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Workplace Lactation Support:
Project Development and Implementation
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Doctor of Nursing Practice Capstone Project
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December 5, 2012

Abstract

Objective: A pilot project establishing a lactation support program for staff, faculty, and students at Bluegrass Community and Technical College (BCTC) was introduced in September 2012.

The lactation support program is intended to promote and support breastfeeding and decrease barriers to continued breastfeeding for mothers who are employed or attending classes. The purpose of this paper is to report on the: (1) development and implementation of a lactation support program in a regional multi-campus community college; and (2) plans for evaluation of the effectiveness of the new program. *Setting:* The program was implemented at a community college with campus sites in Lexington, Danville, Lawrenceburg and Winchester, Kentucky.

Intervention: A lactation support program for staff, faculty, and students was implemented on all campus sites in September 2012. Breastfeeding support interventions along the continuum from the maternity care setting through the mother's return to could help women continue to breastfeed and improve health outcomes for mothers and babies.

Keywords: breastfeeding, workplace, employer and lactation support

Workplace Lactation Support: Project Development and Implementation

Background and Significance

Prior to the mid-1800s almost all infants in the United States (U.S.) were “breastfed at least through the infant’s second summer” (Wolf, 2003, p. 2001). According to Wolf (2003) women in the U.S. began offering cow’s milk as a breastmilk substitute in the mid-to-late 19th century. By the early 20th century the practice was widespread and infant mortality rates during the first year of life from diarrheal illnesses increased alarmingly. Pediatricians and nurses in Chicago and Minnesota in the first decade of the 20th century developed public health programs to promote breastfeeding and other reformers advocated for using pasteurized, refrigerated cows’ milk as a safer breastmilk replacement (Wolf, 2003). According to the American Dietetic Association (ADA) (2009) breastfeeding rates continued to decline throughout the first half of the 20th century as other breastmilk substitutes, including infant formula became available and were considered more convenient and more nutritious than breastmilk. By 1971 U.S. breastfeeding initiation rates had declined to 24% (ADA, 2009). Beginning in the late 1970s the U.S. Department of Health and Human Services introduced breastfeeding initiation and duration goals (ADA, 2009). Breastfeeding rates have slowly increased in the U.S. though the rate for breastfeeding through the first 12 months of life (25.5%) is far below the global rate (79%) according to the Centers for Disease Control and Prevention (CDC) (2012).

Breastfeeding outcome indicators for Kentucky are well below *Healthy People 2020* goals (Appendix A, Table 1) according to the Centers for Disease Control and Prevention (2012). Kentucky breastfeeding rates consistently rank among the lowest in the U.S. and have changed little in the past five years (CDC, 2012). In 2012 Kentucky had the lowest 12 month breastfeeding rate (10.8%) in the U.S. (CDC, 2012).

Benefits of Breastfeeding

Breastfeeding is associated with short-term and long-term health benefits for infants and mothers. In their meta-analysis of 86 primary studies and 29 systematic reviews Ip et al. (2007) reported reduced risk for acute otitis media, asthma, diabetes (Type 1, and Type 2), and childhood leukemia for infants who were breastfed.

Breastfeeding is also associated with multiple maternal health benefits. In their meta-analysis Ip et al. (2007) found a reduced risk for Type 2 diabetes, breast cancer and ovarian cancer in women who breastfed. Breastfeeding during the immediate postpartum period increases a woman's oxytocin concentration which induces uterine involution and decreases postpartum bleeding (Anatolitou, 2012). In addition, lactation suppresses ovulation, and lactogenesis leads to breast tissue differentiation, both of which may have long-term protective effects from ovarian and breast malignancy (Stuebe, 2009). According to Godfrey and Lawrence (2010) there is sufficient evidence for reduced risk of breast cancer, cardiovascular disease, type 2 diabetes, postpartum depression, and rheumatoid arthritis for women who breastfeed for 12 months or longer.

Support for breastfeeding. The U.S. Department of Health and Human Services (2011a) *Healthy People 2020* goals support efforts to increase rates of breastfeeding initiation and duration. The World Health Organization (WHO) (2009) recommends exclusive breastfeeding for the first 6 months of life and continued breastfeeding for up to 2 years. The American Academy of Pediatrics (AAP) Section on Breastfeeding (2012) also recommends exclusive breastfeeding for the first 6 months of life.

In addition to the health benefits, there are potential economic benefits to breastfeeding. Bartick and Reinhold (2010) used the outcome data by Ip et al. (2007) to predict the economic

impact of suboptimal breastfeeding rates in the U.S. According to Bartick and Reinhold the U.S. could save \$13 billion and prevent 911 deaths annually if 90% of mothers exclusively breastfed their infants for the first six months. If the more modest *Healthy People 2020* breastfeeding goals were met 142 deaths could be prevented and health care costs could be decreased by \$2.2 billion (Bartick & Reinhold, 2010). These data suggest that states in the southern region of the U.S. with persistently low rates of breastfeeding bear a disproportionate share of the economic impact predicted by Bartick and Reinhold compared to other regions of the U.S. with significantly higher rates of breastfeeding. Kentucky citizens have much to gain by increasing breastfeeding rates through low cost programs addressing barriers to continued breastfeeding.

Policies related to breastfeeding. Chertok and Hoover (2009) reported regional breastfeeding rates in the U.S. corresponded to state laws related to breastfeeding. States with laws supporting lactation breaks and other workplace accommodations had higher breastfeeding initiation and duration rates than states without laws supporting workplace accommodations. Prior to passage of the Patient Protection and Affordable Care Act (PPACA) in 2010, which contains workplace provisions for breastfeeding women, support for breastfeeding mothers was determined only by state law (Drago, Hayes, & Yi, 2010). The PPACA requires all U.S. employers having more than 50 non-exempt employees to allow reasonable break time and a private place to express breast milk (PPACA, 2010).

Workplace lactation support programs are associated with increased duration of breastfeeding (Balkam, Cadwell, & Fein, 2011). In addition, workplace lactation support programs that include accommodations for breast milk expression and storage increase breastfeeding rates overall (Murtagh & Moulton, 2011). The U.S. Department of Health and Human Services (2011b) *Surgeon General's Call to Action on Breastfeeding* recommends that

all employers offer comprehensive, lactation support programs. High-quality, comprehensive lactation programs provide breastfeeding education, offer lactation consultation, and access to high-grade, electric breast pumps in addition to break time and a designated space for breast milk expression (U.S. Department of Health and Human Services, 2011b).

Purpose

The purposes of this program are to support women who wish to continue breastfeeding after returning to work or school by providing the needed facilities and resources across six Bluegrass Community and Technical College (BCTC) campuses; and provide a vehicle for advocacy for positive health behaviors with proven benefits for infants and mothers. After the BCTC president appointed an ad hoc committee to design a lactation support program it was implemented on all campus sites in September 2012.

Theoretical Framework

Social cognitive theory is the basis for this comprehensive employer lactation support program. According to Bandura (1998) social cognitive theory addresses personal and social determinants of health. Human motivation, action, and well-being are regulated simultaneously by individual goals, expectations of outcomes, and environmental facilitators and barriers (Bandura, 1998). U.S. breastfeeding initiation rates in the maternity care setting are increasing (range: 47.2% - 89.2%), but only six states meet or exceed *Healthy People 2020* goals for exclusive breastfeeding persistence for more than 3 months (CDC, 2012). An individual's goal to continue breastfeeding is affected by multiple environmental factors, including support from family, healthcare providers and employers (AAP, 2012). According to Bandura (2004) effective communication to increase an individual's knowledge of risks and benefits associated with a particular behavior establish the foundation for behavioral change. A complete toolkit for

improving breastfeeding initiation and duration includes breastfeeding education for women and health care professionals, offering incentives for mothers who continue to breastfeed, and changing attitudes towards breastfeeding (Phelps, 2010). Offering information about the benefits of breastfeeding, developing a supportive work environment, and providing access to resources supportive of breastfeeding can address personal and social determinants of health.

Program Development, Implementation and Evaluation

Key Personnel

The lactation support ad hoc committee members were recruited through a college bulletin requesting interested volunteers to participate in the development and implementation of a lactation support program. A committee chair and members were appointed by the college president and included faculty, staff, students, and a Human Resources administrator. The Dean of Operations worked closely with the committee members during the planning process and throughout the implementation process.

Stakeholders

A workplace lactation support project is a public health program and as such has a variety of stakeholders. Primary stakeholders in breastfeeding interventions were breastfeeding mothers and their infants. The college administrators, due to their interest in promoting health and wellness for staff members and students, were also stakeholders. Lactation support project committee participants, due to their interest and dedication to the success of the project, were stakeholders. Professional staff involved in the care of mothers and babies as providers of care, and as educators, who are committed to best practice and best outcomes, were secondary stakeholders. The larger community was also a stakeholder, insofar as society has an interest in

the well-being of all community members, and an interest in evaluating cost effective methods of improving outcomes.

Resources

The lactation support program was not established as an individual cost center. All committee members recorded time spent on project development and implementation and received Internal and External Service credit. Furnishings and equipment for the rooms were either already available on campus or purchased through the Dean of Operations. New expenditures for this project were limited to the purchase of door signs for each room and materials for the sign-in boxes (Appendix A, Table 2). All college staff, including administrators, information services staff, maintenance and operations staff, and institutional research staff were fully available to the committee members throughout development and implementation of the lactation support program. The Dean of Operations assumed permanent responsibility for recurring and non-recurring expenses for each room, maintenance, security and upkeep of rooms. He was also assigned to expedite identification of suitable space on each campus and oversee any necessary space modifications.

A full-time faculty member who is an Advanced Practice Registered Nurse and Certified Lactation Counselor, was given internal service credit for serving as a resource to breastfeeding women. This nurse is available by appointment for lactation consultation either by phone, or in-person, depending upon campus location.

Program Development

Need for the program. The BCTC lactation support program development began with a needs assessment survey to determine approximately how many women on each campus are likely to utilize the lactation rooms. The survey, developed with input from the BCTC

Institution Research staff, was available from November 18, 2011 through November 28, 2011. Staff, faculty, and students were invited to participate in the survey using the college email system to send a link to the survey, along with information about the purpose of offering lactation support and the benefits of exclusive breast feeding for mothers and infants. The survey had 199 respondents from all campus sites; 20% were currently breastfeeding ($n = 40$), and 73.3% had breastfed a baby in the previous five years ($n = 146$). Of those, 23.9% ($n = 35$) had access and 76% ($n = 111$) did not have access to a private room to pump breastmilk while on campus.

Based on the needs assessment survey and an estimated birth rate of 1.38% according to the U.S. Census Bureau (2012) a college with approximately 6000 women of childbearing age, either working or attending classes, would anticipate approximately 80 breastfeeding women per year. All breastfeeding women who work or attend classes on any BCTC campus are eligible to participate in the BCTC lactation support program.

Program components. In addition to lactation rooms and lactation breaks required by the PPACA (2010), comprehensive lactation support programs may include the following interventions:

- Board certified lactation consultants available for prenatal education, maternity leave phone consult, and return-to work consultation
- Breast pump rental or loan program
- Workplace lactation support policy

Proposal development included a review of the literature to evaluate the evidence supporting the various lactation program interventions.

Workplace Lactation Consultant. Balkam et al. (2011) reported the effect of workplace access to registered nurses who were also board certified lactation consultants (ICBLC) for 305 participants in a comprehensive workplace lactation support program. The ICBLC provided prenatal breastfeeding education, maternity leave breastfeeding consultation by phone, and return-to-work consultation for program participants. Maternity leave phone consultation, and return-to-work phone consultation were significant ($p < .05$) for exclusive breastfeeding at six months (Balkam et al., 2011).

The BCTC lactation support program committee members chose to include lactation consultation by a full-time faculty member who is an Advanced Practice Registered Nurse and Certified Lactation Counselor. Consultation is limited to non-emergency matters; with serious physical or emotional concern referred to community providers. Time dedicated to this service to date has been minimal due to low utilization of the new program, but will be tracked and evaluated as program utilization increases. If time exceeds normal faculty internal service expectation, an adjustment will be requested, or time can be shared with another interested faculty member. In addition to the Certified Lactation Counselor, the college website provides links to local breastfeeding resources and lactation providers.

Breast pump rental or loan. Meehan, Harrison, Afifi, Nickel, Jenks, and Ramirez (2008) reported the results of a non-randomized, controlled trial on the effect of immediate or delayed access to a portable, electric breast pump on duration of breastfeeding among a group of employed mothers ($n = 208$) enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). According to Meehan et al. breastfeeding duration was decreased for those mothers who did not receive a breast pump, compared to the other two groups ($p < .05$).

An amendment to the PPACA (2010) added a requirement that insurers provide payment for breast pump rental and other breastfeeding resources for plan years beginning on or after August 2012 (U.S. Department of Health and Human Services, 2011c). Due to the cost and time required to maintain and manage an inventory of breast pumps and supplies, the decision was made by the program committee not to purchase and offer these items for either rental or individual purchase, but to offer information about local breastfeeding supplies and resources on the BCTC website. The committee members worked closely with the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) regional breastfeeding coordinators to develop a current and detailed list of local breastfeeding support providers and breastfeeding supplies to post on the BCTC website.

Work environment. Dabritz, Hinton, and Babb (2009) reported the effect of a workplace lactation support policy and supportive supervisors and coworkers on duration of breastfeeding among a cohort of employed women and students ($n = 399$). Knowledge of a workplace lactation support policy ($p < .036$) and supportive supervisors and coworkers ($p < .018$) were associated with continued breastfeeding at six months (Dabritz et al., 2009).

The BCTC lactation support program has a lactation guideline (Appendix B) document posted on the college website [Lactation Station](#) link. Committee members reviewed the lactation support policies for several universities, including the University of North Carolina, University of Kentucky, Purdue, and Oregon State University when developing the BCTC lactation guidelines. The new guideline was submitted to Human Resources, and after review and approval was added to the Faculty and Staff Resource Manual and to the Student Resource Manual. The BCTC guideline details the purpose of the lactation program, guidelines for

program users and staff supervisors, processes for using the program, and resources available to program users and staff supervisors.

Program Implementation

The lactation support program committee developed an implementation timeline (Appendix C), budget, website link, and a lactation support program policy. In addition the committee made recommendations for ongoing oversight and evaluation of the program. The completed proposal was submitted to the college president on February 9, 2012 and approved for implementation on April 2, 2012. All campus sites were planned to be fully implemented by August 2012 to coincide with National Breastfeeding Month.

Program oversight. The lactation support program ad hoc committee, along with the Dean of Operations, determined long-term oversight for routine maintenance and security of the rooms would be the responsibility of the Dean of Operations. The committee recommended that administrators on each campus site would work with the ad hoc committee members during implementation to identify an appropriate staff person to serve as campus lactation program representative for each campus. Responsibilities would include interacting with women using the lactation room, providing the room key, maintaining the sign-in lists, and assisting with any concerns; either through direct response or referral to the appropriate service.

Program evaluation. Program evaluation is essential for continuous quality improvement. The committee recommended workplace lactation support representatives from the original ad hoc committee support, analyze and report results of program evaluation to stakeholders. One short term goal will be measured, within three months of program implementation, using a survey of staff, faculty, and students to evaluate promotion and

awareness of the new program. Long term goals to increase duration of breastfeeding will be measured using a second survey beginning six months after program implementation.

Space identification. Space identification was the most difficult part of implementation and required careful negotiation and compromise to accomplish. The PPACA (2010) does not specifically address size, location, and furnishing of workplace lactation rooms. Employers are only required to provide a secure, private location that is not a restroom. The lactation room may be as simple as a re-purposed storage closet, furnished with a comfortable chair, a flat surface for a breast pump, and an electric outlet.

Committee members contacted leadership on each campus site to provide information about the planned program and allay any concerns about allocating space for a lactation room. Each space, when identified, was evaluated by committee members for privacy, accessibility, proximity to a sink and access to an electrical outlet. Lactation rooms were furnished with available furniture identified on each campus. All campus lactation rooms are dual purpose and share space used for other low traffic purposes. Each room has a “Lactation Room” sign on the door with a slider to indicate whether “Occupied” or “Unoccupied”. Staff members on all campus sites were identified through campus leadership to serve as program representatives who will interact with women using the lactation rooms. Each campus staff representative was provided with education about the program, information about the sign-in process each time the room is used, location of the room key and contact information for program representatives who can address any problems.

Concern for privacy of lactation room users was raised during the implementation process. The original plan to use a sign-in sheet, which could be seen by other users of the lactation room and by college staff at sign-in areas, was discarded. The committee elected to use

sign-in cards which would be placed in a small, locked collection box. Sign-in collection boxes for each campus were constructed and finished as a class project in a cabinetry and woodworking class on the BCTC Lawrenceburg campus.

Website link. Committee members worked with the Information Technology (IT) staff to develop content for the Lactation Station menu tab on the BCTC website. The goal for the web content was to provide one place for women to obtain all the information needed to access the program, locate the lactation room on their campus, identify a program representative on each campus, as well as additional information about pumping and storing breast milk, and resources for supplies (Appendix D). In addition an interactive digital registration form was developed for the website. Women can complete the online form and simply click “Submit”. The form is then delivered to the BCTC Certified Lactation Counselor’s email Inbox. The woman then receives an email response confirming her registration and welcoming her to the program. The Lactation Counselor maintains a confidential, password protected file of all program participants on each campus.

Lactation program utilization is tracked each week by campus program representatives by using the online Lactation Support program registration form, and the sign-in cards completed by users each time they use the lactation room. In addition site traffic to the BCTC Lactation Station web tab can be tracked. Original members of the ad hoc committee prepare and present utilization reports each semester to the Dean of Operations.

Program promotion. Committee members collaborated with the Public Information and Marketing staff to develop a BCTC Facebook and Twitter presence. Facebook and Twitter announcements about the BCTC lactation support program are sent twice per month. A Facebook breastfeeding group will be offered to all lactation program participants and will be

moderated by the Certified Lactation Counselor. The lactation support program was announced using the college newspaper in October. Every two weeks notices with the [Lactation Station](#) link are posted on the BCTC Facebook and Twitter accounts.

Lactation program initiation. The lactation support program missed the August 2012 target date and all rooms were available on September 15, 2012. The [Lactation Station](#) link on the BCTC website was made available on this date once all rooms were open for use, and includes the BCTC lactation support guideline, an orientation packet for all program participants, locations and directions and an interactive registration form for online enrollment in the program. The orientation packet includes information about the BCTC lactation support program and additional information for breastfeeding mothers and links to local resources.

All women who work or attend classes on any BCTC campus and are breastfeeding are eligible to participate in the BCTC lactation support program. To date there has been a single, regular user on the Cooper campus.

Program Sustainability

The PPACA (2010) requirement for employers to provide suitable space and break times for breastfeeding mothers to use a breast pump during work hours was the initial motivation for this lactation support program. The program has the full support of the college administration and a dedicated group of faculty and staff who have been active in developing and implementing this program as part of their internal service load. Any recurring and non-recurring expenses including room supplies (anti-bacterial wipes, facial tissues, hand sanitizer, replacement keys) related to sustaining this program have been assigned to the budget of the Dean of Operations.

Members of the ad hoc committee have remained active in supporting program sustainability through service as campus program representatives, participation in program

evaluation and quality improvement. Matters related to the program are dealt with through regular, informal communication.

Program participation has been limited to date and variable participation is anticipated each year. The program currently requires minimal day-to-day oversight and is maintained by program representatives on each campus who are supported by the Dean of Operations. Each campus site has a contact person, supported by campus leadership, who is responsible for the lactation room key, the sign-in cards, and who notifies Maintenance and Operations to order antibacterial surface wipes or hand sanitizing supplies for each room. In addition, each room has signs with contact information for lactation room users who may have a question or concern.

Ultimately, the success of the lactation program will be based on utilization and user satisfaction. Evaluation of program utilization and of program component availability for users provides opportunity for quality improvement (CDC, 2006). As program use increases and demands on program representatives at each campus increases, the need for additional program support representatives or additional lactation room space may become apparent. Lactation program representatives will provide reports every semester including room utilization on each campus, adequacy of space, supplies, and support personnel, and results of user satisfaction survey. Recommendations for changes will be included in these reports. Sustainability and quality of the program ongoing participation of lactation program representatives and timely communication with the Dean of Operations.

Planned Program Evaluation

Evaluation of program utilization, user satisfaction, and breastfeeding duration for program users will be evaluated using two surveys; the first survey will evaluate program

promotion and awareness by potential users; while the second survey will evaluate individual user satisfaction and duration of breastfeeding.

First Survey: Program Promotion and Awareness of Users

Initial use of the lactation program has been limited and whether this is due to normal variability or due to lack of awareness of the program is unclear. Effective promotion of a new program is essential to assure that potential users are aware of the program and can access the services. Therefore the first survey is to identify effectiveness of program promotion.

Subjects and consent. Institutional Review Board review was requested for the Lactation Program Implementation Survey. The BCTC Institutional Research staff set up the password protected online survey and made it available on the college website on 12/5/2012. The survey will be available through January 2013. All staff, faculty, and students are eligible to participate in the survey. A participation request and link to the online survey is available on the BCTC website. The opening page of the survey defines the objectives of the survey and explains that participation is voluntary and optional (Appendix E). The participant may download and print a copy of the consent. There are no foreseeable physical, psychological, or social risks associated with study participation.

Instrument and variables. The Institutional Research staff worked with committee members to develop the online survey tool to evaluate effectiveness of program promotion and awareness of potential program users. The survey consists of 12 questions (Appendix F). Demographic information including age, race, and education level will be collected. Each respondent will be asked about breastfeeding status and use of the campus lactation room. Additional questions explore sources of information about the lactation program, awareness of the BCTC Lactation Support guideline and perception of lactation support by the college.

Data and safety monitoring plan. All records of survey results will be retained for a period of at least three years after completion of the study. No study participant's identity will be collected or associated with any data collected, reviewed or stored. Printed records will be maintained in a locked file in the investigator's office. Digital records will be maintained in password protected files accessible only to authorized personnel through BCTC Institutional Research.

Analysis. Descriptive statistics including frequency distributions will be used to determine demographic characteristics of the sample. In addition, bivariate analysis will be used for group comparison in cross tabulations.

Anticipated outcomes. Anticipated outcomes are that survey participants from all campus sites will report awareness of the lactation support program either through the college website, Facebook, or Twitter.

Second Survey: Lactation Program Participant Survey

Future data collection will examine individual user satisfaction with the program and duration of breastfeeding. This survey will begin in February 2013, six months after program implementation, and continue through February 2014. Institutional Review Board approval has been requested for this survey.

Subjects and consent. Due to the anticipated small study population, all women who registered to use the campus lactation rooms from September 30, 2012 through September 30, 2013 will be invited to participate in the survey. The BCTC Lactation Program Registration Form, an interactive, digital form is available on the college website, and when completed, is routed to the principle investigator, who is a lactation program representative and a Certified

Lactation Counselor. Six months after registering to use the campus lactation room, each program participant will be invited to participate in this online survey.

The BCTC Institutional Research staff will set up the password protected online survey and make it available on the college website. The opening page content (Appendix G) will include survey objectives, and explain that survey participation is voluntary, and participant identity will not be associated with the completed survey. Willingness to participate is indicated by clicking through to the survey. The participant may download and print a copy of the consent.

Instruments and variables. The U.S. Food and Drug Administration developed the Infant Feeding Practices Study II (IFPS II) questionnaire which includes items specific to workplace lactation support (Fein et al., 2008). According to the Department of Health and Human Services (DHHS) (2004) the IFPS II has been extensively tested using small pretests and cognitive interviews. Reliability is shown by month to month response consistency and validity is indicated by similarity of study estimates with other data (DHHS, 2004). Complete IFPS II questionnaires and survey results are available at <http://www.cdc.gov/ifps/index.htm>. After consultation with content experts, the 26 question BCTC Lactation Program Participant Survey tool (Appendix H) was developed using 17 questions from the IFPS II section specific to workplace lactation support, along with 9 questions specific to the BCTC lactation program. Based on pilot testing, survey completion will take 10 to 15 minutes.

Data and safety monitoring plan. All participant records will be retained for a period of at least three years after completion of the study. Study participants will be assigned a number for identification purposes, and all personal identifiers will be removed. Printed records will be maintained in a locked file in the principle investigator's office. Digital records, absent any

personal identifiers, will be maintained in password protected files accessible only to authorized personnel through BCTC Institutional Research.

Analysis. Results of the IFSP II 2008 data, stratified by region and demographics, for the specific questions in this study will be used for comparison analysis (CDC, 2008). Descriptive statistics including frequency distributions will be used to determine demographic characteristics of the sample. In addition, bivariate analysis will be used for group comparison in cross tabulations. Results of the BCTC Lactation Program Participant Survey will be organized, one table per question, to facilitate comparison to the 2008 IFSP II results (Appendix I) using the two sample *t*-test for comparison of means. Independent variables will be analyzed using multiple regression. Continued breastfeeding at three, and six months among college staff and students would be compared to IFPS II 2008 breastfeeding rates in the southeastern region of the US for evidence of program effectiveness.

Anticipated outcomes. Anticipated outcomes of a successful lactation support program would demonstrate breastfeeding duration equivalent to the results reported for the southeast region of the U.S. Details of the results of the IFPS II may be found at <http://www.cdc.gov/ifps/index.htm>.

Conclusions

Breastfeeding is the biologic norm for infants (WHO, 2009; AAP, 2012; ACOG, 2007; ADA, 2009) Breastfeeding duration remains well below *Healthy People 2020* goals and AAP and WHO recommendations, particularly in the southeastern region of the U.S. (CDC, 2012). Modification of infant feeding practices to increase breastfeeding initiation and duration is an important public health initiative which can reduce risk and improve health outcomes for mothers and infants (Stuebe, 2009). Effective interventions address issues affecting

breastfeeding initiation and continuation along the continuum beginning in the maternity care setting and through the infant's first months (Chung, Raman, Trikalinos, Lau, & Ip, 2008).

Supporting breastfeeding mothers in the workplace can help them balance the dual role of providing income for their family and nutrition for their infant (Godfrey & Lawrence, 2010).

The BCTC lactation support program completes the goal to meet the PPACA (2010) requirement to provide lactation space and breaks for staff, but meets an additional goal to provide lactation support to students. In addition the BCTC lactation support program offers information for breastfeeding women, and their supervisors.

Implementing a workplace lactation support program at BCTC was not cost prohibitive. Results of the two planned surveys can be used to optimize the existing program and will provide information to support development of a toolkit, based on the experience at BCTC, which can be shared with other institutions. This program may serve as a template for all college systems in the Kentucky Community and Technical College System (KCTCS), and there have been inquiries from other staff in the system. Sharing our experiences and increasing the number of institutions offering a lactation support program can potentially benefit thousands of mothers and infants throughout the state.

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Appendix A

Table 1
Breastfeeding rates for infants in Kentucky

Healthy People 2020 Goals	2008	2009	2010	2011	2012	U.S. Range of Rates 2012
Initiation Goal: 81.9%	48.2%	53.6%	58.7%	57.8%	59.4%	47.2-90.8%
3 months, exclusive Goal: 46.2%	21.5%	27.2%	26.4%	24.2%	21.1%	17.3-56.6%
6 months Goal: 60.6%	23.2%	28.9%	29.6%	32.9%	27.3%	23.6-68.1%
6 months, exclusive Goal: 25.5%	5.9%	9.4%	12.0%	9.8%	9.6%	7.6-26.6%
12 months Goal: 34.1%	9.8%	15.8%	13.1%	18.6%	10.8%	10.8-48.7%

Note: Center for Disease Control (2012).

Table 2
Expenses for Lactation Rooms

Item	Number	Price	Total
Lactation Room signs	6	\$65.00	\$390.00
Supplies for sign-in boxes	6	\$26.50	\$159.00
Kleenex® facial tissues (24 boxes)	1 case	\$69.62	\$69.62
Antibacterial wipes (27 tubs)	1 case	\$40.80	\$40.80
Purell® Desktop dispenser (12)	1 case	\$75.49	\$75.49
In kind service 9 hr/week	45 weeks	\$20.83/hr	\$8333.33
Total expenditures:			\$9617.54

Appendix B

**Bluegrass Community and Technical College
Breastfeeding and Lactation Support Guidelines**

Purpose

Recognizing the importance of breastfeeding for both mothers and their infants, and of promoting a family-friendly work and study environment, the College provides breastfeeding and lactation guidelines. In doing so, the College strives to create an exceptional academic environment conducive to working and learning and one that is attuned to both professional and personal needs of its women faculty, staff and students.

Guidelines

Bluegrass Community and Technical College recognizes the importance and benefits of breastfeeding and is committed to promoting this effort. Therefore, in a manner consistent with Kentucky Revised Statute¹, the College acknowledges that a woman may breastfeed her child in any place open to the public on campus. Additionally, the College shall provide sanitary and private space for expressing milk wherever possible; lactation breaks; and resources to support its women faculty, staff and students.

Process

Upon returning to work after the birth of a child, nursing mothers may request an area to pump breast milk in the workplace during normal business hours. Supervisors and Department Chairs will work with employees who are nursing to schedule reasonable and flexible break times each day for this activity.

1. Lactation Breaks

- a. Whenever possible, the College shall provide flexibility for staff and faculty mothers who give their Department Chair or Supervisor adequate notice identifying a need for lactation support and facilities.
- b. Mothers are responsible for requesting lactation support prior to or during maternity leave, preferably no later than two weeks before returning to work.
- c. Supervisors and employees shall work together to establish mutually convenient times.
- d. Alternatively, vacation time or flexible scheduling in accordance with the Flexible Work Arrangement Guidelines may be used for this accommodation.
- e. Employees who need assistance are encouraged to make appropriate arrangements with their supervisor to ensure that normal business activities are not severely disrupted and their assigned tasks are completed as expected.
- f. Students and instructors planning to use lactation facilities must do so around their scheduled class times. Although any necessary student accommodations should be negotiated with individual professors, professors are not required to excuse tardiness or absences due to lactation needs.

Appendix B

**Bluegrass Community and Technical College
Breastfeeding and Lactation Support Guidelines**

2. Lactation Facilities

- a. The College, at a minimum, should provide clean, comfortable private rooms with locked doors. Each room should have an electrical outlet and at least one table and one chair.
- b. The College shall provide sanitary and private facilities in close proximity (10 minutes) to the work area across campus for mothers to express breast milk.
- c. The location may be the place an employee normally works if there is adequate privacy, cleanliness, and is comfortable for the employee.
- d. Supervisors who receive a lactation accommodation request should review available space in their department/unit and be prepared to provide appropriate nearby space and break time.

3. Education Services and Resources

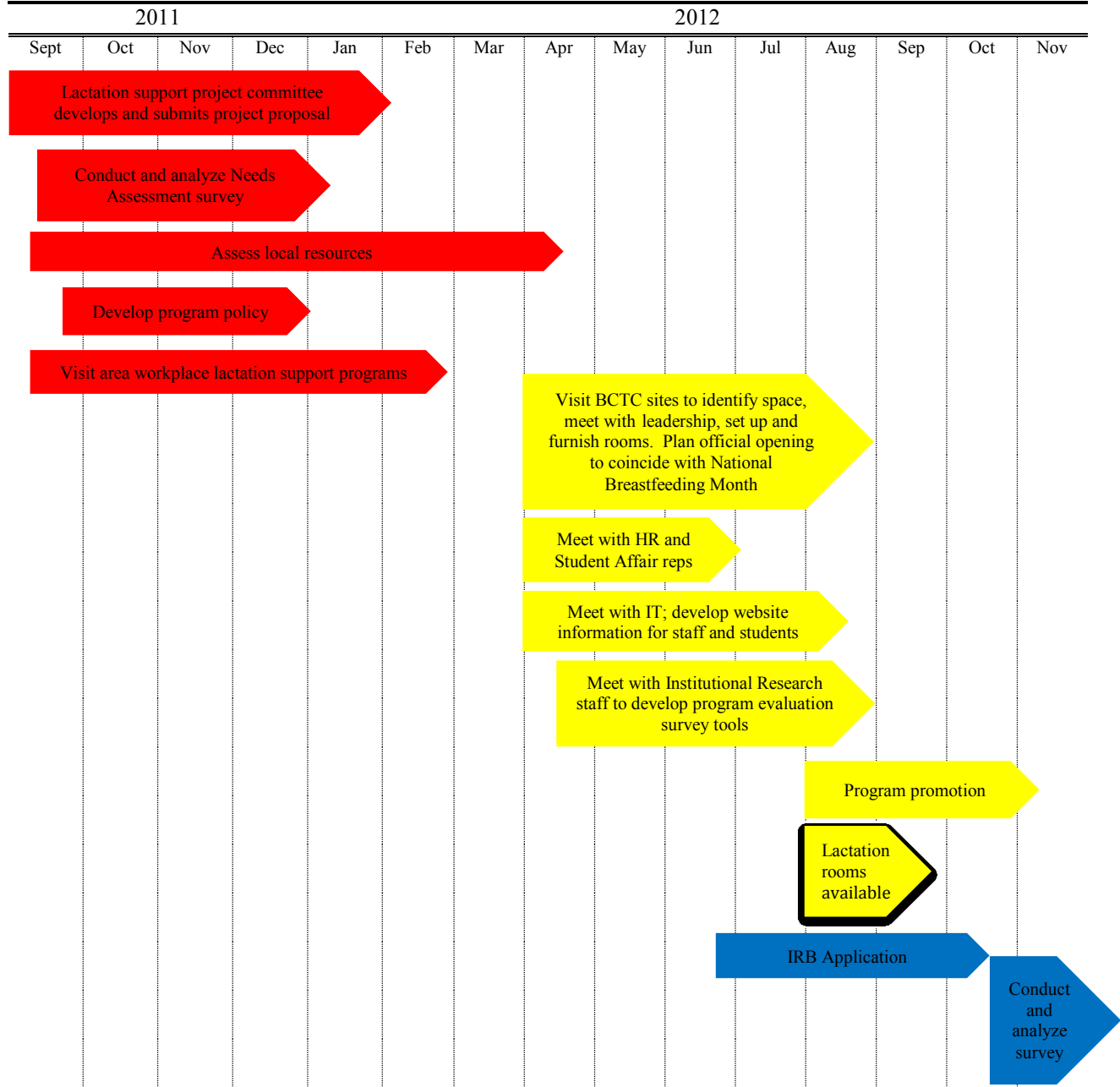
- a. The College shall provide lactation support and information on the website and in Human Resource Benefits booklets.

Note: These guidelines do not extend to permitting infants in the work place.

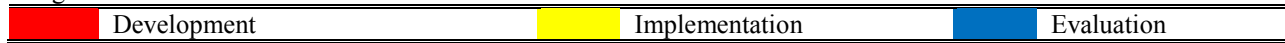
1 KRS 211.755 specifically provides that a mother may breast-feed her baby or express breast milk in any location, public or private, where the mother is otherwise authorized to be.

Appendix C

Table 1
Lactation Support Program Project Timeline



Legend



Appendix D

Orientation Packet for Staff, Faculty and Students

Are you expecting a baby and considering breastfeeding? Or are you a new mother who wants to keep breastfeeding after returning to work? Bluegrass Community and Technical College has a program to help you combine the demands of working or attending classes and breastfeeding. To learn more about the BCTC program to support breastfeeding and about the **Lactation Stations** contact the Human Resources Manager or Peggy Rinehart, CLC peggy.rinehart@kctcs.edu

Welcome To Your Breastfeeding-Friendly College

Congratulations on your decision to feed your baby mother's milk! Your baby deserves the best possible start in life and mother's milk provides that! BCTC recognizes the importance of breastfeeding for you and your baby and is a "Breastfeeding Friendly College". You can return to work or school and still provide your baby with the best possible source of nutrition -- mother's milk. Mother's milk provides your baby with the most nutritionally complete, easily digested, convenient and economical source of nourishment. In addition, mother's milk has many health benefits for your baby including a reduction in the incidence and severity of ear infections, respiratory infections, gastrointestinal infections and allergies. Breastfeeding enhances the bond between you and your baby. Benefits for you, as the mother, include more time spent with the baby instead of preparing formula, less risk of premenopausal breast cancer, and more relaxation and stress relief due to hormones produced during lactation. Your decision to breastfeed your baby may provide lifetime benefits for you and your baby!

Participants in the BCTC lactation support program are asked to follow the Participant Guidelines outlined in this packet. If you have questions or concerns contact your personal Lactation Consultant, the BCTC Certified Lactation Counselor, your family physician, or other community breastfeeding support groups. Helpful Information links:

[How WIC Supports Breastfeeding](#)

[Kentucky Cabinet for Health and Family Services Breastfeeding Information](#)

[Kentucky Breastfeeding Resources](#)

[Kentucky Breastfeeding Resource Guide](#)

[American Academy of Pediatrics](#)

[Text4baby](#)

Appendix D

Lactation Room Guidelines

1. For non-urgent breastfeeding questions or to discuss using the lactation room on any BTC campus site, please call (859-246-6250) or email (peggy.rinehart@KCTCS.edu) Peggy Rinehart, the Lactation Station program representative. You can register to use any lactation room using the online registration form using the link in the Lactation Station menu. Each campus has a sign-in location and key located near the lactation room. You will return the key, after each visit to the room.
2. Review your orientation packet. Consider purchasing a good quality double electric pump designed for working women. The **Kentucky Breastfeeding Resource Guide 2011** <http://chfs.ky.gov/NR/rdonlyres/6785ED58-AE0C-4200-BA7E-F867DA22224/0/BFRESOURCEGUIDE311.pdf> has information and links to various breast pump manufacturers and retailers, as well as information about your local La Leche League Leader, and Lactation Consultants for information regarding good quality pumps. Community WIC Programs have breastfeeding coordinators who can also help you with decisions about purchasing or renting a pump.
3. Your pumping equipment should be rinsed well after each use. It is recommended that you rinse your pumping equipment first in cold water and then wash with hot soapy water and rinsed well on a daily basis to avoid contamination.
4. Good hand washing before and after pumping is essential to prevent contamination of your milk, your pumping equipment and the environment. Hand sanitizers are stocked in each room.
5. If you do not have access to a refrigerator when on campus, an insulated cooler bag with “blue ice” packs will keep your milk safe all day, and while transporting your milk from campus to home.
6. Each woman using the room is responsible for cleaning up after her use of the room. Please ensure that you clean up any spills. Disinfectant wipes are available in each room for this purpose.
7. Signing in each time you use the room provides important information about room usage and adequacy of each room. This log also demonstrates the importance of providing this room for breastfeeding mothers.
8. Each room has a notebook available for women to write comments or suggestions. There are also “Comment” slips at the sign-in area, which can be filled out and placed in the sign-in box. Please feel free to share your comments, suggestions, or concerns; or contact Peggy Rinehart, CLC, peggy.rinehart@kctcs.edu.

Appendix D

Hints for Mothers who Pump

Your milk is the best food for your baby for the first year of life and longer. There is compelling evidence that babies on mother's milk are less likely to have infections or be sick. This is especially true for babies in childcare settings. When you are away from your baby, you can express your milk by pumping your breasts and provide your milk for later feedings. The following guidelines may help you in this process.

To Maintain Your Milk Supply

- Frequency is the key. Plan unrestricted nursing throughout evenings, nights, weekends and days off. Milk production is based on supply and demand. Frequent breastfeeding when you are with your baby and regular milk expression when away from your baby will help maintain your supply.
- Expect your baby to want to breastfeed more when you are together, to compensate for time apart during the day.
- Choose the expression method that best meets your needs. If you purchase a pump, practice assembling and cleaning it. If you opt for hand-expression of your milk, learn the technique well in advance of your return to work. Begin expressing and freezing milk about two weeks prior to resuming your work routine. The assurance you gain will make it easier for you to continue after you return to work.
- Delay introducing a bottle until your baby has become expert at nursing and your milk supply is well established, usually at about four to six weeks of age. About two weeks before you return to work, have your baby's caregiver offer your baby a bottle. Many babies will refuse a bottle if their mother is nearby. Infants older than three months who resist the notion of drinking a bottle might accept milk from a cup or a spoon.

Expressing Milk at Home

- To build up a reserve milk supply, try expressing in the morning before your baby breastfeeds, between feedings, or immediately after feedings. Many mothers get good results by expressing milk from one breast while their baby nurses on the other.

Cleaning Bottles and Pumping Kits

Rinse bottles and pump equipment in cold water first and then wash in the dishwasher or hot soapy water dishwasher and rinse twice. Air-dry all parts on a clean towel.

Appendix D

Storing Expressed Breastmilk

- Store your milk in clean glass or plastic bottles. Avoid hard polycarbonate plastic, which contains Bisphenol A (BPA). BPA, a xenoestrogen, is an endocrine disruptor, meaning it disturbs the hormonal messaging in our bodies. Plastic bottles made of softer, safer plastics (polyethylene, polypropylene, or polyamide) are safe to use. Born Free, Gerber, Sassy, and Medela make plastic baby bottles which are safe for babies. Discard worn bottles that are cloudy or scratched. Chemicals leach into food when plastics break down. Don't heat plastic bottles in the microwave, or wash them in the dishwasher, since heat degrades plastic, releasing chemicals.
- Save milk in quantities of 2, 3, and 4 ounces so your baby's caregiver can choose the amount appropriate to your baby's hunger or feeding pattern. Label each container of milk with the date pumped and quantity. Use the oldest milk first. Add your name and your baby's name to the label if your milk will be given to your baby in a childcare setting. Include the date you are bringing the milk to the childcare setting on the label to indicate when it is to be used. Leave fresh, rather than frozen, milk for your baby whenever possible.
- Use a separate container to store the milk each time you pump. You can later combine cooled batches for a feeding or for frozen storage. You can add refrigerated milk to frozen milk provided the amount you add is less than the amount already frozen.

Storage Duration of Fresh Human Milk for Use with Healthy Full Term Infants			
Location	Temperature	Duration	Comments
Countertop, table	Room temperature (up to 77°F or 25°C)	6–8 hours	Containers should be covered and kept as cool as possible; covering the container with a cool towel may keep milk cooler.
Insulated cooler bag	5-39°F or -15-4°C	24 hours	Keep ice packs in contact with milk containers at all times, limit opening cooler bag.
Refrigerator	39°F or 4°C	5 days	Store milk in the back of the main body of the refrigerator.
Freezer			Store milk toward the back of the freezer, where temperature is most constant. Milk stored for longer durations in the ranges listed is safe, but some of the lipids in the milk undergo degradation resulting in lower quality.
Freezer compartment of a refrigerator	5°F or -15°C	2 weeks	
Freezer compartment of refrigerator with separate doors	0°F or -18°C	3–6 months	
Chest or upright deep freezer	-4°F or -20°C	6–12 months	
Reference: Academy of Breastfeeding Medicine. (2004) Clinical Protocol Number #8: Human Milk Storage Information for Home Use for Healthy Full Term Infants [PDF-125k]. Princeton Junction, New Jersey: Academy of Breastfeeding Medicine. Available			

Appendix D

Thawing and Warming

- Defrost frozen milk in the refrigerator, or use water "bath" to defrost.
 - To defrost in the refrigerator, move the milk from the freezer to the refrigerator the night before it is needed.
 - To defrost in the water "bath" put the bottle of frozen milk in a pan of warm (not hot) water or hold under warm tap water until thawed.
- After thawing, shake gently, or swirl, to mix and pour the portion for this feeding only, into the feeding bottle or cup. Refrigerate the remainder for the next feedings.
- Antibodies in breastmilk may survive freezing if the milk is properly stored, but cannot survive intense heating (microwave oven).
- Microwave heating causes "hot spots" in the milk that can burn the baby's mouth and throat. Never use a microwave to thaw or heat milk.
- Warm only enough milk for one feeding. Keep the remainder of the thawed milk refrigerated for use later on the same day. Thawed milk may be refrigerated 24 hours.
- **DO NOT** re-freeze milk that has been warmed and partially utilized for a particular feeding.

Appendix E

Informed Consent for Participation in Research**Protocol Title:** Evaluation of Promotion and Awareness of BCTC Lactation Support Program**IRB Approval Date:** 11/19/2012**IRB Expiration Date:****Subject Informed Consent for Collection of Information/Data****Introduction and Background Information**

You are invited to participate in a research study. The study is being conducted by Peggy Rinehart, MSN, APRN, NNP-BC, a faculty member in the Nursing program. Nancy York, PhD, RN, CNE, a faculty member in the doctoral program at Bellarmine University, is a Research Advisor for this project. The study is sponsored by Bluegrass Community and Technical College (BCTC). The study will take place at Bluegrass Community and Technical College. This survey is open to all interested participants.

Purpose

The purpose of this study is to evaluate the effectiveness of promotion of the new lactation support program for faculty, staff, and students at BCTC. Information shared by study participants will be used to evaluate and improve the BCTC workplace lactation support program.

Procedures

If you decide to participate, you will complete a 12 question survey. Survey completion takes 5-10 minutes.

Potential Risks

There are no foreseeable physical, psychological, or social risks associated with participation in this survey.

Benefits

The information collected may not benefit you directly. The information learned in this study may be helpful to others, and will be used to promote and support breastfeeding, and decrease barriers to continued breastfeeding for mothers who are employed or attending classes at BCTC.

Confidentiality

Your responses are totally anonymous. All the information you provide will be used responsibly and will be protected against release to unauthorized persons. Although absolute confidentiality cannot be guaranteed, confidentiality will be protected to the extent permitted by law. Digital records of survey responses will be maintained in password protected files accessible only to authorized personnel, including research team members, through BCTC Institutional Research. Study sponsors, and the Institutional Review Board may inspect your survey responses. By clicking on the survey link below and by submitting a completed survey, you are giving permission to use your data record in this study. The results of this study may be published in professional, medical, or educational literature or it may be presented in a professional conference, but no publication or presentation will contain information that will identify you.

Date written: 9/5/2012

Date revised:

Appendix E

Informed Consent for Participation in Research**Protocol Title: Evaluation of Promotion and Awareness of BCTC Lactation Support Program****IRB Approval Date:** 11/19/2012**IRB Expiration Date:****Subject Informed Consent for Collection of Information/Data****Voluntary Participation**

Your participation is voluntary, and you are free to withdraw your consent at any time by exiting the survey and closing your browser.

Research Subject's Rights and Contact Persons

If you click on the link below and submit a completed survey, you are indicating your agreement that all your questions have been answered in language you can understand. If you have any questions about the study, please contact Peggy Rinehart 859-246-6250, or peggy.rinehart@kctcs.edu.

If you have any questions about your rights as a research subject, you may call the KCTCS Institutional Review Board 859-256-3184. You will be given the opportunity to discuss any questions about your rights as a research subject, in confidence, with a member of the Board. This is an independent committee composed of members of the University community and lay members of the community not connected with this institution. The Board has reviewed this study.

Consent

You have reviewed the above information and hereby consent to voluntarily participate in this study. You may download a copy of the consent.

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Date written: 9/5/2012

Date revised:

Appendix F

**Bluegrass Community and Technical College
Lactation Program Implementation Survey**

Select "Yes" or "No" for questions 1 through 6

1. Does BCTC have a policy for employees and students who are breastfeeding and pumping breast milk? Yes
 No
2. Does BCTC have information and resources for breastfeeding mothers posted on the campus website? Yes
 No
3. Does BCTC have information and resources for breastfeeding mothers on Facebook? Yes
 No
4. Does BCTC have information and resources for breastfeeding mothers on Twitter? Yes
 No
5. Are you presently breastfeeding? *IF 'NO' SKIP TO QUESTION #7* Yes
 No
6. Do you use the lactation room when you are working or attending class on campus? Yes
 No
7. In your opinion, how supportive of breastfeeding is BCTC? *SELECT ONE* Not at all supportive
 Somewhat supportive
 Very supportive
8. What is your age in years? Enter age in years:
[Click here to enter text.](#)
9. What is your gender? *SELECT ONE* Female
 Male
10. What is your race/ethnicity? *SELECT ONE* White
 African American
 Hispanic
 Asian/Pacific Islander
 Other:
[Click here to enter text.](#)
11. What is your education level? *SELECT ONE* HS graduate (or equivalent)
 Some college (no degree)
 College graduate (AD or higher)
12. On which BCTC campus do you work, or attend classes? *SELECT ONE* Cooper
 Danville
 Lawrenceburg
 Leestown
 Regency
 Winchester
13. Additional comments: [Click here to enter text.](#)

Appendix G

Informed Consent for Participation in Research

Protocol Title: Effect of Workplace Lactation Support on Breastfeeding Duration

IRB Approval Date:

IRB Expiration Date:

Subject Informed Consent for Collection of Information/Data

Introduction and Background Information

You are invited to participate in a research study. The study is being conducted by Peggy Rinehart, MSN, APRN, NNP-BC, a faculty member in the Nursing program. Nancy York, PhD, RN, CNE, a faculty member in the doctoral program at Bellarmine University, is a Research Advisor for this project. The study is sponsored by Bluegrass Community and Technical College (BCTC). The study will take place at Bluegrass Community and Technical College. This survey is open to all interested participants.

Purpose

The purpose of this research study is to evaluate the effect of workplace lactation support on the duration of breastfeeding for mothers who are working, or attending classes. Information shared by study participants will be used to evaluate and improve the BCTC workplace lactation support program.

Procedures

If you decide to participate, you will complete a 26 question survey six months after registering to use the lactation rooms at BCTC. Survey completion takes 10-15 minutes. Survey questions are identical to questions included in the Infant Feeding Practices Study II questionnaire <http://www.cdc.gov/ifps/index.htm>, developed by the Food and Drug Administration (FDA), and conducted by the FDA in collaboration with the Centers for Disease Control and Prevention (CDC). The survey also includes additional questions about the lactation room on campus.

Potential Risks

There are no foreseeable physical, psychological, or social risks associated with participation in this survey.

Benefits

The information collected may not benefit you directly. The information learned in this study may be helpful to others, and will be used to promote and support breastfeeding, and decrease barriers to continued breastfeeding for mothers who are employed or attending classes at BCTC.

Confidentiality

All the information you provide will be used responsibly and will be protected against release to unauthorized persons. Although absolute confidentiality cannot be guaranteed, confidentiality will be protected to the extent permitted by law. Study participants will be assigned a code number, and only this code number will be associated with each completed questionnaire. The list of study participants and code numbers will be kept in a locked file, accessible only to certain research team members. Digital records of survey responses will be maintained in password protected files accessible only to authorized personnel, including research team members, through BCTC Institutional Research. Study sponsors, and the Institutional Review Board may inspect your survey responses. By clicking on the survey link below and by submitting a completed survey, you are giving permission to use your data recorded in this study. The results of this study may be published in professional, medical, or educational literature or it may be presented in a professional conference, but no publication or presentation will contain information that will identify you.

Appendix G

Informed Consent for Participation in Research**Protocol Title:** Effect of Workplace Lactation Support on Breastfeeding Duration**IRB Approval Date:****IRB Expiration Date:****Subject Informed Consent for Collection of Information/Data****Voluntary Participation**

Your participation is voluntary, and you are free to withdraw your consent at any time by exiting the survey and closing your browser.

Research Subject's Rights and Contact Persons

If you click on the link below and submit a completed survey, you are indicating your agreement that all your questions have been answered in language you can understand. If you have any questions about the study, please contact Peggy Rinehart 859-246-6250, or peggy.rinehart@kctcs.edu.

If you have any questions about your rights as a research subject, you may call the KCTCS Institutional Review Board 859-256-3184. You will be given the opportunity to discuss any questions about your rights as a research subject, in confidence, with a member of the Board. This is an independent committee composed of members of the University community and lay members of the community not connected with this institution. The Board has reviewed this study.

Consent

You have reviewed the above information and hereby consent to voluntarily participate in this study. You may download a copy of the consent.

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Date written: 9/5/2012

Date revised:

Appendix H

Bluegrass Community and Technical College
Lactation Program Participant Survey

I. Preparation during pregnancy

1. While you were pregnant what method did you plan to use to feed your new baby? SELECT ONE
 - I planned to breastfeed
 - I planned to formula feed only
 - I planned to breastfeed and formula feed
 - I did not know if I would breastfeed
2. While you were pregnant, did you plan to continue breastfeeding after returning to work or school? SELECT ONE
 - Yes
 - No
3. Did you continue breastfeeding after returning to work or school? SELECT ONE
 - Yes
 - No
4. When you were pregnant with this baby or with any other baby, did you attend any classes that discussed breastfeeding your baby? CHECK ALL THAT APPLY
 - Yes, a class on breastfeeding
 - Yes, a child birth or baby care class that included breastfeeding
 - No

II. Return to work or school

5. How old was your baby (in months and weeks) when you began working or attending classes after your delivery? (If you are not sure, give your best estimate)

Months:
[Click here to enter text.](#)

Weeks:
[Click here to enter text.](#)
6. How old is your baby today?

Months:
[Click here to enter text.](#)

Weeks:
[Click here to enter text.](#)
7. How many hours per week did you usually work at your job during the past 4 weeks? (Answer for whatever time you have been working if less than 4 weeks. If you work at two or more jobs, and/or attend classes, answer for the total number of hours.) CHECK ONE
 - 1 to 9 hours per week
 - 10-19 hours per week
 - 20-29 hours per week
 - 30-34 hours per week
 - 35 to 40 hours per week
 - More than 40 hours per week
8. Does BCTC have a policy for employees and students who are breastfeeding and pumping breast milk? SELECT ONE
 - Yes
 - No
9. Does BCTC have information and resources for breastfeeding mothers posted on the campus website? SELECT ONE
 - Yes
 - No
10. Did you use the lactation room when you were working or attending class on campus? SELECT ONE
 - Yes
 - No

Appendix H

Bluegrass Community and Technical College
Lactation Program Participant Survey

II. Return to work or school (continued)

1. What type of breast pump do you use most often? CHECK ALL THAT APPLY
- Electric breast pump
 - Combination electric and battery operated breast pump
 - Battery operated pump
 - Manual breast pump (no batteries, no cord to plug in)
 - By hand (without using a pump)
2. How did you get the breast pump that you use most often? CHECK ONE
- I bought it
 - It was given to me as a gift
 - I rented it
 - I got it from WIC
 - I borrowed it from a friend or relative
 - I borrowed it from my place of work
 - I use one provided by a hospital, my place of work, or another place
3. Was the breast pump you used most often new or used when you got it or began using it? CHECK ONE
- New
 - Used
 - Not sure
4. If you did not use the campus lactation room, why didn't you? CHECK ALL THAT APPLY
- Didn't know about campus lactation room
 - The lactation room was not conveniently located
 - Didn't like the available lactation room
 - Couldn't get the time slots I needed to pump
 - Preferred to pump in my own office
 - Working from home, or taking classes online
 - Other, *please comment:*
[Click here to enter text.](#)
5. Have you had any of the following experiences during the past 4 weeks? CHECK ALL THAT APPLY
- A coworker, or student made negative comments or complained to me about breastfeeding and/or pumping milk Yes No Not applicable
 - My supervisor, or teacher/instructor made negative comments or complained to me about breastfeeding and/or pumping milk Yes No Not applicable
 - It was hard for me to arrange break time for pumping milk Yes No Not applicable
 - It was hard for me to find a place to pump milk Yes No Not applicable
 - It was hard for me to arrange a place to store pumped breast milk Yes No Not applicable
 - It was hard for me to carry the equipment I needed to pump milk while on campus Yes No Not applicable
 - I felt worried about keeping my job because of pumping my milk Yes No Not applicable
 - I felt worried about continuing to breastfeed because of my job Yes No Not applicable
 - I felt embarrassed among coworkers, my supervisor, or other students because of needing to pump breast milk Yes No Not applicable

Appendix H

Bluegrass Community and Technical College
Lactation Program Participant Survey

III. Stopped Breastfeeding and Pumping: If you are still breastfeeding skip to #23

1. If you had problems with pumping your breast milk, your pump, the lactation room, or with your supervisor, coworkers, or other students, did you request help from the BCTC Lactation Program representative? CHECK ONE Yes No Not applicable
2. If you answered "Yes" to #16, did you receive help from the BCTC Lactation Program representative? CHECK ONE Yes No Not applicable
3. In your opinion, how supportive of breastfeeding is BCTC? CHECK ONE Not at all supportive Somewhat supportive Very supportive
4. Additional comments: [Click here to enter text.](#)
5. If you have stopped breastfeeding, did you breastfeed as long as you wanted to? CHECK ONE Yes No
6. How old was your baby (in weeks) when you completely stopped breastfeeding and pumping milk? CHECK ONE 8-11 weeks 12-15 weeks 16-19 weeks 20-23 weeks 24-27 weeks >28 weeks
7. How important was each of the following reasons for your decision to stop breastfeeding your baby?
 - My baby lost interest in nursing or began to wean him or herself Not at all important Not very important Somewhat important Very important
 - My baby was old enough that the difference between breast milk and formula no longer mattered Not at all important Not very important Somewhat important Very important
 - I could not or did not want to pump or breastfeed at work Not at all important Not very important Somewhat important Very important
 - Pumping milk no longer seemed worth the effort that it required Not at all important Not very important Somewhat important Very important
 - Breastfeeding was too inconvenient Not at all important Not very important Somewhat important Very important
 - Other: [Click here to enter text.](#) Not at all important Not very important Somewhat important Very important

Appendix H

Bluegrass Community and Technical College
Lactation Program Participant Survey

IV. General Information

The information you provide will only be reported in a summary with other responses and will never be referred to on an individual basis.

1. What was your age in years on the date of your baby's birth?

Years:

[Click here to enter text.](#)

2. What is your race/ethnicity? CHECK ONE

- White
 Black
 Asian/Pacific Islander
 Hispanic

Other:

[Click here to enter text.](#)

3. What is your education level? CHECK ONE

- High school graduate (or equivalent)
 Some college, no degree
 College graduate (Associate degree, or higher)

4. On which BCTC campus do you work, or attend classes? CHECK ONE

- Cooper
 Danville
 Lawrenceburg
 Leestown
 Regency
 Winchester

Appendix I

While you were pregnant, what method did you plan to use to feed your new baby?

	N	Breastfeed only	Formula feed only	Breast and formula feed	Don't know yet	Total (%)
Region						
All	4,881	57.0	14.5	24.6	3.9	100
South	1,694	54.3	15.3	25.8	4.6	100
Age						
18-24	1,371	49.7	17.4	27.9	5.0	100
25-29	1,574	61.8	12.7	22.5	3.0	100
30-34	1,213	59.1	13.8	23.3	3.7	100
35+	711	57.2	13.5	25.0	4.2	100
Education						
HS or less	1,048	44.6	22.4	27.6	5.4	100
Some college	1,751	59.3	11.8	25.4	3.5	100
College graduate	1,460	69.7	8.5	18.7	3.2	100
Race						
White	3,851	58.7	15.2	22.4	3.7	100
Black	296	39.5	19.3	37.2	4.1	100
Hispanic	333	51.1	8.4	35.7	4.8	100

Note: CDC, 2008

While you were pregnant, did you plan to continue breastfeeding after returning to work or school?

	N	Yes	No	N/A	Total (%)
Region					
All	3,968	53.9	10.2	35.9	100
South	1,350	52.2	10.4	37.4	100
Age					
18-24	1,062	58.5	12.6	28.9	100
25-29	1,323	51.9	9.7	38.4	100
30-34	995	51.3	8.6	40.1	100
35+	579	54.9	9.5	35.6	100
Education					
HS or less	755	47.2	11.9	40.9	100
Some college	1,478	51.1	10.3	38.6	100
College graduate	1,284	58.7	6.6	34.7	100
Race					
White	3,105	52.8	9.2	38.0	100
Black	228	61.4	17.5	21.1	100
Hispanic	289	55.4	14.2	30.4	100

Note: CDC, 2008

Appendix I

When you were pregnant with this baby or with any other baby, did you attend any classes that discussed breastfeeding your baby?

	N	Breastfeeding class	Child birth or baby care class	Both classes	No classes	Total (%)
Region						
All	3,027	14.3	17.5	7.9	60.3	100
South	986	16.0	16.1	7.6	60.2	100
Age						
18-24	700	13.7	16.3	6.6	63.4	100
25-29	1,018	13.1	17.7	9.9	59.3	100
30-34	833	16.0	17.2	8.4	58.5	100
35+	471	15.1	19.5	4.7	60.7	100
Education						
HS or less	1,048	44.6	22.4	27.6	5.4	100
Some college	1,751	59.3	11.8	25.4	3.5	100
College graduate	1,460	69.7	8.5	18.7	3.2	100
Race						
White	2,484	14.2	17.7	8.1	60.1	100
Black	141	17.7	14.2	6.4	61.7	100
Hispanic	182	14.8	18.1	5.5	61.5	100

Note: CDC, 2008

How old was your baby when you began working or attending classes after your delivery?

Median infant age in weeks when mothers began working.								
	Month 3		Month 6		Month 9		Month 12	
	N	Median	N	Median	N	Median	N	Median
Region								
All	927	8.0	972	9.6	956	10.6	916	12.0
South	283	7.3	278	8.6	278	9.8	253	10.6
Age								
18-24	173	6.3	162	10.6	166	11.1	144	12.9
25-29	313	8.0	321	9.0	300	9.6	288	12.0
30-34	262	8.6	294	9.6	289	10.6	277	11.6
35+	178	8.6	194	10.6	200	10.6	206	11.6
Education								
HS or less	136	7.0	135	8.6	131	10.6	121	12.9
Some college	326	7.0	324	8.6	310	8.6	285	11.0
College graduate	407	8.6	460	10.6	465	11.0	459	11.6
Race								
White	776	8.0	818	9.6	808	10.6	774	11.6
Black	43	8.6	41	12.9	40	11.6	38	12.9
Hispanic	44	8.6	45	11.0	47	10.6	46	12.9

Note: CDC, 2008

Appendix I

How many hours per week did you usually work at your job during the past 4 weeks?

Percent of mothers usually working each number of hours per week during the past 4 weeks by infant age in months.

	3 months	6 months	9 months	12 months
1 to 9 hrs/week	17.8	13.6	12.0	11.6
10 to 19 hrs/week	13.4	12.4	12.6	11.8
20 to 29 hrs/week	15.1	15.4	16.9	18.3
30 to 34 hrs/week	7.4	8.3	9.0	8.1
35 to 40 hrs/week	34.8	34.7	33.4	35.2
>40 hrs/week	11.6	15.6	16.2	15.1
Total (%)	100	100	100	100
N	941	979	960	917

Note: CDC, 2008

What type of breast pump do you use most often?

Percent of mothers who used each type of pump most often by infant age in months

	0-2 Months	3-5 Months	6-7 Months
Electric breast pump	51.9	56.4	59.2
Combination electric and battery operated pump	14.4	15.5	13.5
Battery operated pump	1.7	0.6	0.2
Manual pump	32.0	27.5	27.1
Total (%)	100	100	100
N	1,739	938	579

Note: CDC, 2008

How did you get the breast pump that you use most often?

Percent of mothers who got the breast pump they used most often from each source by infant age in months.

	0-2 Months	3-5 Months	6-7 Months
I bought it	57.3	60.4	60.4
It was given to me as a gift	13.9	14.0	14.0
I rented it	4.3	1.8	1.0
I got it from WIC	5.4	5.2	5.0
I borrowed it from a friend or relative	12.0	13.5	13.5
I borrowed it from my place of work	0.2	0.4	0.3
I use one provided by a hospital, my place of work, or another place	7.0	4.6	5.7
Total (%)	100	100	100
N	1,740	940	579

Note: CDC, 2008

Appendix I

Was the breast pump you used most often new or used when you got it or began using it?

Percent of mothers whose most often used pump was **new** when the mother got it or began using it by infant age in months and selected demographics.

	0-2 months		3-5 months		6-7 months	
	N	%	N	%	N	%
Region						
All	1,741	72.6	938	73.1	579	73.2
South	564	72.7	277	71.1	169	71.6
Age						
18-24	343	78.4	108	79.6	59	79.7
25-29	632	75.0	357	76.8	209	76.6
30-34	482	68.0	297	71.4	194	71.6
35+	283	67.8	176	64.8	117	66.7
Education						
HS or less	262	76.7	94	81.9	49	71.4
Some college	647	72.0	309	69.9	168	70.8
College graduate	738	71.7	509	73.9	350	74.9
Race						
White	1,449	71.3	820	72.0	510	72.2
Black	57	84.2	22	81.8	14	85.7
Hispanic	112	83.0	41	82.9	22	86.4

Note: CDC, 2008

Have you had any of the following experiences during the past 4 weeks?

Percent of mothers who experienced each problem combining breastfeeding and work

	Infant age in months			
	3	6	9	12
A coworker made negative comments or complained to me about breastfeeding	4.3	3.3	3.6	3.9
My employer or my supervisor made negative comments or complained to me	1.6	3.0	1.8	2.2
It was hard for me to arrange break time for breastfeeding or pumping milk	30.2	31.6	29.6	21.0
It was hard for me to find a place to breastfeed or pump milk	19.5	16.8	18.2	11.0
It was hard for me to arrange a place to store pumped breast milk	5.5	3.7	5.4	4.4
It was hard for me to carry the equipment I needed to pump milk at work	10.1	6.8	5.1	4.4
I felt worried about keeping my job because of breastfeeding	4.1	2.6	3.0	1.8
I felt worried about continuing to breastfeed because of my job	17.7	14.0	9.6	8.4
I felt embarrassed among coworkers, my supervisor, or my employer because of breastfeeding	8.2	4.4	5.1	4.0
N	515	429	337	228

Note: CDC, 2008

Appendix I

<i>In your opinion how supportive of breastfeeding is your place of employment?</i>				
Mothers (%) indicating each level of workplace breastfeeding support, among mothers who worked during the past 4 weeks, by infant age in months.				
	3 months	6 months	9 months	12 months
Not at all supportive	8.0	8.0	10.0	8.6
Not too supportive	11.3	12.3	10.5	12.5
Somewhat supportive	30.6	31.9	31.3	32.4
Very supportive	50.1	47.8	48.2	46.6
Total (%)	100	100	100	100
N	902	927	913	865

Note: CDC, 2008

<i>How old was your baby when you completely stopped breastfeeding and pumping milk?</i>						
Percent of mothers who completely stopped breastfeeding and pumping milk in each infant age group by selected demographics, among breastfeeding mothers.						
		< 1 month	1-2 months	3-5 months	6-8 months	≥ 9 months
	N	%	%	%	%	%
Region						
All	1,669	26.2	24.0	19.8	12.9	17.1
South	566	29.5	26.1	18.7	11.5	14.1
Age						
18-24	431	39.9	26.7	18.3	7.0	8.1
25-29	571	23.6	24.0	20.7	13.7	18.0
30-34	431	20.0	20.9	21.1	15.8	22.3
35+	233	18.0	24.9	18.0	16.7	22.3
Education						
HS or less	330	35.2	26.7	16.4	10.6	11.2
Some college	640	29.7	23.8	19.4	11.9	15.3
College graduate	571	15.1	19.6	22.6	17.7	25.0
Race						
White	1,329	26.2	22.4	20.0	13.5	17.8
Black	85	35.3	25.9	21.2	7.1	10.6
Hispanic	124	22.6	30.6	19.4	13.7	13.7

Note: CDC, 2008

Appendix I

<i>How important was each of the following reasons for your decision to stop breastfeeding your baby?</i>					
Percent of mothers indicating each reason for stopping breastfeeding by infant age at weaning					
Reason for stopping breastfeeding	Month stopped breastfeeding				
	< 1	1-2	3-5	6-8	≥ 9
My baby lost interest in nursing or began to wean him or herself	13.2	19.7	33.1	47.9	47.3
My baby was old enough that the difference between breast milk and formula no longer mattered	5.2	11.4	16.5	26.6	28.2
I could not or did not want to pump or breastfeed at work	11.2	22.3	21.3	13.5	4.6
Pumping milk no longer seemed worth the effort that it required	16.7	21.2	23.7	17.7	11.5
Breastfeeding was too inconvenient	20.4	22.3	18.6	12.5	4.2
Other:					

Column percentages do not add up to 100% because mothers could choose all that apply
Percentages shown are those that indicated reason was 'Somewhat important' or 'Very important'

Note: CDC, 2008