PERINATAL OUTCOMES AT RURAL HOSPITALS PARTICIPATING IN THE RURAL SURGICAL & OBSTETRICAL NETWORKS (RSON) INITIATIVE

A RETROSPECTIVE COHORT STUDY IN BRITISH COLUMBIA (2016-2021)

MAIN TAKEWAYS

Quantitative data from this study indicates a high level of safe, quality maternity care at RSON sites. **No maternal deaths or neonatal deaths** of term babies weighting more than 2500 grams occurred at RSON hospitals during the study period.

Childbearing people who gave birth at an RSON hospital (n=3498) had a **10% lower incidence of adverse maternal and newborn outcomes** compared to those who gave birth at a referral hospital, after controlling for unevenly distributed maternal characteristics.

At RSON sites, the odds of **Caesarean birth and preterm birth were significantly lower at RSON sites** compared to referral hospitals when controlling for known confounders; 25% and 62% lower respectively.

STUDY OBJECTIVES & BACKGROUND:

1. To compare perinatal outcomes at hospitals participating in the Rural Surgical and Obstetrical Network (RSON) initiative to referral hospitals, and
2. To examine proportions of local births over time in RSON communities.

Family Physicians with Enhanced Obstetrical and/or Surgical Skills provide Caesarean sections and Family Practice Anesthetists (FPA) manage epidurals at RSON hospitals. Understanding safety, quality and outcomes is foundational for forward planning.

METHODS:

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Referral centres: n= 17, 870 births included

Poisson and logistic regression analyses were used to model the effect of hospital type (RSON versus referral) on perinatal outcomes. We restricted the analysis to singleton births.

2016 ⊢------⊣ 2021

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RSON sites: n= 4, 445 births included

RESULTS:

2 in 3 (69%) rural births occurred locally over the study period. Overall, the proportion of local births (hospital and home) increased from **69%** in 2016 to **72%** in 2021, an **absolute increase of 3.2%.**

In total, **7.7%** of patients experienced at least one adverse outcome at RSON hospitals compared to **9.3%** of patients at referral hospitals.

The average Weighted Adverse Outcome Score (WAOS) for births at **RSON hospitals was 1.96** compared to **2.27 for referral hospitals**.

Rates of instrumental births and VBAC were **lower at RSON facilities.**

During the study period, 49 **(1.4%) of births at RSON hospitals** were **intrapartum transfers** to a higher level of care.

IMPLICATIONS:

Low procedural volume has plagued robust analysis of rural obstetrical and surgical outcomes, leading to a gap in our understanding of the quality of maternity and surgical care in rural settings. The comparative data presented here is a tentative step towards a clearer understanding of the contribution of low volume rural sites to maternity service stability.

Findings from the current study add to the evidence base that **childbearing people can safely give birth at smaller rural hospitals in BC, are less likely to have an operative delivery and preterm birth and enjoy the added benefit of being able to give birth close to home.**

DOI:

The Centre for Rural Health Research

Rural Coordination Centre of BC

Rural Surgical and Obstetrical Networks

A JSC INITIATIVE