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# More than just a crib: Assessing the prevalence of partnerships between Cribs for Kids and children's hospitals in the United States

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## Abstract

**Introduction:** Cribs for Kids is a national organization with a mission to reduce sudden infant death syndrome (SIDS) and sudden unexpected infant death (SUID) nationwide through adaptation of best practices in infant safe sleep, community engagement, and increased access to resources in assuring infant safety during time of sleep. One integral partnership that enables Cribs for Kids to cast a wider net in yielding the potential to reach many more infants and their families across the country involves attainment of hospitalwide certification by Cribs for Kids across both academic and community healthcare systems that provide care to infants for up to one year of age.

**Methods:** However to date, the prevalence of these partnerships remains unclear. It follows that the present study sought to uncover this prevalence across the nation. Utilizing the U.S. News and World Report, the researcher acquired a random sample of 110 children's hospitals. Next utilizing the map locator of hospitals certified at the Gold, Silver and Bronze levels by Cribs for Kids on the organization's website, prevalence of presence and level of certification was ascertained across this sample of children's hospitals.

**Results:** Notably, the vast majority of this sample (n=78) had not attained hospitalwide certification with Cribs for Kids. Among the hospitals that had attained certification, there was substantial variation across levels based on a range of health promotion and community engagement practices.

**Conclusion:** Recommendations for harnessing the potential of this collaboration are presented to inform directions in examining these partnerships as a point of intervention for future planning considerations across community engagement and health promotion practices surrounding SIDS reduction.

Keywords: Cribs for Kids, Health education, Health promotion, Community engagement, Hospitalwide certification, Infant safe sleep

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## Introduction

Cribs for Kids is a nationally acclaimed organization that has sought to address a wide range of modifiable environmental factors as targets for reduction of sudden infant death syndrome (SIDS) and sudden unexpected infant death (SUID) over time. Many of these environmental risk factors constitute social determinants of health. Specifically, Cribs for Kids offers access to education on its website pertaining to best practices in infant safe sleep in line with the American Academy of Pediatrics (AAP) clinical practice guidelines and the Safe-to-Sleep Campaign. The organization also houses an online store for purchasing concrete resources in optimizing an infant's sleep environment, content on their partnership with healthcare systems through their hospitalwide certification program, and much more.

With subsequent iterations of the AAP infant safe sleep guidelines over time (most recently in November

2022), there has been an increase in the typologies of risk factors that have consistently demonstrated in between iterations that each of them elevates an infant's risk for SIDS.<sup>1</sup> Some of these risk factors pertain to thermal conditions, swaddling, nicotine exposure and infant nutrition. Furthermore in recent years, increasingly more research has yielded findings in line with specific infant vulnerabilities (e.g. genetic predisposition, brain abnormalities, prematurity, low birth weight)<sup>2-5</sup> that may heighten an infant's susceptibility for SIDS, also accounted for in the longstanding Triple Risk Model for SIDS that provides a framework for understanding potential modifiable and nonmodifiable (e.g. genetic, physiological) risk factors as well as causal mechanisms for increased susceptibility to SIDS.<sup>67</sup>

Notably through the partnerships that Cribs for Kids has established with healthcare systems, their mission is to cast a wider net in reaching infants and their families



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nationwide, a goal that seeks to optimize health promotion across the US for this population. The organization offers both academic and community healthcare systems that provide quality and delivery of care to infants with the opportunity to participate in achieving a level of certification (Gold, Silver, or Bronze) based on a range of requirements. Each level of certification involves a constellation of parameters that can range from policy development, screening, health education, quality improvement, research, and community engagement. Table 1 provides a breakdown of these requirements in optimizing infant safe sleep practices across catchment areas.

Children's hospitals yield significant potential in partnering with Cribs for Kids to heighten SIDS reduction across the U.S given that each one services at least one community of infants and their families. To date, no study has been conducted on the current prevalence of these established partnerships between children's hospitals and Cribs for Kids. It follows that the goals of this retrospective, cross-sectional study are the following: 1) identify children's hospitals that have attained Cribs for Kids certification; 2) classify level of certification among these children's hospitals; and 3) present recommendations for future research and practice to optimize health promotion, address social determinants of health, and increase partnerships as a macrolevel protective intervention across the country.

# Methods

The U.S. News & World Report's breakdown of children's hospitals from 2023-2024 that ranked in the top ten in at least one subspecialty was reviewed in forming the method of data extraction for the sample of children's hospitals in this study. All fifty states were examined in the sample. However, given that the U.S. News & World Report yielded no children's hospitals in the state of Wyoming, there are none from this state accounted for in this sample.

For each state, a random number generator was utilized to select approximately a proportionate third of the children's hospitals delineated on the list for each state from the U.S. News & World Report inventory. These children's hospitals encompassed a range of jurisdictions across the U.S. Of note from the U.S. News and World Report public inventory, some of the states only had one children's hospital listed which in turn formed a part of this sample.

Next, the Cribs for Kids website's hospitalwide certification map locator was utilized to explore whether any of these hospitals had attained certification either at the Gold, Silver, or Bronze level. A total of 110 children's hospitals across the U.S. formed the sample reviewed in this study. Data analyses included descriptives (frequencies and percentiles) to assess for geographic breakdown and representation of achieved Cribs for Kids certification across children's hospitals in the nation.

# Results

There was a wide dispersion in Cribs for Kids certification status across the sample of children's hospitals in the United States as represented in Table 2. 24 children's hospitals achieved a Gold certification status, accounting for about 22% of this sample.

There are four states in the sample which each offer two children's hospitals that have attained Cribs for Kids certification at the Gold level. These states consist of the following: Florida (Holtz Children's Hospital at UM-Jackson Memorial Medical Center and AdventHealth for Children); Iowa (Blank Children's Hospital and University of Iowa Stead Family Children's Hospital); Missouri (Children's Mercy Kansas City Hospital and SSM Health Cardinal Glennon Children's Hospital – St Louis University); and Pennsylvania (Penn State Health Children's Hospital and Children's Hospital of Pittsburgh).

Sixteen states in this sample each house one children's hospital that has earned Cribs for Kids certification at the Gold level. These states are the following: Alabama (Children's Hospital Alabama); Arizona (Tucson Medical Center for Children); California (University of California-Davis Children's Hospital); Delaware (Nemours Children's Hospital); Illinois (University of Chicago Comer Children's Hospital); Indiana (Peyton Manning Children's Hospital); Indiana (Peyton Manning Children's Hospital at Ascension St. Vincent); Kentucky (Kentucky Children's Hospital); Louisiana (Ochsner LSU Health-Women & Children's Center); Maine (Barbara Bush Children's Hospital at Maine Medical Center); New York (University of Rochester – Golisano Children's Hospital); Ohio (Dayton Children's Hospital); South

Table 1. Cribs For Kids hospitalwide certification levels and requirements

Level of Certification	Requirements for Certification
All levels (Gold, Silver, and Bronze)	1) Require development and implementation of an infant safe sleep policy across the healthcare system for healthcare providers to model best practices in infant safe sleep; 2) Implementation of SIDS reduction education that encompasses these best practices; 3) Require identification of families in need of infant safe sleep resources
Two levels (Gold and Silver)	1) Necessitate development and implementation of quality improvement related research and programmatic endeavors to assess compliance with infant safe sleep practices across the healthcare system; 2) There is discretion to either implement mandatory training for all healthcare providers involved in the care of infants or assure distribution and utilization of infant sleep sacks (wearable blankets) for all infants up to one year of age
One Level (Gold)	1) Substantial focus on the healthcare system's engagement with their community of practice; 2) Necessitates providing an intervention following screening

**Table 2.** Cribs for Kids certification level across a sample of children's hospitals in the United States (N = 110)

Name of hospital	City, State	Certification status
Children's of Alabama	Birmingham, Alabama	Gold
Children's Hospital of Providence	Anchorage, Alaska	None
Phoenix Children's Hospital	Phoenix, Arizona	None
Tucson Medical Center for Children	Tucson, Arizona	Gold
Arkansas Children's Hospital	Little Rock, Arkansas	None
Children's Hospital Los Angeles	Los Angeles, California	None
UCLA Mattel Children's Hospital	Los Angeles, California	None
Valley Children's Healthcare and Hospital	Madera, California	None
CHOC Children's Hospital	Orange, California	Silver
Lucile Packard Children's Hospital Stanford	Palo Alto, California	None
University of California-Davis Children's Hospital	Sacramento, California	Gold
Rady Children's Hospital	San Diego, California	Bronze
UCSF Benioff Children's Hospitals, San Francisco and Oakland	San Francisco, California	None
Children's Hospital Colorado	Aurora, Colorado	None
Connecticut Children's Medical Center	Harford, Connecticut	None
Yale New Haven Children's Hospital	New Haven, Connecticut	None
Nemours Children's Hospital - Delaware	Wilmington, Delaware	Gold
Children's National Medical Center	District of Columbia	None
UF Health Shands Children's Hospital	Gainesville, Florida	None
Holtz Children's Hospital at UM-Jackson Memorial Medical Center	Miami, Florida	Gold
Nicklaus Children's Hospital	Miami, Florida	Bronze
AdventHealth for Children	Orlando, Florida	Gold
Arnold Palmer Hospital for Children	Orlando, Florida	None
Johns Hopkins All Children's Hospital	Saint Petersburg, Florida	None
Children's Healthcare of Atlanta	Atlanta, Georgia	None
Children's Hospital of Georgia	Augusta, Georgia	None
Children's Hospital at the Medical Center of Central Georgia	Macon, Georgia	None
Kapiolani Medical Center for Women and Children	Honolulu, Hawaii	None
Shriners Hospitals for Children – Honolulu	Honolulu, Hawaii	None
St. Luke's Children's Hospital	Boise, Idaho	None
Ann and Robert H. Lurie Children's Hospital of Chicago	Chicago, Illinois	Bronze
University of Chicago Comer Children's Hospital	Chicago, Illinois	Gold
Advocate Children's Hospital	Oak Lawn, Illinois	None
Peyton Manning Children's Hospital at Ascension St. Vincent	Indianapolis, Indiana	Gold

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	JM Sanzari and K Hovnanian		None
			None

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## Table 2. Continued.

Name of hospital	City, State	Certification status
Cohen Children's Medical Center	New Hyde Park, New York	None
Children's Hospital at Montefiore	New York, New York	None
Mount Sinai Kravis Children's Hospital	New York, New York	None
New York-Presbyterian Children's Hospital-Columbia and Cornell	New York, New York	None
University of Rochester- Golisano Children's Hospital	Rochester, New York	Gold
North Carolina Children's Hospital at UNC	Chapel Hill, North Carolina	None
Levine Children's Hospital	Charlotte, North Carolina	None
Duke Children's Hospital	Durham, North Carolina	Bronze
Sanford Fargo Children's Hospital	Fargo, North Dakota	None
Cincinnati Children's Hospital Medical Center	Cincinnati, Ohio	None
Rainbow Babies and Children's Hospital	Cleveland, Ohio	None
Nationwide Children's Hospital	Columbus, Ohio	None
Dayton Children's Hospital	Dayton, Ohio	Gold
Bethany Children's Health Center	Bethany, Oklahoma	None
Oklahoma Children's Hospital OU Health	Oklahoma City, Oklahoma	None
Children's Hospital at Saint Francis	Tulsa, Oklahoma	Silver
Doernbecher Children's Hospital at Oregon Health and Science University	Portland, Oregon	None
Randall Children's Hospital at Legacy Emanuel	Portland, Oregon	None
Penn State Health Children's Hospital	Hershey, Pennsylvania	Gold
Children's Hospital of Philadelphia	Philadelphia, Pennsylvania	None
Children's Hospital of Pittsburgh	Pittsburgh <i>,</i> Pennsylvania	Gold
Hasbro Children's Hospital	Providence, Rhode Island	None
MUSC Shawn Jenkins Children's Hospital	Charleston, South Carolina	None
Palmetto Health Children's Hospital	Columbia, South Carolina	None
Children's Hospital of Greenville Health System	Greenville, South Carolina	None
Sanford Fargo Children's Hospital	Sioux Falls, South Dakota	Gold
Le Bonheur Children's Hospital	Memphis, Tennessee	None
Monroe Carell Jr. Children's Hospital at Vanderbilt	Nashville, Tennessee	Silver
Cook Children's Medical Center	Fort Worth, Texas	None
Dell Children's Medical Center	Austin, Texas	None
Children's Medical Center Dallas	Dallas, Texas	Gold
Children's Memorial Hermann Hospital	Houston, Texas	None
Texas Children's Hospital	Houston, Texas	None

Name of hospital	City, State	Certification status
Intermountain Primary Children's Hospital-University of Utah	Salt Lake City, Utah	None
University of Vermont Children's Hospital	Burlington, Vermont	Gold
University of Virginia Children's Hospital	Charlottesville, Virginia	Gold
Children's Hospital of Richmond at VCU	Richmond, Virginia	None
Seattle Children's Hospital	Seattle, Washington	None
Charleston Area Medical Center Women and Children's Hospital	Charleston, West Virginia	None
West Virginia University Children's Hospital	Morgantown, West Virginia	Gold
American Family Children's Hospital	Madison, Wisconsin	None
Children's Wisconsin Hospital	Milwaukee, Wisconsin	None

Dakota (Sanford Fargo Children's Hospital); Texas (Children's Medical Center Dallas); Vermont (University of Vermont Children's Hospital); Virginia (University of Virginia Children's Hospital); and West Virginia (West Virginia University Children's Hospital).

A total of four states in the sample (3.63%) achieved Silver certification status through Cribs for Kids. The following breakdown presents these states: California (CHOC Children's Hospital); Massachusetts (Boston Children's Hospital); Oklahoma (Children's Hospital of Saint Francis); and Tennessee (Monroe Carell Jr. Children's Hospital at Vanderbilt).

In addition, four states in this sample (3.63%) attained certification from Cribs for Kids at the Bronze level. These states comprise the following: California (Rady Children's Hospital); Florida (Nicklaus Children's Hospital); Illinois (Ann and Robert H. Lurie Children's Hospital of Chicago); and North Carolina (Duke Children's Hospital). Lastly, the vast majority of children's hospitals across the United States in this sample (n = 78) are not currently certified at any level by Cribs for Kids which accounts for more than 70% of the sample.

# Discussion

Notably, majority of the states with children's hospitals in this sample were without Cribs for Kids certification. SIDS rates have rose immensely in the United States, contributing towards infant mortality in the nation.<sup>8</sup> The Back-to-Sleep campaign in the 1990s was formative in achieving SIDS reduction rates but there has been significant stagnancy followed by an increased uptake in related mortality since then.<sup>9</sup> Campaigns, programs, and community engagement are some of the well noted strategies in addressing environmental and behavioral risk factors not only for SIDS but also across a range of community and national health issues.<sup>10-14</sup>

As a community partner, Cribs for Kids similarly

## Jawed

provides an opportunity to cast a wider net in heightening collaboration with healthcare systems through its unique hospitalwide certification program as a foundation for promoting a community level SIDS reduction intervention inclusive of access to care and psychosocial considerations that can reach more infants and their families seeking care in the respective healthcare institution. Through this framework, the goal is to reach an increasing number of residents in one or more communities, thereby facilitating a more downstream impact through these partnerships. However, this goal falls substantially short given that the majority of the children's hospitals in this sample that reflects approximately a third of children's hospitals in the nation are not in partnership with Cribs for Kids.

Given that the primary outcome of this study was to identify level of attained certification, there was no determination on whether these hospitals already have an existing infrastructure with initiatives, programs, and resources that are provided to infants and their families in a pediatric healthcare system. However if this is the case, then this represents a golden opportunity to connect with Cribs for Kids in potentially expanding directions with provision of education and access to relevant resources in supporting their community of practice.

Furthermore, there were some states in this sample with no children's hospitals in network with Cribs for Kids (e.g. Hawaii, Michigan, and Minnesota). In addition although not integrated in this sample, pediatric rehabilitation (subacute care) hospitals had attained certification in some states but not the flagship children's hospitals (e.g. as in the case of Maryland). Notably although not captured in this sample, many community hospitals have achieved Cribs for Kids certification in nearly every state except for Wyoming. It is possible that these hospitals service a smaller community of residents with fewer hospitalized infants which in turn could contribute towards potentially reducing the magnitude of effort needed in mobilizing community engagement, cascade of education, and support from stakeholders in meeting Cribs for Kids requirements. A future study could examine the prevalence and characteristics of these community healthcare systems as a point of comparison with children's hospitals.

In addition, several of the freestanding children's hospitals do not have a nursery, although infants may transition to the neonatal intensive care unit (NICU) following time of birth. This structural consideration may also delimit representation of the infant population across the healthcare system which in turn could contribute towards reduced prioritization in accountability for SIDS reduction education given limited visibility of this population within one healthcare institution. It follows that engaging neighboring hospitals that house nurseries with these freestanding children's hospitals on standardizing infant mortality related education that could encompass preventable leading causes (e.g. SIDS) may yield promise in providing the infrastructure to spearhead comprehensive health promotion initiatives in optimizing reach of infants and their families across both pediatric and adult / obstetric healthcare systems, potentially as an early intervention for many infants discharged from the hospital for the first time following birth.

Furthermore, Cribs for Kids requires community engagement with both internal and external stakeholders as a formative part of attaining Gold certification. Community engagement does require mobilizing support from a range of community stakeholders which takes time, perseverance, and increased interagency collaboration. The healthcare system is one of the prime stakeholders, especially a children's hospital given that it likely attracts a larger catchment area. It follows that drawing on the strengths of the experts in a healthcare system who are more likely to interface with these community stakeholders for resource linkages (e.g. social workers, case managers, and fundraising teams) could liaise the formative parts of these connections which in turn could lay the foundation for all systems within the community to collaborate in one or more ways, thereby supporting best practices in increased access of resources as a contributing factor towards SIDS reduction. It follows that this approach could form a potential path of sustainability in optimizing infant health among other pressing healthcare issues trending on national and global levels.

There were limitations in the present study. First, the design of this study was cross-sectional in nature which involved drawing a random sample of children's hospitals at one conceptual point in time. Across the hospitals that were not certified by Cribs for Kids, there was no examination of the features and characteristics of these hospitals along with whether each has any current initiatives related to SIDS reduction including any research and quality improvement endeavors surrounding biological and physiological (nonmodifiable) determinants of SIDS as targets for further intervention. The sample solely accounted for children's hospitals, majority of which were academic in nature which certainly delimits representation of community hospitals in this sample. Nevertheless, findings were significant in determining the existing representation of the degree of engagement and partnership between children's hospitals with a national organization Cribs for Kids in addressing SIDS as a leading cause of infant mortality nationwide.

# Conclusion

Cribs for Kids is a national organization across the U.S. that has extended its reach and presence across the country in contributing towards SIDS reduction through community partnerships with healthcare systems. Given the findings of this study, there are a limited number of partnerships at this time between Cribs for Kids and children's hospitals. It is possible that freestanding children's hospitals with the absence of nurseries may deprioritize SIDS reduction interventions given decreased visibility of infants in one institution compared with more. There is ample potential for these collaborations given that children's hospitals in many regions in the country service a wide catchment area across surrounding communities. Community engagement is a rigorous, intensive intervention that can have a larger downstream impact which aligns with the mission of the hospitalwide certification program spearheaded by the Cribs for Kids organization for the infant population and their families. Exploring further directions to facilitate these partnerships could be further examined to determine any impact on reducing SIDsrelated mortality nationwide.

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#### **Competing Interests**

The author declares no competing interests.

## **Consent for publication**

All respondents permitted publication, provided anonymity was ensured.

## **Ethical Approval**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with human participants or animals performed by the author. Informed consent was obtained from all participants in the study. The study was performed in line with the principles of the Helsinki Declaration.

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