Canadian STATA Conference 2026

Antenatal Care Visits and Early Neonatal Mortality Among Pregnant Women Transported by Emergency Medical Services: A Cohort Data Analysis

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Background

Why This Study Matters

- Early neonatal mortality remains a major global health challenge.
- Low-resource areas in India often have inadequate ANC utilization.
- Women receiving ≤3 ANC visits may experience missed opportunities for detecting pregnancy complications.
- EMS transportation improves access to healthcare facilities.
- However, neonatal mortality remains high despite EMS availability.

Research Gap

Does inadequate ANC increase neonatal mortality among mothers transported by EMS?

Contribution to Literature

Contribution to Literature

What is already known?

- Adequate antenatal care reduces neonatal mortality.

What does this study add?

- Few studies have examined ANC utilization among women transported through EMS.
- Our findings suggest that EMS transport alone may not overcome the risks associated with inadequate ANC.

Slide 3. Study Objective

To assess the association between antenatal care visits and early neonatal mortality among mothers transported through emergency medical services.

Research Question

Are mothers with ≤3 ANC visits at higher risk of early neonatal mortality than mothers with ≥4 visits?

A cohort of 1,431 EMS-transported live births

1,431

analytic live births

February–April 2014

INCLUDED

Live births to mothers who used emergency medical services transport

EXCLUDED DURING DATA MANAGEMENT

Stillbirths

Incomplete records

Data Source: Secondary analysis of an existing EMS cohort

Population Characteristics

ANC Distribution		
ANC Category	N	%
≤3 Visits	1,128	78.8
≥4 Visits	303	21.2

Variables

Exposure

Antenatal Care Visits	
Group	Definition
Low ANC	≤3 Visits
Adequate ANC	≥4 Visits

Outcome

Early Neonatal Mortality
Death within first 7 days of life

Covariates

- Delivery method
- Delivery location
- Geographic region



Statistical Analysis: STATA 19 BE

Analytical Approach

- Descriptive statistics
- Mortality comparison
- Logistic regression
- Adjusted odds ratios
- 95% Confidence intervals



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logistic mortality anc_group
logistic mortality anc_group ///
delivery_method ///
delivery_location ///
region
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Most mothers had fewer than four ANC visits

1–3 ANC visits

1,128

78.8% of the cohort

Low-ANC group

≥4 ANC visits

303

21.2% of the cohort

Recommended-ANC group

The comparison is numerically imbalanced—an important context for the confidence intervals.

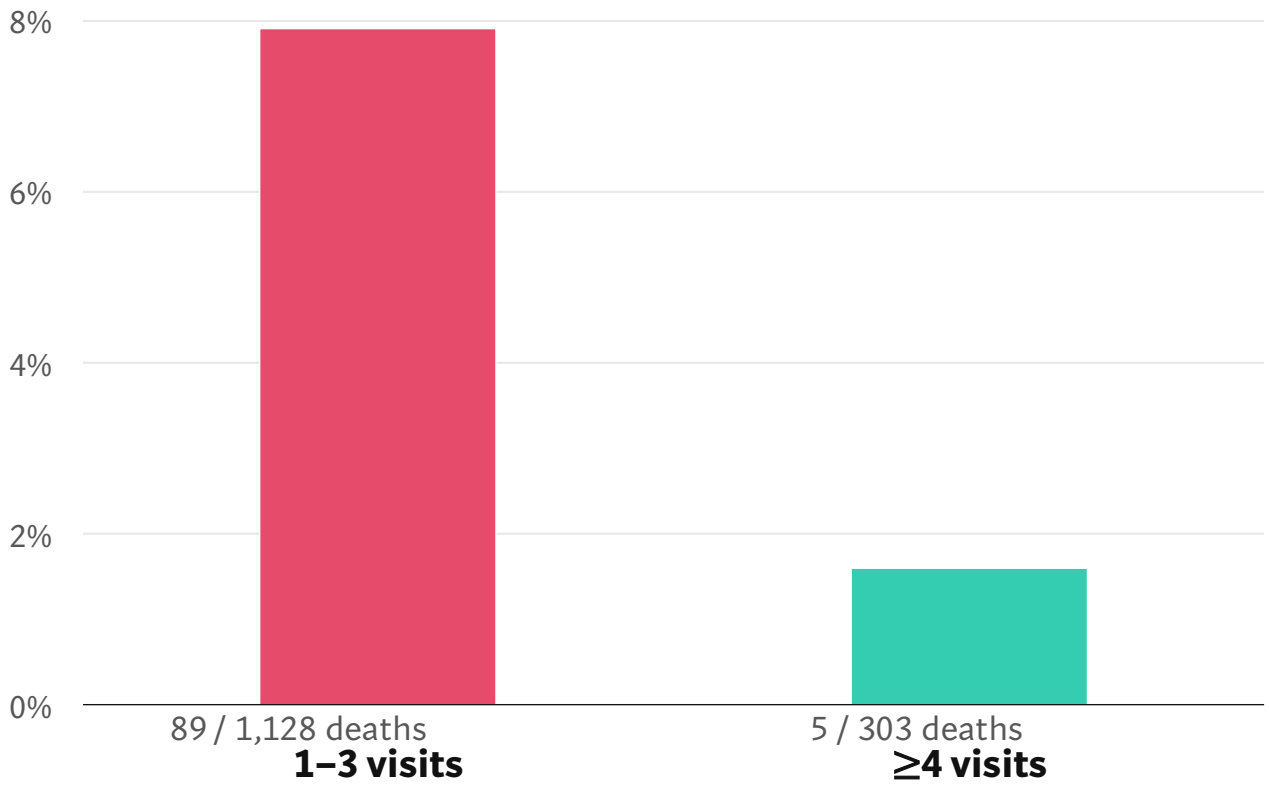
Key Finding

Nearly four out of five mothers received fewer than four ANC visits.



PRIMARY RESULT

Early neonatal mortality was 7.9% vs 1.6%



5.3

unadjusted odds ratio

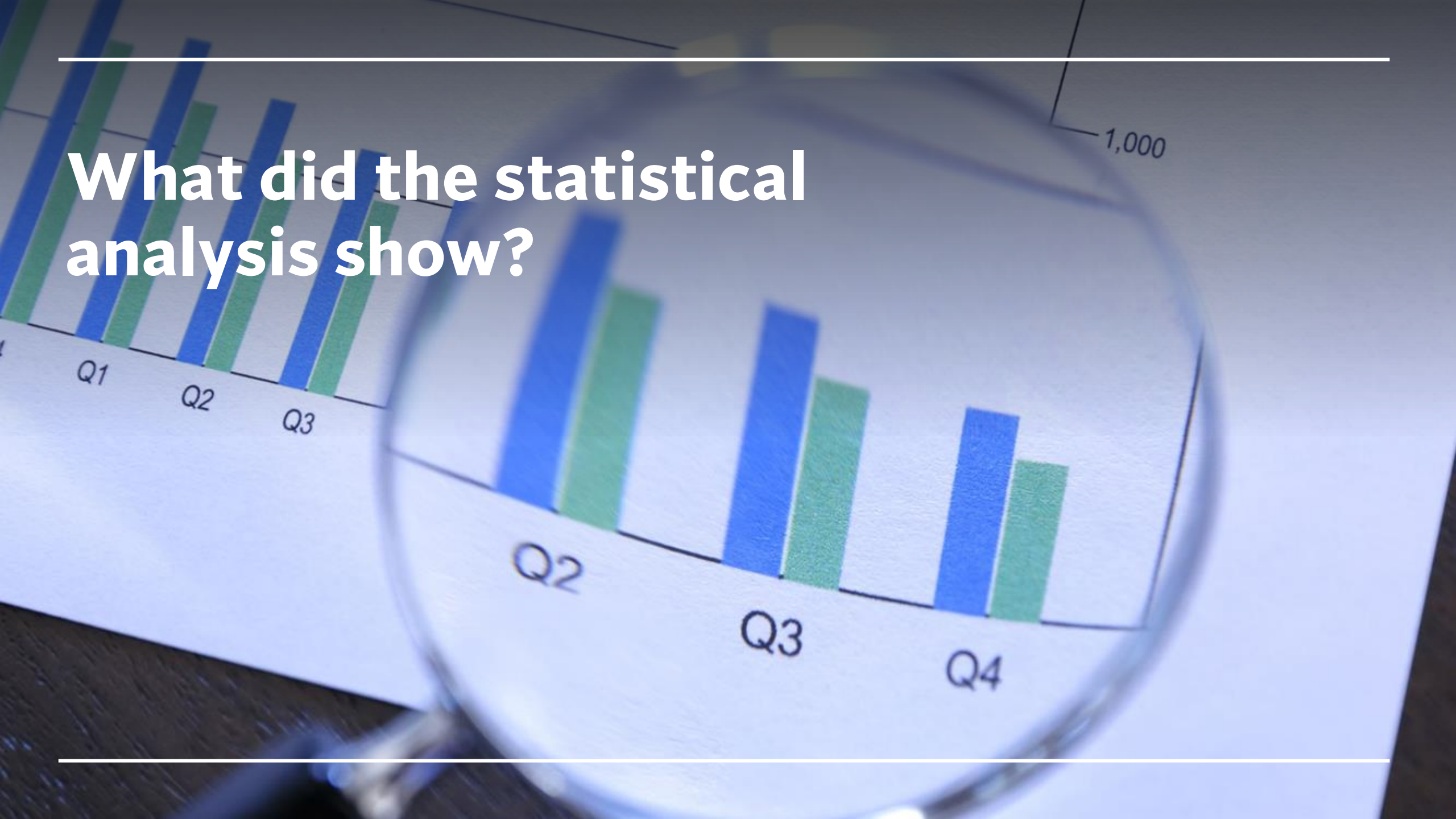
95% CI 2.1–13.2

The observed mortality rate was nearly five times higher in the 1–3 visit group.

Key Finding

Mortality was approximately five times higher among mothers with inadequate ANC visits.

What did the statistical analysis show?



Results Interpretation

Main Findings

✅ Early neonatal mortality was **7.9% vs 1.6%**

✅ Mothers with ≤3 ANC visits had **5-fold higher crude odds of mortality**

- OR = 5.3 (95% CI 2.1–13.2)

✅ The association remained after adjustment

- AOR = 1.72 (95% CI 1.03–5.89)



Key Message:
Access to emergency transportation does not replace the benefits of adequate antenatal care.

TAKEAWAY

Four ANC visits mark an actionable care threshold

Fewer than four visits identified a group with markedly higher early neonatal mortality.

01 **Support completion of at least four ANC visits.**

02 **Integrate EMS transport with antenatal follow-up.**

03 **Use richer data to test causality and target interventions.**

Thank you

Questions?

Khaleda Adib Binte Abdullah