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Infant deaths in Northeast Ohio: Insights from the ohio department of health and community-based initiative infant mortality reports

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Objectives: This study aimed to better understand the epidemiological profile and causes of infant mortality in Northeast Ohio, particularly in relation to the rest of Ohio and to the U.S. We particularly sought to determine the nature of infant mortality: Neonatal (first four weeks of life) or post-neonatal (from one month up to one year). We also attempted to identify differences in incidence among races. To our knowledge, this is the first study that reports the epidemiology of infant mortality in northeast ohio as an entire region.

Background: Ohio currently has one of the highest infant mortality rates in the U.S. recent reports suggest a possible rise in infant mortality specifically in northeast ohio; Cuyahoga county and cleveland have among the highest rates of infant mortality in the state. Furthermore, racial disparities in infant mortality have been established, particularly in cleveland. This has prompted several initiatives in ohio such as ohio equity and first Year cleveland to generate public awareness and target high-risk populations.

Methods: The 2014 and 2015 ohio department of health infant mortality reports, in addition to specific individual reports of 2007-2012 and 2013, were analyzed for data on incidence and causes of infant mortality. Data from frst year cleveland, a publicly available initiative-based aggregate of infant mortality in cleveland, was analyzed. The cleveland department of public health report on infant mortality in cleveland and a March of dimes report on premature births in cleveland were also reviewed. Northeast ohio was defined as comprising 18 counties (ashland, ashtabula, columbiana, cuyahoga, erie, geauga, huron, lake, lorain, mahoning, medina, portage, richland, stark, summit, trumbull, tuscarawas, wayne). Since publicly available databases only report data for ohio as a state with a county-specific breakdown, data were extracted and tabulated in aggregate specifically from these 18 counties to reflect the northeast ohio region. Analyses entailed matched comparisons between data from northeast ohio, and the U.S. Data from each county was analyzed, with attention to percent neonatal and post-neonatal mortality. Counties with a greater average (neonatal and post-neonatal) than the ohio state average were noted as "high priority", to help identify counties where better neonatal or post-neonatal care should be encouraged.

Results: Our investigation yielded several important findings. In 2012, northeast ohio had a lower infant mortality rate (6.72%) than Ohio (7.57%). While 6 counties in northeast ohio had a higher rate of neonatal mortality than the ohio state average, 10 counties had a higher rate of post-neonatal mortality than the ohio state average. The counties with the highest neonatal death rates in 2015 included mahoning and cuyahoga, while in 2012, the two counties with the highest infant mortality rates were mahoning and stark. Counties with greater neonatal mortality rates than ohio were cuyahoga, stark, trumbull, tuscarawas, wayne, and mahoning. Counties with greater post-neonatal mortality rates than ohio were geauga, ashtabula, columbiana, cuyahoga, erie, lorain, stark, trumbull, tuscarawas, and mahoning. racial disparities are evident as african americans have a higher rate of infant mortality in northeast ohio. The largest racial disparities were seen in erie, ashtabula, cuyahoga, trumbull, stark, portage, summit, and mahoning counties.

Discussion: Greater initiatives are needed to increase the rates of preventive measures during pregnancy and delivery in northeast ohio. As most infant deaths in northeast ohio were post-neonatal deaths, public health efforts with an overall focus on post-neonatal care may be appropriate. Yet, a greater emphasis on prenatal care (which contributes to neonatal outcomes) is warranted, especially in cuyahoga county. Since the high rate of preterm births contributes to the high rate of infant mortality in cleveland, public health efforts in this city should aim to curb preterm births. There is a general paucity of research with segmentation of populations in northeast ohio in terms of incidence and prevalence of infant mortality. More studies that examine behavioral facets of the perinatal experience in northeast ohio are needed. Racial disparities in infant mortality occurrence in northeast ohio need to be further explored.

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