

# Study finds an association between day of delivery and maternal-fetal mortality

23 January 2017

In a study to be presented Friday, Jan. 27, in the oral concurrent session, at the Society for Maternal-Fetal Medicine's annual meeting, The Pregnancy Meeting, researchers with the Baylor College of Medicine in Houston, Texas, presented the study titled Association between day and month of delivery with maternal-fetal mortality: weekend effect and July phenomenon in current obstetric practice.

Based on data from the Centers for Disease Control and Prevention, the United States [maternal mortality ratio](#) is three to four times higher than that of most other developed nations. The maternal mortality ratio is increasing, reaching 21-22 per 100,000 live births in 2014 (more than double from 1990.) Although much has been written about this problem, few solutions have been forthcoming.

The researchers of this study wanted to know if maternal and fetal death ratios were higher on weekends versus weekdays or during different months of the year. "We were interested in this study because we believe this data provides a valuable window into the problems with the U.S. system of obstetric care delivery," said Amirhossein Moaddab, M.D., with the department of obstetrics and gynecology at Baylor College of Medicine and the presenter of the study at the SMFM annual meeting.

The researchers analyzed more than 45 million pregnancies in the U.S. between 2004 and 2014 to determine if there are significant differences in ratios of both maternal deaths and stillborn deliveries depending on the day they occurred. Weekend delivery is also associated with differential maternal and neonatal morbidity, including increased ratios of perineal lacerations, maternal transfusions, [neonatal intensive care](#) admissions, immediate neonatal ventilation requirements, neonatal seizures and antibiotic use.

"We were able to control for pregnancy

complications, and found that most women with pregnancy complications known to lead to death actually deliver on weekdays, suggesting that the actual problem with weekend deliveries is even greater," Steven L. Clark, M.D., senior author of the study explained. Researchers also looked at months of the year including "July phenomenon," the month of the year that is associated with an increased risk of medical errors and surgical complications that occurs in association with the time of year in which United States medical school graduates begin residencies. The researchers found no association between maternal-fetal mortality and July.

Clark continued, "Any system that shows this sort of variation in the most important of all system outcomes is, by definition, badly broken. Our data suggest that a part of the overall dismal U.S. obstetric performance may be related to this systems issue, that is, there may be a 'spill over' effect that is demonstrably worse on weekends but is also present on weekdays to a lesser extent. Our data does not allow us to go any further than this in terms of specifying what the problem is. However, we believe it is likely due to the fact that rarely is care of the pregnant inpatient the primary concern of the treating physician - it is almost always a distraction from office, surgery or personal activities."

The researchers determined that by addressing this study and improving the obstetric quality of care on weekends by different methods, such as expanded use of the hospitalist or laborist model, will be one important component of addressing this issue.

**More information:** Abstract 59: Association between day and month of delivery and maternal-fetal mortality: weekend effect and July phenomenon in current obstetric practice, The Pregnancy Meeting, 2017.

Provided by Society for Maternal-Fetal Medicine

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