

Misguided guidelines for managing labor

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We thank Dr Zhang and colleagues¹ for their response to the concerns we expressed about the new guidelines for the management of labor recommended jointly by the American Congress of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM).^{2,3} Their response has not diminished our unease about the validity of the guidelines and the potential for adversity their implementation would unleash. Zhang et al¹ continue to contest the relative merits of their approach to generating labor curves and that used by Friedman, but they ignore the wider concerns we raised about the guidelines. It would be unwise to allow the polemics over how best to assess and manage labor to focus solely on competing curve-fitting methods. Labor curves should play a pivotal role in decisions about obstetric interventions; but they are one of many tools any astute clinician must bring to bear in the assessment of a patient in labor.

Not only have Zhang et al¹ substantially mischaracterized the methods Friedman used to generate his curves, but their emphasis on curve-fitting techniques misses the entire point of using labor curves rather than the clock to assess the normality of progress in cervical dilatation and fetal descent. Our goal as practitioners, most broadly stated, is to identify as soon as possible parturients who have a reduced likelihood of a safe vaginal delivery. That purpose is currently best served by using Friedman's concepts of labor progression and the comprehensive philosophy of management that has evolved around them, which have inarguably served women well for many decades.⁴⁻⁹

We argued that Zhang et al's¹ methodology is vulnerable to considerable error and selection bias, limitations that probably resulted in dilatation and descent curves that differ from those of Friedman. Among the potential biases we cited was their exclusion of patients delivered by cesarean. Zhang et al¹ dismiss this because cesarean was infrequent in the databases they analyzed, a possibly valid but unproved notion. More importantly, they do not address other sources of bias we identified, such as the exclusion of women with advanced dilatation on admission and the likely disparity in dilatation rates among women admitted at different

times in labor. These are all reasons to be cautious about acceptance of their curves at this time. This is particularly important because they have led in turn to the promulgation of a new set of unproved guidelines intended to improve labor management.

Zhang et al's¹ characterization of the Friedman curves emphasizes inferences from the diagrams of labor curves in some early publications,^{4,5} without reference to the detailed data accompanying them or to decades of subsequent publications. For example, Zhang et al's¹ comment that the mean deceleration phase duration in nulliparas is 30 minutes is incorrect; exploration of the Friedman data in depth would have revealed published analyses showing it is nearly twice that duration.^{4,5} In fact, Zhang et al¹ doubt the existence of the deceleration phase. Although they acknowledge that our "theory" explaining it is "attractive," they argue that it has no place in the depiction of average dilatation curves, and that accepting its existence will lead to more diagnoses of dystocia, even though this has not been demonstrated.

The deceleration phase exists. Any observant practitioner who has patiently waited while the cervix slowly retracts over an occiput posterior positioned head in the terminal portion of dilatation—first as a thin rim, then as an anterior lip that recedes, seemingly reluctantly, to yield full dilatation—knows this. Indeed, Zhang et al¹ acknowledged that they saw a deceleration phase in some cases that were delivered by cesarean in the second stage, but excluded from their analysis.¹⁰

A deceleration phase can be produced artifactually if cervical examination is delayed well beyond the moment of complete dilatation, and often the deceleration phase is quite short and unlikely to be noticed.⁴⁻⁶ Clinical common sense is required to assess the deceleration phase. If it is brief and unnoticed, it is of no particular consequence. If the illusion of a long deceleration phase is produced, that should also be of no concern to an observant clinician, who can easily clarify the situation by further observation. However, the identification of a truly long deceleration phase is of great clinical value as a bellwether for abnormal descent, and as an indicator of the high likelihood of the need for cesarean delivery and of the potential for shoulder dystocia.^{6,11-13}

Whatever the merits or failings of the method championed by Zhang et al,¹ any statistical model of labor progress must be consistent with direct experimental study and sapient clinical observation. Zhang et al's¹ curve disappoints on both counts; it cannot be reconciled with data from direct observation of dilatation and descent or with data from several dozens of publications from investigators around the world that support the Friedman version of labor progress and its applicability. Even if Zhang et al¹ were correct, however, it is of interest that many of the new ACOG/SMFM guidelines do not come directly from their work. The guidelines are not,

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in today's popular term, "evidence-based." On the contrary, there is no compelling objective evidence whatsoever to support these new recommendations.

Irrespective of the approach applied to create labor curve norms, their most important quality derives not from the computer program used to derive them, but from whether they work in practice. Those of Friedman have been shown to work; the same cannot be said of those of Zhang et al.¹ The Friedman curves facilitate a logical, easily mastered approach to care. Moreover, its uniformity provides a useful quality assessment tool and valuable data that help us to investigate and understand the consequences of our care. Friedman and others who used his approach allowed us to recognize and to quantify, among other things, the effects of parity, analgesia, maternal obesity, prior cesarean, maternal age, and fetal presentation and position on labor.^{4-6,11-17} Moreover, dysfunctional labor patterns may serve as indicators of both short- and long-term risks to offspring, important considerations in making clinical recommendations to patients.^{18,19}

Friedman determined and reported the outcomes from different types of labor aberrations (eg, protracted active phase dilatation, arrest of active phase dilatation and of second stage descent), described how those abnormalities could be detected using his labor curves, quantified the effectiveness of various treatments, and assessed the impact of labor disorders on outcome.^{4,5,18,19} The Friedman system—that is to say, his curves and the management approach derived from them—is a valuable means to help the clinician caring for an individual woman predict the outcome of the labor (ie, the likelihood that some form of intervention will be necessary and have a favorable risk/benefit balance). It may well be that this general approach can be refined further to make predictions more accurate. We would certainly favor such advances in our understanding. Neither Zhang et al¹ nor the new guidelines have done this, and that is why we are so concerned that a time-tested approach to labor management would be abandoned in favor of new recommendations that have not been validated.

To restate our position, we believe our specialty has too hastily adopted wholly new guidelines for the assessment and management of labor, and has used a reduction in the cesarean rate, rather than optimization of maternal and neonatal outcomes, as the grail to be sought. The long labors endorsed by the new guidelines and abetted by the use of the Zhang et al¹ interpretation of normal labor progress would result in gratuitous exposure of fetus and mother to potentially injurious forces of labor.²⁰⁻²² We do not know what the human costs of a lower cesarean rate resulting from the new guidelines would be in terms of neonatal encephalopathy or maternal pelvic floor injury. Sobering preliminary data from one study show that application of the ACOG/SMFM guidelines reduced the cesarean rate by a few percent. This was achieved, however, at the expense of a more than 2-fold increase in the frequency of very low Apgar scores.²³ That is not a trade-off with which we or the women who entrust

themselves to our care should be comfortable. The conversation we hoped to generate by our review is thus not simply a matter of intellectual jousting. There is a great deal at stake for the well-being of women and children in adopting labor management guidelines. It is essential we do so thoughtfully and judiciously. ■

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ABSTRACT

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In a recent review we expressed concerns about new guidelines for the assessment and management of labor recommended jointly by the American Congress of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM). These guidelines are based heavily on a new concept of how cervical dilatation and fetal descent progress, derived from the work of Zhang et al. In their Viewpoint article they have addressed, but not allayed, the concerns we described in our review. We assert that the dilatation curve promulgated by Zhang et al cannot be reconciled with direct clinical observation. Even if they were correct, however, it still does not follow that the ACOG/SMFM guidelines should recommend replacing the coherent system of identifying and managing labor aberrations described by Friedman. That system is grounded in well-established clinical principles based on decades of use and the

objectively documented association of some labor abnormalities with poor fetal and maternal outcomes. Recommendations for new clinical management protocols should require the demonstration of superior outcomes through extensive, preferably prospective, assessment. Using untested guidelines for the management of labor may adversely affect women and children. Even if those guidelines were to reduce the currently excessive cesarean delivery rate, the price of that benefit is likely to be a trade-off in harm to parturients and their offspring. The nature and degree of that harm needs to be documented before considering adoption of the guidelines.

Key words: labor assessment, labor curve, obstetric guidelines, partogram