

Breastfeeding Measurement in the Outpatient Electronic Health Record

Current Practices and Future Possibilities



Report prepared, April 2016, for Lactation Supportive Environments, a project of the County of San Diego Healthy Works program, implemented by UC San Diego Center for Community Health with funding from First 5 San Diego.



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Executive Summary

The Lactation Supportive Environments (LSE) project aims to increase access to settings that encourage breastfeeding initiation and duration. Funded by First 5 San Diego, LSE is a project of the County of San Diego, Health and Human Services Agency and is led by the UC San Diego Center for Community Health. An important component of the LSE project's work in 2014-2015 has been partnering with six San Diego County community healthcare centers (CHCs) to create more breastfeeding-friendly venues for patients and employees. As part of their efforts, the LSE project provides support, training, and technical assistance to CHCs in ten key areas; **Electronic Health Records (EHRs)** is one of the key areas.

Beyond the value to direct patient care, expanded use of EHRs has the capacity to inform quality improvement efforts and address larger questions important to community and population health. Given the growing use of EHRs throughout the healthcare system, this project sought to better understand current practices, challenges, and opportunities around the inclusion of breastfeeding measures in outpatient EHRs.

We conducted a series of 18 in-depth interviews with subject matter experts and key stakeholders. Our sample represents a diverse group affiliated with relevant local and national agencies and organizations as well as four of the six CHCs that participate in the LSE project.

Discussions with CHC stakeholders largely substantiated the knowledge and opinions shared by our thought leaders. While local CHCs have made the transition to EHRs, there is variability across healthcare centers in EHR vendors and the ways in which breastfeeding is – or is not – being measured. Breastfeeding data currently obtained is utilized predominantly for direct patient care or audit purposes; other data use opportunities (e.g., quality improvement) are mostly unexplored.

Challenges identified by experts and stakeholders to greater inclusion of breastfeeding measures in the EHR include: lack of standardized breastfeeding-related definitions and corresponding measures, absence of external mandates for breastfeeding data, healthcare provider concerns, and EHR-system constraints.

Opportunities for improving EHR-inclusion of breastfeeding measurement include: establishing a common set of breastfeeding-related definitions and a core set of measures, enhancing clinician acceptance by aligning breastfeeding data with quality improvement, and creating a more robust "market" for breastfeeding data.

Based on learnings from expert informants and CHC stakeholders, short- and longer-range recommendations are proposed.

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Introduction

The Lactation Supportive Environments (LSE) project aims to increase access to settings that encourage breastfeeding initiation and duration. Funded by First 5 San Diego, LSE is a project of the County of San Diego, Health and Human Services Agency's Healthy Works program. Healthy Works is a cornerstone of the Building Better Health component of *Live Well San Diego*, the County of San Diego's vision for creating healthy, safe, and thriving communities. The LSE project is led by the UC San Diego Center for Community Health.

An important component of the LSE project's work in 2014-2015 has been partnering with six of the County's community healthcare centers (CHCs) to create more breastfeeding-friendly environments for the families they serve and the employees who care for those families. The collaboration is significant as CHCs are the main providers of primary care for medically underserved communities and our most vulnerable individuals. While breastfeeding rates differ substantially by race, socioeconomic, and other demographic factors, breastfeeding can be an effective tool and low-cost early intervention toward reducing health disparities.

Using a policy, systems, and environmental change approach, the LSE project provides support, training, and technical assistance to CHCs in ten key areas to promote exclusive breastfeeding of infants until 6 months of age and continued breastfeeding with appropriate complementary foods for at least 12 months. **Electronic Health Records (EHRs)** is one of the ten key areas.



The 2014 report, *Best Practices Guide for Implementation of Newborn Exclusive Breast Milk Feeding in Electronic Health Records*,¹ argues that the “movement towards the use of electronic health records provides many opportunities to optimize the collection of healthcare delivery data.” A recent Institute of Medicine workshop, *Metrics that Matter for Population Health Action*,² noted that data can be a “call to action.”

Beyond the value to direct patient care, expanded use of electronic health records has the capacity to inform quality improvement efforts and address questions important to public health/maternal and child health. In a presentation entitled *Electronic Medical Records and Public Health*,³ author Cindy Hinton from the Centers for Disease Control and Prevention suggests that EHRs can contribute to public health knowledge in the following ways, each directly relevant to breastfeeding and breastfeeding measurement:

- Prevalence and incidence of disease
- Outcomes and quality of life
- Burden of disease and healthcare utilization
- Education needs for patient, family, provider
- Guidelines for care

A 2008 study that examined *Electronic Health Records in an Outpatient Breastfeeding Medicine Clinic*⁴ found no published guidelines on establishing an EHR system for outpatient lactation clinics. Current literature searches reveal no change since the 2008 publication. To date, no national professional organization or government agency has developed a model EHR breastfeeding template or core set of measures.

Given the growing use of electronic health records throughout the healthcare system, this project sought to better understand current practices around the inclusion of breastfeeding measures in outpatient EHRs as well as barriers and opportunities, by conducting a series of exploratory interviews with subject matter experts and local community healthcare center stakeholders.

The Interviews

To plan for the interviews, project staff from UC San Diego and the County of San Diego's Health and Human Services Agency developed a list of organizations and institutions from which representation was sought, along with a list of potential contacts at each organization. The original goal was to interview at least one participant from each of the six CHCs taking part in the LSE project as well as a number of local and national thought leaders.

Participant invitations were sent via email and included a description of the project and a request for interview. Three experts approached for an interview declined. Additionally, two informants invited to participate deferred to a colleague whom they believed more qualified to address the topics of interest. Two of the six invited CHCs did not complete an interview.

From July 1, 2015 to September 1, 2015, we conducted 18 in-depth interviews. A semi-structured interview guide focused the content of each discussion and was shared with participants in advance of their interview.

Sixteen interviews were conducted by telephone, one in person, and one via email. One interviewer (L. Radecki) facilitated all interviews; each session lasted between 30-60 minutes. All participants (except the email correspondent) were read a standardized introductory script at the start of the interview containing information about project purpose and confidentiality. Prior to the start of discussion, each participant was asked to verbally affirm their willingness to participate and grant permission to be audio-recorded. Several interviewees agreed to speak only as a subject matter expert rather than as representatives of their institution or organization. Following each interview, recordings were transcribed verbatim for relevant content. Transcripts were analyzed for recurrent themes using Atlas.ti.

A **semi-structured interview guide** focused the content of each discussion.

Expert informant topics included:

- Perceptions of current EHR use for breastfeeding measurement
- Barriers to greater inclusion of breastfeeding metrics in EHRs
- Breastfeeding measurement and quality improvement
- Organizational supports for breastfeeding measurement
- Familiarity with CDC/CDPH Breastfeeding Friendly Clinic project
- Personal experience with EHRs (if applicable)

CHC Stakeholder topics included:

- Current breastfeeding data collection and reporting (EHR and other) strategies
- Organizational use of breastfeeding data
- Lactation education and support (provision, documentation, and reporting)
- Breastfeeding measurement and quality improvement

Participants

The 18 individuals interviewed represent a diverse group of subject matter experts (n=13) affiliated with relevant local and national agencies and organizations as well as key stakeholders (n=5) from CHCs participating in the LSE project. The sample included nine physicians and eight allied health professionals; 10 participants were credentialed as a Certified Lactation Counselor (CLC) or International Board Certified Lactation Consultant® (IBCLC).



- ¹ American Academy of Pediatrics
- ² Academy of Breastfeeding Medicine
- ³ Association of State and Territorial Public Health Nutrition Directors
- ⁴ Centers for Disease Control and Prevention
- ⁵ California Department of Public Health
- ⁶ San Diego County Breastfeeding Coalition
- ⁷ International Lactation Consultant Association

What We Learned

Because discussion guides were customized with a different set of core questions for subject matter experts and key stakeholders (CHC representatives), summary findings from the interviews are presented separately for each group below, beginning with the expert informants.

Expert Informants/Subject Matter Experts

State of Breastfeeding Measurement in EHRs

Subject matter experts uniformly agreed in their assessment of breastfeeding measurement in outpatient EHRs, describing the current state with words like minimal, extremely limited, spotty, and nonexistent.



Every time that somebody gets EHRs there seems to be a query on AAP or ABM's listservs asking people for templates...none of the major players have anything pre-scripted...I'm pretty sure that this is for most people...most of us are starting from scratch.

...when you go into general pediatric clinics I suspect it's more like "are you breastfeeding?" and "if not, when did you stop?"

...we've done some tailoring to get more breastfeeding information and documentation into the EHR but it's very limited...we didn't have access to a breastfeeding template.

Several noted that hospitals may be "farther ahead" in breastfeeding measurement via EHR due to Baby-Friendly Hospital Initiative requirements.

In the hospital admission, feeding is a key component of your medical history, especially for a newborn but there's a large gap in collecting the type of information that we need for breastfeeding in [outpatient] EHRs.

Barriers and Challenges to Greater Inclusion of Breastfeeding Measures in the EHR

Experts cited numerous reasons for the limited presence of breastfeeding measures in EHRs that can be categorized into the following overarching themes:

- Lack of standardized definitions and measures
- Absence of external mandates for breastfeeding data
- Healthcare provider concerns
- EHR-system constraints

Lack of Standardized Definitions and Measures

Key informants concurred that a lack of common definitions to describe even the most basic breastfeeding behaviors and outcomes and the consequent lack of a standard, accepted core set of questions hinders broader adoption of breastfeeding measurement in EHRs.

This is a major challenge. We had started with "Are you breastfeeding?" and we found that that was a very confusing question because it didn't tell us what the progression of breastfeeding was and then we used "breast, bottle, or both?" and that helped but it didn't tell us if the bottle had breastmilk in it? Definitions are a great need.

In general, collecting breastfeeding information is not consistent unless it's in the newborn, neonatal period.

Just to use WIC as an example, they grappled with what is the definition of partial breastfeeding. Is it once a day, or half the time they give formula, or is it 75% of the time and we don't always have the ability to record that much detail? It would be nice if there was some national agreement.

I think we can, particularly with things like amount of breastfeeding and duration of breastfeeding, do a better job of more accurately reflecting what's going on...trying to quantify in a simple language what we're trying to measure...

It's still "breast" and "bottle" and I said we need to change that to formula because the poor pumping mom who's giving expressed breastmilk in a bottle has to tell her whole life. Can't we just put "formula" instead of "bottle"?

...one big challenge is deciding on a core set of questions or value sets...

It would be great if we could coincide with WIC data but the USDA is slow to change. If they could engage leadership in USDA and CDC so we're all asking the same questions and looking at the same data and having the ability...to get the data and then get the data out. That's the only way we're going to look at population health.

When people think of EHRs and designing EHRs, they are not thinking about breastfeeding....It would be nice if there was a standard breastfeeding module that was part of a standard package...

Absence of external mandates for breastfeeding data

The majority of our subject matter experts cited the absence of external requirements for breastfeeding data reporting as a significant barrier to greater inclusion of breastfeeding measures in EHRs. As interviewees noted, health plans are not currently required by any mandate or quality project to collect and report breastfeeding data.

If CMS or some reimbursement agency or pay-for-performance group or insurance company would incentivize my enormously large medical practice to collect breastfeeding data then we will collect breastfeeding data.

If you had...a financial incentive to measure, then I don't think it would be a problem.

Unless the community of clinicians is creating a demand, then why should someone have to pay for it? In the hospitals they have the Joint Commission pressing this a bit but there's no Joint Commission for outpatient care so there's no one source that would demand or push for it.

Breastfeeding information and questions about breastfeeding were not included in Meaningful Use stages 1, 2, or 3 to my knowledge and the uptake of EHRs with required information took longer than expected...part of the problem with breastfeeding is that to get the answers that we would need, it's a whole variety of questions. It's not like child obesity prevention where we really just need height and weight and it can be easily tracked, plotted.

First, somebody has to care about the data. For example, I'm audited whether I checked to see if parents smoke and what the child's BMI is...they audit my charts for specific quality indicators and where those indicators come from, I'm not sure. But in order to get breastfeeding data incentivized it would have to be something that the medical group would see as important enough to collect information on.

There's [breastfeeding] stuff that I've put in but not to track any data. At this point, there's no benefit to me doing that except for me to see if I'm giving good breastfeeding support...

Healthcare provider concerns

Two subthemes emerged under healthcare provider concerns, namely *time* and *balancing the interests and needs of primary care and public health*.

Time: Based on the feedback of our clinician experts, the promise of greater efficiency with electronic medical records is yet unmet. Physicians in particular reported a steep learning curve for EHR use and some conceded that electronic charting takes more, rather than less, time. Findings from a recent survey conducted by American EHR Partners and the American Medical Association⁵ corroborate, observing that “over half of the survey's respondents reported a negative impact [of EHRs] in regards to cost, productivity and efficiency questions.” For many, additional measures equate to additional time spent on chart completion.

...EHRs are wonderful as far as record keeping but they have significantly added burden to the physician time in the office. I spend 50% more time charting.

...time to ask the questions – we asked nurses to do it as intake procedure for every pediatric visit and the nurses are only willing to do so many questions. So we had to negotiate. We took something else off to get that on.

it's a priority issue, everybody is pushed for time. There's never enough time for clinicians to gather the data needed.

Balancing the interests and needs of primary care and public health:

There is a general belief that today's healthcare providers are being asked to do more with the same or fewer resources. Clinicians were unlikely to endorse additional breastfeeding measures in the EHR if a clear connection between such measures and direct patient care is not readily apparent or if the end goal of expanded breastfeeding measurement is not clearly articulated and recognized.

...my first role is always patient care. Whatever we develop has to be workable to care for the patient.

...we want clinics to not just have the ability to collect the data in their systems but see the value in it. So that means the clinics have to place a value on breastfeeding support and inputting and collecting the data.

We would probably get a lot of pushback if we created a registry or information system where you have to go and add information into a whole other system to collect data as opposed to data collected into an EHR for clinical purposes and having those de-identified and used for population health purposes.

...I think about that all the time when I'm entering data. One half of me...this would be fun data to have. On the other side, it's just one more thing to record. And the way it works in the hospital, it's "How many minutes on each side?" – I mean if you're going to collect data it should be useful data. How do we balance it? I don't know. But the messaging has to be clearer from the public health side about what kinds of questions we should ask...not just random stuff...and then we have to be very clear from the public health side as to what this data is going to be used for because I think part of the reluctance to capture all this data is that the practitioner is not really going to benefit from it or see the fruits of our labor. What outcome do we get to share in that we're collecting all this data for?

EHR-system constraints

Many of our experts cited various system constraints as contributing factors to the dearth of EHR-based breastfeeding measures. First, there exists a wide variety of EHR vendors and "products," some with built in breastfeeding-related questions and others not. Clinics or health systems may incur a cost to "turn on" or add breastfeeding modules. Sometimes such efforts can be undertaken "in house," but depending on an organization's information technology capacity, may require additional assistance from

the vendor. One clinician noted that working with her organization's internal IT Department to achieve breastfeeding-related changes in their EHR system has taken over two years.

...I would say it's a priority issue. If you're an obstetrician or pediatrician in a private practice, are you really going to prioritize getting that breastfeeding module when your vendor is probably going to charge you extra money? You're already struggling to get up and running. I just don't think it's going to percolate to a top priority. When you're talking about a huge health system, it's a whole different ball game. They've got more cash on hand and they have a much bigger distribution network and more power.

...the wheel is being created over and over again for these sorts of clinical decision support and data collection modules...it's a really big problem.

When existing breastfeeding questions do not meet the documentation needs of lactation specialists, clinicians often resort to documenting in open note fields which do not lend themselves to systematic data capture or reporting. Systems also frequently lack the ability to communicate with one another, making data sharing, and even individual patient tracking and monitoring, challenging as well. Among its recommendations, the 2014 LA County Breastfeeding Summit Report⁶ includes an action to "Advocate for data sharing of core measures to establish a standardized surveillance system for tracking breastfeeding reporting."

There's a wide variety of EHRs that don't talk to each other. So if you wanted to do exclusive breastfeeding rates you'd have to have your computer talk to the ones at the hospital where you admit newborns and then have that data get transferred to your outpatient record and that's not easy to do because the health records don't speak to each other.

...WIC asks about breastfeeding but we don't have access and we ask and they [WIC] don't have access. We could eliminate duplication through better integration. The other challenge is that the CPSP program also has separate documentation and they're also counseling on breastfeeding prenatally too. Everybody is making efforts but it's not all integrated.

There isn't communication between health systems and WIC. They could get reports and try to compare them but there's no communication between them.

Further, data reporting can be problematic. While the provider is typically the person charting, individuals (and sometimes departments) often lack the ability to access data for reporting purposes.

...you have to make requests or get in line for your data.

...I wouldn't even know who to ask if I wanted to get data taken care of...

Opportunities for Greater Inclusion of Breastfeeding Measurement in the EHR

Despite the challenges identified above, experts also envisioned opportunities to promote greater adoption of breastfeeding metrics in the EHR. Emergent themes include:

- Establishing a common set of breastfeeding-related definitions and core set of measures
- Enhancing clinician acceptance by aligning breastfeeding data with quality improvement
- Creating a “market” for breastfeeding data

Establishing a common set of breastfeeding-related definitions and core set of measures

There was consensus about the importance of instituting community-accepted breastfeeding definitions and an agreed upon set of standard measures. Experts disagreed, however, on the organization(s) or agency(ies) that should take a leadership role. Among those mentioned include: American Academy of Pediatrics, Academy of Breastfeeding Medicine, California Department of Public Health, the Centers for Disease Control and Prevention, the Centers for Medicare and Medicaid Services, and the United States Breastfeeding Committee.

The 2014 report, *Best Practices Guide for Implementation of Newborn Exclusive Breast Milk Feeding in Electronic Health Records*,¹ argues that “movement towards interoperable EHRs requires that data be defined and described consistently across care to ensure appropriate interpretation and treatment. This provides the opportunity to select terms which accurately describe the intended meaning and retire ambiguous or confusing terms.”

A potentially promising new undertaking described by several of our experts may be a step in the right direction. *Integrating the Healthcare Enterprise* (IHE) is a not-for-profit group working on electronic health records and interoperability. IHE facilitates the creation of profiles to support EHR use for a particular subject matter and has recently released for trial implementation a Healthy Weight Profile⁷ that includes a subset of questions on breastfeeding. Module testing with a cadre of EHR vendors demonstrated success in capturing data via EHR and then passing that data to a public health information exchange. While not developed explicitly for breastfeeding, this work may serve as a model for future breastfeeding-specific efforts.

Enhancing clinician acceptance by aligning breastfeeding data with quality improvement

To foster buy-in from the health care professionals most responsible for patient charting, experts endorsed making a case for the value of data for direct patient care and beyond. Here, the onus is on breastfeeding champions in both clinical and public health settings to provide clear messaging about how data can be used to improve patient care **and** community and population health.

Physicians are under a tremendous amount of pressure to see a lot of patients and do a good job. When we add on top of it, it can be overwhelming. One of the most important things we have to do is be really smart about the questions we're asking and the data we ask for and that it aligns completely if possible with what's needed for best practice clinical care. Simplicity and efficiency are incredibly important...

...what can we do to benefit the clinician? If there's a way that, within the health record, you can actually help the clinician as opposed to just collecting information and adding a burden to their workload, that would be beneficial. For example, a clinical decision tool for breastfeeding. If there were ways that you could incorporate a popup, like to calculate birthweight minus weight and see what percent of body weight the baby lost since birth. If the EHR could tell me that, it's one more calculation that I don't have to do, that would really be beneficial. If you could develop an EHR that had some of those elements to help the clinician and make their job easier, I think they'd be much more willing to adopt something like that.

...our role can be, through state and local health departments, [to] emphasize the need for the promotion of breastfeeding but also emphasize the need for data on breastfeeding to feed back to communities about how they're doing on breastfeeding rates.

Quality improvement efforts are burgeoning in the healthcare setting but appear underutilized in breastfeeding medicine and care. Scholle et al⁸ argue that "health information technology will bring dramatic change to quality measurement and improvement." The Agency for Healthcare Research and Quality (AHRQ), however, indicates that health information technology (HIT)⁹ remains a largely untapped resource for quality improvement. Quality improvement projects can create interconnections between direct patient care and larger public health issues.

Getting buy-in from practices has been a challenge in some cases because their focus is on clinical activities and not making systems changes to improve their practices to be more breastfeeding-friendly. However practices need to collect and then objectively review their data in order to first make small tests of change and then policy and procedure changes to implement practice changes.

...to have a cleaner set of data...we can say look, this is exactly where breastfeeding fails, not where we think breastfeeding fails and this is who breastfeeding fails with and when...We know that breastfeeding falls off at hospital discharge and that it falls off at return to work and school...so

to really be able to look at that and say for this population, in this county...this is where we can intervene to make a difference.

...what I hope is that when this system gets perfect that what we're able to do is take our breastfeeding rates at discharge and link them to both postpartum and pediatrics care and say "this is where our fall off is." We can say that when our patients leave our center they're breastfeeding on average "x" number of weeks whereas when our patients get care at our tertiary clinic, they're breastfeeding an average of "x" number of weeks. What's the difference between this system and this system?

Creating a market for breastfeeding data

Numerous experts recommended a policy, systems, and environmental approach that creates a greater market for breastfeeding data and makes measurement an imperative.

Several interviewees promoted the importance of stronger linkages between breastfeeding measurement and other pediatric health issues, namely childhood obesity. Others advocated for the adoption of one or more breastfeeding measures as recognized quality measures. A presentation from the Indian Health Service, *The Documentation of Breastfeeding Education in the IHS to Meet the Ten Steps to Breastfeeding Success*,¹⁰ argues that "what gets measured gets done!" One of our expert informants countered that "...the things that get done are the things that are required."

The framework with pediatric obesity is really important and that could be another argument for measuring because I don't really think most people know the protective effect of breastfeeding, at least not policy makers, so if the perspective was that this is going to reduce future diabetes and diseases associated with obesity, I think that would help a lot.

...initiation and duration and exclusivity...are really important strategies around childhood obesity prevention. ...so that there are resources out there that are standardized that vendors recognize and are able to implement in a more uniform, streamlined, less costly way...we see that need but we still have a long way to go but we're working on it...

We're required to report on certain documented HEDIS quality measures and then the state decided that we'd be required to report the percentage of kids who had a BMI measured so everyone in the state developed an electronic system to document whether BMI had been measured. I think the same system should work for breastfeeding.

So basically the NCQA develops certain measures of quality and then state Medi-Cal managed care medical directors decide which of those measures are going to be required throughout the state and I think that breastfeeding should be defined as a quality measure and should be required to be measured by Medi-Cal managed care plans.

To get managed care directors to adopt these measures, they're competing against other measures that save them money right away, like if you decrease hospital readmissions. But if you promote breastfeeding, the money savings are cumulative and it doesn't happen quickly. ... [you have to] frame to reduce future healthcare costs. It has to be repeated regularly...You can't go in and say "breast is best." You have to show why it's best for the system.

When it affects quality and reimbursement...then everybody says "oh my gosh, we have to ask that question."

Other experts suggested developing a certification or designation similar to the Baby-Friendly Hospital Initiative that would mandate and incentivize data collection and reporting. Ideally, a designation would recognize and support the continuum of breastfeeding care that begins prenatally, continues in the hospital setting, and extends into postpartum care, encompassing both mother and baby. No consensus emerged among experts as to the governing body or entity that should develop and oversee such efforts.

...full implementation is going to be when the state steps up and says "here's how we're going to have a real designation, something similar to Baby-Friendly or the way the Joint Commission certifies"...and then I'd like to see incentives to community health centers and ambulatory sites...

If it's something being monitored by a credentialing agency then the data has to be reported...

...it should be linked to the Baby-Friendly Hospital Initiative and right now they're separate...There should be something where it's really clear that if you're doing everything you can to discharge moms exclusively breastfeeding, you should continue to do everything you can in the clinics. Not just projects but sustained policy and quality efforts.

Key Stakeholders – Community Healthcare Centers

After speaking with local and nationally recognized experts we turned to key stakeholders – the users of breastfeeding data and EHRs in San Diego County community healthcare centers – to better understand their experiences and challenges. In descriptions of CHC-related findings, the abbreviation “CHCs” is used to represent the four CHCs from whom interview data was obtained.

Current EHR Use

EHRs are used in each of the four CHCs represented, but three of the four centers report using different EHR vendors, and not all CHCs have incorporated lactation services into their EHR.



When first queried about the types of breastfeeding information collected via EHR, most participants cited only one or two basic measures, prenatally and postpartum (e.g., intent, exclusivity). On further probing, however, two interviewees revealed that their healthcare center actually captures a great deal of breastfeeding data via EHR, largely due to Comprehensive Perinatal Services Provider (CPSP) requirements. Among the CHCs that agreed to an interview, all are part of the California Department of Public Health’s CPSP program which “provides a wide range of culturally component services to Medi-Cal pregnant women, from conception through 60 days postpartum.” CPSP-mandated documentation and reporting requirements are extensive but sites have some autonomy in the selection of forms to record and track service provision. Two of the four CHCs interviewed have embedded CPSP forms into their EHRs. Documentation is completed by CPSP health workers but accessible by clinicians and lactation staff as needed.

What breastfeeding data are CHCs currently capturing through their EHRs?

CHC1	Prenatal – intent, education, & support (CPSP) Postpartum – feeding choice
CHC2	None at this time (but able to access hospital data)
CHC3	Prenatal – uncertain Postpartum – exclusivity, frequency of feedings, average duration of feedings, lactation consult order
CHC4	Prenatal – intent, education, & support (CPSP) Postpartum – feeding choice

Despite differences in their EHR systems, four key commonalities emerged across comments from CHCs interviewees:

- Much breastfeeding information continues to be scanned in or documented in note fields – neither of which is useful for systematic data capture or report generation
- At this time, EHR-documented breastfeeding data appears to be used entirely for direct patient care and audit purposes
- In general, allied health and healthcare providers are unable to run their own EHR-generated reports, even on limited breastfeeding data collected

We haven’t done it before. We could ask the team and they’d look into it, whether they can generate a report from the fields being clicked...It’s possible they might not be able to do that and then we’d have to put in a ticket to [vendor] to see if they could help us with that.

- Data sharing between organizations is the exception rather than the rule. One CHC reported some sharing with an affiliated WIC program; another reported limited sharing with a local hospital.

Breastfeeding-Related Data Capture Beyond the EHR

How do you know if it's making a difference if you're not documenting it?

Although breastfeeding data collected via EHR is limited in more than one CHC, allied healthcare professionals who provide lactation-related services recognize the critical value of breastfeeding-related measurement and often find creative workarounds to make data tracking and reporting less cumbersome than paper-based methods. The creation of spreadsheets has been the “go to” method for lactation professionals at two CHCs. By culling information from numerous sources throughout their respective systems, both electronic and non-electronic, they populate their spreadsheets by hand. Homegrown tracking logs also allow users, without the assistance of IT staff or vendors, to run their own reports at their convenience.

We can draw off EHR data collection but then we do our own data collection with our postpartum patients in Excel.

These efforts are impressive and commendable but labor intensive and duplicative. The 2014 report, *Best Practices Guide for Implementation of Newborn Exclusive Breast Milk Feeding in Electronic Health Records*,¹ notes that “screen scraping” (hand entering or entering the same data to another source) is common and often the result of limited EHR functionality and/or inability to run reports.

One interviewee shared her thoughtfully crafted model after our interview (see “CHC Postpartum Lactation Visit Sample Tracking Log” to the right). Her spreadsheet could be a roadmap to the kinds of measures translatable to the EHR for this CHC and others.

Barriers to Greater Incorporation of Breastfeeding Measurement in the EHR

Two common barriers emerged in discussions about greater inclusion of breastfeeding measures in the EHR. For the CHCs, much of the challenge can be attributed to competing demands for limited resources and time.

CHC Postpartum Lactation Visit Sample Tracking Log

- Appointment date
- Patient name, DOB (mom and baby)
- Mom had a breastfeeding concern or question
- Mom had another same day appointment
- Breastfeeding desire during pregnancy
- Saw lactation consultant prenatally
- Breast only
- Breast and formula
- Formula only
- Golden hour in the hospital
- Bottle given in hospital
- Appointment made in hospital for postpartum lactation visit
- Electric breast pump ordered
- Notes

Competing demands for limited resources

With [vendor] there are only a few things that are modifiable like drop lists. They give us the permission to make little changes...it would be expensive if we went through [vendor]...If we devised a whole new breastfeeding template, like if someone gave us a grant to do it, it's highly likely that in the next upgrade in a year or two it would most likely disappear and we'd have to do the whole thing again because it wouldn't work with their upcoming software...These systems are so expensive and money is always tight for CHCs.

The federal government hasn't eased up on the requirements based on the money they give us. They want us to see patients but do all this stuff too – meaningful use and measures galore...it's challenging.

...the key thing here is that there's the documentation piece and the reporting piece and how important is the reporting piece? Really, that is going to be driven by what are the needs of the health center in responding to either federal guidelines or financial guidelines. If there is a push there, then you will see a bigger push for setting up fields for capturing data.

Time

It's not that the people we work with are difficult but it has to be approved through several levels and I do respect that there's usually a reason and policy behind it...it's not difficult to ask, we feel like we can approach everyone. It's more that it takes time to actually get the task completed.

If it's one finding it doesn't take a lot of time. If it's creating a new form, then it takes more.

From a clinic that is currently in the process of migrating their lactation services to EHR, “every single person touches the chart in a different way. The whole process is really long and that's what they [IT Department] are trying to fully understand. Our CPSP program is not in the system – that's yet another component that's difficult to put into our system.” This participant expects the process to take at least 18 months.

Breastfeeding Data for Quality improvement

CHCs expressed varying levels of interest in breastfeeding-related quality improvement efforts. Interest was stronger among allied health professionals who provide direct lactation services than among other providers and those in an administrative role.

We still feel like a lot of babies are coming out of the hospital being given formula so...we'd like to improve. If we had the data to back it up, if the mom is not given formula in the hospital she's more likely to continue breastfeeding for 6 months postpartum, we would like to use the data to improve the system and improve our breastfeeding rates and improve our patient care because there's still a lot of little areas that need a lot more

attention....It helps to know where our deficiencies are and make progress.

It's probably low on our list. We've got tons of things we're being measured for by the government and tons of things that we're being given financial incentive for. If we're given financial incentives then yes, it would probably get pushed way up in the forefront. Right now there's no money tied to it...as far as measuring and reporting on it, there hasn't been much incentive for us to do that. That doesn't mean it's not important.

Everybody knows the benefits of it [breastfeeding] or we suspect everybody knows that breast is best and there's been a lot of campaigns around that. The same message is being touted across. I think we're in good shape.

Among CHCs that report past or current QI-related work, efforts have been largely informal and driven by observations and anecdotal information rather than quantitative data.

Data sharing

In general, interviewees expressed potential interest in “more opportunity to collaborate” as well as sharing information, including data, across local CHCs to improve care for mothers and babies as well as health at the community level.

It's important that we're all working towards a common goal and not a clinic versus clinic thing. Although our moms received care here, we don't provide pediatric care; they're going to another clinic possibly to receive care. So we're interested to know if that mom and baby go on to continue breastfeeding and what were the barriers and what information did they need and at what time did they need it?

Summary

UNICEF's Breastfeeding Advocacy Initiative,¹¹ among others, proposes that "swaying those in a position to invest in breastfeeding can only happen when convincing evidence is close at hand." Such evidence is difficult to obtain in the absence of high quality data. EHRs hold promise to more systematically document and measure the provision of breastfeeding education, support, and care delivery in outpatient settings. In 2010, pediatrician and then president of the Academy of Breastfeeding Medicine, Jerry Calnen, MD, proposed that "the collection of breastfeeding data will be of enormous importance from the perspective of both clinical practice and medical research. One of the most valuable features of the EHR is that it will greatly enhance efforts currently underway to link reimbursement to provider performance. Breastfeeding assessments and interventions must be included in the metrics for these reimbursement plans."¹² Five years later, those ideals are largely unrealized.

Exploratory interviews with 18 local and national breastfeeding experts and CHC-based healthcare professionals provide insights into the current use of EHRs for breastfeeding-related measurement as well as related challenges and subsequent opportunities.

In general, expert opinions on the current state of breastfeeding measurement in the outpatient setting were largely corroborated through the experiences reported by healthcare providers with whom we spoke at four San Diego county CHCs.

While local CHCs have made the transition to electronic medical records, there is great variability across healthcare centers in EHR vendors and the ways that breastfeeding is – or is not – being measured. Virtually all breastfeeding information obtained is used for individual patient care and program audit rather than quality improvement or to address larger community and public health concerns. Much information is also still captured via notes fields that are not conducive to reporting. Further, electronic data sharing with relevant agencies, most critically WIC, is extremely limited and data sharing across CHCs is non-existent. To illustrate program need and effectiveness, lactation professionals have developed their own strategies to track and report breastfeeding-related metrics in the absence of electronic options. These professionals recognize the importance of documentation – *"I learned from Day One that if it's not documented, then it didn't happen"* – but also acknowledge that *"...we're not working as smart as we should be to get good data and use it."*

Barriers noted by subject matter experts to more comprehensive breastfeeding measurement via the EHR were also apparent in the "CHC trenches." CHC staff spoke of the costs and time required to implement changes in their EHR systems. Without an external motivator or mandate to report breastfeeding data, those with CHC administrative responsibilities believed the current situation unlikely to change.

Our findings are perhaps unsurprising given anecdotal comments regarding the 2013 CDC-funded project in which 15 California health clinics tested nine “steps” towards creating more breastfeeding-friendly environments. Among the nine steps and their associated guidelines¹³ was, “Develop a system to monitor breastfeeding data from patient visits and patient surveys, using data to identify quality improvement needs and effective breastfeeding support services.” Desired outcomes included clinical medical records to provide data encompassing lactation outcomes (breastfeeding initiation and exclusive breastfeeding rates) and infant feeding outcomes among others. According to interviewees familiar with the project, this step was among the most difficult for clinics to implement. One participant site with good prior EHR experience found data extraction and reporting requirements problematic due to information requests that necessitated linking maternal and child health records. *“They wanted us to make the connection between mom and baby and oftentimes that’s difficult because baby’s chart isn’t always connected to mom’s chart.”*

While challenges to better breastfeeding measurement through the EHR are numerous and wide-ranging, experts shared several recommendations to promote greater uptake. Their suggestions, which include development of an accepted core set of measures and associated definitions, improved healthcare provider buy-in, and creation of a market for breastfeeding data necessitate a policy, systems, and environmental approach for change. Realizing such change will require new and ongoing collaboration between all individuals and entities that impact every aspect of breastfeeding promotion, education, support, and care -- namely families, healthcare and allied health professionals, public health, health systems, insurers, and EHR vendors.

Recommendations

Ultimately, the enhanced use of electronic medical records for breastfeeding measurement is one of numerous operational changes required for a truly breastfeeding-friendly outpatient care setting.



Based on the contributions of subject matter experts, both local and national, as well as knowledge and experiences shared from San Diego county community healthcare centers, there are several short- and longer-range recommendations that may be useful to promote greater inclusion of breastfeeding metrics in the electronic health record.

Short-Range Recommendations

- Capitalize on interest expressed by CHC stakeholders in further collaboration around breastfeeding measurement and EHRs. Consider convening a work group of local community healthcare center representatives to explore emerging possibilities for information sharing. CHC healthcare professionals with whom we spoke welcomed greater opportunities for dialogue with other CHCs around data-related practices and procedures. If possible, include public health/maternal and child health champions in these discussions from the start.
- Challenge CHCs to conduct a comprehensive environmental scan of data currently collected by EHR and other means. Encourage critical thinking about opportunities for data use beyond direct patient care and audit purposes.
- Host a lunch and learn or other educational opportunity for CHCs to improve understanding of the ways in which data can be used for quality improvement purposes. Provide innovative examples and encourage administrator participation. Convey how quality improvement can impact the bottom line for breastfeeding care services.
- Based on AHRO's "Primary Care Interventions to Promote Breastfeeding Fact Sheet and Resources"¹⁴ (<http://www.ahrq.gov/professionals/prevention-chronic-care/healthier-pregnancy/preventive/breastfeeding.html>), among the best interventions supported by literature are "...direct assistance, support, and education to mothers and families about breastfeeding, from a variety of sources." Encourage CHCs to leverage existing CPSP documentation and reporting requirements around the provision of education, support, and anticipatory guidance, to consider other ways that data might be used (e.g., quality improvement). Perhaps there are lessons to be learned from the Indian Health

Services' requirement¹⁰ to track provision of breastfeeding-related education in the EHR.

- Consider devoting a section of the UC San Diego LSE CHC Forum to EHR-related issues and concerns. Share lessons learned and questions/challenges. In their 2014 presentation to the California Breastfeeding Summit, authors Hummel et al in discussing *Guidelines and Criteria for a Breastfeeding-Friendly Healthcare Provider Office*¹⁵ mention the "incorporation of financial planning for lactation services into the EHR."
- For those early in their EHR journey or CHCs adding lactation services to an existing EHR system, encourage critical thinking about measures, data collection mechanisms, and charting related to breastfeeding services and support. Breastfeeding is unique in that care and (postpartum) clinical encounters impact two charts – mother and baby. The 2014 report *Best Practices Guide for Implementation of Newborn Exclusive Breast Milk Feeding in Electronic Health Records*¹ notes that an important feature of EHRs is the ability to synch or electronically duplicate information between the mother's and baby's charts. A challenge for CHCs is when a facility offers prenatal but not pediatric care, or vice versa. Sustainability is also a key consideration given CHC concerns about the potential incompatibility of add-on modules with later vendor upgrades/updates.

Long-Range Recommendations

- Promote dialogue at every level – local, state, and national – to encourage the development and adoption of an agreed upon set of breastfeeding-related definitions and corresponding measures.
- Support efforts to create and adopt one or more breastfeeding quality measures and subsequent financial incentives for reporting. Comments from our experts affirmed messages heard from CHC administrators – from a systems perspective, financial incentives are powerful motivators.
- Advance the discussion of a breastfeeding friendly credentialing process or certification/designation for outpatient care settings, similar to the Baby-Friendly Hospital Initiative. Not only would such a designation provide greater incentive for data and reporting, it would recognize and legitimize the continuum of breastfeeding care that begins prenatally and extends to postpartum/pediatric care.
- Advocate for interoperability between EHR systems. Until EHR vendors develop products that can communicate with each other, data siloes will remain. Only when data sharing between healthcare facilities, ancillary service providers (like WIC), and local, state, and national public health agencies is possible will EHRs have reached their full potential to impact and improve breastfeeding care and service delivery, as well as population health.

References and Selected Resources

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¹⁵ Guidelines and Criteria for a Breastfeeding-Friendly Healthcare Provider Office Maria Jose Hummel, MPH; Gail Newel, MD, MPH, FACOG; Gloria Pecina, RD, MBA; Michele Bunker-Alberts, DNP(s), APN-FN-BC, IBCLC; and Heather Readhead, MD, MPH. 2014 CA Breastfeeding Summit Presentation. <http://californiabreastfeeding.org/wp-content/uploads/2014/02/9-step-presentation.pdf> (accessed 8-22-2015).

Additional Resources

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