

Minnesota Milk Bank for Babies

What's new with Minnesota pasteurized donor milk?

Macronutrient content, access, and more

Linda Dech, MPH, IBCLC
MBC Annual Conference
October 12, 2023



Minnesota
Milk Bank
for Babies

Objectives:

- Describe Minnesota Milk Bank for Babies pasteurized donor human milk product types and their use in hospitals and distribution sites.
- Describe macronutrient content, analysis, and target pooling of milk bank donor milk
- Provide information about how to start a depot and distribution site, and the process for donating extra milk to the milk bank
- Describe Bridge Bag pilot programs to increase access to pasteurized donor human milk for those experiencing food insecurity and financial need.



AAP

Section on
Breastfeeding's
Clinical Report

Updated and
released in
October 2021

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

From The American Academy Of Pediatrics CLINICAL REPORT

Ⓐ Promoting Human Milk and Breastfeeding for the Very Low Birth Weight Infant

Margaret G. Parker, Lisa M. Stellwagen, Lawrence Noble, Jae H. Kim, Brenda B. Poindexter, Karen M. Puopolo and
SECTION ON BREASTFEEDING, COMMITTEE ON NUTRITION, COMMITTEE ON FETUS AND NEWBORN

Pediatrics October 2021, e2021054272; DOI: <https://doi.org/10.1542/peds.2021-054272>

Article

Figures & Data

Info & Metrics

Comments

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Abstract

Provision of mother's own milk for hospitalized very low birth weight (VLBW) (≤ 1500 g) infants in the NICU provides short- and long-term health benefits. Mother's own milk, appropriately fortified, is the optimal nutrition source for VLBW infants. Every mother should receive information about the critical importance of mother's own milk to the health of a VLBW infant. Pasteurized human donor milk is recommended when mother's own milk is not available or sufficient. Neonatal health care providers can support lactation in the NICU and potentially reduce disparities in the provision of mother's own milk by providing institutional supports for early and frequent milk expression and by promoting skin-to-skin contact and direct breastfeeding, when appropriate. Promotion of human milk and breastfeeding for VLBW infants requires multidisciplinary and system-wide adoption of lactation support practices.

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In this issue

Pediatrics

Vol. 148, Issue 4
1 Oct 2021



Mother's own milk for VLBW infants associated with decrease in:

- necrotizing enterocolitis (NEC)
- late-onset sepsis
- chronic lung disease
- retinopathy of prematurity
- neurodevelopmental impairment

NEC ([Seminars in Perinatology, Vol 47, Issue 1, Feb 2023](#))

- Affects 3-9% born <37 weeks gestation
- Mortality rate 24% overall
 - 30% for VLBW
 - 50% for surgical NEC & ELBW
- Morbidity - Short bowel syndrome, inadequate digestion, poor growth

PDM reduces NEC by at least 50%





Impact

- **Hospitals served** **33**
- **Milk Donors** **1,150**
- **Dispensed oz.** **738,000**
- **Meals served (VLBW)** **2,214,000**

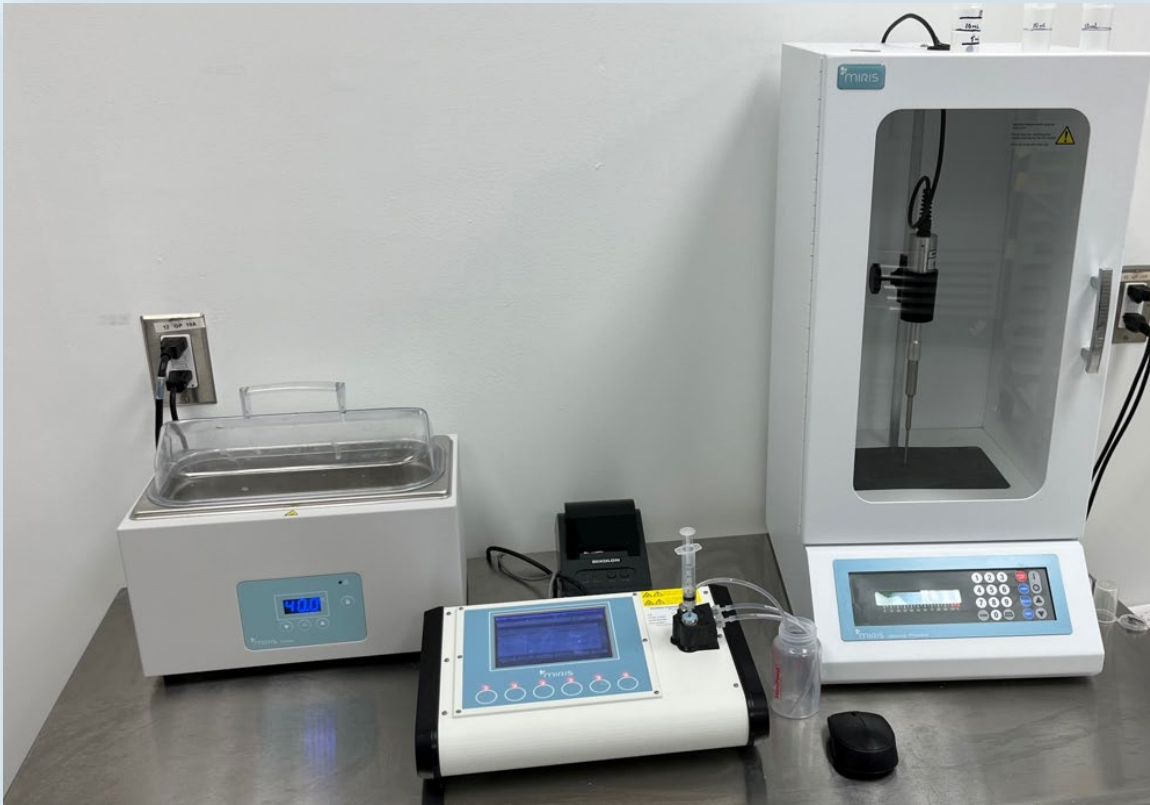


Caleb & family



Production Equipment Added

Miris Human Milk Analyzer

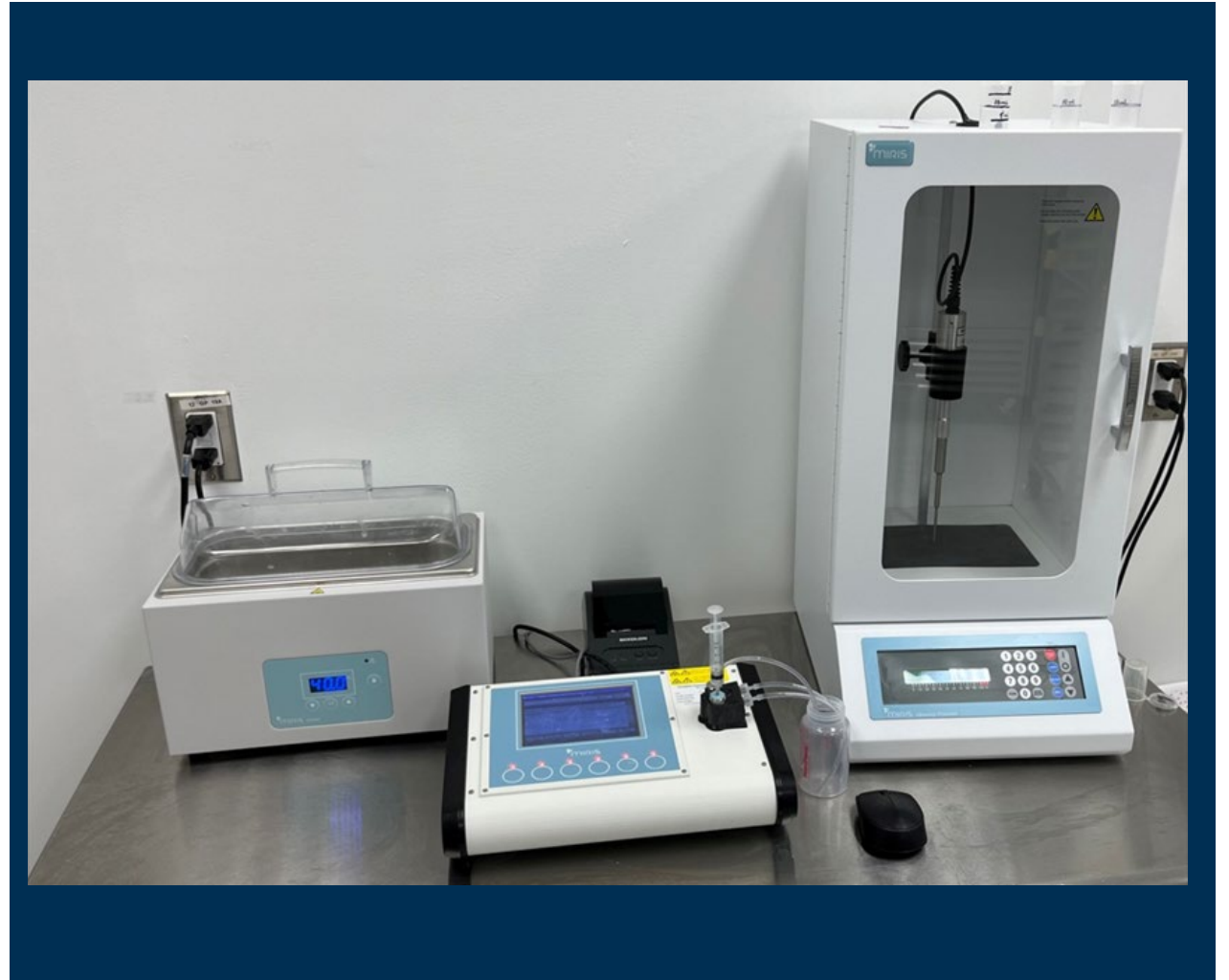


Sterifeed Pasteurizer



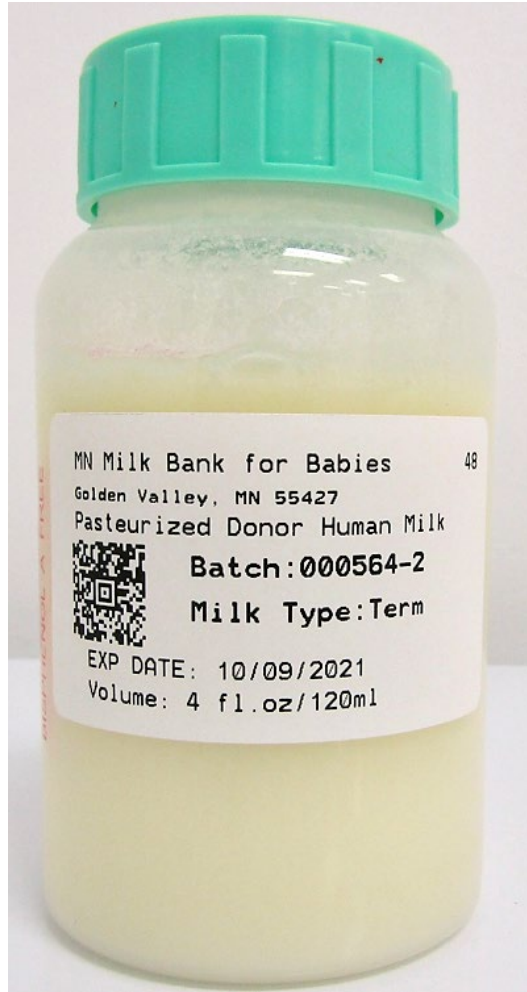
Miris HMA

- FDA approved & registered for hospital use
 - Macronutrients, energy, and total solids
 - Trained staff
 - Calibrated daily and checked after every 10 samples
 - Analyzed by:
 - Donors
 - Pool (3-5 donors)
 - Two samples per pool
-



Label change

Old



New



Milk Batch Analysis Report

BATCH #:

Date Analysis Performed:

Employee Reporting Miris HMA:

Fat (g/100ml):

Carbohydrates (g/100ml):

Total Solids (g/100ml):

Total (Crude) Protein (g/100ml):

Energy (kcal/100ml):

Calculated Calories (kcal/oz):



The Process - Following the Milk

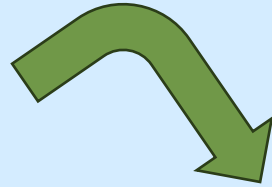
Donors



3 to 5 Donors

- Nutrient content
- Anti-infective properties

Pooling



Bottling & Sealing



The Process - Following the Milk

Production: Pasteurizing



Cooling & Freezing



Testing



MMBB Donor Milk – Macronutrient Ranges

	Term Donors			PreTerm Donors			Term Pools			PreTerm Pools		
	Low	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg
Calories/oz	14.8	31.9	21.8	19.0	28.0	22.9	17.1	27.8	21.6	20.1	24.6	22.3
Fat	1.2	7.2	3.8	2.7	5.8	4.0	2.2	5.8	3.7	2.9	4.4	3.7
Total Protein	0.4	2.3	1.1	1.2	2.3	1.6	0.7	2.2	1.1	1.4	2.2	1.7
Carbohydrates	6.5	10.5	8.2	7.5	8.7	8.1	7.4	8.9	8.2	7.9	8.6	8.1

Donors, 1244

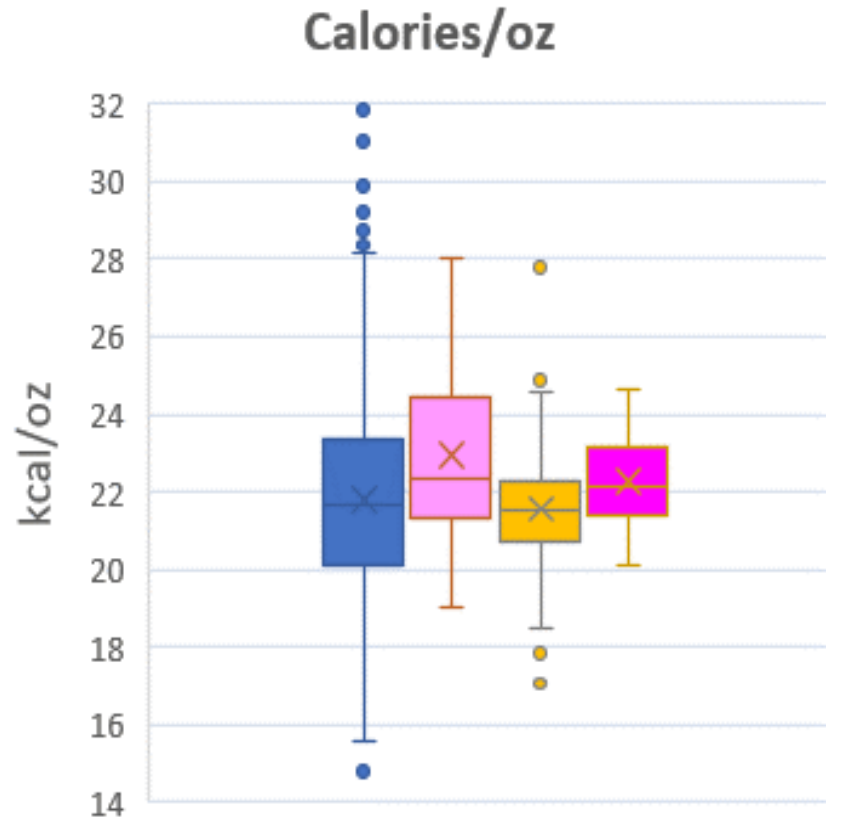
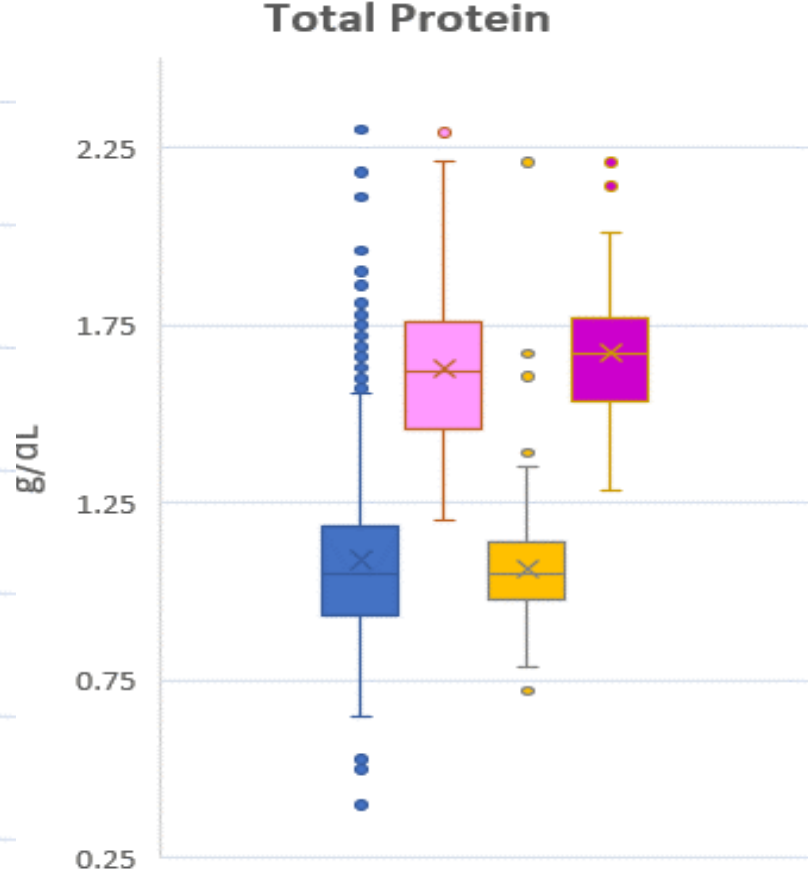
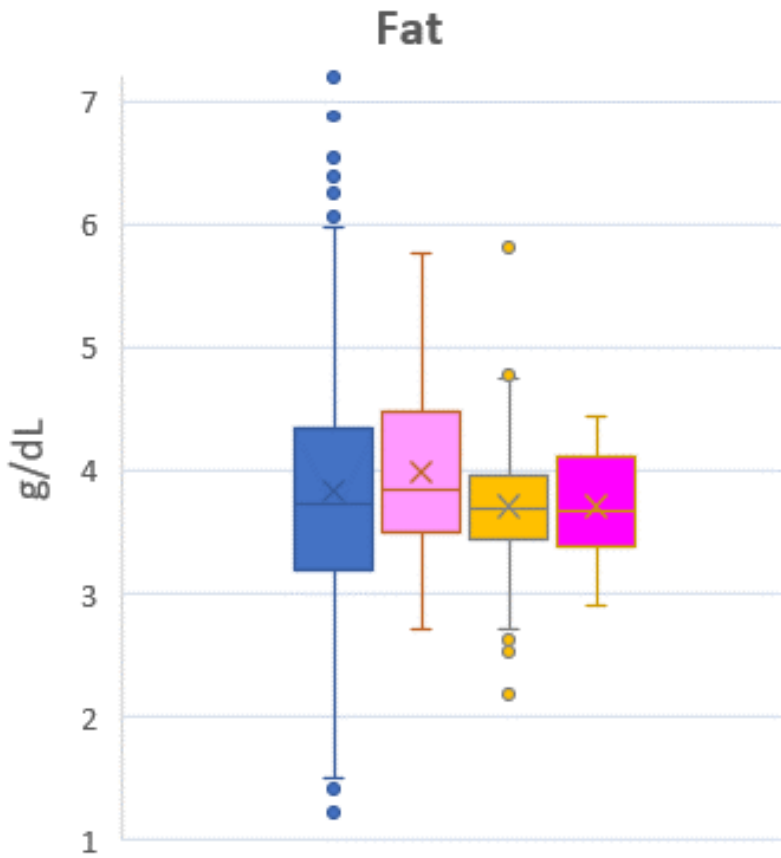
PreTerm Donors, 45

Pools, 238

PreTerm Pools, 29



MMBB Donor Milk – Macronutrient Ranges Graphically



Term Donors
PT Donors
Term Pools
PT Pools

Term Donors
PreTerm Donors
Term Pools
PreTerm Pools

Term Donors
PreTerm Donors
Term Pools
PreTerm Pools

Donors, 1244

PreTerm Donors, 45

Pools, 238

PT Pools, 29



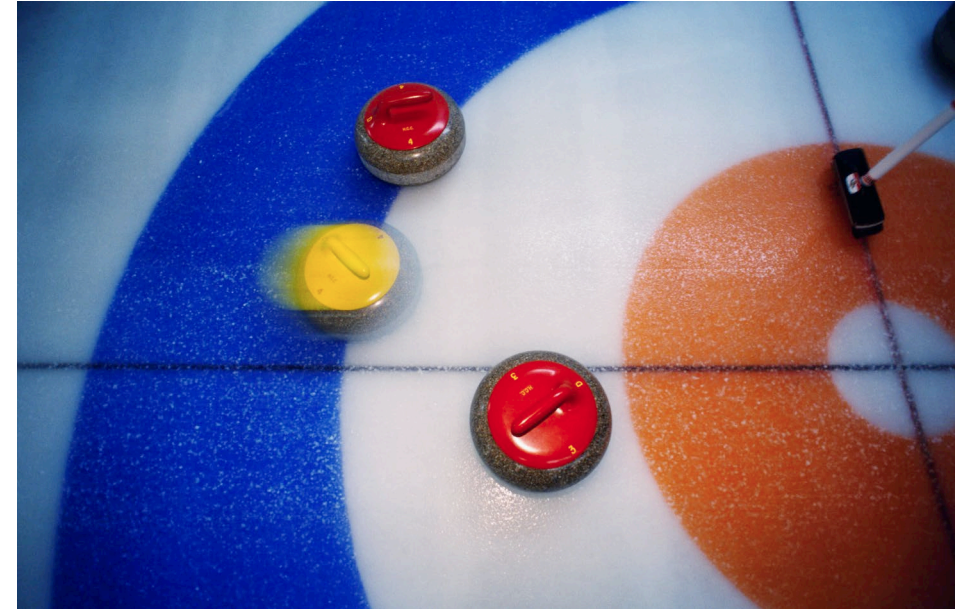
Criteria for Recipients based on PDHM Nutrition Content

Recipients	Milk Type	Calories/oz	Total Protein, g/dL
Inpatient	Term 20	19.5 – 21.4	At least 0.9g/dL
Inpatient	Term 22	21.5 – 23.4	At least 0.9g/dL
Inpatient	Term 24	23.5 – 25.4	At least 0.9g/dL
Inpatient, NICU only	PreTerm	Minimum 20, labeled as is	Labeled as is
Outpatient	OP	<19.4, labeled as is	Labeled as is



Target Pooling

- Each donors' thawed deposits selected for a pool are analyzed for macronutrient content
- 24kcal/oz requires deposits that are higher than average
- Depending on each donor's nutrient results, certain donors can be selected, excluded, or partially included if a specific caloric content is needed



Type	Kcal/oz range	Percentage of Donors
Outpatient	≤ 19.4	16
Term 20	19.5 – 21.4	30
Term 22	21.5 – 23.4	30
Term 24	23.5+	24



MMBB updated product lines with nutrition content information



MMBB Products List

[Click to open links](#)

Nutrition Content Information

MINNESOTA MILK BANK FOR BABIES

Pasteurized Donor Human Milk Products List

ITEM #	T3.3	T4-20	T4-22	T4-24	T4-OP	PT
Product Type*	Term	Term	Term	Term	Term	Preterm
Volume	3.3oz / 100mL	4oz / 120mL	4oz / 120mL	4oz / 120mL	4oz / 120mL	1.7oz / 50mL
Caloric Content**	20-22 kcal/oz	20 kcal/oz	22 kcal/oz	24 kcal/oz	As shown on label	As shown on label

[Sign up for Product Information \(MailChimp\)](#)

MMBB Zoom Partner Update – 11/6/23, 11:30am – 12:30pm
 Dr. Fahim will share info about nutrition content and fortification



Minnesota
Milk Bank
for Babies

HELPING BABIES CLOSE TO HOME

Nutrition Content Information

of MMBB Pasteurized Donor Human Milk
 (8/1/2023)

The Minnesota Milk Bank for Babies (MMBB) has acquired a [Miris Human Milk Analyzer \(HMA\)](#) to measure macronutrient content of donors' milk. The Miris HMA is the only FDA-approved human milk analyzer registered as a medical device for hospital use. The Miris HMA uses mid-range infrared transmission spectroscopy principles and a patented process to analyze the macronutrients, energy, and total solids in human breast milk. MMBB's Miris HMA (Ser. No H2109-18, 2022), is operated by trained staff who follow manufacturer's guidelines for proper maintenance and calibration, and current Human Milk Banking Association of North America (HMBANA) nutrition analysis standards.

The composition of human milk varies based on factors such as gestation, milk expression methods, and handling. Donor human milk preparation and handling may impact macronutrients and their bioavailability. Fat content is particularly impacted by feeding method, such as bolus vs. continuous and position of feeding syringes during enteral feeds (vertical vs. horizontal). Among milk donor samples tested at MMBB, the caloric content ranges from 14kcal/oz to 28 kcal/oz. The MMBB uses the Miris HMA to analyze each donor's milk to target pool and optimize batches of pasteurized donor human milk (PDHM) for inpatient and outpatient use. At least 3 donors' milk are pooled for Term batches to maximize anti-infective and other properties unique to human milk.

MMBB provides macronutrient content information on bottle labels, including calories (kcal/oz) and total (crude) protein (g/dL). PDHM provided to hospitals for inpatients contains no less than 20 kcal/oz and 0.9 g/dL of total (crude) protein. While caloric content is identified as a specific number, the results should be treated as a range and can be used for the basis of fortification. The ranges are indicated below:

- 20kcal/oz includes milk from 19.5 to 21.4kcal/oz
- 22kcal/oz includes milk from 21.5 to 23.4kcal/oz
- 24kcal/oz includes milk from 23.5 to 25.4kcal/oz



PDHM Priorities – NICU, SCN, MotherBaby



Outpatient Distribution Sites



Increase access to pasteurized donor human milk for babies in need of supplementation

Allow continuity when donor milk is used from inpatient postpartum to outpatient care

Serve as a temporary bridge until mother's milk increases



Outpatient Distribution Sites

8 locations including MMBB

Vary by hours

Cost varies \$19-21/bottle*

Listed on website – Receive Milk

Vary by amount dispensed



Allina Health St. Francis Outpatient Pharmacy

1455 St. Francis Ave, Suite 100
Shakopee, MN 55379
952-428-5100

Monday – Friday, 8am – 6pm, Saturday/Sunday, 9am – 2pm
*Closed on some holidays

No appointment necessary, ground floor, walk-in during business hours.

Prescription required for more than 10 bottles.

Fairview Specialty Pharmacy

711 Kasota Ave SE
Minneapolis, MN 55414
612-672-5237

Monday – Friday, 8am – 4pm

Prescription required for more than 10 bottles

- Next-day home delivery for no fee available Tuesday-Friday for orders received Monday-Thursday.
- Orders received on Friday or Saturday are delivered on Monday.
- Pick-up at Kasota site available Monday-Friday, 8am – 4pm.
- Call for information about emergency requests. Call center available M-F, 8am – 7pm & Sat, 8am – 4pm.

Methodist Hospital Breastfeeding Center

Health & Care Store
3931 Louisiana Ave S
St. Louis Park, MN 55426

952-993-3121 (answering machine only for messages)
Monday-Friday, 8am – 5pm, Saturdays (temporarily closed until further notice)

No appointment necessary, ground floor, walk-in during business hours

Prescription required for all purchases.

- Printed script needed from non-Methodist patients.
- Limit of up to 10 bottles/day, 20 bottles/week. Larger requests are usually referred to the Milk Bank.

Minnesota Milk Bank for Babies

2525 Nevada Ave N, Suite 304

Nitamising Gimashkikinaan – Division of Indian Work

1001 E Lake St
Minneapolis, MN 55407
651-325-9267

Monday – Friday, 11am – 3:00pm, call for availability and appointment.

No prescription required – reserved for Indigenous and Latine families with a newborn under 6 weeks as a temporary bridge for parents experiencing low milk supply and financial need. **Nitamising Gimashkikinaan enrollment is required.** See Bridge Bags for more details.

NorthPoint Health & Wellness Food Shelf

For those seeking financial assistance for bridge milk. See Bridge Bags for more details.

2220 Plymouth Ave N
Minneapolis, MN 55411
612-767-9500

Monday – Thursday, 11am – 4pm, Fridays, call 763-670-6302 for availability and appointment.

No prescription required – limit on number of bottles dispensed.

Food shelf enrollment required. See NPFS Enrollment Form.

Ridgeview Human Milk Distribution

Ridgeview Home Medical Equipment Boutique
500 S Maple St
3rd floor of Ridgeview Hospital (by the Birth Center)
Waconia, MN 55387
952-442-2191 ext. 35740

Monday – Friday, 8:30am – 3pm, closed on weekends and holidays

No prescription required – limit of up to 10 bottles, larger volumes will be directed to the Milk Bank.

Appointments or walk-ins are welcome, consider calling ahead for availability.

Twin Cities Birth Center

(formerly Health Foundations)



Bridge Bags

NorthPoint Health & Wellness
Food Pantry

Division of Indian Work
Nitamising Gimishkikinaan

Olmsted County Public Health
Family Home Visiting & WIC





Storing, Handling, and Thawing Donor Milk

Unpack and put frozen bottles of pasteurized donor milk
in a freezer as soon as possible

HAND HYGIENE

Before handling milk or feeding equipment:

- Wash hands with soap and water for 20 seconds, with special attention to the area around and under the fingernails.
- Dry hands with a single-use paper towel.

STORING FROZEN MILK

- Store the milk in a freezer that always keeps ice cream hard (less than 0°F).
- Store in the *back* of a freezer and *NOT* the door to ensure consistent and coldest temperatures.

THAWING FROZEN MILK

- **Never thaw frozen human milk in a microwave oven or hot water.**
- The preferred way to thaw frozen milk is to place it in the refrigerator overnight.
- Frozen milk can be thawed quickly in a container of warm water (not to exceed 98°F). Take care that the water does not touch the lid. When milk is liquid **and** still chilled, dry and refrigerate until use.
- Defrost an entire bottle. Do not pour off partially thawed milk.
- Once the milk is liquid, it may be maintained for up to 48 hours in the **back** of a refrigerator (32-39°F).

HANDLING PASTEURIZED DONOR HUMAN MILK

- Refrigerate milk after thawing in the back of the refrigerator and not the door.
- Thawed milk should **NOT** be left at room temperature.
- Once milk is thawed, it cannot be refrozen.
- Use thawed refrigerated pasteurized donor milk within 48 hours.
- Pasteurized donor milk offered for a feed that is unfinished may be refrigerated and offered for the next feeding. Discard if not finished within 6 hours.

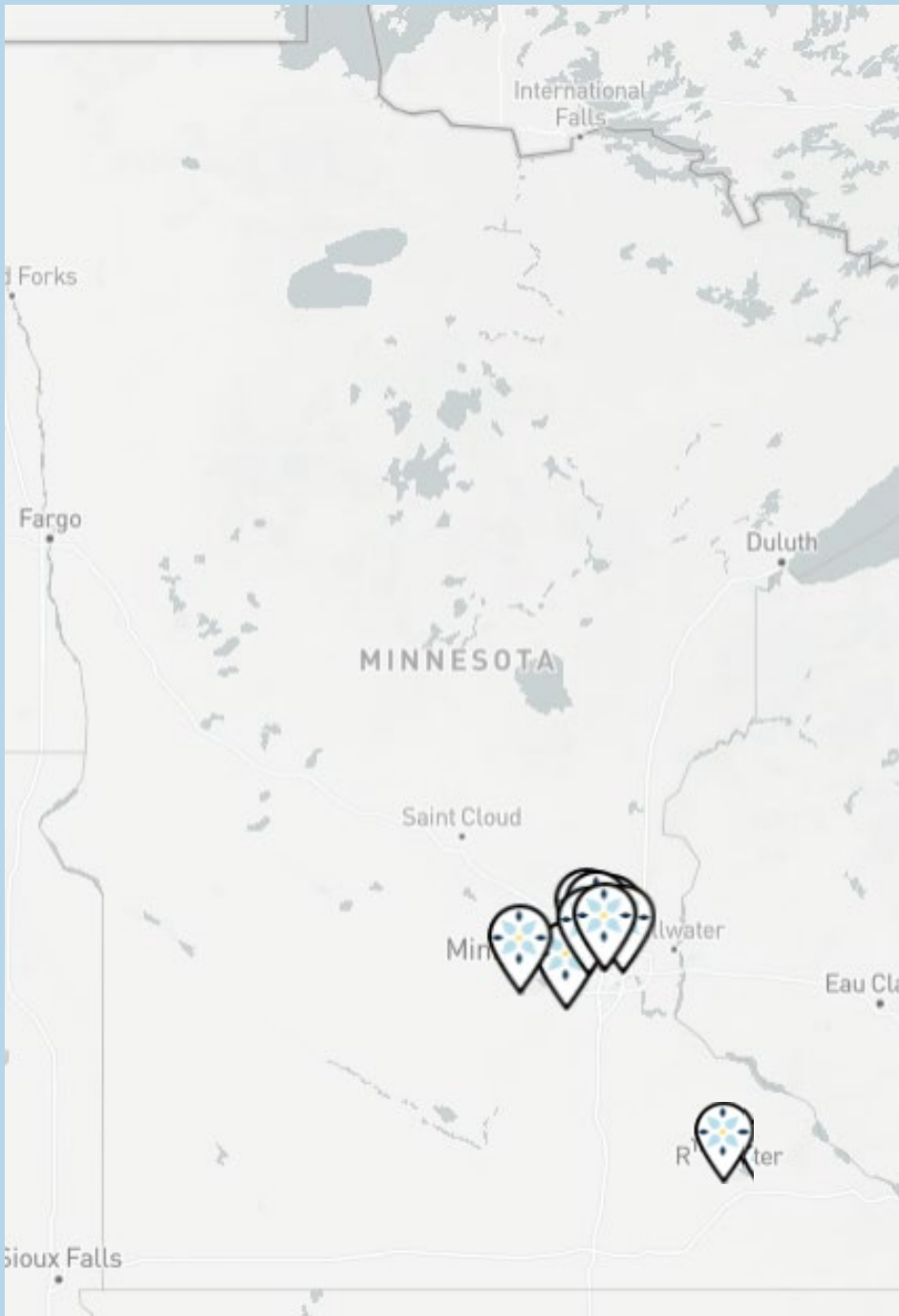
WARMING FOR FEEDING

- Warm an individual feeding by standing the container of milk in warm water or holding under warm water with the cap above the water.
- Before feeding – swirl gently (do not shake) the container to ensure an equal distribution of the nutrients.

Safe Use of Donor Milk

Storage Handling Thawing





Distribution Sites

Only have 8 sites – more needed

- Location should be where babes are born
- Site Agreement (similar to a Depot agreement)
- Freezer – monitored
- Contact person
- Vendor



Starting a Distribution Site



Outpatient Hospital Pharmacies

- Pick up PDHM as leaving hospital or returning for follow-up
- Open more hours, days/week
- Can handle payment
- Can handle perishable products
- Freezer monitoring



OP Distribution Sites – discussion with OP Pharmacy Director

PDHM should be where the babies are born for:

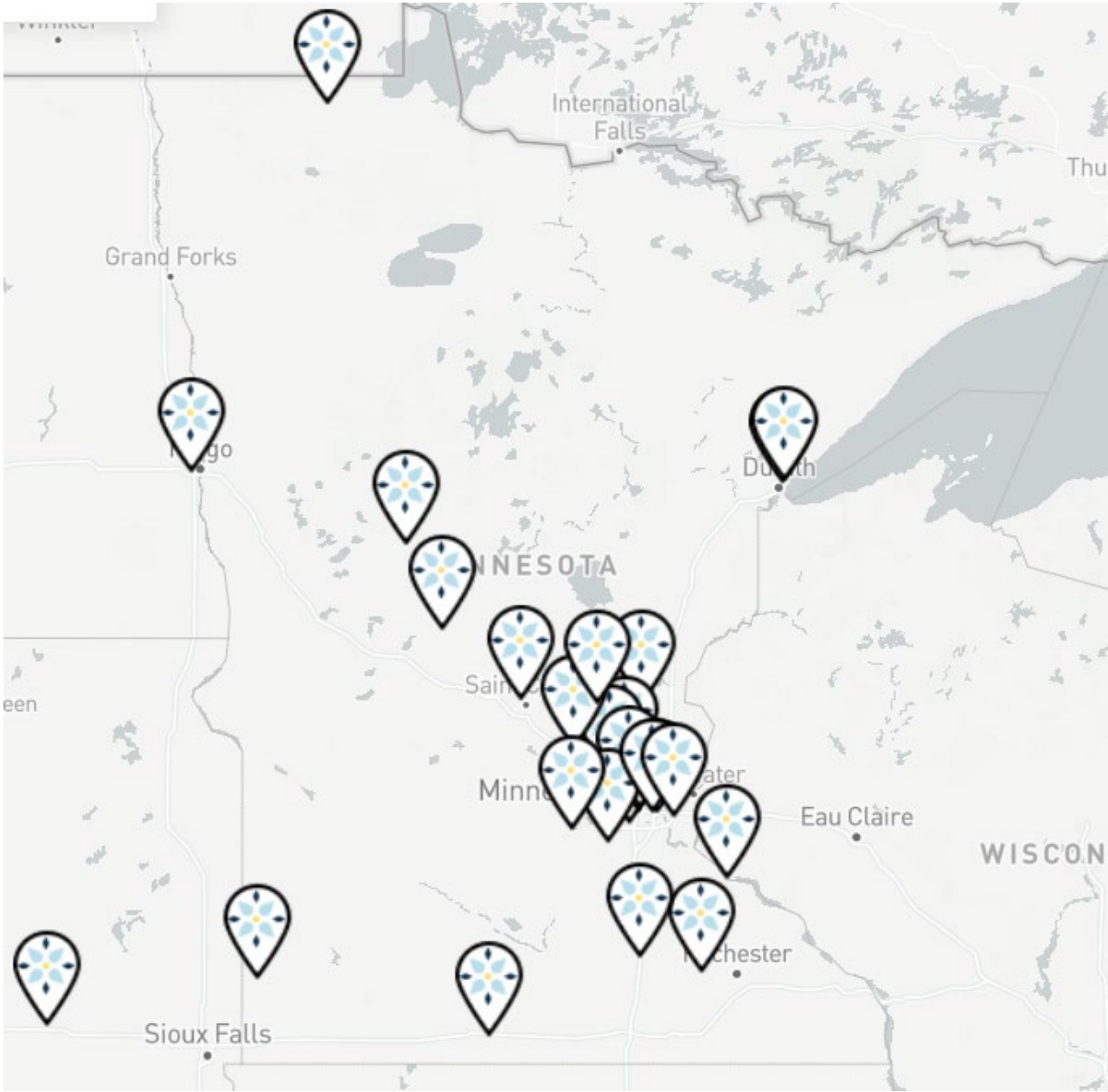
- Continuity
- Temporary bridge until MOM supply increases
- No shipping
- Babies eat 24/7

- Space for a freezer
- Temperature monitoring – during reg hours
- Manage payment at pharmacy
- Annual Reporting
- May limit number of bottles dispensed
- Referral to MMBB for additional bottles

Medical Assistance – MN MA does NOT currently cover PDHM. Medical Directors have started discussion with DHS

- Seeking inpatient and outpatient coverage of PDHM for those with medical condition
- Currently 14 states and DC provide coverage
- Provider authorization and/or prescription needed





Milk Depots

Milk Collection Sites
for
Approved Donors

29 Depots



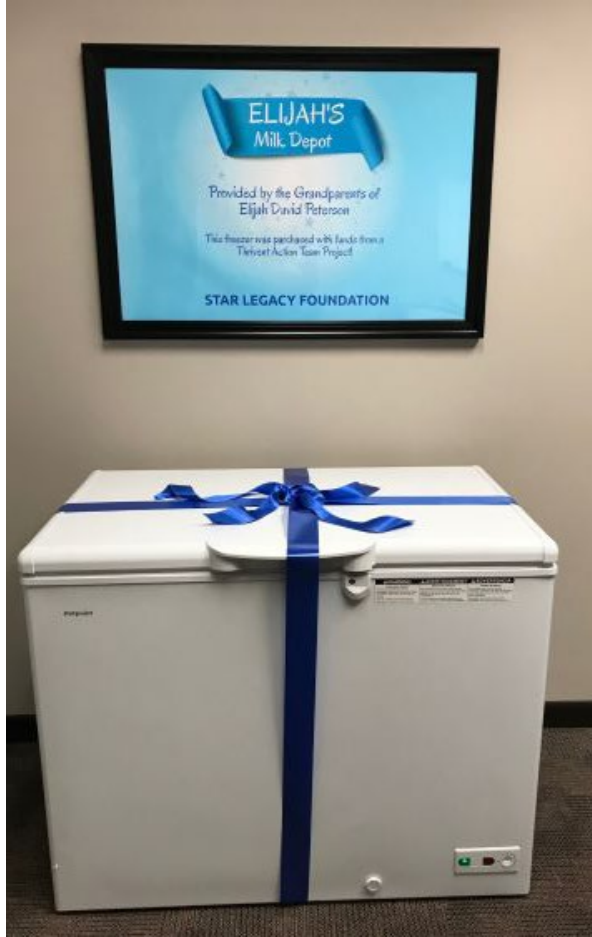


Starting a Depot – Milk Collection Site

- Site type:
 - Clinic
 - Public Health
- Space for a chest freezer
- Monitor temps during business hours
- Volunteer coordinator who
 - assists approved donors with drop offs
 - Contacts the MMBB when freezer has milk to pick up
- Hospitals & Distribution sites have shipping fee waived for PDHM orders.



Depots – Collection Sites



Transfer





Bereavement Program

Our Forever Butterflies

- For those who had an infant loss may choose to donate their milk to the MMBB
- Option to go through donor approval process or donate their milk for research purposes
- Either option – donor receives a butterfly
 - One for quilt
 - One for family
- Can choose to place their butterfly on the quilt
- Event to honor and remember babies who left us too soon – Oct 27, 2023 at MN Landscape Arboretum

[Donating After Loss](#)





Bereavement quilt - summer

- 4 volunteer quilters
- Completed last week
- 15 butterflies to place
- Bereavement event, Oct. 27th



Thank you, Joanne!



Move 2024



Roseville, 9800sf facility

Timeline for move - February 2024

Capital Campaign – Step up for Tiny Feet



Capital Campaign – Step up for Tiny Feet



Walk-in Freezer



Lab space



**Islamic FATWA
discussion about
Pasteurized Donor
Milk use**





MINNESOTA
Milk Bank
FOR BABIES

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Jade

