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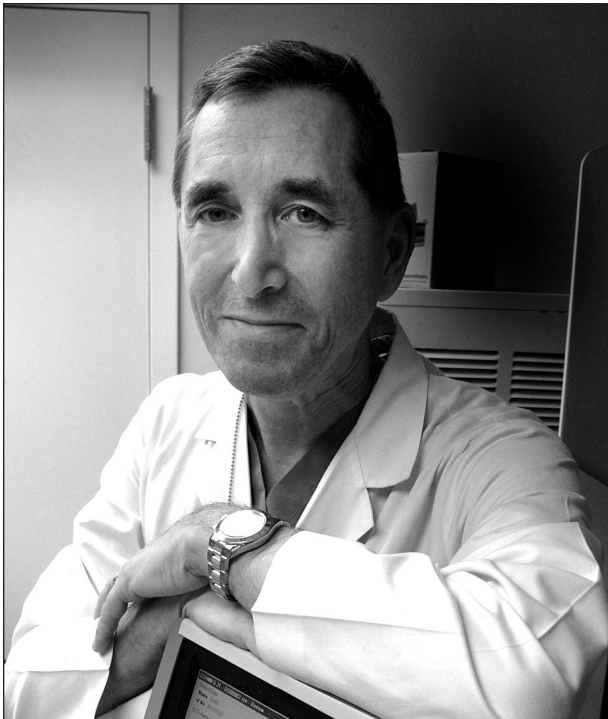
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## A Note from the Editor-in-Chief

Lawrence D. Devoe, M.D.

Welcome to the March-April 2018 Editor-in-Chief's page. This editorial column focuses on a featured manuscript that has addressed one of the more serious and problematic obstetric complications.



Lawrence D. Devoe, M.D., Editor-in-Chief

### *In This Issue*

- *The Use of Customized Birth Weight Percentiles for the Prediction of Shoulder Dystocia*  
N. Carrington, H. Sadath, H. Sangi-Haghpeykar, and C. Davidson

This is a case-cohort study to demonstrate the value of using customized birth weight percentiles (CBWPs) to predict the outcome of interest—shoulder dystocia (SD)—by entering maternal and fetal variables including maternal weight and ultrasound-estimated fetal weight (EFW) in a proprietary software program. Using receiver operating characteristic curves (ROCs), the authors determined that CBWP was superior to EFW alone in predicting risk of SD.

### *Commentary*

Shoulder dystocia remains one of the most challenging complications that obstetricians face during the course of a vaginal delivery. The consequences of SD can be devastating for the infant and its family, with the potential for serious permanent injury and death. Preventing such adverse outcomes is not always possible, and it remains difficult to accurately predict which patients are at the highest risk for SD, particularly for those without a previous history of such a complication. The American College of Obste-

tricians and Gynecologists (ACOG) has recommended a policy of offering cesarean delivery when EFWs exceed 5000 g in women without diabetes and 4500 g in those with diabetes. The obvious problems here are that not only are such birth weights infrequently encountered, but also that ultrasound-based EFWs become increasingly less accurate at such extremes. In point of fact, the majority of SD cases occur in deliveries of infants with considerably lower birth weights, as demonstrated in this study.

Customized birth weights and birth weight percentiles have been previously evaluated (Gailard et al, *Eur J Epidemiol* 2011;26:919-926), and such formulas have often been shown to outperform ultrasound EFW alone. Unfortunately, such formulas like ultrasound-based EFW formulas are often developed for specific populations and may have limited entries at either birth weight limit. The Gestation Related Optimal Weight (GROW) software used in this study has been previously examined (Khandaker, *J Obstet*

*Gynaecol India* 2014;64:189-192) and was shown to exhibit some promise in predicting birth weight percentiles. The central issue remains the question of predictive accuracy. A perfect predictive model would generate an area under the ROC of 1.0, not attained by either approach, although the former was nearer to that target. The CBWP yielded the highest predictive accuracy at the 70th percentile rather than the 95th percentile, a number historically batted around as one threshold for fetal macrosomia. This finding supports prior observations that most cases of SD occur to nonmacrosomic infants.

Should we apply the findings of this study to future practice? That really depends on how high a positive likelihood ratio of SD (3.3, here) we should accept against a low overall occurrence rate of SD (<1%). I think that the jury will still be out for the prospective use of CBWP, but it should prompt us to reexamine our approach to assessing the risk of SD and lead to more accurate predictive instruments than the ones currently in use.