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Classification of maltreatment-related mortality by Child Death Review teams: How reliable are they?

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ABSTRACT

Accurate estimation of the incidence of maltreatment-related child mortality depends on reliable child fatality review. We examined the inter-rater reliability of maltreatment designation for two Alaskan Child Death Review (CDR) panels. Two different multidisciplinary CDR panels each reviewed a series of 101 infant and child deaths (ages 0–4 years) in Alaska. Both panels independently reviewed identical medical, autopsy, law enforcement, child welfare, and administrative records for each death utilizing the same maltreatment criteria. Percent agreement for maltreatment was 64.7% with a weighted Kappa of 0.61 (95% CI 0.51, 0.70). Across maltreatment subtypes, agreement was highest for abuse (69.3%) and lowest for negligence (60.4%). Discordance was higher if the mother was unmarried or a smoker, if residence was rural, or if there was a family history of child protective services report(s). Incidence estimates did not depend on which panel's data were used. There is substantial room for improvement in the reliability of CDR panel assessment of maltreatment related mortality. Standardized decision guidance for CDR panels may improve the reliability of their data.

1. Introduction

Child maltreatment, which includes both abuse and neglect, is a major public health problem (Kendall-Tackett, 2002). Reliable identification of fatalities from child maltreatment is critical for ongoing monitoring of this issue. Unfortunately, vital statistics data for children less than 16 years of age underrepresent maltreatment deaths by up to 50% (Crume, DiGuiseppi, Byers, Sirotnak, & Garrett, 2002; Ewigman, Kivlahan, & Land, 1993; Herman-Giddens et al., 1999). Compared to vital statistics alone, the National Child Abuse and Neglect Data System (NCANDS) provides a more accurate assessment of the number of child maltreatment deaths each year. In fiscal year 2014, NCANDS estimated 1580 maltreatment related fatalities (US

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Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2016). However, even NCANDS undercounts child maltreatment deaths, due to variation in state classifications, non-standard definitions, voluntary state reporting, and reliance on child protection data (US, 2011).

To improve fatal maltreatment case detection and surveillance a range of methods have been evaluated. These include multi-source data (Putnam-Hornstein, Wood, Fluke, Yoshioka-Maxwell, & Berger, 2013; Schnitzer, Slusher, & Van Tuinen, 2004), hospital reports (Hampton & Newberger, 1985), capture re-capture (Palusci, Wirtz, & Covington, 2010), population survey (Finkelhor, Turner, Shattuck, & Hamby, 2013; McCurdy & Daro, 1994; Sedlak et al., 2010), and consensus or expert panel review (Leventhal, 1999; Palusci & Covington, 2014; Webster, Schnitzer, Jenny, Ewigman, & Alario, 2003). Some research however, suggests employing a public health model within the context of the CDR is the optimal approach for maltreatment detection and classification (Palusci et al., 2010; Schnitzer, Gulino, & Yuan, 2013).

Developed in 1979, the interagency CDR model was specifically designed to improve the identification of child deaths due to maltreatment (Durfee & Gellert, 1992). Unlike vital statistics death records or NCANDS, the CDR model (Covington, 2011) uses multiple sources of information and a multidisciplinary consensus review process to adjudicate the available information. Currently, the core interagency members of CDR include law enforcement, child protection, prosecutor/district attorney, medical examiner/coroner, public health, medical providers, and emergency medical services (Covington, Foster, & Rich, 2005). CDR panels typically classify potential maltreatment deaths into four categories: Yes, Probable, No, and Unknown. The use of these or other similar categories are widely used in fatal and nonfatal child maltreatment surveillance and research (Schnitzer, Slusher, Kruse, & Tarleton, 2011; Shanahan, Zolotor, Parrish, Barr, & Runyan, 2013).

Researchers have recommended that CDR teams utilize a systematic approach with standardized criteria when making maltreatment classifications to ensure consistency in classification (Palusci et al., 2010; Schnitzer et al., 2013). However, some evidence suggests considerable disagreement in the application of neglect classifications among and between CDR team members (Schnitzer, Covington, & Kruse, 2011Schnitzer, Covington, & Kruse, 2011). Although the CDR model was originally developed to increase identification of child deaths due to maltreatment (Durfee & Gellert, 1992) this process has undergone minimal scientific scrutiny. It is currently unknown whether this process, used in nearly all 50 states, produces reliable maltreatment classifications. Research in other areas of death review (such as designation of preventability) has documented high levels of variability in the absence of clear methods to guide classification (MacKenzie, Steinwachs, Bone, Floccare, & Ramzy, 1992; McDermott, Cordner, & Tremayne, 1997).

The purpose of this study was to quantify the reliability of maltreatment classifications made through CDR consensus review in one state. A secondary purpose was to examine the effect of between-panel variation on incidence estimates for child maltreatment mortality. We selected Alaska for this research because their CDR team was readily accessible to us and interested in partnering.

2. Methods

We assessed inter-rater reliability of abuse, neglect, and negligence classification between two CDR panels (hereafter referred to as Panel 1 and Panel 2).

2.1. Alaska Maternal Infant Mortality Review – Child Death Review (MIMR-CDR)

Since 2008, the Alaska Maternal Infant Mortality Review – Child Death Review (MIMR-CDR) has used a broad definition to guide panels in classifying maltreatment-related mortality. The MIMR-CDR program defines Abuse as overt actions that cause harm, potential for harm, or threat of harm, Neglect as failure to provide for a child's physical or emotional needs or to protect from harm or threat of harm, and Negligence as failure to exercise reasonable care that would be expected of any other person in a similar situation. The operation of these definitions were modeled after those created by the National Center for the Review and Prevention and Child Deaths (NCRPCD) (The National Center for the Review and Prevention of Child Deaths, 2015) and other sentinel research (Schnitzer, Covington, Wirtz, Verhoek-Oftedahl, & Palusci, 2008). The MIMR-CDR is a public health program targeted with identifying patterns for prevention through systematic data collection, review, and recommendation. The determinations of these teams are for public health purposes only and are not used for individual criminal or child welfare proceedings.

Prior to review, the CDR administrative team collects, centralizes, and compiles comprehensive information from a variety of sources. Although the amount and breadth of information varies with each death, the core set of information often include: Medical Examiner autopsy and drug toxicology reports, death investigator reports, medical records (both child and mother if applicable), child protective services, law enforcement, village public safety records, first responder, Medicaid, publically available criminal justice records, and other relevant information if applicable.

The MIMR-CDR review process consists of three phases: 1) primary and secondary review, 2) case presentation and discussion, and 3) consensus classification. During the primary and secondary review, two committee members read through the case history file and take notes to document relevant information and circumstances of the death. After all deaths receive both a primary and secondary review, each is presented to the full panel followed by a discussion on the most probable causes, contributors, and preventability of each death. The discussion culminates in the committee making consensus classifications.

The MIMR-CDR program adapted the acts of omission and commission definitions and NCRPCD data elements to meet the needs of the Alaska program (The National Center for the Review and Prevention of Child Deaths, 2015). During this data