

The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Master's Projects and Capstones

All Theses, Dissertations, Capstones and
Projects

Summer 2023

A Public Health Educational Campaign For Sudden Unexpected Infant Death (SUID) Intervention

Elia G. Peralta Landeros
eliaperaltaland@gmail.com

Follow this and additional works at: <https://repository.usfca.edu/capstone>



Part of the [Behavior and Behavior Mechanisms Commons](#), [Educational Leadership Commons](#), [Education Policy Commons](#), [Maternal and Child Health Commons](#), [Public Health Education and Promotion Commons](#), and the [Social Justice Commons](#)

Recommended Citation

Peralta Landeros, Elia G., "A Public Health Educational Campaign For Sudden Unexpected Infant Death (SUID) Intervention" (2023). *Master's Projects and Capstones*. 1594.
<https://repository.usfca.edu/capstone/1594>

This Project/Capstone - Global access is brought to you for free and open access by the All Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Projects and Capstones by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

**A Public Health Educational Campaign For Sudden Unexpected Infant Death (SUID)
Intervention**

Elia G. Peralta Landeros

School of Nursing and Health Professional, University of San Francisco

Masters of Public Health

August 11th, 2023

Table of Contents

Section I: Abstract3

Section II: Introduction4

Section III: Background 5

Risk Factors and Ethnic Disparities In The Prevalence of SUID

Association of Breastfeeding and SUID

Time Trends of SUID

Policy Trends of Breastfeeding Rights

Figure 1: Social Ecological Model (SEM)

Section IV: Methods11

Section V: Recommendation12

Section VI: Implementation & Evaluation13

Legitimacy & Support

Operation Capacity

Public Value

Figure 2: Asset Map

Section VII: Implication & Discussion.....17

Health Benefits of SUID

Social Benefits of SUID

Internal Limitations of Breastfeeding

External Limitations of Breastfeeding

Figure 3: Forces of Change

Section VIII: Alleviate Breastfeeding.....21

Figure 4: Messaging Strategy

Section IX: Further Recommendations.....23

Sections X: Conclusion.....23

Section XI: References.....25

Section XII: Appendix.....31

A: SUID By Race/Ethnicity 2015-2018

B: SUID Rated By State 2016-2020

C: Trends in SUID By Case 1990-2020

D: Multifaceted Learning

E: Percentage of Babies Receiving Any & Exclusive Breast Milk

F: Early Care & Education (ECE) Licensing

G: Breastfeeding Initiation Rates

H: Policies in California

I: MCAH Funding Distribution

J: Formula Production

K: Modifiable Factors

L: Core Competencies

Abstract

Purpose: The rate of infant mortality serves as a crucial indicator of the overall health of society (CDC, 2022). The five leading causes of infant mortality are birth defects, preterm birth, sudden infant death syndrome, injuries, and maternal pregnancy complications. The prevalence of infant mortality varies across states, with eastern states and minority-ethnicity infants having higher prevalence. This thesis proposes utilizing the Safe to Sleep framework to introduce Giving Breath, a public health education campaign that introduced breastfeeding as an intervention to Sudden Unexpected Infant Death (SUID).

Methods:

- I. Analyze current and new policies' impact on women's rights to breastfeed their infants.
- II. Compare institution databases (California Department of Public Health and Centers for Disease Control and Prevention) that reflect the prevalence of SUID among various ethnicities in the United States.
- III. Develop the proposed framework with relevant literature on breastfeeding and SUID within PubMed and the National Library of Medicine.

Results: The prevalence of SUID has decreased through the implementation of initiatives (Safe to Sleep) and policies (The California Lactation Accommodation Law of 2002, The Breastfeeding Education & Support of 2007, and Providing Urgent Maternal Protection (PUMP) for Nursing Mothers Act of 2022). Further enforcement of policies through Giving Breath is needed to decrease the prevalence of SUID, particularly for unknown causes.

Conclusion: Public health education campaigns have successfully encouraged behavior change at individual, interpersonal, community, organizational, and structural levels. Giving Breath can encourage mothers to breastfeed their infant without fearing shame and sexualization, recognizing it as the most natural act they can do.

Keywords: Sudden unexpected infant death, sudden infant death, safe sleep, breastfeeding, policies, intervention, public health educational campaign, and infant mortality.

Introduction

The Centers for Diseases Control and Prevention has indicated that the five leading causes of infant mortality are birth defects, preterm birth, sudden infant death syndrome, injuries (suffocation), and maternal pregnancy complications. In 2020, the infant mortality rate in the US was 5.4 deaths per 1,000 lives birth (Murphy et al., 2021). Most of these deaths occur in eastern states, with an average rate of 4.86 to 8.27 deaths per 1,000 lives (CDC, 2022). Sudden Infant Death Syndrome (SIDS) is rated as the third cause of infant mortality (CDC, 2012).

Various organizations have focused on reducing the prevalence of infant mortality through initiatives, campaigns, and policies throughout all levels of public health intervention. The Safe to Sleep campaign has demonstrated the impact of public health education campaigns in creating awareness and enforcing policies. By recommending the Giving Breath campaign utilize a similar framework, the prevalence of SUID/SIDS can be further decreased. Infant mortality is a marker of a society's overall health (CDC, n.d).

“A wife who loses a husband is called a widow. A husband who loses a wife is called a widower. A child who loses his parents is called an orphan. There is no word for a parent who loses a child. That’s how awful the loss is” (Neugeboren,1979).

This thesis discusses the importance of understanding Sudden Unexpected Infant Death (SUID) and how it has been addressed through initiatives, campaigns, and policies in the last few decades. Even though the prevalence of SUID has decreased, it has maintained an alarming and consistent rate. By recommending using the Safe to Sleep campaign framework to propose Giving Breath which emphasizes educational awareness of breastfeeding beyond the individual level, as well as the enforcement of policies. The following questions are meant to shape the problem statement.

- I. What is SUID?
- II. What has been done to reduce the prevalence of SUID?
- III. What can be done to further reduce the prevalence of SUID?

Background

Sudden Unexpected Infant Death (SUID) refers to an infant's sudden and unexpected death under 12 months (CDC, 2023). It is estimated that 3,400 SUID occur each year in the United States. Male infants are 30 to 50% more likely than female infants to die from SUID (Athanasakis et al., 2011). The primary causes of SUID reported in 2020 include accidental suffocation and strangulation in bed (27%), sudden infant death syndrome (41%), and unknown causes (32%) (CDC, 2023). Most SUID occurs in the infant's sleeping environment, which results in an uncertain category of death, due to minimal caregiver supervision. Additionally, paternal absence significantly increases the prevalence of SUID (Athanasakis et al., 2011). There are preventable internal risk factors associated with SUID that include the infant's non-supine sleep position (21.6%), soft bedding (38.5%), and bed sharing (61.4%) (Children's Safety Network at Education Development Center, n.d.). Additional external risk factors that influence the prevalence of SUID are ethnicity, culture, and socioeconomic status (Radojevic et al., 2021). The importance of external risk factors will be exposed in the following sub sections.

Risk Factors and Ethnic Disparities In The Prevalence of SUID

The CDC National Center for Health Statistics (NCHS), National Vital Statistics System, and Period Linked Birth/Infant Death Data calculated that SUID rates were higher among Non-Hispanic American Indian/Alaska Native, Non-Hispanic Black, and Non-Hispanic Native Hawaiian/other Pacific Island infants (Appendix A) (CDC, 2023). Deaths accounted for by accidental suffocation and strangulation in bed (ASSB) were higher among Non-Hispanic Native Hawaiian/other Pacific Island infants (57 per 100,000 live births) (CDC, 2023). While deaths accounted for by sudden infant death syndrome (SIDS) were higher among Non-Hispanic Native Hawaiian/other Pacific Islander infants (52%) and Non-Hispanic White infants (41%) (CDC, 2023). Various ethnicities have overlapping factors that influence the prevalence of SUID, including socioeconomic status, educational status, and marital status.

Infants from low socioeconomic status, low maternal education, and single-marital status are more likely at risk for SUID due to limited living and sleeping environmental resources (Athanasakis et al., 2011). Early exposure to secondhand smoke and co-sleeping before 12

months hinders the infant's ability to breathe and regulate body temperature. It is not limited to an environments toxic level but excessive temperatures and close air-circulation environments. It is estimated that 40% of caregivers had reported awareness of SUID and safe sleep practices (Cole et al., 2022). Increasing awareness of SUID and expanding interventional methods for SUID encourages caregivers of various ethnicities, cultures, and socioeconomic statuses to modify their interactive behavior toward their infants. An example is how young mothers between 20 to 29 years are less likely to breastfeed their infant than mothers 30 years old or older during the first 12 months due to a lack of education on breastfeeding benefits (CDC, 2023). To further expand intervention methods for SUID, such as breastfeeding, it is essential to identify barriers to further adapt or propose new policies targeting behavior change from the individual to the community level.

Association of Breastfeeding and SUID

Various studies have been conducted to find the association between breastfeeding and SUID. Most identify that any duration of breastfeeding can reduce the prevalence of SUID. It is strongly encouraged that exclusive breastfeeding for at least six months can decrease the prevalence of SUID (Vennemann et al., 2009).

The German Study of SUID

A case-control study in Germany investigated the association between types of breastfeeding and SUID through 333 infants reported as SUID and 998 age-matched controls (Vennemann et al., 2009). This study identified that 50% of cases and 83% of controls were breastfed at two weeks of age (Vennemann et al., 2009). Exclusive and partial breastfeeding was associated with reducing the prevalence of SUID by half across all ages in infancy.

The Chicago Study of SUID

A population-based case-control study in Chicago investigated risk factors for SUID among Non-Hispanic Blacks through 260 infants reported as SUID and 260 age-matched controls (Hauck et al., 2003). This study identified that 21% of cases and 50% of controls were breastfed in the first 12 months of life (Hauck et al., 2003). Breastfeeding was found to provide

infants with a protective mechanism against SUID, it is considerable to acknowledge the factors that influence the act of breastfeeding.

The Irish Study of SUID

A case-control study in the Republic of Ireland investigated the risk factors for SIDS in the sleeping environment of Irish infants through 203 infants reported as SUID and 622 age-matched controls (McGarvey et al., 2003). This study identified that 8% of cases and 4% of controls were breastfed since birth (McGarvey et al., 2003). Infants who slept alone were more likely to be breastfed than co-sleepers, reducing the prevalence of SUID.

In recent years, successful public health educational campaigns such as Safe to Sleep have initiated recommended exclusive breastfeeding in their messaging to encourage behavior change. Giving Breath can solely be dedicated to recommending breastfeeding as an intervention for SUID.

Time Trends of SUID

Among 50 states of the United States and the District of Columbia, the lowest SUID rates were reported in Vermont, Massachusetts, New Hampshire, West Virginia, and California at 67.6 to 75.7 per 100,000 live births (Appendix B) (CDC, 2023). Despite over half of the states having SUID rates above the average, significant reductions have been achieved through statewide initiatives and institutions. The decline began in the early 1990s when The American Academy of Pediatrics and the Back to Sleep campaign helped increase the awareness of sudden unexpected infant death (SUID) by providing educational resources of safe sleep recommendations to healthcare providers and families (CDC, 2022). These resources were developed in consideration for major ethnicity and cultural groups such as Non-Hispanic White, Hispanic, Non-Hispanic Black, and Non-Hispanic American Indian/Alaska Native. From the 1990s to 2020s, the combined rate of SUID has decreased significantly from 154.58 to 92.9 deaths per 100,000 live births (Appendix C) (CDC, 2023). However, by the individual type of death, ASSB and unknown causes has slightly increased.

The latest reported increase of ASSB is relevant to personal utilization and educational awareness of SUID intervention resources such as Back to Sleep and Baby Friendly 10 Steps to

Successful Breastfeeding. However, non-Hispanic Black mothers are less likely than other ethnicities to follow intervention resources and recommendations due to multifaceted learning barriers reported as "it is just easier," "cannot fight culture & grandma," and "effectively teaching mother" (Appendix D) (Stiffler et al, 2020). These barriers indicate how the overall prevalence of infants receiving some or exclusive breastfeeding continues to decline after three months of birth (Appendix E) (CDC, 2022). From 2016 to 2019, California has had a slight decrease in breastfeeding prevalence among Non-Hispanic Asians (1.6%), Non-Hispanic White (0.8%), and Hispanics (0.3%) (CDPH, 2019). On the contrary, a slight increase in any breastfeeding prevalence among Non-Hispanic Black (1.5%), Non-Hispanic American Indians (2.8%), and Non-Hispanic Pacific Islanders (0.9%) (CDPH, 2019). The prevalence of any and exclusive breastfeeding is different in each state. The Early Care and Education (ECE) Licensing Breastfeeding Support Scores indicate that California, Texas, Mississippi, North Carolina, Georgia, Maryland, Delaware, Vermont, and the District of Columbia had the highest scores in meeting the "Our Children" standards, which support breastfeeding, feeding of breast milk, and making accommodations for mothers (Appendix F) (CDC, 2022). This indicates that more than half of the states do not meet Our Children standards, impacting overall support for SUID interventions (CDC, 2022).

The Baby Friendly 10 Steps to Successful Breastfeeding is meant to provide breastfeeding support through promoting information and skill acquisition. Unfortunately, many health facilities that provide maternal health care do not implement this initiative, resulting in many mothers to seek support through other methods. Mothers had reported receiving information on SUID and interventions through print media (55%), family or friends (45%), hospital staff (34%), online sources (30%), local programs (23%), television (20%), obstetrics (20%), and other medical doctors (11%) (Cole et al., 2022). It results in conflicting information that impacts the personal utilization and education awareness of SUID interventions. To establish counter measurements, federal and state policies have been developed to support breastfeeding from the individual to the community level.

Policy Trends of Breastfeeding Rights

The California state legislatures have developed policies that support a mother's right to breastfeed their infant by expanding workplace accommodations, parental leave rights, hospital training, and breastfeeding support. It initiatives at the community level by normalizing breastfeeding. In 2001, only 43% of the adult population believed that women should have the right to breastfeed in public spaces, leaving more than half of the adult population against public breastfeeding (U.S. Department of Health and Human Services, 2011). This has slightly changed to 69% of the adult population agreeing that women should have the right to breastfeed in public (CDC, 2021). The California Civic Code Section 43.3 aims to protect women's right to breastfeed their infants in public places; it is not limited to clothing coverage when breastfeeding (National Conference of State Legislatures, 2021). Many women continue to feel restricted to public breastfeeding because of social and cultural factors that sexualize breasts. It is essential to empower mothers through early education and support systems.

The California Breastfeeding Education & Support of 2007 initiated the recommendation of acute care hospitals to train their administrator and supervisory staff on exclusive breastfeeding (California Breastfeeding Coalition, n.d.). Each training focused on meeting the latest exclusive breastfeeding criteria of Healthy People Guidelines. California Special Supplemental Food Program for Women, Infants, and Children (WIC) sites were primarily encouraged to model these trainings. The further expansion of the California Hospital Infant Feeding Act of 2011 reinforces this training by orienting the training to the Baby Friendly Hospital Initiatives that specify ten steps to successful breastfeeding (California Breastfeeding Coalition, n.d.). In 2022, it was identified that 27% of births are in baby-friendly designated facilities, including all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico (Baby-Friendly USA, n.d.). The success rate of any breastfeeding occurring within these baby-friendly facilities went from 74% to 82% (Appendix G) (Baby-Friendly USA, n.d.). The short time frame between the baby's birth and discharge was vital to preserving breastfeeding in the next six to 12 months.

In 2020, women comprised 56.2%, and mothers comprised 71.2% of the United States workforce (U.S. Bureau of Labor Statistics, 2022). Two-thirds of these mothers plan to return to

work postpartum, and only 52% of mothers receive workplace breastfeeding support (California Department of Public Health, 2021). To ensure that mothers continue to breastfeed, the California Lactation Accommodation Law of 2002 proposed to protect and aid employees by expanding appropriate break times, providing adequate milk storage areas, and expanding private locations to express milk aside from the restroom (California Breastfeeding Coalition, n.d.). If an employer fails to provide these accommodations, their employee can submit a violation form that results in a violation fee of \$100.00 dollars per day (California Breastfeeding Coalition, n.d.). With the support of the Federal Fair Labor Standards Act Section 7, these accommodations can be extended to 12 months (California Breastfeeding Coalition, n.d.). Mothers are twice as likely to exclusively breastfeed at three months if sufficient workplace support is provided (CDPH, n.d.). It is expected that these policies will help to overcome lactation issues, employment challenges, and social norms. Unfortunately, many employees do not know their rights which lessens the pressure for employers to accommodate as needed. This results in modifying these policies to meet desired outcomes.

The most recent federal policy, Providing Urgent Maternal Protection (PUMP) for Nursing Mothers Act of 2022, was developed to fill the gap for those excluded from the California Lactation Accommodation Law of 2002 (Maloney, 2021). It was initiated by mandating employers with less than 50 employees a designated time frame of 10 days to expand accommodations, validate the accommodation for up to two years, and consider express breast milk as working hours (Maloney, 2021). There is no reassurance that employers will implement these policies without further enforcement. By analyzing each socio-ecological level, interventions for SUID and supportive policies for breastfeeding can be developed in consideration of creating positive behavior change (Figure 1).

SOCIAL ECOLOGICAL MODEL (SEM)



Figure 1

Methods

This thesis proposes breastfeeding as an intervention for Sudden Unexpected Infant Death (SUID) through analysis of current and new policy that impact on women's rights to breastfeed their infants. In a comparison of institution databases that reflect the prevalence of SUID among various ethnicities in the United States. These institution databases comprised the California Department of Public Health and the Centers for Disease Control and Prevention.

To assist the framework of this proposal, the following focus words utilized PubMed and the National Library of Medicine: [sudden infant death syndrome] AND [risks factors], [sudden unexpected infant death], [infant safe sleep], [infant safe sleep intervention], [breastfeeding benefits] AND [sudden infant death]. Each individual and combined focus word resulted in range of 8 to 356 resources. To filter these resources, peer review literature was prioritized.

Recommendation

Across all the 51 states of the United States and the District of Columbia, California has the most extended history of developing policies to protect women's right to breastfeed their infants (CDC, 2023). This reflects its position as one of the states with the lowest prevalence of Sudden Unexpected Infant Death (SUID). Further enforcement of current and new policies through public health education campaigns, such as Safe to Sleep, will make introducing breastfeeding as an intervention to SUID feasible. In proposing Giving Breath with a similar framework to Safe to Sleep, it allows individual, interpersonal, community, organizational, and structural barriers to be addressed and overcome.

Vision: Decrease the prevalence of SUID, mainly unknown causes. In infants between 0 to 12 months of age from multicultural backgrounds across the United States.

Mission: Giving Breath has five main parts to its mission

- I. Increase awareness of breastfeeding rights in public spaces and workplaces.
- II. Reevaluate the penalty fee for workplaces denying policy implementation and breastfeeding rights.
- III. Mandate health facilities that provide maternal health care to implement the Baby Friendly Hospital Initiatives (BFHI) with the recommended expansion of breastmilk banks for those unable to breastfeed.
- IV. Deconstruct Western cultural norms of bottle feeding
- V. Promote breastfeeding educational commercials to normalize breastfeeding.

Values: Integrity, Innovation, Transparency, and Compassion

Brand Logo:



Implementation & Evaluation

The Giving Breath campaign is recommended to be led at the federal level by the U.S. Department of Health and Human Services (HHS) Office on Women's Health (OWH) in collaboration with other state-level committees, organizations, and institutions to increase awareness of breastfeeding intervention for Sudden Unexpected Infant Death (SUID). The OWH has been a leading branch in addressing women's health issues, including health disparities in breastfeeding patterns across ethnic groups.

In addition, the U.S. Department of Health and Human Services (HHS) National Institute of Health branch has been part of leading the Safe to Sleep campaign, asserting HHS credibility and authority to lead the Giving Breath campaign through the Office on Women's Health. This allows state-level committees, organizations, and institutions that aim to improve infant health to follow federal-level campaigns in exchange for receiving Title V Maternal and Children Block Grant.

To initiate and model the implementation of Giving Breath at the state level it is recommended that The California State Department of Public Health (CPDH) Maternal, Child, and Adolescent Health Division (MCAH) takes the lead for other state-level committees, organizations, and institutions to follow (Figure 2). The Public Value Model of Strategy was utilized to evaluate CDPH MCAH's legitimacy and support, operation capacity, and public value to carry Giving Breath.

Legitimacy & Support

The California State Department of Public Health (CPDH) Maternal, Child, and Adolescent Health Division (MCAH) aims to improve the physical, mental, and emotional health of women, infants, children, and adolescents by implementing diverse programs and initiatives that provide resources, information, and data on best evidence-based practices (CDPH, n.d). Most state policies supporting MCAH's vision and mission have been developed under the Labor, Health & Safety, Educational, Governmental, Civil, Welfare & Institute, and Business & Professional Codes (Appendix H) (National Conference of State Legislatures, 2021). On the

contrary, federal policies that supported MCAH have been developed under Amendment rights, resulting in significant federal funding for these state departments.

Title V Maternal and Children Block Grant has funded 59 U.S. states and jurisdictions to provide health care services to 60 million people, it primarily aids infants (98%), pregnant women (92%), and children (58%) (U.S. Department of Health and Human Services, n.d.). States with public health education campaigns eligible for Title V Maternal and Children Block Grant go through rigorous National Performance Measures (NPM) to identify if there is progress. The latest report indicated that funding was distributed for breastfeeding initiatives (42 states) and safe sleep initiatives (37 states) (U.S. Department of Health and Human Services, n.d.). In 2021, Title V national expenditures reached nearly two and a half billion dollars, and California received one hundred million dollars (U.S. Department of Health and Human Services, n.d.).

In California, Title V funds programs primarily implemented by the Maternal, Child, and Adolescent Health (MCAH) Division of California Department of Public Health (CDPH); it services 61 local health jurisdictions which played a critical role in aiding preterm births (9.1%), Medi-Cal paid deliveries (39.6%), and decrease adolescent birth rate (68%) across people of color or Hispanic ethnicities (CDPH, n.d.). Funding is allocated to three major programs Maternal, Child, and Adolescent Health (MCAH), Sudden Infant Death Syndrome (SIDS), and Black Infant Health (BIH) (CDPH, n.d.). The California Budget Act of the 2023-2024 fiscal year indicated that Los Angeles and San Bernardino received the highest Title V funding for these programs, with more than half a million dollars each (Appendix I) (CDPH, n.d.).

MCAH's implementation of initiatives and programs has demonstrated that public health educational campaigns/initiatives are impactful for education awareness and policy enforcement. Giving Breath campaign can be an additional program that CDPH MCAH models its implementation for other states to follow with the support of the HHS Office on Women's Health. Each state utilizes the Title V Maternal and Children Block Grant to ensure five years of implementation, in addition to supporters and sponsors that aim to reduce SUID through breastfeeding intervention.

Operational Capacity

The California State Department of Public Health (CPDH) Maternal, Child, and Adolescent Health Division (MCAH) has seven fundamental initiatives and programs that provide resources, information, and data on best practices considering language and access barriers. The fundamental initiatives and programs consist of the Women Infant & Children (WIC), Nutrition Education & Obesity Prevention Branch (NEOPB), Comprehensive Perinatal Services Program (CPSP), Regional Perinatal Services Program (RPPC), California Home Visit Program (CHVP), Blank Infant Health (BIH), and Adolescent Family Life Program (AFLP). These programs and initiatives are implemented through public health coordinators and directors of internal state departments and external federal stakeholders such as the Centers for Disease Control & Prevention (CDC). Allowing expansion of MCAH resources through its various initiatives and programs.

Potential external stakeholders that aid the HHS National Institute of Health and can contribute to MCAH implementation of Giving Breath are the American Academy of Pediatrics (AAP), First Candle, the American College of Obstetricians and Gynecology (ACOG), Maternal and Child Health Bureau (MCHB) of the Health Research and Services, Americans SIDS Institute, Keeping Babies Safe, and Association of Maternal and Child Health Program (AMCHP). These stakeholders have contributed to increasing awareness of breastfeeding and SUID through educational efforts and policy enforcement. By gathering external stakeholders with similar desires to MCAH, the Giving Breath campaign can be successfully implemented as its current initiatives and programs.

Public Value

The California State Department of Public Health (CPDH) Maternal, Child, and Adolescent Health Division (MCAH) is one of the many state departments implementing federal initiatives and programs to improve maternal and infant health. Title V Maternal and Children Block Grant and State General Fund supports MCAH under five health domains: Women/ Maternal, Perinatal/ Infant, Child, Children & Youth with Special Health Care Needs (CYSHCN), and Adolescent. Giving Breath campaign qualifies for Title V support under the

Perinatal/ Infant health domain, as its vision is to decrease the prevalence of SUID in infants by creating educational awareness of breastfeeding intervention and enforcement of policies.

MCAH's efforts have indicated that exclusive breastfeeding has increased by 4%, with an average rate of 33% (CDPH, n.d.). Secondly, infant mortality has decreased by 1 per 1,000 live births, with an average prevalence of 5 per 1,000 live births (CDPH, n.d.). Lastly, infant mortality led by SUID has decreased by 6 per 100,000 live births, with an average prevalence of 46 per 100,000 live births (CDPH, n.d.). Many factors that contribute to infant mortality also affect the overall health of everyone (CDC, 2012). It is essential to analyze these factors to understand our society's moral standing (Brosco, 1999).

ASSET MAP

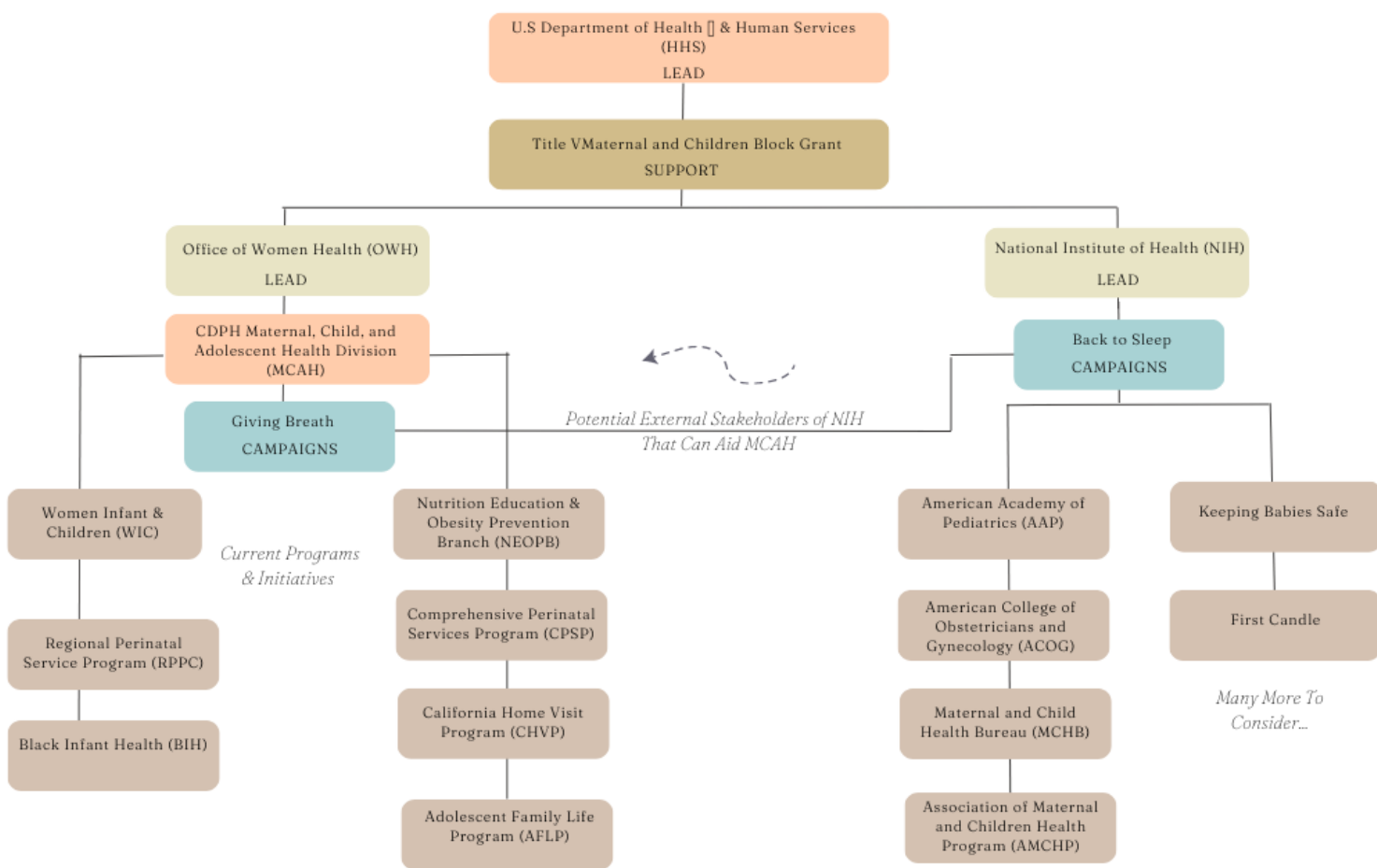


Figure 2

Implication & Discussion

Breastfeeding has multiple health benefits for infants and mothers. Studies indicated that breastfeeding infants have a significantly lower prevalence of respiratory tract infection, otitis media, and gastroenteritis than non-breastfeed infants (Rouw et al, 2018). An infant's respiratory system is crucial in determining SUID's prevalence. An underlying theory that is associated with SUID is Apnea (the temporary cessation of breathing) and Hypoxia (absence of oxygen in tissue to sustain body functions) (Keens & Stastny, n.d). It implies that infants "will not" or "cannot breath" during their sleep, increasing the prevalence of SUID. Limited studies question the correlation between Apnea and Hypoxia to SUID; it is viable to hypothesize it as an attribute of SUID (Thach, 2008). Giving Breath campaign proposes breastfeeding as an intervention to SUID through the support of benefits and an indication of limitations that alleviates breastfeeding compared to alternative nursing options such as formula and human milk bottle feeding (Figured 3).

Health Benefits of Breastfeeding

The mechanism benefit of breastfeeding is that it helps protect infants from SUID and other illnesses. Breastfeeding contains nutrients such as Immunoglobulins, Myelination, Isozyme, Lactoferrin, and Oligosaccharides that help develop an infant's health system to fight respiratory infections and strengthen breathing coordination (Young, 2016). Infant mortality reported as SUID was 45 to 80 percent more likely to have an infection two weeks before death (Young, 2016). It reflects the importance that any duration of breastfeeding provides protection from infections related to SUID such as respiratory.

A population-based study conducted in La Marina Baja, Spain, reported that infants breastfed and bed-shared had a lower SUID prevalence than formula-feed (Landa-Rivera et al., 2022). The change in parental behavior regarding breastfeeding and formula feeding influences how parents position their infant during sleep. Infants younger than six months are less likely to be placed in prone positions if breastfed (3.5%) than bottle feed (5.8%) (Landa-Rivera et al., 2022). The behavior changes that breastfeeding has over bottle feeding is that breastfeeding mothers are more likely to increase their milk supply through skin-to-skin contact and identify

arousal (breathing) patterns. Breastfeeding promotes breathing coordination by pacing swallowing and breathing during feeding time (Young, 2016). Infants not breastfed are more likely to trigger Laryngeal-Chemoreflex (LCR) that can induce Apnea resulting in SUID (Young, 2016).

Social Benefits of Breastfeeding

The social benefit of breastfeeding is that it saves infants' lives, has less environmental impact, encourages workforce productivity, and saves money (U.S. Department of Health and Human Services, n.d.). In California, infants from 200% above the poverty line are 42% more likely to be exclusively breastfed than those below 100% of the poverty line at 25% (CDHP, n.d.). They indicate that infants below the 100% poverty line have a higher prevalence of SUID (CDHP, n.d.) Researchers have hypothesized that if 90% of families exclusively breastfeed for six months, nearly 1,000 deaths can be prevented yearly (U.S. Department of Health and Human Services, n.d.). Infants breastfed are less likely to fall ill due to the health benefits, resulting in lower medical costs than infants formula fed.

The ongoing manding of bottles and formula products creates more trash and plastic waste that can impact our environment. Comparatively, breast milk is a renewable supply that changes as the infants demands for more. A study that utilizes life-cycle assessment (LAC) methodology reviews the environmental impact of formula and feeding supplies in global warming, terrestrial acidification, landfills, and marine and freshwater eutrophication (Andresen et al., 2022). It identified that four-month exclusive feeding with formula (35- 73%) has a higher environmental impact than breastfeeding (Andresen et al., 2022). Formula production consists of many raw ingredients (cow milk, rapeseed oil, and sunflower oil) that need modification for consumption, outputting environmental impact, and fewer mechanism benefits for an infant (Appendix J) (Andresen et al., 2022).

Internal Limitations of Breastfeeding

Biological Attributes

The American Academy of Pediatrics and the World Health Organization recommend exclusive breastfeeding for optimal growth and development for the first six months of age (Lee & Kelleher, 2016). About 75% of women in the United States attempt to breastfeed, and 40 to 50% fail to produce sufficient lactation (Lee & Kelleher, 2016). They are indicating that less than half of women breastfeed their infant. A woman's genetics and modifiable factors such as energy balance, dieting, and environmental exposure have a role in Mammary Gland lactation performance, milk volume, and composition (Appendix K) (Lee & Kelleher, 2016). By clearly understanding the biological attributes that determine successful and unsuccessful lactation, it will be feasible for public health professionals to recommend breastfeeding.

Inclusion "Chest Feeding"

Transgender or gender-diverse individuals who can carry a child are often excluded from very cis-normative and female-engendered breastfeeding experiences (Nationwide Children, 2022). This impacts these individuals' ability to implement successful feeding mentally, emotionally, and physically. Creating awareness of chest-feeding allows transgender or gender-diverse individuals that have or cannot carry a child to feed their infant from their chest, regardless of the ability to produce breastmilk—allowing infants from these diverse communities to have the same or similar opportunity to reduce the prevalence of SUID.

External Limitations of Breastfeeding

Health Care

The International Board of Lactation Consultant Examiners (IBLCE) reported that worldwide there is a total of thirty-five thousand certificate lactation consultants, with the United States having the highest number at nineteen thousand (IBLCE, 2023). Unfortunately, many healthcare insurances do not cover services for lactation consultants, limiting accessibility for low-income communities. Healthcare professionals covered by healthcare insurance lack knowledge, training, and education pertaining to breastfeeding (Spatz, 2005). National surveys

have indicated that 73% of residency training programs had inadequate preparation to promote breastfeeding, and 49% of pediatric residents have been in a position to provide breastfeeding support (Spatz, 2005). Inadequate training contract principle of ethics in providing adequate care. By identifying that health professionals' lack of knowledge is a factor that determines the likelihood of mothers breastfeeding after discharge, the Baby Friendly Hospital Initiatives (BFHI) can provide assistance for health professions to follow.

Western Normalization of Bottle Feeding

Before bottle feeding was adapted as a social norm for infant feeding, wet nurses were the safest alternative for breastfeeding (Stevens et al., 2009). From 2000 BC to the 20th century, wet nurses were common in Western and Eastern countries such as Egypt, Greece, Italy, and the United States. The wet nurse profession slowly began to decline after society negatively viewed wet nurses and the industrial revolution of bottle feeding was introduced. Breastfeeding was an alternative need that became an alternative choice for many mothers due to its convenience and flexibility—allowing them to share feeding responsibilities with their partners and opting out of private areas for feeding (Ben-Joseph, 2018). In America, breastfeeding has often been regarded as a sexual object, downplaying its nurturing function (U.S. Department of Health and Human Services, 2011). Leaving many women to feel uncomfortable to breastfeed in public spaces. By identifying how Western social norms influence a mother's decision to breastfeed, we can further deconstruct the sexualization of breasts and the norm of bottle feeding through educational awareness.

Economic Investment

In the United States, the bottle and formula production industry continue to increase significantly compared to other countries, with an average weekly sale of 5.1 million pounds of powder (The United States Government, 2022). Families that rely on formula as a primary source of nutrition spend an average of \$1,500 dollars a year; the cost of formula can vary if families have more than one infant (U.S. Department of Health and Human Services, n.d.). An organization such as the Special Supplement Nutrition Program for Women, Infants, and

Children (WIC) purchases most of the domestic formula to reduce inadequate cost, which allows them to have a revenue of 1 to 2 billion dollars annually (Pathak, 2022). The latest shortage of infant formula indicates how families should rely on something other than bottle feeding as a primary source of nutrition. By identifying how the bottle and formula industry influences policy decisions that support breastfeeding, Giving Breath campaign can contradict their efforts through policy enforcement of breastfeeding rights.

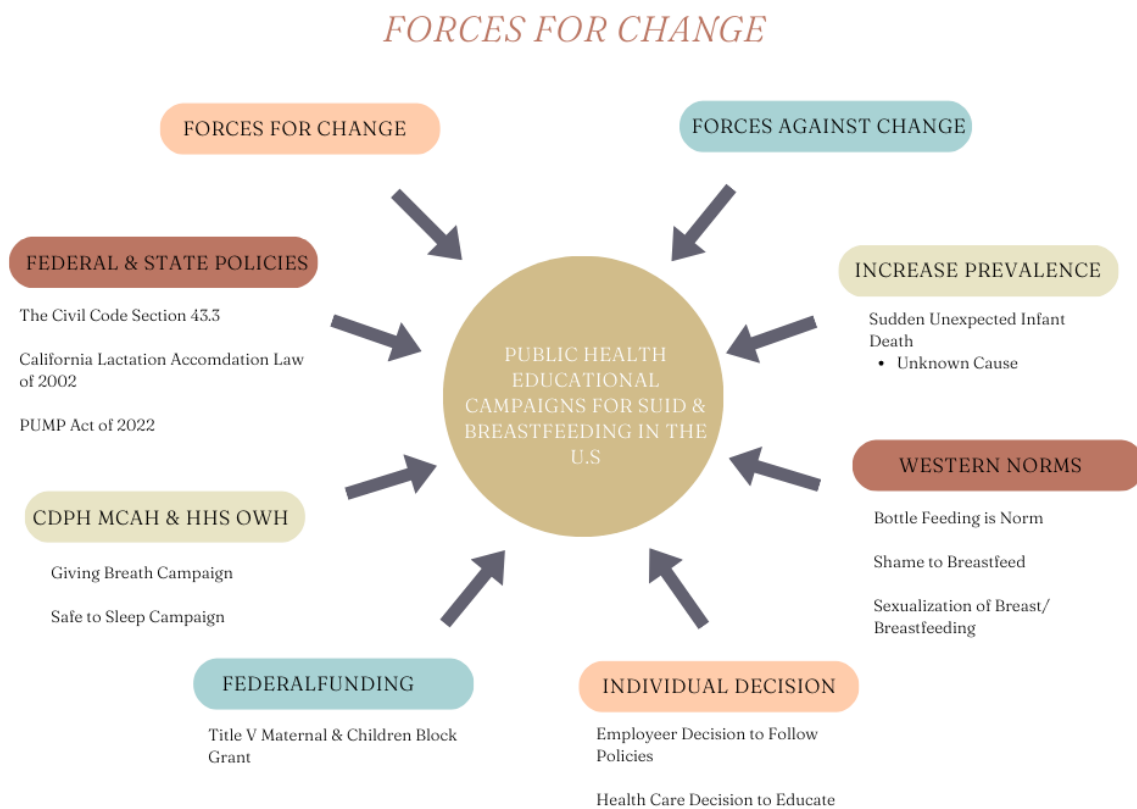


Figure 3

Alleviate Breastfeeding

Giving Breath campaign will convey its message that breastfeeding save infants' lives through branding and health messaging of civil and employee rights to breastfeed, health professional support for breastfeeding, and the natural act of breastfeeding. Similar to the Safe to Sleep campaign, the first concept behind the health messaging intervention is to answer

questions that pose barriers to adherence (Moon et al., 2016). Such as "How does breastfeeding prevent SUID? What if I cannot breastfeed? What if my employer does not accommodate me to pump? How can I be safe to breastfeed in public?. Individuals are more likely to follow a health recommendation if they understand the rationale (Moon et al., 2016). The second concept behind the health messaging intervention is to provide messages that promote the realization of how every infant is at potential risk for SUID, especially those not breastfed (Moon et al., 2016). Through employing the messaging strategy of product, price, place, and promotion, caregivers can be encourage to prioritize breastfeeding over bottle formula-feeding, leading to behavior changes (Figure 4).



Figure 4

Further Recommendations

Giving Breath's vision is to decrease the prevalence of SUID in infants between 0 to 12 months of age from multicultural backgrounds across the United States through breastfeeding intervention. It is essential to consider the impact of internal and external limitations in this recommendation. In order to use a multi-level approach further to implement Giving Breath (Moon et al., 2016). It can consist of the enforcing policies to...

- I. Reducing the cost of human milk at milk banks.
- II. Expand health care coverage for professionals that specialize in breastfeeding (e.g., lactation consultants and doulas).
- III. Expand remote employee accommodation for the first 12 months of breastfeeding.
- IV. Mandate breastfeeding training for health professionals with primary contact with mothers.
- V. Conduct further research on the theoretical causes of SUID and how breastfeeding can reduce the prevalence of SUID.
- VI. Develop curriculums of best breastfeeding methods.

Conclusion

There have been numerous efforts to reduce the prevalence of SUID through policies and public health education campaigns. It is alarming that one of the three causes of SUID, unknown continues to increase its baseline. The unknown cause of SUID can be decreased through behavior change that support breastfeeding at the individual, interpersonal, community, organizational, and structural level. Breastfeeding has nutrients that help develop an infant's health system to fight respiratory infections and strengthen breathing coordination (Young, 2016). Impacting the infant's ability to overcome Apnea and Hypoxia, it is viable to hypothesize it as an attribute to SUID, possibly to an unknown cause (Thach, 2008). By utilizing the Safe to Sleep campaign framework to propose Giving Breath, a public health education campaign that recommends breastfeeding as an intervention for SUID. Social determinants of health such as ethnicity, culture, and socioeconomic status, can be overcome through this public health educational campaign y recognizing internal and external factors that impact behavior change to

support breastfeeding—allowing to save infants' lives from multicultural backgrounds across the United States.

Reference

- Athanasakis, E., Karavasiliadou, S., & Stliadis, I. (2011). The factors contributing to the risk of sudden infant death syndrome. *Hippokratia vol. 15,2* (2011): 127-31. <https://pubmed.ncbi.nlm.nih.gov/22110293/>
- Andresen, E. C., Hjelkrem, A. R., Bakken, A. K., & Andersen, L. F. (2022). Environmental impact of feeding with infant formula in comparison with breastfeeding. *International journal of environmental research and public health*, *19*(11), 6397. <https://doi.org/10.3390/ijerph19116397>
- Baby-Friendly USA. (n.d.). *The baby-friendly hospital initiative*. <https://www.babyfriendlyusa.org/about/#:~:text=More%20than%2020%2C000%20mater nity%20facilities,earned%20the%20Baby%2DFriendly%20designation>
- Ben-Joseph, E. P. (2018). *Breastfeeding vs. formula feeding*. KidsHealth. <https://kidshealth.org/en/parents/breast-bottle-feeding.html>
- Brosco J. P. (1999). The early history of the infant mortality rate in America: "A reflection upon the past and a prophecy of the future". *Pediatrics*, *103*(2), 478–485. <https://doi.org/10.1542/peds.103.2.478>
- California Breastfeeding Coalition. (n.d.). *Breastfeeding rights*. <https://californiabreastfeeding.org/breastfeedingrights/california-breastfeeding-laws/>
- California Department of Public Health. (2019). *California in-hospital breastfeeding as indicated on the newborn screening test form statewide, county and hospital of occurrence by race/ethnicity*. <https://www.cdph.ca.gov/Programs/CFH/DMCAH/surveillance/CDPH%20Document%20Library/Breastfeeding/Breastfeeding-In-Hospital-Data-2019-Hospital-by-Race.pdf>

- California Department of Public Health. (n.d.). *Maternal, child and adolescent health division*. <https://www.cdph.ca.gov/Programs/CFH/DMCAH/Pages/Default.aspx>
- Centers for Disease Control and Prevention. (2012). *Infant mortality*. <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/InfantMortality.htm>
- Centers for Disease Control and Prevention. (2023). *Data and statistics*. <https://www.cdc.gov/sids/data.htm>
- Centers for Disease Control and Prevention. (2023). *Facts*. <https://www.cdc.gov/breastfeeding/data/facts.html>
- Centers for Disease Control and Prevention. (2022). *Linked birth and infant death data*. National Vital Statistics System. <https://www.cdc.gov/nchs/nvss/linked-birth.htm>
- Centers for Disease Control and Prevention. (2022). *Sudden unexpected infant death and sudden infant death syndrome*. <https://www.cdc.gov/sids/index.htm>
- Centers for Disease Control and Prevention. (2022). *Breastfeeding report card*. <https://www.cdc.gov/breastfeeding/data/reportcard.htm>
- Centers for Disease Control and Prevention. (2021). *Public opinions about breastfeeding*. https://www.cdc.gov/breastfeeding/data/healthstyles_survey/index.htm
- Centers for Disease Control and Prevention. (2022). *Infant mortality*. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>
- Children's Safety Network at Education Development Center. (n.d.). *Sudden unexpected infant deaths in the united states*. <https://www.childrensafetynetwork.org/infographics/sudden-unexpected-infant-deaths-united-states>
- Cole, R., Young, J., Kearney, L., & Thompson, J. M. D. (2022). *Infant care practices, caregiver*

awareness of safe sleep advice and barriers to implementation: A scoping review.

MDPI. <https://www.mdpi.com/1660-4601/19/13/7712>

Hauck, F. R., Herman, S. M., Donovan, M., Iyasu, S., Merrick Moore, C., Donoghue, E., Kirschner, R. H., & Willinger, M. (2003). Sleep environment and the risk of sudden infant death syndrome in an urban population: the chicago infant mortality study.

Pediatrics, 111(5 Pt 2), 1207–1214. <https://pubmed.ncbi.nlm.nih.gov/12728140/>

Keens, T. G., & Stastny, P. F. (n.d.). *Sudden infant death syndrome and safe infant sleep.*

California Department of Public Health. <https://www.cdph.ca.gov/Programs/CFH/DMCAH/SIDS/CDPH%20Document%20Library/KEENS-SIDSSafeInfantSleep-CalSIDSProgamTraining.pdf>

Lee, S., & Kelleher, S. L. (2016). Biological underpinnings of breastfeeding challenges: the role of genetics, diet, and environment on lactation physiology. *American journal of physiology. Endocrinology and metabolism, 311(2), E405–E422.* <https://doi.org/10.1152/ajpendo.00495.2015>

Landa-Rivera, J. L., Pérez-Pérez, J., González-Núñez, M. D. P., Gil-Miralles, R. A., Jover-Escolano, Y., & Fernández-Pan Astacio, V. (2022). Population-based survey showing that breastfed babies have a lower frequency of risk factors for sudden infant death syndrome than nonbreastfed babies. *Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine, 17(2), 182–188.* <https://doi.org/10.1089/bfm.2021.0113>

Maloney, C. B. (2021). *H.R.3110 - pump for nursing mothers act* . Congress.

<https://www.congress.gov/bill/117th-congress/house-bill/3110>

- McGarvey, C., McDonnell, M., Chong, A., O'Regan, M., & Matthews, T. (2003). Factors relating to the infant's last sleep environment in sudden infant death syndrome in the Republic of Ireland. *Archives of disease in childhood*, 88(12), 1058–1064. <https://doi.org/10.1136/adc.88.12.1058>
- Murphy, S. L., Kochanek, K. D., Xu, J., & Arias, E. (2021). *Mortality in the united states, 2020*. Centers for Disease Control and Prevention. <https://www.cdc.gov/nchs/data/databriefs/db427.pdf>
- Moon, R. Y., Hauck, F. R., & Colson, E. R. (2016). Safe infant sleep interventions: What is the evidence for successful behavior change?. *Current pediatric reviews*, 12(1), 67–75. <https://doi.org/10.2174/1573396311666151026110148>
- National Conference of State Legislatures. (2021). *Brief breastfeeding state laws*. <https://www.ncsl.org/health/breastfeeding-state-laws>
- Nationwide Children's Hospital. (2022). *Inclusive lactation care: Supporting all parents in their lactation journey*. <https://www.nationwidechildrens.org/family-resources-education/700childrens/2022/08/inclusivity-in-lactation>
- Neugeboren, Jay. (1978). An Orphan's Tale
- Radojevic, N., Konatar, J., Vukcevic, B., Jovovic, A., Begic, S., Savic, S., Subramanian, S. V., & Miranovic, V. (2021). The socio-economic status of families experiencing the sudden unexpected death of an infant - Is it possibly related to a higher rate of non-natural deaths among them. *Journal of forensic and legal medicine vol. 80*. 102168. doi:10.1016/j.jflm.2021.102168
- Rouw, E., von Gartzten, A., & Weißenborn, A. (2018). The importance of breastfeeding for the infant. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, 61(8), 945–

951. <https://doi.org/10.1007/s00103-018-2773-4>

Spatz D. L. (2005). Report of a staff program to promote and support breastfeeding in the care of vulnerable infants at a children's hospital. *The Journal of perinatal education*, 14(1), 30–38. <https://doi.org/10.1624/105812405X23630>

Stiffler, D., Matemachani, S. M., & Crane, L (2020). Considerations in safe to sleep messaging: Learning from african-american mothers. *Journal for specialists in pediatric nursing : JSPN* vol. 25,1. e12277. doi:10.1111/jspn.12277

Stevens, E. E., Patrick, T. E., & Pickler, R. (2009). A history of infant feeding. *The Journal of perinatal education*, 18(2), 32–39. <https://doi.org/10.1624/105812409X426314>

Thach B. (2008). Tragic and sudden death. Potential and proven mechanisms causing sudden infant death syndrome. *EMBO reports*, 9(2), 114–118. <https://doi.org/10.1038/sj.embor.7401163>

The United States Government. (2022). *Addressing the infant formula shortage*. The White House. <https://www.whitehouse.gov/formula/>

U.S. Department of Health and Human Services. (2011). The Surgeon General’s Call to Action to Support Breastfeeding. *U.S. Department of Health and Human Services, Office of the Surgeon General*. <https://www.ncbi.nlm.nih.gov/books/NBK52682/>

U.S Department of Health & Human Services. (n.d.). *Making the decision to breastfeed*. Office on Women’s Health. <https://www.womenshealth.gov/breastfeeding/making-decision-breastfeed>

U.S Department of Health and Human Services. (n.d.). *Explore the title V federal-state partnership*. HRSA Maternal & Child Health. <https://mchb.tvisdata.hrsa.gov>

U.S. Bureau of Labor Statistics. (2022). *Women in the labor force: A databook : BLS reports*.

<https://www.bls.gov/opub/reports/womens-databook/2021/home.htm>

Vennemann, M. M., Bajanowski, T., Brinkmann, B., Jorch, G., Yücesan, K., Sauerland, C.,

Mitchell, E. A., & GeSID Study Group (2009). Does breastfeeding reduce the risk of

sudden infant death syndrome?. *Pediatrics*, *123*(3), e406–e410. [https://doi.org/10.1542/](https://doi.org/10.1542/peds.2008-2145)

[peds.2008-2145](https://doi.org/10.1542/peds.2008-2145)

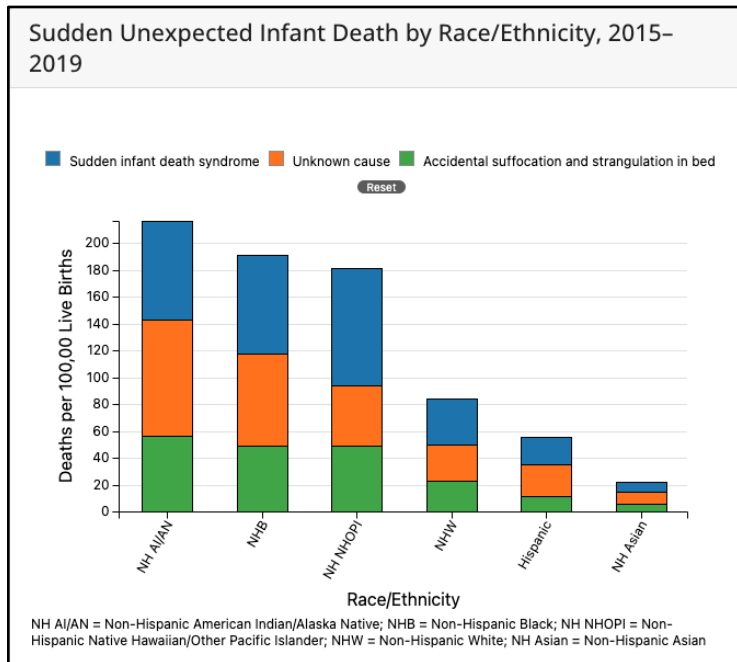
Young, J. (2014). Breastfeeding and the risk of sudden unexpected death in infancy. *Red Nose*.

National Scientific Advisory Group. [https://rednose.org.au/article/breastfeeding-and-the-](https://rednose.org.au/article/breastfeeding-and-the-risk-of-sudden-unexpected-death-in-infancy)

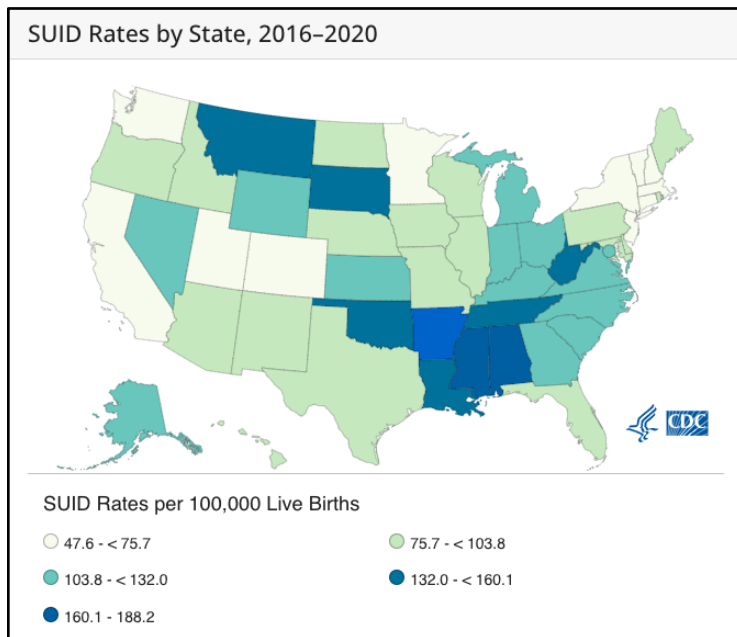
[risk-of-sudden-unexpected-death-in-infancy](https://rednose.org.au/article/breastfeeding-and-the-risk-of-sudden-unexpected-death-in-infancy)

Appendix

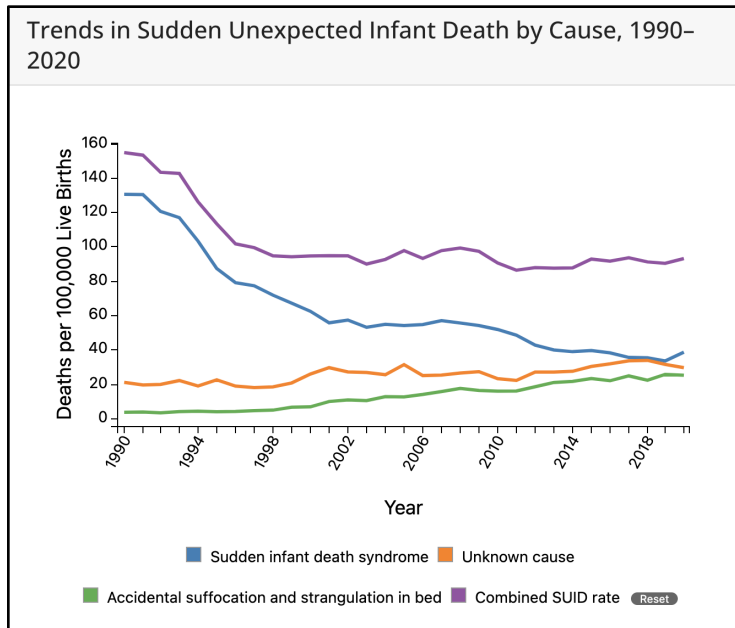
Appendix A



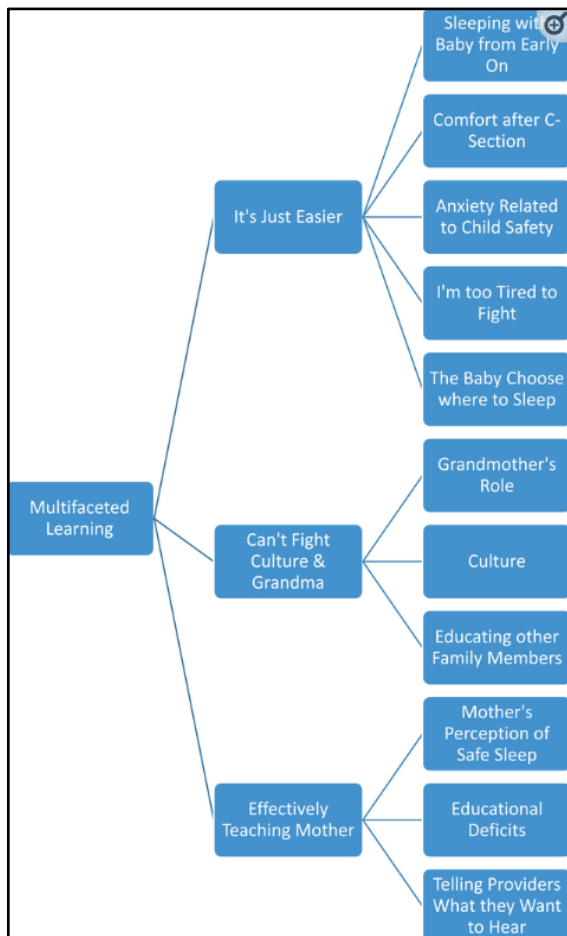
Appendix B



Appendix C

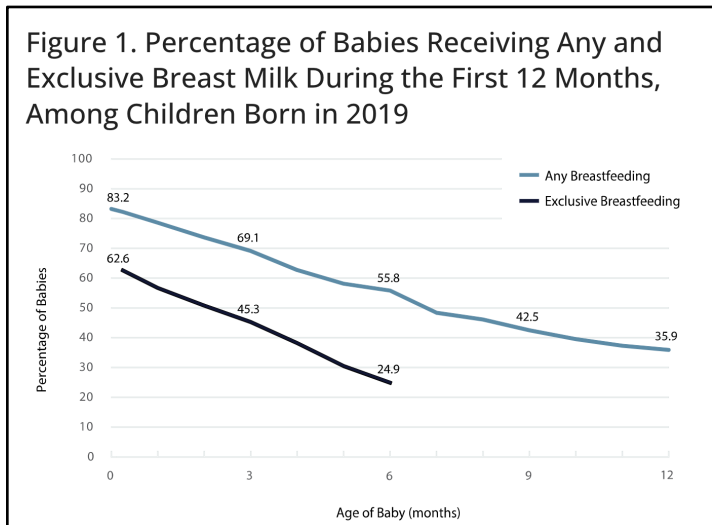


Appendix D



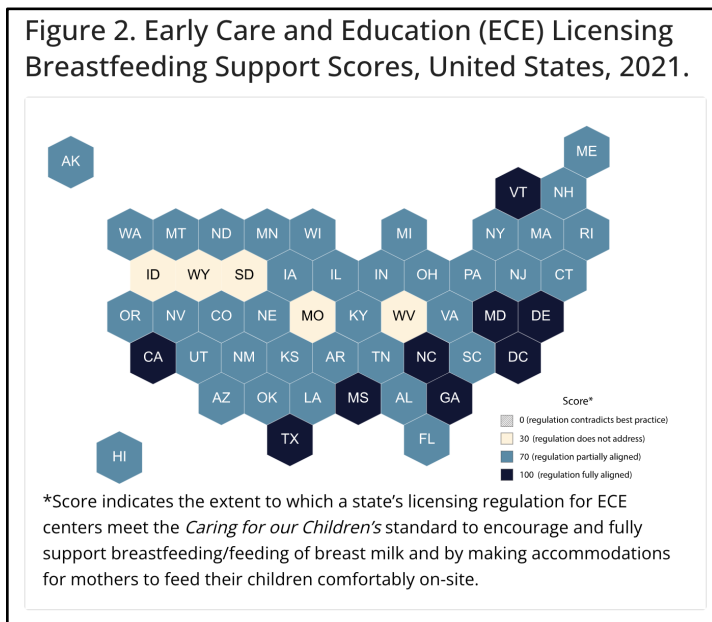
Appendix E

Figure 1. Percentage of Babies Receiving Any and Exclusive Breast Milk During the First 12 Months, Among Children Born in 2019

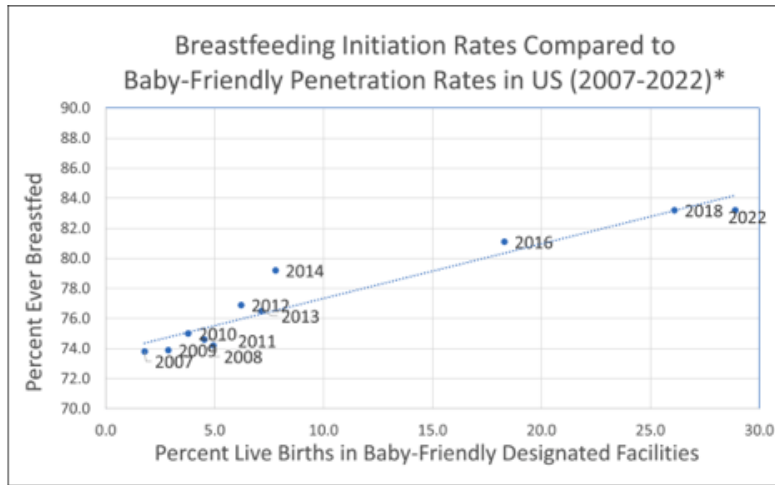


Appendix F

Figure 2. Early Care and Education (ECE) Licensing Breastfeeding Support Scores, United States, 2021.



Appendix G



Appendix H: Policies In California

[Cal. Health & Safety Code § 123365](#) (1996) requires all general acute care hospitals and special hospitals providing maternity care to make available a breastfeeding consultant or, alternatively, provide information to the mother on where to receive breastfeeding information.

[Cal. Civil Code § 43.3](#) (1997) allows a mother to breastfeed her child in any location, public or private, except the private home or residence of another, where the mother and the child are otherwise authorized to be present.

[Cal. Welfare and Institutions Code § 11218](#) (2013) specifies an applicant or recipient of aid is entitled to breastfeed her child in a county welfare department or other county office.

[California Assembly Concurrent Resolution 155](#) (1998) encourages the state and employers to support and encourage the practice of breastfeeding by striving to accommodate the needs of employees, and by ensuring that employees are provided with adequate facilities for breastfeeding and expressing milk for their children. The resolution memorializes the governor to declare by executive order that all state employees be provided with adequate facilities for breastfeeding and expressing milk.

[Cal. Health and Safety Code § 1647](#) (1999) declares that the procurement, processing, distribution or use of human milk for the purpose of human consumption is considered to be a rendition of a service rather than a sale of human milk.

[Cal. Code of Civil Procedure § 210.5](#) (2000) requires the Judicial Court to adopt a standardized jury summons for use, which must include a specific reference to the rules for breastfeeding mothers. [AB 1814](#) created the law and directs the Judicial Council to adopt a rule of court to allow the mother of a breastfed child to postpone jury duty for a period of up to one year and that after one year, jury duty may be further postponed upon written request by the mother.

[Cal. Labor Code § 1030-1033](#) (2001) provides that employers need to allow a break and provide a room for a mother who desires to express milk in private. [CA AB 1976](#) (2018) requires an employer to make reasonable efforts to provide an employee with use of a room or a location other than a bathroom, for these purposes. [CA SB 142](#) (2019) requires the room or location other than a bathroom to have prescribed features. Requires an employer, among other things, to provide access to a sink and refrigerator in close proximity to the employee's workspace.

[Cal. Health and Safety Code § 1648](#) (2006) requires a hospital that collects, processes, stores or distributes human milk collection from a mother exclusively for her own child to comply with the standards for collection, processing, storage or distribution of human milk by the Human Milk Banking Association of North America unless the department of health approves alternate standards. No screening tests are required to be performed on human milk collected from a mother exclusively for her own child.

[Cal. Health and Safety Code § 123360](#) (2007) requires the Department of Public Health to include the promotion of mothers breastfeeding their infants in its public service campaign; and require the department to develop a model eight-hour training course and to promote exclusive breastfeeding and specify hospital staff for whom the training is appropriate.

[Cal. Health and Safety Code § 1257.9](#) (2007) states the Department of Public Health shall recommend a minimum eight-hour training to appropriate staff in general acute care hospitals that provide maternity care and have exclusive patient breastfeeding rates in the lowest 25 percent of the state.

[Cal. Government Code § 12920-12923](#) (1980) make it unlawful to engage in specified discriminatory practices on the basis of sex related to individuals' opportunity to seek, obtain and hold employment or housing. [Cal. Government Code § 12926](#) (2012) defines sex to include breastfeeding or medical conditions related to breastfeeding.

[Cal. Health and Safety Code § 123366](#) and [§ 123367](#) (2013) establishes the "Hospital Infant Feeding Act" and requires all acute care and special hospitals that have a perinatal unit to adopt the "Ten Steps to Successful Breastfeeding" of the Baby-Friendly Hospital Initiative, or an evidence-based alternative with targeted outcomes adopted by a health care service plan, or the Model Hospital Policy Recommendations as defined by [§ 123366](#).

[Cal. Education Code § 222](#) (2015) requires schools operated by a school district or a county office of education, the California School for the Deaf, the California School for the Blind and charter schools to provide reasonable accommodations to a lactating pupil on a high school campus to express breast milk, breastfeed an infant child, or address other needs related to breastfeeding.

[Cal. Business and Professions Code § 26120](#) (2017) includes breastfeeding in the warning of a government warning label for cannabis products.

[Cal. Business and Professions Code § 26211](#) (2018) includes the potential harms of using cannabis while pregnant or breastfeeding in a public awareness campaign.

[Cal. Penal Code § 4002.5](#) (2018) requires a county sheriff, or the administrator of a county jail, to develop and implement an infant and toddler breast milk feeding policy for lactating inmates detained or sentenced to a county jail that is based on accepted best practices.

[Cal. Education Code § 66271.9](#) (2018) requires community colleges and state university, and encourages satellite campuses, to provide reasonable accommodations to a lactating student to express breast milk, breastfeed an infant child or address other needs related to breastfeeding. Requires educational institutions to provide a sink in the new construction, replacement, expansion or renovation, in addition to access to a private and secure room for breastfeeding students.

[Cal. Public Utilities Code § 99176](#) (2019) requires multimodal transit stations that begin construction or a renovation on or after January 1, 2021, to include a lactation room.

[Cal. Business and Professions Code §§ 4052.02](#) and [4052.03](#) (2019) require a pharmacist to provide counseling to the patient on the use of preexposure and postexposure prophylaxis which includes education on its safety during breastfeeding.

Appendix I: MCAH Funding Distribution

Agency	Program	Fiscal Year	Funding	Amount
202001 Alameda	MCAH	2023-24	Title V	\$175,398
202002 Alpine	MCAH	2023-24	Title V	\$77,001
202003 Amador	MCAH	2023-24	Title V	\$77,016
202004 Butte	MCAH	2023-24	Title V	\$123,080
202005 Calaveras	MCAH	2023-24	Title V	\$77,021
202006 Colusa	MCAH	2023-24	Title V	\$77,015
202007 Contra Costa	MCAH	2023-24	Title V	\$150,010
202008 Del Norte	MCAH	2023-24	Title V	\$77,018
202009 El Dorado	MCAH	2023-24	Title V	\$102,097
202010 Fresno	MCAH	2023-24	Title V	\$422,226
202011 Glenn	MCAH	2023-24	Title V	\$77,023
202012 Humboldt	MCAH	2023-24	Title V	\$82,756
202013 Imperial	MCAH	2023-24	Title V	\$129,784
202014 Inyo	MCAH	2023-24	Title V	\$77,010
202015 Kern	MCAH	2023-24	Title V	\$177,055
202016 Kings	MCAH	2023-24	Title V	\$111,238
202017 Lake	MCAH	2023-24	Title V	\$102,045
202018 Lassen	MCAH	2023-24	Title V	\$77,016
202019 Los Angeles	MCAH	2023-24	Title V	\$674,577
202020 Madera	MCAH	2023-24	Title V	\$111,828
202021 Marin	MCAH	2023-24	Title V	\$119,263
202022 Mariposa	MCAH	2023-24	Title V	\$77,009
202023 Mendocino	MCAH	2023-24	Title V	\$102,060
202024 Merced	MCAH	2023-24	Title V	\$131,632

202025 Modoc	MCAH	2023-24	Title V	\$77,006
202026 Mono	MCAH	2023-24	Title V	\$77,008
202027 Monterey	MCAH	2023-24	Title V	\$169,487
202028 Napa	MCAH	2023-24	Title V	\$102,082
202029 Nevada	MCAH	2023-24	Title V	\$102,052
202030 Orange	MCAH	2023-24	Title V	\$289,070
202031 Placer	MCAH	2023-24	Title V	\$99,794
202032 Plumas	MCAH	2023-24	Title V	\$77,011
202033 Riverside	MCAH	2023-24	Title V	\$251,807
202034 Sacramento	MCAH	2023-24	Title V	\$185,156
202035 San Benito	MCAH	2023-24	Title V	\$102,040
202036 San Bernardino	MCAH	2023-24	Title V	\$490,152
202037 San Diego	MCAH	2023-24	Title V	\$297,167
202038 San Francisco	MCAH	2023-24	Title V	\$139,938
202039 San Joaquin	MCAH	2023-24	Title V	\$153,848
202040 San Luis Obispo	MCAH	2023-24	Title V	\$122,194
202041 San Mateo	MCAH	2023-24	Title V	\$168,763
202042 Santa Barbara	MCAH	2023-24	Title V	\$166,290
202043 Santa Clara	MCAH	2023-24	Title V	\$209,412
202044 Santa Cruz	MCAH	2023-24	Title V	\$124,325
202045 Shasta	MCAH	2023-24	Title V	\$110,426
202046 Sierra	MCAH	2023-24	Title V	\$77,002
202047 Siskiyou	MCAH	2023-24	Title V	\$102,028
202048 Solano	MCAH	2023-24	Title V	\$133,051
202049 Sonoma	MCAH	2023-24	Title V	\$138,597
202050 Stanislaus	MCAH	2023-24	Title V	\$186,113

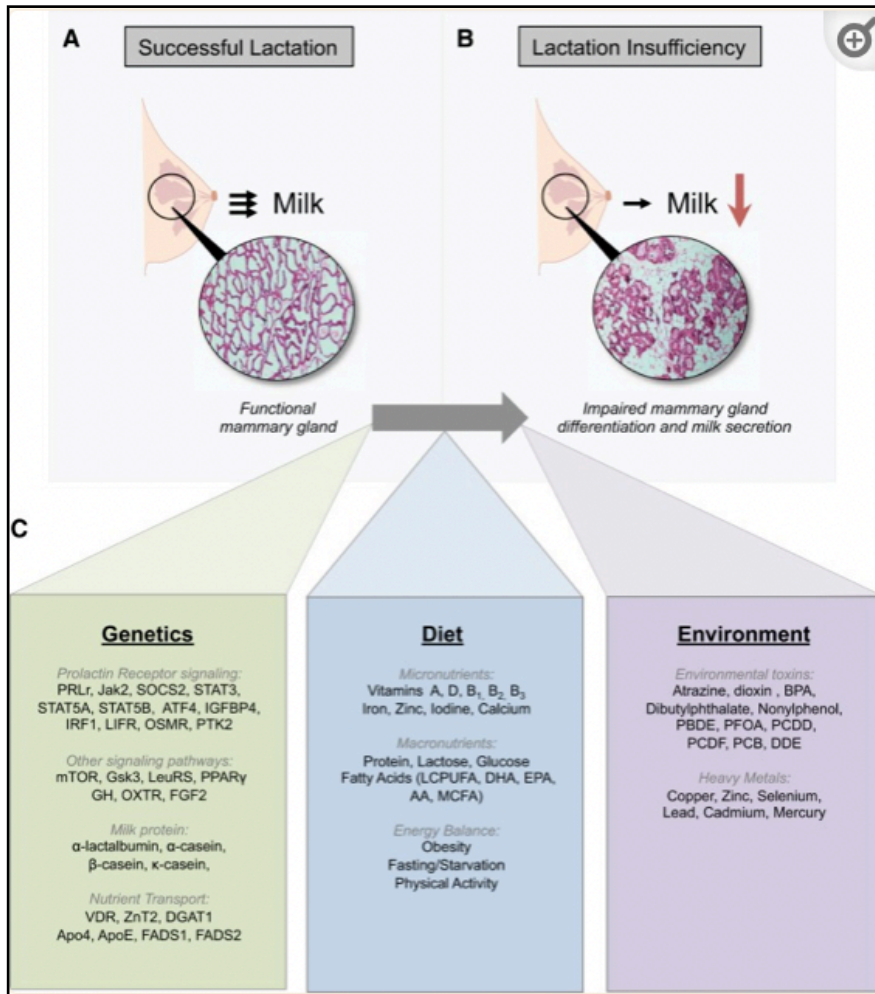
202051 Sutter	MCAH	2023-24	Title V	\$102,068
202052 Tehama	MCAH	2023-24	Title V	\$102,049
202053 Trinity	MCAH	2023-24	Title V	\$77,008
202054 Tulare	MCAH	2023-24	Title V	\$178,049
202055 Tuolumne	MCAH	2023-24	Title V	\$102,027
202056 Ventura	MCAH	2023-24	Title V	\$155,524
202057 Yolo	MCAH	2023-24	Title V	\$97,620
202058 Yuba	MCAH	2023-24	Title V	\$102,062
202059 Berkeley	MCAH	2023-24	Title V	\$102,089
202060 Long Beach	MCAH	2023-24	Title V	\$169,956
202061 Pasadena	MCAH	2023-24	Title V	\$103,581
202001 Alameda	SIDS	2023-24	Title V	\$11,800
202002 Alpine	SIDS	2023-24	Title V	\$3,000
202003 Amador	SIDS	2023-24	Title V	\$3,000
202004 Butte	SIDS	2023-24	Title V	\$3,000
202005 Calaveras	SIDS	2023-24	Title V	\$3,000
202006 Colusa	SIDS	2023-24	Title V	\$3,000
202007 Contra Costa	SIDS	2023-24	Title V	\$6,241
202008 Del Norte	SIDS	2023-24	Title V	\$3,000
202009 El Dorado	SIDS	2023-24	Title V	\$3,000
202010 Fresno	SIDS	2023-24	Title V	\$7,372
202011 Glenn	SIDS	2023-24	Title V	\$3,000
202012 Humboldt	SIDS	2023-24	Title V	\$3,000
202013 Imperial	SIDS	2023-24	Title V	\$3,000
202014 Inyo	SIDS	2023-24	Title V	\$3,000
202015 Kern	SIDS	2023-24	Title V	\$6,869

202016 Kings	SIDS	2023-24	Title V	\$3,000
202017 Lake	SIDS	2023-24	Title V	\$3,000
202018 Lassen	SIDS	2023-24	Title V	\$3,000
202019 Los Angeles	SIDS	2023-24	Title V	\$67,390
202020 Madera	SIDS	2023-24	Title V	\$3,000
202021 Marin	SIDS	2023-24	Title V	\$3,000
202022 Mariposa	SIDS	2023-24	Title V	\$3,000
202023 Mendocino	SIDS	2023-24	Title V	\$3,000
202024 Merced	SIDS	2023-24	Title V	\$3,000
202025 Modoc	SIDS	2023-24	Title V	\$3,000
202026 Mono	SIDS	2023-24	Title V	\$3,000
202027 Monterey	SIDS	2023-24	Title V	\$3,340
202028 Napa	SIDS	2023-24	Title V	\$3,000
202029 Nevada	SIDS	2023-24	Title V	\$3,000
202030 Orange	SIDS	2023-24	Title V	\$19,432
202031 Placer	SIDS	2023-24	Title V	\$3,000
202032 Plumas	SIDS	2023-24	Title V	\$3,000
202033 Riverside	SIDS	2023-24	Title V	\$13,858
202034 Sacramento	SIDS	2023-24	Title V	\$14,426
202035 San Benito	SIDS	2023-24	Title V	\$3,000
202036 San Bernardino	SIDS	2023-24	Title V	\$22,567
202037 San Diego	SIDS	2023-24	Title V	\$23,324
202038 San Francisco	SIDS	2023-24	Title V	\$5,023
202039 San Joaquin	SIDS	2023-24	Title V	\$6,214
202040 San Luis Obispo	SIDS	2023-24	Title V	\$3,000
202041 San Mateo	SIDS	2023-24	Title V	\$4,327

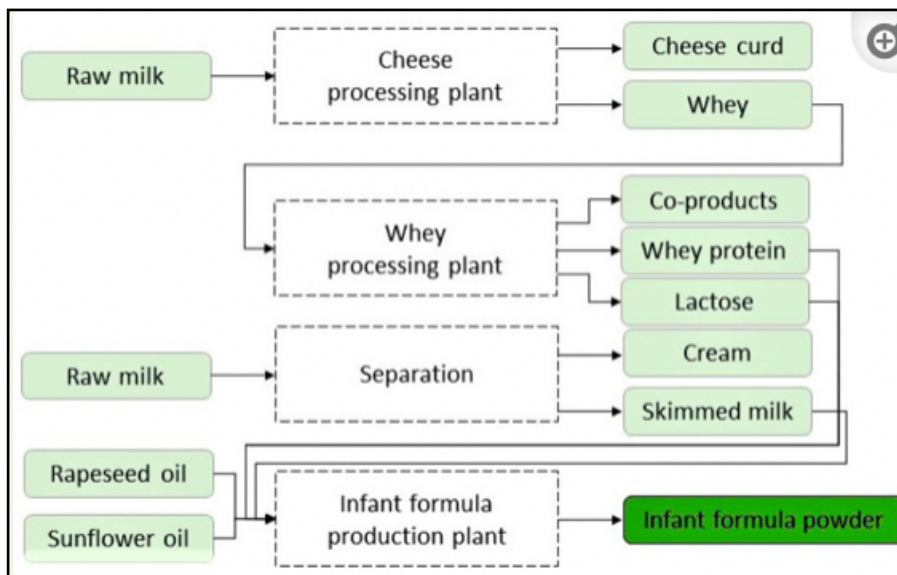
202042 Santa Barbara	SIDS	2023-24	Title V	\$3,000
202043 Santa Clara	SIDS	2023-24	Title V	\$11,697
202044 Santa Cruz	SIDS	2023-24	Title V	\$3,000
202045 Shasta	SIDS	2023-24	Title V	\$3,000
202046 Sierra	SIDS	2023-24	Title V	\$3,000
202047 Siskiyou	SIDS	2023-24	Title V	\$3,000
202048 Solano	SIDS	2023-24	Title V	\$4,171
202049 Sonoma	SIDS	2023-24	Title V	\$3,000
202050 Stanislaus	SIDS	2023-24	Title V	\$4,057
202051 Sutter	SIDS	2023-24	Title V	\$3,000
202052 Tehama	SIDS	2023-24	Title V	\$3,000
202053 Trinity	SIDS	2023-24	Title V	\$3,000
202054 Tulare	SIDS	2023-24	Title V	\$4,060
202055 Tuolumne	SIDS	2023-24	Title V	\$3,000
202056 Ventura	SIDS	2023-24	Title V	\$4,445
202057 Yolo	SIDS	2023-24	Title V	\$3,000
202058 Yuba	SIDS	2023-24	Title V	\$3,000
202059 Berkeley	SIDS	2023-24	Title V	\$3,000
202060 Long Beach	SIDS	2023-24	Title V	\$4,387
202061 Pasadena	SIDS	2023-24	Title V	\$3,000
202001 Alameda	BIH	2023-24	Title V	\$308,786
202007 Contra Costa	BIH	2023-24	Title V	\$259,379
202010 Fresno	BIH	2023-24	Title V	\$259,379
202015 Kern	BIH	2023-24	Title V	\$259,379
202019 Los Angeles	BIH	2023-24	Title V	\$483,316
202033 Riverside	BIH	2023-24	Title V	\$308,785

202034 Sacramento	BIH	2023-24	Title V	\$390,054
202036 San Bernardino	BIH	2023-24	Title V	\$390,054
202037 San Diego	BIH	2023-24	Title V	\$308,785
202038 San Francisco	BIH	2023-24	Title V	\$214,807
202039 San Joaquin	BIH	2023-24	Title V	\$259,379
202043 Santa Clara	BIH	2023-24	Title V	\$214,807
202060 Long Beach	BIH	2023-24	Title V	\$259,379
202001 Alameda	BIH	2023-24	State General Fund	\$1,499,214
202007 Contra Costa	BIH	2023-24	State General Fund	\$644,621
202010 Fresno	BIH	2023-24	State General Fund	\$2,048,621
202015 Kern	BIH	2023-24	State General Fund	\$644,621
202019 Los Angeles	BIH	2023-24	State General Fund	\$2,228,684
202030 Orange	BIH	2023-24	State General Fund	\$904,000
202033 Riverside	BIH	2023-24	State General Fund	\$1,499,215
202034 Sacramento	BIH	2023-24	State General Fund	\$1,417,946
202036 San Bernardino	BIH	2023-24	State General Fund	\$1,417,946
202037 San Diego	BIH	2023-24	State General Fund	\$595,215
202038 San Francisco	BIH	2023-24	State General Fund	\$689,193
202039 San Joaquin	BIH	2023-24	State General Fund	\$644,621
202043 Santa Clara	BIH	2023-24	State General Fund	\$689,193
202060 Long Beach	BIH	2023-24	State General Fund	\$1,144,621

Appendix J: Fomula Production



Appendix K: Modifiable Factors



Appendix L: Core Competencies

Foundational Competency	Description of How Used For Capstone
Evidence-based Approaches to Public Health	
4. Interpret results of data analysis for public health research, policy and practice	Review and analysis data association to SUID prevalence across causes, ethnicities, and states from institutional data bases (CDC and PudMed) to emphasize the importance of the recommendation above (Giving Breath).
Planning & Management to Promote Health	
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs	Cultural competency was acknowledge in the background section of this paper for the development of the recommendation above (Giving Breath).
9. Design a population-based policy, program, project or intervention	The Safe to Sleep public health educational campaign framework was utilize to develop the recommendation above (Giving Breath).
Policy in Public Health	
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence	A Socio Ecological Model (SEM) was developed in support of the recommendation above (Giving Breath).
14. Advocate for political, social and economic policies and programs that will improve health in diverse populations	Reviewed the literature to identify benefits and limitations of recommendation above (Giving Breath).
15. Evaluate policies for their impact on public health and health equity	State and federal level policies were reviewed as supportive arguments for the need of the recommendation above (Giving Breath).
Leadership	

<p>16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making</p>	<p>By proposing the recommendation above (Giving Breath) to be led at the federal level by U.S Department of Health & Human Services (HHS) Office of Women Health (OWH) in collaboration with state-level institutions, organization, and communities such as California Department of Public Health (CDPH) Maternal, Child, and Adolescent Health Division (MCAH) to empower other states to follow implementation.</p>
<p>Communication</p>	
<p>19. Communicate audience-appropriate public health content, both in writing and through oral presentation</p>	<p>Developed a capstone paper and slide deck for the recommendation above (Giving Breath) for inter professionals.</p>
<p>20. Describe the importance of cultural competence in communicating public health content</p>	<p>Identify the ethnical gaps in SUID and breastfeeding to emphasize the importance of cultural competency of the recommendation above (Giving Breath).</p>
<p>Systems Thinking</p>	
<p>22. Apply systems thinking tools to a public health issue</p>	<p>A Forces of Change model was developed to highlight the forces against change and forces for change for SUID & Breastfeeding Initiatives/Programs/ Campaigns.</p>

<p>Health Policy Leadership</p>	
<p>Competency</p>	<p>APEX Objective or Activity</p>
<p>3. Formulate efficient health policy change recommendations through the analysis of proposed health policy initiatives that could affect health outcomes of vulnerable populations</p>	<p>A Asset Map of The Public Value Model of Strategy was developed to outline how the recommendation above (Giving Breath) would be implemented through federal and state level.</p>

Behavioral Health	
Competency	APEX Objective or Activity
<p>2. Effectively deliver evidence-based health education and behavior change intervention skills such as motivational interviewing, health coaching, peer education, mindfulness, or social media messages to individuals or groups.</p>	<p>A Messaging Strategy for primary audience was developed as an example how the recommendation above (Giving Breath) will achieve one of its many mission statements to increase awareness of breastfeeding rights & normalization of breastfeeding.</p>