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The Benefit of Early Preventive Dental Care for Children

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To the Editor The finding by Blackburn et al¹ that “children with early preventive care visits from dentists were more likely to have...greater expenditures than children without preventive dental care” is stunning. This finding calls into question more than 25 years’ efficacy studies. What isn’t immediately obvious is that the findings and interpretation are likely to be spurious.

Take residual confounding. Blackburn et al¹ used propensity score matching of a statewide Medicaid population and estimated the conditional effects within levels of the propensity score. If the predictors included by the authors are insufficient to adjust for all possible sources of bias, then subsequent matching on the propensity score will be inadequate. For example, the reported analyses addressed demand-side (ie, patient) variation but did not address supply-side (ie, clinical) variation. Concretely, Medicaid reimbursement rates incentivize treatment.² Given these incentives to provide treatment, propensity score matching of clinicians is a significant omission. There is also a problem with case definition. This report defines prevention as at least 1 of the following: examination, prophylaxis, or fluoride treatment. To our knowledge, the first 2 have no demonstrated preventive benefit. The definition of fluoride treatment also has its complications. Fluoride treatment requires multiple applications per year to effectively prevent caries.³ However, fluoride treatment cannot arrest current caries. Therefore, identifying the frequency of application and its effect only on sound tooth surfaces could significantly refine the reported results. Finally, this is a retrospective cohort study. We are therefore concerned that the foregoing issues (and others) are all likely to drive the results and interpretation toward those that were reported.

While the report’s results and interpretation may be questionable, the findings clearly remind us that we lack effectiveness studies of caries prevention. In particular, we lack prospective community-based pragmatic observational studies demonstrating the value of caries prevention. For example, a quick PubMed search could not identify any current largescale effectiveness studies of early childhood or school-based caries prevention.

The need for pragmatic caries prevention studies is not new; the US Institute of Medicine identified caries prevention as one of the top 20 clinical priorities in 2009.⁴ Given the continuing finding that caries is the most prevalent disease and among the top 10 diseases affecting disability-adjusted life years,⁵ the call for effectiveness studies is critically important

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if one expects to begin improving health equity. Blackburn et al¹ deserve hearty thanks for reminding us of the need for effective caries prevention.

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