

TITLE: Modification of Existing Head Circumference Charts for New Mexico Native American Children

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ABSTRACT

Background

Current Centers for Disease Control (CDC) and World Health Organization (WHO) growth charts are based on normative data that do not adequately represent the distinct pattern of head growth observed by providers for New Mexican Native American children.¹ Therefore, Native American children with normal but larger head circumferences (HC), can be inaccurately diagnosed with macrocephaly and undergo unnecessary diagnostic workups.² The purpose of this study is to evaluate whether HCs for Native American children in New Mexico distribute differently than established growth charts.

Methods

This is an IRB-approved retrospective chart review of all Native American well-child visits from ages 0 to 2 seen at the UNM Hospitals and Clinics. 1,513 patients were screened, and 1,214 patients were included. Data for gestational age, sex, zip code, date of birth, date of visit, HC, CDC and WHO percentile were recorded. HC curves were calculated using quantile regression.

Results

A total of 8,569 HCs and their corresponding CDC and WHO percentiles were recorded. The 99th, 95th, 90th, 75th, 50th and 25th CDC and WHO HC percentile curves were compared with the estimated corresponding Native American HC percentile curves for males and females. For all percentiles, the Native American HC curve naturally crosses percentiles within the first four months.

Conclusion

In this preliminary analysis, New Mexico Native American children HCs are not adequately represented by current growth curves. Of particular concern is the trend that Native American HCs appear to naturally cross percentiles within the first four months, which causes unnecessary workups for increasing HC. Further analysis will focus on increasing data collection to create a refined New Mexico Native American HC model.

References

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