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Barriers to Pediatric Blood Lead Screening

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Background

The pernicious effects of lead on the health of children are well-documented. The severity of many of these effects directly correlates with increasing blood lead levels ( BLLs). The current recommendation from the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) is that BLLs ≥10 μg/dL are dangerous. However, new evidence demonstrates that even BLLs ≤10 μg/dL and that children with BLLs <10 μg/dL exhibit neurological and social deficits. The Vermont Department of Health (VDH) currently recommends universal blood lead screening for 12 and 24-month-old children. In 2006, 79% of 12-month-old children and 41% of 24-month-old children were screened in Vermont.

Objectives

To identify barriers preventing Vermont pediatricians from performing blood lead screening on 24-month-old children.

To identify specific predictors associated with lower rates of screening using data from a descriptive population study.

Methods

A web-based survey was distributed to all currently licensed Vermont primary care pediatricians to obtain descriptive information regarding current lead screening practices.

Pediatricians were assigned to a higher, lower or unknown screening group based on blood lead screening rates from the Vermont Immunization Registry and the Childhood Lead Poisoning Prevention Program Registry.

Univariate and multivariate analyses were used to assess factors associated with higher versus lower blood lead screening rates.

Results

72 out of 98 pediatricians responded (~74%).

Factors associated with lower screening rates included practicing in Chittenden County, belonging to a non-academic group practice and having a low self-reported Medicaid population (Table 1).

52.8% of pediatricians believed that they are not adequately reimbursed for blood lead screening. The reported mean cost of screening per patient was $22.30, while the desired reimbursement was $24.30 (the current Medicaid reimbursement rate is $44).4

Pediatricians were more likely to be in the higher screening group if they reported that a blood lead level ≥10 μg/dL is associated with negative health outcomes, reported agreeing with the VDH lead screening recommendations, or reported routinely screening all 24-month-old children. The three most-reported barriers to lead screening were parental opposition, difficulty obtaining samples and no knowledge of the VDH (Table 2).

Multivariate analysis indicated that the most significant determinants of lower versus higher screening rates are gender of the pediatrician (contributes 28%), perceived dangerous BLL (contributes 28%) and self-reported Medicaid population (contributes 63%) (Table 3).

The top two sources of lead screening information utilized by pediatricians in this study were the VDH (88%) and the AAP (93%).

Conclusions

While survey data demonstrate that 50% of Vermont pediatricians disagreed with the VDH lead blood screening recommendations, the majority of respondents (29%) reported using the VDH as a primary source of information and guidance when establishing office policy. Therefore, the VDH has an opportunity to redesign their physician education to convey the importance of universal lead screening at 24 months through emphasis on the significant health risks associated with BLLs ≥10 μg/dL. Multivariate analysis also indicates that physicians with larger Medicaid populations have significantly higher screening rates. We recommend that the VDH further investigate this association to determine strategies to increase blood lead screening rates in 24-month-old children.

Limitations

While data collection often presents many challenges, the use of a web-based survey was an effective and timely method for gathering data. However, the use of a self-reporting tool may not have accurately represented these figures, those in group practice may have been assigned rates that are not representative of their individual screening practices.

Lessons Learned

While data collection often presents many challenges, the use of a web-based survey was an effective and timely method for gathering data. However, the use of a self-reporting tool may not have accurately represented these figures, those in group practice may have been assigned rates that are not representative of their individual screening practices.

References

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