

THE STATE OF HUMAN MILK BANKING IN CALIFORNIA



A Call for Collective Action





Dear Friends and Community Partners,

For the first time in our organization's history, Mothers' Milk Bank California (MMBCA), formerly San Jose Mothers' Milk Bank, is proud to release *The State of Human Milk Banking in California* — a comprehensive report that provides critical insights into milk donation trends and statistics, the growing demand for pasteurized donor human milk (PDHM), and the evolving landscape of infant nutrition in our state. As California's first and the U.S.'s oldest operating community-based nonprofit milk bank, MMBCA's commitment to ensuring that every baby has access to safe donor milk has never been stronger.

This report underscores the profound impact of donor milk in neonatal intensive care units (NICUs), Well Baby Nurseries, and Postpartum care, including perspectives from physicians, parents, and community advocates and research confirming its undeniable role in reducing life-threatening conditions such as necrotizing enterocolitis (NEC). This report also highlights the incredible generosity of milk donors, the power of collaboration with our community partners, and the emerging challenges we must address together. From shifting breastfeeding trends to increasing legislation that supports human milk access, we are at a pivotal moment in shaping the future of infant health.

Donor milk is increasingly recognized as “a gold standard” in infant nutrition for infants unable to access sufficient breastmilk from their own parent, particularly for premature and medically fragile infants who rely on donor milk for survival. This is a good thing, but it does mean that one of the most pressing challenges we face is the rising demand for donor milk. California saw over 36,000 preterm births in 2023 alone, and many of these infants needed donor milk to thrive. Demand is also rising in Well Baby and Postpartum units, fueled by research showing additional benefits of donor milk in these populations, but milk banks across the country continue to experience a gap in supply.

The data in this report highlight the urgent need to expand our donor recruitment efforts and strengthen hospital partnerships to ensure that every infant receives the nourishment they need. Just as blood donation has become a normalized and valued part of our giving community, we must work to normalize milk donation as a vital and lifesaving contribution, ensuring that every eligible donor sees the impact of their generosity.

Despite these challenges, there is much to celebrate. The availability of donor milk in California hospitals has more than doubled in recent years, and our state has passed legislation supportive of breastfeeding and donor milk. The recent passing of Senate Resolution 20 (SR-20), designating May as California Human Milk Donation Month, marks a significant step forward in raising awareness about the importance of milk donation.

At MMBCA, we believe that access to human milk is not a privilege — it is a necessity. Our mission to advance health and wellness through safe donor milk is only possible through the unwavering support of our community: donors, healthcare professionals, policymakers, and advocates like you.

As you explore this report, we invite you to join us in shaping the future of human milk banking. Whether by becoming a donor, advocating for policies that support breastfeeding families, or partnering with us to expand access to donor milk, your involvement is vital to our success. Together, we can ensure that every baby gets the best start in life.

With gratitude,

Jennifer Benito-Kowalski
Chief Executive Officer
Mothers' Milk Bank California

Katie Anderson
Board Chair
Mothers' Milk Bank California



MMBCA's Mission
**Advancing health
and wellness with
safe donor milk.**



MMBCA's Vision
**A world where
human milk
is accessible to all,
beginning at birth.**



Introduction

MILK BANKS IN CALIFORNIA

Human milk banking provides a lifesaving resource for premature and medically fragile infants, providing pasteurized donor human milk (PDHM) when a mother's own milk is unavailable or there's simply not enough of it.¹

Human milk banks collect breast milk donations from healthy women who have a surplus supply and a desire to help other families. Before donation, prospective donors undergo medical screening to determine their eligibility and health status. Once approved, their donated milk is pasteurized to eliminate pathogens, ensuring safety while minimizing the loss of nutritional components.^{2,3} The pasteurized milk is then distributed to hospitals and individuals in a safe and regulated manner.

The goal of human milk banks is to ensure that all infants have access to the myriad benefits of breast milk.

WHY IT MATTERS

Since 1980, the World Health Organization (WHO) has recommended that infants be exclusively breastfed for the first 6 months of life, as breast milk is a perfect and complete source of nutrition.^{3,4,5} Breast milk provides all the nutrients a baby needs during this critical growth period and contains important antibodies to protect them from illness. Breastfeeding is associated with improved health outcomes, including reduced infant mortality, decreased incidence of pneumonia, ear infections, and diarrheal illness, and lower rates of health problems such as obesity and diabetes later in life.^{3,6} There is overwhelming evidence that breastfeeding benefits human health in both the short and long term compared with formula feeding, leading to healthier lives and lower lifetime healthcare costs.^{3,4,5,6} Equitable access to breast milk, which impacts an infant's entire health trajectory, is one of the most cost-effective ways to improve overall public health at a foundational level.

Despite these guidelines, fewer than half of all infants globally are breastfed as recommended, for reasons ranging from lack of knowledge

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about the benefits of breast milk to lack of maternity leave and support for breastfeeding.^{7,8} In the U.S. most infants receive some breast milk during their lifetimes, but only a quarter of infants are breastfed exclusively for the first 6 months of life.⁷

There are many reasons that an infant's mother's milk may be unavailable even immediately after birth, including: absence of the birth mother, the mother having certain diseases that can be transmitted to the baby, the mother requiring medications that may make breastfeeding unsafe, premature birth requiring hospitalization of the infant in the neonatal intensive care unit (NICU), and lactation difficulties.^{1,3,8} In these situations, milk donated from other women can help bridge the gap until breastfeeding is possible, providing critical support to ensure healthy infant development.¹

The WHO and UNICEF have recommended that the first alternative to mother's own milk should be the use of PDHM from a nonprofit milk bank.^{3,9} Accredited nonprofit milk banks are therefore a critical resource that support the health of vulnerable infants.

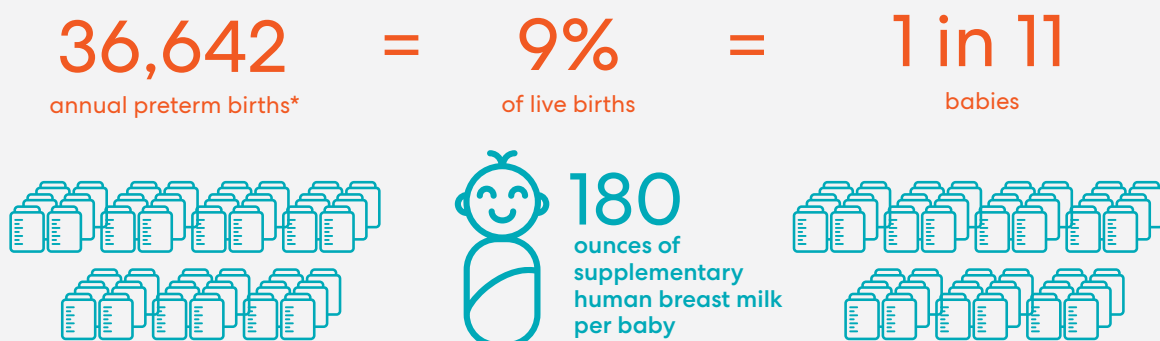
SAVING PREMATURE AND SICK INFANTS IN THE NICU

Preterm or premature infants, born at fewer than 37 weeks of gestational age (vs. full-term delivery at 40 weeks), are the priority population in need of donor human milk.¹⁰ Globally, about 10% of infants are born prematurely, with a 7% mortality rate from related complications.¹¹ In California, there were 36,642 preterm births in 2023, representing 9% of live births or 1 in 11 babies that may need supplementary human breast milk, an estimated 180 ounces per baby.^{12,13} In total nearly 12% (472,402) of live births in California from 2008–2018 resulted in NICU admission, and 43.2 of 100,000 infants born in 2022 (76.8 of 100,000 across the U.S.) died from premature birth or low birthweight (LBW).^{14,15}

PDHM provides many of the nutritional and immunological benefits of mother's milk and significantly improves health outcomes for preterm and sick infants in the NICU, protecting them from severe complications like necrotizing enterocolitis (NEC).^{1,3} NEC is a serious disease in which babies experience severe intestinal tissue inflammation.¹⁴ As a result, a perforation or hole can form in the intestine, allowing bacteria to leak into the bloodstream and leading to sepsis, in which the infant has a life-threatening immune response to an infection.

NEC affects 2%–5% of all premature infants and is the cause of 8% of all NICU admissions in the U.S.¹⁶ NEC-related mortality rates are as high as 50%; severe cases involving intestinal perforation and sepsis are almost always fatal.^{16,17} A study analyzing California health data found that NEC impacted 1 per 1,000 live births, with a mortality rate of 12.5%, and NEC disproportionately impacted Black and Hispanic infants.^{18,19}

Infants that survive NEC and their families suffer negative consequences long after discharge from the NICU, with 89% of NEC survivors and 72% of parents reporting long-term complications,



*California 2023^{11,12,13,14,15}

including a need for long-term IV nutrition, repeated emergency room visits and hospitalization, and severe impacts on mental health and quality of life for the rest of their lives.²⁰ “My son has been hospitalized dozens of times since he was discharged from the NICU,” shared a parent.²⁰ “NEC has impacted every aspect of my life, both career-wise and in my personal life,” said a survivor.²⁰

From 2007–2013, PDHM availability in California hospitals doubled to over 80%, and this was associated with decreased NEC incidence.²¹ “Donor breast milk has been a game-changer,” said Dr. Rachel Land, neonatologist at Stanford Medicine Children’s Health and Medical Director for MMBCA. “There are very few things that are as powerful as human breast milk in preventing onset of NEC, which can be deadly to preterm babies.”

When PDHM was or is not an option, formula is used to feed premature babies, and studies show that PDHM reduces NEC onset in preterm infants by more than 50% compared with infants who were fed formula.^{22,23,24} In a randomized clinical trial across 15 hospitals, NEC occurred in only 4% of preterm infants fed PDHM vs. 9% of infants fed formula.²⁴

“In the NICU we refer to [breast milk] colloquially as liquid gold,” said Dr. Land.

INCREASING BREASTFEEDING RATES

According to the Centers for Disease Control and Prevention (CDC), in 2019 most infants (83%) received some breast milk at some time, but only 56% still received breast milk at 6 months, and only 25% of infants were breastfed exclusively.⁷ California fares better than average (90%, 62%, and 27%, respectively), but there is room for improvement.^{25,26,27} In addition to saving NICU babies, milk bank services can help support breastfeeding overall, for both NICU and a small percentage of well infants who may require supplemental human milk.

This is particularly important for preterm or LBW infants and cases where the mother is unwell after delivery or has not yet established her milk supply.²⁸ Providing PDHM for a short period right after delivery can help new mothers become or stay motivated to provide their own milk for their babies by showing families that the medical team values human milk. Compared with infants who receive formula, infants who receive supplemental PDHM are up to 14% more likely to be breastfeeding or bottle-feeding with their own mother’s breast milk at time of discharge from the hospital and 5 times more likely to be exclusively breastfed at 6 months of age.^{20,29,30}

“By increasing the likelihood that a baby is exclusively breastfed for a longer period of time, we may have a healthier population in the long term,” said Dr. Land.



HISTORY OF MILK BANKING

The practice of donating human milk is surprisingly ancient, with the first record of regulating human milk donation appearing in the Babylonian Code of Hammurabi in 1800 BC.³¹ The origins of donating milk lie in wet nursing, in which breastfeeding was done not by the birth mother but by other women, commonly servants or slaves who were unable to nurse their own infants as a result.³² Having access to a wet nurse was often a privilege afforded to the aristocracy or upper classes.

In the 19th century, the development of baby bottles and increased availability of animal milk and infant formula led to a shift from wet nursing to artificial feeding in the western world.³² Artificial feeding became a sign of modernity, and its convenience over breastfeeding also helped enable women to enter the workforce.

Then, in the early 20th century, Viennese researcher Theodor Escherich showed that breastfed infants had significantly different and healthier microbiomes compared with infants given non-human milk.³¹ These findings led to the formation of the first official milk bank in Vienna in 1909. In 1910, the U.S. followed suit with its first milk bank in Boston, MA in the Floating Children's Hospital, now part of Tufts Medical Center.³¹

In the 1940s, the U.S. established standards for nonprofit milk banks that included donor screening and testing and milk processing protocols and regulations. In 1985, the Human Milk Banking Association of North America (HMBANA) was formed to help regulate milk banking and now provides accreditation to nonprofit milk banks in the U.S. and Canada.³³ The HIV/AIDS epidemic had a big impact on milk banking due to fears of infected donor milk. However, HMBANA found

HISTORY OF HUMAN MILK BANKS

1909	VIENNA First human milk bank in Europe
1910	BOSTON First human milk bank in the United States
1919	ERFURT A model for Europe, the United States
1943	UNITED STATES AAP recommendations
1947	PARIS LeLong introduces human milk for preterm infants
1975	ENGLAND Five large banks established
1980	WHO/UNICEF Joint statement
1980	UNITED STATES AAP recommendations
1985	UNITED STATES HMBANA foundation
1993	UNITED STATES HMBANA recommendations
1994	CANADA Canadian Paediatric Society recommendations
1995	FRANCE National law for human milk banks
2010	MILAN EMBA foundation
2014	ITALY National law for human milk banks

no cases of infection from donor milk and instituted routine HIV screening for donors in 1990, reviving both supply and demand for PDHM.³⁴

There are now 32 HMBANA member milk banks in North America. In 2020 there were an estimated 756 milk banks in 66 countries worldwide.³⁵

MILK BANKS IN CALIFORNIA

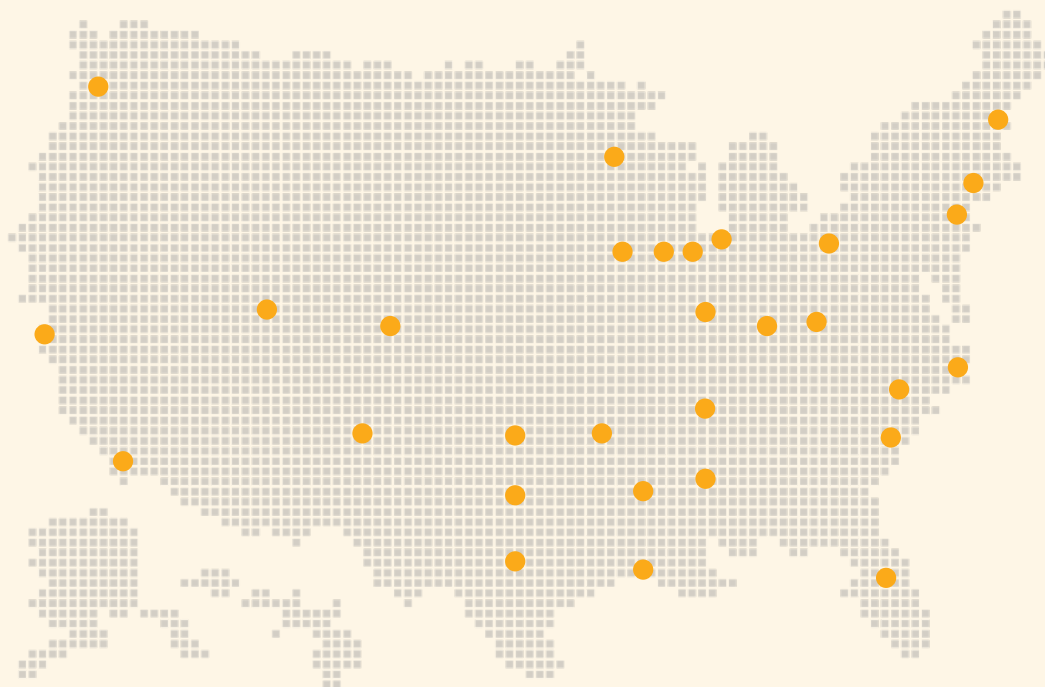
Founded in 1974 by Maria Teresa Asquith, Mothers' Milk Bank California (MMBCA), formerly San Jose Mothers' Milk Bank, is a charter member of HMBANA and is now the oldest operating nonprofit milk bank in the U.S., having celebrated its 50th anniversary in 2024.³⁴

Since 2017, MMBCA has also established 9 collection centers to better serve more geographically distant communities, collaborating with hospitals including the Santa Clara Valley Medical Center and community partners such as California Breastfeeding Coalition, Women's Infants and Children (WIC), BreastfeedLA and many more. Two collection centers are in Nevada, which does not have its own milk bank. MMBCA is working on adding new collection centers in hospitals in the San Francisco Bay Area, Sacramento, Central California, and the North Coast.

In 2022, the UC Health Milk Bank was launched out of University of California San Diego (UCSD). The UC Health Milk Bank is a part of the Human Milk Institute, which incorporates research, clinical care, and milk banking to advance human milk innovation.³⁶

California is one of very few states to have two nonprofit HMBANA-accredited milk banks within its borders. (Pennsylvania, Michigan, and Texas are the others.) These two milk banks help to serve infants and mothers in need in California and beyond.

U.S. HUMAN MILK BANKS





Our goal is to have enough donations so we can provide mother's milk or donor milk to any baby who needs it."

— Dr. Priya Jegatheesan, neonatologist and Well Baby Nursery Director at SCVMC

Growing Demand For Donor Milk

Demand for PDHM has increased worldwide, for both medically fragile infants in the NICU and otherwise healthy infants who may need a small boost in the first days of life.³⁷ MMBCA distributes PDHM to 70% of NICUs in California and elsewhere and has seen a 30% increase in demand for PDHM in the last year. This trend has been driven by many factors, including continued advancements in milk processing techniques, improvements in baby care, increased awareness of human milk benefits, a positive regulatory landscape, and bad press for formula companies pushing parents toward alternatives.

IMPROVED STANDARDS FOR DONOR MILK

Improvements in donor screening and human milk processing procedures have made PDHM a more viable alternative to mother's own milk when the latter is unavailable. Rigorous donor screening means that on average, fewer than half of women who apply to donate to MMBCA are eligible to donate; for every 100 applicants, approximately 30 are approved, and 70 are disqualified for various reasons. While these screening requirements limit the donor pool, it does mean that the PDHM received is extremely safe for all infants. Additionally, technological improvements mean that donor human milk can now be pasteurized and stored in the freezer until it expires, making PDHM more accessible to infants in need.³⁸

Now that fortification of donor human milk is standard, hospitals and healthcare professionals recognize PDHM as a gold standard for infant nutrition in NICUs. "As a neonatologist, donor breast milk is something that I use and see the benefits of every day," said Dr. Land.

DEMAND BEYOND THE NICU

The medical community's efforts to increase breastfeeding rates have helped PDHM gradually become available in Well Baby nurseries and Postpartum units, not just the NICU. "Ten years ago, donor breast milk was a scarce commodity pretty much only available in NICUs," said Dr. Land. "And even NICU use was only in a special subset of the NICU population to prevent NEC in the very small, very immature preterm babies."

Historically, most people only knew about PDHM and the option to donate if they or someone they knew had a preterm baby or after infant loss. This is still often the case, but the tides are gradually turning. In contrast to a decade ago, Dr. Land now occasionally sees signage at Stanford about PDHM and has observed more conversation about its availability by the lactation team and pediatricians. Greater access to information has made parents more aware of the benefits of human milk and the option of PDHM as a healthier alternative to formula when they aren't able to breastfeed.

"In the past when we approached families and recommended the use of donor breast milk, it was something they hadn't heard of," said Dr. Land. "Now, often when we approach families about the use of donor breast milk, a lot of them have already heard about it, and some will ask outright, 'Is this something that you would recommend for my baby?'"

HUMAN MILK-FRIENDLY POLICIES

Recent legislative and regulatory updates aimed at supporting breastfeeding and expanding the use of PDHM in California have led to hospital policy changes.

CALIFORNIA ASSEMBLY BILL (AB) 3059 — Authored by then-Assemblymember, now Senator Akilah Weber and sponsored by the University of California, this bill passed in September 2024.^{39,40} With AB 3059 in effect, PDHM is defined as an essential health benefit under all insurance plans, with the intent of helping all infants access this resource. In addition, under AB 3059, hospitals are no longer required to have their own tissue bank license (TBL) to dispense PDHM from a licensed milk bank with a TBL. This requirement previously limited PDHM availability to more resourced hospitals with large NICUs. The bill is intended to help increase availability of PDHM for well babies, remove geographical and financial barriers that disproportionately impact families of color, and raise awareness about PDHM to both prospective recipients and donors.

“AB 3059 is a significant step forward in improving access to donor milk across California and removing logistical and financial barriers so we can incorporate donor milk more widely and efficiently,” said Patrick Rohan, CEO of Good Samaritan, a large community hospital in San Jose, CA. “Ultimately, this legislation is going to help us elevate the standard of care throughout the state, and more babies getting a healthier start is what everyone wants to see.”



REASONS FOR DONOR MILK NEED

- Mother is absent due to separation, sickness, death, or abandonment
- Mothers infected with a sickness or disease
- Mothers who require medications contraindicated in breastfeeding
- Mothers who use addictive drugs that could lead to neuro-behavioral development
- Adoptive or other parents without lactating capacity
- Mothers who do not have enough breast milk during the first days after birth

CALIFORNIA HEALTH & SAFETY CODE 1648 — This has been updated accordingly since the passage of AB 3059:⁴¹

- Hospitals do not need a tissue bank license (TBL) to store or distribute PDHM obtained from a licensed milk bank.
- Milk depots established by a licensed milk bank within a hospital setting are required to have a TBL.

CALIFORNIA HEALTH & SAFETY CODE (HSC) 123367 — This follows the Hospital Infant Feeding Act (HSC 123366) initially enacted in 2014.⁴² Hospitals are now directed to promote breastfeeding by adopting the “Ten Steps to Successful Breastfeeding” outlined by the Baby-Friendly Hospital Initiative (BFHI), initiated in 1991 by WHO and UNICEF, or a similar policy by 2025.^{43,44}

Official BFHI or Baby-Friendly designation requires implementation of the “Ten Steps,” including discouraging the use of baby formula and pacifiers. Hospital staff required training and continued education, and hospitals paid regular fees to maintain certification. While BFHI was not without critics, the policy was linked with increased breastfeeding rates and decreased racial disparities gaps.^{45,46,47,48}

The intention of HSC 123367 is for hospitals in California to universally adopt BFHI or similar policies that drive breastfeeding-supportive practices by 2025. Some community partners fear that in practice, this may backfire by providing a loophole for “similar” non-BFHI policies that are not actually equivalent. “Unfortunately, we’ve seen many hospitals in LA County move away from Baby-Friendly designation,” said Arissa Palmer, Executive Director of the nonprofit organization BreastfeedLA, which helped over 40 hospitals obtain BFHI accreditation and supported the establishment of four of MMBCA’s 9 collection centers. “Without strong accountability, we risk losing the progress made in ensuring equitable access to lactation support for all families.”



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— Patrick Rohan, CEO of Good Samaritan



A 2024 CDC study found that about a third of hospitals in the U.S. had BFHI designation, and breastfeeding-supportive practices were less likely to be implemented when they required technical training of hospital staff vs. providing patient education.⁴⁹ In 2021, 40% (95) of California birthing hospitals had BFHI designation.⁵⁰ As of March 2025, 79 California facilities are listed as having BFHI designation by Baby-Friendly USA.⁵¹

CALIFORNIA SENATE RESOLUTION (SR) 20 — To raise awareness about the important role that nonprofit milk banks and human milk donors have in infant health, the month of May is being declared California Human Milk Donation Month, starting in 2025. May was selected because World Human Milk Donation Day is celebrated on May 19, as established in 2004 in Brazil and supported globally.

FORMULA SHORTAGES

In 2022, Abbott Laboratories paused production of their Similac formula for 4 months in response to concerns about bacterial contamination linked to two infant deaths.⁵³ Because they stopped production, it caused a formula shortage that impacted more than 30% of families with infants, who were no longer able to access their normal food source. This shortage caused a spike in interest in donor milk, both from prospective donors and recipients.

In 2024, lawsuits were filed against formula companies Abbott Laboratories and Mead Johnson & Company for not warning families of premature infants about the risk of NEC associated with formula feeding in light of ample research showing the superiority of human milk for preventing NEC.⁵⁴ The lawsuits represented the families of more than 600 infants who died from NEC after formula feeding, and plaintiffs in one Missouri case were awarded \$495 million.

These formula supply disruptions and NEC lawsuits pushed many families towards PDHM as a safer option. PDHM benefits infant health outcomes both directly and indirectly by increasing breastfeeding adherence. In light of these advantages, in the long term, the increased awareness may be beneficial to public health.



One of the greatest barriers parents face is accessing lactation support that truly reflects their culture and lived experiences. Without culturally congruent care, many families are left without the support they need to successfully breast/chestfeed.”

— Arissa Palmer, Executive Director of the nonprofit organization BreastfeedLA

Addressing Milk Banking Challenges

MEETING INCREASING DEMAND

Expanding the use of PDHM beyond preterm babies will increase visibility and hopefully donations. But in the short term there will likely be a strain on supply, as there is currently a 15% year-over-year increase in demand for PDHM.

In 2024, MMBCA was able to work with 1,686 approved donors and 140 hospitals to dispense 1,298,030 ounces (10,141 gallons) of PDHM, including 746,810 inpatient ounces (5,834 gallons) and 551,928 outpatient ounces (4,312 gallons). Per month, that was 108,000 ounces (844 gallons) of PDHM dispensed to service both inpatient and outpatient settings.

Given the 15% increase in demand each year, nearly 1.5 million ounces of PDHM are expected to be dispensed in 2025, provided that MMBCA is able to receive enough milk donations to meet this demand. In cases where there is not enough PDHM to meet the demand, babies in the NICU will always be prioritized.

2024
BY THE NUMBERS



1,686
approved donors

140
hospitals

1,298,030
ounces of PDHM

EXPANDING DONOR RECRUITMENT STRATEGIES

People who work with PDHM often compare it to blood donation. Like blood, milk must be constantly replenished, so donor recruitment is a never-ending effort. But the prospective milk donor population is much more limited (i.e., only nursing mothers), and only a tiny fraction of these potentially eligible donors is donating breast milk.

MMBCA conducted a study in collaboration with the geospatial analytics organization Esri and found that only 2% of eligible donors in California, most of whom are ages 25-35, living in densely populated areas, are donating breast milk.⁵⁵ Nonprofit milk banks must raise greater awareness of the need for PDHM among these populations, in part by actively supporting community partners that address breastfeeding and lactation services. More breastfeeding mothers in California means healthier babies overall, as well as more potential donors with surplus milk.

In January 2025, MMBCA conducted a focus group with prior donors and prospective donors who had not completed the screening process in order to identify barriers to donation. Lack of awareness and logistical challenges were identified as the biggest limitations, as not all women with surplus milk know that they can donate or how to donate. Many participants said that they did not know about milk banking prior to finding themselves with surplus milk and researching donation options, as they did not want their breast milk to go to waste. Additionally, the participants cited time-consuming paperwork and other logistical challenges, including a 100-ounce minimum donation requirement.

MMBCA has a team of professionals to medically screen milk donors and their milk to ensure safety of PDHM. As part of the rigorous screening process, donors must undergo blood testing through Labcorp or Quest Diagnostics, with the costs fully covered by MMBCA. Once approved, donors must send a minimum of 100 ounces of breast milk in a cooler, also provided by MMBCA along with the cost of shipping. The primary reason for this requirement is because some milk is lost in the process, so for every 100 ounces of donor milk received, only 60-70 ounces are usable after processing. The large quantity required for a shipment discourages some would-be donors, who may decide to share milk informally instead.

Focus group participants did, however, express appreciation for MMBCA's clear communication and provision of pumping supplies and coolers. More lactation support was suggested, possibly through consultation from International Board Certified Lactation Consultants (IBCLCs), and a more convenient donation process can also increase donor recruitment.

In November 2024-January 2025, MMBCA brought back as a pilot program a local pick-up option in Santa Clara County, in which a staff member was sent to pick up breast milk directly from donors' homes. Not surprisingly, this convenient option was popular with donors, and 8,104 ounces of PDHM were picked up from 26 donors. However, local pick-up is geographically limited and requires a lot of people power that a lean nonprofit milk bank isn't always able to spare.

MMBCA relies on collaborations with hospitals and community partners to help host donor drives and operate collection sites to raise awareness and decrease logistical barriers to milk donation. In the aftermath of the COVID-19 pandemic, MMBCA is working on continuing to reimagine donor recruitment efforts to further decrease barriers for prospective donors. Additionally, in a state as diverse as California, bilingual and culturally relevant strategies are necessary to reach parents statewide.

EVALUATING OPERATIONAL CHALLENGES

The complexity and expenses of operating a nonprofit milk bank can quickly add up, from donor screening to milk processing, storage, and distribution. However, MMBCA's rigorous standards are necessary to ensure the safety of PDHM.

Once received, donor milk is thawed, analyzed, pasteurized, and tested by the Public Health Laboratory. PDHM can be stored for up to 8 months before it is distributed to babies in need. Some milk is inevitably lost in the process, so a 100-ounce donation may end up as 60-70 ounces sent to the NICU.

Nonprofit milk banks need improved equipment to maximize efficiency and increase PDHM yields from donations. Greater collaboration between nonprofit milk banks and centralization of milk processing equipment could help maximize the impact of milk banking efforts, as we will explore later in the report.

PRIORITIZING EQUITABLE ACCESS

Nationally, about 70% of NICUs have access to PDHM, and PDHM availability has been found to be greater at hospitals with nonprofit or teaching status, hospitals with Baby-Friendly designation



Pasteurized donor human milk (PDHM) availability has been found to be greater at hospitals with NICUs serving a higher percentage of white families and insured families.^{57,58}

and/or level IV NICUs and NICUs serving a higher percentage of white families and insured families.^{57,58} Within individual institutions, white families were also found to be more likely to receive PDHM.⁵⁹

In California up to 99% of very preterm or very low birthweight (VLBW) babies now use PDHM in the NICU.⁵⁶ This much higher rate of PDHM use compared to the broader U.S. is thanks in large part to the efforts of the 100% NICU, 100% California Project, which believes that outcomes should not depend on where a baby is born. The goal is for 100% of NICUs to offer PDHM to all sick and preterm infants.

HMBANA released the Equitable Donor Milk Access Blueprint including guidance on understanding and tackling continued disparities in PDHM access.⁶⁰ HMBANA guidance for nonprofit milk banks includes:

- partnering with healthcare and research institutions and advocacy organizations to collect and analyze the demographics of PDHM recipients
- advocating for insurance coverage of PDHM
- understanding barriers for hospitals to implement PDHM programs
- collaborating with community partners to support breastfeeding and community infant feeding programs

MMBCA has been and continues to be actively engaged in all of these strategies to advance the equitable distribution of PDHM.



“Donor milk is not only a lifeline for the tiny patient, but also a powerful way for mothers to give back to their communities.”

— Patrick Rohan, CEO of Good Samaritan

Opportunities In Milk Banking

HONORING DONOR GENEROSITY AND IMPACT

A recurring theme among both current and prospective donors is the desire to help other families in need.^{61,62} Parents who have experienced child loss have also shared psychological benefits from becoming donors.

Lauren P. Adams lost her daughter Dove at only three weeks of age, and the hospital gave her information about milk donation. “That inspired me to continue pumping for months,” Adams said. “My ‘milk tears’ connected me to her. Dove’s hope lives on through all the little babies who received her milk donation.”

Ana Penrod lost her daughter Cecilia, who suffered from congenital heart disease complications and was unable to consume her mother’s milk. “I continued to pump every day in hopes she could use it someday. Today, I donated around 500 ounces of milk to the Mothers’ Milk Bank of California. This milk will go to NICU babies in need, and knowing that brings me so much peace during my grief. This truly gives me a sense of purpose amid the pain of losing her.”

MMBCA’s bereavement program helps support parents like Lauren and Ana who donate milk after losing a child, by acknowledging their loss and giving them a sense of purpose and community. In August 2021, MMBCA unveiled a Bereavement Wall to honor the donors who selflessly donated milk after their loss. Additionally, there are plans to create a public art installation—a memorial tree on which each leaf has the name of a child. This installation would provide a dedicated space for families to place a leaf in remembrance of their child and visit whenever they wish.

These poignant stories of altruism demonstrate the healing power of milk donation, not only for infants and families in need but also for the donors themselves. This sentiment is reinforced by feedback from focus group participants, who found infants’ success stories to be compelling and wanted more knowledge about the potential impact of donating their breast milk.

HOSPITAL PARTNERSHIPS STREAMLINE MILK DONATIONS AND DISTRIBUTION

Healthcare providers and institutions play a major role in spreading the word and helping people understand the value of milk donation. Hospital collaborations increase awareness of PDHM for both prospective recipients and donors, as mothers who receive PDHM for their babies are often spurred to become donors and offer this resource for other families.

Magali Hernandez’s son Franquito was born at 38 weeks underweight with his umbilical cord wrapped around his neck and leg, causing his airway to become restricted. Once born, he was rushed to the NICU where he received life-saving treatment, including donor milk. “Franco was able to come home after 5 days in the NICU,” Hernandez shared. “I knew at that moment that I wanted to do the same for another child in need.”



MOTHERS' MILK BANK CALIFORNIA

MMBCA developed a program called MMB CARES to more effectively partner with hospitals to provide PDHM to as many infants as possible. The goal of the program was to bridge the gaps between the NICU and hospital, collection centers, and outpatient care—three critical areas that were once siloed and disconnected. In addition to increasing awareness of PDHM, these partnerships help leverage hospitals' existing medical expertise and infrastructure to more efficiently recruit donors and distribute PDHM.⁶³ MMB CARES has helped numerous hospitals transition to consistently providing PDHM to their infants in need.

"We've used donated breast milk since the milk bank first opened on our campus, so they're integral to our unit," said Dr. Sudha Rani Narasimhan, neonatologist and Lactation Director at SCVMC.

"I think as a society the overall impact of being able to exclusively provide human milk can go a long way, and our Mothers' Milk Bank has been part of that," said Dr. Priya Jegatheesan, neonatologist and Well Baby Nursery Director at SCVMC. "Our goal is to have enough donations so we can provide mother's milk or donor milk to any baby who needs it."



Donor breast milk has been a game-changer. There are very few things that are as powerful as human breast milk in preventing onset of NEC, which can be deadly to preterm babies."

— Dr. Rachel Land, neonatologist at Stanford Medicine Children's Health and Medical Director for MMBCA

MMBCA also partners with Good Samaritan Hospital in San Jose, CA. Since 2016, Good Samaritan has distributed nearly 40,000 ounces of PDHM provided by MMBCA. Over a quarter of this (11,550 ounces) was distributed just in 2024, in which 329 babies were admitted to the NICU.

Over the past two years, Good Samaritan has provided MMBCA with \$50,000 in unrestricted grants, as well as helped host donor milk drives to encourage community donations. "These drives provide a safe, impactful way for our moms to support families in need," said Good Samaritan CEO Patrick Rohan. "Many mothers have an oversupply of milk and may not realize how easy it is to donate it or how impactful their contribution can be."

Good Samaritan also provides pamphlets about milk donation and their donor drives, which puts them ahead of the curve. Rohan is working on ensuring that these materials are not only available but actively included in the informational packets given to all mothers who deliver infants at Good Samaritan. When 2,300 babies are delivered each year at the hospital, this simple but impactful step could provide over 1,000 new donor applications from a single hospital.

“I think it’s our responsibility to improve that awareness and improve education and visibility,” said Rohan. “Donor milk is not only a lifeline for the tiny patient, but also a powerful way for mothers to give back to their communities. We need to actively increase awareness and widen the top of the funnel so that moms who can donate know it’s an option, how to do it, where to do it, and the impact it has.”

SUPPORTING INFANTS HOLISTICALLY THROUGH COMMUNITY PARTNERSHIPS

Collaboration is key to ensuring that every infant has access to the life-saving benefits of PDHM. Mothers’ Milk Bank California (MMBCA) partners with organizations like BreastfeedLA, a nonprofit dedicated to advancing breastfeeding education, advocacy, and equitable lactation support in Los Angeles County.



As a neonatologist, (donor breast milk) is something that I use and see the benefits of every day.”

— Dr. Rachel Land, neonatologist at Stanford Medicine Children’s Health and Medical Director for MMBCA



Recognizing a significant gap between PDHM usage and local milk donations, BreastfeedLA played a crucial role in establishing four community-based milk collection sites in LA County. Previously, the region consumed approximately 30% of the PDHM banked by MMBCA but contributed very little in donations. These collection centers are helping to bridge that gap by providing local parents with a convenient way to donate their excess milk. In 2024 alone, these sites collected over 18,407 ounces of PDHM, which was then processed and distributed to infants in need.

Strategic partnerships like this are critical to improving maternal and infant health outcomes. “We look at things through the lens of lactation and infant feeding, but we’re not just talking about infant feeding,” said Arissa Palmer, Executive Director of BreastfeedLA. “We’re talking about paid family leave, infant and maternal mortality, we’re talking about all the intersections that lead to better health outcomes for the parent and the child. True support for new families requires a coordinated effort across multiple sectors to ensure that all parents—regardless of their background—have access to the care and resources they need.”

Mothers’ Milk Bank California (MMBCA), in partnership with diverse communities beyond hospital settings, recognizes and respects the unique cultural values, languages, and lactation experiences of young families. By embracing this understanding, MMBCA is better positioned to meet the growing need for equitable access to both milk donors and recipients.



Pasteurized donor human milk (PDHM) is a safe service for those fragile individuals without a voice in healthcare. There has never been a death or poor outcome due to PDHM.”

— *Pauline Sakamoto, President of AANHPI Lactation Collaborative Board of Directors, US Breastfeeding Committee; Former President, Human Milk Banking Association of North America; Former Executive Director, San Jose Mothers' Milk Bank*

The Future Of Milk Banking In California

Analysts have estimated a 9% growth in the human milk banking industry worldwide over the next decade, which could greatly benefit infant health.^{64,65} Nonprofit milk banks in North America are viewed as a leader in the industry, with a strong regulatory framework ensuring safety of donor milk and strong hospital partnerships to facilitate distribution.

To sustain this progress and safely scale operations, however, nonprofit milk banks must continue to improve efficiency, aided by new technologies that will improve PDHM products. Nonprofit milk banks must also build and strengthen collaborations with health systems, community partners, governmental agencies, and each other.

TECHNOLOGICAL ADVANCEMENTS IN MILK BANKING

Cutting edge technologies can help nonprofit milk banks improve efficiency and the quality of PDHM in the next decade:

- **Macronutrient optimization tools** — Researchers are exploring the use of machine learning and artificial intelligence (AI) to analyze and optimize the macronutrient composition (i.e., fat, protein, lactose) of PDHM, ensuring consistent nutritional benefits and improved outcomes for every infant that receives PDHM.⁶⁷
- **Pathogen detection innovations** — New technologies will allow for rapid detection of bacterial and viral pathogens in donor milk. For example, the biotechnology company Prolacta Bioscience has developed a nucleic acid amplification test that can quickly and directly test for pathogens within the donated milk, including viruses such as SARS-CoV-2.⁶⁸ This is particularly helpful for ensuring safety of human milk from repeat donors.

MONITORING PUBLIC HEALTH THREATS

In the long history of human milk donation and milk banking, nonprofit milk banks such as MMBCA have weathered numerous societal and public health cataclysms, from industrialization to the HIV/AIDS epidemic to the COVID-19 pandemic. PDHM is and should be part of every disaster plan's response. Understanding that the safety of PDHM is paramount, MMBCA continues to work with its network of community partners and public health entities such as the California Department of Public Health (CDPH), CDC, WHO, and Food and Drug Administration (FDA) to monitor ongoing emerging threats, including avian flu. In the event that health risk responses from federal agencies are delayed, nonprofit milk banks must work more closely with state health officials to remain prepared for the public health threats of the future.

COLLABORATION IS KEY

Nonprofit milk banks must work more effectively with hospital partners to leverage existing medical expertise and infrastructure for seamless milk collection, processing, and distribution. In an ideal future, all hospitals with a NICU and eventually all hospitals that deliver infants will have a collection center on-site, managed by their lactation director or appropriate hospital staff, in collaboration with a nonprofit milk bank such as MMBCA. Integration of milk banking into hospital systems would enable parents to access lactation support and conveniently donate their surplus milk.

This vision draws inspiration from Brazil's nationalized, integrated milk banking program.³⁵ Brazil has two main milk bank networks (the Global Network of Human Milk Banks and the Ibero-American Network of Human Milk Banks) that operate 224 human milk banks and 214 collection centers throughout the country. Between 2000 and 2019, Brazil's milk banking program distributed over 95 million ounces of PDHM collected from nearly 2.5 million donors.³⁵ This level of donation and distribution is made possible by the integration of Brazil's government-supported collection centers into their healthcare institutions. Healthcare staff are trained on-site, and mothers and infants are provided with education, lactation support, and other breastfeeding-supportive practices largely following BFHI guidelines. This creates a virtuous cycle that supports milk donations, breastfeeding, and helps to ensure equitable access to human milk.



Only 2% of
eligible donors
in California
are donating
breast milk.



Additionally, increased partnerships with academic and research centers will facilitate testing, data-collection, and innovation. UC Health Milk Bank is setting an example as a nonprofit milk bank that is well-integrated into UCSD's research and clinical ecosystem, as part of the Human Milk Institute.³⁶

Nonprofit milk banks must also continue to work more effectively with each other as the milk banking landscape evolves. Currently, nonprofit milk banks in North America are accredited by HMBANA but otherwise operate independently as community-based or hospital-based institutions. The European Milk Bank Association (EMBA), similar to HMBANA, provides guidance to over 200 members across more than 20 European nations. The organization, which launched in 2010, greatly emphasizes collaboration, research, and hosts annual conferences for EMBA members to learn from each other.⁶⁹

Greater collaboration among HMBANA members, such as in a federated network in which each milk bank is a local chapter, could benefit all members by increasing donor milk access and awareness, streamlining operations and consistency, expanding advocacy and funding opportunities, and reducing processing costs and redundancy.

Unification of milk banking efforts in the U.S. can help expand geographic reach more systematically and efficiently, making PDHM accessible statewide in California and beyond, providing multiple concrete benefits:

- Centralization of milk processing will improve efficiency and give milk banks greater access to the latest high-tech equipment, increasing PDHM yields from donations.
- A united network would allow for stronger lobbying efforts for legislation supporting donor milk programs, and larger scale fundraising and awareness campaigns could attract more donors, community partners, and sponsors.
- In a more streamlined network, nonprofit milk banks might have the resources to operate mobile collection sites or collect milk donations directly from donors' homes, making the process as seamless as possible for potential donors.

Ultimately, improved collaboration between milk banks and integration with existing health systems would allow for growth without each location having to reinvent the wheel, providing a structured model for opening new milk banks.

Nonprofit milk banks aim to advance health and wellness with safe donor milk. Improving the health of an infant has reverberations throughout their entire lifetime as well as their future generations, leading to a healthier population and lower overall healthcare costs. If we all work together towards a common goal of advancing the health of the smallest patients, we can help create a healthier future for California.

A CALL TO ACTION

MOTHERS: Donate your excess milk to save vulnerable infants. Breastfeed your child for a minimum of 6 months, as recommended by the American Academy of Pediatrics, the World Health Organization, and other international guidelines.



HEALTHCARE PROVIDERS: Partner with milk banks to ensure that preterm and medically fragile babies in the NICU have access to life-saving donor milk.



POLICYMAKERS AND SPONSORS: Support legislative efforts and provide financial backing to sustain milk banking operations.



THE GENERAL PUBLIC: Spread the word about the importance of human milk banking and the ongoing need for milk donors.

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Thank you to all of our community partners whose continued support and collaboration help advance infant health across California. Your dedication to the mission of milk banking ensures that more families have access to the life-saving benefits of donor human milk. Together, we are creating a healthier future for our most vulnerable infants.

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Since 1980, the World Health Organization (WHO) has recommended that infants be exclusively breastfed for the first 6 months of life.