

Newborn mortality was higher for several years after large-scale closures of urban maternity units

October 3 2012

After a series of Philadelphia hospitals started closing their maternity units in 1997, infant mortality rates increased by nearly 50 percent over the next three years. The mortality rates subsequently leveled off to the same rate as before the closures, but pediatric researchers say their results underscore the need for careful oversight and planning by public health agencies in communities experiencing serious reductions in obstetric services.

Between 1997 and 2007, 9 of 19 obstetric units closed in Philadelphia, resulting in 40 percent fewer obstetric beds. Other research suggests that increased malpractice [insurance costs](#) and reduced reimbursements are the primary reasons for the closures. (An additional three obstetrics units have closed in Philadelphia since the study period.)

"Previous research on patient outcomes after hospital closure have focused on the impact of closing [rural hospitals](#) or single hospitals in a large metropolitan area," said study leader Scott A. Lorch, M.D., a [neonatologist](#) and researcher in the Center for Outcomes Research at The Children's Hospital of Philadelphia. "Our study was the first to systematically analyze the effects of large-scale urban obstetric service reductions on the outcomes of mothers and babies."

Lorch and colleagues published their study online August 10 in the journal *Health Services Research*.

The before-and-after study analyzed all Philadelphia births between Jan. 1, 1995 and June 30, 2007 (over 150,000 births) and compared them to two geographic control groups. One control group drew on birth records from the five suburban counties surrounding Philadelphia, the other group was from eight [urban counties](#) in California and Pennsylvania. The researchers analyzed 3.1 million births in all.

Compared to the two years before the closures, the difference in neonatal hospital mortality increased by 49 percent in Philadelphia between 1997 and 1999, and the difference in all [perinatal mortality](#) increased by 53 percent, compared to both control groups. These researchers adjusted for differences in patient characteristics in each county. The results are approximately equivalent to a rise from 5 deaths per 1,000 newborns to 8 per 1,000.

After 2000, the adjusted neonatal mortality rates in Philadelphia returned to pre-closure levels, although the outcomes did not improve over the baseline. Possible reasons for this leveling off, said the study team, include increased cooperation among obstetric departments, higher monitoring of the care delivery system by the public health department, or adjustments that the remaining open hospitals made to accommodate higher numbers of deliveries.

Lorch and colleagues said the initial adverse newborn outcomes are similar to results found by other researchers after the closure of smaller, adult hospitals in Los Angeles. Future studies in other locations may reveal whether the results found in Philadelphia are generalizable to other cities experiencing closures in obstetric units, or whether the large-scale closures in Philadelphia resulted in outcomes unique to the city.

Lorch added, "There are a variety of questions for hospital and public health officials to consider when obstetric units shut down. For instance, where will expectant mothers go for services, especially lower-risk

mothers who typically deliver at the nearest hospital? How will remaining obstetric units handle a surge in patients?"

He continued, "Will there be reduced usage in prenatal services, especially in areas where hospitals provide both delivery care and prenatal services, as they frequently do in large cities like Philadelphia? Will the obstetric units have access to these prenatal health records? Addressing such issues may aid in transition planning, improve the efficiency of obstetric care, and provide better outcomes."

More information: "The Impact of Obstetric Unit Closures on Maternal and Infant Pregnancy Outcomes," *Health Services Research*, published online August 10, 2012. [doi: 10.1111/j.1475-6773.2012.01455.x](https://doi.org/10.1111/j.1475-6773.2012.01455.x)

Provided by Children's Hospital of Philadelphia

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