



## ***Tennessee Breastfeeding Hotline Quarterly Report***

### **Submitted to:**

*State of Tennessee, Department of Health*

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## **Executive Summary**

*January to March 2016*

The Tennessee Breastfeeding Hotline (TBH) is a telephonic breastfeeding support program that is free to nursing mothers, their families and partners, expectant parents, and to health care providers. Participants who call the Tennessee Breastfeeding Hotline speak with a certified lactation professional who collects the mother's and baby's information using self-reporting techniques. This information is gathered for the purpose of making assessments, attending to the client's individual needs, referring the client to available resources and ensuring that the lactation professional is able to follow-up with the client.

Lactation professionals offer strategies to empower clients to breastfeed, identify barriers to successful breastfeeding, and provide techniques to cope with and overcome barriers to breastfeeding. Participants receive individualized counseling for common breastfeeding issues. If the caller's issues are beyond the scope of the lactation professional's expertise, or require treatment, the mother is directed to a health care provider or an outside agency better able to offer the necessary support. Some participants receive a 24 hour follow-up call, if the caller's situation requires additional support and encouragement.

The measurement period for this report is January 2016 through March 2016, but the report may make comparisons to previous quarters. Lactation professionals collected quantitative data through the use of a conditional questioning workflow. These workflow data analyzed characteristics such as breastfeeding trends, call volume and repetition, and patterns in caller's age, race, and ethnicity. After the initial call, TBH also conducts follow-up calls that occur at 4, 8, and 12 weeks to assess self-reported outcomes and client satisfaction with services. Over the course of the measurement period, these data are collected to aid in the construction of a continuous quality improvement plan, vital in ensuring the sustainability and productiveness of the TBH.

Participants receive follow-up calls at 4, 8 and 12 weeks for two purposes. First, it is to encourage the women to continue breastfeeding. In Tennessee, the percentage of breastfed infants that were supplemented with formula before three months was 26.5%.<sup>1</sup> During the 3<sup>rd</sup> quarter, there were a total of 1564 calls to the TBH. When asked about intention to continue breastfeeding, 98% responded that they intended to continue breastfeeding (pg. 21, Table 14A). At four weeks follow-up, 88.2% of the moms reached were still breastfeeding (pg. 21, Table 14B).

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<sup>1</sup> Nutrition, Physical Activity and Obesity Data, Trends and Maps web site. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity and Obesity, Atlanta, GA, 2015. Available at <http://www.cdc.gov/nccdphp/DNPAO/index.html>.

The second purpose of the three follow-up calls is to acquire necessary information used to determine the effectiveness and quality of the program from the viewpoint of the user. For each follow-up call, clients are asked to rate overall services received from the TBH. During this quarter, 98.4% of the callers reached at the 4-week follow-up and 100% of callers reached at the 8-week follow-up reported being satisfied or very satisfied with services received (pg. 23, Table 15). High satisfaction of services remained at 12-week follow-up as well. When asked about the likelihood to recommend TBH services to another person, 99.6% of callers reached at 4 weeks and 100% of callers reached at 8 weeks reported that they were likely to refer someone else to the hotline (pg. 23, Table 15).

Clients are welcome to call the hotline any time they need support, regardless of language barriers. An auto attendant greets callers in both English and Spanish. Interpretive services are available for more than 200 languages. Special operators are available to assist hearing-impaired callers.

### **Data Limitations**

TBH understands and balances the need to provide an important service as well as the need to collect data for evaluation. TBH staff attempt to capture complete information from all of its callers. However, missing data may be present due to TBH's priority to high quality service, repeat callers, or non-response from a caller. Also, TBH is available to a wide range of individuals who may seek breastfeeding support, so some questions may not be applicable to all callers.

### **Introduction**

Breastfeeding is widely accepted as an effective strategy to promote positive health outcomes for both mothers and their babies. Despite growing data on these benefits, 27.4% of babies born in Tennessee in 2012 were never breastfed, according to the Centers for Disease Control and Prevention's most recent National Immunization Survey<sup>2</sup>. By the time their baby reached 6 months of age, the proportion of Tennessee mothers continuing to breastfeed, decreased from 72.6% to 43.1%. Tennessee rates for breastfeeding initiation and six months duration are lower than Healthy People 2020's goal of 81.9% and 60.6%, respectively.

This report was created to examine how the TBH is currently fostering the healthy development of children by promoting and supporting the practice of breastfeeding in Tennessee. By addressing common barriers to breastfeeding in the state, the hotline reinforces the national goal of higher breastfeeding rates, over longer periods of time. Prevalent barriers to breastfeeding include<sup>3</sup>:

- Lack of knowledge
- Lactation problems
- Poor family and social support
- Social norms
- Embarrassment
- Employment and child care
- Health services

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<sup>2</sup> Centers for Disease Control and Prevention National Immunization Survey (NIS), 2012 births. Centers for Disease Control and Prevention, 2014 Breastfeeding Report Card

<sup>3</sup> U.S. Department of Health and Human Services. Executive Summary: The Surgeon General's Call to Action to Support Breastfeeding. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; January 20, 2011.

The TBH addresses these obstacles in a multifaceted approach designed around the individual needs of each client. The primary medium for doing so is through International Board Certified Lactation Consultants (IBCLC) and/or Certified Lactation Counselors (CLC). These lactation professionals answer questions and provide information about:

- Inadequate milk production
- Nursing rejection by baby
- Breast or nipple pain
- Medications and breastfeeding
- Working and breastfeeding
- Breast pumps and rentals
- Breastfeeding in public
- Tennessee laws that relate to breastfeeding
- Weaning
- State-approved online breastfeeding support groups
- State-approved online breastfeeding resource material

The topics of information covered by the lactation professionals acknowledge the barriers to breastfeeding experienced by women nationally.

### **Caller Demographics**

The target population of the TBH includes nursing mothers, their families and partners, expectant parents, and health care providers. During this 3<sup>rd</sup> quarter, 80.3% of the callers were white, 16.1% were black, and 2.2% identified as Asian, American Indian or Alaskan Native, or native Hawaiian/Pacific Islander. Less than 2% of callers were of multiple or mixed race (pg. 15, Table 9B). According to the United States Census Bureau, 78.9% of Tennessee residents are white, 17.1% are black, and 2.2% are Asian, American Indian or Alaskan Native, or native Hawaiian/Pacific Islander. Close to 2% of Tennessee residents are of multiple or mixed race.<sup>4</sup> Hispanic women comprised 5.6% of the callers for the 3<sup>rd</sup> quarter (pg. 16, Table 9C). When examining age, the hotline received the highest proportion of calls (39.7%) from callers between the ages of 26 and 30 (pg. 15, Table 9A).

### **Notable Findings**

One unique call received this quarter involved allergies. A breastfeeding mother was attempting to slowly re-introduce eggs into her diet due to a history of allergic reactions to eggs. However, her nine-month-old had an anaphylactic reaction and was rushed to the Emergency Department. After discharge, the mother was instructed to pump and dump her expressed breast milk. She called the TBH to inquire how long she needed to continue to pump and dump her breast milk. The mother was referred to InfantRisk.com for more information. In addition, TBH spoke with the Medical Consultant, Dr. Allison Stiles and Community Advisory Board member Ginger Carney. Both Dr. Stiles and Ms. Carney agreed that the mother should be able to breastfeed after 24 hours. A 24 hour follow up was attempted; however, there was no response.

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<sup>4</sup> U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits Last Revised: Wednesday, 14-Oct-2015 10:53:57 EDT

## Conferences and Continued Education

On January 29-30<sup>th</sup>, the Le Bonheur Children's Hospital's Annual Newborn Conference was held at the Westin Hotel in Memphis. The TBH poster originally created for the Association of Maternal & Child Health Programs (AMCHP) was displayed and presented by Dr. Michael Warren and Helen Scott. In addition, the Shelby County Breastfeeding Coalition (SCBC), under the leadership of Dr. Stiles, had a booth at this event, where TBH magnets and law cards were distributed.

On February 1<sup>st</sup>, the TBH poster was displayed at Le Bonheur Children's Hospital in preparation for the Magnet status site visit. The TBH poster received positive feedback from the Magnet Team.

On February 5<sup>th</sup>, a TBH staff meeting was held at Le Bonheur Community Health and Well-Being (LCHWB). Sharon Harris, the Nursing Director of the Maternal Child Division of Le Bonheur Children's Hospital was in attendance with our team and gave us the update on the Magnet status site visit.

On February 17<sup>th</sup>, TBH held its Community Advisory (CAB) meeting at Le Bonheur Community Health and Well-Being. TBH was pleased to welcome staff from the Tennessee Department of Health, including Amy Riggins, State Breastfeeding Coordinator, Kristy Gentry, Peer Counselor Coordinator for WIC, Sierra Mullen, epidemiologist. At this meeting, TBH displayed the revised categories that summarized the reasons for calling.

On February 22<sup>nd</sup>, Dr. Warren, Ms. Madubonwu, and TBH staff members Elizabeth Pletz attended the Le Bonheur Children's Hospital's Roundtable Panel. The panel was hosted by Le Bonheur's Pediatrician in Chief, Jon McCullers and was also attended by Shelby County Health Department director Ms. Haushalter, Regional One NICU Director Kelley Smith, and March of Dimes Representative Valencia Nelson. State Representative Steve Cohen opened and closed the discussion.

On February 26<sup>th</sup>, Ms. Madubonwu and Ms. Scott attended the Breastfeeding Strategic Planning Meeting at the Tennessee Hospital Association (THA) in Nashville, TN. Melissa Blair and Dr. Warren led the group that represented stakeholders from across the state, incorporating a new concept of strategic planning.

On March 6-8<sup>th</sup>, Ms. Madubonwu and Ms. Scott attended the Annual Tennessee Initiative of Perinatal Quality Care (TIPQC) in Franklin, TN. The TBH poster was displayed during the poster presentation. We received updated, evidence-based information from keynote speakers and workshops to share with the TBH staff. Ms. Madubonwu and Ms. Scott also attended the Mother's Milk Bank of TN planning committee meeting that shared information about the Milk Depots at Nashville General Hospital and Memphis Regional One Medical Center (opening at the end of March). Mothers who call the TBH wanting to donate their excess breastmilk can now be referred to these two locations in TN.

On March 15-16<sup>th</sup>, an IBCLC review course was held at the University of Memphis. This course was presented by Lactation Education Consultants, to prepare for the exam (held twice a year). Ten TBH staff members attended this review course.

On March 30<sup>th</sup>, Le Bonheur held its annual Pediatric Research Day. TBH evaluator August Marshall presented the TBH poster at this event.

Finally, as part of TBH's continuous improvement, as well as meeting internal goals such as those set by the Associate Feedback Survey and Magnet Status requirements, TBH has decided to use staff meetings and conference calls as part of its continuing education. A staff member will choose an educational topic and share a current article to present and discuss at TBH's regular meetings. This helps TBH stay current and provides evidence-based information to share with TBH callers.

### **Call Report Changes**

Since the previous quarterly report, we have:

- Added "Breastfeeding Device/Equipment (e.g. nipple shields)" to "Primary Reason for Calling" and "Additional Reasons for Calling." This will be categorized under "breastfeeding management."

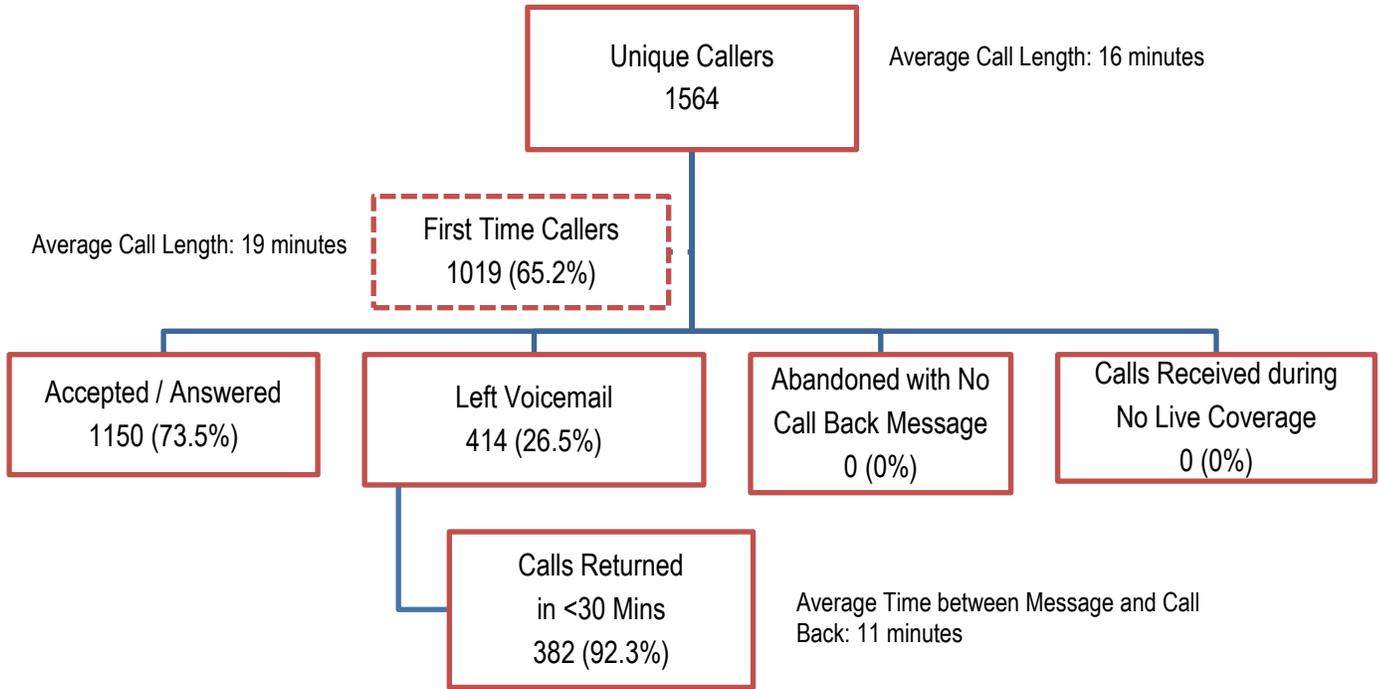
### **TBH Staff Updates**

- TBH staff member Victoria Roselli IBCLC has moved to Arizona but continues to work for the TBH. Additionally, TBH has hired two new staff members this quarter: Tuwanna McDaniel, BSN, RN, CLC in January and Julie Flynn, RN, CLC in March.

## Tables and Figures

### (1) Call Data

Figure 1. Tennessee Breastfeeding Hotline Call Flow, 3<sup>rd</sup> Quarter (January - March 2016)



The flowchart above illustrates calls received to the Tennessee Breastfeeding Hotline from January through March 2016. For the 3<sup>rd</sup> Quarter of SFY 2016, the TBH had 1564 unique callers. Of those total unique callers, about 1019 (65.2%) were first time callers to the TBH. Average call length for all calls was 16 minutes; first-time callers were slightly longer (19 minutes).

Of all calls received, 1150 (73.5%) were answered and accepted live by TBH staff and 414 (26.5%) callers left a voicemail for TBH staff. About 92% of calls were returned within 30 minutes of initial voicemail.

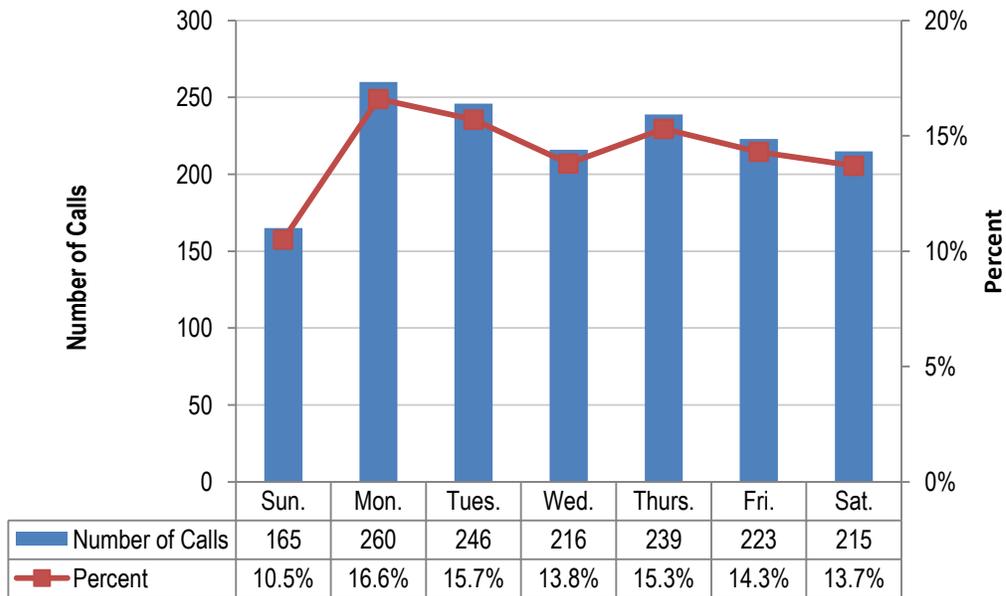
**(2) Call Volume & Time**

**Table 2A. Call Volume, by Time of Day (N=1564)**

Time of Call	January	February	March	3 <sup>rd</sup> Quarter Totals	3 <sup>rd</sup> Quarter Percent
12 AM - 7 AM	41	36	36	113	7.2%
8 AM - 12 PM	187	159	160	506	32.4%
1 PM - 6 PM	206	213	235	654	41.8%
7 PM - 11 PM	101	86	104	291	18.6%
<b>TOTALS:</b>	<b>535</b>	<b>494</b>	<b>535</b>	<b>1564</b>	<b>100%</b>

During the 3<sup>rd</sup> quarter, the majority of calls (41.8%) were received between 1 PM and 6 PM. About 74% of calls were received during the traditional workday (8AM – 6 PM).

**Figure 2. Call Volume, by Day of Week (N=1564)**



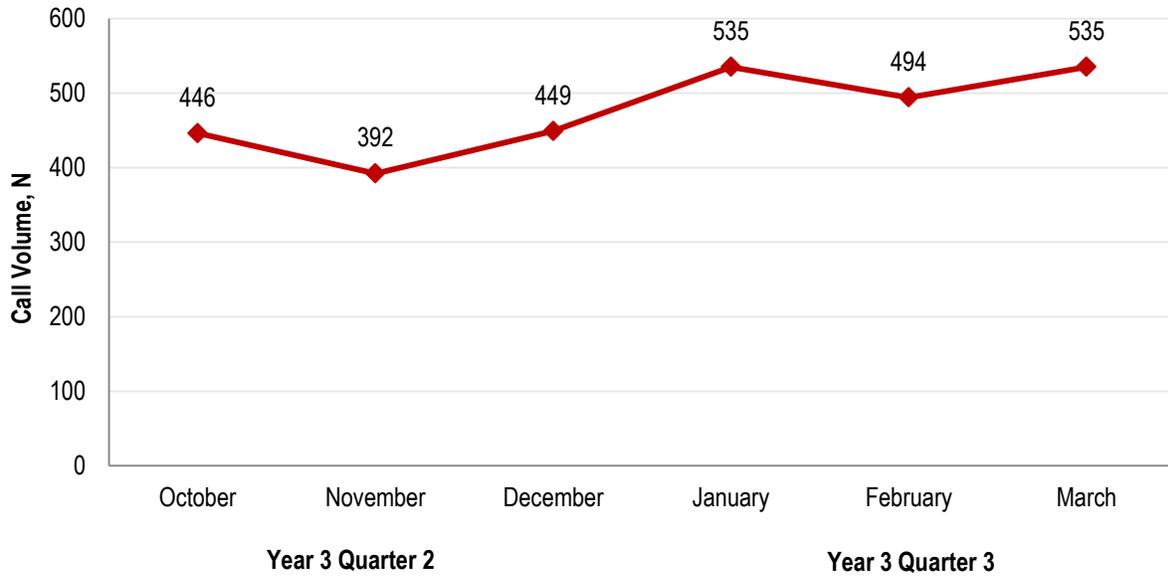
During the 3<sup>rd</sup> quarter, TBH experienced its highest call volume on Mondays (16.6%). Call volume was lowest on Sundays (10.5%).

**Table 2B. Call Volume, by Month (N=1564)**

Month	Number of Calls	Percent
January	535	34.2%
February	494	31.6%
March	535	34.2%
<b>TOTALS:</b>	<b>1564</b>	<b>100%</b>

Call volume within the 3<sup>rd</sup> quarter was highest in both January and March, with both months recording a record number of calls.

**Figure 2. Call Volume Trend, Current Quarter (Y3Q3) Compared to Previous Quarter (Y3Q2)**



Compared to the previous quarter (Y3, Q2), TBH experienced a 21.5% increase in call volume.

**(3) Call Length**

**Table 3. Number and Proportion of Calls within 3<sup>rd</sup> Quarter, by Call Length (N=1564)**

Length of Call	3 <sup>rd</sup> Quarter Totals	3 <sup>rd</sup> Quarter Percent
0-9 minutes	614	39.3%
10-19 minutes	649	41.5%
20-29 minutes	212	13.6%
30-39 minutes	67	4.3%
40-49 minutes	14	0.9%
50-59 minutes	4	0.3%
1 hour or more	4	0.3%
<b>TOTALS:</b>	<b>1564</b>	<b>100%</b>

Over 80% of calls lasted between 0 and 19 minutes during the 3<sup>rd</sup> quarter. Four calls lasted more than an hour. These longer calls are usually due to the certified lactation professional having to utilize a language line and interpreter, which can significantly extend call time.

**(4) Referrals****Table 4A. Referral Source Reported by Caller (N=1246)**

Referral Source	January	February	March	3 <sup>rd</sup> Quarter Total	3 <sup>rd</sup> Quarter Percent
Hospital	315	304	291	910	73.0%
Website/Search Engine	46	46	44	136	10.9%
Provider's office	29	29	44	102	8.2%
WIC clinic	24	19	21	64	5.1%
Family or Friend	6	6	8	20	1.6%
Brochure	3	0	6	9	0.7%
Billboard	4	1	0	5	0.4%
<b>Total</b>	<b>427</b>	<b>405</b>	<b>414</b>	<b>1246</b>	<b>100%</b>

Not applicable n=318

During the call, clients were asked how they heard about the TBH. Hospital was the most common referral source, referring exactly 73% of callers, followed by information found on a website or via search engine (10.9%).

**Table 4B. Number and Proportion of Callers Referred to Provider by the Hotline (N=1541)**

Referral Status	January	February	March	3 <sup>rd</sup> Quarter Total	3 <sup>rd</sup> Quarter Percent
Referred to own provider	56	35	25	116	7.5%
Referred to other provider in the vicinity	0	0	2	2	0.1%
No referral given	473	455	495	1423	92.3%
<b>TOTALS:</b>	<b>529</b>	<b>490</b>	<b>522</b>	<b>1541</b>	<b>100%</b>

Missing n=23

The TBH captured information about whether the caller was referred to a provider for their issue. Only 7.6% of callers were referred to a provider, predominantly their own.

**Table 4C. Number and Proportion of Callers Referred for Immediate Medical Attention (N=1518)**

Medical Reference Given	January	February	March	3rd Quarter Totals	3rd Quarter Percent
No	506	473	514	1493	98.4%
Yes	10	8	7	25	1.6%
<b>TOTALS:</b>	<b>516</b>	<b>481</b>	<b>521</b>	<b>1518</b>	<b>100%</b>

Not applicable n=46

Only 25 (1.6%) callers were advised by the certified lactation professionals to seek immediate medical attention. Reasons that the mother would have been advised could include if the mother had symptoms of mastitis or a yeast infection, or any issue above and beyond the scope of practice.

**Table 4D. Number and Proportion of Callers Referred to a Local Lactation Professional (N=1440)**

Referred to a Lactation Specialist	January	February	March	3rd Quarter Totals	3rd Quarter Percent
No	438	408	444	1290	89.6%
Yes	58	45	47	150	10.4%
<b>TOTALS:</b>	<b>496</b>	<b>453</b>	<b>491</b>	<b>1440</b>	<b>100%</b>

Not applicable n=124

During the 3<sup>rd</sup> quarter, the TBH advised 150 (10.4%) of callers to seek out a local lactation professional.

**(5) First Time or Repeat Caller**

**Table 5. TBH Caller by Call Type (N=1564)**

Caller Type	January	February	March	3rd Quarter Total	3rd Quarter Percent
First Time	354	318	347	1019	65.2%
Repeat Caller	181	176	188	545	34.8%
<b>TOTALS:</b>	<b>535</b>	<b>494</b>	<b>535</b>	<b>1564</b>	<b>100%</b>

The majority (65.2%) of calls received were from first time callers.

**(6) Interpretive Services**

**Table 6. Use of Interpretive Services (N=1564)**

Interpretive Services	January	February	March	3rd Quarter Total	3rd Quarter Percent
Not Used	525	482	532	1539	98%
Used	10	12	3	25	2%
<b>TOTALS:</b>	<b>535</b>	<b>494</b>	<b>535</b>	<b>1564</b>	<b>100%</b>

Only 25 (2%) of callers required interpretive services. Of those 25 calls, 18 were for Spanish-speaking callers, 2 were for Arabic-speaking callers. The remaining 5 calls did not denote the language used.

**(7) Caller Location**

**Table 7. Number and Proportion of Calls, by TN Department of Health Regions (N=1328)**

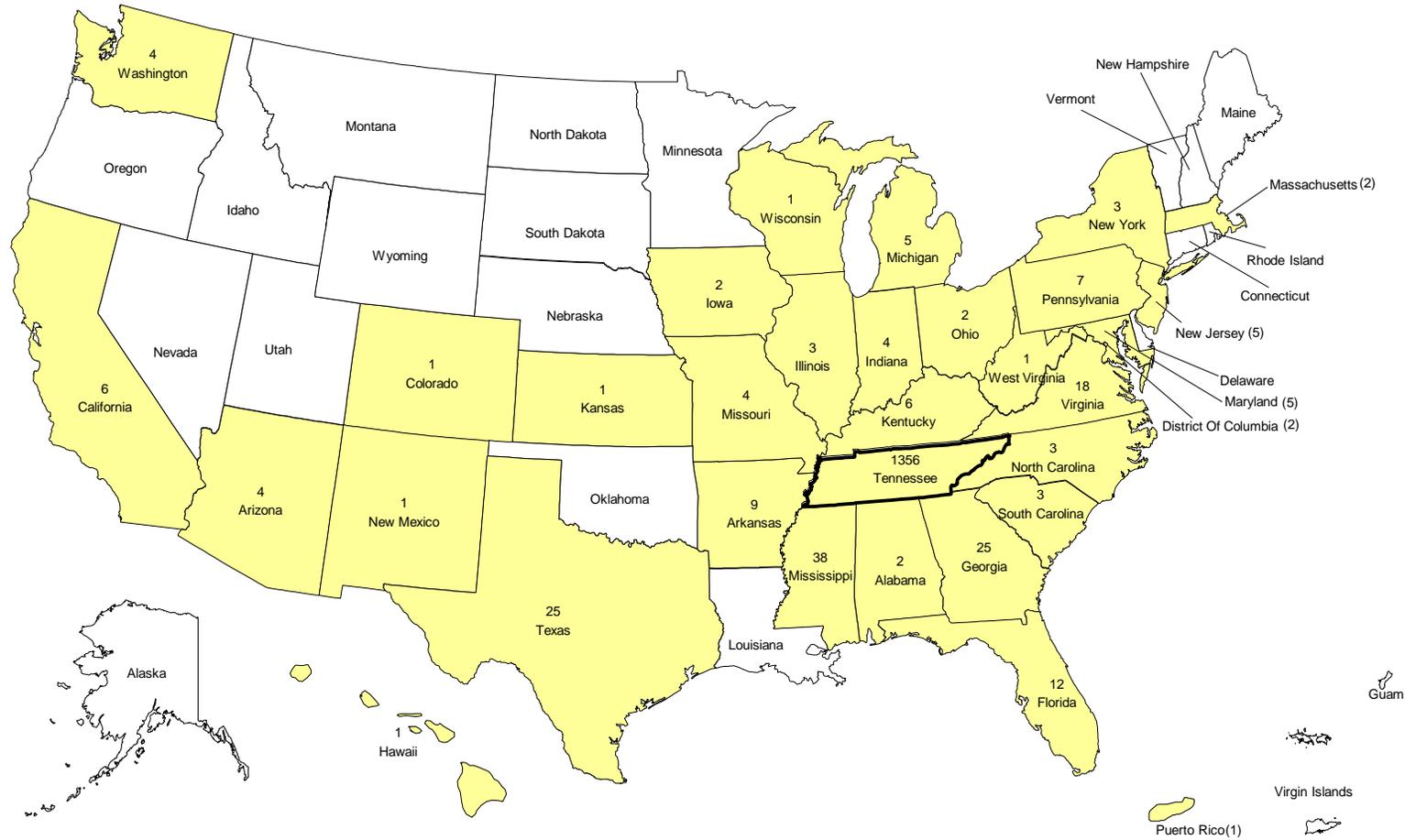
Region	Total Calls	Percent
Davidson	296	22.3%
Shelby	275	20.7%
Mid-Cumberland	254	19.1%
Knox	74	5.6%
Hamilton	70	5.3%
East	68	5.1%
West	61	4.6%
South Central	60	4.5%
Upper Cumberland	55	4.1%
Southeast	46	3.5%
Sullivan	35	2.6%
Northeast	23	1.7%
Madison	11	0.8%
<b>TOTALS:</b>	<b>1328</b>	<b>100.0%</b>

Missing n=28

The table above depicts call volume by the Tennessee Department of Health regions during the 3<sup>rd</sup> quarter. There were a total of 1356 (86.7%) calls from Tennessee residents. Of callers who reported a county of residence, approximately 62% of TN resident calls to the TBH were from the Davidson, Shelby, and Mid-Cumberland regions.



Figure 4. Call Volume, by Caller's State of Residence, January to March 2016



Overall, TBH received calls from 181 unique counties across multiple states.

**(8) Caller's Relationship to Mother**

**Table 8. Number and Proportion of Calls, by Caller's Relationship to Mother (N=1531)**

Relationship to Mother	January	February	March	3rd Quarter Totals	3rd Quarter Percent
Self	494	452	498	1444	94.3%
Spouse or partner	16	11	14	41	2.7%
Family or household member	9	10	10	29	1.9%
Healthcare provider	8	6	3	17	1.1%
<b>TOTALS:</b>	<b>527</b>	<b>479</b>	<b>525</b>	<b>1531</b>	<b>100%</b>

Not applicable n=33

During the 3<sup>rd</sup> quarter, the majority (94.3%) of callers to the TBH were the mothers.

**(9) Maternal Age, Race, and Ethnicity**

**Table 9A. Number and Proportion of Calls, by Maternal Age (N=1181)**

Maternal Age	January	February	March	3rd Quarter Totals	3rd Quarter Percent
< 15	0	0	2	2	0.2%
15 - 17	3	1	0	4	0.3%
18 - 20	17	10	16	43	3.6%
21 - 25	89	82	89	260	22.0%
26 - 30	164	154	151	469	39.7%
31 - 35	107	96	107	310	26.2%
36 - 40	25	27	26	78	6.6%
41 - 45	6	7	0	13	1.1%
≥ 46	1	0	1	2	0.2%
<b>TOTALS:</b>	<b>412</b>	<b>377</b>	<b>392</b>	<b>1181</b>	<b>100%</b>

Missing or Not applicable n=383

During the 3<sup>rd</sup> quarter, call volume was highest (39.7%) among mothers between 26 and 30 years.

**Table 9B. Number and Proportion of Calls, by Maternal Race (N=1156)**

Maternal Race	January	February	March	3rd Quarter Total	3rd Quarter Percent
White	330	295	303	928	80.3%
Black	62	62	62	186	16.1%
Asian	5	7	10	22	1.9%
Multiple Races	7	2	7	16	1.4%
American Indian/Alaskan Native	0	0	4	4	0.3%
Native Hawaiian/Pacific Islander	0	0	0	0	0.0%
<b>TOTALS:</b>	<b>360</b>	<b>360</b>	<b>385</b>	<b>1156</b>	<b>100%</b>

Missing or Not applicable n=408

TBH callers were asked to report maternal race during initial call. Of those who reported race, 80.3% were white followed by black (16.1%).

**Table 9C. Number and Proportion of Calls, by Maternal Ethnicity (N=1339)**

Ethnicity	January	February	March	3rd Quarter Total	3rd Quarter Percent
Not Hispanic	444	402	418	1264	94.4%
Hispanic	23	30	22	75	5.6%
<b>TOTALS:</b>	<b>467</b>	<b>432</b>	<b>440</b>	<b>1339</b>	<b>100%</b>

Not applicable n=225

Mother's ethnicity was reported for 1339 (85.6%) calls. Of those with ethnicity documented, 75 (5.6%) callers identified as Hispanic/Latina.

**(10) Mother's Pregnancy History**

**Table 10A. Number and Proportion of Calls, by Caller's Pregnancy History (N=629)**

Number of Prior Pregnancies	January	February	March	3rd Quarter Total	3rd Quarter Percent
1	163	128	121	412	65.5%
2	47	48	42	137	21.8%
3	22	13	17	52	8.3%
4	7	4	5	16	2.5%
5	3	2	1	6	1.0%
6	1	1	2	4	0.6%
7	1	0	0	1	0.2%
8	0	0	0	0	0.0%
9	1	0	0	1	0.2%
10 +	0	0	0	0	0.0%
<b>TOTALS</b>	<b>245</b>	<b>196</b>	<b>188</b>	<b>629</b>	<b>100%</b>

Missing n=935

Pregnancy history was captured for 629 (40.2%) of callers. Approximately 66% of women reported one prior pregnancy.

**Table 10B. Number and Proportion of Calls, by Prior Live Births (N=813)**

Number of Prior Live Births	January	February	March	3rd Quarter Total	3rd Quarter Percent
1	206	178	166	550	67.7%
2	59	51	60	170	20.9%
3	30	18	20	68	8.4%
4	7	1	9	17	2.1%
5	1	2	2	5	0.6%
6	0	0	2	2	0.2%
7	0	0	0	0	0.0%
8	0	0	0	0	0.0%
9	1	0	0	1	0.1%
10 +	0	0	0	0	0.0%
<b>TOTALS:</b>	<b>304</b>	<b>250</b>	<b>259</b>	<b>813</b>	<b>100%</b>

Missing n=751

Table 10B shows the number and proportion of calls by prior live births of the caller. The number of prior live births was documented for 813 (51.9%) callers. During this quarter, about 67% of women had only one previous live birth.

**Table 10C. Number and Proportion of Calls, by Infant’s Gestational Age\* at Birth (N=1163)**

Gestational Age	January	February	March	3rd Quarter Total	3rd Quarter Percent
< 37 weeks (pre-term)	23	16	38	77	6.6%
37 to <39 weeks (early term)	129	101	59	289	24.8%
39 to <41 weeks (full term)	241	227	271	739	63.5%
41 to <42 weeks (late term)	15	23	18	56	4.8%
> 42 weeks (post term)	0	1	1	2	0.2%
<b>TOTALS:</b>	<b>408</b>	<b>368</b>	<b>387</b>	<b>1163</b>	<b>100%</b>

\*Recommended classifications from American College of Obstetricians and Gynecologists

Missing n=401

Most (63.5%) of mother reported delivering at full-term. Only 6.6% reported delivering prematurely.

**(11) Baby's Birth Information****Table 11A. Number and Proportion of Calls, by Infant's Age during Initial Call (N=1217)**

Age of Infant	January	February	March	3rd Quarter Totals	3rd Quarter Percent
< 1 week	112	87	78	277	22.8%
1 week - < 1 month	117	86	115	318	26.1%
1 - < 3 months	81	90	84	255	21.0%
3 - < 6 months	68	63	66	197	16.2%
6 - < 9 months	26	25	29	80	6.6%
9 - < 12 months	10	18	17	45	3.7%
12 - 18 months	14	11	7	32	2.6%
19 - 24 months	6	4	3	13	1.1%
<b>TOTALS:</b>	<b>434</b>	<b>384</b>	<b>399</b>	<b>1217</b>	<b>100%</b>

Missing n=347

Callers were asked to indicate the age of infant during initial call to the TBH. Almost half (48.9%) of calls were made when the baby was less than 1 month old.

**Table 11B. Number and Proportion of Calls, by Delivery Method (N=579)**

Delivery Method	January	February	March	3rd Quarter Totals	3rd Quarter Percent
Vaginal	170	131	125	426	73.6%
Cesarean	51	56	46	153	26.4%
<b>TOTALS:</b>	<b>221</b>	<b>187</b>	<b>171</b>	<b>579</b>	<b>100%</b>

Missing n=985

Table 11B shows the number and proportion of calls by delivery method during the 3<sup>rd</sup> quarter. Almost three-quarters (73.6%) of women indicated that they had a vaginal delivery. Six of the callers during this quarter were pregnant at time of the call (delivery method recorded as 'not yet born'). These instances were documented but were excluded with regard to the table above.

**(12) Feeding Information****Table 12A. Number and Proportion of Calls, by Breastfeeding Status (N=745)**

Breastfeeding Status	January	February	March	3rd Quarter Totals	3rd Quarter Percent
Breastfeeding exclusively	150	131	102	383	51.4%
Both breastfeeding and pumping	60	48	49	157	21.1%
Breastfeeding with supplemental nutrition	73	45	35	153	20.5%
Pumping exclusively	15	18	19	52	7.0%
<b>TOTALS:</b>	<b>298</b>	<b>242</b>	<b>205</b>	<b>745</b>	<b>100%</b>

Missing n=819

TBH collected information about the breastfeeding status of mothers during initial call. Breastfeeding status was reported for 745 (47.6%) callers. Of the mothers who disclosed their breastfeeding status, just over half (51.4%) were breastfeeding exclusively.

**Table 12B. Number and Proportion of Callers Breastfeeding within 24 Hours of Delivery (N=568)**

Breastfeeding within 24 Hours?	January	February	March	3rd Quarter Totals	3rd Quarter Percent
Yes	226	170	155	551	97.0%
No	9	6	2	17	3.0%
<b>TOTALS:</b>	<b>235</b>	<b>176</b>	<b>157</b>	<b>568</b>	<b>100%</b>

Missing n=996

Table 12B shows number and proportion of callers who indicated breastfeeding within 24 hours of delivery. Of the 568 callers who responded, 551 (97%) of mothers began breastfeeding their baby within 24 hours of birth.

### (13) Reasons for Calling

**Table 13A. Number and Proportion of Calls, by Primary Reason for Call (N=1431)**

Reasons for Calling	January	February	March	3rd Quarter Total	3rd Quarter Percent
Breast-Related Problems	109	92	101	302	21.1%
Maternal Health Behaviors	80	83	99	262	18.3%
Lactation or Milk Concerns	72	58	72	202	14.1%
Breastfeeding Management	56	64	39	159	11.1%
Infant Health Concerns	61	53	41	155	10.8%
Milk Expression	38	20	39	97	6.8%
Breastfeeding Technique	29	26	27	82	5.7%
Infant Health Behaviors	25	22	22	69	4.8%
Maternal Health Concerns	16	12	18	46	3.2%
Medical Condition (Infant)	6	9	12	27	1.9%
Supplemental Nutrition	5	6	6	17	1.2%
Breastfeeding Support	4	7	5	16	1.1%
<b>TOTALS:</b>	<b>501</b>	<b>451</b>	<b>479</b>	<b>1431</b>	<b>100.0%</b>

Missing n=133

Callers were asked to indicate their primary reason for calling the TBH, which TBH categorized into the reasons above (please see Appendix A for classification of individual reasons). During this quarter, 21.1% of calls were regarding breast-related problems (e.g. breast or nipple pain, breast engorgement, or sore nipples) followed by maternal health behaviors (18.3%). The top five individual reasons for calling the TBH included: medications and breastfeeding, not making enough milk, breast/nipple pain, breast engorgement, and appropriate feeding by age/weight.

**Table 13B. Number and Proportion of Calls: Top 10 Additional Reasons for Calling (N=109)**

<b>Top Additional Reasons for Calling</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>3rd Quarter Total</b>	<b>3rd Quarter Percent</b>
Not making enough milk	11	1	4	16	15.5%
Pumping	4	0	10	14	13.6%
Breast engorgement	8	3	2	13	12.6%
Breast or nipple pain	5	3	3	11	10.7%
Overactive letdown/too much milk	6	0	3	9	8.7%
Sore nipples	5	3	1	9	8.7%
Fussiness/colic	3	2	3	8	7.8%
Medications and breastfeeding	2	2	4	8	7.8%
Working and breastfeeding	2	4	2	8	7.8%
Inability to latch	4	2	1	7	6.8%
<b>TOTALS:</b>	<b>50</b>	<b>20</b>	<b>33</b>	<b>103</b>	<b>100.0%</b>

In addition to the primary reason for calling, lactation professionals noted additional questions that were brought up during the course of the call. Many mothers did not bring up additional questions. However, of those who did (N=103), top concerns were related to not making enough milk (15.5%) and pumping (13.6%).

**(14) Outcomes at Follow-Up**

At the end of each initial call to the TBH, the lactation professionals asked the callers if they intended to continue to breastfeed (Results in Table 14A). Continuation of breastfeeding was also asked during the 4-week, 8-week, and 12-week follow up calls (Table 14B).

Also, the lactation professionals asked the caller if they felt more comfortable and/or confident with breastfeeding by the end of the initial call (pg. 22, Table 14D). Similar to the question regarding the continuation of breastfeeding, caller confidence and comfort was also assessed by TBH staff at 4-week, 8-week, and 12-week follow-up calls (pg. 22, Table 14E).

**Table 14A. Number and Proportion of Calls, by Intention to Continue Breastfeeding (N=1380)**

<b>Intention to Continue Breastfeeding</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>3rd Quarter Totals</b>	<b>3rd Quarter Percent</b>
Yes	464	422	467	1353	98.0%
No	9	11	7	27	2.0%
<b>TOTALS:</b>	<b>473</b>	<b>433</b>	<b>474</b>	<b>1380</b>	<b>100%</b>

Not applicable n =184

When asked about the intention to continue breastfeeding, 1353 (98%) of callers intended to continue breastfeeding at the end of the initial call.

**Table 14B. Caller’s Breastfeeding Status, by Follow-Up Period**

<b>Follow-Up Period</b>	<b>Calls Attempted</b>	<b>Not Reached</b>	<b>Reached N (%)</b>	<b>Answered Question</b>	<b>Still Breastfeeding N (%)</b>
4 week	912	615	297 (32.5%)	279	246 (88.2%)
8 week	820	578	242 (29.5%)	228	181 (79.4%)
12 week	699	544	155 (22.2%)	150	120 (80%)

**Notes:** Reached = # of callers reached out of # of calls attempted

Still breastfeeding = # of callers still breastfeeding out of # of callers who answered the question

During the 3rd quarter, TBH attempted a total of 2,431 calls to clients to follow-up about breastfeeding status; only 694 (28.5%) of callers were reached for follow-up.

At the 4-week follow-up, 246 (88.2%) of callers were still breastfeeding. This proportion drops by almost 10% for callers during the 8-week follow-up (79.4%). Reasons reported by the mothers who ceased breastfeeding during the weeks in between the initial call and the follow up included mother returning to work, the baby refusing to latch, stress, not making enough milk, medications, and lack of support.

**Table 14C. Breastfeeding: Exclusive or Supplemental, by Follow-Up Period**

Follow-Up Period	Number Still Breastfeeding (from Table 14B)	Answered Question	Supplemented N (%)	Exclusive N (%)
4 week	246	212	30 (14.2%)	182 (85.8%)
8 week	181	161	30 (18.6%)	131 (81.4%)
12 week	120	112	23 (20.5%)	89 (79.5%)

Callers who indicated that they were still breastfeeding during the follow-up call (Table 14B) were then asked if they were breastfeeding exclusively or with supplemental nutrition.

Of the callers who indicated that they were still breastfeeding, more mothers were exclusively breastfeeding their infants during each follow-up period, though supplemented feedings did rise during each follow up period.

**Table 14D. Number and Proportion of Callers Confident or Comfortable Breastfeeding at End of Initial Call (N=1366)**

Comfort with Breastfeeding	January	February	March	3rd Quarter Totals	3rd Quarter Percent
Yes	467	425	460	1352	99.0%
No	3	4	7	14	1.0%
<b>TOTALS:</b>	<b>470</b>	<b>429</b>	<b>467</b>	<b>1366</b>	<b>100%</b>

Not applicable n=198

TBH staff reported that almost all (99%) callers had increased comfort and confidence with breastfeeding by the end of their interaction.

**Table 14E. Caller's Confidence and Comfort with Breastfeeding, by Follow-Up Period**

Follow-Up Period	Calls Attempted	Not Reached	Reached N (%)	Answered Question	Improved N (%)	Did Not Improve N (%)
4 week	912	615	297 (32.5%)	207	197 (95.2%)	10 (4.8%)
8 week	820	578	242 (29.5%)	162	154 (95.1%)	8 (4.9%)
12 week	699	544	155 (22.2%)	114	109 (95.6%)	5 (4.4%)

**Notes:** Reached = # of callers reached out of # of calls attempted;

Improved= # of callers with improved confidence or confidence breastfeeding out of # of callers who answered the question

At the 4-week follow-up, 197 (95.2%) of callers reported increased confidence and comfort with breastfeeding. Similar rates of confidence and comfort remained for all three follow-up periods.

**(15) Client Satisfaction with Services**

Clients rated TBH services at different intervals: 4 weeks, 8 weeks, and 12 weeks after services had been rendered. Callers were asked to rate their overall satisfaction with hotline services and indicate their likelihood to recommend TBH services to another person.

**Table 15. Caller’s Satisfaction and Likelihood to Recommend the TN Breastfeeding Hotline, by Follow-Up Period**

Follow-Up Period	Calls Attempted	Not Reached	Reached N (%)	Satisfied N (%)	Likely to Recommend N (%)
4 week	912	615	297 (32.5%)	244 out of 248 (98.4%)	249 out of 250 (99.6%)
8 week	820	578	242 (29.5%)	196 out of 196 (100%)	196 out of 196 (100%)
12 week	699	544	155 (22.2%)	136 out of 136 (100%)	136 out of 136 (100%)

**Notes:** Reached = # of callers reached out of # of calls attempted;  
 Satisfied = # of callers satisfied or very satisfied with TBH services out of # of callers who answered the question  
 Likely to Recommend = # of callers likely or very likely to recommend TBH services out of # of callers who answered the question.

To assess client satisfaction of services provided, the TBH reached a total of 694 callers during the 3rd quarter. Callers were asked to rate their level of satisfaction of TBH from 1 (very dissatisfied) to 5 (very satisfied). Overall, clients were satisfied with TBH services during each follow-up period (range: 98.4% - 100%). During each follow-up, callers were also asked to indicate their likelihood to recommend the TBH to others (1 - very unlikely to 5 - very likely). Overall, callers were likely to recommend TBH services to another person (range: 99.6% - 100%).

**(16) Texting Follow-Up (Pilot)**

In June 2015, TBH began pilot implementation of a texting follow-up program. Texts were sent only after a member of the TBH staff was unsuccessful in reaching the caller via voice call. Texting follow-up consisted of the following message, which was personalized for each caller contacted to include the caller’s name:

**“Thank you for taking the time to answer a few questions about your experience with the Tennessee Breastfeeding Hotline. Remember, if you have any questions, feel free to call us at any time at 1-855-423-6667 and we would be happy to help you.”**

Results are currently not separated by weeks due to restraints by the texting platform; the TBH is working with iCarol to figure out a solution to this. Furthermore, not all questions asked during the traditional follow-up method were available for texting follow-up. Currently, only information pertaining to breastfeeding status, satisfaction of services, and level of comfort/confidence breastfeeding was captured.

**Table 16A. Texting Follow-Up: Caller’s Breastfeeding Status (N=154)**

Follow-Up Method	Texts Received	Yes N (%)	No N (%)
Text	154	136 (88.3%)	18 (11.7%)

During the 3rd quarter, TBH received 154 follow-up texts regarding breastfeeding status. Of those reached, 136 (88.3%) responded that they were still breastfeeding.

**Table 16B. Caller’s Satisfaction with TN Breastfeeding Hotline (N=156)**

Follow-Up Method	Texts Received	Satisfied N (%)
Text	156	146 (93.5%)

**Note:** Satisfied = # of callers satisfied or very satisfied with TBH services

TBH received 156 responses regarding caller’s satisfaction with services provided. Close to 94% responded that they were satisfied with services received.

**Table 16C. Caller’s Likelihood to Recommend TN Breastfeeding Hotline (N=156)**

Follow-Up Method	Texts Received	Likely to Recommend N (%)
Text	156	147 (94.2%)

**Note:** Likely to Recommend = # of callers likely or very likely to recommend TBH services

TBH received 156 responses with regard to caller’s likelihood to recommend the TBH to others. Of 156 responses received, 147 (94.2%) indicated that they were likely or very likely to recommend the TBH to another person.

**Table 16D. Caller’s Increase in Confidence/Comfort with Breastfeeding (N=144)**

Follow-Up Method	Texts Received	Yes N (%)	No N (%)
Text	144	123 (85.4%)	21 (14.6%)

TBH received 144 responses with regard to caller’s increase in confidence and comfort with breastfeeding. Of the 144 texts received, 123 (85.4%) indicated that they were more comfortable and confident breastfeeding.

## Our Team

Meri Armour – President, Le Bonheur Children’s Hospital  
Meri provides oversight over the entire hospital.

Sharon Harris, MSN, RN – Administrative Director, Le Bonheur Children’s Hospital.  
Sharon provides oversight of the Maternal Child Department.

August Marshall, M.A. – Evaluation Coordinator  
August updates iCarol survey questions as needed, provides general iCarol support to the TBH staff, analyzes hotline data, and helps write and submit quarterly and annual reports.

Cathy Marcinko, M.A. -- Grant Development Coordinator  
Cathy assists division departments in researching, developing and submitting funding proposals, and with other assignments, as needed. She has a Masters’ Degrees in Community Planning and in Teaching, and has a BA in Art History.

Christina M. Underhill, Ph.D. -- Program Evaluation Manager for the LCHWB Division  
Christina coordinated the creation of the TBH quarterly report format and assisted with the development of the TBH quality improvement plan. She advises on the collection of outcome measures and ensures proper data management.

Gary R. Cook, LCSW -- Director of LCHWB Grant Administration Department  
Gary co-authored the TN Breastfeeding Hotline Proposal. He provides contract related and fiscal oversight of the project.

Nicole Gottier, M.A. -- Grant Reimbursement Supervisor  
Nicole tracks monthly expenses for the program for correctness, as well as alignment with budget projections, and creates and submits monthly invoices to the State.

Sandra Madubonwu MSN, RN, CLC – Director, Maternal Child Department.  
Sandra was involved in the proposal process for the TN Breastfeeding Hotline and played an instrumental role in implementing the program. She provides administrative oversight to all the programs within the Maternal Child Department, including the TBH.

Helen Scott, RN/IBCLC/RLC -- Project Coordinator of the Tennessee Breastfeeding Hotline  
Helen coordinates the staff and ensures that the Hotline is working to meet identified purposes and goals.

## **Lactation Consultants and Counselors**

Sandra Madubuonwu, MSN, RN, CLC  
Helen Scott, RN, IBCLC, RLC  
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## **Tennessee Breastfeeding Hotline Community Advisory Board (CAB)**

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Amy Riggins, Tennessee Department of Health  
Kristin L. Gentry, Tennessee Department of Health  
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Nancy H. Rice, South Central Region TN.  
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Dr. Genae Strong, University of Memphis, School of Nursing  
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Lauren Robinson, Le Bonheur Community Health and Well-Being

**APPENDIX A.** Categorization of the Primary Reason for Calling the Tennessee Breastfeeding Hotline

CATEGORIES	REASONS / ISSUES
<b>Supplemental Nutrition:</b> Issues related to complementing breastfeeding with expressed human milk or some other fluid or food	<ul style="list-style-type: none"> <li>• Vitamin D supplementation</li> <li>• Supplemental feeding</li> </ul>
<b>Milk Expression:</b> Issues related to taking breastmilk from the mother’s breast without the baby needing to suckle.	<ul style="list-style-type: none"> <li>• Breast pumps and rentals</li> <li>• Exclusive pumping</li> <li>• Milk storage</li> </ul>
<b>Breast-Related Problems:</b> Issues or problems mother can experience that are commonly associated with breastfeeding	<ul style="list-style-type: none"> <li>• Breast mass</li> <li>• Breast engorgement</li> <li>• Sore nipples</li> <li>• Breast or nipple pain</li> <li>• Nipple abnormality</li> </ul>
<b>Breastfeeding Management:</b> Issues related to the process of maintaining or integrating breastfeeding within a mother’s routine or circumstances	<ul style="list-style-type: none"> <li>• Tandem nursing</li> <li>• Breastfeeding while pregnant</li> <li>• Working and breastfeeding</li> <li>• Managing multiple breastfeeding babies</li> <li>• Weaning</li> <li>• Bottle feeding</li> <li>• Returning to work/school</li> <li>• Baby feeding to much / too little</li> <li>• Breastfeeding device/equipment (e.g. nipple shields)</li> </ul>
<b>Breastfeeding Support:</b> Resources, guidance, or laws that can assist with breastfeeding	<ul style="list-style-type: none"> <li>• Public breastfeeding</li> <li>• Donor milk</li> <li>• TN breastfeeding laws</li> <li>• Seeking resources</li> <li>• Pre-birth information / counseling</li> </ul>
<b>Breastfeeding Technique:</b> Issues related to mother’s breastfeeding skill	<ul style="list-style-type: none"> <li>• Inability to latch</li> <li>• Breastfeeding technique</li> <li>• Clicking / Noisy nursing</li> </ul>
<b>Medical Condition (Infant):</b> Issues related to an infant’s disease, disorder, illness, or complication diagnosed by a health care provider that can impact mother’s ability to breastfeed	<ul style="list-style-type: none"> <li>• Feeding baby with hypotonia</li> <li>• Feeding baby with Down Syndrome</li> <li>• Feeding baby with cleft lip / palate</li> <li>• Jaundice</li> <li>• Late preterm newborn</li> <li>• Managing premature infant breastfeeding</li> <li>• Tongue-tie</li> <li>• Allergies</li> <li>• Baby spitting up (reflux)</li> </ul>
<b>Infant Health Behaviors:</b> Issues related to infant’s actions that can impact mother’s ability to	<ul style="list-style-type: none"> <li>• Baby biting breast</li> <li>• Baby refusing to nurse</li> </ul>

breastfeed	<ul style="list-style-type: none"> <li>• Distraction during breastfeeding</li> <li>• Sleepiness</li> </ul>
<b>Maternal Health Behaviors:</b> Issues related to the practices (choices), of the mother that can impact her overall health and ability to breastfeed	<ul style="list-style-type: none"> <li>• Alcohol use</li> <li>• Substance abuse / Illicit drug use</li> <li>• Smoking / Smoking cessation</li> <li>• Exercise and breastfeeding</li> <li>• Diet</li> <li>• Medications and breastfeeding</li> </ul>
<b>Lactation or Milk Concerns:</b> Issues related to mother's anxiety or worry about milk production or quality	<ul style="list-style-type: none"> <li>• Overactive letdown / too much milk</li> <li>• Not making enough milk</li> <li>• Re-lactation</li> <li>• Adoption</li> <li>• Color change in milk</li> </ul>
<b>Infant Health Concerns:</b> Issues related to mother's anxiety or worry about infant's health state or condition	<ul style="list-style-type: none"> <li>• Fussiness / Colic</li> <li>• Gassiness</li> <li>• Appropriate feeding by age / weight</li> <li>• Abnormal stools / voids</li> <li>• Lethargy</li> <li>• Weight concerns</li> <li>• Sick baby</li> <li>• Constipation</li> </ul>
<b>Maternal Health Concerns:</b> Issues related to mother's anxiety or worry about her own health state or condition	<ul style="list-style-type: none"> <li>• Maternal postpartum vaginal bleeding</li> <li>• Menstruation / Return of menstrual cycle</li> <li>• Maternal sickness</li> <li>• Maternal postpartum depression</li> </ul>
<b>Other:</b> An issue indicated by mother that is other than what is currently listed	<ul style="list-style-type: none"> <li>• Specify</li> </ul>