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

Ushma D. Upadhyay, PhD, MPH
Assistant Professor
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco
Co-authors

- Sheila Desai, MPH
- Vera Zlidar, MPH
- Tracy Weitz, PhD, MPA
- Daniel Grossman, MD
- Patricia Anderson, MPH
- Diana Taylor, PhD, MS, RNP
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.
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.

![Graph showing the number of state abortion restrictions by year](https://www.guttmacher.org)
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
Abortion
Complications and ED Visits Covered by Medi-Cal

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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
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

Race/Ethnicity:
- Hispanic: 42.1%
- White: 26%
- Black: 15%
- Asian: 6%
- Other: 5%

Age:
- ≤19 years: 21%
- 20-24 years: 33%
- 25-29 years: 23%
- 30-39 years: 21%
- ≥40 years: 2%
- Other: 5%
Results: Characteristics of the Procedure

Type of Procedure:
- Aspiration (1st Tri): 63%
- 2nd Tri and Later: 16%
- MAB: 21%

Source of Care:
- Outpatient Clinic: 56%
- Physicians Office: 41%
- Hospital: 3%
Number of providers of Medi-Cal Fee For Service abortion

- 1st Trimester: 290
- 2nd Trimester: 149
- Total: 297

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Total complication rate is 2.1% (95% CI 1.99 – 2.23) (n=1,156)
Rate of Major and Minor Complications

- Major Complications: 0.23
- Minor Complications: 1.88
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

- Medication Abortion: 0.31
- First Trimester Aspiration: 0.16
- Second or Later Trimester: 0.41

Complications (n=1,156)
Number of Complications by Days after procedure

Days to the complication

Number of Complications
Mean Reimbursement Amounts by Procedure Type

(n=54,911)

- Medication Abortion: $33 (Abortions) + $410 (Complications)
- First Trimester Aspiration: $13 (Abortions) + $398 (Complications)
- Second Trimester or Later: $17 (Abortions) + $496 (Complications)
Mean Reimbursement Amounts for complication cases

- Medication Abortion: $655
- First Trimester Aspiration: $1,192
- Second Trimester or Later: $1,673
Among all abortions in the sample, 6.4% were followed by an emergency department visit within 6 weeks (n=3,531).

- Abortion-related: 40.2%
- Not abortion-related but concurrent: 9.4%
- Not abortion-related but concurrent: 50.0%
- Undetermined: 0.3%
Results: Emergency Department Visits

- Not abortion-related: 49.8%
- Abortion-related - No Treatment: 27.0%
- Abortion-related - Treatment: 12.7%
- Not abortion-related but concurrent: 9.4%
- Undetermined: 0.3%
Abortion-related ED Visits, by Treatment

- **Treatment**: 33.4%
- **No Treatment**: 66.6%
Proportion of abortions resulting in a complication diagnosed & treated at the ED

ED visit and diagnosis & treatment received 0.9% (n=478)

All other abortions 99.1%
Abortion-related ED Visits, by Procedure Type

<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Abortion</td>
<td>21.8%</td>
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<tr>
<td>First Trimester Aspiration</td>
<td>64.2%</td>
</tr>
<tr>
<td>Second Trimester or Later</td>
<td>14.0%</td>
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</tbody>
</table>
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!

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Consultants
Kristina Ryan, RN, MSN, FNP
Yvonne Piper, MLIS, RN, PHN

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### Results: Treatment

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<th>Treatment</th>
<th>%</th>
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<td>No treatment</td>
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<tr>
<td>Meds (not fluids)</td>
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<tr>
<td>Aspiration</td>
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<tr>
<td>Meds and aspiration</td>
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<tr>
<td>Other</td>
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<td>Unknown</td>
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Perception of High Complication Rates
### Abortion Complications and ED Visits Covered by Medi-Cal

**Ushma Upadhyay, PhD, MPH**

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**Table:**

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<td><strong>Total</strong></td>
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**Pearson chi2(2) = 17.6174 Pr = 0.000**