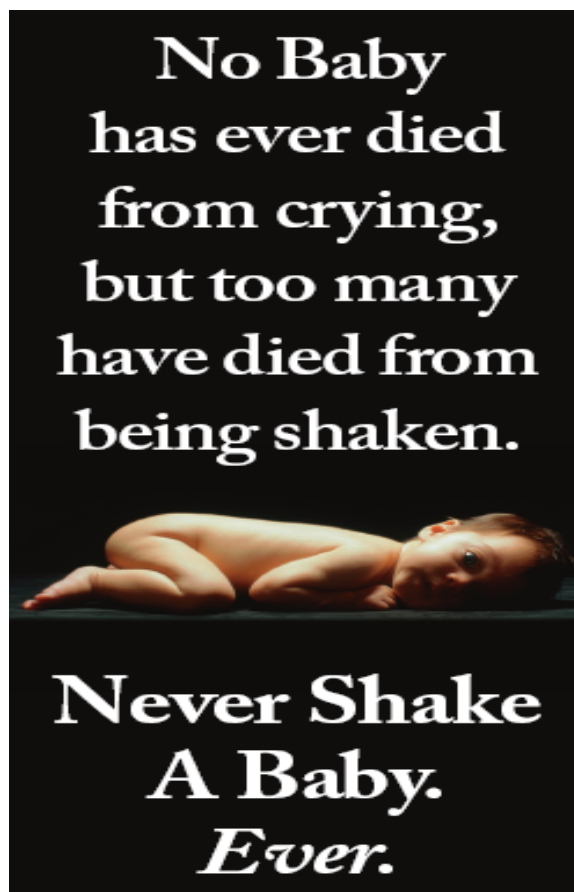


# Never Shake a Baby Arizona Annual Evaluation Report

(July 1, 2012- June 30, 2013)

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## Executive Summary

Prevent Child Abuse Arizona initiated the Never Shake a Baby Arizona program (NSBAz) in northern Arizona at the Flagstaff Medical Center and in southeastern Arizona at the University Medical Center in Tucson in the fall of 2003. NSBA, in continuous operation since then has now offered parent education to over 193,951 Arizona parents. Parent response to the education has been very positive since the program's inception; therefore, the primary objective for the past ten years has been to increase the number of hospitals providing the parent education and to expand the program to additional home visiting and other community-based practitioners and programs, OB and Pediatric practices, and eventually to all parents and the public at large.

This goal continues to be fulfilled with the addition of hospital nurses; home visitors; Court Appointed Special Advocates (CASAs), Fire Department First Responders; home visiting programs staff; high school child development classes; student nurse associations; local Safe Kids Coalitions; First Things First Regional Family Fun Days in Apache-Navajo, Whiteriver Apache, and Navajo Nation Regions; foster parents; and county public health departments involved in maternal/child health, injury prevention and child care health consultation. The NSBAz Coordinator presented multiple workshops to teen parents; child care workers; Child Fatality Review Committees; high schools, community colleges, and university students in nursing, child development, and infant mental health; Exchange Club members; 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 individual contacts with parents (involving 38,452 families at newborn discharge and an additional 7,000 families on home visits in 2011-2012), NSBAz consists of a 15 minutes intervention in which parents of newborns receive education about infant crying as 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 which 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 NSBAz is to reduce Shaken Baby Syndrome (SBS), also known as Abusive Head Trauma (AHT), and to reduce the costs in quality of life and health care required to treat injuries associated with this type of child maltreatment in Arizona.

FY 2012 Arizona Department of Health Services, Bureau of Women's and Children's Health is not yet available but will be submitted in an amended report in early 2014. FY 2011 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 from an all-time low of 29 in 2010 to 44 in 2011. According to the Child Fatality Review Report, the number of deaths attributed to AHT/SBS also rose to 12, with the potential for another 5 cases where shaking could not be confirmed as the cause of death. Not all hospitals are implementing the Never Shake A Baby Arizona program, making it difficult to report statewide reductions in the incidence of this form of infant/young child maltreatment.

Initial hospital charges in 2011 for non-fatal hospitalizations due to AHT/SBS totaled \$3,054,575. For the first time, more female infants (55%) were hospitalized. The average length of stay for an infant was 7 days; the average cost per hospitalization was \$74,741; and the percentage of cases covered by AHCCCS was 75%. Only 2 AHT/SBS cases are recorded as seen in Emergency Departments. With published research from four Children's Hospitals around the US identifying an increase in AHT cases since the start of the economic recession<sup>2i</sup>, the need to educate all parents remains vital to share the consequences of abusive head injuries in babies and protective strategies to prevent shaking them.

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<sup>2</sup> 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; Nationwide Children's Hospital, Columbus, OH; University of Pittsburgh School of Public Health, Pittsburgh, PA.*

## Introduction

Prevent Child Abuse Arizona first contracted with LeCroy & Milligan Associates, Inc. in 2003 to conduct an evaluation of the 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 and report data collected via Commitment Forms submitted from hospitals and community programs.

This report is the tenth 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 NSBAz 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.** NSBAz proposes to assess the feasibility of a follow up study to determine how new parents a decade later use the NSBAz information provided at newborn discharge.

Subsequent evaluation reports provide data on program expansion looking at the number of families in Arizona that received the NSBAz 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](http://www.nsbaz.org).

Due to NSBAz presentations to high school students since 2009, additional evaluation data in the form of individual, personal feedback on program messages are also included. A student at Alhambra High School (2011) in Phoenix, Arizona said:

“I was really unaware of all the effects that happen by shaking a baby. I am shocked that many people do not have patience with their children. The way she

explained the Shaken Child cases were (sic) very moving. It's something that really made me really think of all the poor baby's (sic) that died."

Another student from Trevor Brown High School (2013) in Phoenix commented:

"I'm due to deliver in 3 weeks and I had no idea how dangerous it is to shake a baby. I didn't know babies cry so much but now I will know I have to ask for help."

In addition to clear messages about the dangers of shaking young children, the NSBAz Coordinator also infuses presentations with messages about positive social emotional development for all babies and toddlers so that they get off to a good start in life. The comment below from another High School student reflects this:

"Something I didn't know was the baby loves to be bundled close to the mom because that how their (sic) used to being. I also didn't know that the longer you leave the baby alone, it starts feeling insecure. I learned the 5 S's."



## Program Description

The NSBAz program consists of a 15-minute intervention 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 their role in protecting, loving, and finding delight in their babies. The dangers of shaking babies as well as methods to avoid shaking them when frustrated are also discussed. Research suggests that during moments of frustration and stress, particularly associated with babies who cry for prolonged periods of time, parents will recall what they learned from the program and implement strategies they wrote on the Commitment Form Plan instead of shaking their child. Techniques are provided such as wearing the baby in a sling or baby holder, calling a friend or relative for help, or giving parents the permission to let the baby cry (while checking on the baby at least every ten minutes).<sup>3</sup>

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."<sup>4</sup>

The NSBAz Coordinator oversees program implementation. The initial Coordinator was Phyllis Palla, RN; the second Coordinator was Patrice Herberholst, RN; the third Coordinator was Mary Warren, PhD, IMH-E®(IV); a new Coordinator, Nicole Valdez, LCSW, IMHE(III) took over Sept 2012. The Coordinator is responsible for grant writing and grants 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.

In 2006, printed 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. The 24 hour ChildHelp crisis line telephone number is provided in

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<sup>3</sup> For more information go to [www.nsbaz.org](http://www.nsbaz.org) and [www.pcaaz.org](http://www.pcaaz.org)

<sup>4</sup> 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

two places in the door hanger. With funding from the Virginia G. Piper Charitable Trust and the Child Abuse Prevention License Plate program, materials were reprinted in 2009. The Commitment Form was revised to eliminate the detailed demographic data collection needed for evaluation of the pilot. Instead, in addition to signing the form to indicate 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 pass it on to 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 NSBAz for evaluation tracking.

In 2010, the NSBAz Public Service Announcement workgroup, a collaboration of NSBAz Task Force members from Phoenix Children's Hospital and the Phoenix Police Department, with help from Chili Pepper Productions under a grant from the International Association of Business Communicators, developed a script and participated in filming an updated and shortened training video as well as a thirty second PSA. New videos have been sent to all implementing hospitals and programs, as well as distributed to cable TV and radio broadcasting sources. The training video is now a crisp five minutes, showing safe sleep practices in addition to infant soothing techniques, with a message from the Phoenix Police Department to add emphasis to the consequences of adult frustration. The video and PSA, in English, Spanish, and closed captioned for the hearing impaired, can be downloaded from [www.nsbaz.org](http://www.nsbaz.org). The link has been provided to other websites, ie., Phoenix Children's Hospital, Arizona Department of Health Services (ADHS), as well as to programs in other states.

The Coordinator continually revises training presentations to incorporate new research findings and 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](http://www.zerotothree.org)), the Infant Toddler Mental Health Coalition of Arizona ([www.itmhca.org](http://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](http://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, which 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 *Coping with Infant Crying: Preventing Shaken Baby Syndrome* (the updated video produced under a grant from the International Association of Business Communicators by Chili Pepper Productions), *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. The updated *Coping with Infant Crying* video is also closed captioned for the hearing impaired. Since 2006, multiple copies of the *Coping with Infant Crying* video are provided free of charge; with additional copies made available through a grant from the Margaret T. Morris Foundation in 2010.

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. Home visitors are asked to use an Evaluation form designed to follow up on home use of the instructions and guidance provided in the hospital.

## ***Abusive Head Injuries among Arizona Infants and Young Children, 2004-2011***

The information in this section was provided by Arizona Department of Health Services Bureau of Women's and Children's Health (BWCH)<sup>5</sup>. 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).<sup>6</sup> 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 causes 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 which is not an injury, but have a secondary diagnosis which 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.

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-

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<sup>5</sup> 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.

<sup>6</sup> 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.

2011, 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.<sup>7</sup>

## 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.<sup>3</sup>

## 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

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

<sup>3</sup> Ibid.

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 15<sup>th</sup> 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 16<sup>th</sup> Annual Child Fatality Review Report, published in November 2009, explains these deaths.<sup>8</sup>

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

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<sup>8</sup> <http://www.azdhs.gov/phs/owch/pdf/cfr2008.pdf>

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** which may not have involving shaking. The 17<sup>th</sup> Annual Child Fatality Review Report, published in November 2010, explains these deaths. <sup>9</sup> The non-fatal hospitalizations due to abusive head injuries were reported from nine facilities during 2005-2009.

## **2010**

There were 29 non-fatal hospitalizations in 2010. Forty-five percent were males (n=13) and 55 percent were females (n=16). (This gender ratio represents a switch.) The children stayed a total of 220 days in the hospital, and the mean length of stay was 8 days (median= 4 days). The hospital charges totaled \$2,256,718, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (86 percent, n=25). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$77,929 (median=\$27,389). There were nine emergency department visits for abusive head injuries. According to the Child Fatality Review Program, there were four confirmed deaths due to shaken infant syndrome in 2010, and four confirmed cases of abusive head trauma not involving shaking.

## **2011**

There were 44 non-fatal hospitalizations in 2011. Forty-five percent were males (n=20) and 55% were females (n=24). The children stayed a total of 294 days in the hospital, and the mean length of stay was 7 days (median = 4 days). The hospital charges totaled \$3,054,575, and AHCCCS/Medicaid was the expected payer for the majority of these hospitalizations (75%, n=33). Of the cases for which AHCCCS/Medicaid was the expected payer, the average cost per hospitalization was \$74,741 (median = \$39,571). There were two emergency department visits for abusive head injuries. According to the Child Fatality Review Program, there were twelve confirmed deaths due to shaken infant syndrome in 2011, and five cases of abuse head trauma where shaking could not be confirmed.

Table 1 shows non-fatal hospitalizations due to abusive head injury by facility. ADHS data from 2012 are not available but will be provided at a later date.

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

**Table 1. Non-Fatal Hospitalizations due to Abusive Head Injury by Facility, Arizona 2007-2011**

Facility	2007 (n=22)		2008 (n=42)		2009 (n=62)		2010 (n=29)		2011 (n=44)	
	n	N	N	%	n	%	N	%	n	%
Banner Desert Medical Center	-	-	4	10%	9	15%	3	10%	2	5%
Maricopa Medical Center	4	18%	5	12%	2	3%	3	10%	1	2%
Phoenix Children's Hospital	8	36%	18	43%	25	40%	16	55%	30	68%
St. Joseph's Hospital and Medical Center	3	14%	10	24%	8	13%	3	10%	3	7%
Tucson Medical Center	2	9%	-	-	5	8%	-	-	-	-
University Medical Center	3	14%	5	12%	9	15%	4	14%	7	16%
Flagstaff Medical Center	-	-	-	-	2	3%	-	-	1	2%
Banner Good Samaritan Medical Center	-	-	-	-	-	-	-	-	-	-
Los Niños Hospital	2	9%	-	-	1	2%	-	-	-	-
Scottsdale Shea Hospital	-	-	-	-	1	2%	-	-	-	-

During 2005-2011, 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. ADHS data for 2012 are not yet available.

**Table 2. Non-Fatal Hospitalizations for SBS/AHT by County of Residence 2006-2011**

County of Residence	2006 (n=22)		2007 (n=22)		2008 (n=42)		2009 (n=62)		2010 (n=29)		2011 (n=44)	
	n	%	n	%	N	%	n	%	n	%	n	%
Apache	1	4%	1	5%	-	-	-	-	-	-	-	-
Cochise	-	-	-	-	-	-	-	-	1	3%	-	-
Coconino	-	-	-	-	3	7%	2	3%	-	-	1	2%
Gila	-1	4%	-	-	1	2%	-	-	-	-	-	-
Graham	-	-	1	5%	-	-	1	2%	-	-	1	2%
Greenlee	-	-	-	-	-	-	-	-	-	-	-	-
La Paz	-	-	-	-	-	-	-	-	-	-	2	5%
Maricopa	114	64%	16	73%	28	67%	30	48%	20	69%	22	50%



**Table 2. Non-Fatal Hospitalizations for SBS/AHT by County of Residence 2006-2011**

<b>County of Residence</b>	<b>2006 (n=22)</b>		<b>2007 (n=22)</b>		<b>2008 (n=42)</b>		<b>2009 (n=62)</b>		<b>2010 (n=29)</b>		<b>2011 (n=44)</b>	
Mohave	-	-	-	-	-	-	2	3%	-	-	1	2%
Navajo	-	-	-	-	1	2%	1	2%	2	7%	1	2%
Pima	3	14%	4	18%	5	12%	12	19%	2	7%	9	20%
Pinal	2	9%	-	-	2	5%	6	10%	2	7%	3	7%
Santa Cruz	1	4%	-	-	-	-	2	3%	1	3%	-	-
Yavapai	1	4%	-	-	1	2%	4	6%	1	3%	1	2%
<b>Yuma</b>	-	-	-	-	-	-	2	3%	-	-	2	5%

The number of non-fatal emergency department visits has been fairly stable (4-6/year) between 2004 and 2008; however, in 2009 and 2010, the number of emergency cases identified as AHT/SBS increased to 8 (2009) and 9 (2010) and fell to only 2 in 2011. Likewise, the number of fatalities due to abusive head trauma in infants and young children swung widely between 3 (2004) and 12 (2011). The number of non-fatal inpatient admissions showed similar ups and downs between 2004 and 2011, from 29 in 2004 spiking to 62 in 2009 and down to 44 in 2011. As expected, the total hospital costs coincides with the numbers of non-fatal admissions (\$1,459,354 in 2004 to \$4,241,327 in 2009); however, the mean length of stay per year has remained fairly steady around 8 days.

The total charges for inpatient stays due to AHT/SBS in 2011 were \$3,054,575, reflecting 44 non-fatal admissions. The percentage of cases covered under AHCCCS has remained over 75%, up 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); \$44,932 per case in 2009 (77% of cases); \$77,929 in 2010 (86% of 29 cases); and \$74,741 (75%, 33 cases) in 2011. Again, due to changes in the way the data are collected, year-to-year comparisons cannot be accurately made. However, it is clear that the public pays a significant share of costs for these preventable admissions.

The 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 Abusive Head Trauma/Shaken Baby Syndrome. Never Shake messages appear to be effective in lessening the incidence.

### ***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, diabetes or dental caries, the costs are high, and consequences can be devastating. The goal of implementing NSBAz, therefore, is to eliminate or reduce Shaken Baby Syndrome/Abusive Head Trauma and reduce costs of associated health care and impaired quality of life 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, it is dangerous to shake their babies, there are tips and community resources available to avoid shaking, and the importance of informing their babies' caregivers about infant crying and the dangers of shaking babies.

A logic model which 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	
NSBAz 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 2012-2013, NSBAz experienced continued 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. New nursing staff at Paradise Valley and West Valley Hospitals, St. Joseph's Carondelet Hospital in Tucson, and new groups of home visitors, student nurses, child care workers, child development students (high school and university), and court affiliated personnel (judges, CASAs, child welfare personnel, and early intervention providers) were trained in 2012-13.

All hospitals and organizations offering parent education in 2012-2013 can be seen in the following exhibit. (Some hospitals or organizations have been trained and are not yet implementing the program, have been trained and are not submitting Commitment Forms, or have ceased providing the program. The most common reason to cease program implementation is nursing turnover, or closure of the service/organization.)

<b>Exhibit 2. Hospitals and Organizations offering NSBAZ Education*</b>				
<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of 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) and Cardon Children's	Hospital	December 2007	January 2008	
Banner Baywood Medical Center	Hospital	June 2009	Jan 2010	
Banner Del Webb (BDW)	Hospital	March - April 2009 May 2012	May-09	
Banner Estrella Medical Center (BEMC)	Hospital	May 2008	July 2008	

Exhibit 2. Hospitals and Organizations offering NSBAZ Education\*

<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of Program Training</i>	<i>Date of Program Initiation</i>	<i>Ceased Providing Program</i>
Banner Gateway Medical Center (BGMC)	Hospital	January 2009	January-09	
Banner Good Samaritan Medical Center (BGSMD)	Hospital	February 2008	August-08	
Banner Ironwood	Hospital	Oct 2010	Nov 2010	
Banner Thunderbird Medical Center	Hospital	May 2009 July 2011		
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	March 2011
Holy Cross Hospital	Hospital	October 2009		
Hopi Health Center	Clinic/ Hospital	July 2012	September 2012	
Kingman Regional Medical Center (KRMC)	Hospital	September 2006	November 2006	
Maryvale Hospital	Hospital	February 2007	April 2007	
Maricopa Medical Center (MIHS)	Hospital	Dec 2010	May 2011	
Maricopa Medical Center (MIHS)	Outpatient	Dec 2010	May 2011	

**Exhibit 2. Hospitals and Organizations offering NSBAZ Education\***

<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of Program Training</i>	<i>Date of Program Initiation</i>	<i>Ceased Providing Program</i>
Mount Graham Regional Medical Center (MGRMC)	Hospital	January 2009	February 2009	
Mountain Vista Medical Center	Hospital	February 2010	March 2010	X
Paradise Valley Hospital	Hospital	February 2013	February 2013	
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	
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	
Verde Valley Medical Center	Hospital	Sept 2010	February 2012	
West Valley Hospital	Hospital	May 2013	June 2013	
Western Arizona Regional Medical	Hospital	November 2006	February 2007	

**Exhibit 2. Hospitals and Organizations offering NSBAZ Education\***

<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of Program Training</i>	<i>Date of Program Initiation</i>	<i>Ceased Providing Program</i>
Center (WARMC)				
Whiteriver Indian Health Service	Hospital	October 2010	Nov 2010	
Yavapai Regional Medical Center	Hospital	August - September 2008 Sept 2010		
<b><i>Home Visiting Programs</i></b>				
Beautiful Beginnings, Apache/Navajo	Home Visiting	October 2009	March 2010	x
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	March 2010	
Newborn Intensive Care Program, state	Home Visiting	March 2008	May 2009	
Nurse Family Partnership, Pima County	Home Visiting	May 2010	July 2010	
Nurse Family Partnership, Maricopa County	Home Visiting	Nov 2010		
Southwest Human Development (SWHD)	Family and children services provider	March 2007	May 2007	

Exhibit 2. Hospitals and Organizations offering NSBAZ Education\*

<i>Organization Name</i>	<i>Organization Type</i>	<i>Date of Program Training</i>	<i>Date of Program Initiation</i>	<i>Ceased Providing Program</i>
Yavapai County Home Visiting Coalition	Home Visiting	August 2010		
Platicamos Salude, Mariposa CHC	Home Visiting	April 2011		
Healthy Mothers/ Healthy Babies	Home Visiting	March 2012		

\*corroborated by submitted Commitment Forms. Other programs may offer NSBAz education; however, they do not routinely submit Commitment Forms.

***Expansion of the Education***

In addition to hospital and home visiting programs, educational presentations in 2012-2013 have included a workshop for the ASU graduate students in Infant Family Practice, Trevor Brown Pregnant and Parenting class, Esperanza women’s group members, Tempe Exchange Club members, Early Head Start Parent Meeting participants, and Court Appointed Special Advocates with cases involving infants and toddlers in foster care.

Additional changes and clarifications on the newly redesigned website can be found at [www.nsbaz.org](http://www.nsbaz.org). The site is easier to navigate and encourages searches on research articles about shaken baby syndrome, parenting tips to calm crying, videos, training presentations, as well as Arizona specific data on program implementation and evaluation.

The Infant Death Investigation Checklist and AZPOST training video have been transitioned to the Arizona Department of Health Services, Child Fatality Review, to maintain and track their use.

***Expansion of Funding***

From program inception, the Child Abuse Prevention License Plate Fund has generously funded NSBAz. In 2006, BHHS Legacy added critical funding, in



particular to convene the Sudden Unexplained Infant Death Investigation Group. Also in 2006, the ADHS, Bureau of Women's and Children's Health allocated a small portion of the federal Maternal Child Health Grant to enable printing of the new parent education door hangers. In 2009, the Virginia G. Piper Charitable Trust added funds for both program operation and a new printing of the parent education door hangers. In 2010, the Margaret T. Morris Foundation added to operations funds and enabled the replication of the new training videos and PSAs. In 2013, Blue Cross Blue Shield and Desert Diamond Casino added to operating funds, specifically to expand the outreach to rural areas of Arizona and St. Joseph's Hospital provided funds for the printing of brochures.

### ***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. Appendix D contains the Evaluation form completed by some home visiting programs.

The signed forms are mailed to Beth Sedlet, NSBAz Arizona Data Manager, on a monthly basis along with a data cover sheet stating the number of births for the reporting 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.) As part of the sustainability

features for NSBAz, hospitals and community organizations fund clerical and mailing costs for data collection.

Data reports detailing the percentage of births educated about NSBAz by hospital/community-based program are emailed out to nurse contacts on a monthly basis. Reports are also posted on [www.nsbaz.org](http://www.nsbaz.org). Nurse managers use the monthly reports as a means to continually motivate staff to ensure their hospital/program successfully competes with others to educate close to 90% of all new parents.

In 2012-2013, 38,452 parents were educated prior to being discharged with a newborn. An additional 7,000 families were provided the NSBAz messages and materials on home visits through Healthy Families, Nurse Family Partnership-Maricopa, Nurse Family Partnership-Pima, Healthy Start, Health Start, and Southwest Human Development Neonatal Intensive Care Program. Even more families were educated by other home visiting program staff who have received Never Shake training and operate under program protocols requiring discussion about coping with crying and shaken baby prevention, although their education numbers cannot be verified by signed Commitment Forms. The chart in Appendix B shows how many parents were offered NSBAz education by each hospital and home visiting program – not all home visiting programs report using Commitment Forms.

Statewide, the total number of families that have received NSBAz education since program inception is now over 194,000, with more than 7000 families receiving services between 2003 and 2005, 6200 families receiving services in 2006-07, 15,500 being educated in 2007-2008, 25,200 educated in 2008-2009, 32,800 in 2009-2010, 34,900 in 2010-2011, and 38,452 in 2012-2013. The cumulative efforts to educate Arizona parents is shown in the table below, detailing births and parents educated at newborn discharge by year from program inception through the 2012-2013 reporting period.

# Cumulative Program Data

Year	Total Number of Births at Implementing Facilities	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%
FY 2006 May 2005-April 2006	3956	2720	3007	76%	69%
FY 2007 July 2006-June 2007	6269	3850	4002	64%	61%
FY 2008 July 2007-June 2008	18614	15675	15815	85%	84%
FY 2009 July 2008-June 2009	32511	25201	25461	78%	78%
FY 2010 July 2009-June 2010	38388	33290	33494	87%	87%
FY 2011 July 2010-June 2011	39581	34951	35102	89%	88%
FY 2012 July 2011-June 2012	40460	35714	35801	88%	88%
FY 2013 July 2012-June 2013	43409	38452	38519	89%	89%
<b>Totals to date</b>	<b>229543</b>	<b>193951</b>	<b>195632</b>	<b>85%</b>	<b>84.49%</b>

## References

Abusive Head Injuries Among Arizona Infants and Young Children 2004-2010, Schacter, Alana, November 2011, ADHS/BWCH, Injury Prevention.

Abusive Health Injuries among Arizona Infants and Young Children, 2004-2011, Rabel, Brenna, November 2012, ADHS/BWCH, Injury Prevention.

Arizona Department of Health Services. (2006, 2007, 2008, 2009, 2010). *Child Fatality Review Annual Reports: 13<sup>th</sup>-18<sup>th</sup> Annual Reports*. Available at <http://www.azdhs.gov/phs/owch/cfr.htm>.

Rachel P. Berger, Janet Fromkin, Haley Stutz, Kathi Makoroff, Kenneth Feldman, Philip V. Scribano, Tom Songer (2010). *An Increase in Abusive Head Trauma during the Current Recession: A Multi-Center Analysis*: Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA; Cincinnati Children's Hospital, Cincinnati, OH; Seattle Children's/Harborview Medical Center, Seattle, WA; Nationwide Children's Hospital, Columbus, OH; University of Pittsburgh School of Public Health, Pittsburgh, PA

Dias, M.S. & Barthauer. (2001). *Western New York/Finger Lake Regional Shaken Baby education project*. Upstate New York Shaken Baby Syndrome Education Program. Children's Hospital of Buffalo, New York.

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.

Dias, M.S., Smith, K., deGuehery, K., Mazur, P, Li V, & Shaffer, M. (2005). Preventing abusive head trauma among infants and young children: A hospital-based, parent education program. *Pediatrics*, 115, 470-477

**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

<b>Families Receiving Never Shake a Baby Education in Arizona FY 2012-2013</b>			
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	706	671	95%
BDMC	4544	4513	99%
BDWMC	1721	1654	96%
BEMC	4047	3888	96%
BGMC	4243	3439	81%
BGSMC	5658	4852	86%
BIMC	1014	836	82%
CVRMC	308	295	96%
FMC	1264	1214	96%
HHC	15	15	100%
KRMC	692	520	75%
MIHS	2513	1728	69%
Maryvale	602	540	90%
MGRMC	570	510	89%
PVH	291	247	85%
PCH-Thomas	144	141	98%
PCH-McDowell	366	359	98%
SHCO	1264	1181	93%
SHCS	4441	4097	92%
STJOE	4034	3394	84%
STJOE (NICU)	394	352	89%
SHRMC	931	889	95%
UMC	1808	1628	90%
VVMC	603	541	90%
WVH	107	78	73%
WARMC	98	87	89%
WIH	90	68	76%

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
YRMC	582	356	61%
SWHD	180	180	100%
HF-Pima	136	136	100%
HF-Pinal	43	43	100%
<b>Totals</b>	<b>43409</b>	<b>38452</b>	<b>89%</b>

### Site Abbreviations

<b>BB</b>	<b>Beautiful Beginnings</b>
<b>BBMC</b>	<b>Banner Baywood Medical Center</b>
<b>BDMC</b>	<b>Banner Desert Medical Center</b>
<b>BEMC</b>	<b>Banner Estrella Medical Center</b>
<b>BGMC</b>	<b>Banner Gateway Medical Center</b>
<b>BGSMC</b>	<b>Banner Good Samaritan Medical Center</b>
<b>BDWMC</b>	<b>Banner Del Webb Medical Center</b>
<b>BIMC</b>	<b>Banner Ironwood Medical Center</b>
<b>CVRMC</b>	<b>Cobre Valley Regional Medical Center</b>
<b>CCFR</b>	<b>Cochise Child and Family Resources Home Visiting</b>
<b>FMC</b>	<b>Flagstaff Medical Center</b>
<b>HF-Pima</b>	<b>Healthy Families (Pima County) at Child and Family Resources</b>
<b>HHC</b>	<b>Hopi Healthcare Center</b>
<b>JCLH</b>	<b>John C. Lincoln Hospital</b>
<b>KRMC</b>	<b>Kingman Regional Medical Center</b>
<b>MIHS</b>	<b>Maricopa Integrated Health System</b>
<b>Maryvale</b>	<b>Maryvale Hospital</b>
<b>MGRMC</b>	<b>Mt Graham Regional Medical Center</b>

<b>MVMC</b>	<b>Mountain Vista Medical Center</b>
<b>PVH</b>	<b>Paradise Valley Hospital</b>
<b>PBH</b>	<b>Phoenix Baptist Hospital</b>
<b>PCH</b>	<b>Phoenix Children's Hospital</b>
<b>SHCO</b>	<b>Scottsdale Healthcare Osborn</b>
<b>SHCS</b>	<b>Scottsdale Healthcare Shea</b>
<b>STJOE(NICU)</b>	<b>St. Joseph's Hospital (NICU)</b>
<b>STJOE</b>	<b>St. Joseph's Hospital (Couplet care)</b>
<b>SHRMC</b>	<b>Summit Healthcare Regional Medical Center</b>
<b>SWHD</b>	<b>Southwest Human Development</b>
<b>TMC</b>	<b>Tucson Medical Center</b>
<b>UAMC-UC</b>	<b>University of Arizona Medical Center- University Campus</b>
<b>VVMC</b>	<b>Verde Valley Medical Center</b>
<b>WVH</b>	<b>West Valley Hospital</b>
<b>WARMC</b>	<b>Western Arizona Regional Medical Center</b>
<b>WIH</b>	<b>Whiteriver Indian Hospital</b>
<b>YRMC</b>	<b>Yavapai Regional Medical Center</b>



## Appendix C: Families Educated by County

NSBAz Education Rates for Implementing Hospitals by County for FY 2013					
County	Birth by Country of Residence	Number of Births in Implementing Facilities	Number of Signed Commitment Forms	Percentage of Parents Educated	Parents Educated by County
Apache	950	90	68	76%	7%
Cochise	1568	0	0	0%	0%
Coconino	1644	1264	1214	96%	74%
Gila	591	308	295	96%	50%
Graham	583	570	510	89%	87%
Greenlee	105	0	0	0%	0%
La Paz	198	0	0	0%	0%
Maricopa	53148	35255	31314	89%	59%
Mohave	1746	790	607	77%	35%
Navajo	1581	946	904	96%	57%
Pima	11783	1944	1764	91%	15%
Pinal	4542	1057	879	83%	19%
Santa Cruz	663	0	0	0%	0%
Yavapai	1807	1185	897	76%	50%
Yuma	2992	0	0	0%	0%
Totals	83901	43409	38452	89%	46%

## Appendix D: Home Visitor Evaluation Form

### Never Shake a Baby Az Home Visitor Evaluation Form

Parents: You have learned that crying is normal for babies, and shaking a baby can cause brain damage or death. Please help us to learn how you have used what you learned from the nurses in the hospital or home visitors about the Never Shake A Baby Arizona program. Check the statements below that are true for you. Your comments help us to better understand how to improve our education program.

I have learned how to soothe my baby when s/he cries.

The best way(s) to soothe my baby

is/are \_\_\_\_\_

I tell everyone who watches my child how to soothe my baby.

I tell everyone who watches my child about the dangers of shaking.

I have the Never Shake A Baby Arizona door hanger hanging in the house.

I calm myself when my baby cries so that I don't get frustrated and shake her/him.

The best way(s) to relax myself is/are

I call somebody (family, friend, neighbor, medical person, hotline) to help me if my baby won't stop crying. (Circle the helps you use/might use)

Anything else you want to tell us about Never Shake A Baby Arizona?

Date of Visit:

Age of Target Child:

Home Visitor: \_\_\_\_\_