

Editorial

Using databases to address important but neglected clinical questions

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The rate of cesarean sections has been increasing substantially over the last several decades, and, accounting for approximately 27.5% of deliveries in the general population in 2004, is much higher than the target rate of 15% established in 1991 as a United States health objective for the year 2000 [1, 2]. There are a number of intertwined medical and societal explanations for the increased rate of cesarean sections in the United States, but the overall pattern is admittedly not fully understood, nor is the most appropriate path to address the discrepancy between actual and goal cesarean delivery rates.

One of the key first steps to determining optimal health care, as well as the reasons for falling short of health care goals, centers on understanding the extent and nature of the problem on many levels. Trends affecting the population as a whole – such as those related to pre- and perinatal care – naturally impact individuals and populations who are simultaneously affected by other conditions. As Revital Faro and colleagues point out in their important article entitled “Cesarean delivery rates in Down syndrome pregnancies,” the ramifications of general health trends are too often neglected in terms of the effects on certain sub-populations [1]. In the manuscript, Faro et al. state,

“information on rates of cesarean delivery among pregnancies diagnosed with genetic syndromes remains limited because fetuses/newborns with genetic anomalies or congenital malformations are often excluded from the analysis in studies concerning cesarean delivery rate” [1]. Exclusions of individuals with specific disorders or clinical characteristics are natural in some types of studies in order to, for example, avoid certain types of bias. Depending on the specific research question, some of such exclusions may indeed be justified.

However, these exclusions can also be problematic for a number of reasons. First, a dearth of information challenges the ability to practice evidence-based medicine. To compound the problem, the need for this evidence-based medicine may be especially great in some cohorts (such as in individuals with Down syndrome or other genetic/congenital conditions), in which affected patients may be at a greater risk for various health complications, and would thus benefit from a well-delineated clinical algorithm [3]. Second, a lack of baseline data makes designing and implementing further investigations in order to address clinically important questions more difficult. By establishing key statistical findings, data like those presented by Faro et al. thus lays important groundwork for future lines of inquiry.

It must also be pointed out that Down syndrome, while not as common as many health issues, is not exceedingly rare, and this group of individuals will

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be cared for by virtually all clinicians and health care professionals. The frequency of the condition should clarify the need for sounder evidence-based decisions (and better health care). The authors describe an estimated incidence of Down syndrome of approximately 1 in 2,000 births after 20 weeks gestation [1, 3]. Given the US birth rate of over 4 million births per year [4], it can be estimated that over 2,000 deliveries of individuals with Down syndrome (at >20 weeks gestation) occur each year (based on figures measured in the decade preceding 2004). Through the analysis by Faro et al., this means that over 700 of deliveries of infants with Down syndrome are performed by cesarean section yearly, and the number is clearly rising such that the current cesarean rate would be projected to be significantly higher. As Faro et al. show a 10-year increase of 23% in cesarean deliveries of infants with Down syndrome from 1995–2004, we can further extrapolate that the current rate, assuming the same rise in cesarean delivery rate, of well over 40% of individuals with Down syndrome [1]. Again, with the clear delineation of the issue at hand, Faro et al. have set the stage for necessary research endeavors – in their words, “further studies are necessary to understand the reasons for this increasing trend in cesarean deliveries in Down syndrome pregnancies and the financial and societal impacts this trend portends” [1].

Finally, this article also demonstrates the power of using large, well-organized, and centralized databases to address key research questions that would be difficult to examine using a more piece-meal approach [5]. To perform their study, Faro et al. analyzed data derived through the national natality and fetal mortality files, which was assembled by the National Center for Health Statistics of the United States’ Centers for Disease Control and Prevention. These and other

databases like them offer rich sources of information, and should provide the basis for important analyses like the one in this article. In attempting to answer important clinical questions like those raised by Faro et al., there is certainly “strength in numbers, and embracing the type of technology and infrastructure necessary to construct and maintain such databases is anticipated to allow further important insights that will shape medical practices and the future of evidence-based healthcare.

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