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Olivia M. Pokoski, Student

Dr. Corrine Williams, Committee Chair

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**HOSPITAL-BASED SAFE TO SLEEP INTERVENTION TO DECREASE SLEEP-
RELATED INFANT DEATHS IN ST. LOUIS, MISSOURI**

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the
requirements for the degree of
Master of Public Health
in the
University of Kentucky College of Public Health

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ABSTRACT

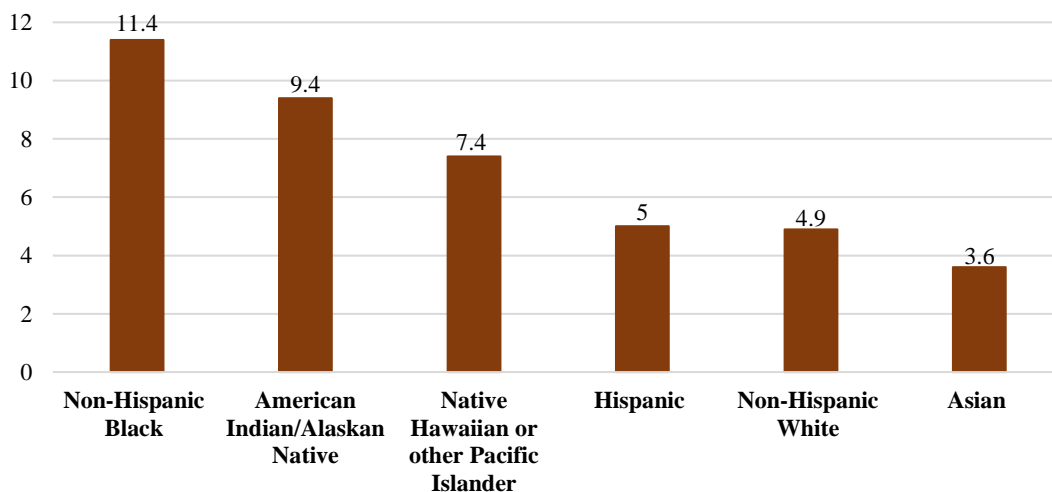
The city of St. Louis in Missouri has an elevated infant mortality rate compared to St. Louis County, Missouri, and the United States. When controlling for race, black or African American infants are over twice as likely to die before their first birthday compared to their white counterparts. Two of the leading causes of infant death are sleep-related causes and sudden infant death syndrome (SIDS) which occur if the infant is placed in an unsafe sleeping environment. To address this burden Affinia Healthcare, Barnes Jewish Hospital, and St. Mary's Hospital have decided to implement a hospital-based Safe to Sleep campaign. Safe to Sleep is an evidence-based program that was originally implemented statewide in Georgia and is based on the ABC's of safe sleep as recommended by the American Academy of Pediatrics (AAP). It suggests that infants should sleep *alone*, on their *backs*, and in a *crib*. Once each hospital adopts a culture of safe infant sleep, the hospital staff will educate each mother on safe sleep habits, as well as provide a crib for those who are on Medicaid or uninsured. Process evaluation measures include said crib audits, a poster count and efficacy measure, as well as a measure to determine the providers self-efficacy to deliver the intervention as planned. Outcome evaluation will be assessed using a pretest posttest study design metric. Mothers will complete the Pregnancy Risk Assessment Monitoring System (PRAMS) questionnaire, a CDC developed survey to determine if the intervention is successful. Success will be measured through the short-term outcomes of increasing the knowledge of a safe sleep environment, increasing parental self-efficacy to follow the AAP safe sleep guidelines, decreasing rates of bed-sharing, increasing rates cribs in the house, and increasing rates of infants sleeping in the supine position. In turn, these will lead to the long-term outcomes of decreasing infant mortality rates and reducing health disparities related to infant health and infant mortality.

TARGET POPULATION & NEED

Infant Mortality

Infant mortality is defined as the death of an infant in his or her first twelve months of life and is an important marker of the overall health of a society at the population level.¹ According to the CDC, the five leading causes of infant deaths in the United States in 2017 were as follows: birth defects, preterm birth and low birth weight, maternal pregnancy complications, SIDS, and injuries.¹ This rate is very alarming because the US consistently ranks worse at 5.8 deaths per 1,000 live births, compared to other highly developed countries with similar GDPs that have an average is 3.4 deaths per 1,000 live births.² It is possible that this rate is so high due to the racial inequity in our country with race being a fundamental cause of disease. A fundamental cause of disease (FCD) is an upstream factor that must meet four criteria in order to be classified as an FCD.³ It must influence multiple morbidity or mortality outcomes, impact those outcomes through multiple risk factors, affect access to resources, and holds concrete association with specific disease outcomes without changing over time.³ With race being an FCD, the impact it has on health is astronomical. Figure 1 conveys the prevalence of the racial disparity when it

Figure 1: Infant Mortality Rates by Race and Ethnicity in 2016

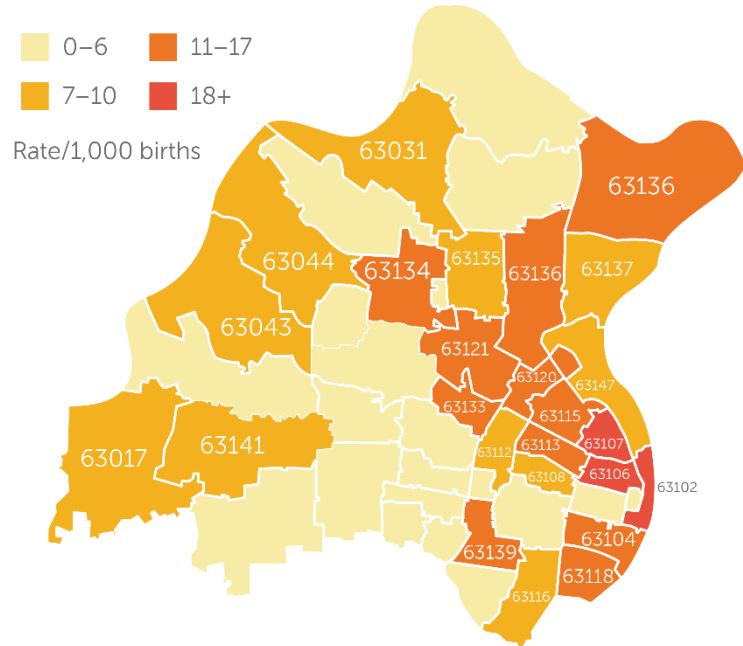


comes to infant mortality and suggests that black infants are two times more likely to die before their first birthday than their non-Hispanic white counterparts.¹

With an infant mortality rate of 6 deaths per 1,000 live births, Missouri as a state is on par with the nation's average infant mortality rate.⁴ However, the city of St. Louis is significantly worse with a rate of 9 infant deaths per 1,000.⁴ When broken down by race, this rate is even more distressing in the black community

with 15 deaths per 1,000 births.⁴ This is 3.6 more infant deaths per 1,000 births when controlling for race in St. Louis city than in the United States as a whole, suggesting a need for intervention.¹ Figure 2 conveys the disparity zip codes in St. Louis alone, suggesting that the infant mortality problem is very prevalent in the inner city.⁵ To further put it into perspective, a rate of around 15 deaths per 1,000 live births in St. Louis City is similar to the rates in developing countries such as Iran, Georgia, and Syria.⁶

Figure 2: St. Louis Infant Mortality Rates by Zip Code



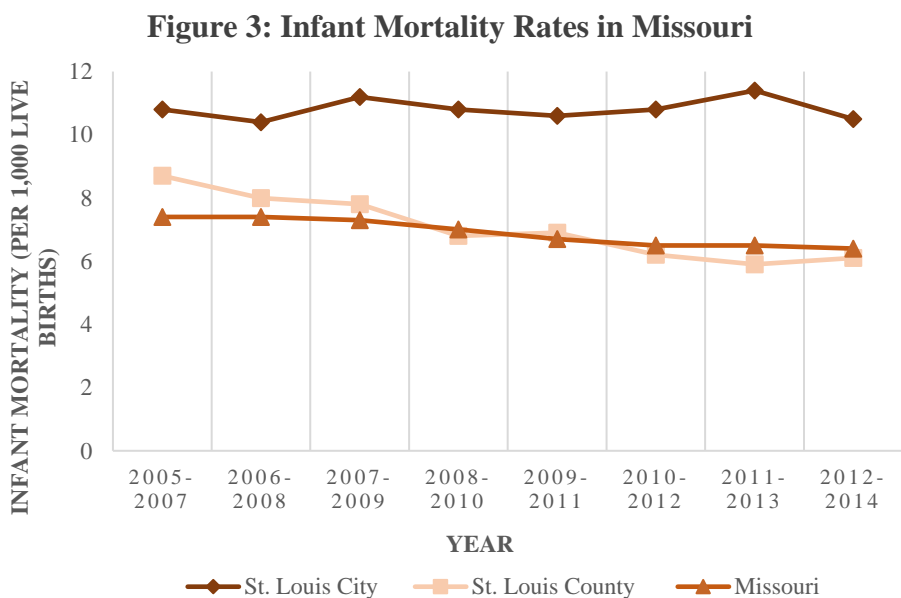
Burden of Sleep-Related Infant Deaths

Sleep related infant deaths including sudden infant death syndrome (SIDS), accidental suffocation, and deaths from unknown causes, results in a staggering 3,500 deaths among US babies annually.⁷ One of the main causes of infant mortality is sleep-related injuries which include suffocation. Suffocation occurs when the baby's airway is obstructed and typically is

attributed to soft bedding, wedging, or overlay.⁸ This is most frequently explained when another person rolls onto or against the infant, if the infant gets wedged between two inanimate objects, or a non-supine sleeping position.⁸ Despite efforts aimed at decreasing the number of sleep related infant deaths in the United States, deaths attributed to suffocation have been dramatically increasing since 1999.⁸ In 2016, the American Academy of Pediatrics (AAP) released a policy statement with their updated recommendations for a safe infant sleeping environment. These recommendations include sleeping in the supine position, on a firm sleep surface, in the same room as the caregiver without bed-sharing, and avoiding soft bedding and overheating.⁹

In 2017 in Missouri, there were 94 sleep related infant deaths, representing over 16% of the total infant deaths in the state.¹⁰ Of those 94 deaths, 79 were due to suffocation, and 89% of the infants who died were not sleeping in a crib.¹⁰ Since 71% of those deaths occurred to infants from families who were on Medicaid, it is possible that they lacked the resources and/or education necessary to prevent these unnecessary deaths.¹⁰ Despite actions taken to decrease overall infant mortality throughout the state, the city of St. Louis is still lagging significantly

behind St. Louis county and the rest of the state (see Figure 3).¹¹



St. Louis City Demographics

The city of St. Louis is a relatively small geographic area, covering less than 62 square miles.¹² To the East it is bordered by the Mississippi River, but aside from this geographic boundary it is bordered by St. Louis County. St. Louis is home to over 302,000 people as of 2018, with 47.6% being black or African American alone.¹² With the median household income being about \$38,600, it is a relatively poor city with 25% of people living in poverty.¹² In order to put this into context, 12.3% of the US population is black and the median household income is approximately \$60,000.¹³ Additionally, over 13% of our nation is living in poverty, so St. Louis city is significantly more impoverished at almost twice as many people living below the national poverty line.¹³

Reach of the Program

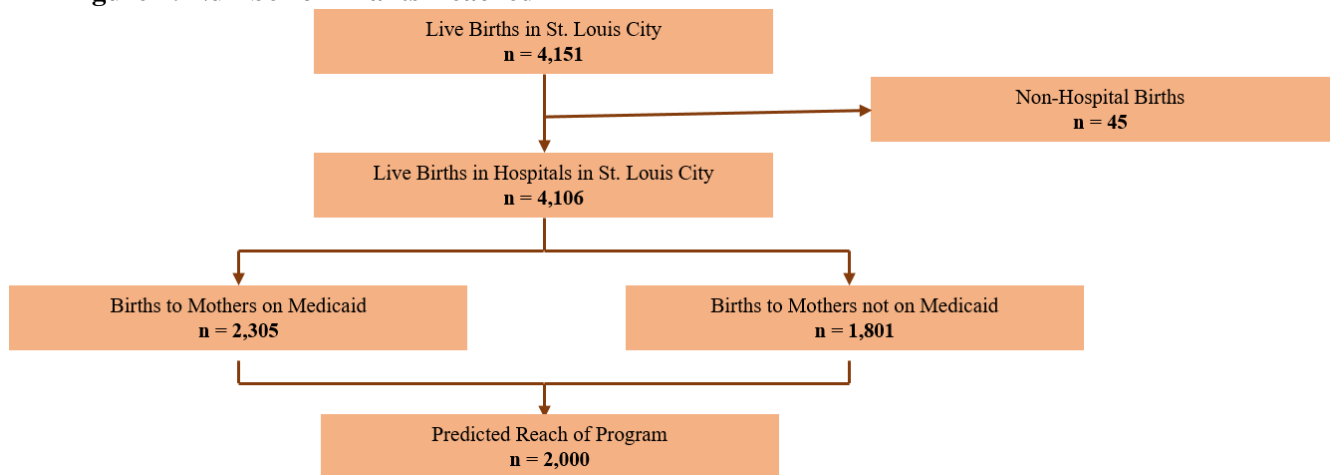
Sleep-related infant deaths are 100% preventable, so we anticipate being able to affect change in this area, through the implementation of our Safe to Sleep program in St. Louis city, thus decreasing the infant mortality rate overall. It is important to note that this intervention is being implemented in an effort to decrease the high infant mortality rate located within the city limits rather than including St. Louis County as well. The three hospitals receiving the intervention have been strategically chosen in order to positively impact the lives of the women and families who are in the most need. These hospitals currently lack programs dealing with education around safe sleep for infants despite delivering several babies daily.

Through targeting three large hospitals—Barnes Jewish Hospital, St. Mary’s Hospital, and Affinia Healthcare—we will ensure that safe sleep is being discussed with the birth of every baby. Barnes Jewish Hospital and Affinia Healthcare are both located within the St. Louis city limits; however St. Mary’s Hospital is located just outside of city limits, in St. Louis County.

That being said, it is justified that women from the city would deliver infants at this hospital, just as residents of the county have the potential to deliver babies at one of the hospitals located downtown if it is more conveniently located near her place of work.

Of the 4,000 infants born annually in hospitals in St. Louis City, over 2,000 were born to mothers on Medicaid in 2017 alone.¹⁴ Additionally, over 2,200 of all live births in 2017 were to black or African American mothers suggesting that strides could be made toward making St. Louis more equitable on the basis of race, especially when discussing the staggeringly different infant mortality rates.¹⁴ Our intervention targets everyone who delivers a newborn at one of the three hospitals stated above through an emphasis placed around safe sleep habits in each hospital’s culture. However, it is possible that some of these women may not receive the educational component, or may not complete a baseline questionnaire, thus not be accounted for in the evaluation of the overall program. We realize expecting 100% efficiency is not practical. For this reason, we expect our hospital-based intervention to reach 2,000 of these babies, for a total of 6,000 infants and families over the course of the three-year grant (see Figure 4).

Figure 4: Number of Infants Reached



Current Efforts

Currently, there are several organizations throughout St. Louis that focus on promoting infant health in various capacities. FLOURISH STL is a non-profit organization that aims to have zero racial disparities in the greater St. Louis area by 2033.¹⁵ One health issue that they believe will be influential in achieving this is infant health, thus FLOURISH STL aims to educate new parents about safe sleep practices, as well as connecting families to crib providers. Nurses for Newborns is a home visitation program that takes a comprehensive approach in order to decrease infant mortality, child abuse, and neglect. Through providing educational materials as well as physical resources such as diapers and formula, Nurses for Newborns takes a more individual level approach due to the nature of home visits. In addition to these programs, Safe Cribs for Missouri and Safe Kids currently use Title V funding to provide low income families with cribs and educational sessions on safe sleep. They distributed 406 and about 700 cribs, respectively, throughout the state of Missouri in fiscal year 2018.¹⁶ However, since referrals are necessary to get families involved in this program, we believe that targeting the hospitals where the infants are born will remove several unnecessary steps from the process of receiving a crib. That being said, we are planning on partnering with Safe Cribs for Missouri to provide the cribs in our initiative. Knowing that there are widely accepted programs promoting infant health already in St. Louis, we anticipate that the community will be willing to implement ours. One of the state priority areas, as described by the community needs health assessment conducted by the Missouri Department of Health and Senior Services is to promote safe sleep practices among newborns to reduce sleep-related infant deaths.¹⁶ Despite having efforts to decrease sleep related deaths and thus infant mortality, the high prevalence and race-based health disparity suggests that an intervention is still needed. To address this problem, the St. Louis city health department

is deciding to implement an intervention to decrease the number of sleep-related infant deaths in the area.

PROGRAM APPROACH

Hospital-Based Safe to Sleep Program

We will be modeling our intervention after the statewide Georgia Hospital-Based Safe to Sleep Program – a comprehensive approach aimed at protecting infants from sudden infant death syndrome (SIDS) and other sleep related causes of death. Safe to Sleep has four primary goals:

1. Provide accurate and consistent safe infant sleep information to hospital personnel
2. Enable hospitals to implement and model safe infant sleep practices throughout their facility
3. Provide guidance to health care staff on addressing safe infant sleep concerns and issues
4. Reduce infant mortality attributed to sleep-related infant deaths.¹⁷

Through targeting the hospitals in the area, we are aiming to impact the lives of as many newborns as possible. Assuming that the hospitals support and would like to participate in the intervention, we will designate hospital safe sleep champions. The Safe to Sleep hospital champions will be the face of the intervention and will help implement and oversee the program to ensure that it is running as smoothly as possible. These champions will also serve as a point of contact between the hospital staff, leadership and the program coordinator. From there we will distribute the implementation guide for the program along with the educational support tools in return for a signed ‘pledge of intent.’

Prior to the implementation of the Safe to Sleep campaign, key informant interviews will be conducted to determine the extent to which education and policy changes need to be made in

the individual hospitals. These interviews will also serve as baseline data for future evaluation measures of the effectiveness of the program. Additionally, they can be used to educate the hospital administration around the scope of sleep-related infant deaths in St. Louis as they relate to the state and national averages in order to gain buy-in from all personnel.

After the initial hospital baseline data is conducted, the program coordinator will assist in developing a curriculum specific to the hospital in order to meet their particular needs and setting attainable goals for the hospital to reach in regard to safe sleep practices. This involves ensuring that all of the AAP recommendations are followed by every staff member which requires training the staff and physicians. One way to further reinforce the safe sleep policy is to display visual aids around the rooms and halls of the hospitals. Once the new policy is agreed upon by all members of the hospital, it is up to them to educate the new parents and caregivers on proper safe sleep practices. This involves providing all of the educational materials endorsed by the Safe to Sleep initiative. The educational materials to be provided to the hospitals include a safe sleep educational flipchart, posters, and handouts for parents in both English and Spanish.¹⁷ The foundation of the educational piece is built on “The ABC’s of Safe Sleep,” suggesting that the infants should sleep **ALONE**, on their **BACKS**, and in a **CRIB** with a firm mattress and nothing else inside.¹⁷ All mothers will also receive an infant sleep gown with the message “This Side Up” suggesting that the baby be placed on his or her back to sleep, as well as a *Sleep Baby Safe and Snug* board book which provides education for the caregiver in the form of a children’s book.¹⁸ For Medicaid and uninsured/self-pay families, travel bassinets will be provided in order to facilitate compliance with the safe sleep location recommendations.¹⁸ Program content was informed by the health belief model, as the mother’s perceived susceptibility and perceived benefits propelled her into following the suggested actions.¹⁹

Evidence-Base of the Georgia Safe to Sleep Program

In 2018, a prospective, matched pre- and post-test cohort study of the Georgia Safe Sleep program was conducted to determine if knowledge and practice of safe sleep were positively changed. Salm Ward et al determined that there was a significant change in knowledge, as 58.8% of mothers answered correctly with the AAP recommended sleeping position at the pre-test, versus 96.2% at the post-test.¹⁹ Changes in practice were also significant with only 79.1% of infants sleeping in their own crib prior to the intervention and 89.1% after the intervention.¹⁹ The College of Public Health at the University of Georgia conducted a process evaluation in order to evaluate how hospitals had implemented the Georgia Safe to Sleep Hospital Initiative and determined the sustainability efforts.²⁰ They found that the Safe to Sleep program led to a 43% increase in hospitals in Georgia with a safe sleep policy in place.²⁰ Additionally, 82.3% of the hospitals enrolled in the program completed the required staff training, with 74.7% reporting ongoing staff training.²⁰

St. Louis Safe to Sleep Initiative

The City of St. Louis in Missouri is aware of the many racial and ethnic disparities that exist within its city and county limits when comparing the black population to the white population and is aiming to invest to become a more equitable city.²¹ One measure of health and safety in the area is infant mortality, a rate that is 3.07 times higher in blacks than it is in whites.²¹ According to the Centers for Disease Control and Prevention, sudden infant death syndrome (SIDS) and injuries, including suffocation, are two of the five leading causes contributing to infant mortality.¹ Since the safe to sleep program is proven effective in decreasing SIDS and sleep related injuries/deaths, this program is likely to be widely accepted throughout the city.

We will be implementing the intervention in three different hospitals in the St. Louis City area: Barnes Jewish Hospital, St. Mary's Hospital, and Aflac HealthCare. After closely examining these three hospitals, none of them require a safe sleep educational program though they recognize the American Academy of Pediatrics (AAP) recommendations as imperative for infant health.

Following the same methods as the Georgia Hospital-Based Safe to Sleep program, we will be contacting the leadership of each hospital to ensure that they would be willing to participate in the intervention. We will use the implementation guide, developed to enroll hospitals in Georgia which details step-by-step how the program should look from every angle in the hospital. After identifying safe sleep champions for each hospital, we will communicate through them to ensure that the program is proceeding in a positive way. These people will also be in charge of mandating the trainings for different hospital staff members in order to ensure that they are all implementing the educational materials in the proper fashion. With the hospitals belonging to the program, staff members can identify expecting mothers who would benefit from the education on safe sleep habits.

Every family who births an infant in any of these three hospitals will be exposed to the educational materials regarding safe sleep for their newborn presented by hospital faculty and staff. In order for those expectant mothers in need to receive a crib, they will first be required to complete a pre-survey containing demographic and safe sleep questions. For evaluation purposes, we will have a follow-up survey six months after the parents received the education and/or bassinet to see how their infant is sleeping. This will also allow us to see the rates of SIDS and other sleep related infant deaths with those involved in the safe to sleep program versus the control group which would be other hospitals in the area that do not receive an intervention.

Since every infant born in the three target hospitals receives at the very least the educational materials, there will be no discrimination based on race, ethnicity, SES, or any other factors due to our goal of the health for all. Knowing that the death of a child can weigh heavily on the well-being of the parents and caregivers, we have decided to hire a grief counselor as a consultant for this project. Being able to refer the parents to a counselor will allow them to better cope with the loss of their infants.

Adaptations

Implementation of the Safe to Sleep intervention in St. Louis will require minor adaptations in order to make it run more smoothly and increase participation from expectant mothers. A peer-reviewed evaluator of the Georgia program found that mothers in the third trimester found it difficult to travel from the hospital with a crib, especially if they had limited transportation.¹⁹ In order to account for this difficulty, we will employ a crib delivery service. This way the crib can be delivered to any address that the mother requests to ensure that the crib is functional by the time the baby is brought home. Another adaptation is the appointment of two safe sleep hospital champions per hospital. When reaching out to the project coordinator of the original Georgia Hospital-based Safe to Sleep program, she informed us of the difficulties they faced when safe sleep champions altered their career paths. In an effort to prevent those difficulties, we believe that having more champions could only have a positive outcome on all of those involved in both implementing and experiencing the program. Having a champion solely focused on the hospital policies regarding safe sleep ensures that all of the American Academy of Pediatrics recommendations are followed, and that the policy comprehensive. A champion who can focus a lot of attention to being enthusiastic about the program is likely to achieve more community buy-in from the hospital staff. Through providing a salary incentive for these

positions, we also believe that we will be more successful in implementing the program because there will be less champion turn-over.

Potential Challenges

Despite creating adaptations, we still foresee challenges that could potentially inhibit the growth of the Safe to Sleep project. Engagement from all personnel at the hospitals are key in order to ensure that every parent delivering an infant is receiving proper education and materials. In an evaluation of the Georgia hospital-based program, it was discovered that only half of the hospitals delivered all of the materials provided by the initiative .²² Though this could be a potential challenge, Georgia's program was implemented state-wide, so it was undoubtedly more difficult for the project manager to build a relationship with each and every sleep hospital champion. We believe that since we are only targeting three hospitals, we will be able to build and maintain a close professional relationship with each champion in order to hold them accountable in participating in all aspects of the intervention. Through partially covering the champions' salaries, they are also more likely to hold their position to a higher standard. Another challenge is the implementation guide. It provides a very comprehensive, step-by-step set of instructions on how to implement the program successfully and is rather long, thus parts could be forgotten. Since we want our program to be generalizable to hospitals around the United States, we need to ensure that baseline and follow-up data is collected via surveys. Getting the hospital faculty/staff to complete the surveys and distribute the surveys to willing expectant mothers may be a challenge. For this reason, we will provide an incentive for those who get the most completed questionnaires.

Sustainability

We understand the importance of creating a program that is able to be sustained by the community after the duration of the three-year implementation period. For this reason, we have decided to create a Community Advisory Board for the Safe to Sleep Initiative including hospital physicians, community members, and other organization leaders who are passionate about infant health. Figure 5 spells out a list of potential community advisory board members.

Figure 5: Community Advisory Board for the Safe to Sleep Initiative		
Physician, <i>St. Mary's Hospital</i>	Physician, <i>Barnes Jewish Hospital</i>	Physician, <i>Affinia Healthcare</i>
Cabinet Member, <i>FLOURISH St. Louis</i>	Director, <i>City of St. Louis Health Department</i>	Chief Executive Officer, <i>St. Louis Regional Health Commission</i>
Grief Counselor, <i>Infant Loss Resources</i>	Representative, <i>Safe Cribs for Missouri</i>	Mother, <i>St. Louis City Resident who recently delivered (x2)</i>

The physicians from each hospital will be able to provide insight into the culture of their individual organizations as well as the challenges and successes that they had during their three-year implementation period. A cabinet member from FLOURISH St. Louis will also be included in the board due to his or her experiences educating parents on safe sleep habits for infants and the organizations connections with crib providers. The director of the health department in the City of St. Louis and the chief executive officer from the existing community advisory board, the St. Louis Regional Health Commission will both serve on this community advisory board as well. These leaders in health initiatives will provide valuable insight into how to successfully implement a program and expand its reach. A representative from Safe Cribs for Missouri will connect our project with the crib distribution service and allow future families to receive cribs more easily. Additionally, a grief counselor from Infant Loss Resources will be important to ensure that the families who do experience the unexpected loss of an infant will be thought of

and supported. Finally, two mothers who are residents of the City of St. Louis who recently delivered will provide necessary guidance to ensure that the materials developed by the community advisory board are culturally appropriate, non-stigmatizing, and meet the needs of the target population.

PERFORMANCE MEASURES & EVALUATION

Performance Measures

Each year of the grant, the number of students who participate in the hospital-based Safe to Sleep program will be recorded and broken down by hospital and extent of participation. The project team will count every mother who delivers a baby at one of the three intervention hospital as receiving a component of the initiative. This data will be stratified further by the number of families who receive the educational materials, including a sleep gown, and the Medicaid or uninsured families who receive a crib. Knowing who actually received the educational materials and the cribs compared to those who did not but were eligible is important to ensure that potential participants are not being missed. All of these performance measures will be able to report on the number of participants by gender, race and age at delivery.

Process Evaluation

Throughout the implementation of the program, process measures will be evaluated to determine the reach of the program, participation, fidelity, and quantitative measures of both participant and providers perceptions of the program. Primary process evaluation measures include the number of crib audits conducted, the count of posters displayed exhibiting safe sleep habits for infants, measures of self-efficacy of providers to implement the Safe to Sleep initiative, the number of women who participate in baseline questionnaires, and the number of trainings completed by those delivering the intervention. These measures are further outlined in

Figure 6 below. Additionally, we will continuously conduct key informant interviews to determine if there has been a change in hospital culture surrounding the topic of safe infant sleep and if there is buy-in from hospital staff.

Figure 6: Process Measures

Process Measure	Measurement Method	Completed By
Crib Audits	Observation of in-hospital compliance with the campaign	Graduate Students
Poster Count	Count of Safe to Sleep initiative posters displayed in the halls, rooms, and restrooms of the hospitals	Graduate Students
Poster Effectiveness	Verbal survey of hospital patrons as they leave, inquiring about whether or not they recall seeing a poster on safe sleep habits for infants	Graduate Students
Self-Efficacy of Providers	Survey of hospital staff to determine if they believe they are well-equipped to deliver the intervention.	Project Coordinator
Baseline Survey Participants	Record the number of women who participate in the pre-test prior to delivery compared to all women who deliver	Hospital Staff
Trainings for Hospital Staff	Document the number of trainings that hospital staff participate in regarding safe sleep habits for infants	Policy Focused Hospital Champion
Uninsured or Medicaid Insured Crib Recipients	Record the number of women who receive cribs compared to those who are eligible	Enthusiastic Hospital Champion

Crib audits will be conducted by the graduate students and will be unannounced in order to diminish possible bias from hospital staff. These audits will occur once a month and will vary during the time of day and week to ensure that multiple shifts are being analyzed. We will be using the same tool that was developed in the evaluation of a program that was similarly designed to emphasize safe sleep habits for infants in a hospital setting.²³ Figure 7 below depicts what the crib audit tool looks like. This tool was derived from American Academy of Pediatrics

Figure 7: Crib Audit Tool

	Yes	No
Baby on back (or held)?		
No soft objects, blankets, or toys in crib?		
Sleep sack used?		
Not co-sleeping with parent? (i.e., is the infant in a safe environment?)		
Baby in crib <u>or</u> held/cared for by awake adult?		
If baby not held by awake adult or in crib – where?		
Room temperature not > 78		

recommendations. The graduate students will also be asked to converse with families who have recently delivered to determine if the nurses are giving the educational portion of the intervention. A sample parent conversation script is located in the Appendix V. Both the crib audit tool and the parent conversations are incorporated in the process evaluations to ensure program fidelity.

During the monthly hospital visits, the graduate students will also conduct a count of posters with Safe to Sleep program information. These posters could be displayed anywhere in the hospitals, from hallways, to patient rooms, to restrooms or stairwells. After documenting an objective count of the posters, the students will ask patrons of the hospitals as they are leaving if they recall seeing any posters pertaining to the safe sleep habits of infants. This measure is necessary in determining if the hospital is attempting to acquire a culture around safe sleep practices as well as if the posters are significant enough to maintain a lasting impression with the hospital patrons.

Prior to delivery, the women will have the opportunity to participate in a baseline questionnaire. This will include demographic questions as well as questions similar to the Phase 8 Infant Sleep Environment section from the Pregnancy Risk Assessment Monitoring System questionnaire. Based on the responses that the women give, the hospital staff will be able to determine the baseline knowledge that each woman is coming into the hospital with regarding

safe sleep. The hospital staff will deliver the pre-test at the earliest possible appointment. Ideally, every woman who delivers in each of the three hospitals will participate in this survey in order to be able to directly measure the increase in knowledge of safe sleep practices. In order to promote their participation in the survey, our graduate research assistants will put together gift bag incentives, amounting to \$5 worth of newborn supplies in exchange for a completed questionnaire.

In order to measure the self-efficacy of the hospital staff to implement the Safe to Sleep program without compromising its fidelity, we will be using the Evidence-Based Nursing Practice Self-Efficacy Scale. This scale uses Likert-Scale type responses from 0% confidence to 100% confidence for each of the seventeen items listed. Questions range from asking about locating resources necessary to implement the program to actually implementing the program without losing fidelity of the intervention.²⁴ The scale has been proven both reliable and valid, with Cronbach alpha coefficients ranging from 0.95 to 0.98 in several different medical locations.²⁴ We will use this to measure the self-efficacy of the staff twice annually to mitigate the effects of staff turnover as well as a fidelity check.

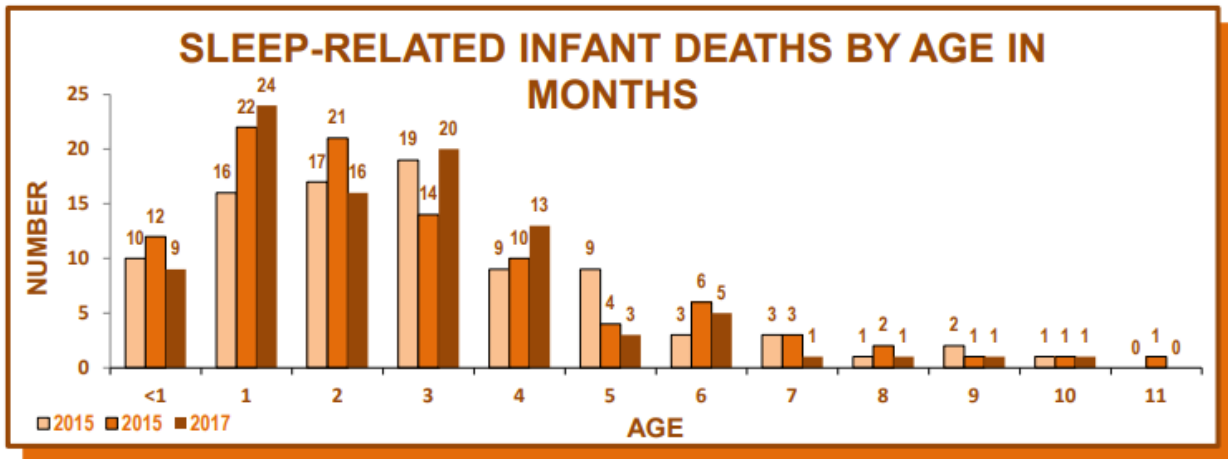
If we find there to be a low self-efficacy of delivering the intervention in the hospital staff, they will be asked to complete a training module. The National Institute of Health has created continuing education credits on safe infant sleep, which will serve as an incentive for hospital staff to complete trainings. It is the responsibility of the Policy Focused Hospital Champion to document that his or her staff is staying educated on the topic of safe infant sleep. Knowing the specific numbers of completed trainings is essential to determine if the hospital is fully embracing a safe sleep culture and remaining up to date on the most current practices.

Lastly, each Enthusiastic Hospital Champion will record the number of uninsured or Medicaid-insured women who deliver baby in their hospital and whether or not she received a crib from the program. It is important for the champion to note the reason for not receiving a crib, as the mother may already own a crib, or the delivery of the Safe to Sleep program could be flawed. Through recording this information, we will be able to catch any problems that may arise as quickly as possible.

Outcome Evaluation

Within the scope of this three-year project, we aim to have the following outcomes: increase knowledge of safe sleep habits for infants, increase parental self-efficacy to follow safe sleep guidelines, decrease rates of bed sharing, increase rates of families with a crib in the home, and increase rates of infants sleeping in the supine position. These would then influence the longer-term outcomes of decreasing infant mortality rates, reducing health disparities related to infant health and infant mortality, as well as increasing rates of breast feeding in the City of St. Louis. In order to evaluate the effectiveness of the hospital-based Safe to Sleep program, we will use a pretest-posttest study design to measure the short-term outcomes. Each pregnant mother who agrees to participate will initially be given a pretest prior to receiving the intervention components and then a posttest once the baby has reached six months of age. As the pretest may be given before the baby is delivered, it will consist of a modified version of the posttest, adjusting wording to describe how the mother believes that she will place the baby to sleep. We have chosen to follow up at three months and six months rather than both six months and twelve months because the majority of infant deaths due to sleep related causes occur in the first six months of life.¹⁰ This is clearly depicted in Figure 8 below.

Figure 8: Sleep Related Infant Deaths by Age in Months



At both three months and six months post-delivery, the mother will receive a questionnaire in the mail to assess her self-reported practices regarding her infant’s sleep environment. We will use a modified version of the Phase 8 Infant Sleep Environment section from the Pregnancy Risk Assessment Monitoring System (PRAMS) questionnaire. This measure includes demographic questions as well as five questions related to the knowledge of safe sleep habits and Likert-scale type questions to determine the frequency in which the mother sleeps with the baby and places her baby in the supine position.²⁵ All of these items align with the American Academy of Pediatrics recommendations for safe sleep practices thus suggesting information that should have been learned and implemented during the mother’s experiences in the hospital. For this reason, it is likely that we can attribute positive questionnaire responses with the implementation of the hospital-based Safe to Sleep initiative. Additionally, we will ask the mother which of the three hospitals she delivered her baby at to determine if there is a correlation between intervention fidelity and safe sleep practices. If a response indicates that the family lost the baby, we will refer them to the grief counselor through Infant Loss Resources, a non-profit organization located in the City of St. Louis.

Another outcome objective is to increase the rate of families who have a crib in the home. Upon the mother's first hospital visit, whether it be a prenatal care visit or the delivery itself, she will be asked if she currently has a crib for the infant if she is uninsured or on Medicaid. Through our crib delivery service, we will be able to easily document the number of families that receive cribs. Without the implementation of the hospital-based Safe to Sleep program, these families would have not received a crib, thus suggesting that every crib delivered represents an increase in the rate of families who have a crib in their home.

Though this may not be completed under the scope of the three-year grant, the long-term outcome of interest that the hospital-based Safe to Sleep program is striving to change is the infant mortality rate in the city of St. Louis. Since there are several other programs that are attempting to decrease the infant mortality rate in this area, it is important to understand how the rate has changed in the years prior to implementation. Knowing the trend of the infant mortality rate will help us understand if the Safe to Sleep program directly caused the change, or if there were potential confounding factors. We will also be tracking trends of sleep-related infant deaths that occur in our three intervention hospitals to determine if we have made a direct impact on these rates. Since the majority of women in St. Louis City are black, there will be a direct correlation with decreasing the infant mortality rate in the city and reducing the race-related health disparities associated with infant health and infant mortality overall.

Limitations and Challenges

Attrition is one of the biggest foreseen challenges, since participants are being asked to perform practices that they were informed of six months prior. However, we believe that the components of perceived susceptibility and perceived benefits in the health belief model will provide enough motivation for the mothers to act in a way which will promote the health of her

infant. Previous evaluations of the program have found non-response bias to be overwhelmingly prevalent. In an effort to mitigate this bias, we are incentivizing completed questionnaires with \$15 in cash. Additionally, self-report measures may encourage participants to respond in a socially desirable manner which would introduce bias to their responses. Even though this is a concern, if surveys are answered in a manner that suggests positive safe sleep habits, we know that the knowledge of safe sleep practices exists, despite knowing if the actual practice does. We expect to discover more challenges as we implement the program, but through conduction of our comprehensive process evaluation plan, we believe we will be able to address them as quickly and efficiently as possible.

CAPACITY & EXPERIENCE

In 1866, the Department of Health was founded in the city of St. Louis when it was the fourth largest city in the United States. With 154 years of service to the community, we have prevented and mitigated many potential public health crises, positively impacting the livelihood of millions. Our mission is to assure an equitable community with optimal health for all by providing continuous protection, prevention, and promotion for the public's health through quality public health services and partnerships. Throughout the past eighteen years we have performed five needs assessments of the city, which all indicate the disproportionate rates of infant mortality between both whites and blacks, as well as between St. Louis City and St. Louis County. For this reason, implementation of the hospital-based Safe to Sleep program will fit with our mission of assuring an equitable community. It also fills the gap of currently available services, with a demonstrated need of more attention to the infant mortality rate, as it has worsened since 2010. As confirmed by the literature, the use of evidence-based interventions is essential to effecting change in this area of public health.

The Bureau of Women, Children, and Adolescent Health under the St. Louis City Department of Health demonstrated a high capacity for the implementation of programs specific to infant health. We have previously partnered with FLOURISH St. Louis, an organization aiming to decrease health disparities in the City of St. Louis through decreasing infant mortality. Additionally, we have documented a history of promoting women's and children's health through our Show Me Healthy Women program which offers free breast and cervical screenings to women meeting age, income, and residency requirements throughout the state. This program has provided services for around 10,000 women annually, with about 300 cancers being identified and referred to for treatment each year. The Bureau of Women, Children, and Adolescent Health plays a large role in this program for the City of St. Louis, though it would not have been nearly as successful without the knowledge of a community advisory group.

Every summer, we release an annual report as a snapshot of the department's effort and activities over the past year. During fiscal year 2018, we were allotted \$12,049,232 and successfully divided our funds among the Health Commissioner, Communicable Disease Control, Animal Care and Control, Environmental Health Services, Family/Community/School Health, and the Health Care Trust Fund. With the appointment of a new Department of Health Director in 2019, we expect to have a long-term ally with medical experience and expertise in public health.

To conclude, we, the health department in the City of St. Louis, does not discriminate on the basis of race, color, national origin, ancestry, religion, age, disability, sex or sexual orientation, gender identity or expression, marital status or retaliation. We aim to perform our duties with professionalism, honesty, integrity, and courage. If we are to find that any member

on this outreach project is in violation of our policies, that member will immediately be removed from the project and organization.

PARTNERSHIPS & COLLABORATION

Collaboration between several different organizations will be necessary to ensure the success of the hospital-based Safe to Sleep program in the City of St. Louis. We have previously established extensive partnerships with multiple different organizations that are striving to create a more equitable, safe, and healthy city. These partners include the local hospitals, the University of Missouri – St. Louis, FLOURISH St. Louis, and the St. Louis Regional Health Commission Community Advisory Board. Additionally, we will be forming new partnerships with Safe Cribs for Missouri and Infant Loss Resources. Each of the organizations listed above will aid in the implementation of the Safe to Sleep program and will be considered key stakeholders in the health and wellbeing of infant health within St. Louis City. In order to guarantee that the fidelity of the program is withheld, we have asked a member from each organization contributing to an aspect of program implementation to serve on our Community Advisory Board for the Safe to Sleep Initiative (refer back to **PAGE 15**). Figure 9 below outlines the necessary role that each organization will have in order to effectively implement the Safe to Sleep initiative.

Figure 9: Implementation Partners

Organization	Role
St. Mary’s Hospital Barnes Jewish Hospital Affinia Healthcare	Each of the hospitals where the Safe to Sleep intervention will be implemented are key partners as they are in direct contact with the target population. Having a physician from each hospital on the community advisory board will assist in ensuring that the program is effective for the specific setting.
University of Missouri – St. Louis	Partnering with the local public university will aid us in recruiting graduate research assistants for the scope of the

	entire project. In addition, we will be contracting a project evaluator from the university who will have significant expertise in the areas of program implementation and evaluation.
FLOURISH St. Louis	With FLOURISH St. Louis' hefty goal of achieving zero racial disparities in infant mortality by the year 2033, they have a very established network of community and national partners who are also passionate about infant health. A representative from this organization is serving on our community advisory board and will provide an abundance of relevant expertise.
St. Louis Regional Health Commission Community Advisory Board	Connecting with the city's pre-existing community advisory board is essential for disseminating information about the Safe to Sleep program across St. Louis. It has also made great strides towards creating a healthier city since its inception in 2001, accomplishments that will provide valuable insight into successfully implementing the Safe to Sleep initiative. This knowledge of the community will contribute to making sure that the materials are relevant and culturally appropriate.
Safe Cribs for Missouri	This organization is very familiar with sleep-related infant deaths and has the connections and resources that we need in order to reach as many families as possible. Through building a partnership with Safe Cribs for Missouri, we are aiming to create a program that is sustainable beyond the three grant years.
Infant Loss Resources	Despite proper safe sleep education and a crib distribution service, it is still possible that families will lose their infants to SIDS and other sleep-related deaths. For this reason, we have decided to partner with Infant Loss Resources in an event that a grief counselor would be necessary to provide services to families.

Following the completion of the three-year project, we will require the support of state based as well as national organizations. The Missouri State Medical Board will provide necessary data to determine the efficacy of the Safe to Sleep program. Furthermore, the National Cribs for Kids

organization will be important in disseminating our successes regarding safe infant sleep practices. All of the organizations listed above have formally documented their support and plan for the implementation of the Safe to Sleep initiative.

PROGRAM MANAGEMENT

The role of the principle investigator will be filled by the director of the Bureau of Women, Children, and Adolescent Health which is located under the city of St. Louis Health Department. One key goal of this agency is to improve health equity through reducing race-based health disparities in infant mortality outcomes. The bureau also provides services to a maternal and child health program through funding provided by the title V Maternal Child Block Grant. We plan on using this established connection to connect the grant-funded baby cribs to families in need. Overall, the principle investigator will be responsible for assuring compliance with IRB policies, maintaining integrity of the program, and general management of everyone involved in conducting the program. The project coordinator will be overseeing the day to day management of the intervention and will be responsible for ensuring that everyone is following the intervention plan and making strides towards reaching program goals. Daily tasks will include data collection, incentive distribution, and the conduction of interviews. She will meet with the research team, consisting of the principle investigator and graduate assistants, weekly in year one of the program implementation, then will shift to bi-weekly in years two and three. The program coordinator will also meet with the hospital champions weekly to address any unforeseen problems that may arise throughout the duration of the intervention.

There will be one policy-oriented hospital champion per hospital who will be responsible for changing the culture of the hospital around safe sleeping habits for infants. They will communicate with hospital directors about the newly establish policy surrounding safe sleep and

will be an advocate for promoting that their physicians and nurses take the proper means to educate caregivers and families on the ABC's of safe sleep. These champions will be responsible for ensuring that their staff is delivering all aspects of the intervention to every mother of an infant born in their hospital and that everyone is following the intervention and safe sleep policy. They will meet with the project coordinator weekly to update her on any compliance issues, supply shortages, and data collected.

There will also be one enthusiastic hospital champion per hospital to ensure that the staff are buying into the intervention and are passionate about educating families. This role was created in part to share some of the tasks of the other champion and to ensure that the problem of sleep-related infant deaths is a discussion in every delivery room. Daily tasks include modeling what a safe sleeping environment looks like for infants, in addition to distributing incentives, cribs, educational materials, and collecting data from both the parents and the hospital staff.

Two graduate research assistants from the University of Missouri – St. Louis will be aiding program evaluation, data collection and analysis, and manuscript preparation. These students will work 20 hours a week, for a collective 40 hours a week on the project. They will be responsible for conducting crib audits in each hospital, as we believe they will introduce the least amount of bias. In order to gain a full picture of the project management, a flow chart is depicted in Appendix IV.

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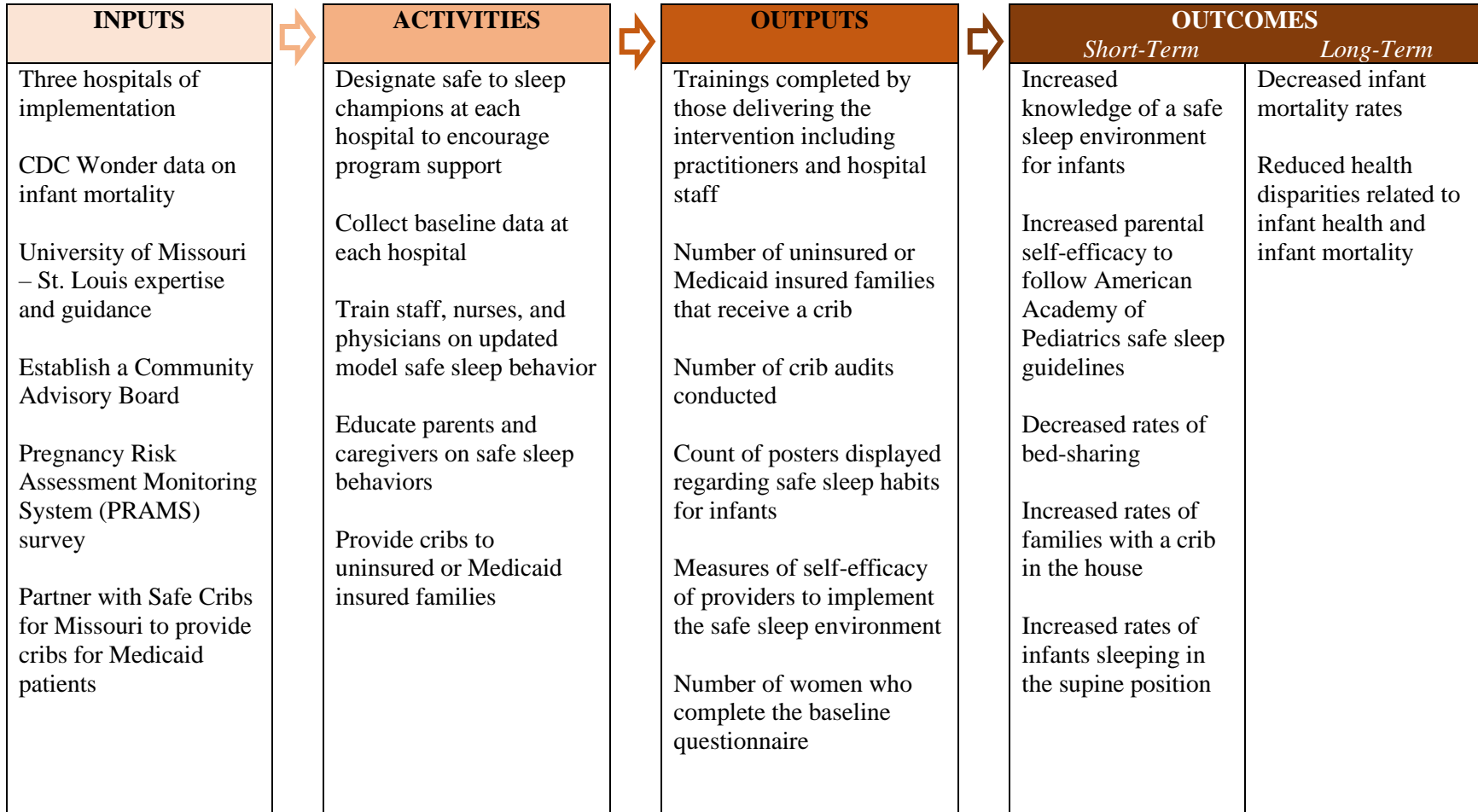
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I. LOGIC MODEL



II. GANTT CHART

	Year One				Year Two				Year Three			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Training and Community Engagement												
Hire Safe Sleep Hospital Champions	■											
Interview and hire graduate research assistants	■							■				
Baseline data collection	■	■										
Community Advisory Board meetings	■	■	■	■	■		■		■		■	
Acquire educational materials / cribs	■		■		■		■		■		■	
Purchase participant incentives	■		■		■		■		■		■	
Program Implementation												
Staff trainings on safe sleep habits	■		■		■		■		■		■	
Crib delivery		■	■	■	■	■	■	■	■	■	■	■
Educational component for new mothers		■	■	■	■	■	■	■	■	■	■	■
Outcome Evaluation												
Key informant interviews	■				■				■			
Baseline interview of mothers		■	■	■	■	■	■	■	■	■	■	■
Three-month follow up questionnaire			■	■	■	■	■	■	■	■	■	■
Six-month follow up questionnaire				■	■	■	■	■	■	■	■	■
Final Manuscript Preparation												■

III. BUDGET NARRATIVE

A. Salaries and Wages

Personnel	Annual Salary	% Effort	Salary Requested	Fringe Requested	Total Requested	# of People x Total
Principal Investigator	\$100,000	15%	\$15,000	\$4,115	\$19,115	1 - \$19,115
	\$103,000	10%	\$10,300	\$2,825	\$13,125	\$13,125
	\$106,090	10%	\$10,609	\$2,910	\$13,519	\$13,519
Project Coordinator	\$60,000	100%	\$60,000	\$18,930	\$78,930	1 - \$78,930
	\$61,800	100%	\$61,800	\$19,498	\$81,298	\$81,298
	\$63,654	100%	\$63,654	\$20,083	\$83,737	\$83,737
Policy Focused Hospital Champion	\$150,000	20%	\$30,000	\$7,611	\$37,611	3 - \$112,833
	\$154,500	20%	\$30,900	\$7,839	\$38,739	\$116,217
	\$159,135	20%	\$31,827	\$8,075	\$39,902	\$119,706
Enthusiastic Hospital Champion	\$100,000	20%	\$20,000	\$5,486	\$25,486	3 - \$76,458
	\$103,000	20%	\$20,600	\$5,651	\$26,251	\$78,753
	\$106,090	20%	\$21,218	\$5,820	\$27,038	\$81,114
Graduate Research Assistant	\$16,000	100%	\$8,000	\$4,790	\$12,790	2 - \$25,580
	\$16,480	100%	\$8,240	\$4,934	\$13,174	\$26,348
	\$16,974	100%	\$8,487	\$5,082	\$13,569	\$27,138
YEAR 1						\$312,916
YEAR 2						\$315,741
YEAR 3						\$325,214

*Each salary increases at a rate of 3% per year on the project

Principal Investigator (15%, 10%, 10%). The director of the Bureau of Women, Children, and Adolescent Health which is located under the City of St. Louis Health Department will serve as the principal investigator on this project. During the first year of the grant, she will dedicate 15% of her time to the hospital-based Safe to Sleep Initiative, followed by 10% in years 2 and 3. Due to her experience serving the city, she will primarily be responsible for overseeing the implementation of the program and the management of everyone involved in program delivery.

Olivia Pokoski, MPH, Project Coordinator (100%). Olivia Pokoski is the project coordinator and will oversee the daily operations of the program, ensuring fidelity to its original evidence base. This will include data collection, incentive distribution, the conduction of interviews, and process/outcome evaluations. Additionally, she will be responsible for conducting meetings with the principal investigator, graduate students, hospital champions, and community advisory board to ensure that progress is being made in all facets of program implementation.

Policy Focused Hospital Champions, MD (20%). Each implementation hospital will have a policy focused hospital champion dedicating 20% of their time to the Safe to Sleep initiative. They will be an advocate for changing the culture of the hospital to align with the American Academy of Pediatrics guidelines for safe sleep habits for infants. Additionally, they will be responsible for ensuring that every mother of an infant born in the hospital receives all aspects of the intervention. They will also be responsible for updating the project coordinator on any compliance issues, supply shortages and data collection.

Enthusiastic Hospital Champions, MD (20%). There will also be an enthusiastic hospital champion at each implementation hospital who will put 20% effort into the project. This role was created in part to share the tasks the policy focused hospital champion. Daily tasks include modeling what a safe sleeping environment looks like for infants, in addition to distributing incentives, cribs, educational materials, and collecting data from both the parents and the hospital staff.

Graduate Research Assistants, University of Missouri – St. Louis (100%). The graduate research assistants will each spend 20 hours a week on the project, the maximum effort allotted for a graduate student based on university rules. These students should be selected from psychology, social work, or public health related graduate programs at the University of

Missouri – St. Louis. They will work under the direction of the project coordinator, assisting with data collection and interpretation, creating literature reviews, packing participant incentives, and manuscript preparation.

Fringe Benefits. The fringe benefits are set at a standard rate per the particular governing organization, including covering retirement, social security, and a prorated amount of health and life insurance. This calculation is based on approximately 21% of the employee’s salary.

B. Consultants

	Year One	Year Two	Year Three
Grief Counselor	<i>\$20,000</i>	<i>\$20,000</i>	<i>\$20,000</i>
Project Evaluator	<i>\$50,000</i>	<i>\$50,000</i>	<i>\$50,000</i>
TOTAL	<i>\$70,000</i>	<i>\$70,000</i>	<i>\$70,000</i>

We will be employing consultants to assist in work outside the realm of knowledge of our principal investigator and project coordinator. Infant Loss Resources is a non-profit organization located in St. Louis that aims to promote safe practices which reduce the risk of infant death and to provide grief support for families who have lost babies. Due to the current alarmingly high infant mortality rate in the City of St. Louis, we are expecting that infants will still be lost despite our intervention efforts. For this reason, we will refer families experiencing a loss to a grief counselor who will be able to aid in building their coping strategies as well as offering other mechanisms for support. Additionally, a project evaluator with expertise in biostatistics and program implementation will be consulted at different key evaluation points of the program to assist in data collection, analysis, and program evaluation. He or she will also attend community advisory board meetings as necessary to help disseminate findings.

C. Supplies

	Year One	Year Two	Year Three
Educational Book	<i>\$1.00 x 2,000 infants</i>	<i>\$1.00 x 2,000 infants</i>	<i>\$1.00 x 2,000 infants</i>
Sleep Gown	<i>\$5.00 x 2,000 infants</i>	<i>\$5.00 x 2,000 infants</i>	<i>\$5.00 x 2,000 infants</i>
Laptops	<i>\$1,000 x 3</i>	–	–
Poster Printing	<i>\$1,000</i>	<i>\$1,000</i>	<i>\$1,000</i>
Survey Printing	<i>\$2,000</i>	<i>\$2,000</i>	<i>\$2,000</i>
TOTAL	<i>\$18,000</i>	<i>\$15,000</i>	<i>\$15,000</i>

The majority of our supply costs are budgeted for materials to be distributed to each mother that gives birth in the hospitals, including the educational book and sleep gown with the safe sleep message, “this side up,” written on the chest. Due to the amount of data that will be collected under the scope of this project, we will require a laptop at each hospital to store said information. Additionally, as we are aiming to change the culture of the hospital to be oriented around safe sleeping habits, professional poster printing will be required to display this message.

D. Travel

	Expenses	Year One	Year Two	Year Three
Annual Project Director Meeting	<i>Airfare</i>	<i>\$250</i>	<i>\$250</i>	<i>\$250</i>
	<i>Lodging</i>	<i>\$400</i>	<i>\$400</i>	<i>\$400</i>
	<i>Per Diem</i>	<i>\$76 x 3 days</i>	<i>\$76 x 3 days</i>	<i>\$76 x 3 days</i>
	<i># of Attendees</i>	<i>1</i>	<i>1</i>	<i>1</i>
	<i>Total</i>	<i>\$878</i>	<i>\$878</i>	<i>\$878</i>
Annual Regional Training	<i>Mileage</i>		<i>\$0.58 x 500 miles</i>	<i>\$0.58 x 500 miles</i>
	<i>Lodging</i>	<i>not traveling to training in year one</i>	<i>\$124 x 2 nights</i>	<i>\$124 x 2 nights</i>
	<i>Per Diem</i>		<i>\$66 x 3 days</i>	<i>\$66 x 3 days</i>
	<i># of Attendees</i>		<i>2</i>	<i>2</i>
	<i>Total</i>		<i>\$1,472</i>	<i>\$1,472</i>
Mileage	<i>58 cents / mile</i>	<i>\$0.58 x 1000</i>	<i>\$0.58 x 1000</i>	<i>\$0.58 x 1000</i>
	<i>Total</i>	<i>\$580</i>	<i>\$580</i>	<i>\$580</i>
TOTAL		<i>\$1,458</i>	<i>\$2,930</i>	<i>\$2,930</i>

Travel expenses have been allocated to allow for our principle investigator to attend the Annual Project Director Meeting in Washington D.C. during all three years of the grant. In years two and three, we have allotted funds for our principle investigator and project coordinator to attend regional training sessions on safe sleep habits for infants in Kansas City, Missouri. Furthermore, we have accounted for the miles that the project management may have to drive between sites in St. Louis, including funding the crib delivery service.

E. Other Expenditures

	Year One	Year Two	Year Three
Graduate Student Tuition	<i>\$16,000 x 2 students</i>	<i>\$16,000 x 2 students</i>	<i>\$16,000 x 2 students</i>
Incentives for Mothers	<i>\$30,000</i>	<i>\$30,000</i>	<i>\$30,000</i>
Incentives for Hospital Staff	<i>\$5,000</i>	<i>\$5,000</i>	<i>\$5,000</i>
Crib Delivery	<i>\$15/hour – 16 hours/week</i>	<i>\$15/hour – 16 hours/week</i>	<i>\$15/hour – 16 hours/week</i>
Storage	<i>\$100 per month</i>	<i>\$100 per month</i>	<i>\$100 per month</i>
TOTAL	\$79,720	\$79,720	\$79,720

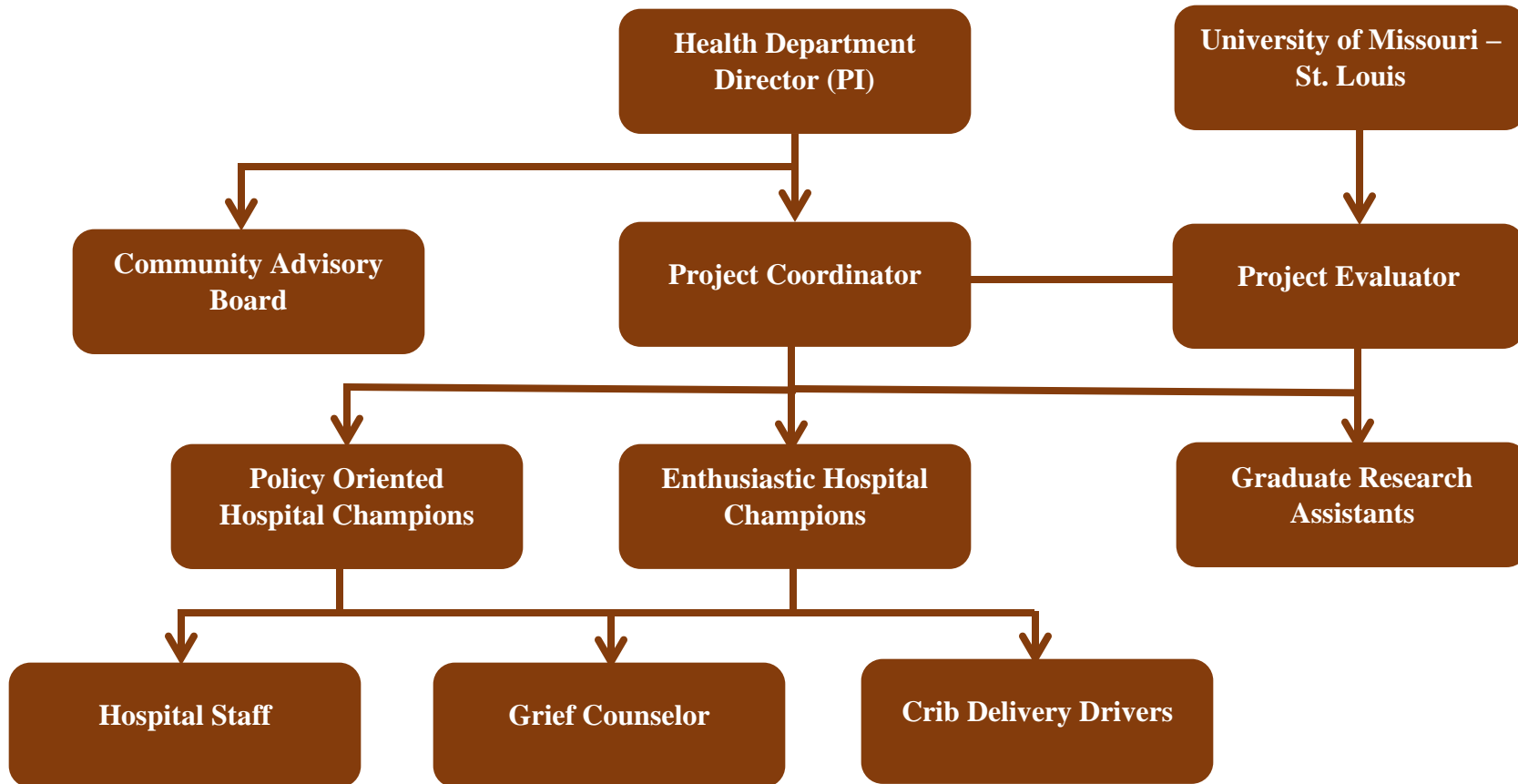
We are requesting funding for our graduate research assistants’ tuition for each of the three years of the project based on the University of Missouri—St. Louis metropolitan graduate student tuition rate. Each mother who delivers a baby will be given an opportunity to participate in a survey at three different points of data collection, once pre-delivery, three months post-delivery, and six months post-delivery. Their participation will result in a gift basket incentive in the amount of \$5 which will include various newborn supplies. These supplies could include anything from diapers and wipes to onesies or socks. Incentives are necessary for the hospital staff because they are being asked to perform additional tasks in educating new parents on safe sleep, outside of their regular duties. In an effort to make it easier for the cribs to get to the

houses of new mothers, we are including funding for a crib delivery service to mitigate the negative effects of those who don't have private transportation methods. Lastly, as we are expecting to serve 2,000 families annually, we will need to store everything including the bulky cribs to the educational books in centrally located storage unit.

F. Total Budget

Cost Category	Year One	Year Two	Year Three	
Salaries and Wages	<i>\$312,916</i>	<i>\$315,741</i>	<i>\$325,214</i>	
Consultants	<i>\$70,000</i>	<i>\$70,000</i>	<i>\$70,000</i>	
Supplies	<i>\$18,000</i>	<i>\$15,000</i>	<i>\$15,000</i>	
Travel	<i>\$1,458</i>	<i>\$2,930</i>	<i>\$2,930</i>	
Other	<i>\$79,720</i>	<i>\$79,720</i>	<i>\$79,720</i>	TOTAL
TOTAL	<i>\$482,094.00</i>	<i>\$483,391.00</i>	<i>\$492,864.00</i>	\$1,458,349.00

IV. PROJECT MANAGEMENT



V. PARENT CONVERSATION SCRIPT

Has your nurse talked to you yet about how to put your baby to sleep safely?

___ Yes ___ No

(If “**yes**”) – What has your nurse told you? (Listen for and document the ABC’S below. Mark Yes/No that they remember the nurse mentioning each item)

(If “**no**”) – What have you heard about putting your baby to sleep safely? (Listen for and document the ABC’S below. Mark Yes/No that they know or didn’t know the item).

After completing the parent(s) responses (below), THEN educate as needed.

	Yes	No
A: <u>A</u>lone		
• No soft objects/toys in crib		
• No blankets in crib		
B: <u>B</u>ack		
• On <u>B</u> ack		
C: <u>C</u>rib & <u>C</u>omfortable temperature		
• In <u>C</u> rib only		
• <u>C</u> omfortable room temperature		
• Don’t overdress/overheat baby		
S:		
• Don’t co- <u>S</u> leep with your baby		
• Don’t hold your baby if you’re <u>S</u> leepy		
• Don’t expose your baby to cigarette <u>S</u> moke		

References

1. Infant Mortality. Centers for Disease Control and Prevention (Accessed September 25, 2019, at <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>.)
2. How does infant mortality in the U.S. compare to other countries? Kaiser Family Foundation 2017. (Accessed November 3, 2019, at <https://www.healthsystemtracker.org/chart-collection/infant-mortality-u-s-compare-countries/#item-start>.)
3. Phelan BGLaJ. Social Conditions As Fundamental Causes of Disease Journal of Health and Social Behavior 1995;35:80-94.
4. Missouri County Health Rankings & Roadmaps, 2019. at <https://www.countyhealthrankings.org/app/missouri/2019/rankings/st-louis-city/county/outcomes/overall/snapshot>.)
5. Infant Death in St. Louis 2020. (Accessed March 29, 2020, at <https://www.flourishstlouis.org/problem/>.)
6. The World Factbook Central Intelligence Agency (CIA), 2017. at <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2091rank.html>.)
7. About 3,500 babies in the US are lost to sleep-related deaths each year. CDC Newsroom. (Accessed 19 September 2019,
8. Erck Lambert AB PS, Cottengim C, Faulkner M, Hauck FR, & Shapiro-Mendoza CK. Sleep-Related Infant Suffocation Deaths Attributable to Soft Bedding, Overlay, and Wedging. Pediatrics 2019;143.
9. Syndrome ATFoSID. SIDS and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment. Pediatrics 2016;138.
10. Program TMCFR. Preventing Child Deaths in Missouri. Missouri: Missouri Department of Social Services State Technical Assistance Team; 2017.
11. Infant mortality rate in St. Louis stagnant despite improvements across state, US. St. Louis Public Radio 2017. (Accessed December 18, 2019, at <https://news.stpublicradio.org/post/infant-mortality-rate-st-louis-stagnant-despite-improvements-across-state-us>.)
12. QuickFacts: St. Louis city, Missouri. United States Census Bureau, 2018. (Accessed November 3, 2019, at <https://www.census.gov/quickfacts/stlouiscitymissouri>.)
13. United States Data USA, 2018. (Accessed November 3, 2019, at <https://datausa.io/profile/geo/united-states#demographics>.)
14. Missouri Information for Community Assessment. 2018. (Accessed September 25, 2019, at <https://health.mo.gov/data/documentation/birth/birth-documentation-metadata.php>.)
15. Infant Health Flourish STL 2019. (Accessed September 25, 2019, at <https://www.flourishstlouis.org/what-we-are-doing/infant-health/>.)
16. Services MDoHaS. Maternal and Child Health Services Title V Block Grant: Missouri FY 2020 Application/FY 2018 Annual Report 2019.
17. Safe to Sleep. Georgia Department of Public Health, 2018. (Accessed November 3, 2019, at <https://www.healthsystemtracker.org/chart-collection/infant-mortality-u-s-compare-countries/#item-start>.)
18. Walcott R, Salm Ward, T., Ingles, J., Llewellyn, N., Miller, T., & Corso, P. A Statewide Hospital-Based Safe Infant Sleep Initiative: Measurement of Parental Knowledge and Behavior. Journal of Community Health 2018;43:534-42.
19. Salm Ward T, McClellan, C., Miller, M., & Brown, M. . Evaluation of Crib Distribution and Safe Sleep Educational Program to Reduce Risk of Sleep-Related Infant Death Journal of Community Health 2018;43:848-55.

20. Georgia Safe to Sleep Hospital Initiative Process Evaluation Report: The University of Georgia College of Public Health 2017.
21. Health and Safety City of St. Louis 2018. (Accessed November 3, 2019, at https://www.stlouis-mo.gov/government/departments/mayor/initiatives/resilience/equity/opportunity/health-safety/health-safety.cfm#CP_JUMP_705569.)
22. Miller T, Salm Ward, J., McClellan, T., Dawson, C., Ford, M., Polatty, M., Corso, K. . Implementing a Statewide Safe to Sleep Hospital Initiative: Lessons Learned. *Journal of Community Health* 2018;43:768-74.
23. Sleutel M, True, B., Gustus, H., Baldwin, K., & Early, B. Response to a National Issue: Moving Beyond "Back to Sleep" at Three Hospitals. *Journal of Pediatric Nursing* 2018;43:16-22.
24. Tucker S, Olson, M., & Frusti, D. Evidence-Based Practice Self-efficacy Scale: Preliminary Reliability and Validity *Clinical Nurse Specialist* 2009;24:207-15.
25. Pregnancy Risk Assessment Monitoring System (PRAMS). Centers for Disease Control and Prevention. (Accessed October 17, 2019, at <https://www.cdc.gov/prams/index.htm>.)