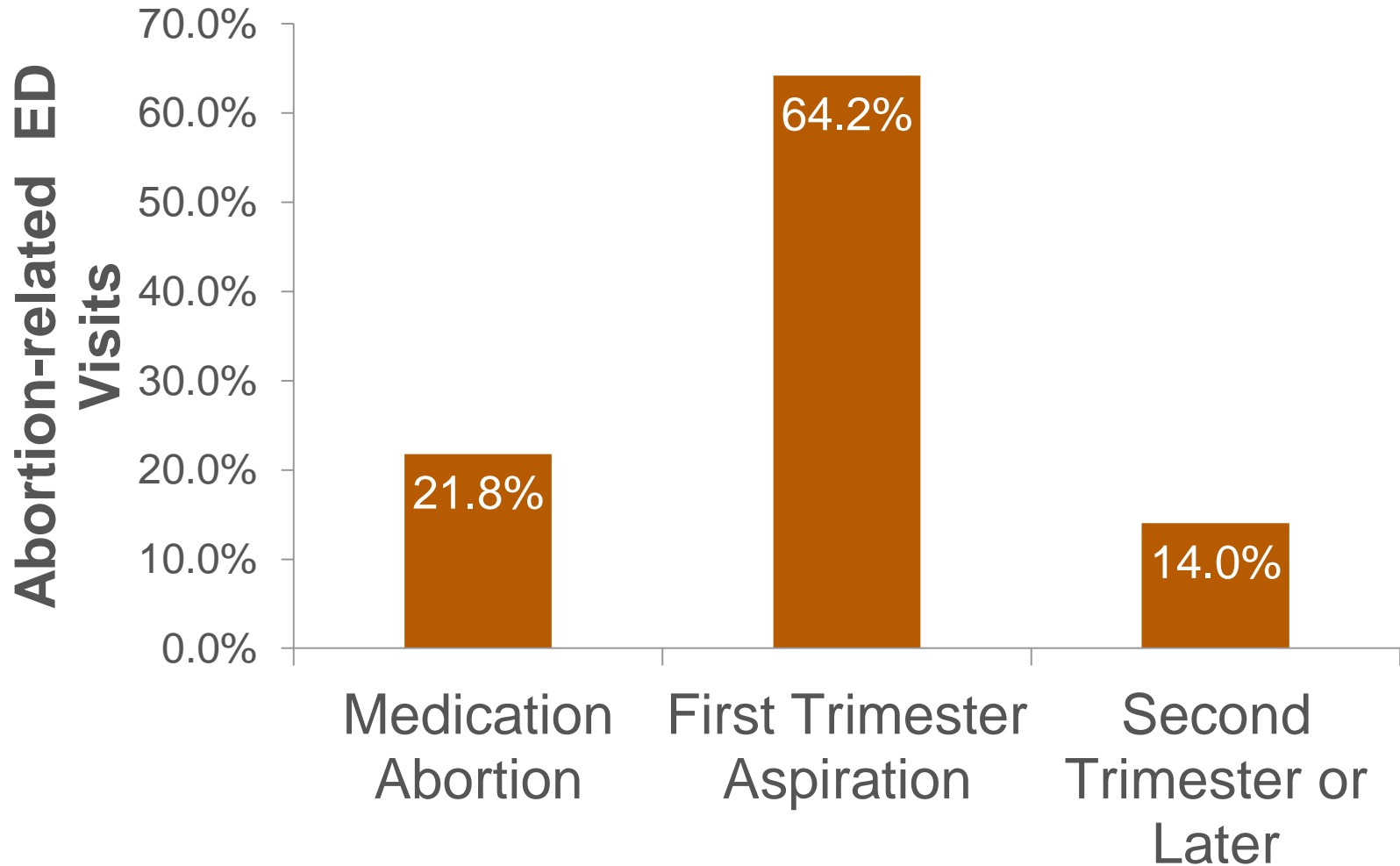
Abortion-related ED Visits, by Treatment



Proportion of abortions resulting in a complication diagnosed & treated at the ED



Abortion-related ED Visits, by Procedure Type



Conclusions: Safety

- Abortion is an extremely safe procedure.
- Recent new legislation regarding Ambulatory Surgical Center requirements and Transfer Agreements are unlikely to further increase safety.

Conclusions: ED visits

- High level of ED visits post-abortion
 - Only 13% were due to true abortion-complications
 - High levels of *unnecessary* use of the ED
 - ED is a primary source of care for many women

Conclusions: Reimbursement

- Reimbursement likely does not reflect true provider costs
- Reimbursements are substantially lower than national costs of abortion (Jones 2011)

Strengths

- Follow up beyond a two-week period
- No loss to follow up
- Multiple facilities
- Large sample size

Limitations

- Reporting bias: Reliance on **reported** billing data. Could not include complications that were not coded or identified in some way.
 - → Underestimation
- Generalizability: Medi-Cal patients may have more health risks or problems than the general US population.
 - → Overestimation

Additional Analyses

- Specific analyses by diagnosis or treatment (e.g. anesthesia-related, Methergine)
- Distance travelled to see a provider
- Association between distance and where they go for care of suspected complications

Thank you!

Additional Mentorship

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Consultants

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Yvonne Piper, MLIS, RN, PHN

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Supplemental Slides



Results: Treatment

Treatment	%
No treatment	2.7
Meds (not fluids)	24.8
Aspiration	61.6
Meds and aspiration	3.5
Other	4.1
Unknown	3.4

Perception of High Complication Rates

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**Abortion
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majorcomp	proctypefill			Total
	MAB	1st tri	2nd tri+	
0	11,283 99.68	34,690 99.81	8,800 99.58	54,773 99.75
1	36 0.32	65 0.19	37 0.42	138 0.25
Total	11,319 100.00	34,755 100.00	8,837 100.00	54,911 100.00

Pearson chi2(2) = 17.6174 Pr = 0.000

