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International comparisons and holistic patient care

The letter by Emms and colleagues raises concerns that comparing caesarean birth rates across countries, as we did in our article on Robson's Ten Group Classification System (TGCS) published in the *British Journal of Obstetrics and Gynaecology*,[1] will compromise holistic patient care by promoting target rates. They claim that comparisons that do not account for population sociodemographic and clinical characteristic lead to misleading conclusions. We agree with the authors and with the latest World Health Organization statement on caesarean birth,[2] that setting international targets is not appropriate. We also agree that information about the clinical context improves the usefulness of comparisons. Euro-Peristat has always recommended presenting caesarean birth rates by clinical subgroup.[3] However, we would argue that international comparisons are essential precisely because they promote a holistic view of perinatal care which is not easily accessible to individual clinicians or researchers.

Our study's aim was to evaluate the feasibility of using the TGCS to create more homogenous clinical groups and improve international comparisons. The purpose of this classification is not to impose targets, but to provide tools for auditing obstetric practice.[4] On the international level, comparing rates within TGCS groups provides more nuanced analysis of how the current evidence-base is interpreted and applied in Europe. One example is that caesarean birth rates for breech presentations are lower in France than in Sweden, despite overall caesarean rates being low in both countries.

In general, however, our study found that countries with higher overall caesarean rates had higher rates in all sub-groups. We discuss several hypotheses for these differences, including those related to the characteristics of childbearing women. However, population characteristics are unlikely to explain the variation between countries, in part because risk is low for most women and because the differences are very wide. For instance, despite the elevated risk of caesarean associate with higher maternal age, only modest changes result from adjustment (Figure). The figure also shows variation

between countries even when proportions of older mothers are similar. Further, while adjusting for population characteristics is informative, comparing unadjusted rates is also valuable. Many population characteristics that raise caesarean risk are modifiable through primary prevention, including obesity and social deprivation and their complications.

Documenting the differences in caesarean birth rates between European countries provides a starting point for research on explanatory population and health system factors. While many have heard of the ecological fallacy (inferences about individuals are made based on aggregated data), the individualist fallacy (population-level exposures cannot be investigated when they do not vary within the study population) is of equal concern. Comparing countries with similar patient populations, but different health systems and societies, extends the scope for learning and change. As articulated by Michael Robson in his editorial to our paper, these comparisons help to identify the "unknown unknowns" needed for effective audit and evaluation of practice.[5] This diversity should therefore not be viewed as a threat, but welcomed as a way to identify best practices for achieving optimal maternal and infant health without unnecessary caesareans.

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Figure Legend and notes

Figure – Caesarean birth rates, unadjusted and adjusted for maternal age in 12 European countries in 2015. The percentage of mothers 35 years and older is shown in brackets next to the country name.

NOTES: Standardisation on the maternal age distribution in five year intervals in the overall population. Countries are those that provided age-stratified data as part of data collection in 2015. Data sources available: www.europeristat.com/index.php/reports/european-perinatal-health-report-2015.html