Risk Adjustment for Inter-hospital Comparisons of Cesarean section rates in Taipei Municipal Hospitals

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Abstract

BACKGROUND: This study sets out to determine whether adjustments for specific patient caesarean delivery risk factors have an affect on the assessment of performance rates among the municipal hospitals of Taipei City. METHODS: Analysis of National Health Insurance (NHI) claims data, linked with birth certificate data, was undertaken on a cohort of 27,693 live births in the six general hospitals of the Taipei Medical Hospital System (TMHS) between 1999 and 2001. Using multivariable logistic regression modeling of the risk factors independently associated with caesarean deliveries, an expected caesarean delivery rate was constructed for each of the hospitals. By contrasting observed rates with expected rates to quantify the magnitude of the deviation from average practice, a measurement similar to relative risk (RR) was also constructed for each hospital. RESULTS: The observed rates for two of the six hospitals examined fell within the expected 95% confidence interval (CI), two were above the expected upper limit, and two were below the expected lower limit. The RR ranking of Hospitals A (RR=1.08, CI=1.01-1.15) and C (RR=1.01, CI=1.00-1.03) improved from first to second, and third to fourth, whilst the RR of Hospitals B (RR=1.09, CI=1.05-1.14) and D (RR=1.02, CI=0.99-1.06) worsened from second to first, and fourth to third, respectively. The RR rankings of Hospitals E (RR=0.92, CI=0.88-0.96) and F (RR=0.80, CI=0.77-0.84) were the same as the observed rates. CONCLUSIONS: Caesarean delivery rate profiles, or hospital comparisons without risk adjustment, may be methodologically biased and may lead to unfair judgments by healthcare purchasers.