

## **Performance Outcome of the Proficiency in Clinical Breast Examination (ProCBE) Module at the Vicente Sotto Memorial Medical Center - Breast Center**

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**Introduction:** The VSMMC Breast Center actively promotes the practice of monthly breast self-examination and annual clinical breast examination to aid in the early detection of breast cancer. The objective of this study was to determine the performance outcome (proportion of participants who passed) on the technical aspect of the proficiency in clinical breast examination (ProCBE) module at the Vicente Sotto Memorial Medical Center.

**Methods:** The study is a retrospective analytical review designed to evaluate the proficiency in clinical breast examination program (ProCBE) done at VSMMC Breast Center. The participants' skills on the technical aspect (Position, Perimeter/Pattern and Palpation/Pressure) were evaluated through a return demonstration. Testing the difference between proportions using z-test was used for statistical analysis.

**Results:** One hundred fifty-two participants were included in the ProCBE class which included medical doctors, medical interns, and registered nurses. In the positioning station, 87.3%, 86.4%, and 80.4% of doctors, interns, and nurses passed. In the perimeter/pattern station, 97.5%, 90.9%, and 66.7% of doctors, interns, and nurses passed. In the palpation/pressure station, 54.4%, 50.0%, and 66.7% of doctors, interns, and nurses passed. Overall, 43.0%, 27.3%, and 29.4% of doctors, interns, and nurses passed the module.

**Conclusion:** Overall, 43.0%, 27.3%, and 29.4% of doctors, interns, and nurses passed the technical aspect of the Proficiency in Clinical Breast Examination Module, respectively.

**Key words:** Clinical breast exam, breast cancer

The Philippine College of Surgeons recommends 3 strategies for breast cancer screening, namely: Breast Self-Examination (BSE), Clinical Breast Examination (CBE), and Mammography. Women from the age of 20 years are encouraged to perform Breast Self-Exam

monthly while CBE is performed by a trained professional annually on women aged 30 and above. Both strategies are dependent on knowledge and skills of the individual doing the examination. Mammography is the most sensitive among the three in detecting breast masses since it detects about 40 percent of cancers that wouldn't be detected on CBE, particularly smaller-sized and early stage cancers.<sup>1</sup> It is done annually on women aged 50-74. For high risk women, annual mammography is recommended starting age 40. However, the relatively high cost of mammography in our country deters its utilization as an effective mass breast cancer screening tool. The VSMMC Breast Center thus actively promotes the practice of monthly BSE and annual CBE to aid in the early detection of breast cancer.

Clinical breast examination (CBE) is important in detecting masses missed on mammography, lumps found by women, abnormalities in women who do not follow recommended mammography intervals, and in recognizing interval cancers. Mammography sensitivity was 78% and combined mammography-CBE sensitivity was 82%, thus CBE detected an additional 4% of invasive cancers.<sup>2</sup>

According to Saslow, et al.<sup>3</sup>, CBE's contribution to women's health may extend beyond its ability to identify previously undetected palpable masses. Specifically, CBE presents an opportunity for health care providers to educate women about breast cancer, its symptoms, risk factors, and advances in its early detection, as well as normal breast composition and variability. Clinical

breast exam is performed by a trained medical or nursing practitioners yearly to women aged 30 and above as well as to those women who have detected lumps in their breasts. A comprehensive CBE is composed of 7 elements: Positions, Perimeter, Pattern of search, Pressure, Palpation, Patient education, and Plan of action.<sup>1</sup> The first 5 elements comprise the technical aspect of CBE that we are studying in this paper.

The general objective of this study was to determine the performance outcome (proportion of participants who passed) on the technical aspect of the proficiency in clinical breast examination (ProCBE) module at the Vicente Sotto Memorial Medical Center.

The specific objectives were to determine the proportion of participants who passed in the return demonstrations of the 1) "position", 2) "perimeter and pattern of search" and 3) "palpation and pressure" aspects of the ProCBE.

## Methods

A retrospective review of the Proficiency in Clinical Breast Examination (ProCBE) module was done to evaluate the participants' performance. All participants in the ProCBE module from November 2005 to June 2011 were included in the study.

At the start of the module, participants were made to watch an instructional video on how to perform a comprehensive clinical breast examination. Shown in the video was a detailed instruction and demonstration on the technical aspect of CBE after which participants will be tested on their newly acquired technical skills. Participants were made to make a return demonstration to evaluate their skills at the end of the module.

The participants' skills in the following elements were tested in 3 stations: Position (Station 1), Perimeter & Pattern (Station 2), and Palpation & Pressure (Station 3) through a return demonstration. Participants were given 3 minutes per station to complete the task.

In Station 1, a patient actor, while sitting, will be instructed by the participant to assume the following positions while inspecting the patient's breasts from side to side: arms relaxed at sides (component 1), arms held straight above the head (component 2), hands pressing down on hips with elbows bent contracting the pectoralis

muscles (component 3), and leaning forward (component 4). The participant should also properly palpate both the axilla (component 5), and the infraclavicular and supraclavicular areas (component 6). After proper positioning while sitting, the participant asks the patient to lie supine while placing a pillow under the respective breast being examined (component 7). A participant passed this station if he/she has done at least 5 out of the 7 components comprising 71.4%.

In Station 2, the participant is asked to palpate on a 5-sided figure on a mouse pad representing the area of the breast with its respective borders. The area is sprinkled with talc powder to easily assess the completeness of the area palpated. An adequate search would flatten out the talc powder on the perimeter board (component 1). The participant should be using his or her 3 middle fingers (component 2) and finger pads (component 3) without raising it while palpating (component 4) and mentions that he or she does it in 3 levels of palpation, namely: light, medium, and deep (component 5). The participant executes palpation using any of the correct pattern of search as long as all the breast area is covered (component 6). The participant knows the boundaries of the area of palpation when asked, namely: clavicle [superior], inframammary fold [inferior], anterior axillary line [lateral], and lateral border of the sternum [medial] (component 7). If the participant accomplished at least 5 out of the 7 components, he/she passed this particular station.

In Station 3, a Mammacare silicone clinical practice breast model (Mammatech Corporation, Gainesville, FL) was used for lump detection. The breast model contains 5 masses wherein each mass palpated corresponds to 1 point. Masses identified were illustrated on a form shown in Appendix A. The participant is also asked to identify the smallest and the largest masses, given also 1 point each for a correct answer, thus a total of 7 points for this station. Likewise, a participant passes this station if he/she gets at least 5 points.

Each station had a preceptor who evaluated the correctness of the technical skills of the participants through the return demonstration. The preceptors included Fellows of the Philippine College of Surgeons and trained senior residents of the Department of General Surgery who have gone through the same module.

Preceptors graded the participants on their performance on the position, perimeter/pattern, and palpation/pressure categories which made up the 3 stations. Each participant spent a maximum of 3 minutes per station since an average breast palpation examination takes 5 minutes to perform on both breasts, as recommended by the Clinical Breast Examination - California Health Services of 2001.<sup>1</sup> Participants passed the whole module if they passed all 3 stations. The proportion of participants who passed the module was computed. Testing the difference between proportions using z-test was used for statistical analysis. P-value less than 0.05 is considered significant.

## Results

There were a total of 152 participants in the ProCBE module. Participants were categorized under doctors, medical interns, or nurses. The numbers of participants who passed each category and overall are shown in Table 1. More doctor-participants passed in the perimeter/pattern category than nurse-participants and this was statistically significant. Overall, more doctors passed the module at 43.0% followed by the nurses, and lastly the interns, though this was not statistically significant.

## Discussion

Current health care reform is placing primary care physicians in an increasingly significant role as the

front-line providers of women's health care. It is critical that primary care physicians as well as surgeons develop the knowledge base, physical examination skills, and interpersonal skills necessary to care for patients with breast cancer.<sup>4</sup>

In this review, the interns have the lowest overall percentage passing. In a study done by Saslow, et al.<sup>3</sup>, medical students' perceptions of their own need for additional training and the small number of CBEs they have actually performed illustrate the limits of current medical school training in the performance of CBE. This may explain the poor performance of the medical interns in the palpation category and overall.

According to a study by Steiner, et al.<sup>5</sup>, most untrained primary care residents are not proficient in CBE. Better CBE training for residents may improve early detection of breast cancer. Barton, et al.<sup>6</sup> found out that untrained practicing physicians detected only 14 percent of 3mm masses in silicon models.

Chalabian, et al.<sup>4</sup> of the University of Southern California conducted a study using a standardized patient breast case in an Objective Structured Clinical Examination (OSCE) format to objectively assess clinical breast evaluation skill performance by nursing staff and medical students. Performance of medical students exposed to a uniform clinical breast evaluation curriculum was found to maintain a high performance of initial surgical OSCE breast station and clinical practice exam. Clinical breast examination is part of their intern orientation program and ongoing curriculum. Nursing staff demonstrated significantly poorer skills than medical students. Effective CBE training should not only improve screening technique but also increase perceived competence and self-efficacy. Results in a study reviewed by Lannoti, et al.<sup>7</sup> indicated that there is a significant effect of CBE on perceived competence and suggested that nurse practitioners from all levels of experience can benefit significantly from CBE training.

The overall percentage passing for doctors, interns and nurses are quite low. For some women, CBE is the only exam they can afford to receive. It is important for clinicians to take up the cause of the examination because the stakes are high. Delayed diagnosis of breast cancer is the most common reason for malpractice claims against physicians as noted in the Physician's Insurer Association

**Table 1.** Percentage distribution of participants who passed the test on the technical aspects of PRO-CBE.

Stations	Number of Participants who passed the 3 different stations of the ProCBE		
	Doctors (N=79)	Interns (N=22)	Nurses (N=51)
Position	69 (87.3%)	19 (86.4%)	41 (80.4%)
Perimeter/Pattern	77 (97.5%)*	20 (90.9%)	39 (76.5%)*
Palpation/Pressure	43 (54.4%)	11 (50.0%)	34 (66.7%)
Overall	34 (43.0%)	6 (27.3%)	15 (29.4%)

\*statistically significant difference at p-value = 0.002

of American Study (PIAA, 1995). The average delay in diagnosis is 14 months. In the 1995 PIAA study, leading reasons for the delay in the diagnosis include physical findings that failed to impress (35%), failure to follow-up (31%), negative mammography results (26%) and misread mammogram (23%). Spending adequate time conducting CBE can facilitate detection of abnormalities.<sup>8</sup>

The utility of CBE in the community cannot be underrated because aside from detecting 40% of first early stage breast cancers; it also uncovers 84% of breast cancer recurrence. Thus, it has a value in surveillance after patients undergo treatment for breast cancer.<sup>9</sup>

Furthermore, in a developing country like ours, where the prohibitive cost of mammography and the relatively younger age of our breast cancer patient population limit our breast cancer screening capability. Lay breast cancer awareness and performance of a comprehensive clinical breast exam may be a reasonable alternative. The establishment of clinical evaluation like CBE is a practical and necessary pre-requisite for the operation of any early detection program, especially in a low and middle income country in which patients typically present with advanced disease stages.<sup>10</sup>

## Conclusion

Overall, 43.0%, 27.3%, and 29.4% of doctors, interns, and nurses passed the technical aspect of the Proficiency in Clinical Breast Examination Module, respectively.

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