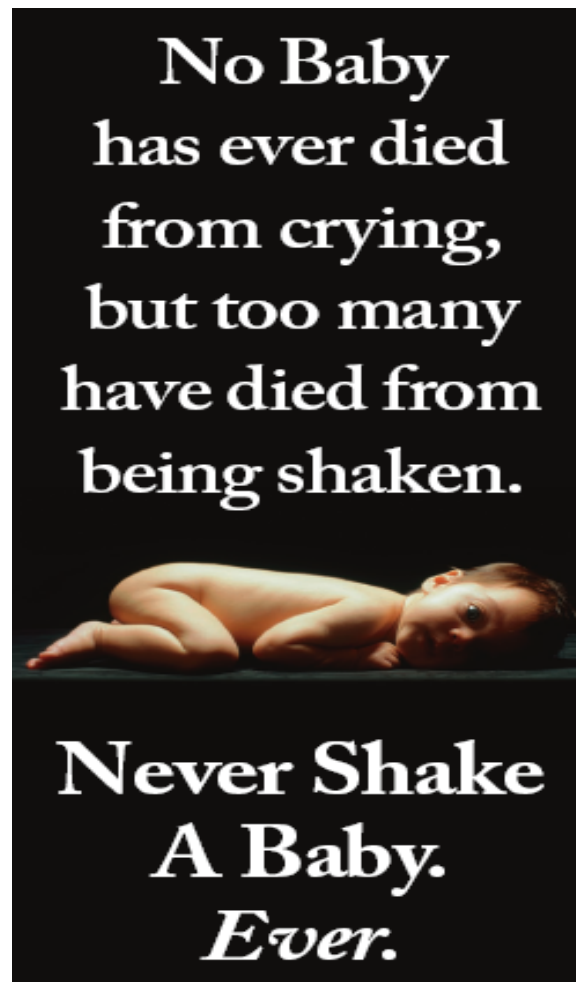


Never Shake a Baby Arizona Annual Report

July 1, 2009 - June 30, 2010

November 2010



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Acknowledgements

The authors of this report, Mary Warren and Beth Sedlet, wish to acknowledge and thank the following people for their time, support and contribution to the 2010 Never Shake A Baby program evaluation:

- The committed staff members from Flagstaff Medical Center, University Medical Center (Tucson), Kingman Regional Medical Center, Phoenix Children's Hospital, Western Arizona Regional Medical Center, Banner Desert, Banner Estrella, Banner Good Samaritan, Banner Del Webb, Banner Baywood, Banner Gateway, and Banner Thunderbird Hospitals, Scottsdale Healthcare Osborn and Shea Hospitals, John C. Lincoln Hospital Birthing Center, St. Joseph's Hospital and Medical Center Couplet Care and Newborn Intensive Care Nursery (Phoenix), Mountain Vista Medical Center (Gilbert), Cobre Valley Community Hospital (Globe), Mount Graham Regional Medical Center (Safford), and Southwest Human Development, Haven Center, Healthy Families, Health Start, ADHS Women's and Children's Hotlines staff, ChildHelp crisis counselors, Beautiful Beginnings, and the Gila, Navajo, Pima, and Yavapai County Public Health staff for their continued cooperation and commitment in providing the program to families across Arizona
- Phyllis Palla, RN, the original Never Shake A Baby Arizona Coordinator, who was for most of this reporting year the *Quality Specialist at Cardon Children's Medical Center, Banner Desert Hospital, Neonatal Intensive Care Unit*. Phyllis was instrumental in motivating Banner Desert Hospital and the other hospitals within the Banner System to continue to implement Never Shake A Baby Arizona.
- Alana Shacter, Injury Epidemiologist, Bureau of Women's and Children's Health, Arizona Department of Health Services, who provided the information on Abusive Head Injuries among Arizona Infants and Young Children, 2004-2009.
- The SUIDI Group for completing a training video in support of statewide implementation of the new Infant Death Investigation Checklist. The SUIDI Group (Sudden Unexplained Infant Death Investigation) is composed of Maricopa County Medical Examiners, health practitioners from Phoenix Children's Hospital Forensic Team

and St. Joseph's Hospital ChildHelp Unit, attorneys from Maricopa County and the US Attorney's Offices, law enforcement personnel from Maricopa County agencies, AZPOST staff (Arizona Peace Officers Standards and Training), and representatives from the Arizona Department of Health Services, Epidemiology and Child Fatality Review Units, and the Department of Economic Security, Children Youth and Families. ADHS, Bureau of Women's and Children's Health, will host the new Infant Death Investigation Checklist as a downloadable form (found at http://www.azdhs.gov/phs/owch/pdf/az_infant_death_inv_checklist.pdf), with completed forms stored in a new database to be developed.

The authors thank Becky Ruffner and Trish Gray for editing the final manuscript. Funders: Child Abuse Prevention License Plate Fund, BHHS Legacy Foundation, Virginia G. Piper Charitable Trust, Arizona Department of Health Services.

Citation: Warren, MG, B. Sedlet. (2010). <i>Never Shake a Baby Arizona Annual Evaluation Report 2010</i> . Prescott Valley, AZ; Prevent Child Abuse Arizona.
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Executive Summary

Prevent Child Abuse Arizona initiated the Never Shake a Baby Arizona program in northern Arizona at the Flagstaff Medical Center and in southeastern Arizona at the University Medical Center in Tucson in the fall of 2003. Never Shake A Baby Arizona, in continuous operation since then has now offered parent education to over 86,700 Arizona parents. Parent response to Never Shake A Baby Arizona education has been very positive since the program's inception; therefore, the primary objective for the past two years was to increase the number of hospitals providing the parent education and to expand the program to additional home visiting and other community-based programs. This goal was fulfilled with the addition of hospital nurses, home visitors, Court Appointed Special Advocates (CASAs), Fire Department First Responders and other community people in 19 hospitals, plus two new home visiting programs, local Safe Kids Coalitions, First Things First Regional Family Fun Days in Apache-Navajo, Whiteriver Apache, and Navajo Nation Regions, Court Appointed Special Advocate (CASA) trainings, foster parent training, and county public health departments involved in maternal/child health, injury prevention and child care consultation.

Between 2008 and 2010, over 32,800 families were educated by hospital nurses, Newborn Intensive Care Program home visiting nurses (statewide), and Healthy Families (statewide), Health Start (statewide, Beautiful Beginnings (Navajo/ Apache), and Nurse Family Partnership (Maricopa/Pima/Yavapai) home visitors.

Emergency Department personnel, Pediatric residents in Healthy Steps training, CASAs (Court Appointed Special Advocates), Early Intervention Specialists, and Fire Department personnel in some cities were also provided Never Shake A Baby Arizona training. The Coordinator presented multiple workshops to teen parents and child welfare and juvenile justice personnel. The ripple effect of these people teaching their clients is not quantified in this Evaluation Report, but anecdotally it is significant.

In hospital and home visiting settings, Never Shake A Baby Arizona consists of a 15 minutes intervention in which parents of newborns receive education about infant crying as a normal behavior, how to soothe crying infants and

how to handle their own frustrations, since crying and the adult frustration it engenders is the most frequent trigger for Shaken Baby Syndrome. Parents also learn about the dangers of shaking babies and methods to avoid shaking. Hospital personnel (primarily nurses) and family service providers are responsible for administering the program. The primary tasks are to solicit parents' participation in program activities that include watching a video, accepting written materials for reference at home, and reading and signing a Commitment Form where they develop a Plan for coping with crying at home and agree to share what they learn with their baby's other caregivers. The educators discuss the dangers of shaking babies and are asked to witness parents signing the Commitment Forms. The goal of Never Shake A Baby Arizona is to reduce Shaken Baby Syndrome (SBS), also known as Abusive Head Trauma (AHT), and to reduce the quality of life and health care costs of injuries associated with this type of child maltreatment in Arizona.

FY 2009 data from Arizona Department of Health Services, Bureau of Women's and Children's Health indicate that the number of non-fatal hospitalizations due to abusive head injuries among Arizona infants and young children rose to 62, the highest number since ADHS has been keeping SBS/AHT surveillance data. However, the number of deaths remained at seven (7), the same as in 2008. Most of the fatal and non-fatal cases continue to come from Maricopa and Pima counties where most births occur, and where not all hospitals are implementing the Never Shake A Baby Arizona program.

Initial hospital costs for non-fatal hospitalizations continue to increase from previous years--\$4,241,327 in 2009 as compared to \$3,664,454 in 2008. The average length of stay for each baby decreased, from 12 days in 2008 down to 8 days in 2009. The percentage of cases covered by AHCCCS continues to rise – 77% in 2009. With new research from four Children's Hospitals around the US identifying an increase in AHT cases since the start of the economic recession²ⁱ, the need to educate all parents on the consequences of abusive head injuries in babies and strategies to avoid shaking them remains vital.

² **An Increase in Abusive Head Trauma during the Current Recession: A Multi-Center Analysis**

Rachel P. Berger, Janet Fromkin, Haley Stutz, Kathi Makoroff, Kenneth Feldman, Philip V. Scribano, Tom Songer. Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA; Cincinnati Children's Hospital, Cincinnati, OH; Seattle Children's/Harborview Medical Center, Seattle, WA;

Introduction

Prevent Child Abuse Arizona first contracted with LeCroy & Milligan Associates, Inc. in 2003 to conduct an evaluation of the Never Shake a Baby Arizona (NSBAZ) *pilot* program. The program was initially implemented in northern Arizona at the Flagstaff Medical Center (FMC) in Flagstaff and in southern Arizona at the University Medical Center (UMC) in Tucson in the fall of 2003, and has been in continuous operation since. In 2006, Prevent Child Abuse contracted with Beth Sedlet to manage data collected via Commitment Forms submitted from hospitals and community programs.

This report is the seventh in a series of annual evaluation reports. The first report, *Never Shake a Baby Arizona FY2004 Annual Evaluation Report*, presented program implementation findings related to the start up of the pilot program and included recommendations for program improvement. The second and third annual reports, *Never Shake a Baby Arizona Annual Evaluation Reports FY2005 and FY2006*, included program implementation and intermediate outcome findings regarding the participants' recall of the main messages of the Never Shake A Baby Arizona program six months after completion. The evaluation findings in those reports indicated that the program was well-received by parents: **more than 90% found the program helpful and remembered its main messages about the dangers of shaking babies and methods to handle the stress related to babies crying for prolonged periods of time.**

Subsequent evaluation reports provide data on program expansion looking at the number of families in Arizona that received the Never Shake A Baby Arizona program statewide, by institution or organization, with updated data on abusive head injuries among Arizona infants and young children from the Arizona Department of Health Services. Electronic Annual Reports are viewable at www.nsbaz.org.

Nationwide Children's Hospital, Columbus, OH; University of Pittsburgh School of Public Health, Pittsburgh, PA.

Program Description

The Never Shake A Baby Arizona program consists of a 15 minutes intervention that is conducted in hospitals, homes, and community organizations with parents of newborns and young infants. The premise of the program is that the period just after the baby's birth provides an optimal "teachable moment" wherein parents can be educated about the need to find delight in their babies and the dangers of shaking babies and methods to avoid shaking when frustrated. It is believed that during moments of frustration and stress, particularly associated with babies who cry for prolonged periods of time (more than three hours at a time for more than 3 days a week for more than 3 months), parents will recall what they learned from the program and implement strategies they wrote on the Commitment Form Plan instead of shaking their child, such as wearing their baby in a sling or baby holder, calling a friend or relative for help, or letting the baby cry (but checking on the baby frequently).³

Peer reviewed research of the original New York program conducted by Dr. Mark Dias (2005) supports the basic program premise: "A coordinated, hospital-based, parent education program, targeting parents of all newborn infants, can reduce significantly the incidence of abusive head injuries among infants and children less than 36 months of age."⁴

The Never Shake A Baby Arizona Coordinator oversees program implementation. The initial Coordinator was Phyllis Palla, RN; the second Coordinator was Patrice Herberholz, RN; the current Coordinator is Mary Warren, PhD, IMH-E®(IV). The Coordinator is responsible for grant writing and management, contacting hospital/program administration for approval to implement the program, training hospital, home visiting, public health, and parent education staff on the proper implementation and data collection procedures, supplying them with program materials, and requesting that completed Commitment Forms are submitted to the data manager.

³ For more information go to www.nsbaz.org and www.pcaaz.org

⁴ Dias, M.S.; H. Silberstein; V. Li; K. Smith & K. deGuehery. (2004). *The Infant Shaken Impact Syndrome: A parent education campaign in upstate New York*. Women and Children's Hospital of Buffalo, New York

In 2006, program materials were revised to include a multi-colored door hanger for parents to use at home that highlights tips for soothing a crying child and reducing parental frustration. With funding from the Virginia G. Piper Charitable Trust and the Child Abuse Prevention License Plate Fund, materials were reprinted in 2009. The 24 hour ChildHelp crisis line telephone number is provided in two places in the door hanger. The Commitment Form was revised to eliminate the detailed demographic data collection needed for evaluation of the pilot. Instead, In addition to signing that they have received information about the dangers of shaking infants, parents are asked to write down their Plan to use when their baby cries inconsolably. This step encourages them to incorporate lessons learned from the video and nurse explanation, and to tell everyone who cares for their child. The Coordinator has worked with hospital Risk Management personnel to customize the Commitment Form to allow submission of signed forms to Never Shake a Baby Arizona for evaluation tracking.

The Coordinator has also revised training presentations to stress consistent, nurturing responses to baby's cries, infant crying as normal child behavior, and parental feelings of delight in their new child. Customized training presentations are available for Emergency Department staff focusing on signs, symptoms, and treatment of AHT. Information is also provided to target audiences about professional resources available at Zero To Three (www.zerotothree.org), the Infant Toddler Mental Health Coalition of Arizona (www.itmhca.org), as well as advice for parents and caregivers from the Fussy Baby Network staff of the Birth To Five Helpline at Southwest Human Development (www.swhd.org).

In hospitals, clinical coordinators, clinical educators, and charge and floor nurses are responsible for administering the program. As part of the newborn discharge process, nurses talk to parents of newborns to request their participation in program activities that include watching a video, accepting written materials to take home, and reading and signing a Commitment Form with their Plan, agreeing to share what they learn with other caregivers. The nurses also discuss the dangers of shaking babies and are asked to witness parents signing the Commitment Forms. In home visits and community service organizations, families of newborns and older infants are offered the program, and similar procedures are followed.

The program materials highlight the consequences of shaking babies and methods to avoid shaking. The video options available to participants include *Preventing Shaken Baby Syndrome* (produced by Phoenix Children’s Hospital in conjunction with production, shooting, and editing by KTVK-3TV and KASW-CW6), *Babies Cry* (produced by the Shaken Baby Alliance in Texas), *When Your Baby Cries*, which is targeted to Native Americans (produced by the University of Oklahoma Health Sciences Center), and *Portrait of a Promise* (produced by the Children’s Medical Center in St. Paul, MN) used in the Banner Hospitals. Spanish-speaking versions of all videos are also available. For parents who speak neither English nor Spanish, UMC provides electronic translation equipment for watching the video. (Since 2006, multiple copies of the *Preventing Shaken Baby Syndrome* video [produced by Phoenix Children’s Hospital and KTVK-3TV] are provided free of charge.) In 2009, the *Preventing Shaken Baby Syndrome* video was closed-captioned for the deaf thanks to the generosity of KTVK-3TV, Phoenix.

In 2010, Never Shake a Baby Arizona was awarded a grant from the International Association of Business Communicators to develop a Public Service Announcement. In collaboration with Phoenix Children’s Hospital and the Phoenix Police Department, Amy McSheffrey of Chili Pepper Productions, not only helped us to make a 30 second PSA; she also worked with our team to revise the Preventing Shaken Baby Syndrome training video. The training video is now a crisp five minutes, showing safe sleep practices in addition to infant soothing techniques, and a message from the Phoenix Police Department to add emphasis to the consequences of adult frustration. The video and PSA can be downloaded from www.nsbaz.org and will be provided as a link to other websites, i.e., Phoenix Children’s Hospital, Arizona Department of Health Services.

In non-hospital settings, similar training materials are used, somewhat modified for the audience. For instance, the procedure for collecting and submitting Commitment Forms is deleted from trainings for non-institutionalized settings and workshops.

Abusive Head Injuries among Arizona Infants and Young Children, 2004-2009

The information in this section was provided by ADHS Bureau of Women's and Children's Health (BWCH)⁵. The BWCH compiles annual data based on the abusive head injury fatalities identified in the Arizona Child Fatality Review Program annual reports and on the non-fatal hospitalizations and emergency department visits due to abusive head injuries (shaken infant or shaken impact syndrome). The cases are identified using methods from a study conducted by Dias et al. (2005).⁶ Between years 2004-2007, data for infants and children under the age of two with a code for shaken infant syndrome (995.55) in any of the diagnostic fields were included. Additionally, cases with a diagnostic code for skull fracture or intracranial injury (800-804.9), retinal hemorrhage (362.81), or intracranial hemorrhage (853.0, 853.1) with an external cause of injury code for known or suspected homicide/assault (E960-E968 and E980-E989) were included.

Beginning in 2008, the hospital discharge database was updated to allow for the collection of up to 25 ICD-9 codes and 6 External cause of injury codes. This is an increase from the previous data layout, which only allowed for up to 9 ICD-9 codes and 1 External cause of injury code. The external cause codes (up to 6) apply to ALL diagnosis codes. Therefore, a patient could have a principal diagnosis that is not an injury, but have a secondary diagnosis that is an injury, and the E code for that secondary diagnosis would be reported.

Additionally, beginning in 2008, hospital coders were required to report external causes of injury on all patients, including those transferred from another facility. Previously external cause of injury data were only collected on a patient's initial visit for an injury, not any subsequent transfers to other hospitals.

For 2007 and prior discharges, the one external cause of injury code reported was for the principal diagnosis only. If there was a secondary diagnosis on which an E code was appropriate, the state did not collect it. Because of all these changes, comparison is not recommended between data prior to 2008 and data from 2008 and later.

⁵ Schacter, A., Abusive Head Injuries Among Infants and Young Children 2004-2009, Arizona Department of Health Services, Bureau of Women's and Children's Health, November 2010.

⁶ Dias MS, Smith K, deGuehery K, *et al.* Preventing Abusive Head Trauma among Infants and Young Children: A Hospital-Based, Parent Education Program. *Pediatrics.* 2005;115:e470-e477.

In the study by Dias and colleagues (2005), all suspected cases of abusive head injury were reviewed in detail by a multidisciplinary medical team to confirm the nature of the inflicted injuries. For this report on abusive head injury in Arizona during 2004-2009, the number of non-fatal hospitalizations represents *an estimate* because ADHS was unable to conduct an extensive review of medical records for non-fatal cases.

2004

In 2004, there were 29 non-fatal hospitalizations. Sixty-two percent were males (n=18) and 38 percent were females (n=11). The children spent a total of 292 days in the hospital, and the mean length of stay was 10 days. The hospital charges totaled \$1,459,354, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (69 percent, n=20). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$72,967. There were also two emergency department visits due to abusive head injuries. According to the 12th Annual Child Fatality Review Program Report, there were **three confirmed deaths** due to shaken infant syndrome in 2004.⁷

2005

In 2005, there were 34 non-fatal hospitalizations. Sixty-two percent were males (n=21) and 38 percent were females (n=13). The children spent a total of 298 days in the hospital, and the mean length of stay was 8.8 days. The hospital charges totaled \$1,526,626, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (76 percent, n=26). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$58,716. There were also six emergency department visits for abusive head injuries. According to the 13th Annual Child Fatality Review Program Report, there were **three confirmed deaths** due to shaken infant syndrome in 2005.³

⁷ Arizona Child Fatality Review Program: <http://www.azdhs.gov/phs/owch/cfr.htm>

³ Ibid.

2006

There were 22 non-fatal hospitalizations in 2006. Sixty-four percent were males (n=14) and 36 percent were females (n=8). The children stayed a total of 244 days in the hospital, and the mean length of stay was 11 days. The hospital charges totaled \$1,630,998, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (68 percent, n=15). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$108,733. There were five emergency department visits for abusive head injuries. According to the Child Fatality Review program, there were **nine confirmed deaths** due to shaken infant syndrome in 2006: seven deaths occurred in Maricopa County; one death in Apache County, and one death in Gila County. There were no deaths reported in Pima and Coconino Counties, where the program has been in effect since 2003.

2007

There were 22 non-fatal hospitalizations in 2007. Fifty-five percent were males (n=12) and 45 percent were females (n=10). The children stayed a total of 248 days in the hospital, and the mean length of stay was 11 days. The hospital charges totaled \$1,566,940, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (68 percent, n=15). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$80,312. There were six emergency department visits for abusive head injuries. According to the 15th Annual Child Fatality Review program, there were **eleven confirmed deaths** due to shaken infant syndrome in 2007.

2008

There were 42 non-fatal hospitalizations in 2008. Sixty-two percent were males (n=26) and 38 percent were females (n=16). The children stayed a total of 492 days in the hospital, and the mean length of stay was 12 days. The hospital charges totaled \$3,664,454, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (71 percent, n=30). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$70,210. There were four emergency department visits for abusive head injuries. According to the Child Fatality Review Program, there were **five confirmed deaths due to shaken infant**

syndrome in 2008, and two confirmed cases of abusive head trauma that may not have involving shaking. The 16th Annual Child Fatality Review Report, published in November 2009, explains these deaths. ⁸

The non-fatal hospitalizations due to abusive head injuries were reported from eight facilities during 2004-2008.

2009

There were 62 non-fatal hospitalizations in 2009. Sixty-one percent were males (n=38) and 39 percent were females (n=48). The children stayed a total of 476 days in the hospital, and the mean length of stay was 8 days. The hospital charges totaled \$4,241,327, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (77 percent, n=48). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$44,932. There were eight emergency department visits for abusive head injuries. According to the Child Fatality Review Program, there were **seven confirmed deaths due to shaken infant syndrome in 2008, and four confirmed cases of abusive head trauma** that may not have involving shaking. The 17th Annual Child Fatality Review Report, published in November 2010, explains these deaths. ⁹ The non-fatal hospitalizations due to abusive head injuries were reported from nine facilities during 2005-2009.

Table 1 shows non-fatal hospitalizations due to abusive head injury by facility.

Table 1. Non-Fatal Hospitalizations due to Abusive Head Injury by Facility, Arizona 2004-2009

Facility	2005 (n=234)		2006 (n=22)		2007 (n=22)		2008 (n=42)		2009 (n=62)	
	n	%	n	%	N	%	n	%	n	%
Banner Desert Medical Center	6	18%	1	4%	-	-	4	10%	9	15%
Maricopa Medical Center	4	12%	3	14%	4	18%	5	12%	2	3%
Phoenix Children's Hospital	11	32%	10	45%	8	36%	18	43%	25	40%
St. Joseph's Hospital and Medical Center	4	12%	4	18%	3	14%	10	24%	8	13%
Tucson Medical Center	1	3%	-	-	2	9%	-	-	5	8%
University Medical Center	7	21%	3	14%	3	14%	5	12%	9	15%

⁸ <http://www.azdhs.gov/phs/owch/pdf/cfr2009.pdf>

⁹ <http://www.azdhs.gov/phs/owch/pdf/cfr2009.pdf>

Flagstaff Medical Center	1	3%	-	-	-	-	-	-	2	3%
Banner Good Samaritan Medical Center	-	-	1	4%	-	-	-	-	-	-
Los Niños Hospital	-	-	-	-	2	9%	-	-	1	2%
Scottsdale Shea Hospital	-	-	-	-	-	-	-	-	1	2%

During 2005-2009, the majority of children hospitalized for abusive head injuries resided in Maricopa County. Table 2 shows non-fatal hospitalizations due to abusive head injuries by county of residence.

Table 2. Non-Fatal Hospitalizations for SBS/AHT by County of Residence 2005-2009

County of Residence	2005 (n=34)		2006 (n=22)		2007 (n=22)		2008 (n=42)		2009 (n=62)		2010	
	n	%	n	%	n	%	n	%	n	%	n	%
Apache	3	9%	1	4%	1	5%	-	-	-	-		
Cochise	-	-	-	-	-	-	-	-	-	-		
Coconino	1	3%	-	-	-	-	3	7%	2	3%		
Gila	-	-	1	4%	-	-	1	2%	-	-		
Graham	-	-	-	-	1	5%	-	-	1	2%		
Greenlee	-	-	-	-	-	-	-	-	-	-		
La Paz	1	3%	-	-	-	-	-	-	-	-		
Maricopa	15	44%	14	64%	16	73%	28	67%	30	48%		
Mohave	1	3%	-	-	-	-	-	-	2	3%		
Navajo	-	-	-	-	-	-	1	2%	1	2%		
Pima	6	21%	3	14%	4	18%	5	12%	12	19%		
Pinal	2	6%	2	9%	-	-	2	5%	6	10%		
Santa Cruz	1	3%	-	-	-	-	-	-	2	3%		
Yavapai	3	9%	1	4%	-	-	1	2%	4	6%		
Yuma	1	3%	-	-	-	-	-	-	2	3%		

While the number of non-fatal emergency department visits has remained stable since 2004, the number of fatalities due to abusive head trauma in infants and young children increased, and then decreased sharply in 2008 and have remained fairly level through 2009. Though the number of fatalities decreased, the number of non-fatal inpatient hospitalizations increased between 2004 and 2009, from 29 in 2004 to 34 in 2005 to 22 in 2006, spiking to 42 in 2008, and increasing again to 62 in 2009. Additionally, the total hospital costs

increased, although the mean length of stay per year has decreased to 8 days, down from 12 days in 2008 to even lower than the 2005 level at 8.8 days.

The total costs of inpatient stays due to AHT/SBS exceeded all previous years in 2009--\$4,241,327 vs. \$1,459,354 in 2004. The percentage of cases covered under AHCCCS has increased to 77% in 2009, from 69% in 2004. According to the ADHS data, the average hospitalization cost per case, for which the expected payer was AHCCCS/Medicaid, was \$72,967 per case in 2004 (69% of cases); \$58,716 per case in 2005 (76% of cases); \$108,733 per case in 2006 (68% of cases); \$80,312 per case in 2007 (68% of cases); \$70,210 per case in 2008 (71% of cases); and \$44,932 per case in 2009 (77% of cases). Again, due to changes in the way the data are collected, year to year comparisons cannot be accurately made.

Clearly, however, the rising incidence and cost of hospitalization due to abusive head injuries among young children justifies the need for educating all parents of newborns and young infants about Shaken Baby Syndrome.

Program Goals and Objectives

As demonstrated above, shaking babies can lead to serious injury or death. The emotional and financial toll on families can also be staggering. The continual care required often necessitates that one parent become a full-time caregiver. This can lead to loss of income and tensions in the family, especially among other siblings who may sometimes feel neglected. Tragically, a shaking can also cause the break-up of family relationships.

Although Shaken Baby Syndrome is relatively rare compared to more common childhood diseases and conditions such as asthma or diabetes, the costs are high, and consequences can be, and often are, severe for children and families. The goal of implementing Never Shake A Baby Arizona, therefore, is to eliminate or reduce Shaken Baby Syndrome/ Abusive Head Trauma and reduce associated health care costs in Arizona. To that end, a primary objective is to expand the program to all birthing hospitals in Arizona as well as to appropriate home visiting programs and community-based organizations in order to educate and reinforce to *all* parents of newborns and young children that crying is normal infant behavior, the dangers of shaking their babies, methods to avoid shaking, and the importance of informing their babies' caregivers about infant crying and the dangers of shaking babies.

A logic model that summarizes the program's major resources, activities, objectives, and goals is presented in Exhibit 1 on the following page.

Exhibit 1. Program Logic Model for Never Shake a Baby Arizona

Resources	Activities	Objectives	Outcomes
Never Shake A Baby Arizona Coordinator	Program implementation oversight	Train nurses, home visitors and community organization service providers on program implementation and data collection procedures	Decrease the incidence of non-fatal and fatal cases of Shaken Baby Syndrome in Arizona Decrease associated health care costs in Arizona Increase quality of life for all children and families
	Program development	Expand program to all Arizona hospitals; expand program to community-based organizations Develop web-based communication	
Hospital nursing staff Community-based organization program providers	Discuss crying and the dangers of shaking babies with parents Provide parents written materials on methods to avoid shaking Show parents video on consequences of shaking/methods to avoid	Educate all parents of newborns and young infants on crying as normal infant development and the dangers of shaking babies and methods to avoid shaking	
	Have parents sign commitment forms Submit signed forms to evaluation team	Parents develop Plan to cope with crying and commit to sharing information with all their babies' caregivers Signed commitment form	
Never Shake a Baby Arizona Data Manager	Count and verify commitment forms	Report numbers of parents receiving program Monitor program implementation and data collection; work with sites to correct issues	
Funding	Administrative and supply costs	Program sustainability	

Expansion of the Program

In 2009-2010, Never Shake A Baby Arizona experienced steady growth in the number of hospitals and organizations offering services to the parents of newborns and young infants. The table below presents the complete list of organizations currently providing services, and in what year and month the program was initiated. Four hospitals and two public health agencies (Navajo and Yavapai), the Wellness Clinic on the Gila River Indian Reservation, and two community organizations (Casa de los Niño's and Easter Seal-Blake) initiated Nurse Family Partnership services in 2010. In 2009, Beautiful Beginnings, contracted under the First Things First Southern Navajo-Apache Regional Council, began using Never Shake A Baby Arizona materials to educate parents in their care. Luke AFP Parent Educator was trained and now includes Never Shake a Baby Arizona materials in her Dads' Boot Camp session.

All hospital and organizations offering parent education in 2009-2010 can be seen in the following exhibit. (Some hospitals or organizations have been trained and are not yet implementing the program, or have ceased providing the program.)

Exhibit 2. Hospitals and Organizations offering Never Shake a Baby Arizona Education				
<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of Initial Program Training</i>	<i>Date of Program Initiation</i>	<i>Ceased Providing Program</i>
Arrowhead Medical Center	Hospital	July 2008		
Banner Desert Medical Center (BDMC)	Hospital	December 2007	January 2008	
Banner Baywood Medical Center	Hospital	June 2009	Jan 2010	
Banner Del Webb (BDW)	Hospital	March – April 2009	May-09	
Banner Estrella Medical Center (BEMC)	Hospital	May 2008	July 2008	

Exhibit 2. Hospitals and Organizations offering Never Shake a Baby Arizona Education				
Banner Gateway Medical Center (BGMC)	Hospital	January 2009	January-09	
Banner Good Samaritan Medical Center (BGSMC)	Hospital	February 2008	August-08	
Banner Thunderbird Medical Center	Hospital	May 2009		
Casa Grande Regional Medical Center	Hospital	October 2008, September 2009		
Cobre Valley Community Hospital (CVCH)	Hospital	March 2008	June 2008	
Flagstaff Medical Center (FMC)	Hospital	July 2003	August 2003	
John C. Lincoln Hospital North Mountain (JCLH)	Hospital	March- April 2008	August 2008	
Holy Cross Hospital	Hospital	October 2009		
Kingman Regional Medical Center (KRMC)	Hospital	September 2006	November 2006	
Maryvale Hospital	Hospital	February 2007	April 2007	
Mount Graham Regional Medical Center (MGRMC)	Hospital	January 2009	February 2009	
Mountain Vista Medical Ctr	Hospital	February 2010	March 2010	
Phoenix Baptist Hospital (PBH)	Hospital	January 2007	March 2007	X
Phoenix Children's Hospital (PCH)	Hospital	January 2007	February 2007	
Scottsdale Healthcare Osborn (SHCO)	Hospital	August - September 2007	August 2008	
Scottsdale Healthcare Shea (SHCS)	Hospital	August - September 2007	August 2008	
St. Joseph's Hospital and Medical Center	NyICU	February 2009	November 2009	

Exhibit 2. Hospitals and Organizations offering Never Shake a Baby Arizona Education				
St. Joseph's Hospital and Medical Center	Hospital	April 2008	February 2010	
Summit Healthcare, Show Low	Hospital	June 2009	August 2010	
Tucson Medical Center (TMC)	Hospital	May 2007	May 2007	X
University Medical Center (UMC)	Hospital	September 2003	October 2003	
Western Arizona Regional Medical Center (WARMC)	Hospital	November 2006	February 2007	
Yavapai Regional Medical Center	Hospital	August - September 2008		
Beautiful Beginnings, Apache/Navajo	Home Visiting	October 2009	March 2010	
Health Start (ADHS), Statewide	Family and children services provider	February 2008	April 2008	
Healthy Families, Statewide	Home Visiting	October 2007	Jan 2008	
So Phoenix Healthy Start	Home Visiting	February 2010		
Newborn Intensive Care Program, Statewide	Home Visiting	March 2008	May 2009	
Nurse Family Partnership, Pima County	Home Visiting	May 2010		
Southwest Human Development (SWHD)	Family and children services provider	March 2007	May 2007	

Expansion of the Education

The SUIDI Group, meeting monthly since March 2007, completed a training video on the Infant Death Investigation Checklist, which has been approved for statewide use by the State's Unexpected Infant Death Council. The SUIDI Group is a multidisciplinary group representing health care professionals, law enforcement personnel, attorneys, DES and ADHS representatives, Child and Family Advocacy Center staff, and the Maricopa Medical Examiners Office. In collaboration with AZPOST (Arizona Peace Officers Standards and Training) a training video premiered June 17, 2010 and is intended for diverse audiences statewide to train them how to use the revised Infant Death Investigation Checklist. As importantly, the data documented on the revised Checklist will allow the Child Fatality Review process to more accurately and comprehensively identify opportunities to prevent infant deaths from many causes, including shaken baby syndrome/abusive head trauma.

The Never Shake a Baby Arizona Coordinator authored an article on Coping with Crying published in the February 2010 issue of Raising Arizona Kids. She was interviewed for a follow up TV spot in March.

<http://www.raisingarizonakids.com/index.php?page=3.other.raising-arizona-kids-on-12News>

The Coordinator was interviewed on Blythe Lipman's radio internet show on Calming Infant Crying at www.toginet.com, Our Shows Baby and Toddler Instructions, listen to the podcast from 2/15/10.

A redesigned website at www.nsbaz.org now encourages searches on research articles about shaken baby syndrome, parenting tips to calm crying, videos, as well as Arizona specific data on program implementation and evaluation.

Data Collection and Families Served

Parents are asked to sign a Commitment Form saying they will ensure that they and any caregivers of their babies will use methods learned through the program to cope with crying babies. On the Commitment Form, parents also note actions they could take for themselves to cope with their baby's crying, and list a person or persons they could call for help and support when upset by their babies' prolonged crying. By signing the forms, parents "commit" to sharing the information they learned with their babies' other caregivers. The English version of the Commitment Form is presented in Appendix A (it is also available in Spanish). Each hospital customizes the Commitment Form

with their logo; a program sustainability feature is that hospitals reproduce these forms.

The signed forms are mailed to Beth Sedlet, Never Shake A Baby Arizona Data Manager, on a monthly basis along with a data cover sheet stating the number of births that month in the case of birthing hospitals, or the number of parents eligible to receive the program in the case of community-based organizations. The numbers are then checked and entered into a database. Parent names are not recorded; Commitment Forms are shredded after each monthly report is completed. (To respond to concerns of hospital legal and risk management departments, some hospitals have modified the Commitment Form to provide additional information giving parents “informed consent” when signing the form.)

In 2009-2010, 32,798 parents were educated prior to being discharged with a newborn. The chart in Appendix B shows how many parents were offered Never Shake A Baby Arizona education by hospital and home visiting program.

In 2000-2010, 335 families were offered Never Shake A Baby Arizona education during home visits by Newborn Intensive Care Program (SWHD) or Beautiful Beginnings staff. Even more families were educated by Healthy Families and Health Start home visitors, despite nearly statewide defunding last year and slowly refunded programs through First Things First Regional Councils.

Statewide, the total number of families that have received Never Shake A Baby Arizona education since program inception is over now 86,700, with over 7000 families receiving services between 2003 and 2005, over 6200 families receiving services in 2006-07, over 15,500 being educated in 2007-2008, 25,200 educated in 2008-2009, and 32,800 in 2009-2010. The cumulative efforts to educate Arizona parents is shown in the table below, detailing births and parents educated by year from program inception through the 2009-2010 reporting period.

Table 3		Cumulative Program Data 2010			
Year	Total number of births	Number Families who Accepted Program	Number of Families Offered Program	Percentage of Births Offered Education	Percentage of Births Educated
FY 2005 May 2004-April 2005 (includes all data from inception of program in August 2003)	6355	4098	4431	70%	64.48%
FY 2006 May 2005-April 2006	3956	2720	3007	76%	68.76%
FY 2007 July 2006-June 2007	6269	3850	4002	64%	61.41%
FY 2008 July 2007-June 2008	18614	15675	15815	85%	84.21%
FY 2009 July 2008-June 2009	32511	25201	25461	78%	77.52%
FY 2009 July 2009-June 2010	37945	32833			86.5%
Totals to date	105,750	84,377			79.8%

References

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Appendix A: Commitment Form Example
Never Shake A Baby Arizona - Commitment Form

You are your child's best advocate. We need you to prevent the shaking of your baby.

Commitment Statement:

I have learned that crying is normal for babies, and shaking a baby can cause brain damage or death. I will make sure that anyone who watches my child knows about the dangers of shaking.

Please sign for yourself below:

Mother's Signature _____ date _____

Father's Signature _____ date _____

Witness' Signature _____ date _____

My Plan in case my baby cries a lot:

- Take my baby for a walk or a ride in the car
- Put my baby in a safe place and let him/her cry
- Do what I like to relax myself _____
- Other _____

Who I can call for help:

Name of doctor: _____

Telephone number: _____

Name of family member:

Telephone number: _____

Name of friend:

Telephone number: _____

Note: this statement is not part of the medical record. If found, please return to NSBAZ, c/o Prevent Child Abuse Arizona, P.O. Box 26495, Prescott Valley, AZ 86312

Appendix B: Parents Educated by Hospital/Organization

Families Receiving Never Shake a Baby Education in Arizona FY 2009-2010			
Facility	Number of Births in Hospitals and/or Number of Parenting Families in Organizations Served	Number of Families/Parents Signed Commitment Form	Percentage of Families Accepting Program
BBMC	1101	768	70%
BDMC	4724	4556	96%
BDWMC	1837	1586	86%
BEMC	3600	3433	95%
BGMC	4218	3252	77%
BGSMC	5479	4828	88%
CVRMC	353	327	93%
FMC	1335	1069	80%
JCLH	1504	1296	86%
KRMC	670	455	68%
Maryvale	907	444	49%
MGRMC	512	487	95%
MVMC	205	172	84%
PCH	531	470	89%
PCH-Thomas	141	119	84%
PCH-McDowell	410	345	84%
SHCO	1423	1324	93%
SHCS	4315	3917	91%
STJOE	1801	1443	80%
STJOE(NICU)	424	368	87%
UMC	1920	1692	88%
WARMC	183	147	80%
SWHD	288	271	94%
BB	64	64	100%
<i>Totals</i>	<i>37945</i>	<i>32833</i>	<i>87%</i>

Site Abbreviations

BB	Beautiful Beginnings
BBMC	Banner Baywood Medical Center
BDMC	Banner Desert Medical Center
BEMC	Banner Estrella Medical Center
BGMC	Banner Gateway Medical Center
BGSMC	Banner Good Samaritan Medical Center
BDWMC	Banner Del Webb Medical Center
CVRMC	Cobre Valley Regional Medical Center
FMC	Flagstaff Medical Center
JCLH	John C. Lincoln Hospital
KRMC	Kingman Regional Medical Center
Maryvale	Maryvale Hospital
MGRMC	Mt Graham Regional Medical Center
MVMC	Mountain Vista Medical Center
PBH	Phoenix Baptist Hospital
PCH	Phoenix Children's Hospital
SHCO	Scottsdale Healthcare Osborn
SHCS	Scottsdale Healthcare Shea
STJOE	St. Joseph's Hospital (Phoenix)
STJOE(NICU)	St. Joseph's Hospital (NICU) Phoenix
SWHD	Southwest Human Development (NICP)
SHRMC	Summit Healthcare Regional Medical Center
TMC	Tucson Medical Center
UMC	University Medical Center
WARMC	Western Arizona Regional Medical Center