Do State Level Malpractice Payments Explain Extreme Variation in Obstetrical Ultrasound Utilization Nationwide?

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Background

- **No consistent guidelines** regarding the “right” number of obstetrical ultrasound examinations during an uncomplicated pregnancy.

- Anecdotally, **variation** in obstetrical ultrasound utilization during pregnancy exists across states.
Objective

To test whether potential fear of malpractice lawsuits explains the variation in obstetrical ultrasound utilization during pregnancy across states
Data

- **Obstetrical ultrasound examinations** performed during private health insurance continuously covered pregnancy episodes in all 50 states identified in 2009-2013 Truven Health MarketScan® Databases

- State-level **potential fear of malpractice lawsuits** estimated by calculating per capita total dollars paid out for medical malpractice claims in each state over 3 years prior to each claim year using data from National Practitioner Data Bank public use files
Statistical approach

The association between number of per pregnancy obstetrical ultrasound examinations and state level per capita malpractice payments was adjusted for:

• Maternal age
• Single vs. multiple gestation
• Urban vs. rural setting
• Health plan type, and
• Secular time trend

using a generalized linear model with a logarithmic link function and a negative binomial distribution function
Results (1/2)

- **Sample size:** 1,146,179 pregnancy episodes resulting in live births

- Nationally, the adjusted average number of obstetrical ultrasound examinations per pregnancy **rose** from 4.87 (95% CI: 4.84, 4.89) in 2010 to 5.36 (95% CI: 5.33, 5.39) in 2013

- **Substantial state-level variation** exists in adjusted average obstetrical ultrasound examinations per pregnancy, ranging from **2.98** (95% CI: 2.92, 3.04) in Arkansas to **8.52** (95% CI: 8.38, 8.67) in Delaware
Adjusted average number of obstetrical ultrasound examinations per pregnancy by state

- Less than 3.00
- 3.00 to 3.99
- 4.00 to 4.99
- 5.00 to 5.99
- 6.00 to 6.99
- 7.00 and more

Reporting restricted by data use agreement
Results (2/2)

- We documented a **weak positive association** between the number of obstetrical ultrasound examinations per pregnancy and per capita malpractice payments by state.

- Each **dollar per capita per year** paid out for medical malpractice lawsuits was associated with a **1.2% increase** in the number of per pregnancy obstetrical ultrasound examinations ($p<.001$).
Conclusion

• The utilization of obstetrical ultrasound during pregnancy varies considerably by state, and in some states is as high as 1 per month

• Increased malpractice payments are associated with higher utilization of obstetrical ultrasound, but malpractice fears alone do not explain this variation

• More research is necessary to better understand the drivers of variation
Thank you!

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