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Letter-in-reply

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We thank Uebel and colleagues (Uebel et al., 2019) for their response. Given they took no issues with our descriptions of shortcomings and solutions, we share much common ground.

Uebel and colleagues' concerns focus on: "It [Jones et al., 2019] suggests that studies that use a diagnosis of NAS or NOWs as the main indicator of adverse developmental outcomes pose 'potential radiating harm to the child and the family and misses the opportunity' to consider the impact of other adverse circumstances on the children's potential". That is a concise statement of our Alternative Conceptual Framework position. The basis of our argument is found in three distinct but overlapping perspectives on NAS research.

First, some studies examining the association between NAS history and infant/child outcomes report significant relationships. However, such relationships cannot be examined in isolation. It is quite likely that such findings are due in large part to (1) prenatal maternal factors that adversely impact the fetus and/or (2) postnatal social determinants of health that adversely impact infant/child development. For prenatal maternal factors, NAS diagnosis could be a confounding variable or an intervening variable. For postnatal social determinants, NAS can only serve as a confounding variable. The extent to which NAS history serves as an independent causative factor of later child development needs examination controlling for these various maternal and social determinants – presently, this possibility is not established.

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Second, the position that NAS can serve as a "flag for other problems that can compound the risk of neurodevelopment" is concerning. Developmental psychologists have repeatedly found, proximal behaviors are more powerful predictors of outcomes than are distal behaviors. Further, behaviors earlier in childhood are more unstable predictors of outcomes later in life than are behaviors measured later in childhood. Thus, NAS, one of the earliest postnatal events for a child – and an event measured with error (eg, Jones & Fielder, 2015) – is unlikely to be a powerful predictor of developmental outcomes, given the length of time between the diagnosis of NAS and the number of intervening social determinants of development outcomes that have likely occurred for most children. We note again (Jones et al., p. 91) that the largest *F* in Oei et al. (2017) Table 2 was 182.1, indicating that differences between the NAS group, a 'control' group, and a population database explains 0.3% of the variance in writing skills, indicating that any differences in Table 2 lack clinical importance.

Third, the use of NAS history as the basis for clinical decision-making lacks an understanding of the nature of prediction to the individual case. As Oei et al. have found, a history of NAS likely explains only a very small proportion of variance in developmental outcomes. Therefore, evaluation of the risk:benefit ratio strongly suggests that using NAS history in clinical decision-making would provide little if any clinical utility, yet would risk stigmatizing such children, much as the stigma that occurred for children whose mothers used crack cocaine a generation ago.

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