

Sudden Unexpected Infant and Child Death Tissue Consortium

Bruce A. Hyma, M.D.¹ and Betty L McEntire, Ph.D.²

¹*Miami-Dade Medical Examiner Department*, ²*American SIDS Institute*

Presented at NAME (National Association of Medical Examiners) Conference, October 2013, Milwaukee, WI.

Abstract

The sudden unexpected death of an infant or toddler challenges the forensic science community while bringing emotional trauma to families. Research is needed to understand the interplay between the medically vulnerable child and unsafe sleep conditions. To determine what genetic and physiological abnormalities may contribute and in what circumstances, researchers require data from large numbers of infant/toddler cases, including autopsy results, scene investigation findings and infant/family medical information.

An infrastructure is needed which facilitates parental consent, encourages uniform tissue collection paired with appropriate data, and allows for safe tissue banking. To that end, the Sudden Unexpected Infant Death (SUID) Tissue Consortium was created, following the San Diego (SUID) program model.

Four ME districts in Florida (Miami-Dade, Collier, Palm Beach, and Polk) are currently participating with consent assistance from two tissue bank's donor services (University of Miami and Lifelink). With parental consent, body fluids, tissue samples and the brain of infants and toddlers (≤ 3 years regardless of cause of death) are collected during the autopsy process. Organ and tissue transplantation as well as the evidentiary needs of the ME take precedence over research tissue, so not all samples may be collected in every case. Samples are either frozen at minus 80°F or fixed in 10% buffered formalin and are shipped for banking at the National Institute for Child Health and Development (NICHD) Brain and Tissue Bank in Maryland. Additionally, they provide the ME a neuropathology report on each brain received. ME investigative data is collected by the American SIDS Institute and attached to each body fluid/tissue set.

Lab equipment is provided by American SIDS Institute and tissue kits and shipping are provided by NICHD Tissue Bank. Monthly consortium virtual meetings allow for monitoring the progress of consented cases, exchange investigative information and address system deficiencies.

This consortium began collecting and preserving tissue/organ samples from infants in August 2011. Toddlers were added April 2013. Target consent rate is 25% of eligible infants and is currently at 27%.

Because all unexpected infant/toddler deaths are ME or coroner cases, a SUID tissue project must be layered within the death investigation system. We have demonstrated that it is possible to establish and fund an infrastructure that allows banking of infant/toddler tissue linked with necessary data to enable the next generation of SUID related research. ME offices nationally are encouraged to join the consortium.