Addressing Abusive Head Trauma in Montana

November 2015

An evaluation of the Period of PURPLE Crying project and other Abusive Head Trauma Prevention work funded by the MT Children’s Trust Fund from 2012-2015
The following report is the result of an independent evaluation conducted by Katie Loveland of Loveland Consulting, LLC in the Fall of 2015. The methodology for the evaluation included:

1) An electronic survey tool sent to the key contacts at all Montana hospitals implementing The Period of PURPLE Crying ® program under a Dose 1 Memorandum of Understanding (MOU) with the National Center on Shaken Baby Syndrome (NCSBS)

2) An electronic survey distributed to other infant and family serving agencies and stakeholders in Montana through DPHHS list serves including home visitors, WIC contractors, maternal and child health county contractors, midwives, Community Coalitions and Best Beginnings Advisory Councils, private adoption agencies and tribal entities.

3) Semi-structured interviews conducted with 27 stakeholders involved in The Period of PURPLE Crying ® program including key staff at Dose 1 PURPLE hospitals, past and present Healthy Mothers Healthy Babies staff and board members, past and present Children’s Trust Fund staff and board members and Montana Department of Public Health and Human Services (DPHHS) stakeholders and partners.

4) An extensive review of documents including the research on Abusive Head Trauma and evidence based public health programs related to its prevention, the original contracts and yearly reports from Healthy Mothers Health Babies for the PURPLE Montana project, program logic models, goals, objectives and metrics, administrative documents and strategic plans developed as part of this initiative.

The conclusions and recommendations in this report are solely those of Katie Loveland MPH, MSW and do not necessarily reflect those of the Montana Children’s Trust Fund staff or board, Montana DPHHS, the National Center on Shaken Baby Syndrome or Healthy Mothers Healthy Babies of Montana.

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Why Abusive Head Trauma?

In 2012, there were almost 1600 child deaths in the US due to abuse and neglect, with more than 44% of the fatalities occurring among children under the age of 1 year. The majority of these deaths result from injuries to the head, also known as Abusive Head Trauma (AHT).¹ (Note that over the last decade, the terminology “Shaken Baby Syndrome” has largely been replaced by “Abusive Head Trauma” which is a more inclusive term that acknowledges that older children can be victims and that shaking isn’t the only cause of AHT). The Centers for Disease Control and Prevention defines AHT as, “an injury to the skull or intracranial contents of an infant or young child (<5 years of age) due to inflicted blunt impact and/or violent shaking.”² Estimating the incidence of AHT is difficult due to the inconsistency in coding for the condition and the range of ways that AHT injuries may present, but most national estimates range from 10 to 30 cases per 100,000 children under 1 year of age.³ The consequences of AHT are devastating. More than one in 10 infants or children who are victims of AHT die as a result of their injuries and up to 80% of those who survive sustain life long brain injuries.⁴ The costs of AHT are also substantial. Conservatively, researchers estimate that the lifetime cost per victim is more than $200K for nonfatal child maltreatment and $1.3 million for a death from child maltreatment (in 2010 dollars) for a total estimated economic burden in the US for one year of $124 billion for all forms of child maltreatment.⁵

Studies indicate that AHT occurs most often in infants aged 0 to 11 months (80%) with the highest incidence around three months of age (see inset graph above).⁶ Because of these consistent and well documented

¹ National Child Abuse and Neglect Data System
³ Jayawant et al. 1998; Keenan et al. 2003; Barlow et al. 2005; Eisele et al. 2006; Ellingson, Leventhal and Weiss 2008
⁶ Lee C, Barr RG, Catherine N, Wicks A. Age-related incidence of publicly reported shaken baby syndrome cases: Is crying a trigger for shaking? J Dev Behav Pediatr. 2007;28:288–293
findings, the prevailing theory about the cause of AHT in young infants is that the abuse is triggered by the period of increased and prolonged crying typical in newborns, which peaks around 2-3 months of age. Caregivers who are not able to respond in a healthy manner to an infant who is crying for a prolonged period and who do not understand that this behavior is developmentally normal, are at higher risk of perpetrating AHT. A recent review article summarizing the research on AHT concludes that, “In a large majority of cases, shaking is triggered by the normal increased early crying of healthy newborns now recognized as a behavioral universal of infancy.” This understanding, derived from the research, that infant crying is normal and that the period in young infancy when crying is most pronounced is the major trigger for AHT, is the conceptual and theoretical basis for the best practice interventions currently being used to prevent AHT.

Research also underscores a number of risk factors for AHT that may be helpful in targeting interventions. Male caregivers (related males followed by boyfriends or step fathers) are the most frequent perpetrators of AHT, accounting for more than 2/3 of all documented cases. Deaths from AHT are elevated in households with unrelated adults rather than two biological parents but not in single-parent households without other adults. Other risk factors that have been noted in the research, but are less consistent in terms of findings across studies, include socioeconomic status, societal and family stress, prematurity, multiple births, developmental delay, prior military service, and childhood history of abuse in the perpetrator. Race and ethnicity have not been correlated with AHT. A consistent and unexplained finding in the research is that male infants are more likely than female infants to be victims of AHT. Although some disparities in risk exist, in his review of the current literature on AHT, Ronald Barr concludes that AHT prevention initiatives should be primary, universal, and “attractive, consistent, meaningful and positive for multiple caregiving cultures.” Primary means that the message must be delivered before the occurrence of AHT, either in the prenatal period or just after birth. Universal means that the message should be delivered to all newborns and not just targeted to some parents because AHT affects infants of all backgrounds. Finally the message should reinforce positive parenting norms and behaviors that are acceptable in the culture, instead of focusing on the negative aspects of AHT. As Jeff Linkenbach of the The Montana Institute noted in his semi-structured interview for this project, “We need to get away from ‘public health terrorism’ where we try to scare people into behaving better and instead create positive social norms where parents feel supported in what they need to do to best care for their children.”

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Measuring AHT in Montana

In 2012, the Centers for Disease Control and Prevention (CDC) released a 56 page document with recommendations on how to develop surveillance systems for Pediatric AHT. The paper outlines a series of ICD-9 and ICD-10 codes to utilize to describe presumptive and probable AHT cases, with a narrow and a broad definition incorporating both clinical diagnosis and injury codes. Since AHT events are relatively rare even at the national level, the CDC combined four years of data from across the US (2003-2007) to test their definition.

Recently, the Montana Office of Epidemiology and Scientific Support conducted an analysis of inpatient admissions and emergency department (ED) encounters in Montana meeting the CDC definitions for Montana residents age 5 years and under from 2010 to 2014. The report reads, “The CDC’s narrow definition of injury is highly specific, using E-codes that indicate definite or presumptive abuse. The broad definition includes E-codes for probable abuse. The broad definition has lower specificity and a higher false positive rate than the narrow definition. The CDC recommends using the broad definition for surveillance of populations, and the narrow definition for targeted interventions. Using the narrow definition, there were 14 admissions and 10 ED encounters for non-fatal AHT presenting to Montana facilities between 2010 and 2014. Using broad definition, there were 20 inpatient admissions and 21 ED encounters for nonfatal AHT between 2010 and 2014, an average of 8.2 per year.” Following national trends, 80% of the AHT cases were among infants under one year. The report found, “Sixteen of 20 admissions were infants under one year of age (admission rate of 26 per 100,000; 95% confidence interval 15 - 43) and 18 admissions were children between birth and two years (15 per 100,000; 95% CI 9 - 23).”

Clearly, measuring cases of AHT at the population level in Montana requires extensive epidemiologic support and concatenating multiple years of data. Even then, because the event is rare, the small number of events make the calculated rate unstable and difficult to utilize for evaluation purposes tied to AHT prevention efforts. Because of these factors, in a rural state like Montana, it is imperative to ensure that an evidence based AHT prevention program is being implemented to fidelity. The evidence based model used should be supported by well-designed, population level studies showing evidence that its use has reduced AHT incidence in larger populations. Implementing an evidence based AHT prevention model to fidelity is our best hope of reducing AHT incidence in Montana, even if we can’t directly measure that reduction because of the rural nature of our state.

The Period of PURPLE Crying® Program

Based on the research linking the period of intense crying in newborns to the increased incidence of AHT in early infancy, researchers began studying interventions that might address this important public health concern. The most promising was a hospital-based intervention piloted in 8 counties in western, upstate New York that was published in Pediatrics in April 2005. The hospital-based intervention included education for all parents of newborns on the dangers of violent shaking and alternative responses to persistent infant crying. After receiving the education, parents were asked to sign a voluntary commitment statement affirming that they received and understood the materials. In follow up telephone interviews 7 months after the birth, 95% of parents remembered having received the information. Importantly, the incidence of abusive head trauma injuries decreased 46% in the region during the 6 year time period when the intervention was piloted—a decrease not seen in a control region utilized as a comparison. During the intervention period, 69% of the live births were covered by a commitment statement signed by one or more parents. The study concluded that, “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 <36 months of age.”

This well received and designed study became the basis for a number of AHT prevention programs, including The Period of PURPLE Crying®. The Period of PURPLE Crying® was developed by the National Center on Shaken Baby Syndrome (NCSBS), a 501c(3) organization based out of Farmington, Utah, in conjunction with prominent AHT researcher Dr. Ronald Barr. The acronym PURPLE was developed by the NCSBS to describe and help parents remember the characteristics of the period of crying that is known to be a trigger for AHT.

THE LETTERS IN PURPLE STAND FOR

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<td>PEAK OF CRYING</td>
<td>UNEXPECTED</td>
<td>RESISTS SOOTHING</td>
<td>PAIN-LIKE FACE</td>
<td>LONG LASTING</td>
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<td>Your baby may cry more each week, the most in month 2, then less in months 3 &amp; 5</td>
<td>Crying can come and go and you don’t know why.</td>
<td>Your baby may not stop crying no matter what you try.</td>
<td>A crying baby may look like they are in pain, even when they are not.</td>
<td>Crying can last as much as 5 hours a day, or more.</td>
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THE WORD PERIOD MEANS THAT THE CRYING HAS A BEGINNING AND AN END

18 Dias, M.S. Preventing Abusive Head Trauma Among Infants and Young Children: A Hospital-Based, Parent Education Program. Pediatrics. Vol. 115, No 4, April 2005.
The Period of PURPLE Crying® program is designed to be given in three doses. Dose 1 is an educational intervention for parents and caregivers of newborns designed to be delivered before hospital discharge. Dose 1 utilizes an educational package (DVD or smartphone app and booklet) given to postpartum parents prior to hospital discharge in conjunction with the delivery of key messages by maternity nurses. The program includes six key messages: 1) infant crying is normal; 2) crying peaks at about two months of age; 3) shaking a baby is dangerous; 4) parents should watch the DVD at home; 5) they should read the booklet at home, and 6) the information should be shared with others who will care for the baby. Julie Noble (formerly Price), the Director of the International Prevention Program at NCSBS notes that The Period of PURPLE Crying® model outlines a four step script for nurses or other educators to use as they interact with parents. The four parts of the Dose 1 PURPLE model are teach, teach back watch and give. “Teach” is three minutes of verbal instruction following key points in a script provided by the NCSBS that is designed to be delivered at the bedside or as part of discharge education where the nurse goes through The Period of PURPLE Crying® booklet page by page with the infant’s parents or other present caregivers. The next step is “teach back”, an evidence based practice where the patient is asked specific questions like, “How would you share this information with your boyfriend who comes to take care of the baby?” The “watch” step involves showing the ten minute video on DVD or through closed circuit TV or by helping the parent download the PURPLE app, and then answering any questions the parents have, followed by the final step “Give” which involves giving the parents their own set of materials and asking them to share them with anyone else who watches the baby.

Dose 2 involves a reinforcement of the messages from Dose 1 in settings outside of the OB ward such as pediatrician’s offices, home visiting programs, and/or public and state department of health programs like WIC. Dose 3 is a public education campaign to reinforce positive norms for all community members.

Dose 1 hospitals implementing The Period of PURPLE Crying® are required to sign a Memorandum of Understanding (MOU) with the NCSBS. Under the MOU, the NCSBS agrees to provide the hospital:

- Timely provision of ordered PURPLE materials
- An implementation protocol
- Access to free online training for their staff on The Period of PURPLE Crying®
- Updated training materials such as talking points for nurses, a script for presenting to parents, a nurse educator training powerpoint and script to be used in childbirth classes and a question and answer document for parents and professionals.
- Ongoing technical and administrative support and materials.

In the MOU, hospitals agree to:

- Purchase The Period of PURPLE Crying® materials from the NCSBS (in the Montana MOU, sites are informed that they can receive up to one year of free materials from Healthy Mothers Healthy Babies)
- Work towards sustainability by seeking to fund the program through the hospital’s budget
- Training their staff utilizing the free online training module offered by the NCSBS
- Distribute the PURPLE materials to families of infants that they serve, in their preferred language
- Protect the fidelity of the program by following the implementation protocol and avoiding use of conflicting programs or materials and using the essence of the scripts provided when presenting the program to parents
- Show the DVD to parents-both mothers and fathers, before discharge from the hospital whenever possible.
- Honor the integrity of the program by following the implementation protocol and script for each infant that their organization serves, and providing each family with their own copy of the PURPLE materials to take home.
PURPLE partners in Dose 1 and 2 are instructed to follow an implementation checklist provided by the NCSBS. In the NCSBS’s “Program Implementation Checklist” for Dose One, hospitals are offered the option of free online training for individual staff or a group training to kick off the initiative. All of the trainings are accessed through the training portal at the NCSBS’s website training.dontshark.org. Hospitals are instructed to ensure that 80% of their staff have completed the training before delivering the program to parents. The NCSBS checklist also encourages hospitals to incorporate the online training for staff into a hospital policy (they provided a model policy to follow) and determine who is responsible at the site for training and evaluation of the program.

The NCSBS has helped more than 20 states facilitate “jurisdiction wide initiatives” where a supportive agency helps to bring hospitals on board to implement The Period of PURPLE Crying® and is responsible for implementing Dose 2 and 3. Each of these jurisdiction wide initiatives is organized and funded differently in consultation with the NCSBS. The NCSBS define jurisdiction wide initiatives this way, “A Jurisdiction-wide Initiative is formed when a collective leadership team has been organized and is functioning with an expressed intent to implement The Period of PURPLE Crying® program as their SBS/AHT and infant physical abuse prevention program in birthing hospitals and/or home visiting programs throughout the region. In consultation with the PURPLE program staff, the leadership team has explored options, chosen the PURPLE program and has developed a plan to work through implementation stages including, but not limited to, program installation, initial implementation, full operation, innovation and sustainability. The goal of the PURPLE program staff and jurisdiction-wide leadership team in the Jurisdiction-wide Initiative phase is to fully incorporate the comprehensive three dose PURPLE program model leading to decreased infant physical abuse and positive outcomes for families in the community.”

A number of successful jurisdiction wide initiatives have taken place across the US and internationally. In Kansas, a multi-year state-wide effort has been led by the Kanas Children’s Service League, a large non-profit with over 200 employees that also provides adoption services and a Statewide Parent Helpline. In Maine, The Period of PURPLE Crying® is supported by the Maine Children’s Trust. With funding for the program from hospitals, private foundations, and individual donations, Maine has successfully facilitated the implementation of the program at all birthing hospitals in the state. Once a jurisdiction-wide initiative has MOUs in place with hospitals and birthing centers that cover 80% of births, they receive a jurisdiction wide initiative award from the NCSBS. The Period of PURPLE Crying® is currently being used in over 2000 hospitals in the US and in several other countries including Canada and Japan.

A number of studies specifically examining the outcomes of The Period of PURPLE Crying® have been published. Though not every study looking at the outcomes of The Period of PURPLE Crying® has shown the dramatic reductions in AHT noted in 2005 report, randomized control trials have shown an increase in crying knowledge, shaking knowledge and sharing information about coping with crying with other caregivers for those mothers participating in The Period of PURPLE Crying® program versus controls. In another randomized control trial, mothers who received The Period of PURPLE Crying® reported higher

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21 https://www.kcsl.org/Period_Of_Purple_Crying_Dose_1.aspx

22 http://qid.mainequalitycounts.org/project/period-of-purple-crying

rates of walking away during inconsolable crying compared to mother who received control materials. In North Carolina, calls to a statewide nurse hotline related to infant crying declined 20% after implementation of The Period of PURPLE Crying®. In 2015, a study out of British Columbia showed a 30% reduction in Emergency Room visits for colic complaints and a 37% reduction in hospitalizations for AHT/SBS after implementation of The Period of PURPLE Crying® program. The NCSBS continues to conduct research on the outcomes of the program designed to track reductions in AHT incidence and evaluations of the effectiveness of their training and educational materials.

Because of the research base supporting The Period of PURPLE Crying® Program, it is recognized nationally as one of the most evidence based AHT prevention programs. For instance, in their guidance on Preventing Shaken Baby Syndrome, the CDC lists the The Period of PURPLE Crying® as one of only two mentioned model programs along with the original upstate New York Shaken Baby Syndrome Education Program on which The Period of PURPLE Crying® is based. The Period of PURPLE Crying® is not the only AHT prevention model that has been developed, however. Other AHT prevention models are summarized below.

Other AHT Prevention Models

There are a number of other models that have been developed nationally to address AHT Prevention. Summaries of these programs and their evidence for effectiveness are below.

The New York Shaken Baby Prevention Project

As described above, this program was developed by Dr. Mark Dias and implemented in hospitals in an 8 country region in upstate New York. The project was designed as a research study with results published in Pediatrics in April 2005. The intervention includes education for all parents of newborns on the dangers of violent shaking and alternative responses to persistent infant crying. After receiving the education, parents are asked to sign a voluntary commitment statement affirming that they received and understood the materials. As described in a previous section, 7 months after discharge, 95% of parents remembered having received the information. Importantly, the incidence of AHT injuries decreased 46% in the region during the 6 year time period when the intervention was piloted—a decrease not seen in a control region utilized as a comparison. During the intervention period, 69% of the live births were covered by a commitment statement signed by one or more parents. The study concluded that, “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 <36 months of age.” Currently, 56 maternity hospitals in 48 counties in upstate New York utilize this model which now has incorporated safe sleep messages in addition to AHT education. In the current version of the program, all parents of new babies who are discharged home receive an education component on AHT and safe sleep messages. The program is currently the largest of its kind in the country with over 140,000 parent AHT & safe sleep education materials distributed annually.

borns are offered a written brochure that covers the educational materials. Parents are also asked to view two short videos, one on each of the two topics (SBS and safe sleep) that also review these same concepts. Finally, parents are asked to sign a ‘Commitment Statement’ affirming their participation in the program. This Commitment Statement includes documentation about both AHT and safe sleep practices. These signed statements are then returned to the Co-Coordinators of the program monthly by the nursing staffs at participating hospitals and are used to track hospital compliance. Materials for this program can be ordered from North Delaware Printing. More information about the program is available at this website: https://www.kaleidahealth.org/childrens/services/display.asp?s=694

**All Babies Cry (ABC)**

All Babies Cry (ABC) is a theory-based infant maltreatment prevention program designed to be delivered in a hospital before discharge after the birth of an infant and at home. The program was developed by a private, for-profit company, Vida Health Communications, Inc in conjunction with the Massachusetts Department of Public Health. In January, 2015 Vida Health Communications closed down and control of the program was transferred to the Massachusetts Children’s Trust. The program was developed with the goal of depicting ways for assessing and mitigating parental stress, providing media modules that can be easily disseminated to all parents shortly after birth, and developing appeals to fathers as well as mothers. The materials were informed by research on the experience of perpetrators of AHT. The program includes an 11 minute overview video for in-hospital use which introduces topics covered in the take-home components and b) a home package comprising a video with four brief skills-based modules and either a postcard or a 28-page booklet reinforcing messages in the media programs. The videos are available on DVD or through the All Babies Cry website and app with a user code given to the parents. Currently the program is being implemented in Massachusetts and Delaware. The Massachusetts Children's Trust is developing the capacity to work with other states to implement the ABC program. The Massachusetts Children’s Trust does not currently have a set model or implementation program but they are open to working with states to develop their own programs. The cost of the program would depend on the implementation strategy and the materials the state wants to use to implement the program. The Massachusetts Children’s Trust is looking at developing a multi-dose implementation for the program, similar to The Period of PURPLE Crying ®.

Only one published study exists evaluating the All Babies Cry (ABC) program. It is not a randomized control trial, but a mixed method, quasi-experimental evaluation design. The version of ABC used in the study involved showing the first video in the hospital and sending the parents home with the second DVD and 28 page booklet with instructions to view it at home. The study found that there was no difference between the intervention and control group in the number of or variety of appropriate infant calming strategies used or the number of strategies used to manage parental stress when their baby cried. Intervention participants did report using a wider variety of strategies than controls to manage parental stress. 96% of parents in the intervention group said they would recommend All Babies Cry to other parents. There have not been any studies linking the use of ABC to reduced incidence of AHT or any other health outcomes like reduced ED visits or deaths related to AHT.

**Other State Based Projects**

A number of other states have developed AHT prevention programs, most of them modeled after the Upstate New York Program or The Period of PURPLE Crying ®. Examples include:

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29 Phone call with X of the Massachusetts Children’s Trust on October, 30th 2015.
30 Morrill, AC. et al. Evaluation of All Babies Cry, a second generation universal abusive head trauma prevention program. *J Community Psychol.* 2015 April 1
Ohio: Love Me...Never Shake Me: In the early 2000s, Ohio developed a hospital based education program modeled after the New York model. The program was evaluated in one non-experimental design study that showed positive outcomes for parents remembering the education and practicing infant soothing techniques though there was no control group with which to compare outcomes. The study was published in 2008. The program does not appear to be operational any longer based on search engine results.

Idaho: Crying Baby Plan- Supported by a grant from the Health Resources and Services Administration and by the Idaho Children’s Trust Fund and the non-profit “Shaken Baby Prevention of Idaho” and other partners, Idaho has developed a website where parents can develop a personalized shaken baby plan that can be printed or emailed to share with other caregivers. The Crying Baby Plan can be found at: [www.cryingbabyplan.org](http://www.cryingbabyplan.org). It is unclear from the website how the Crying Baby Plan is utilized in Idaho or if it has been evaluated, though the plan is linked to some hospital websites in Idaho and to the Idaho Department of Health and Welfare website.

Based on this review of the other AHT prevention models and The Period of PURPLE Crying®, it is clear that The Period of PURPLE Crying® is by far the most well researched program and the only program, other than the upstate New York model, that has linked program implementation to reduced AHT incidence and other key behavioral outcomes.

PURPLE in Montana

As AHT became an issues of national prominence in the late 1990s and early 2000s, a number of states developed legislation mandating AHT education. Currently, 23 states, including Montana, have an AHT related mandate on the books. Montana’s AHT legislation was passed in 2009. It reads as follows.

50-16-103. Information on shaken baby syndrome -- program. (1) There is a shaken baby syndrome education program established in the department.
(2) The department shall:
   (a) develop educational materials that present readily comprehensible information on shaken baby syndrome; and
   (b) post the materials on the department's website in an easily accessible format.
(3) The materials required to be produced by this section must be distributed at no cost to the recipients.
(4) For purposes of 50-16-104 and this section, the following definitions apply:
   (a) "Child care facility" means a day-care center, day-care facility, family day-care home, or group day-care home as those terms are defined in 52-2-703.
   (b) "Department" means the department of public health and human services provided for in 2-15-2201.
   (c) "Hospital" means a hospital, as defined in 50-5-101, that regularly provides maternity, pediatric, or obstetrical care.
   (d) "Parent" means either parent, unless the parents are not married or are separated or divorced, in which case, the term means the custodial parent. The term also means a prospective adoptive parent or foster parent with whom the child is placed.

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(e) "Shaken baby syndrome" means damage to the brain of an infant or young child, including but not limited to swelling that impedes the supply of oxygen to the brain or any degree of brain damage that results from the infant or young child having been forcefully shaken.

50-16-104. Information on shaken baby syndrome -- distribution. A copy of the shaken baby syndrome educational materials developed under Section 50-16-103 must be distributed in the following manner:

1. By childbirth educators and staff of pediatric physicians' offices and obstetricians' offices to an expectant parent who uses the services of the educators or physicians;
2. By a hospital in which a child is born to the child's parent before the child is discharged from the facility;
3. By service providers under the MIAMI project, provided for in Section 50-19-311, to a child's parent during visits conducted in accordance with that project;
4. By each child-care facility operating in this state to each of its employees; and
5. By groups or entities that offer classes for babysitters.

In response to this legislation, the Montana DPHHS developed Crying Cards which were printed by the department and distributed across the state. Healthy Mother Health Babies (HMHB), a 501c3 organization based in Helena and the Children's Trust Fund (CTF) were involved early on in this project, advocating for the passage of the legislation and carrying out the legislation's mandate by developing the Crying Cards in conjunction with DPHHS. The NCSBS was also an involved partner from the beginning. According to the original Letter of Intent for the first round of CTF funding for The Period of PURPLE Crying® by HMHB, “during this time period [soon after the legislation was passed] a Crying card was developed in cooperation with the National Center and distributed to the parties named in the law. Upon choosing the National Center for Shaken Baby Syndrome, Julie Price and other staff members worked very closely with MT CTF, HMHB and DPHHS to carry out all intents of the law.” Also according to original Letter of Intent, Montana partners chose to work with NCSBS because they were “particularly impressed with NCSBS work to educate parents and caregivers, in a simple and accessible manner, about the role of crying in every baby’s normal development as well as their low-cost culturally appropriate materials.”

At least 60,000 Crying Cards were printed and distributed to CTF funded programs, Head Start, Planned Parenthood, Early Childhood Bureau childcare programs, home visitors, police departments, the Montana Hospital Association and others in 2011. The CTF and HMHB also developed a stakeholder group soon after the legislation was passed to address AHT prevention, with a first meeting held in October 2010 to gather ideas for implementation, through a formal stakeholder group for AHT prevention has not continued in the state. In 2011, the CTF and HMHB began to approach hospitals about The Period of PURPLE Crying® and encouraging them to consider implementing Dose 1. From mid-2011 into the spring of 2012, CTF and HMHB “made progress under Dose 1 by establishing the training and distribution of PURPLE in a number of Montana birthing hospitals and centers.” Around this time, HMHB began calling their work related to healthy infants and young children the “Zero to Three Project”.

In SFY 2012, the DPHHS Director at that time, transferred $110,000 of general fund money from the Medicaid hospital services benefits appropriation to Program 3, Child and Family Services Division, within the Economic Security Services Branch, for the “Zero to Three Project”. In the LFD Budget Analysis for the 2015 Biennium, the appropriation was described this way, “During the interim the executive made an adjustment related to benefits, grants, and services with the approval of $110,000 general fund to the

33 Letter of Intent. The Montana PURPLE Project Shaken Baby Prevention. Provided to evaluator by Sarah Corbally, MT DPHHS.
34 “Crying Card” Shaken Baby Education Outreach budget. 6/20/2011. Provided to the evaluator by Sarah Corbally.
35 Letter of Intent. The Montana PURPLE Project Shaken Baby Prevention. Provided to evaluator by Sarah Corbally, MT DPHHS.
Zero the Three Project which addresses child abuse with a focus on shaken baby syndrome. It was part of the transfer of Medicaid benefits to other uses discussed in the agency overview. Funds were transferred from Medicaid Hospital Services benefits. The funding was from the Medicaid hospital services benefits appropriation, BCD PT917 and was assigned to program 03 The Child and Family Services Division. At a CTF board meeting on April 28th, 2012, the CTF board was informed that the DPHHS director had decided that the $110,000 appropriation from the State General Fund be directed to the CTF. The director identified to $110,000 as a means to help give the federal “Community Based Child Abuse Prevention” (CBCAP) grant a “boost” each year because it is identified as leveraged funds (meaning any non-federal funds that go toward supporting the goals and objectives of the CBCAP grant). On March 1, 2012, the CTF Board minutes indicate a special announcement – “The Department is now committed to giving the requested amount of $110,000 to the Montana Children’s Trust Fund, along with spending authority to continue the work on the Montana Purple Project.” This decision led to a two month planning grant given to HMHB in May 2012. The goal of the contract was to "provide funding to HMHB to develop the capacity of PURPLE Montana". The funding amount for the planning grant was $91,983. More than a quarter of the planning grant funding was allocated for Josh Turner and Associates. The firm was hired to do a needs assessment, strategic plan and design an evaluation for the program. The strategic plan, developed with a planning group of HMHB employees and board members, CTF employees and board members, and DPHHS staff (along with two staff from THRIVE in Bozeman and one staff person from the Nurturing Center in Kalispell) called for a competitive RFP to determine “the central entity to lead expansion of PURPLE Montana.”

The competitive RFP for PURPLE Montana was released by CTF in the summer of 2012 and was awarded to HMHB for Year 1 from October 2012 to September 2013 in the amount of $110,00. In SFY2013, the appropriation was then transferred to program 04, Director’s Office, during SFY2013 on BCD PT015. At this time, the CTF staff in DPHHS were moved from the Child and Family Service Division to the Director’s Office. The Period of PURPLE Crying contract with HMHB was renewed in October 2013 for $82,429 and in July 2014 for $110,000. In July 2015, the CTF chose not to renew the contract with HMHB. The total investment by the CTF under the competitive RFP for the 33 month period was $302,000 with an additional $92,000 in the technical assistance grant for a total of $394,000.

**Staffing and Board Composition**

During the 33 month funding period, HMHB had a number of staffing and board changes. The program had three different PURPLE Montana Program Managers and three different Executive Directors. No staff served in the program for more than 20 months during the project period.

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36 Personal correspondence from Betty Hall Munger to “Anna, Hank and Sarah” on May, 2012. Provided to evaluator by Sarah Corbally, MT DPHHS.


The HMHB Board of Directors also went through significant changes during this time period. Only one member of the current HMHB Board Member remains from when the CTF funding was originally awarded in 2012. Below is a list of the Board members for HMHB from 2012 to 2015. Currently, Betty Hidalgo also serves as an advisory board member to HMHB.

During this 33 month funding period, the CTF board and staffing were also in flux, due to board member terms ending and new members being appointed to serve on the board. Like the HMHB board, only one member of the CTF board remains from the board that funded the original RFP in 2012.
In the fall of 2012, the CTF, which had been housed in the Child and Family Services Division at DPHHS was reassigned to Prevention Resource Center in the DPHHS Director’s Office. Two different CTF Managers have been employed by DPHHS during the funding period. The current program manager, Jamey Petersen was hired as a 0.5 FTE grant manager and staff to CTF on 1/28/2013. Her position is funded by DPHHS. Melissa Lavinder was hired as a Technical Assistant/program support position as a .75 FTE on 9/2/15. Her position is paid for out of state special funds and the CBCAP technical assistance line item. Two VISTA volunteers also served with the program during the course of The Period of PURPLE Crying® funding.

Dose 1

As stated in the previous sections, The Period of PURPLE Crying® is designed to be a universal, primary and positive message given in three doses, the first of which is the most evidence based and is designed to be delivered in hospital OB wards and birthing centers. To deliver Dose 1, hospitals and birth centers are required to sign an MOU with the NCSBS and train at least 80% of their staff using the NCSBS’s online module. The MOU with the NCSBS requires participating sites to purchase educational materials to give to all parents before discharge. One way that HMHB chose to support implementing sites while they were funded by the CTF was by providing the sites that signed MOUs enough PURPLE materials to cover one year of births at their facility. The NCSBS altered their MOU for Montana sites under the “Additional Considerations” section to say, “Our organization understands that we will be receiving PURPLE materials for one year at no charge from Healthy Mothers, Health Babies-Montana working in coordination with the MT Children’s Trust Fund and we will work to get the program materials into our budget moving forward.” The cost of the PURPLE materials (DVD and brochure) is $2 per patient. Below is timeline of The Period of PURPLE Crying® project in Montana along with the Dose 1 site MOUs.

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39 National Center on Shaken Baby Syndrome. Memorandum of Understanding. Provided to the evaluator by Julie Noble.
The graph below shows the number of Dose 1 PURPLE Hospital sites in Montana during the 33 months of the competitive CTF funding for PURPLE. As noted above, there were 10 hospitals with signed MOUs before the beginning of the first funding cycle. From February 2014 to December 2014 there was an 11 month window where no new MOUs for Dose 1 were signed by either a hospitals or birthing center.
In 2014, there were 32 hospitals with OB wards or birthing centers in the state of Montana that had more than 20 births. The table below shows the number and percent of birthing facilities covered by PURPLE at key points during the project. Note that all of these percentages are based on the number of hospitals and birth centers with 20 or more births in 2014 (32) however the number of birthing facilities has changed slightly over the years. For instance, Bighorn County Memorial Hospital in Hardin recently closed their OB ward while St. Patrick’s Hospital in Missoula recently opened an OB ward.

Montana Dose 1 PURPLE MOUs at key points during the CTF funding period

<table>
<thead>
<tr>
<th></th>
<th>Before the 1st RFP</th>
<th>After Year 1</th>
<th>After Year 2</th>
<th>After Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dose 1 Sites</td>
<td>10</td>
<td>15</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Number of sites added</td>
<td>-</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Percent of all possible sites</td>
<td>31%</td>
<td>47%</td>
<td>56%</td>
<td>69%</td>
</tr>
</tbody>
</table>

Below is a map showing which cities with birthing hospitals do and do not have PURPLE MOUs as of October, 2015. (Note that birthing centers are not indicated on this map, though there are small birthing centers in Great Falls, Bozeman and Missoula-only the Missoula Birthing Center is PURPLE).

A more important measure than facilities, for an intervention that is designed to be universal, is the total number of births occurring in facilities operating under a PURPLE MOU. In 2014, there were 12,391 births in the state of Montana, including 12,090 that occurred in hospitals or birth centers that had more 20 births annually. The graph below shows the number of births in Montana hospitals or birthing centers with PURPLE MOUs during the period of CTF funding.

Before the full year of PURPLE funding was granted to HMHB, 10 facilities covering 5,049 births had already signed MOUs with the NCSBS for PURPLE. In the first 28 months of the funding cycle, 2,505 additional births were covered under signed MOUs. In the last five months of the funding, 3,030 additional births were covered as two of Montana’s large hospitals signed on to PURPLE, facilities which cover 24% of all Montana births annually. The table below shows the number and percent of all births occurring at hospitals with PURPLE MOUs at key points during the project. Interestingly, Montana was awarded a jurisdiction wide PURPLE award by the NCSBS in April, 2014 which is designed to designate that PURPLE was being utilized in facilities covering 80% of the births in the state. According to the calculations below, Montana was only covering 61% of the births in facilities in the state at that time (no MOUs were signed between April 2014 and the end of Year 2 in July 2014). Note that all of these percentages are based on the total number of live births in hospital or birth facilities that had more than 20 births in Montana in 2014 which is 12,083.

<table>
<thead>
<tr>
<th>Number of births at Dose 1 sites</th>
<th>Before the 1st RFP</th>
<th>After Year 1</th>
<th>After Year 2</th>
<th>After Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total births</td>
<td>5049</td>
<td>7054</td>
<td>7389</td>
<td>10,419</td>
</tr>
<tr>
<td>Number of births added</td>
<td>-</td>
<td>2018</td>
<td>322</td>
<td>3030</td>
</tr>
<tr>
<td>Percent of all births</td>
<td>42%</td>
<td>58%</td>
<td>61%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Below is a list of the birth facilities in Montana that currently have a signed MOU with the NCSBS, along with the month and year of signature and the number of births at the facility and the number of births in these facilities in 2014.42

<table>
<thead>
<tr>
<th>Birth Facilities</th>
<th>Number of births in 2014</th>
<th>Month and Year MOU Signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Peter’s Hospital – Helena</td>
<td>766</td>
<td>November 2010</td>
</tr>
<tr>
<td>Benefis Healthcare – Great Falls</td>
<td>1545</td>
<td>February 2011</td>
</tr>
<tr>
<td>Kalispell Regional Medical Center</td>
<td>651</td>
<td>August 2011</td>
</tr>
<tr>
<td>Providence Saint Joseph Medical Center - Polson</td>
<td>139</td>
<td>September 2011</td>
</tr>
<tr>
<td>Livingston Healthcare - Livingston</td>
<td>102</td>
<td>October 2011</td>
</tr>
<tr>
<td>Billings Clinic- Billings</td>
<td>1340</td>
<td>January 2012</td>
</tr>
<tr>
<td>Marias Medical Center - Shelby</td>
<td>21</td>
<td>March 2012</td>
</tr>
<tr>
<td>Sidney Health Center - Sidney</td>
<td>165</td>
<td>April 2012</td>
</tr>
<tr>
<td>Big Horn County Hospital - Hardin</td>
<td>36</td>
<td>August 2012</td>
</tr>
<tr>
<td>Holy Rosary Healthcare- Miles City</td>
<td>284</td>
<td>August 2012</td>
</tr>
<tr>
<td>North Valley Hospital - Whitefish</td>
<td>490</td>
<td>December 2012</td>
</tr>
<tr>
<td>Frances Mahon Deaconess Hospital - Glasgow</td>
<td>132</td>
<td>December 2012</td>
</tr>
<tr>
<td>Community Hospital of Anaconda - Anaconda</td>
<td>79</td>
<td>January 2013</td>
</tr>
<tr>
<td>Bozeman Deaconess Hospital - Bozeman</td>
<td>1207</td>
<td>March 2013</td>
</tr>
<tr>
<td>Cabinet Peaks Medical Center - Libby</td>
<td>110</td>
<td>May 2013</td>
</tr>
<tr>
<td>Trinity Hospital – Wolf Point</td>
<td>165</td>
<td>October 2013</td>
</tr>
<tr>
<td>Barrett Hospital and Healthcare - Dillon</td>
<td>67</td>
<td>February 2014</td>
</tr>
<tr>
<td>The Birth Center – Missoula</td>
<td>90</td>
<td>February 2014</td>
</tr>
<tr>
<td>St. Vincent Healthcare - Billings</td>
<td>1468</td>
<td>January 2015</td>
</tr>
<tr>
<td>Clark Fork Valley Hospital - Plains</td>
<td>42</td>
<td>June 2015</td>
</tr>
<tr>
<td>St. Patrick’s Hospital – Missoula</td>
<td>New center no data</td>
<td>June 2015</td>
</tr>
<tr>
<td>Community Medical Center - Missoula</td>
<td>1520</td>
<td>June 2015</td>
</tr>
<tr>
<td><strong>Total Births in Hospitals that are PURPLE</strong></td>
<td><strong>10,419</strong></td>
<td></td>
</tr>
</tbody>
</table>

Below is a list of the hospitals with OB wards in Montana that do not currently have a signed MOU with the NCSBS and the number of births at these facilities.

<table>
<thead>
<tr>
<th>Birth Facilities</th>
<th>Number of births annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Rockies Medical Center - Cutbank</td>
<td>49</td>
</tr>
<tr>
<td>Central Montana Medical Center - Lewiston</td>
<td>85</td>
</tr>
<tr>
<td>Blackfeet Community Hospital - Browning</td>
<td>139</td>
</tr>
<tr>
<td>Glendive Medical Center - Glendive</td>
<td>106</td>
</tr>
<tr>
<td>Marcus Daly Memorial Hospital - Hamilton</td>
<td>157</td>
</tr>
<tr>
<td>St. Luke Community Healthcare - Ronan</td>
<td>162</td>
</tr>
<tr>
<td>Northern Montana Health Care - Havre</td>
<td>409</td>
</tr>
<tr>
<td>St. James Healthcare - Butte</td>
<td>456</td>
</tr>
<tr>
<td>Family Birth Center – Great Falls</td>
<td>58</td>
</tr>
<tr>
<td>Bozeman Birth Center - Bozeman</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total Births in Hospitals who are not PURPLE</strong></td>
<td><strong>1,671</strong></td>
</tr>
</tbody>
</table>

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Dose 1 Hospital Survey

To delve further into the way that Dose 1 has been implemented in Montana and get feedback directly from the Dose 1 sites, an electronic survey was developed and sent to all of the key Dose 1 contacts in the state of Montana. The survey tool was based off of The Period of PURPLE Crying® nurse survey tool developed by the NCSBS. The tool was adapted to be answered by a nurse manager or administrator to describe the use of The Period of PURPLE Crying® in their facility. The electronic survey tool was 12 questions long and was emailed to the a list of 20 Key Dose 1 contacts provided by the HMHB staff on October 13th, 2015 with a reminder email sent to non-responders on October 26th. The survey closed on October 31st, 2015. Of the 20 contacts emailed, one email bounced back, three emails were unopened and 16 emails contacts opened the email invitation for the survey. Of the 16 opened emails, 12 responses were received. Because of the relatively low response rate (55% of current Dose 1 hospitals responded) these results should not necessarily be considered a full representation of the views of all Dose 1 sites in Montana.

The following graphs summarize the responses to the survey. The majority of respondents (75%) were either nurse managers or staff nurses.

![Pie chart showing distribution of Title or Position of Dose 1 Respondent]

The vast majority of sites (10/12) reported that all or almost all of their staff are trained in The Period of PURPLE Crying® Program.

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Most sites also reported that their staff are either very prepared or adequately prepared to implement The Period of PURPLE Crying® program.

All sites reported that all or almost all of the new parents at their facility receive Period of PURPLE Crying® Education.
The fifth question in the survey began by describing how the NCSBS describes fidelity to the program. It read, “The National Center on Shaken Baby Syndrome recommends that every parent or caregiver receiving The Period of PURPLE Crying® program be given a 3 minute verbal education session with a trained staff person, watch the DVD or video on the PURPLE app on-site and be given the materials to take home. This three pronged approach is known as Teach, Watch, Give.” The question then read, “To your knowledge, how often are parents receiving the PURPLE education at your site being given the information in this way (as opposed to just getting the DVD in a discharge packet or through some other combination of methods)? Only a quarter of respondents indicated that the PURPLE information is always provided with fidelity to the NCSBS, with 25% indicating “almost always” and 42% sometimes.
In general, Dose One facilities report that their hospital administration is “Very Supportive” or “Generally Supportive” of The Period of PURPLE Crying® Program.

**HOW SUPPORTIVE OF PURPLE IS YOUR HOSPITAL ADMINISTRATION OF THIS PROGRAM?**

- Very supportive—they see PURPLE as a key and vital program at our facility: 50%
- Generally Supportive: 34%
- Somewhat Supportive: 8%
- Not at all—they are unaware of or indifferent to the program: 8%

Half of sites also report that the program is fully systematized in their facility, including standardized training for staff and incorporating of PURPLE into their electronic health record and discharge protocols. Only one facility indicated that there is no level of incorporation of PURPLE into the systems at their site.

**HOW INCORPORATED IS THIS PROGRAM INTO THE SYSTEMS AT YOUR HOSPITAL?**

- Fully: We have systematized the use of this program by incorporating it into our EHR and discharge protocols. Training for the program is part of the...: 34%
- Somewhat: We have a protocol in place and try to train staff to give the education but there are gaps in implementation: 8%
- Not at all: PURPLE education is not part of our system. We provide the education if we remember to or have the time: 8%
- Other (please specify): 8%

Other response: The program is part of our discharge class and pregnancy classes. All staff is trained to the program.
For Question 8, sites were asked to rate their overall satisfaction with a number of areas of the PURPLE Montana program. Their choices were 1=Not satisfied at all, 2=Somewhat satisfied, 3=Satisfied, 4=Very Satisfied and N/A which was not weighted.

On average, the sites rated themselves as between “Satisfied” and “Very Satisfied” in every category. The online training for PURPLE, the usefulness of the program to new parents and caregivers and the administrative support within the organization for PURPLE were rated particularly high.

However, looking at the counts of individual responses to the same question, the majority of the responses related to HMHB were rated N/A. This indicates a lack of knowledge or experience with HMHB among the survey respondents.
When asked to compare PURPLE to other AHT prevention program materials, respondents who had experience with other materials rated The Period of PURPLE Crying® Program as very good.
All but one respondent indicated that the PURPLE Program and messaging is sufficient as an AHT prevention message in their hospital, while one participant thought that Montana should incorporate additional messages in addition to PURPLE.

**DO YOU THINK THAT THE PURPLE MONTANA IS THE BEST PROGRAM FOR AHT PREVENTION OR WOULD YOU MODIFY OR CHANGE THE PROGRAM?**

- **91%**: PURPLE is sufficient
- **9%**: We should incorporate additional messages and information in addition to PURPLE
- **0%**: I would recommend using a different program entirely
- **0%**: I would recommend more or different materials tailored to a different population

Participants were also asked to leave additional comments as they finished the survey. Two comments were received. One indicating the need for more peer support and mentoring after the hospital birth and one indicating that the hospital also uses the video “Portrait of Promise” to educate parents about AHT.

**Dose 1 Semi-structured Interviews**

To supplement the survey results, the evaluator also reached out to the list of 20 Key Dose 1 contacts provided by the HMHB staff and requested a semi-structured interview. Dose 1 contacts were called and emailed during the second week of October, 2015 and were re-contacted in the third week of October in an attempt to set up a short, 20 minute semi-structured interview. The evaluator developed a semi-structured interview tool that covered the successes and challenges of using the program, the site’s perception of their interactions with HMHB and suggestions about what could be done to address AHT in Montana. Twelve Dose One contacts were reached for a semi-structured interview. In general, the contacts were positive about The Period of PURPLE Crying® Program and found it useful in their facility, through one site was generally negative in their perception of and comments about the program. These findings are not necessarily representative of all of the Dose 1 sites, because only 12 of the 22 sites completed an interview. In addition, the interviews only represent the perspective of one staff person at each site. Themes and main points from the interviews are summarized below.
How PURPLE is implemented and fidelity to the model

Most sites indicated widespread use of The Period of PURPLE Crying® program though different sites described different models for when they give the PURPLE education to parents. Several sites talked about utilizing The Period of PURPLE Crying® materials during the patient orientation or pre-appointment in the OB department, as well as during post-partum education. “We do PURPLE during our orientation—where people come and listen to slide shows about birthing here and do post-partum education at 35 weeks.” Other sites provide the education at the bedside after delivery. Several larger sites host a discharge brunch or education session that involves PURPLE. For instance, at St. Pete’s Hospital in Helena, the facility hosts a group discharge teaching every morning for parents being discharged from the OB unit that includes education on The Period of PURPLE Crying®. The parents are encouraged to discuss newborn crying and normal newborn development as well as recognizing frustrations they are having and utilizing their social support system to relieve stress. The nurse educator who runs the discharge education sessions reports reported, “We put out muffins and juice and snacks and make it a gathering. A lot of the moms who have children before share their experience with the new moms and it builds some social support.”

There were some issues with fidelity to the model noted in interviews. Several sites explained that they have chosen to not make watching the PURPLE video mandatory. One site reported, “Originally we were playing the whole video and talking about it before and after. Now we are having them watch the video on their own and send it home with them.” Another nurse noted, “I do address it—I encourage patients to watch it but don’t sit and make them utilize the materials.” Another site noted that their hospital has not chosen to continue buying the PURPLE Materials for every family. The nurse manager reported, “We have DVDs—5 or 6 players and it is required video. We answer questions and brochures are available at the end of the hallway but not given directly to parents.” However, most sites reported that they are giving PURPLE materials to their OB patients to take home and most, in accordance to fidelity to the model, are now ordering the PURPLE materials from the NCSBS, reducing the materials cost incurred by the HMHB which provides the materials free of charge for the first year.

Use of the online training for PURPLE through the NCSBS

There was also a variety of ways that sites reported training their staff to implement PURPLE. Several sites expressed enthusiasm for and systematic use of the online PURPLE training through the NCSBS. One site reported, “I really enjoy the education that the staff got. It was really fascinating. It was an online training that the staff did. We do an online training and then I have watched the DVD. I think it is really useful and beneficial information. I am hoping people get something out of it but people seem to be really interested in what we have to say and it starts a really good discussion.” Another site simply reported, “Every nurse that comes to the facility gets the online training.” However, the site that generally did not like the PURPLE program also reported not liking the NCSBS training. The nurse manager noted, “To be perfectly honest—the training is just watching the video—it’s not worthwhile training—very basic and mundane.” This comment indicates that this site may not be aware of the NCSBS online training and is only using the PURPLE video to train staff. Other sites reported wanting to utilize the online training more. One nurse manager reported, “We just got a bunch of new nurses. My goal is to get them all to do the online training program before the end of the year.”

Some sites reported training their staff in other ways besides the NCSBS online model. These sites either reported simply having their staff review the PURPLE materials (“When we hire a new hire we have them watch the DVD”) or having their new staff trained by other nurses in the OB ward on PURPLE. “Ideally, each new nurse mirrors the infant nutrition nurse for 5 hours so they see the PURPLE education happening and the expectations and they must feel comfortable before giving the education.” Reports from these sites also raise some concerns about fidelity, as the NCSBS MOUs require that 80% of the staff at a facility be trained in the PURPLE model using the NCSBS training before they implement the program.
**Positive aspects of using The Period of PURPLE Crying® Program**

Most interviewees were positive about the use of The Period of PURPLE Crying® Program in their facility. One nurse noted, “I definitely like the material—it is straightforward. It’s not too aggressive and it makes crying normal. The nursing staff were pretty impressed with the video-things that they as moms hadn’t really thought about. They were pretty moved by the video.” At the group discharge education class at St. Peter’s in Helena, the educator reported that the moms with more than one child underscore the need for this education. “Some of the multiparas have said to the new moms during our class, ‘It’s really good that you talk about this because I have been through it and it’s hard.’” Other sites report that their doctors and other health care providers see the importance of the program. “Our pediatricians like it. In fact—they say, ‘Make sure this person or the dad or the grandma gets this information.’” Several sites noted that they have only had positive experiences with PURPLE, “We haven’t had any problems with it. It is pretty basic and simple and we like it. A lot of patients feel like they already saw it but say they like it. I personally don’t have any problems.”

**Barriers and Challenges to utilizing the program**

Despite this positive feedback, sites also expressed challenges they have faced implementing The Period of PURPLE Crying® Program. Several sites noted that they think the video is too long. “I think it’s long—the video itself. Would prefer to have it shortened—that is why we don’t want to watch it with them. Sometimes we re-visit it at post-partum if they say their baby is crying a lot.” Several sites also noted that they are not sure what to do with moms who are having their second, third or fourth baby and have already received the education and DVD. “Sometimes it’s frustrating to get an experienced mom to watch education. They have been there done that.”

The site that generally did not like the program had a lot of concerns with PURPLE. “We got it when the state first made the big push to educate all parents with the DVD and the educational materials. We have been handing it out three or four years. We have parents who have three sets of the DVDs at home. I just don’t know if it’s an effective tool in the hospital when they have so much going on. I think that the nurses are supposed to have a whole script and make sure that the parents will watch it. They are disengaged, they are tired, they have family there. And staff don’t have a lot of time. We only have families there for 24 hours. I feel that it is a very expensive thing for us as a hospital and I’m not sure what the value is. I think it is a good program—but I think the way it was rolled out and the expectation that staff do yearly education is not a realistic expectation for hospitals. We are doing close to 1600 deliveries a year. That is a lot of education. They get a lot of ‘how to care for their baby’ and ‘how to care for themselves’ and they are just overwhelmed. We put the DVD in but they don’t watch it—they are texting on their phone or talking to their family.”

Other sites reiterated the concerns about getting parents engaged to watch the video. “Sometimes getting the parents to pay attention to the videos is a challenge. Sometimes we have to say, “you need to watch this” and then the nurses before discharge are going over the information. The hardest part is staying up on the number of videos.” Some sites who noted barriers like parents being overwhelmed and resistant to watching the video at discharge also described creative solutions to address their concerns. One site noted, “As far as I know—I haven’t heard any negative feedback. We are going to start using the antepartum classes and will try to incorporate the PURPLE message. Moms are overwhelmed when they leave. It might sink in more prior to having the baby.”

The expense of the materials was also noted a few sites, especially the site that no longer gives the materials out to all parents. “They are very expensive for the hospitals to purchase for all the patients so that is the only thing. If they were free again it would be glad to give them out to every patient. Used to send them home when they were free but now we can’t afford to give them to everyone.”
 Interaction with HMHB staff

When asked about the interaction with the HMHB staff to implement PURPLE, sites either indicated that they work primarily with the NCSBS for online training and ordering materials or that they worked with HMHB primarily at the beginning of their program. Those who had worked with HMHB were generally positive about their interaction. The nurse manager at the new OB ward St. Patrick’s in Missoula said, “We are a brand new unit at St. Pat’s. My previous hospital had PURPLE. We contacted HMHB. They came out and gave us some training. HMHB has been really great.” Another noted, “HMHB has been good to work with—we had some technical questions at the beginning and they were very responsive.” Another site noted that HMHB conducted a site visit and observed their group discharge education class. One site summarized their interaction saying, “We work with Healthy Mothers Healthy Babies continually— for grants and with our lactation specialist. We have a great relationship with them.”

Only one site, the PURPLE site that generally did not like the program, expressed concerns about their interaction with HMHB. Speaking about PURPLE the nurse manager noted, “This is something that was established at one point and then it’s just continued since then—we don’t get any new updated materials from HMHB. We just do it on our own.”

Ideas for other things that should be done to address AHT in Montana

Dose 1 sites noted that parents like the materials they receive at discharge (“Parents like the video—it is worthwhile for sure”) but several noted that they don’t know the outcomes of the program because once the parents leave, they do not see them again. “After the babies leave here—we don’t see too many of them unless it’s in the clinic. The clinic would be a better follow up. I have talked to some parents at postpartum visits and they said it gave them more of an understanding that babies cry. But after that initial few days, we don’t see them again.” Addressing and reinforcing the PURPLE message after discharge was a theme in other interviews as well. “I think PURPLE is a good fit and a good program. The only thing I think is that it would be good to have a clinic perspective—so addressing it in the pediatrician’s office, WIC etc. We get the message out and get it started but would be good to have it reinforced.” Another site put it this way, “There are SO many messages we give to patients—so we need to be careful about all that we flood them with. I think it is a wonderful program it just needs to be reinforced other places. Young moms are in a fog. Would be good on TV, in doctor’s offices and as part of more public information. I wouldn’t rely on hospitals if I was in charge of the program—we are teaching them too much. Breastfeeding, car seat safety, what is normal in newborns etc. So we have a lot on our plate. We give them so much information and they are in a fog. I think this is the right place to start but it needs be reinforced after they leave.”

Other sites noted that it might be wise to have a process to identify high risk care givers and do more intensive education with them. “We hope that PURPLE is sufficient. It is way better than what we did before. It gets the message out. I don’t see the after results. It is something that is addressed with every parent and every baby. Whether or not it is enough to make a change I don’t know. You try to identify patients who have a short fuse and it would be good to do a more intensive intervention. We really hit our education hard with those patients. I know that parenting can be frustrating and there are times when you don’t know how to calm your baby and that it’s okay. Hopefully that message gets through but some people just generally lack coping skills. We don’t identify all of them but hopefully the message is getting through.”

The interviewees almost universally expressed the importance of giving education related to this topic. “We think that coping regarding crying is really important and we need to let them know what is normal and that that is okay. No matter what—don’t do that.”
Dose 1 Workplans

The goals, activities, indicators and objectives in the HMHB Workplans for Dose 1 in Years 1 to 3 lack a specific strategy to engage hospital partners and encourage adoption of the PURPLE model. The goals, activities and objectives for Dose 1 in Years 1-3 discuss the use of PURPLE champions in hospitals and communities, and hint at targeting hospitals based on readiness and service numbers, but do not describe how HMHB will develop strategic partnerships with hospitals or work with them to adopt PURPLE and ensure fidelity to the PURPLE model. The workplans also belie a lack of understanding of the role of jurisdiction wide initiative, which should be working to strategically influence partners to adopt the PURPLE model developed by the NCSBS. The Year 1 and 2 workplans discuss “aligning records” with the NCSBS but fail to mention MOUs with the NCSBS or facilitating the use of the required, online PURPLE training. At times the workplans confuse the level of influence and control that a jurisdiction wide initiative can have under the PURPLE model, like in Activity 5 under Goal Number 1 in Year 2, which states that PURPLE celebrations will be held for 4 new Dose 1 hospitals each quarter, assuming that these hospitals will sign on to the program, without having a clear strategy to influence them to do so. A jurisdiction wide initiative does not have control over hospitals signing onto PURPLE, but must instead strategically partner with and influence them to adopt the model. The HMHB leadership in the early years does not seem to understand this control versus influence distinction.

In Year 4, a more clear strategy for working with Dose 1 hospitals is outlined. The workplan no longer discusses PURPLE champions, but instead proposes that HMHB work with hospital administrators, a key strategic step for a program that requires policy and procedural change and a long term financial commitment from hospital partners. For the first time, HMHB outlines a clear strategy for facilitating the use of the PURPLE model and tracking fidelity, as in Indicator 1.1 under Objective 1, “By June 2015, PURPLE-MT will develop internal tracking procedures for HMHB for maintaining the fidelity of the Period of PURPLE Crying® Program. This will include a reminder for each hospital as to when they should be re-ordering DVD and educational materials. When a hospital is ordering less than anticipated, PURPLE-MT will contact the hospital to assure continuation of education as designed.” This systematic approach, utilizing data to track partners statewide and monitor fidelity to the model, is unlike any activity outlined in previous work plans. The Year 4 workplan also outlines a plan to work with hospital administrators to discuss re-committing to the PURPLE model, a strategy that aligns with the findings of this evaluation showing that some hospitals have lost their administrative and budgetary support for PURPLE and are not implementing the model to fidelity. Finally, the Dose One approach in Year 4 includes strategic work to systematize PURPLE in hospitals through policy adoption, which is aligned with the best practice approaches supported by the NCSBS. For more information and analysis of the Year 1-4 work plans, see the Workplan analysis below.

Dose 2

As noted in the Dose 1 interviews, nurses delivering the PURPLE message in hospital OB units believe reinforcement of the PURPLE crying message is an important part of The Period of PURPLE Crying® program. The Period of PURPLE Crying® model supports this step through the Dose 2 model which calls for strategic reinforcement of the PURPLE message at sites outside of the hospital OB ward. According to the NCSBS, Dose 2 sites do not have to sign an MOU with the NCSBS to participate in The Period of PURPLE Crying® program, though they may choose to do so, agreeing to deliver the model to fidelity. The following Dose 2 sites in Montana have a formal MOU with the NCSBS.
The rest of the Dose 2 providers in Montana do not have a formal MOU with the NCSBS so it is difficult to assess and confirm what these providers are doing to reinforce the PURPLE message. The Year 4 renewal application from HMHB notes that in Year 3 of the funding, HMHB “partnered with 21 Dose Two providers across the state, providing program information and materials. Additionally, we have provided PURPLE Program updates and new online training information to 98 Dose 2 providers across Montana including 2-Hospitals (Education Dept.), 23-Community and State Agencies, 52 City-County Health Departments, 10-Tribal Health Departments, 11- OB/GYN, Pediatric, Family Practice Clinics.”

According the to the Work Plans and Final reports submitted by HMHB over the course of the three years of funding (see Workplan section below) HMHB has, in the opinion of the evaluator, lacked a clear strategy for Dose 2 and the proposed strategies have shifted a number of times during the course of the funding period. In the Year 1 work plan, (Goal #5) HMHB proposes to develop a partnership with groups in Montana working with pregnant and parenting teens. Formalizing this type of partnership is not mentioned in future year’s work plans or reported on in the final report from Year 1. The Year 2 and 3 work plan include objectives and activities related to engaging the Early Childhood Coalitions (ECCs) in the state, including identifying PURPLE Champions in the ECCs and linking the ECCs in communities to their hospitals who are providing the PURPLE education. In their final report for Year 2, HMHB reports working with the Helena ECC to develop the “Babies They Cry” video and conducting a PURPLE training with the group in June 2014. No other work with ECCs statewide in terms of education, linking to hospitals or identifying PURPLE champions is described. In their final report at the end of Year 3, HMHB noted that they had made a list of ECCs and added it to their Dose 2 database and met with two ECCs, but again a clear strategy to fully and systematically engage this group is not noted. In Year 3, HMHB also proposed to work with the Family and Community Health Division (FCHD) and the Montana Maternal, Infant and Early Childhood Home Visiting (MIECHV) program to recruit their programs as Dose 2 partners. Their final report notes a meeting with FCHD and MIECHV staff, but did not describe formalizing this partnership or an agreement from these partners to utilize PURPLE. Also in Years 2 and 3, HMHB proposes to attend conferences and quarterly meetings across the state to report on PURPLE Montana and provide information to various list serves and professional groups. The final reports for these years contain a list of meetings attended and presentations given but it is unclear how this work is linked to a plan for the strategic engagement of Dose 2 partners.

In the Year 4 renewal application, HMHB proposes a Dose 2 strategy that is more systematic and involves establishing a framework and developing an agreement with DPHHS for the use of PURPLE in their programs. In the renewal application, Indicator 2.1 reads, “By July 2015, HMHB will meet with key individuals within DPHHS to establish framework for formalized recognition of PURPLE MT.” HMHB then outlines a strategy to meet with key individuals within DPHHS and develop a formalized agreement about how the program can be incorporated into agency agendas. The Year 4 work plan also describes a plan to encourage hospital administrators to renew their commitment to PURPLE, which is merited based on the results of the Dose 1 surveys and interviews indicating that some hospitals have waned in their enthusiasm for the program and are not implementing it to fidelity, and a plan to facilitate the systemization of the
To determine what other opportunities there are to further AHT prevention work in settings outside of the OB wards in Montana and to gauge the awareness of potential Dose 2 partners of PURPLE, a Dose 2 survey was developed as part of this evaluation. The 14 question electronic survey tool was developed by the evaluator and a link was provided to administrators in DPHHS who sent it to internally maintained email list serves including: home visitors, WIC contractors, maternal and child health county contractors, midwives, Community Coalitions and Best Beginnings Advisory Councils, private adoption agencies and tribal entities. In all, 110 responses were received. The following tables summarize the results of the Dose 2 survey.

In question one, respondents were allowed to “check all that apply” because of the possibility that respondents work for organizations that fall into a number of these categories. Respondents from state, local, or city governments, home visiting programs and non-profits made up the majority responses.
Respondents reported a wide variety of organizational roles, though they were most likely to be home visitors or nurses followed by administrators and program managers.

More than half of the potential Dose 2 respondents reported utilizing The Period of PURPLE Crying® information in their organization and more than 1/3 reported using the crying cards from DPHHS. More than half of the respondents also incorporate other AHT prevention messages in the work that they do with parents.
Unlike the Dose 1 sites, where 75% of sites reported feeling very or adequately prepared to implement The Period of PURPLE Crying® program, at the potential Dose 2 sites, only 48% reported feeling very or adequately prepared to teach parents, caregivers or other child-serving professionals about preventing AHT.

HOW PREPARED ARE YOU TO TEACH PARENTS, CAREGIVERS OR OTHER CHILD-SERVING PROFESSIONALS ABOUT PREVENTING ABUSIVE HEAD TRAUMA?

- Very prepared 14%
- Somewhat prepared 39%
- Adequately prepared 35%
- Not at all prepared 13%

Like the Dose 1 sites, all Dose 2 providers reported that it was important or crucially important to train parents and caregivers about preventing AHT.

HOW IMPORTANT DO YOU THINK IT IS TO TRAIN PARENTS AND CAREGIVERS ON PREVENTING ABUSIVE HEAD TRAUMA?

- Crucially Important 84%
- Somewhat important 0%
- Not at all important 0%
- Important 16%
Potential Dose 2 sites were asked to indicate in what key areas related to AHT they would like more training information or training. Three quarters of respondents indicated that “teaching parents how to educate other caregivers key skills” and “mental health and post partum depression” would be helpful topics for training.

**HOW USEFUL ARE THE PERIOD OF PURPLE CRYING® PROGRAM MATERIALS?**

- I have used PURPLE materials and they were very useful. 43%
- I have used PURPLE materials and they were somewhat useful. 33%
- I have used PURPLE materials and they were not useful. 0%
- I am not familiar with the Period of PURPLE Crying® program 24%

Potential Dose 2 were asked about their knowledge of The Period of PURPLE Crying ® program. A quarter of the respondents were not familiar with the program. Of those who were familiar with the program, 100% indicated that they found the materials very or somewhat useful.
When asked if they think that The Period of PURPLE Crying® information is sufficient for educating parents on AHT, 60% of those respondents familiar with the PURPLE program indicated that they would incorporate additional messages or components in the program, unlike the Dose 1 sites who overwhelmingly reported that PURPLE is sufficient. When asked to explain, respondents noted the following additional items would be helpful to incorporate into AHT prevention education:

- Ways to handle stress and the baby crying
- I would like information to distribute and videos to show proper supporting of infant baby's neck and links to trauma
- "Hands-on" training would be the most useful. Making the information part of OB education both at the health care provider's office as well as the hospital or birthing center
- Self care/coping skills for caregivers to help them to better manage the crying
- I like multiple approaches and individualizing material.
- Stress the importance of temper control and call it just that - must be concrete and easily understood messages
- Anger management
- Specific resources for help--ie crisis nursery, crisis hotline for those middle of the night crying bouts
- People available WHEN a parent is reaching out for help
- Respite program for parents with little social support
- More pictures for families with disabilities and with low IQ
When asked to describe what kinds of additional AHT materials or resources they would most use, two thirds of respondents indicated that brochures and handouts would be most useful. Other materials requested by respondents included:

- More local HMHB support
- Education to incorporate into our current childbirth curriculum
- A crisis hotline number that is manned 24/7
- Electronic education that can be accessed through an EMR and patient portal
- Information about anger management, access to classes, etc.
- Any information linking this with drug or alcohol abuse
- Magnets, window clings/stickers (for baby bottles, mirrors, car seat)
71% of respondents indicated that their organization would find additional AHT prevention training helpful or very helpful.

If you are interested in additional training, what format would you prefer? (Check all that apply)

Online training was the most requested format for training on AHT. Respondents also requested:

- Webinar to be watched at a person’s convenience
- Early Head Start Association meeting/training
- Speakers at health department conferences
- Make the training convenient with the ability to start and stop as necessary
- We would be interested in hosting a training session and inviting parents in our area

In the final question, respondents were allowed to leave additional comments on AHT prevention. Responses included:

- Most of the education should be done in the hospital when the child is born with links for future prevention
- Just don’t think we are giving enough assistance in the mental health area that we need to. What can we do to better support people in crisis?
- Keep reminding us this is important—time goes on other issues seem to take up our time and we need to remember that this is a very important issue that always needs to be addressed
- TV ads, radio ads, newspaper ads, billboards, etc to get the message out across in a wide variety of ways to a wide audience
- Become familiar with Facebook advertising to reach your target audience
- Glad to be asked. All of our partners could benefit from additional materials and training. I think smart phone apps is an important way to go in this day and age.
Dose 2 Interviews

Interviews with potential Dose 2 partners and with HMHB and CTF board members and staff indicate that there is much more work that could be done, especially with DPHHS programs, to advance Dose 2 in a strategic way in the state. One HMHB board member indicated that it has been difficult working with DPHHS because the department has seemed resistant to utilizing PURPLE. She noted, “My feeling is that some DPHHS partners were not at the table when PURPLE was chosen, so they won’t incorporate it into their programs. But it is a DPHHS-born program, so it’s weird that they are not a strong partner.” DPHHS partners also expressed frustration with PURPLE Montana, noting that they could see areas where HMHB and DPHHS should be partnering but that the partnership never got off the ground. Patty Butler, Chief of the DPHHS Early Childhood Services Bureau and CTF board member noted that the childcare providers they serve would be an excellent target for Dose 2 and 3 but HMHB has focused almost exclusively on Dose 1 in their three years of funding. She notes, “We should be looking at Dose 2 and 3. Childcare providers would be included in that. I could support that and get the word out but I don’t think we’ve gotten passed Dose 1.” She also noted that she is now required by law to provide an online training to childcare providers on AHT prevention, but when it was in development, there was no executive director at HMHB, so they did not partner to create the training. Clearly this required online childcare training on AHT prevention is one area where the PURPLE message could be better incorporated to systematically advance Dose 2.

Other DPHHS partners highlighted other potential areas to partner on AHT messaging. Dianna Frick of the DPHHS MIECHV program expressed a willingness to incorporate PURPLE as long as home visitors were given the choice to utilize the materials when it was appropriate and needed; the evidence-based home visiting models incorporate many messages related to abusive head trauma and child abuse prevention and are already fulfilling the SPS statute using those messages, but the MIECHV program would like to support the home visitors in using the information and accessing additional materials when needed.” From numerous partner interviews, it is clear that there are untapped partnerships, especially within DPPHS, related to Dose 2 that could be better optimized and understood to create a more clear strategy for Dose 2.

Dose 3

In the three years that HMHB was funded for The Period of PURPLE Crying®, no statewide educational campaign was developed or disseminated. There are no goals, objectives or activities related to Dose 3 in the first three years of work plans. Final reports from Years 1-3 include various newspaper articles, editorials and other types of press that covered the work of the PURPLE Montana project, but there was not a strategy for Dose 3 articulated in the applications or contracts. Over the course of the project, a PURPLE Montana website and Facebook page were developed (www.purplemontana.org) and at least two Montana specific videos were produced. It is unclear from the work plans and applications how the website and videos were distributed or utilized to contribute to a clear Dose 3 strategy.

In the Year 4 renewal application, HMHB outlines a strategy for the first time for a Dose 3 campaign under Outcome Objective 3, “By April 2016, HMHB will increase the opportunity for public awareness of AHT through a statewide Positive Community Norms campaign on abusive head trauma”. The campaign message was to be developed by Jeff Linkenbach of the Montana Institute and HMHB committed to applying for outside funding to finance the dissemination of the campaign. A semi-structured interview with
Jeff Linkenback confirmed that preliminary conversations about this campaign were underway at the time that the HMHB funding was cut. In the Year 4 work plan, strategy was also described to develop a methodology to evaluate the campaign.

**Evaluation**

In every year of The Period of PURPLE Crying® funding, HMHB described plans to evaluate their efforts in their work plan. At times, these plans were unrealistic and unachievable, as in Year 1. The work plan in the Year 1 contract described the following activities that were to be conducted annually, quarterly, bi-monthly and at year end.

<table>
<thead>
<tr>
<th><strong>Annually</strong></th>
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<tbody>
<tr>
<td>Monitor Action Plan progress and results</td>
</tr>
<tr>
<td>Conduct survey and focus groups of Dose 1 and Dose 2 participants to assess leadership and commitment and collaboration</td>
</tr>
<tr>
<td>Design and conduct key respondent interviews with about fifteen representatives</td>
</tr>
<tr>
<td>Conduct a count of relevant hospital diagnostic codes; survey hospitals, clinics, pediatricians offices regarding SBS indicators</td>
</tr>
<tr>
<td>Design and conduct leadership team self-assessments</td>
</tr>
<tr>
<td>Collect SBS cost-of-care data from insurance companies</td>
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<table>
<thead>
<tr>
<th><strong>Quarterly</strong></th>
</tr>
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<tbody>
<tr>
<td>Review meeting minutes and retention rates to gauge commitment and collaboration</td>
</tr>
<tr>
<td>Count the number of new parents/caregivers reached with The Period of PURPLE Crying®</td>
</tr>
<tr>
<td>Count the number of Dose I and Dose 2 providers</td>
</tr>
<tr>
<td>Count the number of communities organized to implement Dose 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bi-Monthly</strong></th>
</tr>
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<tbody>
<tr>
<td>Conduct survey of parents of new babies to gauge knowledge and skills</td>
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<tr>
<th><strong>Year-end</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compose findings and recommendation report</td>
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</tbody>
</table>

This evaluation plan is not feasible, in the opinion of the evaluator. For instance, conducting bi-monthly surveys of parents in PURPLE facilities would be an incredibly large data collection burden both on the hospitals themselves and on HMHB- not to mention parents. The evaluation related goals and objectives in the Year One application were also confusing and not specific. The Objectives I-IV under Goal 4 read:

I. Overcome gap in data in order to enhance PURPLE Montana program readiness
II. Need local and state data (SBS coding)
III. Need evaluation of process and impact
IV. Establish baseline data at the institution, local and state levels

Not only are these not objectives, they do not provide any information on what HMHB planned to do related to assessing the incidence of AHT in Montana and evaluating the work of the Period of PURPLE Project. This lack of a clear, feasible evaluation strategy may have resulted from misguided technical assistance that HMHB received early on in this project. During the technical assistance grant period that proceeded the competitive award, HMHB paid Josh Turner and Associates to develop a needs assessment for PURPLE. This firm specialized in marketing and has little public health capacity or training. The Strategic Plan developed by Josh Turner and Associates does not include any public health data on the
incidence of AHT in Montana (or plan to develop this data) nor did it describe a clear, best practice evaluation plan for the program to guide HMHB moving forward.

During Year 1, a Carroll College Intern serving at HMHB, along with support from a VISTA serving with the CTF in DPHHS, developed a survey for PURPLE sites. According to the final report on the project, six hospitals (of the 14 that were PURPLE at the time) volunteered to participate in the survey. The participants from the hospitals were nurses who worked in the OB department and were engages in presenting The Period of PURPLE Crying ® program to patients. Surveys were emailed to the nurse managers at the six sites who printed paper surveys for the nurses to fill out. There were 110 responses to the ten question survey. The final report on the survey only provides information on two of the questions-how the program was presented to the parents in the hospital and the perceived need for additional training. It does not appear that the survey was developed from the “Generic Nurse Survey” tool from the NCSBS. The question format for the fidelity question in the report is concerning, because it does not appear that there was any option for the nurse to select that describes fidelity to the model according to the NCSBS prescribed “Teach, Watch and Give” format. This survey, in the opinion of the evaluator, was poorly designed and the final report does not contain the full survey results. It is clear the survey was developed by individuals with little evaluation experience or expertise. Below are the two graphs presented in the final evaluation report for the survey.

How do you present the Period of PURPLE Crying program to parents?

- Discuss brochure: 21
- Other: 32
- Watch and discuss both: 32
- Watch and discuss video: 25

Do you feel additional training of the PURPLE program would be helpful?

- Not helpful
- Somewhat helpful
- Very helpful
In Year 2, the HMHB application work plan contains more concerning objectives and activities for evaluation. The Goal 2 evaluation related activities include:

1. Continue to disseminate the Infant Trauma survey going to every Montana hospital - utilize for PM program improvement. --- Each July via ‘Survey Monkey’
2. Continue to distribute The Period of PURPLE Crying Nurse Survey to each participating PM educator to be used for PM improvement. --- semi-annual via ‘Survey Monkey’
3. Write a White Paper with recommendations for improvement going forward regarding the status of data collection and evaluation of SBS/MIT in Montana. Because baseline data that allows for the extensive evaluation have not been agreed-upon at this time, performance benchmarks need to be discussed and will be established. —— January 31, 2014
4. After MTCTF Board reviews and develops a response to the White Paper, PM will make any changes that are within the purview of this contract. —— June 2014

The evaluator could not confirm if an infant trauma survey was ever developed or disseminated. It is unclear what this survey would entail and what data would be collected. For the PURPLE Crying Nurse Survey, which the evaluator assumes is referring to the poorly designed tool utilized in Year 1, the described plan to send it out two times per year to hospitals would be unwise, creating an undue burden on Dose 1 partners. Regardless, the final report for Year 2 does not mention the dissemination of any PURPLE surveys. The white paper described in activities three and four was not located by the evaluator.

In Year 3, HMHB again included activities in their work plan related to evaluation under Goal 3 Objective 3. The activities described include:

A. PM will review current “Hospital Survey”, identify information to track, update and identify key Montana Hospital Association contact to distribute to every Montana Hospital CEO or their designee (include Cover Letter from HMHB) via Survey Monkey
B. PM will review current “Nurses Survey” for content, update; identify hospital key contacts for distribution to all PURPLE Hospitals.
C. PM will identify/develop Parent Survey to distribute to PURPLE institutions and propose system of delivery and tracking with families receiving PURPLE education

According to the final report from Year 3, none of these surveys was ever conducted. Again, this strategy of disseminating multiple surveys for different audiences seems like an unfeasible and unrealistic plan.

In the Year 4 renewal application, HMHB discusses a number of strategies related to evaluation including:

1) Evaluating internal activities and external products within a more robust evaluation model
2) A retrospective review of records over the next 5 years.
3) Utilizing a formal partnership with DPHHS to facilitate the evaluation of Dose 2 strategies
4) Conducting a baseline evaluation of public knowledge regarding AHT
5) Developing and identifying a methodology to evaluate the proposed Dose 3 campaign.
6) Applying for a five year grant from the CDC to assist in ascertaining the incidence of AHT in Montana which will “greatly improve the ability of HMHB to evaluate the PURPLE-MT program”

In the opinion of the evaluator, this plan, though not entirely robust or comprehensive, is the most feasible and realistic of any described in the HMHB work plans and includes clear strategies that could be refined further into a meaningful evaluation plan. Sources of data for a more robust and meaningful evaluation of PURPLE Montana are outlined below.
Since a robust evaluation plan for The Period of PURPLE Crying® Program has not been developed, it is important to consider other sources of data that might be utilized to help guide any jurisdiction wide efforts related to the program. One excellent sources of data for evaluation is the NCSBS and their program records. Dose 1 sites sign MOUs directly with the NCSBS, and the NCSBS provides the sites with PURPLE materials and online training, which are tracked in their national database. Below are a number of tables with information provided by the NCSBS on the PURPLE sites in Montana.

### Use of Online Training

<table>
<thead>
<tr>
<th>Dose 1 Hospitals</th>
<th>Month and Year MOU Signed</th>
<th>Month and Year of Online Training Registration&lt;sup&gt;44&lt;/sup&gt;</th>
<th>Use of Training in 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefis Healthcare – Great Falls</td>
<td>August 2012*</td>
<td>October 2010</td>
<td>No</td>
</tr>
<tr>
<td>Big Horn County Hospital - Hardin</td>
<td>August 2012</td>
<td>April 2010</td>
<td>Yes</td>
</tr>
<tr>
<td>Billings Clinic- Billings</td>
<td>August 2012</td>
<td>April 2011</td>
<td>No</td>
</tr>
<tr>
<td>Holy Rosary Healthcare- Miles City</td>
<td>August 2012</td>
<td>July 2012</td>
<td>Yes</td>
</tr>
<tr>
<td>Kalispell Regional Medical Center</td>
<td>August 2012</td>
<td>August 2011</td>
<td>Yes</td>
</tr>
<tr>
<td>Livingston Healthcare -Livingston</td>
<td>August 2012</td>
<td>December 2011</td>
<td>No</td>
</tr>
<tr>
<td>Marias Medical Center - Shelby</td>
<td>August 2012</td>
<td>November 2014</td>
<td>No</td>
</tr>
<tr>
<td>Providence Saint Joseph Medical Center - Polson</td>
<td>August 2012</td>
<td>July 2012</td>
<td>No</td>
</tr>
<tr>
<td>St. Peter's Hospital – Helena</td>
<td>August 2012</td>
<td>November 2010</td>
<td>No</td>
</tr>
<tr>
<td>Sidney Health Center - Sidney</td>
<td>August 2012</td>
<td>February 2012</td>
<td>No</td>
</tr>
<tr>
<td>North Valley Hospital - Whitefish</td>
<td>December 2012</td>
<td>November 2012</td>
<td>Yes</td>
</tr>
<tr>
<td>Frances Mahon Deaconess Hospital - Glasgow</td>
<td>December 2012</td>
<td>July 2012</td>
<td>Yes</td>
</tr>
<tr>
<td>Community Hospital of Anaconda - Anaconda</td>
<td>January 2013</td>
<td>November 2012</td>
<td>No</td>
</tr>
<tr>
<td>Bozeman Deaconess Hospital - Bozeman</td>
<td>March 2013</td>
<td>February 2013</td>
<td>Yes</td>
</tr>
<tr>
<td>Cabinet Peaks Medical Center - Libby</td>
<td>May 2013</td>
<td>January 2013</td>
<td>No</td>
</tr>
<tr>
<td>Trinity Hospital – Wolf Point</td>
<td>October 2013</td>
<td>October 2013</td>
<td>No</td>
</tr>
<tr>
<td>Barrett Hospital and Healthcare - Dillon</td>
<td>February 2014</td>
<td>Has not registered</td>
<td>-</td>
</tr>
<tr>
<td>The Birth Center – Missoula</td>
<td>February 2014</td>
<td>February 2014</td>
<td>No</td>
</tr>
<tr>
<td>St. Vincent Healthcare - Billings</td>
<td>January 2015</td>
<td>January 2015</td>
<td>Yes</td>
</tr>
<tr>
<td>Clark Fork Valley Hospital - Plains</td>
<td>June 2015</td>
<td>January 2014</td>
<td>Yes</td>
</tr>
<tr>
<td>St. Patrick’s Hospital – Missoula</td>
<td>June 2015</td>
<td>June 2015</td>
<td>Yes</td>
</tr>
<tr>
<td>Community Medical Center - Missoula</td>
<td>June 2015</td>
<td>Has not registered</td>
<td>-</td>
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<table>
<thead>
<tr>
<th>Dose 2 sites (MOU not required)</th>
<th>Month and Year MOU Signed</th>
<th>Month and Year of Online Training Registration&lt;sup&gt;45&lt;/sup&gt;</th>
<th>Use of Training in 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaconda Deer Lodge Public Health Department-Anaconda</td>
<td>August 2012</td>
<td>June 2011</td>
<td>No</td>
</tr>
</tbody>
</table>

<sup>44</sup> MT Implementers Training Report. 10/29/2015. Provided to the evaluator by Julie Noble of the NCSBS.

<sup>45</sup> MT Implementers Training Report. 10/29/2015. Provided to the evaluator by Julie Noble of the NCSBS.
*Note: The NCSBS reports that the PURPLE MOUs for Montana were lost at some point and anyone who had an MOU previously had to resign it in August 2012, thus the large number of MOUs signed in that month.

In all, only two Dose 1 sites have not registered for the online training with the NCSBS. About half (9/20) of the registered Dose 1 sites have utilized the online training in 2015. Only 2 of the 6 registered Dose 2 sites have utilized the training in 2015. This training information could be utilized by a jurisdiction wide initiative to follow up with sites, ensure they are providing their staff training according the MOUs and encouraging them to utilize the tools provided by the NCSBS. The NCSBS also indicated that, given a longer time frame, they could work with a jurisdiction wide lead to access the training outcome data and data on the number of individuals utilizing the training at each site.

Another source of evaluation data for PURPLE from the NCSBS is information about the re-ordering of PURPLE materials. According to the NCSBS MOU, Dose 1 sites in Montana should order PURPLE materials directly from the NCSBS after receiving them for free for one year from HMHB. Below is a chart with the PURPLE hospitals and the number of PURPLE materials ordered the NCSBS. It also includes an estimated number of births that each hospital since signing the NCSBS MOU (based on the monthly births at the hospital times the number of months the hospital has had the MOU in place) and the estimated number of materials received from the HMHB which was approximately equal to the number of births annually at the hospital. Estimates were not developed for hospitals that did not return a customer number with the NCSBS.46 Note: This data is from a large NCSBS database and may contain inaccuracies, particularly for sites that were returned as not having a customer number. Thus, it should not be assumed that those sites without a customer ID number have not ordered materials from the NCSBS-there may simply be a problem with the data query that could be explored with the NCSBS.

46 Data query from the NCSBS in the fall of 2015, provided to the evaluator by Jen Shaw of HMHB.

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Estimated # of materials provided by HMHB</th>
<th>Estimated births since MOU signed*</th>
<th>Materials ordered from NCSBS</th>
<th>Estimated Number of Total Materials</th>
<th>Material orders compared to births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefis Healthcare – Great Falls</td>
<td>1545</td>
<td>4249</td>
<td>3000</td>
<td>4545</td>
<td>296</td>
</tr>
<tr>
<td>Big Horn County Hospital - Hardin</td>
<td>36</td>
<td>99</td>
<td>100</td>
<td>136</td>
<td>37</td>
</tr>
<tr>
<td>Billings Clinic - Billings</td>
<td>1340</td>
<td>3685</td>
<td>3105</td>
<td>4445</td>
<td>760</td>
</tr>
<tr>
<td>Holy Rosary Healthcare -</td>
<td>284</td>
<td>781</td>
<td>250</td>
<td>534</td>
<td>-247</td>
</tr>
</tbody>
</table>

**Estimated materials deficits or surpluses**
<table>
<thead>
<tr>
<th>Site Name</th>
<th>PURPLE</th>
<th>MOU</th>
<th>DVD</th>
<th>MMT</th>
<th>MMTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles City</td>
<td>651</td>
<td>1790</td>
<td>900</td>
<td>1551</td>
<td>-239</td>
</tr>
<tr>
<td>Kalispell Regional Medical Center</td>
<td>102</td>
<td>281</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Livingston Healthcare - Livingston</td>
<td>21</td>
<td>58</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Marias Medical Center - Shelby</td>
<td>139</td>
<td>382</td>
<td>150</td>
<td>289</td>
<td>-93</td>
</tr>
<tr>
<td>Providence Saint Joseph Medical Center - Polson</td>
<td>766</td>
<td>2107</td>
<td>2910</td>
<td>3676</td>
<td>1569</td>
</tr>
<tr>
<td>St. Peter’s Hospital - Helena</td>
<td>165</td>
<td>454</td>
<td>400</td>
<td>565</td>
<td>111</td>
</tr>
<tr>
<td>Sidney Health Center - Sidney</td>
<td>490</td>
<td>1266</td>
<td>800</td>
<td>1290</td>
<td>24</td>
</tr>
<tr>
<td>North Valley Hospital - Whitefish</td>
<td>132</td>
<td>341</td>
<td>150</td>
<td>282</td>
<td>-59</td>
</tr>
<tr>
<td>Frances Mahon Deaconess Hospital - Glasgow</td>
<td>79</td>
<td>198</td>
<td>100</td>
<td>179</td>
<td>-19</td>
</tr>
<tr>
<td>Community Hospital of Anaconda - Anaconda</td>
<td>1207</td>
<td>2816</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bozeman Deaconess Hospital - Bozeman</td>
<td>110</td>
<td>238</td>
<td>150</td>
<td>260</td>
<td>22</td>
</tr>
<tr>
<td>Cabinet Peaks Medical Center - Libby</td>
<td>165</td>
<td>289</td>
<td>200</td>
<td>365</td>
<td>76</td>
</tr>
<tr>
<td>Trinity Hospital – Wolf Point</td>
<td>67</td>
<td>95</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The Birth Center - Missoula</td>
<td>90</td>
<td>128</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>St. Vincent Healthcare - Billings</td>
<td>1468</td>
<td>734</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Clark Fork Valley Hospital - Plains</td>
<td>42</td>
<td>21</td>
<td>50</td>
<td>92</td>
<td>71</td>
</tr>
<tr>
<td>St. Patrick’s Hospital – Missoula</td>
<td>No data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Medical Center</td>
<td>1520</td>
<td>126</td>
<td>1520</td>
<td>3040</td>
<td>2914</td>
</tr>
<tr>
<td>HMHB Montana</td>
<td>-</td>
<td>-</td>
<td>14,044</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8,907</td>
<td>20,136</td>
<td>26,309</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Estimate based on the number of months the MOU has been in place and the number of estimated births per based on the annual birth rate.

Of the 15 sites that returned a customer ID with the NCSBS, 10 had an estimated surplus of supplies and 5 had an estimated deficit according to this method of calculation. Though this is only a preliminary look at the data, this type of information could be incredibly useful in helping track the use of PURPLE statewide. Interestingly, in the Year 4 Renewal Application, HMHB proposes using this type of programmatic data to interface with and track the fidelity of Dose 1 partners. Indicator 1.1 in the Year 4 renewal application reads, “By June 2015, PURPLE-MT will develop internal tracking procedures for HMHB for maintaining the fidelity of The Period of PURPLE Crying® Program. This will include a reminder for each hospital as to when they should be re-ordering DVD and educational materials. When a hospital is ordering less than anticipated, PURPLE-MT will contact the hospital to assure continuation of education as designed.”

Another useful tool to evaluate this program is to compare the Work plans in the Year 1 to 3 contracts and Year 4 Renewal Application side by side. It is somewhat challenging to compare the work plans because CTF has changed their format requirements and terminology for work plans over the years, but every plan...
did include Objectives. It is common in public health practice to include objectives in work plans, and to utilize them as the primary means to measure success and achievement of outcomes. The most common type of objective used in public health practice is the SMART objective. SMART is an acronym that stands for Specific, Measurable, Achievable, Realistic and Time-Phased. To read more about the how the CDC describes SMART objectives see this Evaluation Technical Assistance Brief: http://www.cdc.gov/healthyyouth/evaluation/pdf/brief3b.pdf

Below is an attempt by the evaluator to analyze the Objectives in the Year 1-3 HMHB Work Plans funded by the CTF and the Year 4 Renewal Application work plan. Objectives with no SMART components are colored Red, objectives with some SMART components are colored Yellow with an indication of what components the evaluator thinks are present (eg SRT would mean that the objective is Specific, Reasonable and Time-Phased but not Measurable or Achievable) and objectives colored green meet all of the SMART criteria. A column is also included to describe if the objective is achieved (green), not achieved (red) or could not be measured (grey). These designations and the comments included in the last column are subjective determinations by the evaluator. The comments mainly relate to whether objectives can be measured and if they were achieved, whether the evaluator believes that the item in the work plan is correctly classified and whether the goal, objective, activity or indicator follows the PURPLE model.

### HMHB Work Plans-From Year 1 - 3 Contracts and Year 4 Renewal Application

<table>
<thead>
<tr>
<th>Year One</th>
<th>SMART</th>
<th>Objective Achieved</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1. PURPLE Montana Identifies Champions and Develops Clear and Visible Leadership Among Institutional, Community and Statewide Representatives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal 1 Objectives:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Identify central person or entity for contact</td>
<td>Red</td>
<td>Could not be measured (CNBM)</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>II. Assess current institutional, community and statewide leadership potential</td>
<td></td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>III. Identify grassroots stakeholder 'champion' involvement</td>
<td></td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>IV. Enhance professional development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Engage institutional, local, and state level interdisciplinary early childhood and other coalitions</td>
<td>SAR</td>
<td>CNBM</td>
<td>Need metric to measure engagement. Cannot determine if objective was achieved</td>
</tr>
<tr>
<td>VI. Provide technical assistance field staff to work in institutions and communities (medical and community organizing)</td>
<td></td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>VII. Develop enthusiasm for an SBS program</td>
<td></td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>Goal 1 Activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Describe project values in action E.g., what does it look like to be committed and collaborative?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Develop job descriptions for institutional, community, and statewide leadership teams</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Identify existing Dose 1 and Dose 2 institutional project</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

leadership teams
4. Work with current Dose 1 and Dose 2 providers to identify and recruit leadership teams
5. Identify prospective statewide leadership team
6. Recruit and orient state leadership team
7. Orient current Dose 1 and Dose 2 institutional leadership teams about job descriptions and expectations
8. Work with current Dose 1 and Dose 2 providers to identify and recruit community project leadership teams
9. Orient Dose 1 and 2 leadership teams about job description and expectations
10. Create institutional and community leadership teams as PURPLE expands to new Dose 1 and 2 providers
11. Publicize and introduce leaders as they are recruited and trained
12. Provide leadership training and development for all members of institutional, community and statewide leadership teams
13. Identify project leaders on project website and communications

Goal 2. PURPLE Montana Develops Unified and Integrated Organizational Structure

Goal 2 Objectives
I. Adopt a flat, spider-web type structure rather than a siloed hierarchy
II. Build a communication network between and among the stakeholders
III. Creates a central clearinghouse for information that allows for effective program delivery
IV. Brings about an atmosphere of competence and connection to the issues

Goal 2 Activities:
1. Review and adopt the Organizational Structure (Appendix L)
2. Determine management and reporting protocols
3. Identify key program managers to engage in structure (Appendix K)
4. Determine project management meeting schedule
5. Determine project management reporting schedule and format
6. Communicate management structure, protocols and schedules to leadership teams
7. Recruit and train key program managers
8. Communicate management structure, protocols and schedules to key program managers

Goal 3. PURPLE Montana Develops a Successful Implementation Strategy to Deliver Dose 1 and Dose 2 and brain development information to all Montana Parents*

Goal 3 Objectives
I. Parents will understand that their community has resources designed to strengthen their skills and abilities
II. Parents will understand that persistent crying is normal and learn crying cues
III. Parents will know that all babies cry and they will experience less stress when baby cries
IV. Parents will gain tools for soothing a crying baby

<table>
<thead>
<tr>
<th>Goal 2 Objectives</th>
<th>CNBM</th>
<th>Cannot determine if objective was achieved.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Adopt a flat, spider-web type structure rather than a siloed hierarchy</td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>II. Build a communication network between and among the stakeholders</td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>III. Creates a central clearinghouse for information that allows for effective program delivery</td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>IV. Brings about an atmosphere of competence and connection to the issues</td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
</tbody>
</table>

It is unclear who the key program managers and project management are as described here. This terminology is not utilized after the Year 1 application.

<table>
<thead>
<tr>
<th>Goal 3 Objectives</th>
<th>CNBM</th>
<th>This is a goal or desired outcome. Cannot determine if objective was achieved.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Parents will understand that their community has resources designed to strengthen their skills and abilities</td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>II. Parents will understand that persistent crying is normal and learn crying cues</td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>III. Parents will know that all babies cry and they will experience less stress when baby cries</td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>IV. Parents will gain tools for soothing a crying baby</td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td><strong>V. Parents will avoid the financial and emotional costs of SBS</strong></td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td><strong>VI. Parents will be educated about normal infant brain development</strong></td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td><strong>VII. Parents will have confidence to make healthy, age-appropriate decisions</strong></td>
<td>CNBM</td>
<td>This is a goal or desired outcome. Cannot determine if objective was achieved.</td>
</tr>
</tbody>
</table>

**Goal 3 Activities:**
1. Prioritize Dose 1 provider recruitment based on birth rate, apparent readiness, and ID of institutional champion
2. Prioritize Dose 2 provider recruitment based on service numbers, apparent readiness and I.D. of institutional champion
3. Hire and train PURPLE Montana staff
4. Develop a communications strategy to publicize participating hospitals and communities
5. Prepare and distribute regular updates regarding implementation progress
6. Align provider records with National Center on Shaken Baby Syndrome
7. Conduct site visits to current Dose 1 and 2 providers to build relationships and assess their specific needs to be successful
8. Conduct professional development individually as well as at conferences
9. Propose a 'Brain Summit' —train the trainers to be held in conjunction with current statewide conference or at a separate time (such as FCHB or CAN in April)
10. PURPLE Montana provides an initial supply of The Period of PURPLE Crying® DVDs and booklets to participating providers.
11. Maternity ward nurses or other trained educators show the video to parents of new babies, discuss The Period of PURPLE Crying®, and give the parents the video and booklet to take home.
12. In communities with no participating hospital, other providers of care for infants do this.
13. Then, pediatricians, home health visitors, WIC and other early childhood educators reinforce the PURPLE message.
14. Training of Trainers - Brain Summit ... share Boston and other key info
15. Local media and community members help remind everyone that crying is normal and offer support for parents and caregivers.

**Goal 4. PURPLE Montana Identifies Data Necessary to Begin Integration of Positive Community Norms (PCN) / MOST of Us® into the Program**

**Goal 4 Objectives**
1. Overcome gap in data in order to enhance PURPLE Montana program readiness
2. Need local and state data (SBS coding)

**Alignment with the National Center on Shaken Baby Syndrome involves much more than records. Sites need to be oriented to the PURPLE model, agree to operate under an MOU and adopt model to fidelity.**

Activities 10-13 and 15 attempt to describe the PURPLE model but do not articulate a strategy to work with hospitals to adopt PURPLE and implement the model in their facility under and MOU with the NCSBS.
| Goal 4 Activities | Evaluation strategy primarily involves needs assessment (vital signs should be vital records) and FICMR data. No clear strategy to evaluate the actual program with simple measures like the number of MOUs with the NCSBS and the number of trainings completed. |
| Goal 5 Activities: | It is not clear why this population was selected to target in Year 1. No activities listed here are documented in the final report. |
| Goal 5 Objectives | This goal/strategy is not mentioned in Years 2-3. |
| Goal 5 Objectives | Cannot determine if objective was achieved. |
| Goal 5 Objectives | Cannot determine if objective was achieved. |
| Goal 5 Objectives | Cannot determine if objective was achieved. |
| Year 2 | SMART Objective** | Objective Achieved? | Comments |
| Goal 1: PURPLE Montana Develops a Successful Recruitment and Sustainable Implementation Strategy for Dose One and Dose Two Professionals to educate the parents of newborns. | | | |
| SMART | | | Need a metric to measure relationship building with PURPLE Champions. Cannot determine if objective was achieved. |
| Goal 1 Objective 1. Continue to build and maintain relationships with ‘PURPLE Champions’ at each individual hospital to develop enthusiasm for SES/ART prevention, brain development and other ACE-informed educational tools. | | | Activities and outreach strategy is more specific than in Year 1. Activity 3 identifies a strategy for prioritizing outreach, but the strategy does not seem to be used in |
the state map showing the PURPLE Institutions. - Ongoing
3. Prioritize Dose One provider recruitment based on birth rate, apparent readiness, and I.D. of institutional champion. — Ongoing
   - Review quarterly
4. Continue to update plan which Prioritizes Dose 2 provider recruitment based on service numbers, apparent readiness and I.D. of institutional champion. — April 2014
5. PM will assist each hospital to develop protocols to train in-coming nurses and/or refresh staff knowledge about PM delivery and encourage other tactics such as SBS/AHT education within their pre-natal classes will enhance sustainability. PM will organize a special celebration and accompanying publicity campaign for each of the PURPLE Hospitals -- 1 to 3 celebrations per month through June 2014.
   a) Quarter 1 — Great Falls; Livingston; Bozeman; Dillon and Anaconda
   b) Quarter 2 — Billings Clinic; Sidney; Hardin; Miles City and Glasgow
   c) Quarter 3 — Libby; Kalispell; Whitefish; Poisson and Shelby
6. Provide updated PM information to institutional, community and statewide entities at their 2013-2014 meetings and conferences. — June 2014
7. Align provider records with National Center on Shaken Baby Syndrome. — Ongoing
8. Engage all individual institutions with the official NCSBS Program designation inviting them to celebrate alongside PM Partners. — March 2014

<table>
<thead>
<tr>
<th>Goal I Objective II. Continue to reach parents of 80% of newborns in Montana to deliver The Period of PURPLE Crying® education.</th>
<th>SMA</th>
<th>Not achieved at the end of Year 2</th>
</tr>
</thead>
</table>
| 1. PM will obtain signed MOU’s and grow from 16 hospitals to 23+ hospitals and provides an initial supply of The Period of PURPLE Crying® DVDs and booklets to each --- March 2014
   a) Quarter 1 Missoula; Cutbank; Browning; and Lewistown;
   b) Quarter 2 — Glendive; Wolf Point; Billings St. Vincent’s; and Butte
   c) Quarter 3 — Hamilton; Havre; Plains; and Ronan
2. PM will train nurses or other educators to show the video to parents, discuss The Period of PURPLE Crying®, and give them the video and booklet to take home. — Ongoing
3. PM will ensure consistent education regarding the SBS/AHT, PURPLE Crying, and early brain development. This will strengthen Montana families by empowering every parent to become the earliest and best advocate for their child’s health, safety and well-being. The education will normalize the SBS/AHT education to each parent, similar to CPR Training and infant safety seat instruction. | | At the time of this application, PURPLE Montana was only being implemented at hospitals covering 58% of the births, so the objective should not say “continue to reach”. This objective was achieved at the end of Year 3. At the end of Year 2, the objective was not achieved. |
<p>| 15 Dose 1 sites had MOUs with the NCSBS at the time of this application. After Year 2, there were 18 sites. There are currently 22 Dose 1 sites. | | Activity 2 seems to misunderstand the sphere of influence versus the sphere of control. HMHB cannot guarantee that hospitals will sign MOUs, but must have a strategy to recruit them voluntarily. |
| Activity 2 does not acknowledge the use of the NCSBS training. | | |</p>
<table>
<thead>
<tr>
<th>Activity</th>
<th>Objective</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 3</td>
<td>I.</td>
<td>Does not outline a strategy to ensure consistency or fidelity to the PURPLE model.</td>
<td></td>
</tr>
<tr>
<td>Goal I Objective III</td>
<td></td>
<td>Continue to reinforce and support Dose One, PM will begin to build and/or enhance connections between the Dose One institutions and the local early childhood coalition in an effort to assist each to build/enhance parent support system for success.</td>
<td>SAR, CNBM</td>
</tr>
<tr>
<td>Goal 1 Objective III Activities</td>
<td>1.</td>
<td>PM will obtain and maintain and updated list of contacts for the ECCs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>On an individual community basis PM will continue to communicate information about participating hospitals to the corresponding ECC. Provide technical assistance and develop specific next steps appropriate for each community such as the Discharge Brunch and Thrive. --- Ongoing as Institutions are added. a) Quarter 1 — Helena; Kalispell; Bozeman; and Missoula b) Quarter 2 — Butte; Poison; Great Falls and Chester c) Quarter 3 — Anaconda; Billings; Miles City and Deer Lodge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>Continue to maintain an extensive database of ECC PM champions as well as the state map showing the ECC Partnerships with PURPLE Institutions. — Ongoing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.</td>
<td>Prepare and distribute regular updates to MTCTF, DPHHS and other entities regarding implementation progress. — Ongoing</td>
<td></td>
</tr>
<tr>
<td>Goal 2: PURPLE Montana elevates and communicates issues surrounding Shaken Baby Syndrome/Abusive Head Trauma prevention by continuing to build relationships and capacity of partners including Dose Two medical institutions and professionals; early childhood coalitions and advocates; and statewide entities.</td>
<td>Objective III under Goal 1 should be under this Goal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective I.</td>
<td>Continue to build relationships with professional medical associations; early childhood coalitions; and statewide leadership within and outside of government to develop enthusiasm for SBS/AHIT prevention, brain development and other ACE-informed educational tools.</td>
<td>CNBM</td>
<td>Cannot determine if objective was achieved.</td>
</tr>
<tr>
<td>Goal II Objective I Activities</td>
<td>1.</td>
<td>Attend these annual, semi-annual and/or quarterly meetings and report on PM; send communications - content for their various newsletters, listserves and/or social media sites as appropriate. a) MT Hospital Association — quarterly b) MT Medical Association — quarterly c) MT Nurses Association — quarterly d) Rocky Mountain Childbirth Association — semi-annual e) MT Pediatrics Association — quarterly f) MT Public Health Association — semi-annual g) MT CTh Board and Grantees Meeting — quarterly h) Public Health and Safety Division — Dr. Steven Helgerson - Periodic newsletters i) Early Childhood Services Bureau — Patty Butler BBC — Best Beginnings Council; Caitlin Jensen — Head Start; and Kelly Hart - Teens Parenting. - quarterly - as appropriate j) EMS and Trauma Systems — Carol Kussman — semi-annual</td>
<td>These activities lack a strategic direction. Would like to see an articulation of who the key partners are, how HMHB will engage them and for what specific purpose. Unclear who are the strategic partners HMHB will recruit as Dose 2 sites and how will they utilize the PURPLE materials and reinforce the message systematically</td>
</tr>
<tr>
<td>Annual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Child Family Services Division -CAN Conference --- annual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Family and Community Health Bureau (includes FICMR; MIAMI-IW; WIC; PHNs)-quarterly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Attend and present the success of the PURPLE MT at the NCSBS Prevention International Conferences- May and/or September 2014.</td>
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</tr>
<tr>
<td>3. Reach parents of 80% or more of newborns in Montana with PM and work with the NCSBS to conduct the official jurisdiction-wide Program designation celebration.</td>
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</tbody>
</table>

**Objective II. Continue to communicate the news of PM Program to these stakeholders and maintain a best practices clearinghouse of tools and information.**

- Communication strategy does not describe a strategy that relates to Dose 2 according to the PURPLE model
- Cannot determine if objective was achieved.

**Goal II Objective II Activities**

1. Develop the Communication Plan to articulate the dates and responsibilities to carry out PM initiative and activities - December 2013
2. Continue to educate the MTCTF Grant Manager and other system partners about the latest in SBS/AHT research and prevention techniques through meetings, conferences and internal communication and encourage all to disseminate the information through their websites and networks. --- Quarterly beginning winter 2013-14 and ongoing
3. Continue to update the www.PURPLEMontana.org website as well as the HMHB Facebook page — weekly or as often as needed
4. Provide editorial content for DPHHS's “Prevention Opportunities Under the Big Sky” at same time or near the NCSBS recognition celebration --- March 2014
5. In coordination with MTCTF/DPHHS continue to develop a new 'crying card' that meets the mandate and compliments the PM program to be paid for and distributed by DPHHS - -- December 2013
6. Review/update the letter to be given out by the National Center on Shaken Baby Syndrome (NCSBS) to people who contact them directly with questions about Montana services --- December 2013.
7. Continue to provide Quarterly Reports and Information as requested to the MTCTF Board.

**Goal 3: PURPLE Montana Begins to Identify Baseline Outcome and Impact Data and Gaps in Data Necessary for Baseline and Program Impact Tracking.**

<table>
<thead>
<tr>
<th>Objective I. Overcome gap in data in order to enhance PURPLE Montana program readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot determine if objective was achieved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective II. Collect local and state data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot determine if objective was achieved.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective III. Evaluate processes and impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot determine if objective was achieved.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective IV. Establish baseline data at the institution, local, and state levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot determine if objective was achieved.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective V. Acknowledge seriousness of SBS/AHT, but be proactive in engaging communities in solutions with joy and hope utilizing PCN framework.</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a guiding principle or value not an objective. Cannot determine if objective was achieved.</td>
</tr>
</tbody>
</table>

**CNBM**
### Goal 3 Activities (not classified under specific objectives)

1. Continue to disseminate the Infant Trauma Survey going to every Montana hospital - utilize for PM program improvement. --- Each July via ‘Survey Monkey’
2. Continue to distribute The Period of PURPLE Crying® Nurse Survey to each participating PM educator to be used for PM improvement. --- Semi-annual via ‘Survey Monkey’
3. Write a White Paper with recommendations for improvement going forward regarding the status of data collection and evaluation of SBS/MIT in Montana. Because baseline data that allows for the extensive evaluation have not been agreed-upon at this time, performance benchmarks need to be discussed and will be established. --- January 31, 2014
4. After MTCTF Board reviews and develops a response to the White Paper, PM will make any changes that are within the purview of this contract. --- June 2014

Nurse survey refers to PURPLE Nurse Survey Evaluation conducted by Nicole Johnson and Elli Graff (report May 2013).

Evaluator could not locate White Paper and Infant Trauma Survey

None of these activities were completed according to Year 2 final report.

### Year 3 – note in the Year 3 contract, there is a work plan with Service Outputs, Outcomes and Indicators. Below is an attempt to capture most of the information in the two formats.

<table>
<thead>
<tr>
<th>SMART Objective**</th>
<th>Objective Achieved?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1: All Dose 1 birthing hospitals and birthing centers and Dose 2 providers in Montana are PURPLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective I. Purple Montana (PM) will identify, build and maintain relationships with PURPLE champions at our Dose One institutions to build program success, sustainability, and continuity statewide. 90% of hospitals and birthing centers are PURPLE by 6/30/2015</td>
<td>SMT</td>
<td>Not achieved</td>
</tr>
</tbody>
</table>

After Year 2, 56% pf Hospitals were PURPLE. After Year 3, 69% of Montana hospitals were PURPLE. Objective not achieved.

Indicators:
1. PM will identify, prioritize and facilitate meetings with Dose One providers to recruit and implement PURPLE (reinforcement) education.

A. 10 remaining Dose One institutions are contacted and meetings conducted; PURPLE champion identified at each institution, key staff are educated about PURPLE MT initiative and The Period of PURPLE Crying® program.

1.1 21 Hospital media packets will be distributed to existing PURPLE Dose One hospitals to provide resources to help encourage and aid in SBS prevention and PURPLE outreach and awareness efforts.

1.2 3 Dose One providers are trained in The Period of PURPLE Crying® program and have received PURPLE education materials to provide to parents. (Dvd/booklet and reinforcement talking points.)

| Objective II. PM will identify, build and maintain relationships with PURPLE champions at Dose Two professionals to build program success, sustainability and continuity statewide. 90% of hospitals and birthing centers are PURPLE by 6/30/2015. | SMT | Not achieved |

Second half of objective relates to Dose One not Dose Two. Objective not achieved.

Indicators:
2. PM will identify, prioritize and facilitate meetings with 10

A. 40 Dose Two providers are trained in The Period of PURPLE Crying® program and have received PURPLE education materials to provide to parents. (Dvd/booklet and reinforcement talking points.)

2.2 40 Dose Two providers will have been contacted and educated about PURPLE MT initiative and The Period of PURPLE Crying® program.
Dose Two providers (Health Depts., Home Visiting Programs, WIC, Community Education Programs (prenatal, postnatal, safe sitter), OB/GYN, Pediatricians, Family Practice) per quarter to recruit and implement PURPLE (reinforcement) education.

Improves on previous strategies.

Objective III. PM will work with PURPLE partners to support and educate parents of newborns in Montana about early infant crying and the dangers of shaking their baby via The Period of PURPLE Crying® Program. We will increase from 63% to 93% by 06/30/2015.

Objective nearly achieved

After Year 2, 61% of the births were in PURPLE hospitals. At the end of this year, 86% of the births were in PURPLE hospitals. This objective was nearly achieved and there was an increase in coverage by 25%.

Indicators

3.1 100% of parents of newborns born in PURPLE hospitals and clinics receive PURPLE education before leaving the hospital and receive PURPLE dvd and booklet to take home.
3.2 Parents are educated about The Period of PURPLE Crying® and understand early infant crying is normal
3.3 Parents understand the dangers of shaking their baby
3.4 Parents understand the importance of sharing PURPLE information and materials with other caregivers.
3.5 Parents receive ongoing support and education from Dose Two providers (home visiting program, WIC, pre and postnatal education opportunities, pediatricians, family physicians, OB/GYN providers)

These are not measurable indicators. 3.1 is a goal and 3.2-3.5 are desired outcomes.

A. PM will work with Dose One and Dose Two partners to facilitate and support training of nurses and other educators in The Period of PURPLE Crying® Program via the NCSBS online training module, which instructs on program delivery and booklet and DVD distribution to all new parents.
B. PM will collaborate with at least one or two existing PURPLE Partners (St. Peters Hospital in Helena, as well as one to two additional partners, yet to be determined) to identify and develop a PURPLE education protocol and/or policy by September 30, 2014 which will be shared with existing and future PURPLE partners. This protocol and/or policy will emphasize and highlight important program components and to encourage the adoption by PURPLE among institutions providing services to parents, families and caregivers of newborns.

This is the first time that the strategy of utilizing the NCSBS online training module is mentioned.

Activity B mentions the use of policies and protocols in hospitals. This follows the NCSBS PURPLE Model.

Objective IV. PM will work with existing PURPLE hospital(s), PM will identify and/or develop institutional, formal written protocol for delivery of services to parents and develop sample PM policy for PURPLE education at discharge to be distributed to all Dose 1 partners by 12/31/2014.

Objective achieved

A strategy to ensure protocol adoption is an important part of the fidelity and sustainability of the PURPLE model. Objective was achieved.

Indicators:

4.1 Two--Dose One hospitals identify, develop, and institute PURPLE policy and procedural protocols to serve as a model for PURPLE implementation and administration statewide.
4.2 Policy and protocol is provided to all Montana Dose One and Dose Two institutional partners.
4.3 Dose One and Dose Two institutions adopt policy and procedural protocols to aid in the implementation and administration of PURPLE.

A. PM will research written protocol for delivery of PURPLE

The NCSBS already has a written protocol for the...
| MT. | delivery of The Period of PURPLE Crying® Program. |  

**Goal 2**: Community and Statewide partners are identified, educated, and provide capacity and sustainability for PM initiative, The Period of PURPLE Crying® program to support Shaken Baby Syndrome/Abusive Head Trauma (SBS/AHT) prevention in MT.

**Objective I.** PM will identify, build and facilitate relationships with statewide and community stakeholders within and outside of State government to build awareness and support for SBS/AHT prevention through June 30, 2015.

1.1 Stakeholders/partners identified, contacted and included in all education and outreach efforts and added to database.

1.2 Attendance at monthly and quarterly meetings of identified stakeholders/partners--Emergency Medical Services for Children (EMSC) Advisory Committee, quarterly, Early Childhood Coalition-Helena, monthly, Best Beginnings Council Mtg., quarterly, (Others as identified)

**Activities**

A. PM will update and maintain a program database of local and state key contacts, stakeholders, for PURPLE MT information/education distribution and program updates.

B. PM will ensure consistent education/updates regarding SBS/AHT, PURPLE MT and The Period of PURPLE Crying® Program through monthly and quarterly meetings with stakeholders, which include private/public community and state partners.

**Objective II.** PM will establish PURPLE MT and Healthy Mothers Healthy Babies as the statewide expert/resource for SBS/AHT best practices, tools and information among stakeholders, statewide and community partners and agencies and among the general public through June 30, 2015.

**Indicators:**

2.1 Existing education and outreach materials and tools are updated regularly--Dose 1 & 2 Map, PURPLE partners (Dose One) list, Facebook, Website and promoted through community meetings, presentations and through collaborations with partners statewide.

2.2 PURPLE News section is developed and distributed quarterly via HMHB-MT newsletter to stakeholders and partners.

2.3 Crying Card Update completed and ready for dist. by DPHHS.

2.4 Attendance at least 8 conferences/events/meetings to distribute PURPLE MT and The Period of PURPLE Crying® Program materials, current SBS/AHT prevention information and related materials and information.

**Activities**

A. PM will develop, maintain and update PURPLE MT Program education, outreach, and communication materials including the PURPLE MT Dose 1 & 2 Map, PURPLE Partners

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48 [http://www.dontshake.org/lms/files/lmspdf/ImpPro-1.1.15.pdf](http://www.dontshake.org/lms/files/lmspdf/ImpPro-1.1.15.pdf)
| PM will create a PURPLE “news section” within the HMHB quarterly newsletter with distribution to all state and local PURPLE partners and stakeholders. | Objective III. PM will work with the Early Childhood Services Division (the Best Beginnings local coalitions), and the MT Children’s Trust Fund grant awardees to increase awareness about PURPLE MT, Shaken Baby Syndrome/Abusive Head Trauma (SBS/AHT) and The Period of PURPLE Crying® in an effort to work collaboratively to build and enhance parent support systems through June 30, 2015. | SART | CNBM | No metric to measure partner engagement. Without metric, cannot tell if metric was achieved. |
| PM will attend at least 2 statewide conferences/events per quarter to present and/or distribute PURPLE MT and The Period of PURPLE Crying® Program materials, current SBS/AHT prevention information and related materials/information. | New Crying Card was developed in the summer of 2015. | Dose 2 Strategy focused on Early Childhood Coalitions and their local providers is more clear than in previous year’s work plans. | Dose 2 Strategy to connect with home visiting is more clear than in previous work plans. |
| PM will work with the MTCTF Board of Directors, DPHHS Department Designees to collaborate on and develop a new State sponsored SBS/AHT parent education piece to be distributed by the State to designated state and local agencies as stated by MCA 50-16-103. | A. PM will work with the MTCTF Board of Directors, DPHHS Department Designees to collaborate on and develop a new State sponsored SBS/AHT parent education piece to be distributed by the State to designated state and local agencies as stated by MCA 50-16-103. | SMAR | Not achieved | Performance measure training was not developed in three hospitals. Objective not achieved. |
| PM will work to facilitate partnerships with the 23 Early Childhood Coalitions and their identified Dose One and Dose Two local providers (hospitals, health departments, healthcare providers, schools, local agencies serving families, teen pregnant and parenting programs, CASA) to build capacity and to strengthen local and statewide PURPLE education prevention efforts and enhance parent support. | Goal 3: PURPLE MT identifies SBS prevention process and impact performance measures and works with PURPLE partners to identify, develop and incorporate a system of tracking and reporting to determine institutional and program success, as well as challenges, to elevate and build support for SBS/AHT prevention in Montana. | Not sure what the survey in this activity refers to. Tracking/evaluation system development not mentioned in year end report. | This evaluation goal and accompanying objectives are much more strategic than in previous work plans. |
| PM will connect with DPHHS Maternal Early Childhood Home Visiting (MT MECHV) Section to gain access to home visiting program supervisor contacts of agencies receiving MIECHV home visiting funds. Will provide community wide evidence-based home visiting programs across Montana with information related to SHS/AHT prevention. Use crib program as incentive to connect with HMHB. Maintain relationships with counties providing bi-annual phone calls with all state funded home visiting programs, as well as MIECHV funded programs, in coordination with the MT MIECHV program. Encourage proper use of dose 2, by providing a webinar on SHS website to home visitors. | Objective II. PM will work with existing state partners, (DPHHS--EMSC, FCHB, CFSD, ECSB, MTCTF) to identify and | ART | CNBM | No specific measures articulated to describe |
collect existing relevant data to enhance efforts to communicate and elevate issues surrounding SBS/AHT prevention and to build support for these efforts statewide through June 30, 2015.

<table>
<thead>
<tr>
<th>Objective III. PM will collect information from 80% of MT hospitals and Nurses via two existing program surveys, the Hospital Survey distributed in partnership with the Montana Hospital Association and the Nurses Survey distributed to participating PURPLE hospitals and clinics by December 31, 2014.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. PM will contact DPHHS ECS, FCHB, CFSD, EMSC, MTCTF Bureau chiefs and/or designees to set up meeting to discuss collaborative effort to identify and collect data, and enhance efforts to communicate and elevate issues surrounding SBS/AHT prevention.</td>
</tr>
<tr>
<td>relevant data. Cannot determine if objective was achieved.</td>
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</table>

<table>
<thead>
<tr>
<th>Year 4 Renewal Application</th>
<th>SMART Objective?</th>
<th>Objective Achieved?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome Objective 1. By January 2016, HMHB will increase the sustainability of The Period of PURPLE Crying® Program in Montana obstetrical hospitals as indicated by internal hospital protocols for parent education.</td>
<td>SART</td>
<td>Not applicable</td>
<td>Policy and protocol adoption is consistent with the PURPLE model for sustainability.</td>
</tr>
<tr>
<td>Indictor 1.1 By June 2015, PURPLE-MT will develop internal tracking procedures for HMHB for maintaining the fidelity of the Period of PURPLE Crying Program. This will include a reminder for each hospital as to when they should be re-ordering DVD and educational materials. When a hospital is ordering less than anticipated, PURPLE-MT will contact the hospital to assure continuation of education as designed.</td>
<td></td>
<td></td>
<td>This is an activities not an indicator. Pattern is consistent throughout work plan. This is the first time that a strategy for ongoing monitoring of Dose 1 fidelity in hospitals has been articulated.</td>
</tr>
<tr>
<td>Activity 1.1: HMHB internal tracking procedures will be developed to maintain the fidelity of The Period of PURPLE Crying® program.</td>
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<td></td>
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</tr>
<tr>
<td>Indictor 1.2 By August PURPLE-MT contact all PURPLE hospital partners to renew their commitment to The Period of PURPLE Crying® Program. PURPLE-MT will contact each PURPLE participating hospital to maintain and strengthen the work being done by PURPLE-MT partners. With the addition of Dr. Mark Kenata and his highly visible role in neonatology on the HMHB Board we have a strong champion for The Period of PURPLE Crying®.</td>
<td></td>
<td></td>
<td>Based on this evaluation, renewing the commitment of hospitals is a key step to moving forward as there is indication of drift and some hospitals indicate frustration with the program.</td>
</tr>
</tbody>
</table>
**Indicator 1.3**
By October, PURPLE-MT will develop internal hospital protocols and share with partner hospital administrators. PURPLE-MT will be working more closely with MHA to reach out to hospital administrator.
To assure the consistency of message and manner of education across Montana, PURPLE-MT will work with hospital administrators to establish internal protocols. Billings Deaconess, St. Peter’s, Kalispell Regional are willing to take the lead to develop these protocols and encourage other hospitals to follow. Where in the past PURPLE-MT has focused on reaching out to the nursing staff, the focus will move to the administrators to begin the institutionalizing of PURPLE-MT.

The move toward policy and protocol adoption and engaging leadership at a high level in Dose 1 sites is consistent with the recommended NCSBS approach. The PURPLE Champions model seems to have been ineffective in the past.

**Activity 1.2 & 1.3: A hospital communication method will be developed and all PURPLE hospital partners will be contacted. We will be utilizing letters and phone calls to set up a consistent system of communication. Keeping track of this system will be reflected in the development of internal tracking procedures.**

**Indicators to track communication which is the first to be articulated in any work plan. This is important because sites indicated that ongoing communication with HMHB was a concern in Dose 1 and 2 surveys.**

**Indicator 1.4**
By September, PURPLE-MT will attend 2 nursing/medical conferences to present or table information on the importance of fidelity with program implementation. PURPLE-MT will begin to shift the message from the recruitment of hospitals to participate in PURPLE to the need to assure the accuracy of the way the program is implemented. This will allow for better evaluation of the program as we complete a retrospective review of records over the next 5 years.

The shift to fidelity messaging is warranted now that 86% of births are covered by PURPLE MOUs and there is indication of drift in fidelity at some sites (see Dose 1 Survey Results).

**Indicator 1.5**
By January 2016, PURPLE-MT will follow up with hospital administrators regarding successful implementation of protocols. If it becomes apparent that the hospital protocols need amending, we would work with the administrators to resolved any unanticipated challenges. PURPLE-MT will work with MHA for discussions with administrators on the implementation.

Focus on fidelity and policy/protocol development with high level administrators is consistent with the PURPLE model.

**Indicator 1.6**
By February 2016, PURPLE-MT will address any issues arising from hospitals regarding implementation. With input from the providers and administrators, issues will be addressed in a manner incorporating all hospitals or adjusting for a particular nuance in a single hospital.

**Outcome Objective 2**
By December 2015, HMHB will increase the sustainability of the PURPLE-MT program through a formalized relationship with the Department of Health and Human Services as measured by a signed agreement regarding the use of PURPLE-MT to address Shaken Baby Syndrome/Abusive N/A

This is the first formalized partnership strategy articulated by HMHB.
### Head Trauma in Montana.

**Indicator 2.1**
By July 2015, HMHB will meet with key individuals within DPHHS to establish framework for formalized recognition of PURPLE-MT. PURPLE-MT recognizes the significant role DPHHS can play in moving forward with Dose 2. As with the hospital protocols, the uniformity of how The Period of PURPLE Crying® is shared is important for meaningful evaluation in the future. To help determine the reliability of the evaluation, HMHB will formalize the agreement with DPHHS on how the program will be incorporated in agency agendas.

**Activity 2.1** HMHB and PURPLE-MT will be identifying key individuals within DPHHS and we will be organizing and convening meetings and partnerships in an effort to formalize our relationship with DPHHS.

**Indicator 2.2** By September 2015, HMHB will develop a draft of the agreement.

**Indicator 2.3** By November 2015, the final draft will be completed.

**2.1 & 2.3:** HMHB will be developing the formal agreement between HMHB/PURPLE-MT and DPHHS.

**Outcome objective 3**
By April 2016, HMHB will increase the opportunity for public awareness of AHT through a statewide Positive Community Norms campaign on abusive head trauma.

**Indicator 3.1** By July 2015, HMHB will attend the Positive Community Norms training. This training will be provided by Jeff Linkenbach on the need to approach population based messages in a positive tone rather than fear to accomplish the desired behavior change.

**Activity 3.1**
Staff will be attending the Positive Community Norms Training. Positive framing of public health messages has a greater impact for population based programs. HMHB staff will learn the subtle and not so subtle subtext of messaging to the general population.

**Indicator 3.2**
By August 2015, HMHB will engage with Jeff Linkenbach to develop message for AHT. HMHB has already begun discussions with Jeff Linkenbach on how to best frame a statewide campaign to reduce the number of AHT cases in Montana.

**Activity 3.2**
HMHB will be engaging Jeff Linkenbach to develop a positive message for AHT and Dose 3 of PURPLE. HMHB has begun discussions with Mr. Linkenbach on the importance of creating a message that is based on a positive approach rather than fear. Positive messages have proven to have a greater impact on changing behavior.

**Indicator 3.3**
By January 2016, HMHB will begin assisting specific programs in DPHHS to incorporate The Period of PURPLE Crying®.

<table>
<thead>
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**Outcome objective 3**
By April 2016, HMHB will increase the opportunity for public awareness of AHT through a statewide Positive Community Norms campaign on abusive head trauma.
By October 2015 HMHB will develop the methodology to evaluate statewide campaign. HMHB has a commitment to assuring any program administered is able to be effectively evaluated and analyzed to provide the best opportunities to refine and modify to achieve maximum effect.

Activity 3.3
Staff will be developing and identifying a methodology to evaluate a statewide DOSE 3 campaign. HMHB is committed to assuring any program implemented has the internal capacity for ongoing evaluation to assure accurate interpretation of the impact.

Indicator 3.4
By January 2016, HMHB will applied for at least 6 funding opportunities for evaluating the state wide campaign. HMHB recognizes the cost of Dose 3 (statewide campaign) will be greater than the funding allocated from the CTF. As such, HMHB has begun submitting requests for financial assistance with this aspect of PURPLE.

Activity 3.4
HMHB will be applying for at least 6 funding opportunities for evaluating the statewide campaign.

Indicator 3.5
By March 2016, will begin a baseline evaluation of public knowledge regarding AHT

Activity 3.6:
A baseline model for evaluation of public knowledge of AHT in Montana will be developed in order to gather information for the statewide campaign. Montana does not yet have a baseline from which to launch Dose 3 efforts. HMHB will work with Jeff Linkenbach and Bart Klika to develop a model for creating a baseline of public attitude and knowledge regarding abusive head trauma.

Results of this evaluation indicate that engagement of outside experts for evaluation is a needed strategy as HMHB has not shown the capacity to develop a workable evaluation strategy.

*Note: Objectives classified as SMART according to subjective determination by the evaluator

Based on the above analysis, the evaluator developed the chart below indicating the number of objectives in the HMHB work plan each year, as well as the number of SMART objectives and objectives that could be measured. For measurable objectives, the evaluator used the final report data from years 1-3 to determine if the objective was achieved, nearly achieved or not achieved.

<table>
<thead>
<tr>
<th>Objective Type</th>
<th>Year 1 Work Plan</th>
<th>Year 2 Work Plan</th>
<th>Year 3 Work Plan</th>
<th>Year 4 Work Plan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives with no SMART components</td>
<td>20 (77%)</td>
<td>7 (70%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>27 (55%)</td>
</tr>
<tr>
<td>Objectives with some SMART components</td>
<td>6 (23%)</td>
<td>3 (30%)</td>
<td>7 (70%)</td>
<td>2 (66%)</td>
<td>18 (37%)</td>
</tr>
</tbody>
</table>
With only 8% of objectives in the four years of work plans written as SMART objectives, the HMHB final reports rely heavily on narrative descriptions of their work to describe what they have done with the PURPLE funding, making objective evaluation of the work plans difficult. Note that the above chart does not indicate that nothing was done by the HMHB program for the PURPLE Montana initiative during the three year funding cycle. It does indicate that the CTF did not have a reliable way to measure and track what was done over time.

The HMHB and CTF Relationship

The following comments are the subjective conclusion of the evaluator based on semi-structured interviews with the HMHB and CTF staff and boards.

Semi-structured interviews for this evaluation reveal a high level of tension and conflict between the CTF and HMHB. The source of this tension is multifaceted but was likely fueled by the overly close relationship between CTF and HMHB at the beginning of the PURPLE funding and the way that this relationship changed as the organizations went through staffing and administrative shifts. It is clear from reading the early documents from the program that there was almost no distinction between the CTF and HMHB in the early days of the funding, and that HMHB was the presumed recipient of the competitive funds for the Period of PURPLE Crying project, despite the competitive RFP. HMHB was given a non-competitive $90K technical assistance grant for PURPLE directly before the competitive RFP was released and was actively engaged in recruiting PURPLE sites along with CTF staff as the competitive RFP was being released and reviewed. The CTF board was meeting in the HMHB offices and there was an individual serving concurrently on the boards of both organizations directly before the PURPLE funding was awarded. As the project progressed, the CTF identified some concerns with HMHB’s capacity to implement PURPLE. At the same time, the administration at the state was changing, the CTF was moved into the DPHHS Director’s Office and new board members were appointed to the CTF board by the governor. These changes caused the CTF to become more administratively separate from HMHB, and changed the way they interacted with HMHB as a grantee. These changes, along with changes in the reporting requirements for CTF grantees that required them to utilize the forms for the CB CAP grants, created additional tension between the two groups. Interviews also indicate a strong confusion and lack of understanding related to the roles of the CTF board, the CTF staff in DPHHS and the HMHB staff and board throughout the project period. Interviewees from both HMHB and the CTF staff at DPHHS indicated that the other side refused to help them when they had questions or wanted them to do their job. All of this tension was only exacerbated when the CTF board voted to not renew HMHB’s application for the PURPLE Montana project after three
years of funding instead of continuing the contract. The original contract stated that, “This contract may be extended for up to a maximum of seven (7) years if the parties agree in writing to the extension of the contract prior to the end of the current term of this contract.” The lack of measurable objectives in the PURPLE Montana work plans (which were not required by the CTF or provided by HMHB) and the lack of evaluation conducted related to the project during the first three years of funding, made this decision seem arbitrary and personal for the HMHB. The sense of affront was worsened by the fact that HMHB had, in its final five months of funding, achieved its most measurable success with PURPLE (covering 24% of all births in Montana through NCSBS MOUs) and had written a renewal application with a work plan that was far more aligned with the PURPLE model than previous applications. It is the opinion of the evaluator that the current relationship between the CTF and the HMHB organizations has deteriorated significantly over the years, and that the decision to not renew the application precipitated a nearly complete loss of direct communication and trust. This lack of trust creates a significant barrier to future partnerships between the two organizations.

Conclusions

The Period of PURPLE Crying® Program is the most evidence based program addressing abusive head trauma prevention that is currently available for population based initiatives. The model was selected for use in Montana in 2011 and was funded by the Children’s Trust Fund from March 2012 to July 2015 through grants to the 501c3 organization Healthy Mothers Healthy Babies. The Period of PURPLE Crying® program is designed to be given in three doses. Dose 1 is an educational intervention for parents and caregivers of newborns designed to be delivered before hospital discharge. Dose 2 involves a reinforcement of the messages from Dose 1 in settings outside of the OB ward such as pediatrician’s offices, home visiting programs, and/or public and state department of health programs like WIC. Dose 3 is a public education campaign to reinforce positive norms for all community members.

During the first three years of funding, the PURPLE Montana initiative led by HMHB focused primarily on Dose 1. The work plans from the first three years indicate a lack of strategic direction and public health understanding for implementing the PURPLE model in the early years of implementation and the outcome data show that only 12 hospitals were recruited during the three year funding period, with 10 Dose 1 hospitals having PURPLE MOUs before the beginning of the first full year of grant funding. Outcome data indicate an increase in the effectiveness of the program toward the end of the funding. In the first 28 months of the funding cycle, the work on the PURPLE Montana initiative led to only additional 2,505 births being covered under signed PURPLE MOUs. In the last five months of the funding, 3,030 additional births (24% of all births in the state) were covered.

After three full years of funding, PURPLE has been adopted in hospitals or birth centers that cover 86% of the births in the state, who have a signed MOU with the NCSBS. The Period of PURPLE Crying® is generally well received in Montana hospitals. Most Dose 1 implementation sites that responded to a survey or completed a semi-structured interview for this evaluation report that they believe The Period of PURPLE Crying® is the best AHT program for Montana and that it provides vitally important information to new parents and caregivers. Sites report that all or almost all of their new parents receive the PURPLE information, though not all sites are implementing the model with complete fidelity. The cost of the materials and the length of the PURPLE video are concerns at some sites. Dose 1 sites also express a desire for the PURPLE message to be reinforced with parents in other service sites to help parents and caregivers

49 Montana DPHHS Healthy Mothers Health Babies Contract # 13035250017.
fully comprehend the message and acquire the skills necessary to positively interact with and care for their infant.

During the three years of funding, the PURPLE Montana program did not develop or utilize a strategic process for recruiting partners to implement Dose 2. Analysis of the work plans and year end reports indicate that HMHB did not develop strategic partnerships with any DPHHS programs or other potential Dose 2 partners, including Early Childhood Coalitions or the Montana MIECHV program, despite indicating that they would pursue these partnerships in their work plans. Despite this lack of strategic direction, seven Dose 2 providers in the state have signed an MOU with the NCSBS and HMHB reports sending information to a database of at least 98 other Dose 2 sites. In a survey of potential Dose 2 partners, seventy five percent were aware of The Period of PURPLE Crying © program and more than 60% report utilizing PURPLE materials at their site. In the survey, potential Dose 2 sites provided helpful suggestions about what additional materials, training and messages might be helpful and reiterated the importance of the AHT prevention message in Montana.

In terms of Dose 3, during the three years of funding, HMHB did not plan or coordinate a statewide media or awareness campaign for AHT prevention, though the program did develop a website and a number of videos related to the program and received press coverage in media outlets across the state. HMHB also failed to implement any successful evaluation strategies to track the performance of their program outside of the number of facilities with Dose 1 MOUs and the number of births covered under these MOUs. Part of the lack of evaluation was a failure in who provided technical assistance to the program. The staff and contractors used to create the PURPLE strategic plan in 2012 and the one PURPLE nurse survey 2013 failed to provide a public health perspective and likely added more confusion to HMHB’s efforts instead of providing the clarity and capacity building needed to help bolster HMHB’s efforts.

Despite the many challenges and concerns with the HMHB program, the analysis of the work plans indicates that there was improvement in HMHB’s capacity to run this program and their understanding of the PURPLE model toward the end of the funding cycle. In particular, the Year 4 renewal application indicates a strong understanding of what is needed in Montana, according to the findings of this evaluation, to improve the implementation of PURPLE and advance Dose 2 and Dose 3 in Montana including the need to:

- Engage hospital administrators in Dose 1 facilities instead of the PURPLE Champions model which proved ineffective in the past
- Shift from a recruitment to a fidelity message for Dose 1 now that 86% of births are covered under PURPLE MOUs
- Assess the fidelity with which the model is being implemented in hospitals and support policy and protocol adoption to help ensure correct use of the model
- Develop and leverage strategic partnerships by utilizing hospital administrator champions to drive the Dose 1 message and developing formal partnerships with DPPHS and other providers to implement Dose 2
- Develop and implement a Dose 3 campaign utilizing qualified technical assistance
- Diversify funding for the PURPLE Montana initiative

**Recommendations**
Based on the findings of this report, the evaluator respectfully submits the following recommendations to the Montana Children’s Trust Fund and Healthy Mothers, Healthy Babies.

**Recommendations to the Children’s Trust Fund**

- Consider continuing with the PURPLE Model instead of selecting another, duplicative and less evidence based model. Note that asking hospitals to provider other AHT prevention messages may violate their standing MOUs with the NCSBS.

- Make any future decisions about PURPLE in consultation with the NCSBS

- Build your capacity to support evidence based practice in Montana, perhaps requesting that the governor appoint a member to your board with public health training and experience

- Develop clear guidelines describing the roles of grantees, CTF board members and CTF staff

- Clearly delineate between sources of funding (federal CB CAP versus state general fund and special revenue), and align reporting requirements with the funding source and chosen evidence based model

- Review application and reporting requirements, focusing on robust work plans with required SMART objectives and increasing the number of points awarded for clear work plan goals, objectives and activities as opposed to background and supporting information

- Develop a clear accountability structure for grantees, including a process for corrective action and eventual funding termination if SMART objectives are not met

- Assess the capacity of grantees and, when possible and necessary, require or support technical assistance from qualified public health evaluators, strategic planners and others that can ensure good public health practice

**Recommendations to Healthy Mothers Health Babies**

- Review job descriptions for staff for public health and program management expertise

- Develop more diverse and sustainable funding streams

- Maintain professional relationships with grantors and adhere to clear channels of communication

- Assess organizational capacity, and, when needed, hire outside, qualified expertise for technical assistance in evaluation, strategic planning and program development

- Utilize the technical assistance from the NCSBS to ensure fidelity to the program and inform future programmatic directions

- Utilize strategic practices to target interventions and leverage resources and support for your programs
- Carefully review all grant applications for completeness and include measurable SMART objectives to strengthen your commitment to transparency and accountability}

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65
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