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## Population Health Metrics

Volume 14, Issue 1, 4 May 2016, Article number 16

Open Access

## Improving the measurement of maternal mortality in Thailand using multiple data sources (Article)

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## Abstract

**Background:** Thailand uses cause of death records in civil registration to summarize maternal mortality statistics. A report by the Department of Health using the Reproductive Age Mortality Studies (RAMOS) reported that the maternal mortality ratio (MMR) in 1997 was approximately three to four times higher than MMR based on the civil registration cause of death records. Here, we used multiple data sources to systematically measure maternal mortality in Thailand and showed a disparity between age groups and regions. **Methods:** We calculated the number of maternal deaths using a two-stage method. In the first stage, we counted the number of deceased mothers who successfully gave live births. In the second stage, we counted the number of women who died during the pregnancy, delivery, or the postpartum period without a live birth. **Results:** The number of maternal deaths dropped from 268 in 2007 to 226 in 2014. Nearly 50 % of the deaths occurred in Stage 1. The maternal mortality ratio in 2007 was 33.6 per 100,000 live births; the rate fell to 31.8 in 2014. The age ranges of women observed were 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49, and the MMR averages were 21.5, 23.8, 27.0, 42.1, 67.7, 115.4, and 423.4 per 100,000 live births, respectively. The Southern region consistently exhibited the highest MMR compared to other regions for every year analyzed, except 2012. Women in Bangkok had a lower risk of dying during pregnancy, delivery, and the postpartum period than women from other regions. **Conclusions:** We demonstrated that using multiple administrative data sources in the two-stage method was an efficient method that provided systematic measurement and timely reporting on the maternal mortality ratio. An additional benefit of the method was that information provided from the combined data sources, (e.g., the number of maternal deaths by age group and region) was relevant to the safe motherhood policy. © 2016 Chandoewit et al.

## Author keywords

Civil registration; Maternal death; Maternal mortality ratio; Pregnancy; Thailand

ISSN: 14787954 Source Type: Journal Original language: English

DOI: 10.1186/s12963-016-0087-z Document Type: Article

Publisher: BioMed Central Ltd.

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