AMERICAN PROFESSIONAL SOCIETY ON THE ABUSE

APSAC ALERT

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SPECIAL POINTS OF INTEREST:

- **AHT is a leading cause of death as well as long-term, often profound disability and impaired function.**
- **The rate of AHT deaths has decreased from a peak in 2009, with both 2013 and 2104 having less than half the rate of 2009.**
- **Early and accurate diagnosis of AHT makes death less likely by improving the medical outcomes of children affected by AHT.**
- **Prevention oriented public health interventions join the advances in identification and intervention as potential reasons for the decline in AHT related deaths.**

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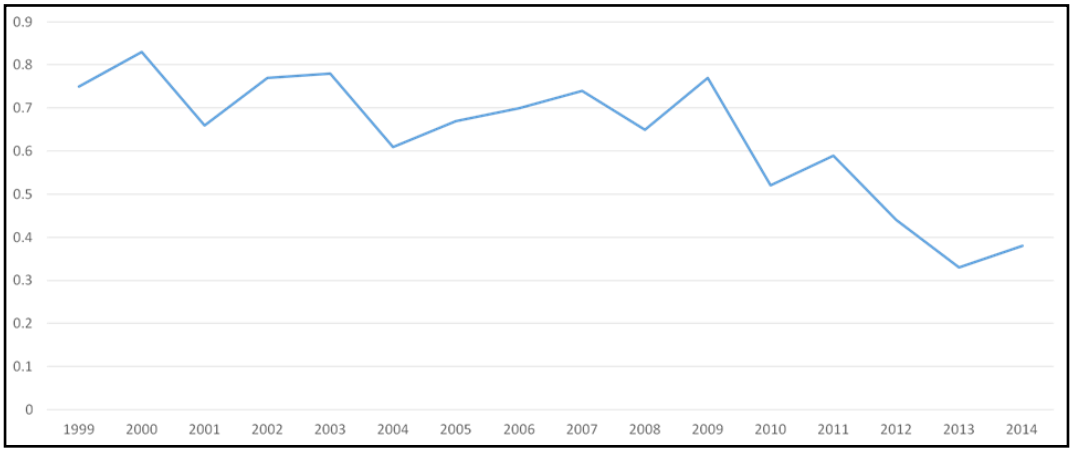
Fatal Abusive Head Trauma on the Decline?

Abusive Head Trauma (AHT), formerly known as Shaken Baby Syndrome, is a constellation of findings which are the result of inflicted injuries to infants and young children at the hands of their caregivers (Greeley, 2015). It has been difficult to get a clear picture of the extent of the problem of AHT and trends over time. The recent report from the Centers for Disease Control and Prevention on 15 years of national data on AHT deaths (Spies & Klevens, 2016) is a welcome clarification of the national rates and trends of fatal AHT in the United States. They found a roughly stable rate of AHT deaths in children under 5 from 1999 to 2009 (between 0.62 and 0.83 per 100,000 children), followed by quite a dramatic decline from 2009 to 2014 when the rate was 0.38 AHT deaths per 100,000 children (see chart below).

These analyses used a consistent and widely accepted definition of AHT and applied it to the National Vital Statistics System, the most comprehensive way of examining mortality in the United States. These data ultimately depend on death certificate data for cause of death. The extent and quality of the data allowed a relatively certain estimate about how many children die from AHT every year and whether this number is declining or increasing. These data also allowed the researchers to eliminate some alternative explanations for the apparent decline in AHT deaths. Importantly, the decline is not due to changes in the way that AHT is categorized by those assigning cause of death.

Trends in rates of abusive head trauma deaths, 1999-2014.



The y-axis represents child AHT deaths per 100,000 children.

Surely, the recent decline in AHT deaths from 2009 onward is good news. There has been a decrease from the recent peak in 2009, with both 2013 and 2014 having less than half the rate of AHT deaths. The decline also corresponds to recent declines in other forms of abuse (both physical and sexual abuse; Finkelhor, Seito, & Jones, 2015). The decline in AHT deaths is especially striking given the increased awareness of AHT as a public health concern (e.g., Boop et al., 2016); presumably this awareness has reached most coroners and medical examiners as well. Such increased awareness would represent a countervailing effect of changes in surveillance bias. This surveillance bias has also resulted in the introduction of novel explanations being presented in court as potential explanations for the findings associated with AHT. This increased awareness of AHT has also been associated with increased discussion of AHT as a myth (Greeley, 2014), similar to the development of "awareness" of the putative link between vaccines and autism (Vinton, 2016).

In either case, the "battlefield" here is the decision-making process of those determining cause of death rather than the critical moments in which AHT actually occurs. This is where there is some cause for optimism. Even if the identification of AHT has somewhat changed, it is unlikely to account for the bulk of the reduction. Spies and Klevens (2016), in interpreting these data, highlight the importance of public health interventions that either improve parenting practices and child care resources among high-risk families (e.g., home visitation, affordable, quality child care, or paid family leave; Klevens et al., 2016) or provide population-level awareness and normalization of difficult child behaviors and provide alternate ways of parenting and perceiving children during the most risky periods (e.g., Dubowitz et al., 2009). Primary prevention is vital, of course, but it is only part of the story. Just as important in reducing AHT deaths is secondary prevention, and here two trends may be important: 1) the general improvement in care provided in pediatric intensive care units (PICUs) and 2) better detection of nonfatal AHT (which provides the opportunity to remove the child from a situation where a fatal incident of AHT is likely; Letson et al., 2016). From this perspective, rather than producing an increase in AHT deaths, early and accurate diagnosis of AHT makes death less likely by improving the medical outcomes of children affected by AHT (Shein et al., 2012).

This brings us to a somewhat less rosy perspective. The most reliable national data quantifies fatal AHT; making inferences from the prevalence of AHT fatalities to the prevalence of all AHT is difficult. More localized state-level data consistently show an increase in the overall rate of hospitalizations for AHT, most of which is both nonfatal and serious (e.g., Boop et al., 2016; Dias et al., 2017; Zolotor et al., 2015). Indeed, most large interventions, although not without benefit, have failed to reduce the rate of AHT hospitalizations in the states where they have been enacted (Dias et al., 2017; Zolotor et al., 2015). AHT is not simply a leading cause of death, but of long-term and often profound disability and impaired function. (Nuno et al., 2015). Finally, although provocative, these data raise several questions beyond the global sense that things are, based on this one metric, improving. Global trends often hide important countertrends; as we have discovered in other domains of child maltreatment, an overall reduction can be accompanied by very substantial local increases and spikes. Within the public health framework this is known as the *ecological fallacy*. In essence, overall trends may not apply to smaller subgroups or individuals. Here, a deeper dig into the national data might prove useful, not only in getting a better picture of the problem but in understanding which interventions have or have not been useful. The Zolotor trial mentioned earlier (2015) is a good example of this more nuanced examination of the problem. How does the overall decline in AHT deaths play out at the state level, and do differences in trends at the state level correspond with some of the primary (and secondary prevention) efforts discussed here and by Spies and Klevens (2016)? Given what we know about the socioeconomic distribution of AHT (Boop et al., 2016; Wood et al., 2010), are some demographic groups being "left behind" by interventions and prevention strategies that are unevenly applied or targeted? As Caspi et al. (2016) have recently shown, a myriad of social and public health problems tend to cluster in the grown-up children of adversity. Thus, community-level interventions, broadly applied to at-risk communities, are likely to have far-reaching impacts beyond the prevention of child fatality and disability.

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