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## Invited commentary

**D**r. Whitfield and his colleagues are to be commended on a very thorough historical review and their own research investigating the prevention of meconium aspiration syndrome (MAS). Through their research findings they have changed the practice patterns at Baylor University Medical Center, as outlined in “Prevention of meconium aspiration syndrome: an update and the Baylor experience”—thereby practicing evidence-based medicine.

Meconium aspiration syndrome is a life-threatening condition that affects 2% to 5% of infants born through meconium-stained amniotic fluid. It is a condition, of multifactorial causes, that can occur during the antepartum, intrapartum, or neonatal period. Most likely, the more severe cases of MAS occur prior to the first breath, with intrauterine gasping and aspiration induced by hypoxia and acidosis. The aspiration of meconium can lead to diffuse parenchymal and airway disease inflammation and partial or complete airway obstruction from the particulate meconium, resulting in respiratory failure.

The approach to preventing MAS in the newborn has changed drastically over the past 30 years from a more aggressive approach (upper-airway suctioning of *all* infants born through meconium-stained amniotic fluid before delivery of the shoulders followed by tracheal intubation and suctioning immediately after delivery) to a selective approach (intubating and suctioning immediately after delivery only those infants who are depressed at birth). Specifically, the position of the Neonatal Resuscitation Program of the American Academy of Pediatrics

for care of the infant born through meconium has evolved. In 1977, it recommended suctioning the upper airway before the shoulders were delivered *and* suctioning the trachea immediately after delivery in *all* infants born through meconium. In 2000, the recommendations were modified to suctioning the upper airway before the shoulders were delivered in all infants born through meconium, but suctioning the trachea immediately after delivery in depressed infants only. Finally, in 2005, the recommendations were modified to not needing to suction the upper airway before the shoulders were delivered but suctioning the trachea immediately after delivery in depressed infants only (that is, selective suctioning). In other words, a vigorous infant (normal respiratory effort, normal muscle tone, and a heart rate >100 beats per minute) born through meconium-stained fluid does not require intratracheal suctioning immediately after delivery.

Dr. Whitfield’s manuscript describes the good outcomes he and his colleagues have achieved in more than 1800 infants at Baylor University Medical Center using the above-described selective suctioning approach in the delivery room. The incidence of MAS and the associated high mortality rate have both declined significantly over the past 30 years, in part due to improved antepartum and intrapartum obstetrical management as well as the above-described resuscitation of the neonate born through meconium-stained amniotic fluid.

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