

Long-term changes in cesarean delivery and recurrence in Norwegian nulliparous women, 1967-2014: A population-based study

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Abstract

Objective: To describe long-term changes in Cesarean Delivery (CD) and estimate CD recurrence risk across five decades. **Design:** Population-based cohort study **Setting:** Norway, 1967-2014 **Sample:** A total of 951,895 nulliparous women with their singleton, cephalic, term deliveries were followed through their first and second births. **Methods:** Data from the Medical Birth Registry of Norway was used to describe CD by maternal age (years): <20 (reference), 20-24, 25-29, 30-34, 35-39 and ≥40 and onset of labor: spontaneous (reference), induced and pre-labor CD. Based on seven risk factors, women were grouped as lower (no factors) - and higher-risk (one or more factors). Risk estimates were stratified by periods: 1967-1982, 1983-1998 and 1999-2014. Multivariable regression models were used to estimate relative risk (RR) with 95% confidence interval (CI). **Results:** CD in the first birth increased across periods from 3.3% to 10.2% and from 8% to 20.5% in lower- and higher-risk women, respectively. The increase in CD was only found among women < 35 years. Compared to women with spontaneous onset, the RR of CD in lower-risk women with induced onset of labor increased from 3.8 (95% CI 3.6-4.0) to 5.9 (95% CI 5.7-6.2) across periods. Overall CD recurrence risk was 57.9%, but relative recurrence risk was lower in the last than in the first period. **Conclusion:** Overall CD risk increased over time in Norwegian women <35 years both in lower- and higher- risk groups, while it was stable or decreased in older women. CD recurrence risk declined across 47 years in Norway.

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