



Arkansas Infant and Child Death Review Program
December 2014

Compiled by:
Arkansas Infant and Child Death Review Program
Injury Prevention Center at Arkansas Children's Hospital

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Annual Report Summary

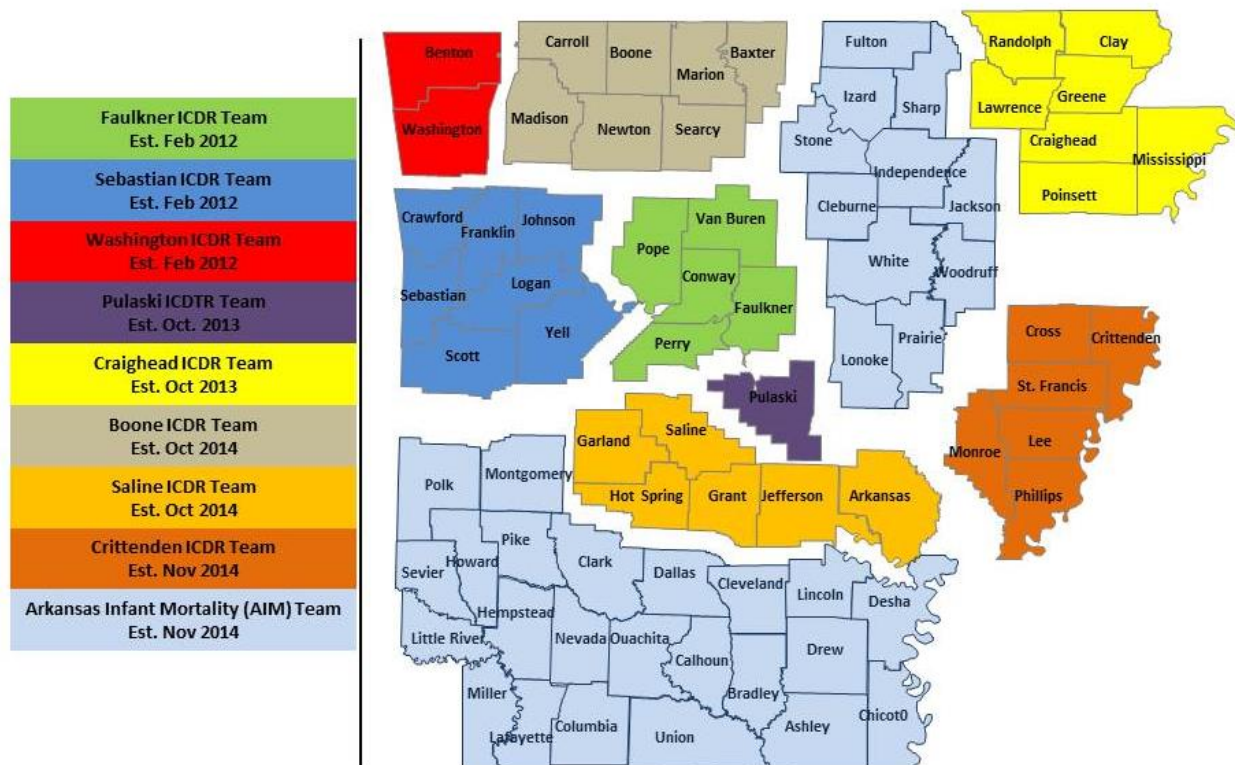
| | | |
|--|---|--------------------------|
| Infant and Child Death Review Teams: | Faulkner | (6 counties) |
| | Sebastian | (7 counties) |
| | Washington | (2 counties) |
| | Pulaski | (1 county) |
| | Craighead | (7 counties) |
| | Boone | (7 counties) |
| | Saline | (6 counties) |
| | Crittenden | (6 counties) |
| AIM Team | (34 counties-Infants Only) | |
| Total Cases Reviewed: | 119 | |
| Top 3 Causes of Death: (reviewed cases) | <i>Infants:</i> | <i>1 – 17 year olds:</i> |
| | 1. SUID | 1. MVC |
| | 2. Asphyxia | 2. Drowning |
| | 3. MVC/Weapon (tied) | 3. Weapon |
| Peak Period for SUID Deaths: | 29 days – 3 months old | |
| Total Reviewed Cases Determined PREVENTABLE: | 80% | |
| Gun Use in Suicides: (of total deaths by suicide) | 67% | |
| Reviewed Cases Listing Acts of Omission/Commission: | Infants: | 1 – 17 year olds: |
| | 81% | 60% |
| ICDR Program Website: | http://www.archildrens.org/Services/Injury-Prevention-Center/Infant-Child-Death-Review.aspx | |

Infant & Child Death Review Teams

From 2012-2013, five local Infant and Child Death Review (ICDR) teams were established (Faulkner, Sebastian, Washington, Pulaski and Craighead). In 2014, an additional three local ICDR teams (Boone, Saline and Crittenden) were added (Figure 1). These local ICDR teams reviewed approximately 73% of all eligible pediatric deaths (birth to 17) in Arkansas (as defined by Act 1818 of 2005, and this report only refers to these eligible cases).

Also in 2014, the Arkansas Infant Mortality (AIM) Team was formed to exclusively review deaths of infants (<1 year old) in counties not covered by local ICDR teams, allowing 100% of eligible infant deaths in the state to be reviewed. With the addition of the AIM Team, 82% of eligible pediatric deaths (birth – 17) in Arkansas will have the opportunity to be reviewed.

Figure 1
Map of Local ICDR Teams



Agencies/Disciplines

Eight agencies/disciplines are considered core members of a review team: medical examiner (ME) or coroner; Crimes Against Children Division (CACD) of the Arkansas State Police; Public Health; Law Enforcement; Arkansas Department of Human Services, Division of Children and Family Services (DCFS); Prosecuting Attorney; Emergency Medical Services (EMS); and medical (Physician or nurse with specialized training). Table 1 shows the percentage of meetings in which each specific agency/discipline was in attendance. Additional disciplines serving as auxiliary members in the review process include injury prevention specialists and child advocates.

Table 1

| Review Meeting Attendance by Agency/Discipline | |
|--|-----|
| CACD | 81% |
| Law Enforcement | 68% |
| Public Health | 65% |
| DCFS | 61% |
| Prosecuting Attorney | 60% |
| ME or Coroner | 57% |
| EMS | 53% |
| Medical | 30% |
| Auxiliary Members | |
| Child Advocate | 42% |
| Injury Prevention Specialist | 35% |



Current Data

To date, Infant and Child Death Review teams have reviewed 119 cases, of which 47% were infants (Figure 2). Also noted from the reviewed cases, males die more often than females in both the infants and 1 – 17 year old age groups (Figures 3A & B).

Figure 2

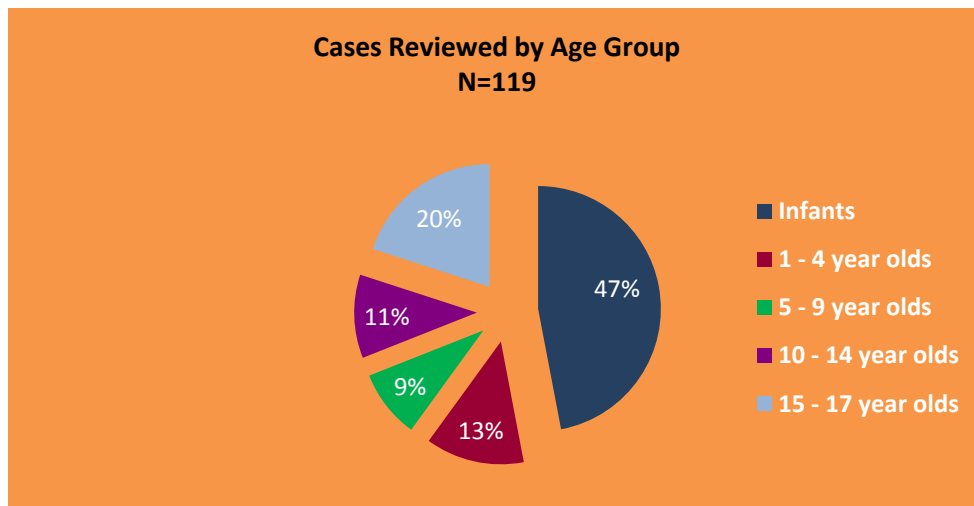
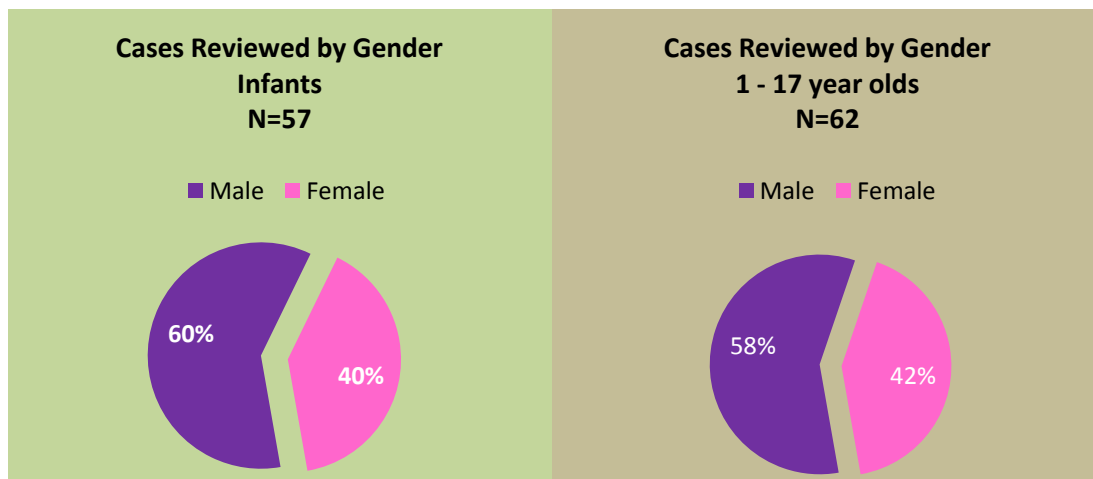


Figure 3A and 3B



Of the reviewed infant deaths, 88% listed undetermined as the manner of death (Figure 4A). Many of these undetermined deaths are Sudden Unexplained Infant Death (Figure 5A). Of the cases reviewed for the 1-17 year old age group, 71% were accidental (Figure 4B), with motor vehicle collisions (MVC) and other transport being the number one cause of death (Figure 5B). All terrain vehicles were involved in 16% of these deaths (Figure 6).

Figure 4A and 4B

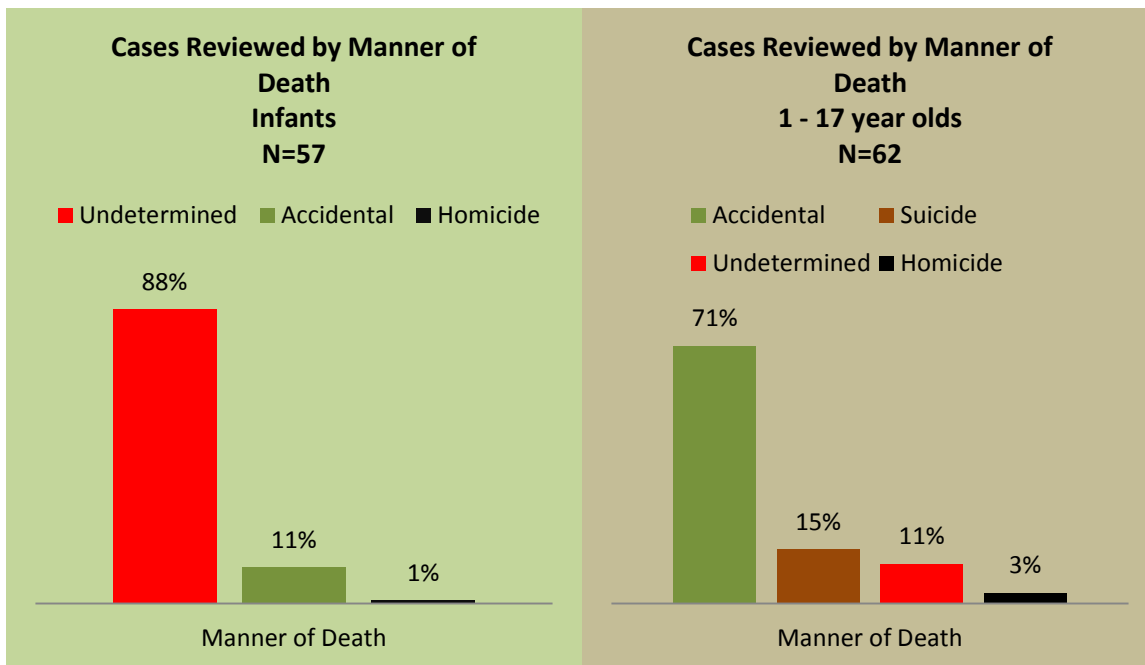


Figure 5A and 5B

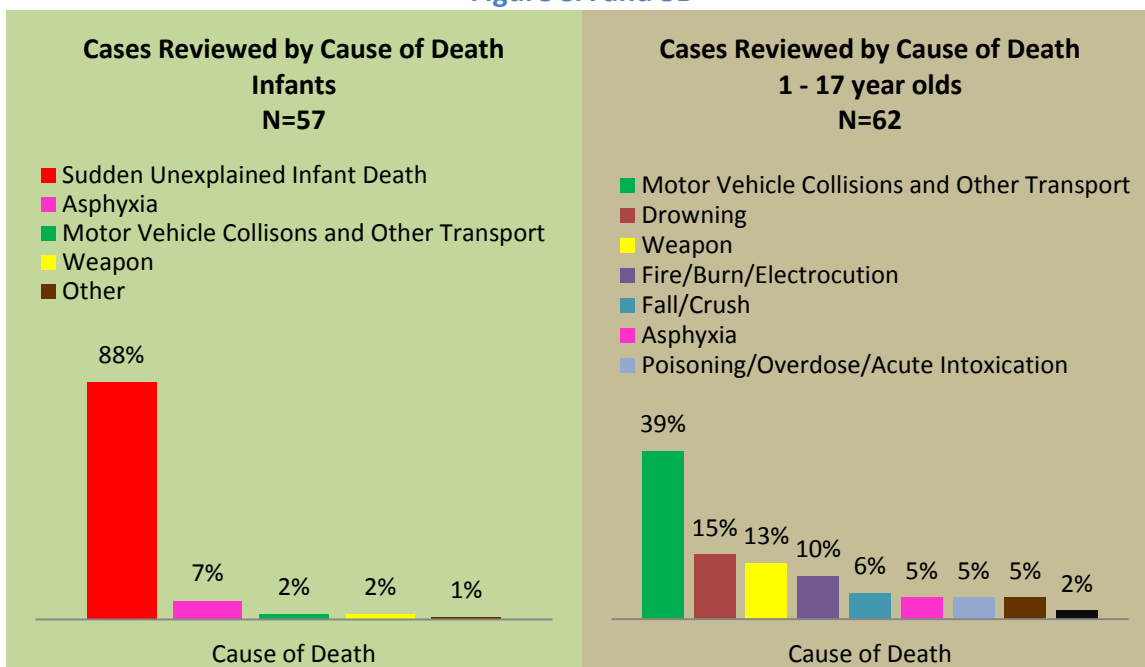
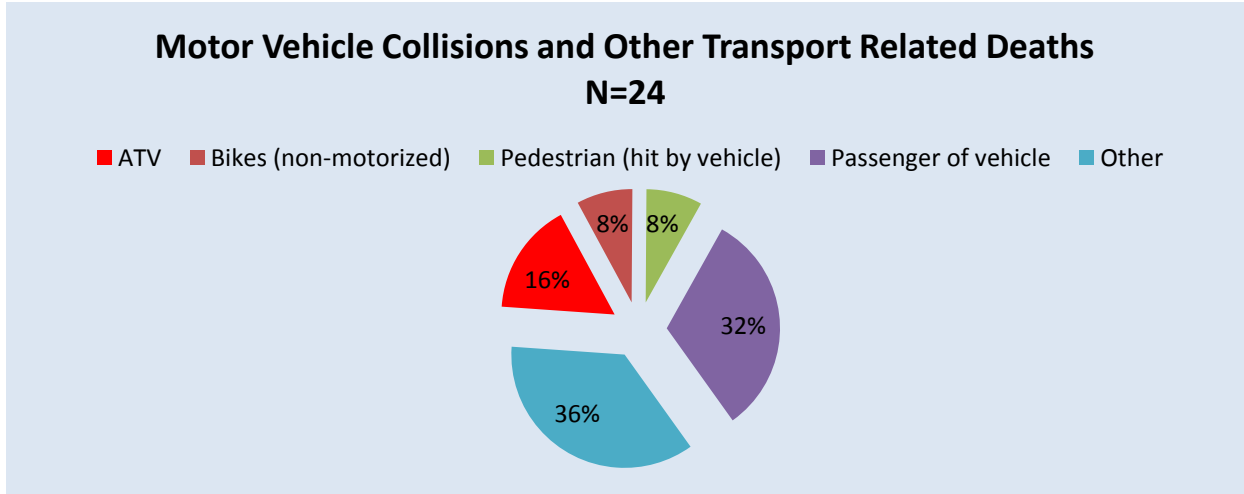
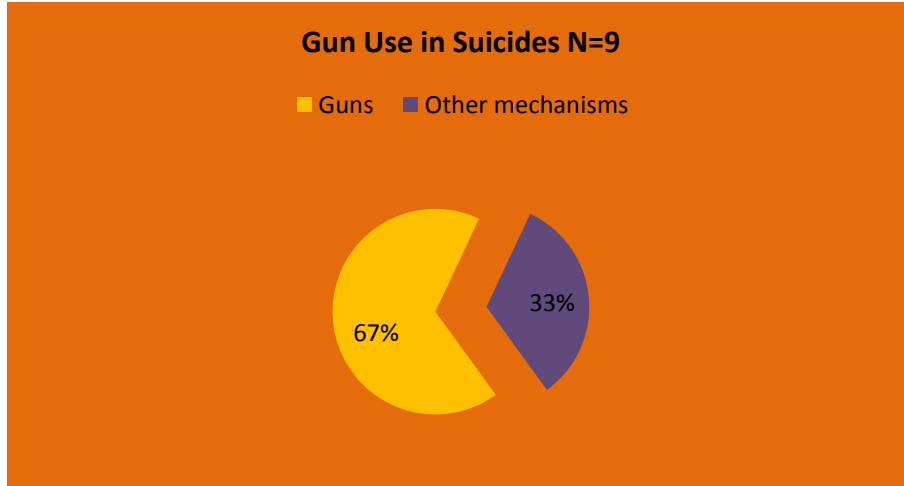


Figure 6



It was noted that 15% of the reviewed cases for the 1 – 17 year old age group were suicides (Figure 4B), where a gun was used in 67% of those suicides (Figure 7).

Figure 7



Additional Findings

Sleep-related Deaths of Infants

Of the total number of cases reviewed by ICDR teams, 47% were infants (Figure 2). Sudden Unexplained Infant Death (SUID) was the leading cause of death for that age group (Figure 5A). From the review of these SUID deaths, 58% listed an inappropriate or unsafe sleep environment, while co-sleeping was listed as a contributory factor in 41% of the reviewed SUID cases.

The American Academy of Pediatrics has formalized safe sleep recommendations including (but not limited to):

- Always place your baby on his or her back for every sleep time.
- Always use a firm sleep surface. Car seats and other sitting devices are not recommended for routine sleep.
- The baby should sleep in the same room as the parents, **but not in the same bed** (room-sharing without bed-sharing).
- Keep soft objects or loose bedding out of the crib. This includes pillows, blankets, and bumper pads.
- For the complete list visit <http://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Expands-Guidelines-for-Infant-Sleep-Safety-and-SIDS-Risk-Reduction.aspx#sthash.mGDTsRqm.dpuf>.

An inappropriate or unsafe sleep environment could include an infant's sleep position (side or stomach), sleep location (adult beds, recliners, couches, swings, car seats, etc.) and other environmental factors (items in the crib or sleep area, room temperature, etc.). Co-sleeping refers to an infant sleeping on the same sleep surface with an adult(s), other children or pets.

In addition to location, prone (stomach) position of a sleeping infant is a risk factor for SUID. The percentage of infants that were placed on their stomach or side and subsequently died was 40%. The percentage of infants placed and found on their back was 26% (Table 2). Wedging, accidental strangulation or entrapment accounted for 7% of reviewed infant deaths.

Table 2

| Sleep Related Environmental Factors (sleep position) N=57 | |
|--|-----|
| Placed on stomach/side | 40% |
| Placed on back | 26% |
| Position unknown | 34% |

In Arkansas, SUID peaks between 29 days and 3 months (Table 3).

Table 3

| SUID Deaths by Age Group N=50 | |
|--------------------------------------|-------------------------|
| Age | % of SUID Deaths |
| 0 – 28 days | 4% |
| 29 days – 3 months | 70% |
| 4 – 6 months | 14% |
| 7 – 9 months | 6% |
| 10 – 12 months | 6% |

Demographics of Parents

Of the cases reviewed for both infants and 1 – 17 year olds, the average age of the biological mother was 22.6 years old and the average age of the father was 35.2 years old (note that not all cases list parents age). Table 4 shows the educational level of the primary caregiver when captured in reporting.

Table 4

| Educational Level of Primary Caregiver N=119 | |
|---|-----|
| Less than High School | 7% |
| High School Graduate | 12% |
| Some College | 4% |
| Post Graduate | 1% |
| Unknown / Not Answered | 76% |

Omission/Commission

Identification of omissions and commissions helps connect human behavior to the death. An omission is a failure to act (i.e., lack of supervision or co-sleeping with an infant) and a commission is a direct act (i.e., abusive head trauma or suicide). Listed in Table 5 is the percentage of total cases reviewed that were identified to have had an act of omission/commission that directly or indirectly lead to the child's death.

Table 5

| Acts of Omission/Commission Listed by Age Group | | |
|---|-----------------|--------------------------|
| | Infants N=47 | 1 – 17 year olds N=52 |
| Yes | 81% | 60% |
| No | 9% | 23% |
| Probable | -- | 12% |
| Unknown | 10% | 5% |

Direct/Indirect Factors in Death

A direct cause is an action that was necessary and sufficient to have caused the death (i.e., ATV collision or gun); whereas an indirect cause is an action that was necessary, however, not sufficient to have caused the death (i.e., co-sleeping with an infant or not using safety equipment such as helmet or life jacket). Table 6 shows the percent of reviewed cases that listed direct or indirect causes by age group.

Table 6

| Direct/Indirect Causes that led to Death by Age Group | |
|---|--------------------------|
| Infants N=47 | 1 – 17 year olds N=52 |
| Direct Cause: 11% | Direct Cause: 23% |
| Indirect: 74% | Indirect: 60% |
| ***direct and indirect percentages are independent and should not equal 100%*** | |

Preventability

After cases are reviewed, teams decide if the death was preventable. Recommendations for improved services, education, policies, prevention education, laws and other interventions are based on this assessment. Table 7 shows that 83% of the infant cases reviewed were determined to have been preventable; while 77% of the cases reviewed for 1 – 17 year olds were determined preventable (please note that some teams may have left this question blank prior to implementing a new data entry process).

Table 7

| Reviewed Cases Determined Preventable by Death Age Group | | |
|--|-------------------------|----------------------------------|
| | Infants N=57 | 1 – 17 year olds N=62 |
| Determined Preventable | 83% | 77% |
| Determined Not Preventable | 5% | 6% |
| Team Could Not Determine | 7% | 5% |
| No Answer | 5% | 11% |



Loss of Potential Earned Income

Loss of potential earned income is calculated on the average Arkansas income multiplied by the average work life years which equals the average work life income of \$1,634,835. Calculating for 119 cases reviewed, the total estimated loss of potential earned income is \$194,545,365.00 (Table 10).

Table 1

| Loss of Potential Earned Income Due to Death N=119 | |
|--|---------------|
| Average AR Income | \$19,010 |
| Average Work Life | Ages 16 – 65 |
| Total Work Life Income (w/ 2% annual raise and cost of living increase) | \$1,634,835 |
| 119 Reviewed Deaths | |
| Total Estimated Loss | \$194,545,365 |
| *** Average income based on US Census Estimates*** | |
| +++Average work life based on legal employment age to retirement+++ | |



Consumer Product Safety

Identified from case reviews were four consumer products that were listed as contributory factors in causing a death. These products have been reported to the Consumer Product Safety Commission (Table 11).

Table 2

| Consumer Product Safety Commission Notifications | |
|--|-----------------------|
| Products | Manner/Cause of Death |
| Magnet Necklace | Accident/Asphyxia |
| Nap Nanny | Undetermined/SUID |
| External Bed Rails | Accident/Asphyxia |
| Boppy Pillow | Undetermined/SUID |

Trainings

In addition to conducting reviews, the ICDR Program provides training to educate individuals and agencies on how to translate review findings into applicable interventions and preventions. We also strive to continue educating our community partners in order to systematically improve recognition of warning signs, as well as increase interagency cooperation and investigations. The ICDR Program continues to utilize innovative resources, such as Telehealth, in offering these trainings and to provide technical assistance to teams.

Training for ICDR Team Directors and Coordinators

The ICDR Program hosted a training session for local ICDR team directors and coordinators in an effort to improve the review process and provide a networking opportunity that would help build collegiality. Agenda items for this training included:

- Messages from Infant Mortality Action Group Chair, Brad Planey; Arkansas Commission on Child Abuse, Rape and Domestic Violence, Executive Director Max Snowden; and Injury Prevention Center Director, Dr. Mary Aitken.
- Presentations: Sudden Unexplained Infant Death; ATV Education and Water Safety; Safety Baby Showers; Suicide Prevention; Moving Data to Action and Media Training.
- Activities included videotaping participants explaining why this work is important to them and gathering information to improve the review process.

Sebastian Team Training

Lieutenant Jayson Peppas of the Sebastian ICDR Team and a member of the Alma Police Department arranged a training session for team members and other law enforcement/DCFS/CACD and coroners in the area. The training session, attended by 55 people, consisted of information pertaining to the ICDR Program; Sudden Unexpected Infant Death; and Abusive Head Trauma. Because of the success of this training, other agencies have requested similar trainings in their area.

Sudden Unexpected Infant Death Investigation (SUIDI) Training

Through detailed interviews, scene investigations and doll re-enactments, the medical examiner is provided with insight and information that can assist in accurately determining the manner and cause of death. SUIDI training is an eight hour course for first responders to instruct them in proper infant scene investigation, interviewing techniques and proper protocol for doll re-enactments. The course has been taught since 2010 and is funded by the AR Commission on Child Abuse, Rape and Domestic Violence. At the completion of the training, coroners are provided SUIDI kits (complete with camera and a pose-able doll for re-enactment) that are provided by a grant from the Family Health Branch at the Arkansas Department of Health. To date, a total of 102 attendees, representing multiple agencies and disciplines, have participated in SUIDI training, as shown in Table 9.

Table 9

| Disciplines/Agencies Attending SUIDI Trainings | |
|---|-----------------------|
| Discipline | Number Trained |
| Coroner / deputy coroner | 66 |
| Law Enforcement | 14 |
| EMT | 3 |
| Healthcare Provider | 4 |
| AR Crime Lab | 5 |
| Crimes Against Children Division (CACD) | 2 |
| Dept. of Children & Family Services (DCFS) | 1 |
| Other Disciplines | 7 |

Activities

Telehealth

In January 2014 the Craighead ICDR Team was the first team to meet with the use of Telehealth technology. This technology allows the ICDR Program Director and Coordinator to continue attending all local team reviews while reducing travel time and cost. Additionally, Telehealth improves availability of injury prevention specialists and other centrally located specialists, such as pediatricians from the Team for Children at Risk, who may be needed for case specific issues. Washington and Boone's ICDR Teams are now utilizing Telehealth with plans to expand to the Crittenden and Saline Teams after those teams gain more experience. We believe that Arkansas is the only state utilizing advanced Telehealth technology to facilitate ICDR review meetings.

Joint Meeting with AR Child Death Review Panel and Infant Mortality Action Group

The AR ICDR Program hosted a joint meeting with the AR Child Death Review (CDR) Panel and the Infant Mortality Action Group (IMAG) in April 2014 to address several issues including:

- Need for greater public awareness about the CDR Panel, the ICDR Program and Local ICDR teams, recommendations and actions;
- Options for partnering across key groups to promote safe sleep measures and other aspects of infant mortality prevention.

Outcomes:

- Formation of a media workgroup resulted in a press release regarding the formation of the Saline ICDR team. The press released generated several TV news reports/interviews, in addition to several newspaper articles.
- The AR ICDR Program and Arkansas Children's Hospital (ACH) Injury Prevention Center is partnering with the ADH Woman Infants and Children (WIC) Office to provide a resource list that will be made available to all WIC customers on topics related to infant mortality. Prevention areas will include, but are not limited to, Safe Sleep, Home Safety, Shaken Baby Syndrome, Safety Baby Showers, Child Passenger Safety, Water and Fire Safety.
- Collaboration from the joint meeting resulted in recruitment of several members for the newly-formed AR Infant Mortality Team.

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Grant

Mary Medlock, coordinator of the Craighead ICDR Team, received a \$1,200 grant to promote safe sleep education under the NICHD-funded Arkansas SIDS Outreach Project. This grant will provide safe sleep and sudden unexpected infant death training to healthcare professionals in Northeast Arkansas.

Division of Children and Family Services

Kevin Dougherty, the Unit Supervisor at the Sebastian County DCFS Office and Coordinator of the Sebastian ICDR Team, has been instrumental in implementing safe sleep evaluations and crib distributions within his area of supervision.

Fayetteville Police Department

Sergeant Dominic Swanfeld, past Director of the Washington ICDR Team and member of Fayetteville Police Department, disseminated safe sleep information to members of the Fayetteville Police Department, educating officers and detectives on effectively responding to calls where infants reside in order to evaluate the sleep environment.

Boone County Child Advocacy Center

Each county that has a Child Advocacy Center is eligible for additional funds from the National Children's Alliance if they meet certain criteria, one of which is having a Prosecuting Attorney in the judicial district who is involved with the Multi-Disciplinary Team (MDT) which staffs cases of severe abuse and neglect. One of the county MDTs had been unable to get a Prosecutor on board so the Child Advocacy Center was losing out on potential funding. After the Prosecutor started participating in Boone County's ICDR Team and realized the importance, he then agreed to sign on as a team member of the MDT. Because of the Infant and Child Death Review Program, Boone County's Child Advocacy Center will now be eligible for additional funding as an accredited center. Michelle Steiner, Coordinator and Aaron Gutting, Director of the Boone ICDR Team have now obtained additional funding that will be used to provide education to parents, grandparents and young people through the school system.

Media

The Moment Newsletter, Summer *Partners in Prevention* (interview of Daniel Shue, Elected PA and Director of the Sebastian ICDR Team)

The Moment Newsletter, June, *ICDR Program Update*

Savvy Kids Magazine *Sleeping Safely*

KTHV, Channel 11, interview about *Teen Dating Violence*

Press release from the AR ICDR Media Group on June 30, 2014: **New Team to Review Unexpected Child Deaths in Saline and Five Other Counties**, *Group part of larger effort to assess, prevent deaths of infants and children in Arkansas.*

Other Training and Lectures Provided

- AR Emergency Medical Services Annual Conference: The Arkansas ICDR Program, Abusive Head Trauma and Sudden Unexpected Infant Death
- AR Child Abuse & Neglect Annual Conference: The Arkansas ICDR Program, Abusive Head Trauma and Sudden Unexpected Infant Death
- Sebastian Team Training: The Arkansas ICDR Program, Abusive Head Trauma and Sudden Unexpected Infant Death
- International Association of Forensic Nurses: Healthcare Serial Killers and Infant Victims
- Informational meeting and attendance at the Faulkner ICDR team meeting with Office of Special Investigations at the Little Rock Air Force Base. Additional training on The Arkansas ICDR Program, Abusive Head Trauma and Sudden Unexpected Infant Death has been offered and is being vetted through the chain of command.

Conferences/Training Attended

- Southeast Coalition of Child Fatality Review Annual Meeting
- American Board of Medicolegal Death Investigators (40 hour course)
- Public Agency Training Council: Child Death Investigation
- International Association of Forensic Nurses

Moving Forward

- Use of telehealth will be expanded to include training team members.
- The Sudden Unexpected Infant Death Investigation (SUIDI) training will be expanded by utilizing the Pediatric Understanding & Learning through Simulation Education (PULSE) Center at Arkansas Children's Hospital to provide hands-on simulation training and role playing during the SUIDI course. Additionally, the PULSE Center will work with the SUIDI instructors to create a training video for future trainings.
- A press release will be prepared focusing on data presented in the annual report.
- Requests for the presentation on The Arkansas ICDR Program, Abusive Head Trauma and Sudden Unexpected Infant Death will be met. Thus far the Little Rock Police Department and the White County Sherriff's and Prosecuting Attorney's offices have requested these presentations.
- Funding permitting, there will be a one-day training for multiple members of the AIM and ICDR teams in spring of 2015.

