

# Confidential enquiry into maternal deaths in the Netherlands, 2006-2018: a retrospective cohort study

Athanasios Kallianidis<sup>1</sup>, Joke Schutte<sup>2</sup>, Louise Schuringa<sup>1</sup>, Ingrid Beenackers<sup>3</sup>, Kitty Bloemenkamp<sup>3</sup>, Babette Braams-Lisman<sup>4</sup>, Jerome Cornette<sup>5</sup>, Simone Kuppens<sup>6</sup>, Anna Rietveld<sup>7</sup>, Timme Schaap<sup>3</sup>, Jelle Stekelenburg<sup>8</sup>, Joost Zwart<sup>9</sup>, and Thomas van den Akker<sup>1</sup>

<sup>1</sup>LUMC

<sup>2</sup>Isala Hospitals

<sup>3</sup>UMC Utrecht

<sup>4</sup>Tergooi

<sup>5</sup>Erasmus MC

<sup>6</sup>Catharina Ziekenhuis

<sup>7</sup>Amsterdam University Medical Centres

<sup>8</sup>UMCG

<sup>9</sup>Deventer Hospital

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## Abstract

**Objective:** To calculate maternal mortality ratio (MMR) for 2006-2018 in the Netherlands and compare with 1993-2005. Describe women's and obstetric characteristics, causes of death and improvable factors. **Design:** Prospective cohort study. **Setting:** Nationwide. **Population:** 2,304,271 livebirths. **Methods:** Analysis of all maternal deaths between January 1st, 2006, and December, 31st, 2018 as reported to and audited by the national Audit Committee Maternal Mortality and Morbidity. **Main outcome measures:** MMR, causes of death, improvable factors. **Results:** Overall MMR was 6.2 per 100,000 livebirths, a decrease from 12.1 in 1993-2005 (Odds Ratio (OR) 0.5, 95%CI 0.4-0.6). Women with non-Western ethnic background had a slightly increased MMR compared to Dutch women (MMR 6.5 vs 5.0, OR 1.3, 95%CI 0.9-1.9), and was particularly increased among women with a background from Surinam/Dutch Antilles (MMR 14.7 OR 2.9, 95%CI 1.6 – 5.3). Half of all women had an uncomplicated medical history (79/161, 49.1%). Of 172 pregnancy-related deaths within one year postpartum, 103 (60%) had a direct and 69 (40%) an indirect cause. Leading causes within 42 days postpartum were cardiac disease (n=21, 14.8%), hypertensive disorders (n=20, 14.1%) and thrombosis (n=19, 13.4%). For deaths up to one year postpartum, suicide was the third commonest cause (n=20, 11.6%). Improvable factors in care were identified in 76 (47.5%) of all deaths. **Conclusions:** Maternal mortality halved in 2006-2018 compared to 1993-2005. Unlike before, cardiac disease outnumbered hypertensive disorders as main cause of death. Women with a background from Surinam/Dutch Antilles had a threefold higher risk of death compared to Dutch women.

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