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Promoting Awareness and Early Detection of Breast Cancer in Thailand

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PROMOTING AWARENESS AND EARLY DETECTION OF BREAST CANCER IN THAILAND

Submitted to

Thomas B. Robertson
Brigitte Servatius
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on

Wednesday, March 3, 2010

Sponsoring Agency: Bangkok Breast Cancer Support Group
Queen Sirikit Centre for Breast Cancer

Project Advisors: Thomas Robertson
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Submitted by: Nandhini Amranand
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Abstract

Breast cancer is the most common type of cancer in Thailand among women. Currently, most patients are diagnosed at advanced stages of the disease, which reduces their chances of survival. The goal of our project was to assist the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer develop a brochure, catalogue, and website that provide accurate, accessible, and up-to-date information on breast cancer, as well as to determine strategies for the BBCs and the Centre to further expand the current awareness of breast cancer and breast cancer treatment in Thailand.

Acknowledgements

We would like to thank several people and organizations for their help throughout our project.

Without the help of the following, we would not have been able to complete this project.

- Khunying Finola Chatamra for her generous hospitality and continued support throughout our process
- Dr. Kris Chatamra for his help and time to make sure our project ran as smoothly as possible
- Khun Goy for her help in contacting hospitals, scheduling interviews, translating, and caring for our well being
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- Khun Heather for attending all of our sponsor meetings and contributing to our project with helpful suggestions and ideas
- Drs. Mawin, Sophark, and Adhisabandh for participating in our interviews and reviewing the content of our brochure and website
- Ajaans Thomas Robertson, Brigitte Servatius and Supawan Tantayanon for their continued help, patience, feedback, support and suggestions to make our project successful

Authorship

Nandhini Amranand (Nan) - Nan's contribution towards this project has mainly been focused on contacting doctors, administrative staff and setting dates for interviews from different hospitals/research institutes. Nan took the initiative to contact doctors from hospitals without personal connections even though it has been very tough to reach out and get an appointment. In addition, Nan contacted pharmaceutical companies, non-profit organizations, Billboard Company, numerous magazines company was also contacted via emails, phone calls and faxes. Nan's toughest role was translating the Queen Sirikit Centre website content and the brochure for Bangkok Breast Cancer Support Group (BBCs). As well as translating all the questions for the Thai doctors and the interview request letters, Nan was faced with the task of changing Thai words, which are not present in the English vocabulary and this was very time consuming, as she had to think of similar words, which would fit the correct category. Moreover the style of writing and content the brochure was written in was also again in a complete different format as it was originally only intended to be read by a Thai audience. Nan also contributed in some parts for the limitations of the finding sections, as well as in the female college group discussion for establishing contact and gathering data.

Sunil Nagpal – Sunil served as our primary liaison to the project advisors and was responsible for most technical aspects of the project and project report. He was also our team's primary photographer around the hospital and in the slums and participated in interviews asking questions and taking notes. He worked with the team on the content for both the brochure and website, developed a web-questionnaire for receiving feedback on the Centre's previous website, and was responsible for the design of the brochure. He contributed to the Introduction and Abstract section, as well as writing the Acknowledgements page, Executive Summary, the section of the Background on the American and Thai health care systems, the sections of the Methods, Findings and Conclusion chapters on developing and evaluating strategies to deliver information on breast cancer, and the section of Recommendations on using social networks to maintain contact with the Thai youth. In addition, he was responsible for compiling our paper and formatting the report.

Irina Nesterenko – Irina was also an active member of the team during meetings and interviews, taking notes and asking questions. She kept the team organized by recording the times and dates of our meetings, interviews, and deadlines, and by making to-do lists specific to parts of our project. She collaborated with the team for the content of the website. She performed the research for and wrote the societal aspect section of the Background. She also wrote the Methods section on the current awareness efforts in Thailand, as well as the sections about Thailand in the Findings and Conclusions chapters. To Recommendations she contributed the section on partnering with other companies. She participated in the initial draft of the Introduction and in the technical and literary editing for the whole report.

Aneliya Rankova – Aneliya participated in developing the interview questions and researching breast cancer awareness efforts in the United States. She also compiled the initial list of ideas about how to expand the Queen Sirikit Center’s current awareness campaign, and worked with the team and sponsors to further develop these ideas. She developed and edited the content of the brochure and the initial outline of the website content. She further participated in developing and editing the subsequent drafts of the website content. Aneliya also edited the breast cancer information section of the website content and submitted it for review to doctors. In the report, she wrote the Nature and Scope of the Breast Cancer Problem in the United States and Thailand and the Effective Health Communication sections from the Background chapter. She also participated in writing the Awareness Efforts in the United States and Thailand section from the Background. She also participated in writing the initial drafts of the Methodology and Findings. She also wrote the final draft of the Executive Summary.

Kelly Tam – Kelly served as the primary liaison between the team and our sponsors the Queen Sirikit Centre for Breast Cancer and the Bangkok Breast Cancer Support Group. She made contributions to the Introduction and also researched the awareness efforts in the United States and Thailand. She was responsible for that section of the Background as well as the implemented changes. She contributed to the Methodology and interviewed Nurse Amy Sharron of Swift House, which is part of the UMass Memorial Medical Center in Worcester, MA. After conducting research on the breast cancer awareness efforts and support activities in the United States, Kelly helped analyze how they could be applied in a Thai context in the appropriate

Findings section, as well as the implemented changes. Kelly also contributed to that part of the Recommendation and Conclusion chapters on billboards, business cards, and calendars featuring ambassadors. She helped review the information available from the National Cancer Institute in order to develop the content for the Bangkok Breast Cancer Support Group's brochure. Kelly attended hospital interviews and worked with the rest of the team to develop the content for the Queen Sirikit Centre's website.

Natnicha Tangkijngamvong (Pedd) - Pedd contacted and made a number of phone calls to major hospitals in Bangkok and several media companies, and sent interview requested letters in Thai. She translated the interviewed questions for doctors, staff, and organizations, and also had some connections, which helped shorten the interview processes. She came up with the second plan by making many phone calls directly to each hospital. With the interview via telephone, she successfully collected the essential information from most hospitals on the list. Pedd went to every interview with doctors, survivors, and organizations. Some doctors are non- English speakers, therefore, Pedd was responsible for translating the answers from interviews into English and also acted as an interpreter in many situations as well as at the web design company. In order to complete the content for the brochure, catalogue, and website, she managed to form a college students group discussion. Pedd was also responsible for pre-testing the brochure and website content with the same discussion group of college students to test the effectiveness. After each group discussion, she summarized all the gathered information and translated into English. Another responsibility of hers was to write the limitations for the report's findings at well. After the discussions with the sponsors, Pedd contacted media companies to support in promoting awareness of breast cancer, as well as printing companies and magazines for pricings of printing postcards, calendars, and name cards. Pedd summarized and compared the printing prices for the sponsors to consider. After the pre-tested, Pedd was also accountable for translating the brochure and website content into English.

Executive Summary

Breast cancer is the most common type of cancer in women in Thailand. Experts expect incidence rates to increase as Thais adopt more Western lifestyles (Wilailak, 2009). Currently, the majority of breast cancer patients in Thailand are diagnosed with the later stages of the disease, stages III and IV (Putthasri, Tangcharoensathien, Mugem, & Jindawatana, 2004). In these stages, patients do not usually respond well to treatments, leading to high mortality rates. Conversely, early detection is associated with better prognosis and higher survival rates, and is therefore considered the key to cancer control (World Health Organization, 2009).

The Bangkok Breast Cancer Support Group (the BBCs) and the Queen Sirikit Centre for Breast Cancer are two organizations that actively promote awareness and encourage early detection of breast cancer in Thailand. The Queen Sirikit Centre is a public teaching hospital that works extensively to reach out to women in underprivileged communities. Both organizations participate in ongoing campaigns to inform the public of the growing problem of breast cancer, but the Queen Sirikit Centre is a clinic while the BBCs is purely a support group. Although the BBCs and the Queen Sirikit Centre currently have well-established awareness campaigns, they actively seek additional strategies to encourage more women to get screened for the disease and to support both newly-diagnosed and current breast cancer patients.

The goal of our project was to assist the Bangkok Breast Cancer Support Group (BBCs) and Queen Sirikit Centre for Breast Cancer develop a brochure, catalogue, and website that provide accurate, accessible, and up-to-date information on breast cancer, as well as to determine strategies for the BBCs and Queen Sirikit Centre to enhance awareness of breast cancer and breast cancer treatment in Thailand. In order to achieve this goal, we developed the following research objectives:

- analyze the current awareness efforts and support activities of breast cancer organizations and support groups in Thailand;
- create a brochure and develop updated content for a website that provide accurate, accessible and up-to-date information on breast cancer and the Centre's offered treatments;

- create a catalogue of available cancer treatments and facilities in Thailand that will be accessible from both the Centre's and BBCs' websites.

In order to develop content for the brochure and the website, we first assessed what breast cancer information was currently available to the public and what information still needed to be collected and organized. We reviewed the websites and available printed materials of breast cancer organizations and agencies in Thailand and conducted interviews with breast cancer specialists. We took notes on these materials, evaluated them qualitatively for their content, level of detail, target audience, and how they delivered their message. In addition, we conducted a discussion group with nine college students from seven universities in Bangkok and determined their knowledge about breast cancer. We developed the content of the brochure and website by adapting breast cancer information from the National Cancer Institute of the United States. In the content, we also addressed some of the most common breast cancer myths and misconceptions that we encountered during our interviews. The content of both the brochure and website was approved by doctors from the Queen Sirikit Centre and was then tested for effectiveness on the same group of college students.

We designed the brochure so that it targets primarily two audiences: women from the age of twenty to forty, to whom we recommended monthly breast–self-examinations, and women from the age of forty and above, to whom we recommended annual mammogram screening.

We interviewed medical staff at thirteen private and three public hospitals in Bangkok and collected information about their cancer treatments and diagnostic procedures as well as the qualifications of their medical personnel and the cost of treatment. We compiled the data into a catalogue that was accessible from both the BBCs and Centre's website. We targeted the catalogue primarily to newly diagnosed breast cancer patients and their families who are researching treatment facilities in Bangkok.

As we executed the described methods, we identified the following key findings:

- 1. The existing breast cancer awareness campaigns in Thailand can be expanded to reach a larger audience in order to stimulate policy changes that will make early detection of breast cancer logistically possible for all women.**

Thailand currently does not have a national breast cancer screening policy. This is partly due to the fact that some provinces do not have enough mammogram facilities or qualified radiologists which present a roadblock in the path to early detection. The existing awareness campaigns in Thailand can be expanded to encourage changes in legislation that will provide a more equal distribution of mammogram machines and qualified radiologists throughout Thailand.

2. There are some breast cancer support groups in Thailand but Thai women tend to not seek emotional support services following diagnosis and during treatment because they find more comfort in discussing the disease with their families.

Breast cancer patients in Thailand rarely see a need for seeking emotional support from organizations in Thailand, since they consider the disease a personal matter that should not be discussed outside the family.

3. Information about breast cancer and the available medical facilities and treatments for breast cancer is not easily accessible in Thailand.

There are very few, if any, websites in Thai that make information on breast cancer readily available. The only website we were able to find in Thai that provided any information on breast cancer is that of the Queen Sirikit Centre. We also found that the Thai survivors we spoke to had to depend on American websites such as the National Breast Cancer Coalition and the Breast Cancer Network of Strength to build their knowledge of breast cancer at their time of diagnosis.

4. There exists a communication gap between Thai medical professionals and the general Thai public about breast cancer and the brochure, catalogue, and website that we developed are potential means that could be utilized by the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group to mend the communication gap.

A lack of communication between the majority of hospitals in or around Bangkok and the general public make it quite difficult for cancer patients, medical experts, and other people in the general public to access expert-approved information on breast cancer. Also, a sufficient

database of hospitals and facilities that provide breast cancer treatment of different levels does not exist.

5. There are several common misconceptions that Thai people have about breast cancer and breast cancer treatments.

The Thais that do have some accurate knowledge of breast cancer often have several misconceptions as well and the fact that the Thai society is often misinformed or misunderstands aspects of breast cancer makes it more challenging to develop an effective awareness campaign for Thailand, but also demonstrates the need for one.

Based on our findings, we developed three recommendations for expanding the Queen Sirikit Centre's current awareness campaign:

1. Use of billboards, business cards and calendars with celebrities and breast cancer facts from the Centre's current campaign.

Companies often advertise via billboards in cities and on highways. Thus, billboards featuring ambassadors – who are well-known celebrities, breast cancer survivors, or both – will catch Thai people's attention and by including certain facts about breast cancer, the public will become more educated about this disease. Business cards and calendars are necessary accessories and will frequently expose individuals who possess them to breast cancer facts.

2. Use of social networks to maintain contact with the youth

Facebook and YouTube have become increasingly popular in Thailand. These social networks can be used to promote breast cancer awareness and advertise the Centre's events. In fact 85% of the Thai users on Facebook are between the ages of thirteen to thirty-four which makes it ideal for maintaining contact with the youth.

3. Partnering with other private companies in Thailand

We recommended that the Centre partner with Avon and another hospital in a new mammogram screening participation program. Women who receive mammograms in October will receive a form from their doctors. The mammogram participants can fill out the form and mail it to Avon

to be entered into a raffle. One or more raffle tickets (at Avon's discretion) will be pulled at the end of October and the winner or winners will receive a free gift from Avon. Our research showed that a similar campaign worked well in the United States.

We also recommended that the Centre look into partnering with a magazine for a new mammogram screening participation program. The magazine will print postcards that will be bound into the magazine. The postcards will feature messages such as "Have you gotten your yearly mammogram? I care about you." Readers can tear out the postcards and send them to the important women in their lives as reminders. A positive and heartfelt reminder to get a mammogram will inspire women to participate in breast cancer screening. A discussion group with college students showed that many enjoyed reading magazines, so this may be a good way to reach the younger generation and make them aware of breast cancer.

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1.0 Introduction

Breast cancer is the most common type of cancer in Thailand. Incidence rates are lower than those in the United States but are expected to increase as Thais adopt more Western lifestyles (Wilailak, 2009). In Thailand, the majority of breast cancer patients are diagnosed with the later stages of the disease, stages III and IV (Putthasri et al., 2004). In these stages, patients do not usually respond as well to treatments, leading to higher mortality rates. Conversely, early detection is associated with better prognosis and higher survival rates, and is therefore considered to be the key to cancer control (World Health Organization, 2009).

The Bangkok Breast Cancer Support Group (the BBCs) and the Queen Sirikit Centre for Breast Cancer are two organizations that work to promote awareness and encourage early detection of breast cancer. The Queen Sirikit Centre is a public teaching hospital that works extensively to reach out to women in underprivileged communities. Both organizations participate in ongoing campaigns to inform the public of the growing problem of breast cancer, but the Queen Sirikit Centre is a clinic while the BBCs is purely a support group.

Although the BBCs and Queen Sirikit Centre currently have well-established awareness campaigns, they actively seek additional strategies to encourage more women to get screened for the disease and to support both newly-diagnosed and current patients.

The goal of our project was to assist the Bangkok Breast Cancer Support Group (BBCs) and Queen Sirikit Centre for Breast Cancer develop a brochure, catalogue, and website that provide accurate, accessible, and up-to-date information on breast cancer, as well as to determine strategies for the BBCs and Queen Sirikit Centre to enhance awareness of breast cancer and breast cancer treatment in Thailand. In order to achieve this goal, we developed the following research objectives:

- analyze the current awareness efforts and support activities of breast cancer organizations and support groups in Thailand;

- create a brochure and develop updated content for a website that provide accurate, accessible and up-to-date information on breast cancer and the Centre's offered treatments;
- create a catalogue of available cancer treatments and facilities in Thailand that will be accessible from both the Centre's and BBCs' websites.

Through a review of publications, websites, and outreach materials, as well as interviews with key informants, we assessed ways in which organizations and support groups in both the United States and Thailand promote awareness and educate the public about treatment options. We also made recommendations and developed materials to help address the gaps that exist in the Thai diagnosis-treatment-support process. The materials included a searchable database that linked to the BBCs's website and printed materials that were available for distribution to the public. Ideally, these materials and recommendations can be utilized by the Queen Sirikit Centre and BBCs to enhance and expand their current awareness campaigns throughout Thailand.

2.0 Background

The Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer are looking to expand their current awareness campaigns in order to reach more people. This chapter will focus on the scope of breast cancer with the emphasis on Thailand and the United States, the differences between health care in Thailand and the United States, the effectiveness of past awareness campaigns in both countries, and some possible reasons for the delayed breast cancer diagnosis in Thai women.

2.1 The Nature and Scope of the Breast Cancer Problem in the United States and Thailand

Breast cancer is the most prevalent cancer in women, both in the developed and the developing world. Incidence rates vary greatly from country to country and are highest in North America (World Health Organization, 2009). The National Cancer Institute of the United States defines breast cancer incidence rate as “the ratio of the number of new cancers of a specific site/type occurring in a specified population during a year to the number of individuals who were at risk for the given cancer, generally expressed as the number of cancers per 100,000 persons”. This overall incidence rate is age-adjusted to account for differences in age structures of the U. S. population. The National Cancer Institute of the United States computes breast cancer incidence rates by considering only the female population at risk for this type of cancer (National Cancer Institute, United States).

The United States has the world’s highest breast cancer incidence rates; according to the National Cancer Institute, 123.8 women out of every 100,000 women are diagnosed with breast cancer per year in the United States. These incidence rates are the most up-to-date statistics available from the National Cancer Institute and are based on cases diagnosed from the period 2002 -2006. However, the NCI does not specify whether this incidence rate was constant over the period 2002 – 2006, or whether it was the average rate for this particular time period. The data have been collected from the seventeen Surveillance and Epidemiology and End Results (SEER) geographic areas in the United States (National Cancer Institute, United States).

The National Cancer Institute of the United States also has available statistics for breast cancer age-specific incidence rates (Figure 1). The data are the most up-to date and refer to the period 2000 – 2006. The information has been collected from the seventeen SEER regions in the United States. These incidence rates are not age-adjusted, since they refer to a specific age group rather than to the overall female population of the United States. Figure 1 shows that women in the age group 75-79 have the highest incidence rate. However, the National Cancer Institute does not explicitly state if the age-specific rates were constant during each year between 2000 – 2006 or if the data represent the average values for each age group over the specified periods (National Cancer Institute, United States).

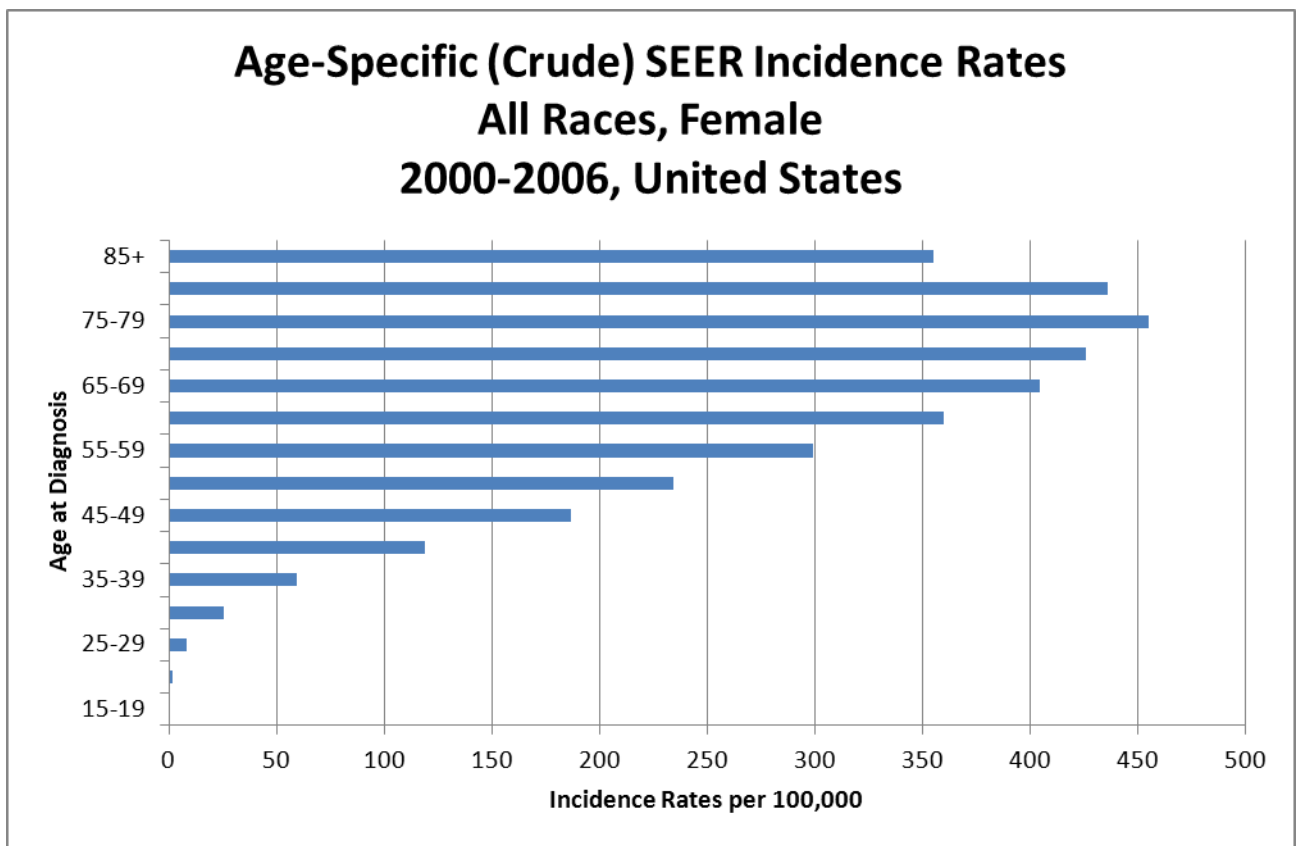


Figure 1: Age-Specific Breast Cancer Incidence Rates. 2000-2006. United States

(National Cancer Institute, United States)

Breast cancer incidence rates are lower in Southern Africa, Eastern Europe, and Western Asia, but are expected to increase in the future. According to the World Health Organization, the incidence rates in the developing countries will rise because of increased life expectancy,

growing urbanization, and greater adoption of Western lifestyles (World Health Organization, 2009).

Survival rate is another important factor that experts consider when analyzing breast cancer. It indicates how long after diagnosis people live. The National Cancer Institute defines survival as “survival from cancer that is calculated in the absence of other causes of death. According to the National Cancer Institute in the United States, for the period 1999 - 2005 the overall 5-year survival rate for breast cancer patients in the United States from the seventeen SEER geographic regions was 90.3% for white women and 77.9% for black women. It represents a hypothetical situation, where the only possible cause of death is cancer” (National Cancer Institute, United States).

In the developed countries breast cancer survival rates are high (80% or higher in North America), while developing societies have much lower survival rates. According to the World Health Organization, the lower survival rates in the developing countries are largely due to inadequate diagnostic and treatment facilities as well as a lack of early detection programs. As a result, more patients are diagnosed when the cancer is already at an advanced stage. Early detection strategies can therefore greatly improve the outcome of the treatment and are considered to be the key to cancer control in both the developed and developing countries (World Health Organization, 2009).

Breast cancer in Thailand is the most common type of cancer among women (Figure 2). According to a report from the National Cancer Institute in Thailand, in 2008, 43% of all diagnosed cancers in women were breast cancer (Figure 2). Breast cancer incidence rates now exceed by far the incidence of cervical cancer, which used to be the leading cancer among women in Thailand. Moreover, breast cancer cases in Thailand are expected to increase over time (Wilailak, 2009). Experts believe that future increases in incidence rates may be associated with changes in diet and lifestyle (Vatanasapt, Sriamporn, & Vatanasapt, 2002). In addition, the peak incidence is from age 35, which is quite early compared to other types of cancer. The average survival rate of diagnosed patients in Thailand is approximately 80%, which is lower than breast cancer survival rates in the United States (Wilailak, 2009).

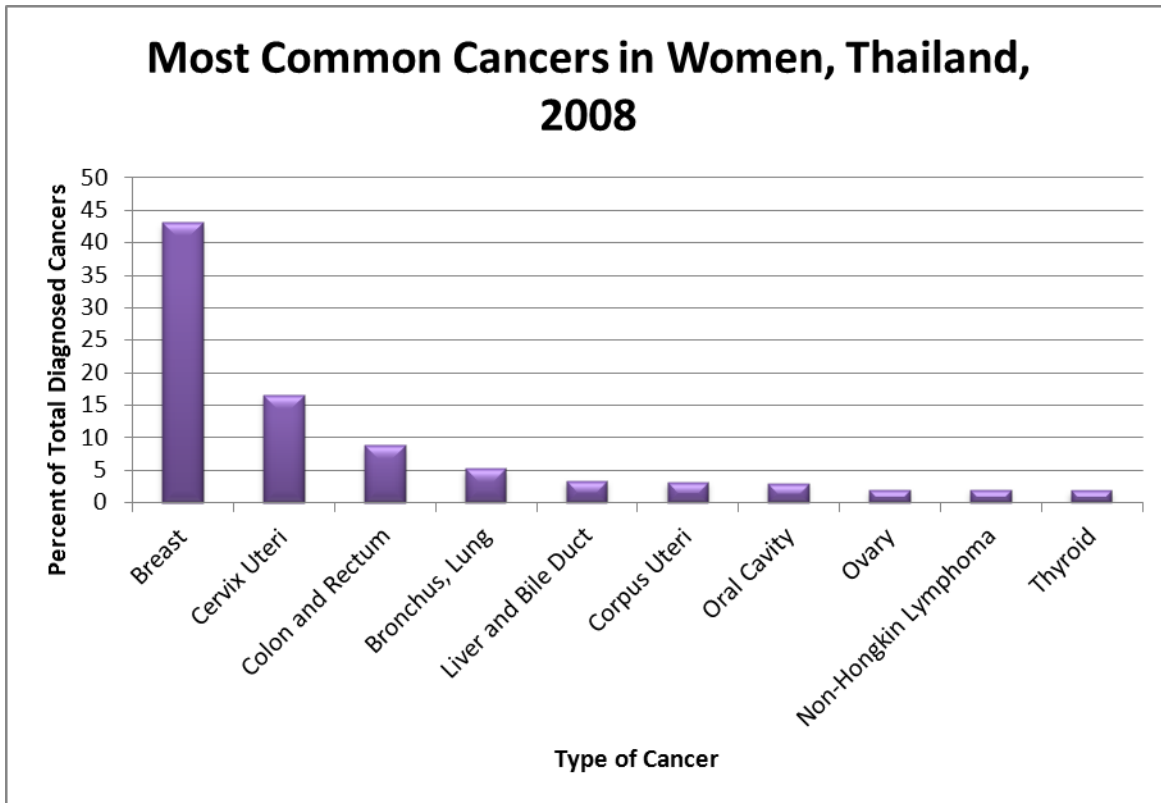


Figure 2: Leading Cancers in Thailand, 2008

(National Cancer Institute of Thailand, 2009)

In a study about the distribution and utilization of mammography in Thailand in 2002, Putthasri et al report that the majority of resources in Thailand are allocated to curative and supportive care rather than breast cancer prevention (i.e. education, screening and early detection).

According to the study, 56 % of the breast cancer patients in Thailand are diagnosed at the two latest clinical stages, stages III and IV of the disease, when available treatment methods are less effective (Putthasri et al., 2004). On the other hand, data collected from the nine cancer registries in Thailand for the period 1988 – 2000 show that the majority of the breast cancer patients from this period did not undergo a full diagnostic evaluation and fall under the category of unstaged cancer (Figure 3) (Chaiwerawatana). A study performed in the United States by Koroukian et al provides several different explanations of why some patients are diagnosed with unstaged cancer; these include limited access to quality health care, personal reluctance to undergo

complete diagnostic evaluation, or the existence of another condition that is of foremost concern. Cancer registries in different countries use different strategies in analyzing unstaged cancer. Some studies remove unstaged cases from the analysis, whereas others include them in the group with distant metastases. In general, determining the correct stage of breast cancer influences the course of treatment, and likewise, the outcome of the disease. Therefore, a high percentage of unstaged cases are associated with poor cancer management (Koroukian et al., 2007). In addition, data from the nine cancer registries in Thailand indicate that a very small percent of the breast cancer cases are detected at the initial stages of the disease, when treatment options are most effective (Figure 3).

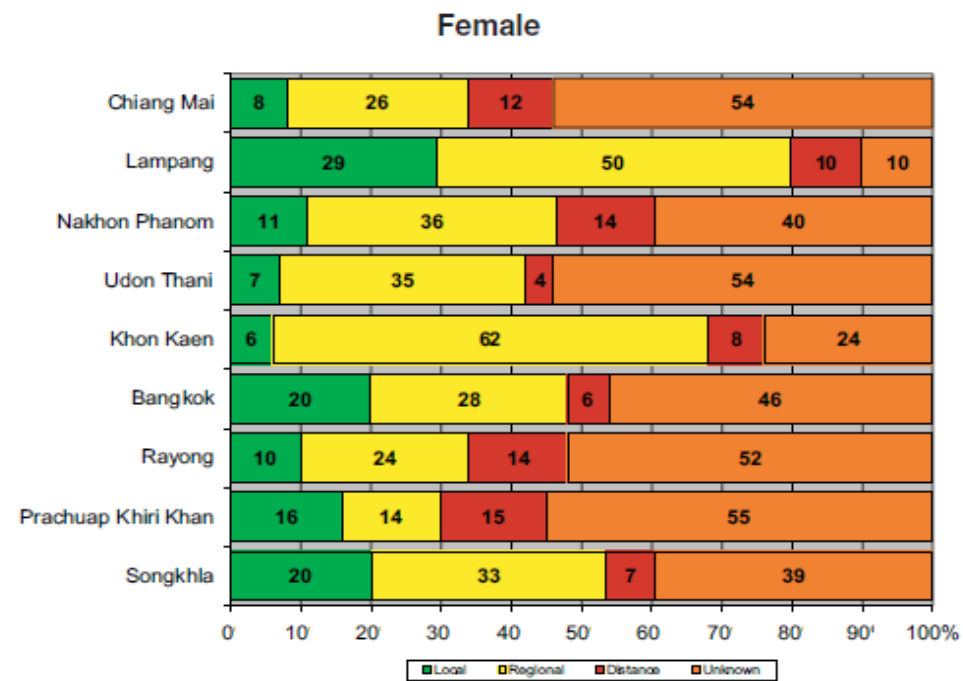


Figure 3: 1988-2000 Breast Cancer Stage Distribution – Thailand

(Chaiwerawatana)

Stage Definitions (National Cancer Institute, United States):

Local: cancer that is limited to the breast without evidence of spread

Regional: cancer that has spread beyond the original site, to nearby lymph nodes or organs and tissues

- Distant:** cancer that has spread from the primary site to distant organs or distant lymph nodes (corresponds to clinical stages III and IV)
- Unstaged:** indicates incomplete diagnostic evaluation

The stage distribution of breast cancer patients in the United States is quite different from the situation in Thailand. Data from the National Cancer Institute in the United States (Figure 4) show that 61 % of the breast cancer cases in the United States are detected at the initial stages of the disease, when the available treatments are most effective (National Cancer Institute, United States, 2010). In addition, the unstaged breast cancer patients represent only 2.6% of the diagnosed cases, while in Thailand the unstaged percentages range from 10% (in Lamphang) to 55% (in Prachuap Khiri Khan) although a comparison between these two figures might not be quite appropriate since the data refer to two different time periods (Figure 3). However, reliable and up-to-date breast cancer statistics in Thailand are hard to obtain. According to a doctor from the Queen Sirikit Centre for Breast Cancer, it is difficult to collect data from the regions outside of Bangkok and therefore, the available breast cancer statistics do not necessarily reflect the real situation in Thailand, as they tend to focus more on the population in the big cities. Unlike Thailand, the United States has an established National Program of State-Based Cancer Registries that collects data about cancer incidence, the type, severity and location of the cancer, as well as the initial treatment. These data represent 96% of the U.S. population. According to the Centers for Disease Control and Prevention in the United States, obtaining realistic information about cancer cases is vital to cancer control, since it helps public health professionals better understand and address the nation's cancer burden (Centers for Disease Control and Prevention).

2000-2006 Breast Cancer Stage Distribution, USA

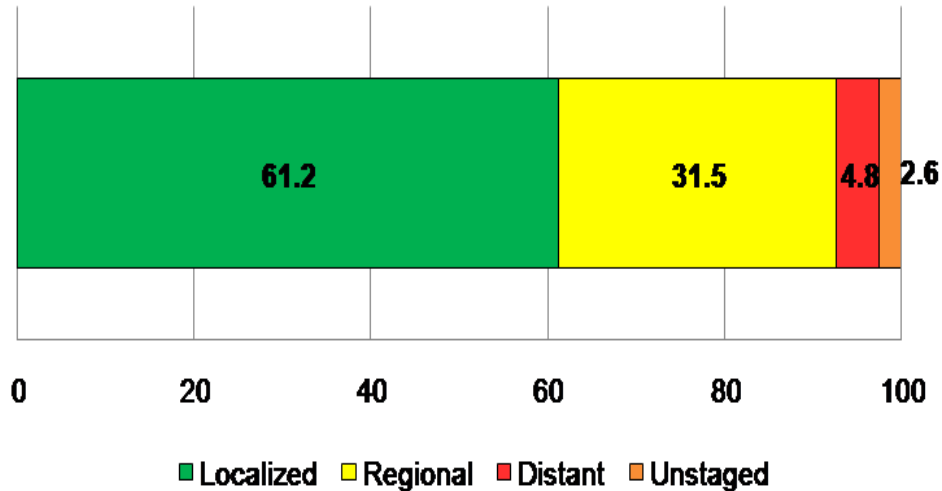


Figure 4: 2000-2006 - Breast Cancer Stage Distribution - United States

(National Cancer Institute, United States, 2010)

Stage Definitions (National Cancer Institute, United States):

- Local:** cancer that is limited to the breast without evidence of spread
- Regional:** cancer that has spread beyond the original site, to nearby lymph nodes or organs and tissues
- Distant:** cancer that has spread from the primary site to distant organs or distant lymph nodes (corresponds to clinical stages III and IV)
- Unstaged:** indicates incomplete diagnostic evaluation

The number of mammogram facilities in Thailand has increased substantially since 1988, but the majority are private (Figure 5) and half are located in Bangkok. The northern parts of the country have the lowest number of facilities: 5.04% of the total number of mammogram facilities in Thailand (Putthasri et al., 2004).

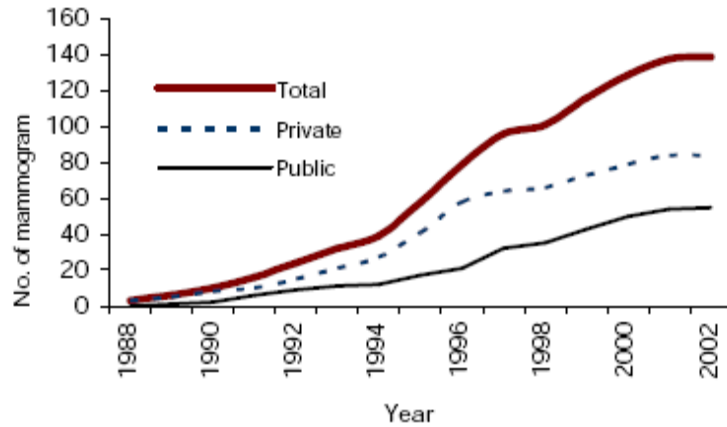


Figure 5: Cumulative Number of Mammogram Facilities in Thailand during 1988-2002

(Putthasri et al., 2004)

During 1988-2002, for every one million women over thirty-five years old, only 2.8 mammograms were performed in the North, 4.0 in the northeast parts of the country and 41.8 in Bangkok. For the period of October 2001 to September 2002, mammogram facilities were available in only thirty provinces in Thailand, while the remaining forty-six provinces did not have a single facility. The provinces with the most mammogram facilities were Bangkok (70), Chonburi (5), and Songkla (5) (Putthasri et al., 2004).

Ironically, while the majority of mammogram facilities were in private hospitals, they appeared to be underutilized due to higher mammogram fees. The average utilization rates for the period 1999 – 2001 are shown in Table 1. In addition, private providers were rarely covered by insurance programs, which put additional burden on the public sector. Public hospitals faced higher demand, while private hospitals had lower utilization rates (Putthasri et al., 2004).

Table 1: Average Mammogram Equipment Utilization by Hospital Type, Year, Thailand, 2002

(Putthasri et al., 2004)

Utilization	Year					
	1999		2000		2001	
All providers (n=64)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
No. of users (cases)	1,029	(1,762)	1,022	(1,707)	1,082	(1,408)
No. utilized (shots*)	2,091	(6,899)	2,143	(6,822)	2,713	(5,355)
Public providers (n=31)						
No. of users (cases)	1,628	(2,202)	1,570	(2,127)	1,590	(1,647)
No. utilized (shots*)	4,121	(10,269)	3,959	(9,961)	4,762	(7,131)
Private providers (n=33)						
No. of users (cases)	281	(158)	318	(198)	344	(194)
No. utilized (shots*)	513	(369)	643	(592)	705	(699)

*mammography shots mean number of films or positions to take radiation; users usually take four shots each

A successful mammography procedure depends on careful interpretation of the results. Qualified radiologists are therefore a crucial part of the diagnostic process. However, data from studies in 2002 revealed inequitable distribution of qualified personnel in Thailand. There were a total of 682 radiologists distributed in sixty-three of Thailand's seventy-six provinces. In the remaining thirteen provinces, there were no radiologists at all (Putthasri et al., 2004).

Regular breast cancer screening can be promoted through physicians' recommendations, raising awareness in community outreach programs, and the use of culture-specific media. However, the inequitable distribution of mammogram facilities and qualified radiologists presents a serious barrier to early detection of breast cancer in the regions outside Bangkok. Lack of easily accessible diagnostic facilities and high charges may discourage women from getting mammograms. Psychological and cultural barriers such as fear of cancer, fatalistic views on

cancer, and culturally-based embarrassment present additional barriers to early diagnosis of breast cancer (Putthasri et al., 2004).

2.2 Comparing the Health Care Systems in the United States and Thailand

Health care in the United States is sometimes provided by programs such as Medicare, Medicaid, and the Veterans Health Administration that are funded by the government, but is primarily financed by the private sector. Approximately 84.7% of Americans have some kind of health insurance, whether it is through their employer or the employer of their spouse or parent (59.3%), from having purchased insurance individually (8.9%), or having insurance provided by government programs (27.8). The citizens with government-provided insurance, though, are limited to medical facilities which accept the particular type of medical insurance they carry. Someone with government-provided insurance who chooses to visit a facility outside the insurance program's "network" would usually have to pay for the treatment themselves, as their treatment would not be covered (DeNavas-Walt, Proctor, Smith, & U.S. Census Bureau, 2008). The United States pays at least twice as much as any other nation on health expenditure per capita, but is just 42nd in the world for life expectancy. In addition, the World Health Organization ranked the United States health care system in 2000 as the highest in cost, first in responsiveness, but just 72nd in overall level of health of its people (DeNavas-Walt et al., 2008).

In 2001, Thailand introduced the 30-baht scheme as a universal coverage program. The 30-baht scheme provides an opportunity for all Thais to access basic health care with a medical consultation and treatment for the cost of 30 baht per visit. People register in their provinces to join the scheme. They receive a gold card which allows them to access certain services in their health district, and, if necessary, get a referral for specialized treatment elsewhere. The majority of expenses for the scheme come from public revenues, with the finances for the program allocated to Contracting Units for Primary Care (CUPs) annually on a population basis. According to the World Health Organization, 65% of Thailand's health care expenditure in 2004 was from the government, and 35% was from private sources. Although the reforms have received a good deal of critical comment, they have proved to be popular in rural areas (World Health Organization, 2009).

Even with the 30-baht scheme, however, a stable, effective, and equitable health care system is still not in place. Appropriate and reliable treatments of diseases such as breast cancer are not readily available to all who seek them, and awareness on prevention, diagnosis, and treatment of the disease could be improved.

2.3 Effective Health Communication

Breast cancer campaigns and other awareness efforts are part of a health communication mechanism aiming to improve public health by delivering information and influencing individual and community decisions. Appropriate health communication can promote awareness of particular health problems, provide solutions and encourage appropriate health behavior. In addition, it can provide individuals with helpful guidance about selecting health care plans, providers, and treatments (U.S. Department of Health and Human Services, 2000).

The National Cancer Institute of the United States has been involved in various health communication programs for the past 25 years and has identified several key principles and strategies that contribute to a successful program. Although health communication is critical in encouraging and enhancing public health, adjustments in the health care regulations and policies as well as changes in health care services and technologies are often needed to completely address a health issue. (U. S. Department of Health and Human Services, Public Health Service, National Institutes of Health, & National Cancer Institute, 2008). From the outset, it is important to understand what health communication can and cannot achieve. Health communication can:

- Increase public knowledge and raise awareness of health problems;
- Promote positive changes in beliefs and behaviors that may change social norms;
- Demonstrate healthy practices in order to encourage action; and,
- Emphasize benefits of behavior change.

Health communication alone, however, cannot compensate for poor health care system or insufficient access to health care services (U. S. Department of Health and Human Services et al., 2008).

The success of a health communication campaign depends on careful planning and implementing of the communication strategies. Based on evaluations of past programs, the National Cancer Institute in the United States has developed guidelines to improve the effectiveness of health communication programs.

Planning is a crucial first step in any communication program. At this stage, it is necessary to evaluate the health issue and possible solutions, in order to set up realistic goals. Figure 6 presents a case study, in which communication alone cannot address all aspects of a problem and needs to be combined with policy and technology changes in order to produce the desirable outcome (U. S. Department of Health and Human Services et al., 2008).



Figure 6: Mammogram Case Study - Problems and Potential Solutions

(U. S. Department of Health and Human Services et al., 2008)

Other important components of the planning stage include identifying target audiences and appropriate communication channels. The epidemiology of the health problem is usually the first factor by which intended populations are defined. Intended audience segments are further derived from these populations based on common characteristics: demographics, geographic region, perceptions of the problem, and behavior. This process, called segmentation, is essential for any communication program, since it dictates what messages, materials, and activities are

developed. In fact, the effectiveness of communication programs depends on careful assessment of the intended audiences' needs and the program's strategies should be adapted to those needs (U. S. Department of Health and Human Services et al., 2008).

Audience segments can be further divided into intended audiences by considering the following factors:

- To what extent is a behavioral change possible based on communication alone?
- Is the audience big enough so that changes in behavior can produce meaningful contribution to the program's goals?
- To what extent would communication benefit the intended audience?
- What available resources and communication channels can best reach the intended audiences?

Program planners often require additional information about intended audiences in order to complete segmentation and set up realistic program objectives and priorities. The intended audiences' knowledge on the topic, as well as any misconceptions, should be identified at the initial stages of health communication. In addition, it is also necessary to elucidate any relevant behavioral patterns, attitudes and notion of barriers to change (U. S. Department of Health and Human Services et al., 2008). After identifying target audiences, it is important to choose communication channels that can best reach those intended audiences. The channel needs to be easily accessible and should be viewed as a credible source by the intended audience. It is also important that the channel can deliver information at the appropriate level of simplicity (U. S. Department of Health and Human Services et al., 2008).

Research demonstrates that the use of a combination of channels greatly increases the effectiveness of health awareness campaigns, since it reaches more of the target audience. In addition, the use of multiple channels increases the exposure of the audience to the message and is, therefore, most successful in generating the desired change in behavior (U. S. Department of Health and Human Services et al., 2008).

2.4 Breast Cancer Awareness Efforts in the United States and Thailand

The United States has the highest breast cancer incidence rate in the world. However, 61% of the breast cancer cases in the United States are diagnosed at the early clinical stages I and II, when the available treatments are most effective and patients have the highest chances for survival (see 2.1 The Nature and Scope of the Breast Cancer Problem in the United States and Thailand). This suggests that the breast cancer awareness campaigns in the United States are successfully promoting early detection of the disease. The United States combines health communication strategies with changes in legislation, such as national screening policies and screening programs for underprivileged women, to make early detection possible for all women. Therefore, the awareness efforts in the United States can be used as a source for ideas on expanding Thailand's current awareness campaigns.

For the past thirty years, numerous non-profit breast cancer organizations have developed throughout the country (Breast Cancer Network of Strength, 2010). These organizations fall into several different groups according to the purpose they serve: breast cancer education, patient support, funding scientific research, or developing campaigns to promote awareness and early detection. Organizations in United States share a common feature: accessible, up-to-date and very detailed information is provided on various breast cancer topics and women are encouraged to educate themselves and spread awareness of breast cancer. These associations aim to empower women by providing them with detailed information on breast cancer. These organizations have newsletters and websites as well as brochures or booklets that can be downloaded directly from the site or delivered through postal mail by request. Topics such as breast cancer screening, risk factors, diagnosis, treatment and follow-up care are discussed in depth. No medical background is necessary to understand the information, since it is presented in simple language and all the terms are further explained and defined. In addition, these websites provide constant updates on breast cancer scientific research as well as results from clinical trials.

Breast cancer organizations in the United States point out several reasons for the need for easily-accessible, up-to-date, and detailed information about the disease. According to Nancy Brinker, the founder of the Susan G. Komen breast cancer foundation, the early stages of the disease are

rarely associated with any pain or other symptoms, which may cause women uneducated about breast cancer to underestimate the severity of the disease and leave it untreated until obvious signs appear. On the other hand, breast cancer diagnosis in other patients is associated with fear, anxiety, and emotional trauma (Susan G. Komen for the Cure, 2010). These factors, combined with complicated diagnostic and laboratory results, often make it very difficult for patients and their families to make the appropriate decision regarding treatment options (BreastCancer.org, 2010). The organizations even encourage patients to question doctors and ask for comprehensive explanations for every diagnostic procedure and treatment option. For instance, the National Cancer Institute of the United States, the American Cancer Society, and the Breast Cancer Network of Strength all provide a detailed list of questions that patients should ask their doctors about diagnosis and treatment. Moreover, in the United States, second opinions are covered by some insurance plans.

Education about breast cancer can influence women to participate in mammography screening, which in turn can reduce fatalities from the disease. “Early detection can save lives” is a message found in the websites, brochures, and flyers from breast cancer associations. The organizations in the United States recommend that all women above the age of 20 should perform breast self-exams and that all women above the age of 40 should participate in annual mammography screenings. They clearly explain the reasons behind these recommendations: breast cancer is the most common cancer among women in the United States, but if it is detected early enough, women have more treatment options and greater chances for survival. According to Janet Brown, a medical writer who works for the Breast Cancer Watch Foundation, knowledge about breast cancer could limit the number of women who develop the disease because if women are aware of some of the risk factors associated with breast cancer, they can take steps to avoid them (Breast Cancer Watch, 2010). Breast cancer organizations encourage women to take responsibility for their own health and insist on mammograms after the age of 40, even when doctors have not specifically pointed out the need for one – excluding instances where other medical conditions exist that do not allow for certain screenings.

Aside from websites, newsletters, brochures and booklets, breast cancer organizations in the United States also use billboards, posters, television, radio and magazines to convey their

messages, often using celebrities as spokes-models. However, organizations in the United States use the internet as their main communication channel. Over the past few years, social networks such as Facebook, Twitter, and YouTube have become very popular among the general public. Because of their popularity and accessibility, many public health associations now have accounts or pages on these websites in an effort to spread awareness. Facebook has reached users from a wide range of age groups from all around the world. In fact, according to the American City Business Journals, there has been an increase in middle-aged housewife users, ages 35 to 49 (Business First of Columbus, 2009). Thus, utilizing such a social network is appropriate and effective in reaching this target audience. By performing a simple “breast cancer” search on Facebook we found hundreds of results on non-profit awareness organizations.

Although women may be aware of breast cancer and early detection, those without health insurance cannot afford to get diagnosed. With the establishment of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) in the United States, the CDC can provide uninsured women, with low income, breast and cervical cancer screening. Furthermore, the Breast and Cervical Cancer Mortality Prevention Act of 1990 funds screening and diagnostic services – which include clinical breast examinations, mammograms, and referrals for treatment – in all fifty states, the District of Columbia, five United States territories, and twelve American Indian/Alaskan Native tribes. In an effort to reach out to even more individuals in need, Congress also passed the Breast and Cervical Cancer Prevention and Treatment Act of 2000 to allow states the option of offering women in the NBCCEDP treatment through Medicaid. Programs funded by the NBCCEDP have aided more than 3.2 million women and provided more than 7.8 million breast and cervical screens since 1991, diagnosing 35,090 cases of breast cancer. In addition, approximately 15.9% of women from the ages of forty to sixty-four who are eligible for NBCCEDP services are screened for breast cancer. In 2007 alone, 295,338 individuals received a mammogram through the NBCCEDP and 3,962 cases were found (approximately 1.34% of the individuals screened), while in 2008 alone, 301,209 women participated in mammography tests resulting in the diagnosis of 3,782 breast cancer cases (approximately 1.26% of the individuals screened). Figure 7 shows the number of women (national aggregate) screened through NBCCEDP from 2003 to 2008. These efforts all aid in the United States Department of Health and Human Services’ Healthy People 2010 goals of reducing the rate of deaths from breast

cancer by 20% and increasing the number of women forty years and older who have received a mammogram in the past two years by 70% (Centers for Disease Control and Prevention, 2009).

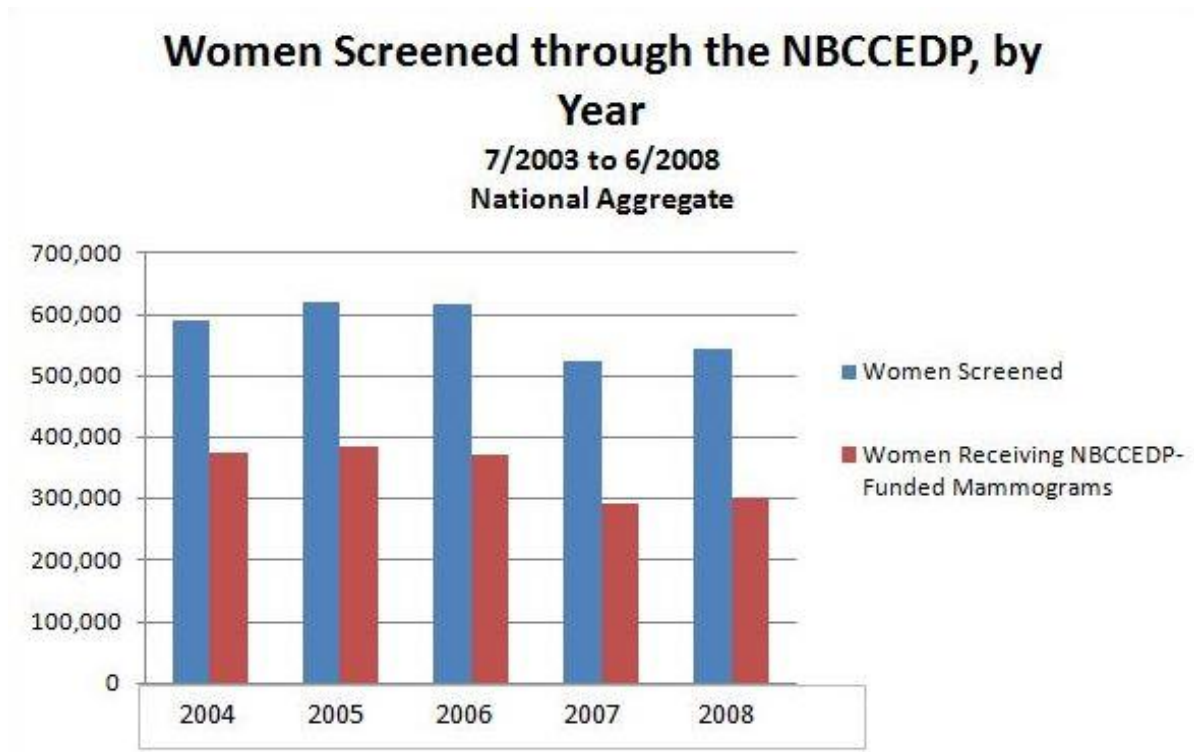


Figure 7: Categories of Factors Influencing Mammography Participation

(Centers for Disease Control and Prevention, 2009)

The National Cancer Institute of the United States estimated that there were 192,370 new cases of breast cancer in females and 1,910 in males in 2009 alone (National Cancer Institute, United States,). The large number of newly diagnosed patients has led to the development of support groups, which provide guidelines for both patients and families on how to cope with the emotional trauma that accompanies breast cancer diagnosis. A study conducted with seventy-four female breast cancer survivors in 2008 showed that approximately 16% of the group faced post-traumatic stress disorder eighteen months after diagnosis. Some of these individuals were also diagnosed with more advanced stages and had experienced more radical surgeries (National Cancer Institute, 2010). Social support from family, friends, and formal therapy sessions is found

to improve the quality of life for both breast cancer patients and survivors (Institute of Medicine, 2004) and (Rowland, JH and Massie, MJ, 2004). Anxiety, depression, and emotional distress can be reduced while self-image and mood can be improved with the help of such social support (Helgeson VS and Cohen S, 1996) and (Michael YL, Berkman LF, Colditz GA, et al., 2002). It is actually very common for American patients to participate in breast cancer support groups and share their thoughts and concerns with individuals other than their family. Moreover, doctors in hospitals highly encourage patients to join such support organizations.

In Thailand, the Queen Sirikit Centre for Breast Cancer has held awareness campaigns year round since 2007. The Centre partnered with its two support groups, the English-speaking BBCs and the Thai-speaking support group, in order to reach out to both English- and Thai-speaking communities. The 2007 campaign consisted of two workshops titled “Well Woman’s Day” that were supported by Director of the Queen Sirikit Centre Dr. Kris Chatamra and his wife Khunying Finola Chatamra. The top four hospitals in Bangkok – the BNH Hospital, Bumrungrad, Bangkok General Hospital, and Samitivej – joined up with pharmaceutical giant Astra Zeneca to sponsor these events, which were seated at full capacity. Top specialists from the hospitals, along with practitioners from all over Thailand, held seminars regarding breast cancer and other relevant health issues for women. Furthermore, the Centre established a slum outreach program. Aside from helping and supporting patients who have already been diagnosed, the awareness campaign also aimed to bring cancer education programs to schools, universities, and businesses in Bangkok (Queen Sirikit Centre for Breast Cancer, 2009).

Following the success of its first breast cancer campaign, the Queen Sirikit Centre undertook another venture to spread awareness in 2008, the “Think Pink Campaign.” The Centre utilized brochures, magazines, radio, and television to convey messages about breast cancer. These public health notices featured both celebrities and cancer survivors from the slums, who have received aid from the outreach programs, as ambassadors (Pruksakit, 2008). The promotional materials featured the chosen representatives along with facts – myths and truths – about breast cancer. Women, children, and men were included in these notices to stress the need for early detection as well as to show the consequences breast cancer had on families. Outreach programs continued to take place in order to help those who are less privileged. Furthermore, fundraising

events such as “An Affair to Remember,” which was a Valentine’s Day fundraising gala that raised a total of 410,000 baht (Sukhsvasti, 2008), raised awareness and the money required for research. In their 2008 campaign, the Queen Sirikit Centre announced they were the first in Asia to have a tomosynthesis machine, which is a type of tomography – a diagnostic tool that takes images by sectioning (Queen Sirikit Centre for Breast Cancer, 2008a).

Overall, all of the Centre’s campaigns aimed to educate the public on breast cancer and spread awareness of this disease. Featuring celebrities or survivors on their informational breast cancer materials has been effective because many view public figures as role models and those who have fought against the disease are undoubtedly seen as a sign of strength and hope for cancer patients. Aside from answering frequently asked questions about this type of cancer, the presence of ambassadors on the brochures and awareness materials aimed to make women feel less embarrassed and more inclined to perform self-examinations and go for check-ups – hoping to rid any stigmas that surround breast cancer.

2.5 Possible Reasons for a Delay in Breast Cancer Diagnosis in Thai Women

It is clear there is a delay in breast cancer diagnosis in Thai women (see 2.1 The Nature and Scope of the Breast Cancer Problem in the United States and Thailand). We investigated the possible reasons for this delay so that we might address them in the materials we created. The materials will counter factors that negatively affect mammogram participation and play up those that positively affect it, leading to earlier detection of breast cancer.

Clark and Natipagon-Shah (2008) studied and interviewed Thai women who have immigrated to the United States about why they would or would not get a mammogram. Although the study was performed in the United States and regards the women’s willingness to go to American mammography facilities, the interviewees’ answers stem from their Thai heritage. Figure 8 shows the factors that the women in the study decided would positively or negatively influence breast cancer screening participation (Clark & Natipagon-Shah, 2008).

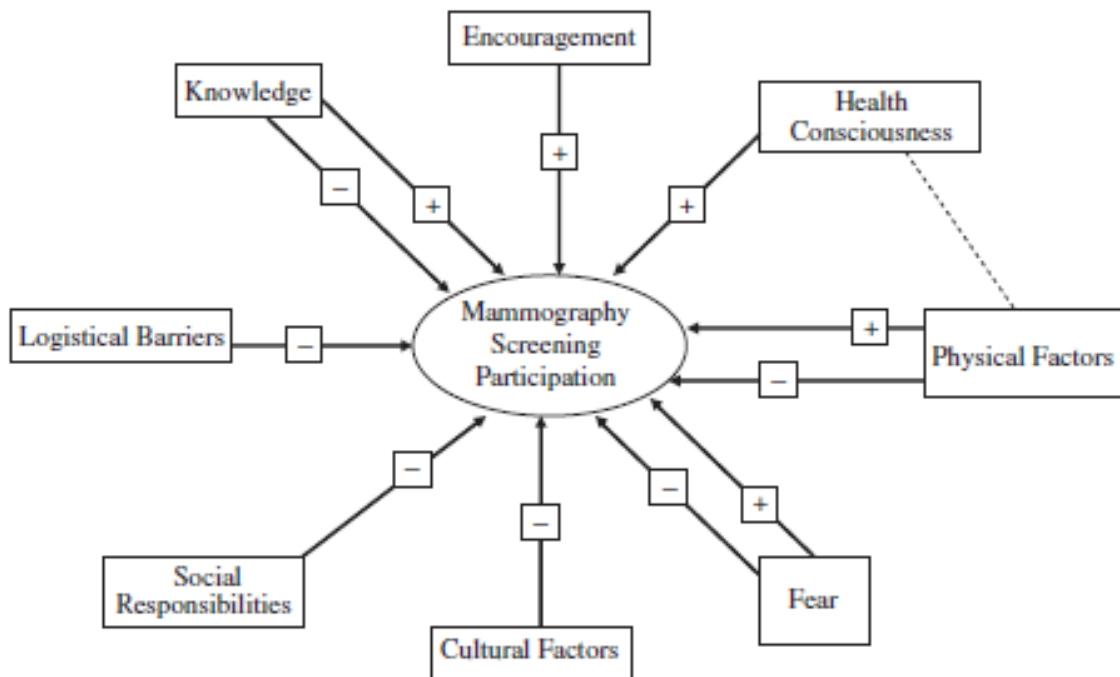


Figure 8: Women Screened through NBCCEDP from January 2003 to December 2007

(Clark & Natipagon-Shah, 2008)

Misinformation was a common reason not to get screened. For example, most of the women believed that younger women, defined loosely as women in or before their forties, cannot get breast cancer. The authors note that the women who were in their forties also held this belief and thus would not get screened until later in life. Women in the study also revealed that they have become more health-conscious as they aged and specifically after menopause. The study shows that “knowledge of the availability of screening services positively influenced screening participation” (Clark & Natipagon-Shah, 2008). Grunfeld et al (2002) interviewed women in the UK. They report that only 23% of the women they interviewed correctly identified the risk of breast cancer as one in ten, the incidence rate of breast cancer in the UK, in that year. The other 77% of the subjects thought the incidence was much lower (Grunfeld, Ramirez, Hunter, & Richards, 2002). This finding underscores that our materials must focus on countering popular misinformation and advertising screening services.

The women in the study said that if a woman were to be encouraged by her friends, family, and doctor to get screened, then she will most likely get the test because these are people she trusts (Clark & Natipagon-Shah, 2008). An effective message would be delivered by someone the public can trust. Many campaigns use this strategy and show celebrities or other public figures supporting the campaign's cause and conveying its message.

Many women in the study were afraid of the pain that comes with a mammogram and claimed that a less painful test would positively affect participation (Clark & Natipagon-Shah, 2008). Since the study was performed in the United States, the women had access to equipment that is required for a different, much less painful diagnostic procedure than a mammogram – breast MRI and, less likely because of its novelty, tomosynthesis. While this might not be a feasible claim in the brochure materials we suggest because of the limited availability of these screening techniques in Thailand, it is important to keep in mind that pain is a strong deterring factor.

The participants in the study said that younger women tend to have more social responsibilities in the form of family and work, which affects young women's health consciousness because they do not have extra time to allocate to a mammogram. Young women cannot take time away from their work to get a mammogram; business owners rarely allow their employees to take days off and young women must comply with these demands to keep their jobs, leaving little time to go and get screened (Clark & Natipagon-Shah, 2008).

Logistical barriers were cited by the women in the study as yet another deterring factor. Clark and Natipagon-Shah (2008) focus on the logistical issues in the United States, where there is a significant language barrier for these women (Clark & Natipagon-Shah, 2008). Although this is not a problem in Thailand for Thai women, other difficulties certainly arise. While cost and insurance coverage are important deciding factors, the biggest problem we observed in Thailand is availability and distance. Our group was working in Bangkok, but breast cancer is an issue throughout the entire country. The Centre offers mammograms, but there is a waiting list for them (Queen Sirikit Centre for Breast Cancer, 2008b). Indeed, there is a wait to use most of the equipment in any Thai public hospital, especially equipment associated with treatments (Queen Sirikit Centre for Breast Cancer, 2008b).

Clark and Natipagon-Shah (2008) found “cultural shyness” plays an extraordinarily important role. Women reported that they were reluctant to show their breasts to anyone, even to a sister, let alone a doctor. These women were taught to be very shy about their bodies; some women were so shy that they would not even conduct self-exams. Mammograms were described as something of a secret between Thai women – if there was a chance of someone in a Thai woman’s social circle finding out, then a mammogram was out of the question. Many women in the study said that they became less shy about breast health as they got older because their anxiety over propriety was overcome by health consciousness (Clark & Natipagon-Shah, 2008). Cultural and religious factors were difficult, if not impossible, to address when we crafted our message because they are deeply personal subjects that may cause discomfort if mentioned. In any case, we took special considerations to be especially sensitive to these issues.

Clark and Natipagon-Shah (2008) also found that women who were afraid of developing breast cancer without having preliminary symptoms were more likely to get screened, so that they could find out early and start the treatments early. In contrast, some women will wait for symptoms to appear before seeing a doctor (Clark & Natipagon-Shah, 2008). Grunfeld’s findings (2002) from his subjects in the UK tested if they knew what symptoms to look for. Women in the oldest age cohort (ages seventy-five to ninety-one) knew fewer symptoms than women ages twenty-five to seventy-four. The most “knowledgeable” age cohort consisted of women ages forty-five to fifty-four, but even so, the average number of symptoms listed in that cohort was six out of the twelve symptoms presented in a list to the interviewees (Grunfeld et al., 2002). While this is a UK study with subjects from the UK, these findings nonetheless re-emphasize that our project team needed to create materials that educate women on what symptoms to take notice of when they perform self-exams.

Women who wait to get a mammogram are potentially letting the disease progress until they see symptoms, at which point it may be too late to eradicate the cancer from their bodies. Our materials’ message tried to deter this practice of waiting for symptoms to appear before consulting a doctor. Waiting to seeing a doctor is such a widespread practice and this matter is so urgent that our materials’ message should be very clear, if not firm, on the stance that waiting for symptoms to appear before seeing a doctor reduces a woman’s chances of surviving breast

cancer. Both the brochure and the website must convey that getting a mammogram to screen for breast cancer is an urgent matter. We needed to be especially aware of and sensitive to the cultural factors described above to make sure that our materials do not make Thai women uncomfortable. There are many factors to address and our message must address them in a supportive but firm way.

3.0 Methodology

The goal of our project was to assist the Bangkok Breast Cancer Support Group (BBCs) and accurate, accessible, and up-to-date information on breast cancer, as well as to determine strategies for the BBCs and Queen Sirikit Centre to enhance awareness of breast cancer and breast Queen Sirikit Centre for Breast Cancer develop a brochure, catalogue, and website that provide cancer treatment in Thailand. In order to achieve this goal, we developed the following research objectives:

- analyze the current awareness efforts and support activities of breast cancer organizations and support groups in Thailand;
- create a brochure and develop updated content for a website that provide accurate, accessible and up-to-date information on breast cancer and the Centre's offered treatments;
- create a catalogue of available cancer treatments and facilities in Thailand that will be accessible from both the Centre's and BBCs's websites.

In this chapter, we will describe the methods we developed to gather and analyze input from key stakeholders, and how the results of that analysis were drawn upon to develop recommendations for the Queen Sirikit Centre for Breast Cancer and the Bangkok Breast Cancer Support Group.

3.1 Characterization of the Current Awareness and Patient Support Programs of Thai Organizations/Agencies

In order to characterize what Thai organizations and agencies are doing to promote awareness of breast cancer as a disease and of diagnosis and treatment options, we browsed their websites and looked at available printed materials. We took notes on these materials, evaluated them qualitatively for their content, level of detail, target audience, and how they delivered their message. We were not able to access all materials because some awareness strategies were not in print form or were not put on the internet. As a result, we conducted face-to-face, semi-standardized interviews with five members of the BBCs and seven members of the Queen Sirikit Centre, as well an assistant manager at the Special Product Design Department from the lingerie company Wacoal. We asked our interviewees for contacts at these additional organizations.

We recognized that there might have been a language barrier for some of the interviews and if our interviewees felt more comfortable answering in Thai, we worked with our Thai student peers to administer the interview script. This was determined before each interview. We had at least two group members at each interview and each team member that was present took notes. As a part of data analysis, we compared the notes we took during the interview to get a complete account of the interview. We sent the questions to the interviewees prior to the interview because some of the questions called for statistics. The questions for this interview can be found in Appendix A: Interview Questions for U.S. Hospital Staff and Appendix I: Interview Questions for Thai Breast Cancer Organization and E-mail to U.S. Breast Cancer Organizations as well as part of Appendix J: Interview Questions for the National Cancer Institute of Thailand.

3.2 Developing a Strategy to Deliver Improved Information on Breast Cancer and Breast Cancer Treatments

Once we completed our research on breast cancer support groups and awareness efforts in the United States, as well interviewed breast cancer survivors in Thailand and administrative and medical staff at Thai hospitals, we worked with our sponsors to develop the content, design and delivery strategies for communicating key messages about the disease to their target audiences. We worked to update the website of the Queen Sirikit Centre for Breast Cancer so that it provided more accurate, accessible and up-to-date information on breast cancer and the Centre's offered treatments.

In order to make effective updates to the website for the Queen Sirikit Centre, it was important that we tested the usability of the past website. We had to consider whether the information presented was accurate, how the information was organized, how easily a user could interact with the webpage, and whether the website catered to the needs and capabilities of various target audiences.

We developed a web-questionnaire (<http://users.wpi.edu/~sunilnagpal/webtest.html>) (Appendix G: Questionnaire for WPI Students and Faculty to Assess the Usability of the Queen Sirikit Centre for Breast Cancer Website) that was sent out to college students and professors, cancer doctors, patients, and

survivors, as well as family and friends. This web-questionnaire provided an opportunity for frequent users of the internet that have some relationship with cancer to give comments on the content, design, and organization of the current website. Evaluation of the information gathered from the questionnaire guided us to the necessary navigation and content changes of the website. We established the foundation for a catalogue for the Bangkok Breast Cancer Support Group that provides information on existing cancer treatment facilities, qualifications of employed medical personnel at these facilities, and information on the general cost of treatments. This catalogue, which currently contains information from thirteen private hospitals and three public hospitals in Thailand, is accessible from both the Queen Sirikit Centre for Breast Cancer and the Bangkok Breast Cancer Support Group's websites. It is primarily targeted at those with cancer, their families, and those without cancer that may be researching breast cancer and its treatments. The catalogue, which was targeted at newly diagnosed patients, and the website, which is aimed at those seeking breast cancer information, will be maintained by a webmaster who will also update the catalogue with the offered treatments and facilities of additional hospitals as their information is received.

We also created a brochure that can be used by the Queen Sirikit Centre for Breast Cancer and the Bangkok Breast Cancer Support Group. This brochure contained a condensed version of the breast cancer topics on the website, but was primarily designed for two main audiences; women between the ages of twenty and forty, to whom we recommend monthly breast self-examinations, and women above the age of forty to whom we recommend annual mammograms. In order to design an effective brochure for the BBCs, we first analyzed the content, design, and organization of other breast cancer brochures (both American and Thai).

We hosted a discussion group with nine Thai students from seven universities in Bangkok to find out what they knew about breast cancer, what misconceptions they had, and what information they thought would be most important in a brochure. The questions and answers from this discussion group can be found in Appendix C: College Students Group Discussion to Assess Knowledge on Breast Cancer. We also interviewed doctors, nurses, and breast cancer survivors to find out what information doctors and nurses convey to their patients, what information is not appropriate to present in a brochure, and what information breast cancer survivors wish they had

seen in a brochure at their time of diagnosis. A complete list of questions that we asked doctors, nurses, and survivors can be seen in Appendix D: Face-to-Face Interview and E-mail Response from Breast Cancer Survivors Volunteering at the Bangkok Breast Cancer Support Group and Appendix E: Face-to-face Interview with Medical Personnel at the Queen Sirikit Centre for Breast Cancer.

Based off of what we learned from organizations' brochures and our interviews, we developed a list of breast cancer topics to be included in the brochure. We obtained the necessary information for each topic from the website of the National Cancer Institute in the United States, *What You Need To Know About Breast Cancer* (National Cancer Institute, United States). The information from the National Cancer Institute is in the public domain and is not under copyright protection. Therefore, we did not need to obtain permission to reproduce their information. We designed the pages of our brochure which can be seen in Appendix N: Brochure for Bangkok Breast Cancer Support Group – (English Version). The drafted brochure was shown to doctors from the Queen Sirikit Centre so that they could review the content and express any suggestions or concerns regarding the brochure. Additional changes were made based off of the doctors suggestions, and the brochure was re-tested with the same college discussion group. In this discussion group, we aimed to see if Thai university students were content with the amount of information that the brochure provided, and if they had a better understanding of breast cancer after reading through the brochure (Appendix F: College Student Group Discussion to Test the Effectiveness of the Brochure).

4.0 Findings

After the analysis of our completed research, interviews, and other project tasks, we developed a list of findings on current awareness and patient support programs of both Thai and American organizations and agencies, as well as on identifying strategies for delivering improved information on breast cancer and breast cancer treatments.

4.1 Analysis of Current Awareness and Patient Support Programs of Thai Organizations/Agencies

By researching current awareness programs of Thai organizations and agencies, we learned that even though the Centre holds many events throughout the year, their campaign can be expanded to reach more people throughout Thailand and that this campaign is the beginning to societal and policy changes. Through interviewing breast cancer survivors, nurses, and doctors, we have found that support services are not widely used in Thailand.

The existing breast cancer awareness campaigns in Thailand can be expanded to reach a larger audience in order to ultimately stimulate policy changes that will make early detection of breast cancer logistically possible for all women.

The breast cancer campaigns in the United States have been going on for thirty years and are so well-established in American society that they have even influenced legislation as a measure for early detection (Breast Cancer Network of Strength, 2010). In Thailand, the breast cancer awareness efforts are five years old and can be expanded to reach more people. The Queen Sirikit Centre for Breast Cancer is the most active breast cancer organization we have encountered in our research because they hold events and programs throughout the entire year. Organizations that do not partner with the Centre hold events only during Breast Cancer Awareness Month. The Centre partners with other companies and organizations, including Estee Lauder, Avon, Singha, and the American Cancer Society, to host and run their awareness programs. Some private companies partner with the Centre and produce products designed to raise awareness of breast cancer. For example, the Singha Corporation sells water with pink bows on the label and a portion of the proceeds is donated to the Centre. The Centre also conducts the Pink Fun Run with Estee Lauder, Robinson's, and Thailand's Channel 3. This is a

charity run similar to the types held in the United States: people can donate or buy pink products to raise money for breast cancer organizations.

One of the main ways the Centre spreads awareness is by providing facts to counter myths held by many women (see 4.2 Strategies for Delivering Improved Information on Breast Cancer and Breast Cancer Treatments in Thailand). We asked three doctors and one nurse at the Centre, as well as doctors at each hospital we visited, what some of the common myths their patients had about breast cancer and these myths were addressed in the campaign. The questions from these interviews can be found in Appendix B: Interview Questions for Thai Hospital Staff and Appendix E: Face-to-face Interview with Medical Personnel at the Queen Sirikit Centre for Breast Cancer. The Centre has ambassadors, celebrities and popular members of high society, who participate in an annual campaign to battle the myths and misinformation. The standard format is a picture of the ambassador with a myth and the countering fact. The National Cancer Institute of the United States' "Making Health Communications Programs Work" says that using celebrities is an effective means for conveying a message (U. S. Department of Health and Human Services et al., 2008) and the Centre has found that the celebrities they use are recognized all over Thailand, not just in Bangkok. These ambassador photos have been put on posters, in magazines, in malls, and on television, thus utilizing mass media to spread breast cancer awareness messages and counter misinformation. There are different forms of mass media that the Centre currently does not use that are in use in the United States: internet and social networks (i.e. Facebook and YouTube), newsletters, billboards, and radio. Furthermore, necessary accessories, such as calendars or stationery, with an ambassador photo and the message or directions on how to perform a Breast Self-Exam (BSE) would also spread awareness.

Although the Centre holds a huge number of events with many different partner companies, they are the only public organization we could find in Thailand. Some private companies have their own breast cancer awareness campaigns, but they generally only have events in October, which is Breast Cancer Awareness Month, and only for their employees and customers. The Centre provides some companies with the materials for these breast cancer awareness events, but the company runs the actual event. One woman we interviewed used to work at Chevron and said that they organized a day in October when nurses came in and taught female employees how to

perform BSEs. The interviewee said that although this was a good effort on Chevron's part, she observed that many women were too shy to wait in line for breast cancer information in front of their male coworkers. An interview with an assistant manager at the Special Product Design Department at the lingerie company Wacoal revealed that the company does a great deal with their own campaign, which is limited to employees and customers. They provide a free prosthesis bra to women who have recently had a mastectomy, if the woman fills out a form and sends it to Wacoal. They also publish a brochure that contains information on general breast health, breast cancer, symptoms, treatments, and common myths, which is distributed at the company's events and to Wacoal customers in Wacoal stores in malls. Wacoal has partnered with the Centre in the past and the Centre has designed a prosthesis bra for Wacoal.

The two groups of women on whom the Centre and the Bangkok Breast Cancer Support Group (BBCs) focus most of their outreach, are women in underprivileged communities and women in rural areas. The Centre reaches women in twenty underprivileged communities in Bangkok through the Slum Outreach Project: one of the Centre's two founders visits one of the communities with several nurses and they spend the morning educating women and teaching them how to perform a BSE. They then take one hundred women back to the Centre for a complete physical and a clinical breast exam. The BBCs does a similar project with women in rural areas. If the women find a lump during the breast self-examination program a breast cancer diagnosis is confirmed, then a surgery is scheduled right away. This all happens very quickly so if the patient decides to pursue treatment in Bangkok, a BBCs representative, usually a survivor, remains with the woman in order to provide information and emotional support throughout the diagnosis process and even until after the surgery.

Although the BBCs has visited the rural provinces of Suphanburi and Pathumthani, awareness efforts in such areas still need to be expanded. According to a BBCs employee, some women in rural areas do not even know what breast cancer is and are often given false information – myths. In addition, since some of these women are housewives who may not be able to read or write and whose main priorities are to take care of the family, they often do not have the time or interest to learn about breast cancer.

A breast cancer specialist from the Queen Sirikit Centre stated that in order for awareness efforts to reach rural areas in Thailand, people in Bangkok and other major cities need to first become fully aware of the disease. He also mentioned that the general public is not interested in raw data on topics such as incidence rates and may not even understand these statistics. Thus, breast cancer information would need to be presented in a different way to those in the rural areas: methods applied in Bangkok and other major cities will not be effective in this setting. Despite the need for change, the doctor at the Centre also mentioned that much time is needed in order to develop successful awareness campaigns for the rural areas, and the current efforts in the country have only been in effect for approximately five years. Moreover, the BBCs employee stated that the Ministry of Public Health of Thailand has also hosted breast cancer awareness campaigns, but these efforts are still in their early stages. According to Khun Napat Sirisambhand, a socio-economic and gender specialist, we would have to focus on one specific area and would have to conduct a case study on the community's lifestyle. Khun Napat said that such small scale investigations are essential before effective methods can be developed to spread breast cancer awareness in rural areas. She claims that this would require a great deal of time and effort and is a complete project on its own. While we would like to give specific recommendations for breast cancer awareness strategies in rural Thailand, we feel that based off of our conversations with the doctor and Khun Napat, that if awareness efforts were successful in Bangkok, they might generate interest in breast cancer in provinces outside of Bangkok (Sirisambhand).

We met with the National Cancer Institute of Thailand as part of our search for statistics to support what we learned from interviews. Questions from this interview can be found in Appendix J: Interview Questions for the National Cancer Institute of Thailand. We asked them about the following topics:

- Incidence, survival, and death rates for breast cancer in and outside of Bangkok
- Stage distribution per age group, per year, in and outside of Bangkok
- Age range for peak incidence in and outside of Bangkok
- Percent of total Thai population covered by the nine cancer registries (see 2.1 The Nature and Scope of the Breast Cancer Problem in the United States and Thailand)

- Are there national breast cancer awareness campaigns?
 - How does the NCI measure the effectiveness of the campaign?
 - What measures does the NCI take to reach women outside of Bangkok and in slum communities?
- Where do women outside of Bangkok and in slum communities go for breast cancer screening services?
- Are there specific breast cancer facilities, or do women use general cancer-care facilities?

The National Cancer Institute of Thailand was only able to answer some questions, but was not able to provide us with the statistics to support its claims. They only have data for their facilities but did, however, speculate about the breast cancer situation in Thailand. We were not able to calculate incidence rates from the information they gave us.

First, the Thai NCI claimed that breast cancer is the most common type of cancer among women in Bangkok and the second most common type of cancer among women in Thailand. Although this contradicts our research, we asked them why they think there is a difference between women in Bangkok and the women outside on Bangkok. They speculated that this is because women in Bangkok are more aware of breast cancer and therefore get check-ups regularly. They further characterized the difference between women in and outside of Bangkok by stating that the women from Bangkok that come to the Institute are diagnosed mostly in stages I and II whereas the women from outside of Bangkok are primarily diagnosed at stage III. No raw data were available to support this claim, but the interview was conducted with a breast cancer specialist; this doctor has the most contact with incoming breast cancer patients and can speak generally about stage distribution for his facility. Additionally, the NCI stated that there are few personnel qualified to properly read a mammogram result in rural areas due to a disorganized healthcare system in Thailand.

We interviewed a doctor at the Queen Sirikit Centre and encountered a situation similar to the one we found at the Thai NCI: the doctor could speak only for the trends he encountered at the Centre and at King Chulalongkorn Memorial Hospital. The doctor from the Centre supported the

claim that there is a lack of qualified radiologists in Thailand and went so far as to say that buying the mammogram machines is not the problem; educating and producing qualified radiologists for the rural areas is the problem. Furthermore, the 30-baht plan only allows women to seek screening and treatment services in the province in which they are registered, which severely limits access to the facilities and qualified personnel in Bangkok (see 2.2 Comparing the Health Care Systems in the United States and Thailand). Thus, even if a woman's provincial doctor refers her to a Bangkok facility, logistical barriers can still prevent her from receiving a diagnosis and treatment.

All breast cancer awareness campaigns emphasize the importance of early detection and declare that a yearly mammogram is recommended for women over the age of forty years. While this is a meaningful message to those with the financial means and the time to get a mammogram at a private hospital, the campaign cannot compensate for public hospitals' long waiting lists and lack of insurance coverage for mammograms as a screening tool. The Centre cannot accommodate screening services because their facilities are already in constant use for diagnostic and treatment procedures. They often refer women seeking screening services to a private hospital, where the women have to pay full price. We found that this is a roadblock in the path to early detection: mammograms are covered by insurance only if a doctor recommends them after suspecting breast cancer, such as after finding a lump or noticing other symptoms. Thus, mammograms are used more as a diagnostic tool rather than a screening method. This hampers early detection campaigns because mammograms are capable of finding breast cancer before a tumor forms, which is key to early detection. The United States has a well-established national screening policy in the form of legislation that funds screening services, including clinical breast examinations and mammograms. Thailand has no such laws, simply because the existing campaigns and awareness efforts are still young and therefore are not as well-established in society to pass the necessary legislation.

Availability of diagnostic equipment and qualified personnel to use the equipment is a problem to health awareness campaigns and begs the question of why we want people to be aware of a disease if they cannot be properly diagnosed and treated within their financial means. An awareness campaign is the first step to increasing the availability of the necessary facilities and

personnel. If women go to get screened for breast cancer before noticing any symptoms, then any cancer the specialist finds will most likely be in the earlier stages; visible and palpable symptoms mean that the tumor has grown and the cancer is affecting more tissues. A participant in the BBCs's rural outreach project (Appendix K: Interview with the Secretary of the Bangkok Breast Cancer Support Group about Outreach Programs in Rural Thailand) said that she met a woman who felt a lump but decided not to see a doctor because it did not hurt and was therefore not a pressing medical issue. This is not uncommon behavior and underscores the need for awareness efforts. Dr. Kris, the head of the Queen Sirikit Centre and an expert in breast cancer in Thailand, said that if breast cancer is found early, then only surgery and radiation are needed and that breast cancer in the advanced stages requires chemotherapy and potentially hormone and targeted therapies (depending on receptor status) in addition to surgery and radiation. Breast cancer in the later stages is harder to treat because the disease does not respond well to treatments; early detection of the disease results in higher chances of survival (see 2.1 The Nature and Scope of the Breast Cancer Problem in the United States and Thailand). The more types of treatment the patient needs, the more expensive it gets, so early detection of breast cancer will be cheaper for the patient. Investment in early detection campaigns will cut down on future treatment costs. This is in the government's interest as well because many Thai citizens are covered by the 30-baht plan (see 2.2 Comparing the Health Care Systems in the United States and Thailand).

Increased awareness of breast cancer will raise awareness of the need for more widely-accessible screening equipment and qualified personnel to operate the machines, which will be an expensive process at first, but will eventually save money as breast cancers are detected in early, more easily-treated stages. Widely-accessible equipment and qualified radiologists are still not enough to make sure that all women have the means to get screened for breast cancer. Currently there are no breast cancer screening programs or policies for the underprivileged. The 30-baht plan does not cover mammograms that are used for screening purposes, which means that there is also a need for appropriate legislation to fund screening services. Legislation will not be passed and policies will not be approved if people are not aware of breast cancer, so an awareness campaign that is well-established in society will inform more people of the problem and eventually stimulate policy initiatives. There is still much that can be done to expand the

current breast cancer awareness efforts so that all women in Thailand can get access to the screening equipment and services that can lead to early detection. An awareness campaign is the first step to making changes.

There are some breast cancer support groups in Thailand but Thai women tend to not seek emotional support services following diagnosis and during treatment because they find more comfort in discussing the disease with their families.

Breast cancer organizations in the United States emphasize the need for emotional support following a breast cancer diagnosis. Most of the organizations that we researched offer their own support services to both patients and relatives of patients, and the ones that do not have their own support programs refer people to other organizations. We found that in Thailand, there are support groups, but nearly all of them are a part of a private hospital such as Bumrungrad International Hospital and open only to the hospital's patients. Furthermore, these support groups are general cancer support groups, and are not specifically for breast cancer. These support groups do not have their own websites and we have not been able to contact them for more information. We have only been able to find one public breast cancer support group, the Bangkok Breast Cancer Support Group (BBCs).

Analysis of discussion groups with college students revealed that although some students had heard of the BBCs, none of them knew what the BBCs does or how to contact them. Other students had never heard of the support group and none of the students had heard of any other breast cancer support groups (Appendix C: College Students Group Discussion to Assess Knowledge on Breast Cancer). Patients at the Centre know about the support group because the doctors tell them to contact the BBCs for emotional support, but the general public seems by and large unaware of the organization and its services, despite heavily-publicized projects such as a project the BBCs conducted with Thailand's Channel 3 where people were encouraged to come and make prosthesis bras to be donated to women who had had mastectomies. In general, there is a lack of cancer support groups in Thailand, both for breast cancer and for other cancers. A member of the BBCs said that although they originally intended to provide emotional support

just for breast cancer patients and survivors, they now accept patients with other cancers as well, simply because there are no publicized support groups for those individuals.

We conducted interviews with eight doctors at several different hospitals (Appendix B: Interview Questions for Thai Hospital Staff and Appendix E: Face-to-face Interview with Medical Personnel at the Queen Sirikit Centre for Breast Cancer), eight breast cancer survivors (Appendix D: Face-to-Face Interview and E-mail Response from Breast Cancer Survivors Volunteering at the Bangkok Breast Cancer Support Group), and two of the Centre's nurses (Appendix E: Face-to-face Interview with Medical Personnel at the Queen Sirikit Centre for Breast Cancer) to find out where patients go for emotional support following the diagnosis and during the treatment of breast cancer. The survivors, most of whom are currently BBCs volunteers, said that they used the BBCs for support group services when they were patients and that they had never heard of any others. Doctors and nurses reported that their patients usually just look to family for emotional support. Some women also go to monasteries for comfort and support, but monks cannot relate to the women about breast cancer. Women who do not feel comfortable discussing their experience with breast cancer with their families or receive no comfort at the monasteries need a neutral, non-emotional place where they can talk.

Breast cancer is a sensitive subject to those with the disease, especially to Thai patients. Interviews with survivors yielded interesting results. The six American expatriate survivors we interviewed said that as soon as they were diagnosed, they wanted to talk about it; given the number of support groups in the United States, this is normal for American women. The two Thai survivors said that they had not wanted to discuss their disease at all because it was a private matter and did not concern anyone outside of the family. One particular Thai survivor said that when her doctor told her to join the BBCs, she did not understand why she had to share her story with strangers. Only when her doctor said that her story might help other patients with their struggle with breast cancer, did she decide to join (see Appendix D: Face-to-Face Interview and E-mail Response from Breast Cancer Survivors Volunteering at the Bangkok Breast Cancer Support Group). Networking with survivors is a strategy that is frequently used in the United States and seems to help patients deal with the disease on an emotional level (see 2.4 Breast Cancer Awareness Efforts in the United States and Thailand). The same survivor who was initially unwilling

to talk about her experiences with breast cancer is now a devoted volunteer at the BBCs and can share her story freely because it can help women who are going through a similar ordeal.

One American expatriate survivor who volunteers for the BBCs said that when she was in the United States twenty years ago, when the breast cancer campaigns were in their nascent stages, it was scary to hear about breast cancer and patients found it difficult to talk about it. Nowadays in the United States, everyone, from patients and doctors to breast cancer organizations, has a more optimistic view on breast cancer; people are getting more and more comfortable discussing it. This expatriate survivor is in Thailand now and reports that the current situation in Thailand is similar to that of the United States twenty years ago. She says that right now in Thailand, it is still terrifying to hear about breast cancer and the majority of women would not seek information when they are diagnosed because they are afraid to find out more. It is crucial to empower these women with information.

4.2 Strategies for Delivering Improved Information on Breast Cancer and Breast Cancer Treatments in Thailand

In developing a brochure, catalogue and website for the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group to use to enhance their existing awareness efforts, we learned how awareness materials in the United States and Thailand must differ in order to be effective, how certain aspects of Thai society influence what makes an awareness campaign effective in Thailand, and realized that a communication gap exists between medical experts and the public when it comes to breast cancer.

Information about breast cancer and the available medical facilities and treatments for breast cancer is not easily accessible in Thailand.

There are very few, if any, websites in Thai that make information on breast cancer readily available. The only website we were able to find in Thai that provided any information on breast cancer was that of the Queen Sirikit Centre. This website, which did provide basic information on breast cancer and some treatments available at the Centre, did not provide an extensive collection of information that could be accessed by the public. Several Thai survivors that we

interviewed had similar findings and had to depend on American websites to build their knowledge of breast cancer at their time of diagnosis. One of the main reasons for accessing the websites of American societies such as the National Breast Cancer Coalition, the Breast Cancer Network of Strength, and the Susan G. Komen Foundation, according to one of the survivors we spoke to, was that “these sites were better organized and seemed more credible than the few Thai websites [she] could find.”

For this reason, when deciding on content for the updated website, we had to find what information and what way of presenting this information would be appropriate and easily accessible by a broad audience, including Thai medical professionals, university students, cancer patients, etc. We used the methods described in “Developing a Strategy to Deliver Improved Information on Breast Cancer and Breast Cancer Treatments” to determine what would be appropriate, and had this information approved by medical professionals at the Queen Sirikit Centre (see 3.2 Developing a Strategy to Deliver Improved Information on Breast Cancer and Breast Cancer Treatments). We also found that several differences between Thai and American societies were important to consider when developing a material intended to spread awareness.

Much of the same findings occurred in establishing the foundation for the catalogue of available cancer treatments in Thailand. We had a very difficult time obtaining information from hospitals about their offered breast cancer treatments and facilities, for several reasons. For example, we found public Thai hospitals very challenging to get information from because they often do not have websites, a published phone number of contact that is easily accessible by the public, or do not respond to requests in a timely manner. In trying to gather information from hospitals to put in the catalogue, we found that a lack of communication between the majority of hospitals in or around Bangkok and the general public make it quite difficult for cancer patients, medical experts, and other people in the general public to access expert approved information on breast cancer and a sufficient database of hospitals and facilities that provide breast cancer treatment of different levels does not exist.

There exists a communication gap between Thai medical professionals and the general Thai public about breast cancer and the brochure, catalogue, and website that we developed are

potential means that could be utilized by the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group to mend the communication gap.

When collecting information for the brochure for the BBCs, we found that a much larger knowledge gap about breast cancer exists in Thailand than in the United States. Not only are there a lot more breast cancer awareness campaigns in the United States, but several of the American campaigns were initiated thirty years ago (Breast Cancer Network of Strength, 2010). During our interview with breast cancer survivors in the BBCs, one survivor stressed how women are uninterested in the topic of breast cancer, or that it falls at the very bottom of their list: “My health comes after taking care of my husband, my children, my household, and other things that are viewed as more important in Thai society than a woman’s health.”

Not only did we find a difference between American and Thai awareness campaigns, but we found a difference in the mindset of American and Thai patients. American patients, as described to us by a UMass Memorial Hospital staff, are both eager and anxious to find out as much information about their disease and their treatments as they can, while Thai patients are much shyer about their health and their bodies. Rarely will a Thai woman question her doctor’s suggestions or ideas, while an American woman is more likely to seek a complete understanding of her diagnosis and treatment, and/or get a second opinion. According to one of our sponsors and one survivor in the BBCs, “it used to be that some Thai women were not even told what disease they had or what treatments they were receiving,” and now, “even though they receive that information, Thai women will not ask their doctor many questions and will rarely consult another doctor.”

Each of the materials we developed could be utilized by the Queen Sirikit Centre and BBCs to reach a broader audience. The Thai version of the brochure, for example, could be used to target those in rural areas of Thailand where internet access is not as common. While the website certainly contains more detailed and complete information about breast cancer, as well as some of the available treatments in Thailand, the brochure can provide an initial education about breast cancer for those in rural Thailand. The information in the brochure includes some of the risk factors associated with breast cancer, ways of prevention, causes, screening methods, treatments,

and frequently asked questions regarding breast cancer, and can be seen in its complete form in Appendix N: Brochure for Bangkok Breast Cancer Support Group – (English Version).

We also found that the website, which includes the catalogue of available cancer treatments and facilities in Thailand we developed, can be used to effectively reach those with cancer, their families, and those without cancer that may be researching breast cancer and its treatments, granted they have internet access. The website can help to fill the communication gap that exists between health experts and Thai youth, as many Thai young adults spend a lot of time on the internet. According to a study conducted by the National Electronics and Computer Technology Center in Thailand in 2005, “internet use in Thailand is dominated by youth and working people, with people ages 15-39 representing about 90% of the internet users in Thailand”(National Electronics and Computer Technology Center, 2006) . With the amount of young people online, the website can be used to make the public more aware of available cancer treatments and what they actually involve. Another goal is that the website makes the Queen Sirikit Centre for Breast Cancer and the Bangkok Breast Cancer Support Group more well-known in Thailand and more relied on by patients facing the challenges of breast cancer diagnosis and treatment.

A website that has been updated with more comprehensive information on breast cancer and its treatments, the story of the Centre itself, and a catalogue of both public and private treatment facilities in Thailand, has the potential to educate those learning about breast cancer, inspire those who want to volunteer their time to a worthy cause, and direct people to additional hospitals in Thailand that provide breast cancer care.

Thai people often have misconceptions about breast cancer and breast cancer treatments.

The Thais that do have some accurate knowledge of breast cancer often have several misconceptions as well. When interviewing students from seven universities in Bangkok, we found that students had a grasp on basic ideas of breast cancer and some of the dangers associated with it. However, several thoughts that the students had about breast cancer were completely untrue. For example, one student had the understanding that “a mammogram involved a needle, or that going to sleep in a bra could increase [one’s] chance of getting breast cancer.” A doctor from the Centre recalled being asked by a patient whether “breast cancer is

contagious by the touch”, while a nurse at the Queen Sirikit Centre has worked with patients who think “that when the needle in a biopsy touches the cancer, the cancer will burst and spread throughout the entire body.” Past research done by the Queen Sirikit Centre indicates that some Thais believe that single women are more likely to have breast cancer than married women, and that having children and breast feeding guarantees that you will not have breast cancer. In fact, a doctor from the Queen Sirikit Centre recalls several patients asking him “if breast cancer is contagious by touch.” If educated women such as university students have these misconceptions, and patients in Bangkok ask doctors such questions, it is quite fair to expect that uneducated women in Bangkok or other parts of Thailand might have the same, or more, misconceptions.

Overall, in our efforts to develop materials for the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group that could enhance their existing awareness efforts, we learned that many aspects of Thai society affect the design of an effective awareness campaign in Thailand, and about the communication gap which exists that makes the design of an effective awareness campaign a difficult task.

5.0 Conclusions and Recommendations

5.1 Conclusions

Part of our goal was to determine strategies for the BBCs and the Queen Sirikit Centre to enhance awareness of breast cancer and breast cancer treatment in Thailand. In order to do this, we first analyzed what breast cancer awareness efforts and support group activities are already present in Thailand. We researched the current Thai campaigns and found that the Centre holds many events every year to promote awareness of breast cancer, but it will take time for the campaign to induce the societal and policy changes necessary to make early detection of breast cancer a feasible goal for all women in Thailand. Early detection is reliant on yearly mammograms, which are conducted at private hospitals and therefore not covered by the public insurance plan. A long-standing and well-established campaign can inspire legislation to provide funding for screening mammograms and clinical breast exams for women in underprivileged and underserved communities. We interviewed breast cancer survivors, doctors, and nurses about support activities in Thailand and found that although there are some support groups at private hospitals, they are general cancer support groups. The BBCs is the only public breast cancer support group we found in our research and interviews. Additionally we found that Thai breast cancer patients receive comfort and emotional support from their families and at monasteries, and do not usually seek additional emotional support from support groups.

By contrast, in the United States, breast cancer awareness campaigns have been in place for more than thirty years and numerous non-profit organizations have been developed throughout the country in an effort to raise awareness of the disease and emphasize the need for early detection. Providing accessible, up-to-date, and comprehensive information about this type of cancer is a priority of the breast cancer organizations in the United States. The information is easily accessible from websites of the breast cancer associations and is also available in the form of brochures and booklets, which visitors can download directly from the website or order hard copies through postal mail free of charge. The organizations provide information about a wide range of breast cancer topics and constantly update this information to account for recent advances in the field.

The associations that we researched utilize breast cancer education as a way to influence healthy women to participate in screening and help diagnosed patients and their families better understand the disease in order to make informed decisions about treatments. The organizations use the mass media to reach large audiences – this includes billboards and posters, television, radio, magazines, brochures, newsletters, and the internet. In fact, the associations utilize the internet as a main communication channel to raise awareness of breast cancer – since 70.2% of the U.S. population uses the internet. However, a health communication campaign that heavily utilizes the internet to provide information may not be suitable in other countries, due to differences in the usage rates. In Thailand only 12.6% of the population uses the internet so a breast cancer awareness campaign that mostly relies on the internet to communicate information about the disease might not be successful. To reach a larger number of people in Thailand, breast cancer organizations should use culture-specific media.

Aside from spreading awareness and providing accurate and accessible information about this disease, breast cancer associations in the United States also recognize the trauma involved in a breast cancer diagnosis. Thus, support groups have been established to provide emotional support for patients and their loved ones. Studies show that individuals from both of these groups can develop post-traumatic stress disorder. However, with social support from family, friends, and/or formal therapy sessions, patients and survivors can actually improve their qualities of life (Institute of Medicine, 2004).

In the United States, it is actually very common for those diagnosed to attend support groups. Although women may be aware and knowledgeable about breast cancer, some still cannot get screened without the proper funds. Given the duration of awareness campaigns for thirty years, the United States has had time to develop national programs, such as the National Breast and Cervical Cancer Early Detection Program (NBCCEDP), that provide low income and underinsured women more access to mammograms and other diagnostic services. Furthermore, different states also have different policies for private insurance companies in regards to coverage for mammograms. Despite the proposed change in mammogram policy in the United States back in November of 2009, certain major insurance companies still comply with the previous principle – women above the age of forty should receive mammograms annually – and

will pay for the screening. All these efforts are geared towards accomplishing the Department of Health and Human Services' Healthy People 2010 goals of reducing breast cancer death rates by 20% and increasing the amount of women forty years and older who have received a mammogram in the past two years to 70%.

After considering the campaigns in both Thailand and the United States, we worked to develop several materials for the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group to use to enhance their existing awareness efforts. We learned how awareness materials in the United States and Thailand must differ in order to be effective, how certain aspects of Thai society influence what makes an awareness campaign effective in Thailand, as well as realized the knowledge gap that exists between medical experts and the public regarding breast cancer. We learned that information about breast cancer and the available medical facilities and treatments for breast cancer is not easily accessible in Thailand. There are very few, if any, websites in Thai that make information on breast cancer readily available. The only website we were able to find in Thai that provided any information on breast cancer was that of the Queen Sirikit Centre.

We found that a lack of communication between the majority of hospitals in or around Bangkok and the general public make it quite difficult for cancer patients, medical experts, and other Thai people to access expert-approved information on breast cancer. A sufficient database of hospitals and facilities that provide breast cancer treatment of different levels does not exist. As a result, the communication gap between Thai medical professionals and the general Thai public about breast cancer often leads to the misconceptions that Thais have about breast cancer and breast cancer treatments. We hope that the brochure, catalogue, and website that we developed are potential means that could be utilized by the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group to mend the communication gap.

Overall, in our efforts to develop materials for the Queen Sirikit Centre for Breast Cancer and Bangkok Breast Cancer Support Group that could enhance their existing awareness efforts, we learned that several aspects of Thai society affect the design of an effective awareness campaign

in Thailand, and about the knowledge gap that exists that makes the design of an effective campaign so difficult.

5.2 Recommendation for the Use of Billboards and Printed Materials to Spread Awareness

One of our objectives for this project was to help expand the Queen Sirikit Centre's existing awareness campaigns. In order to accomplish this objective, we developed a list of possible awareness efforts adapted from past campaigns from the United States. After weighing out the options, we decided that creating billboards, business cards, and calendars that featured the Centre's ambassadors would be both feasible and effective. Billboards are easily seen and are situated in busy areas or places with high volumes of people on a routine basis. Companies often advertise via such channel in cities and on highways. Thus, billboards featuring ambassadors – who are well-known celebrities – will catch the Thais attention and by including certain facts about breast cancer, the public will become more educated about this disease. On the other hand, business cards are also effective in spreading awareness. They are small, portable, and wallet-sized – making them ideal and convenient for distribution at major events or gatherings. These cards will also feature an ambassador on the front with words of encouragement as well as facts, to explain and defy myths, on the back. Since these cards can be stored in one's wallet, the awareness messages will be frequently seen and carried around – making these individuals advocates and a part of the breast cancer awareness campaign as well. Lastly, calendars featuring ambassadors and facts on this type of cancer are another practical and useful way to spread awareness. They are necessary accessories and are seen and used by many on a daily basis – ranging from business offices to schools and homes. Unlike the billboard and business cards, there is room for several messages to be included into one calendar: a different page for each month with a different fact. Since calendars are essential items, they are used frequently by many individuals in different age groups and even from different socioeconomic status. Therefore, utilizing calendars in an awareness campaign will enable far reach and will be effective in conveying breast cancer messages throughout the year.

After Khunying Finola provided details such as the size and texture of the paper as well as the colors that will be used for the business cards and calendars, we contacted several printing

companies for price quotes and received two replies. Although Khunying Finola has already selected the printing company, the actual printing will not begin until approximately a month after we have left Bangkok. On the other hand, we are still awaiting replies for the billboards.

5.3 Recommendation for the Use of Social Networks to Maintain Contact with the Thai Youth

Websites such as Facebook and YouTube, where users can customize a profile for themselves or an organization that they represent, offer a free social networking tool that is extremely popular and rapidly growing throughout the world. In fact, there are over three-hundred million users worldwide that visit YouTube each month (*Youtube statistics – the ultimate time suck*.2009). We feel that if a Facebook profile and/or fan page was created for the Queen Sirikit Centre and BBCs, it could be used to inform internet users about awareness events, news about the organizations, as well as provide links to the Centre’s and BBCs’s websites. At the same time, a YouTube channel could host videos with celebrity ambassadors reaching out to the Thai public, and narrative videos of the organizations’ slum projects. These websites could be especially effective in establishing contact with the youth about breast cancer, as 85.5% of the two and half million Thai users of Facebook are between the ages of thirteen to thirty-four, according to their statistics and figures (see Figure 9).

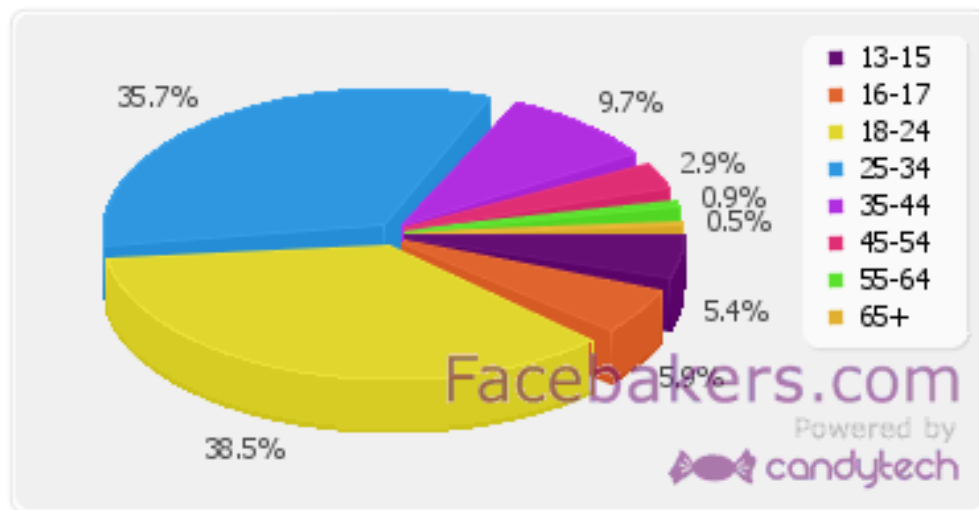


Figure 9: User Age Distribution - Facebook in Thailand

(Facebakers, 2010)

In the last six months, the number of Thai Facebook users has more than doubled from 1.2 million to 2.5 million, and the number of users only appears to be growing (see Figure 10).

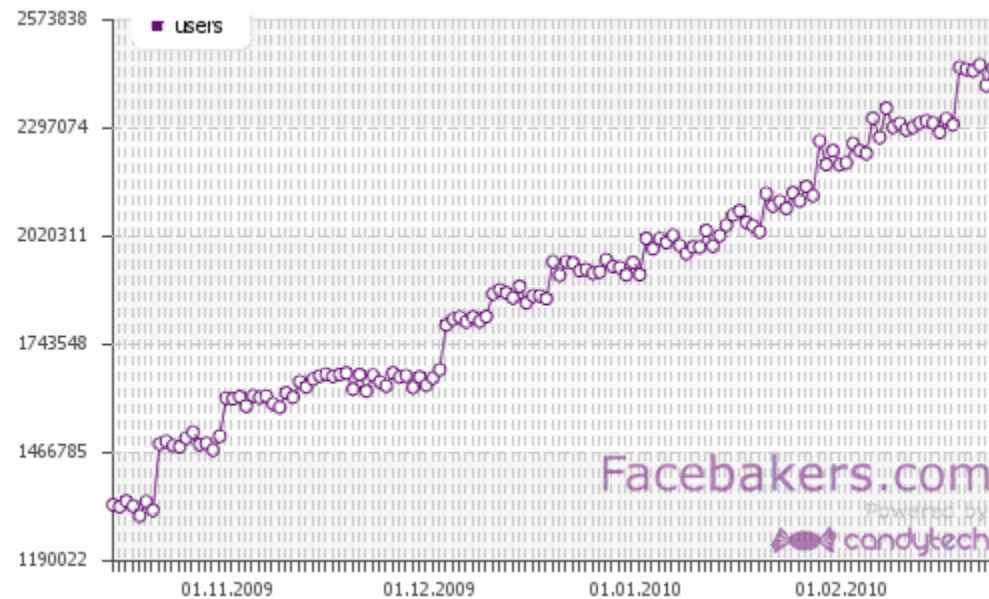


Figure 10: User Growth - Facebook in Thailand

(Facebakers, 2010)

The main constraint one must consider when establishing such pages, though, is that a webmaster is required to regularly update the information and media on the webpages, as well as with responding to messages from global users that use social networks. While this is a legitimate concern, and may require funding if a volunteer is not found to act as a webmaster, it is still a worthwhile investment because of the access it provides to the Thai youth.

5.4 Recommendation for Partnering with other Private Companies to Further Awareness Efforts

Avon. We recommend that the Centre partner with Avon and another hospital in a new mammogram screening participation program. Women who receive mammograms in October will receive a form from their doctors. The mammogram participants can fill out the form and mail it to Avon to be entered into a raffle. One or more raffle tickets (at Avon's discretion) will be pulled at the end of October and the winner or winners will receive a free gift from Avon. Our research showed that a similar campaign worked well in the United States. Winning a free gift from Avon, while receiving a mammogram for the benefit of your health, is an appealing offer.

This idea is a feasible endeavor because the Centre has partnered with Avon in the past. This could be an effective program if women are informed of it well ahead of time so appointments can be scheduled. If the women were encouraged by doctors to tell their friends about the mammogram raffle, this may become an annual event and support the policy that women over forty years should get a mammogram every year.

Magazines. We recommend that the Centre look into partnering with a magazine for a new mammogram screening participation program. The magazine will print postcards that will be bound into the magazine. The postcards will have messages such as “Have you gotten your yearly mammogram? I care about you.” Readers can tear out the postcards and send them to the important women in their lives as reminders. A positive and heartfelt reminder to get a mammogram will inspire women to participate in breast cancer screening. A discussion group with college students showed that many enjoyed reading magazines, so this may be a good way to reach the younger generation and make them aware of breast cancer. Magazines are a form of mass media and therefore can get the Centre and its programs even more into the public eye. The Centre has run the ambassador campaign in magazines in the past and can possibly partner with those magazines again. With some negotiation, perhaps the magazines will agree to print and bind the postcards for free.

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Appendix A: Interview Questions for U.S. Hospital Staff

Hello! We are students from Worcester Polytechnic Institute working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, and Kelly Tam. In order to achieve our goal, we need to create a catalogue of information about available breast cancer treatments and facilities along with information about medical personnel. We are currently collecting data about the available breast cancer treatments and facilities in the United States that we are going to compare to treatment options and facilities in Thailand. We would appreciate it if you could aid our research by answering the following questions:

1. What diagnostic equipment do you have available in your hospital facility?
2. What are the available cancer treatments in your facility? (radiotherapy, chemotherapy, surgery, targeted therapy, and hormone therapy)
3. What equipment do you use in treatments for various types of breast cancer? In what condition is the equipment?
4. What hospital facilities are needed for basic treatment?
5. What is the cost range for treatments and are they covered by insurance?
6. Do you provide any support services to your patients?

Appendix B: Interview Questions for Thai Hospital Staff

Hello! We are students from Worcester Polytechnic Institute in the U.S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tangkijngamvong. Part of our project is to create a catalogue of information on available breast cancer treatments and facilities along with information about medical personnel in Thai hospitals. We are currently collecting and analyzing data about the available breast cancer treatments and facilities in Bangkok and would appreciate it if you could aid our research by answering the following questions:

1. What diagnostic equipment do you have available in your hospital facility? How often are they used (ex: how many mammograms are done per year)?
2. What are the available cancer treatments in your facility? (radiotherapy, chemotherapy, surgery, targeted therapy, and hormone therapy)
3. What equipment do you use in treatments for various types of breast cancer? How old is the equipment?
4. What equipment do you not have but would like in your facilities? What would such equipment allow you to do?
5. What hospital facilities/equipment/services are needed for basic treatment?
6. What are the qualifications of the medical staff in your facilities?
 - Where were they qualified?
 - What degrees and specialties?
 - Have they worked in a teaching facility and if so, for how long?
 - Private or public practice?
7. What is the cost range for treatments and are they covered by insurance? (Ex: cost for mammograms, surgeries, and chemotherapy treatments; other services that are covered by these costs)

Appendix C: College Students Group Discussion to Assess Knowledge on Breast Cancer

Numbers indicate questions

Small letters indicate answers

Hello! We are students from Worcester Polytechnic Institute in the U.S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tangkijngamvong. Part of our project is to create a brochure and website as channels to convey information about breast cancer in Thailand. In order to do that we are currently researching the public's knowledge on breast cancer and would greatly appreciate it, if you could help us by answering a few questions. Please note that your participation is completely voluntary and anonymous and all the responses would be used for research purposes only. You may choose not to answer some questions and you can stop the interview at any time.

1. What is your age?

- a. 20-24 year old

2. What is your level of education?

College Students from:

- a. Chulalongkorn University
- b. ABAC
- c. Bangkok University
- d. Ramkhamhang University
- e. ratchapat University
- f. Thammasat University
- g. Mahidol University

3. What is your hobby?

- a. Watching movies/TV
- b. Hanging out with friends at malls
- c. Internet
- d. Listening to music
- e. Reading magazines
 - i. Lips
 - ii. Cosmopolitan
 - iii. Praew
 - iv. Teenvogue
 - v. Gossip Star
 - vi. WHO

- vii. Elle
- viii. Seventeen
- ix. In Magazine

- 4. What is your foremost health concern?**
 - a. Lung cancer
 - b. Cervical cancer
 - c. Liver cancer
 - d. Breast cancer
 - e. Mental health
 - f. Heart attack
 - g. Leukemia
- 5. Have you ever heard of breast cancer?**
 - a. Yes
- 6. Do you think that a lot of women are diagnosed with breast cancer in Thailand?**
 - a. Yes (5 people)
 - b. No (5 people) – more concerned with cervical cancer
- 7. Do you think that breast cancer is more serious than other types of cancer?**
 - a. No (5 people) – it can be treated by breast removal
 - b. Yes (5 people) – all cancer types are serious conditions
- 8. Do you think that men can breast cancer?**
 - a. Yes (5 people) – but it rarely occurs in men
 - b. No (4 people)
- 9. What do you think are the risk factors of breast cancer?**
 - a. Genetic
 - b. Lifestyle – alcohol, smoking, sleep deprivation
 - c. Food
 - d. Pollution
 - e. Stress
 - f. Chemicals
 - g. Low-quality bra
- 10. Do you think that breast implants can cause breast cancer?**
 - a. No (7 people)
 - b. Yes (5 people)
- 11. What are the basic ways to detect breast cancer?**
 - a. Self-examination
- 12. Why is breast self-examination important?**
 - a. No one knows how to do it, and have not done it yet
 - b. The advantage is early detection which leads to easier treatment
- 13. When do you think you should start having breast check-ups?**
 - a. 7 people are too shy to do self-examination

- b. 2 people think they should start having breast check-ups after the age of 25
- 14. Do you think that breast examination is important as compared to other types of medical check-ups?**
- a. Yes(7 people) – because it is responsible for a lot of deaths and because it is also a type of cancer
 - b. No (2 people) – because blood and cervical checks are more important
- 15. What are the treatment options for breast cancer?**
- a. Surgery
 - b. Chemotherapy
 - c. Radiation
- 16. What equipment is used in hospitals to diagnose breast cancer?**
- a. MRI
 - b. X-ray
- 17. Have you ever heard of mammogram?**
- a. No (5 people)
 - b. Yes (4 people) – but do not know what it is
- 18. What do you think a mammogram is?**
- a. Some sort of treatment
 - b. X-ray
 - c. Needle
- 19. How many times per year do you think a woman should have a mammogram?**
- a. 1 – 2 times per year
- 20. Have you ever heard of any breast cancer support groups in Thailand?**
- a. No (5 people)
 - b. Yes (4 people) – they have heard it from the TV, but do not remember the name of the organization
- 21. What do you think breast cancer organizations do?**
- a. Provide financial support
 - b. Educate people
 - c. Promote awareness
- 22. Have you ever seen breast cancer ads that promote awareness?**
- a. Yes – brochures and posters at hospitals and malls, pink wristbands, TV ads (not so much on TV as compared to other channels)
- 23. Which hospital would you go to, if you had breast cancer?**
- a. Simitet Hospital – good facilities and doctors
 - b. Chulalongkorn Hospital - because it is cheap
 - c. Phayathai and Bangkok Hospitals – because the students have their medical records there
- 24. What are the best ways to promote awareness of breast cancer?**
- a. Posters and brochures at universities and hospitals

- b. Ads on TV- use celebrities
- c. Radio
- d. Forward mail
- e. Facebook
- f. Campaign

25. What do you think should a brochure and website aimed to promote awareness contain?

- a. Rate of death- to make people scare of it and go do examination
- b. The cause of breast cancer
- c. Facts (data)
- d. Causes of breast cancer
- e. how to avoid +risk factors
- f. Symptoms
- g. How to do self-examination
- h. contact info of hospitals and hotlines center
- i. Photos + definition

26. What do you want to know most about breast cancer?

- a. If they are at risk of breast cancer or not
- b. Causes
- c. Symptoms
- d. Self-examination

27. Which of these ways (brochure, and website) would reach most people?

- a. Brochure (6 people)
- b. Website (3 people)

28. After this interview, will you go for breast check up?

- a. Yes (7 people)
- b. No (2 people) – too young and not at risk

29. If yes, which information we provided influences you to have breast check up?

- a. The rate of death
- b. Risk factors

Appendix D: Face-to-Face Interview and E-mail Response from Breast Cancer Survivors Volunteering at the Bangkok Breast Cancer Support Group

Hello! We are students from Worcester Polytechnic Students in the U.S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Center for Breast Cancer on a project to promote awareness and early detection of breast cancer in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tangkijng. Part of our project is to design a brochure for the two organizations to help them deliver improved information about breast cancer. In order to do that, we need to assess what the public's general knowledge on breast cancer is. We would greatly appreciate it, if you could take some time to answer a few questions. Please note that your participation is completely voluntary and anonymous and all the responses would be used for research purposes only. You may choose not to answer some questions and you can stop the interview at any time.

Face-to-face Interview:

1. What did you know about breast cancer at the time of your diagnosis time? What kind of information?

American Survivor - Knew a lot about breast cancer because of family history

In the U.S. 20-30 years ago – it was scary to hear about breast cancer

In the U.S. nowadays – more optimistic views on cancer; people are getting more and more comfortable talking about it

In Thailand now – the situation is similar to the US 20-30 years ago; it is still scary to hear about breast cancer and the majority of women would not seek information once they are diagnosed

Thai Survivor - Knew nothing about breast cancer

2. What do you wish you had known about breast cancer at the time of your diagnosis?

Thai survivor – even if she knew it, it would not change things much. The message for women in Thailand should be: Take care of yourself so that you can take care of your family.

American Survivor – the situation in BKK is different from the situation in the rest of the country → young and educated women in BKK are much more aware about breast cancer

3. Did you seek information about breast cancer from resources other than your physician?

Thai survivor - Yes, Susan G Komen website

American survivor – her doctor provided most of the information (a lot of brochures, booklets, flyers, etc.)

4. **Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?**

Both survivors – not very much information; also internet is not available in some rural areas

5. **Is information on risk factors and possible causes of breast cancer easily accessible?**

Both survivors – not very much information; also internet is not available in some rural areas

6. **Did you feel like you understand your treatments?**

Thai Survivor – yes, and also tried to find additional information

American survivor – most of the information from the doctor; all the family helped and participated in making the decision

7. **Did you seek any support services during your treatment?**

American Survivor – yes, from support groups; also formed her own breast cancer support groups through the American Cancer Society, church and a community center for elderly people

Thai survivor – her doctor suggested joining the BBCs but she refused because she considered her disease something very private; Thai women in general would be much less likely to join a support group because of time; when, however, her doctor mentioned that she can also help other women by joining the support group, she finally agreed

8. **Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, websites, etc.)?**

American survivor – no matter what channels are used, the information should be presented in more optimistic views

9. **What do you think newly diagnosed patients should know about breast cancer?**

American survivor – patients should always try to be as informed as possible

10. **Do you have any further suggestions for promoting awareness of breast cancer?**

American survivor – high school is not too soon to start educating about breast cancer; the BBCs has already done at one school, just with seniors; juniors also wanted to be part of it; students were very interested in learning about breast cancer; education college women is also a very good idea

11. **Do you have any other comments?**

In Thailand, there is a stigma about cancer; people do not feel comfortable talking about it. In general, it is not common to share your problems with other people. Having a disease is considered something very private. Women should realize that family history of breast cancer is important, but if they do not have it, they should not underestimate the risk. Both survivors found their tumors during a self-breast exam and, therefore, think that SBEs are very important. Knowledge about breast cancer, action and getting a second opinion are extremely important.

Second Face-to-face Interview with Two Breast Cancer Survivors Volunteering at the BBCs (all expatriates):

- 1. What is your age?**
- 2. In what stage you were diagnosed with breast cancer?**
 - a. Stage II
 - b. Stage II
- 3. What did you know about breast cancer at that time? What kind of information?**
 - a. Past experience made it seem like a “death sentence”.
 - b. Had mother, sister and cousins with cancer, so she had a good idea of what cancer was.
- 4. What do you wish you had known about breast cancer at the time of your diagnosis?**
 - a. Nothing because had mammograms annually
 - b. Knowledge about self-exams and regular check-ups
- 5. Did you seek information about breast cancer from resources other than your physician?**
 - a. No, she had so much faith in her doctor, who always has a positive attitude.
 - b. Yes, searched through the internet a lot, but it is important to look at reliable sources.
- 6. Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?**
 - a. In Thailand, yes, especially with private health insurance. With public health it is about 6 month waiting for a mammogram.
 - b. *Same as answer a.*
- 7. Is information on risk factors and possible causes of breast cancer easily accessible?**
 - a. *Same as question 6.*
- 8. Did you feel like you understand your treatments?**
 - a. At the beginning, it is kind of a shock, so she did not really understand the treatment. Once you have kind of calmed down, you get the idea of the treatment and why it is being used.
 - b. *Same as answer a.*
- 9. Did you seek any support services during your treatment?**
 - a. Yes, from a couple of friends who have been through it as well as the Thai Red Cross and the BBCs Support Group.
 - b. Did not want to talk about it, but ended up talking to a survivor at the hospital by chance. Once she calmed down, she got involved with the BBCs.

10. Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, websites, etc.)?

11. What do you think newly diagnosed patients should know about breast cancer?

- a. That it is not a “death sentence”. Now it is more of an illness than a disease. Breast cancer is the easiest and most responsive to treatment.
- b. *Same as a.*

12. Do you have any further suggestions for promoting awareness of breast cancer?

- a. Newspapers, magazines, articles, etc.
- b. *Same as a.*

Face-to-face Interview with a Breast Cancer Survivor (not part of the BBCs):

1. What is your age?

- a. 48

2. In what stage you were diagnosed with breast cancer?

- a. Diagnosed at the age of 46, with stage II.

3. What did you know about breast cancer at that time? What kind of information?

- a. Not much at all; but knew you can die from it.

4. What do you wish you had known about breast cancer at the time of your diagnosis?

- a. More about radiation and chemotherapy; she thought that she needed to receive radiation and chemotherapy just one or two times.

5. Did you seek information about breast cancer from resources other than your physician?

- a. She went to three or four doctors and search information on the internet.

6. Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?

- a. On the internet, yes. There is a lot of information on the American website, but the Thai websites do not have much information.

7. Is information on risk factors and possible causes of breast cancer easily accessible?

- a. It was easy to get the information from the Internet, but the doctors said that it is not reliable and encouraged her to ask medical professional instead.

8. Did you feel like you understand your treatments?

- a. Not really. The doctor did not explain why exactly a certain treatment is administered.

- 9. Did you seek any support services during your treatment?**
a. Yes, from her kids, parents and friends, but not from a support organization.
- 10. Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, websites, etc.)?**
a. Websites as well as brochures in hospitals are most effective.
- 11. What do you think newly diagnosed patients should know about breast cancer?**
c. Patients should know what to do with their emotions, because you feel really depressed. Family and loved ones should know that the patient might be in a bad mood.
- 12. Do you have any further suggestions for promoting awareness of breast cancer?**

E-mail Responses from BBCs Breast Cancer Survivors (all responses are from expatriates)

Response 1:

- 13. What is your age?**
a. 49 now but 42 when diagnosed
- 14. In what stage you were diagnosed with breast cancer?**
a. Stage II
- 15. What did you know about breast cancer at that time? What kind of information?**
a. Not much at all
- 16. What do you wish you had known about breast cancer at the time of your diagnosis?**
a. What the options were and what the different treatments were
- 17. Did you seek information about breast cancer from resources other than your physician?**
a. Yes, online
- 18. Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?**
a. There are just basic facts but not too much detail
- 19. Is information on risk factors and possible causes of breast cancer easily accessible?**
a. *No answer*

- 20. Did you feel like you understand your treatments?**
a. Yes, I did.
- 21. Did you seek any support services during your treatment?**
a. No.
- 22. Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, websites, etc.)?**
a. Magazines, brochures and websites
- 23. What do you think newly diagnosed patients should know about breast cancer?**
d. That there is hope and that treatment has advanced a great deal. They should also be told to talk to their physicians and discuss their options and various treatments.
- 24. Do you have any further suggestions for promoting awareness of breast cancer?**
a. No answer

Response 2:

- 1. What is your age?**
a. 64 years old
- 2. In what stage you were diagnosed with breast cancer?**
a. My breast cancer diagnosis was stage IIA
- 3. What did you know about breast cancer at that time? What kind of information?**
a. I knew nothing at all about breast cancer except that it killed people.
- 4. What do you wish you had known about breast cancer at the time of your diagnosis?**
a. Had I known that the diagnosis of breast cancer was not an automatic death sentence it would have made things easier and I wouldn't have been so terrified.
- 5. Did you seek information about breast cancer from resources other than your physician?**
a. Yes, I read anything I could find on breast cancer, trying to find out as much as I could about the disease and what happened to me.
- 6. Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?**
a. Nowadays I think that there is a lot of information available, far more than when I was diagnosed 12 years ago.
- 7. Is information on risk factors and possible causes of breast cancer easily accessible?**

- a. Yes, I think that there is a lot of information available; the main problem is trying to get the information out to the people. People are not really interested until it affects them directly.
- 8. Did you feel like you understand your treatments?**
- a. Yes, I understood what my treatments were as I made a point of reading all about them so I could understand what was happening to me.
- 9. Did you seek any support services during your treatment?**
- a. I had my operation and treatment when I was on holiday in England and I was offered the help of a MacMillan nurse, but my husband and I went back to Brunei the day after my last radiotherapy treatment so my husband was my support.
- 10. Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, and websites)?**
- a. These days you can get a lot of information from the web but you have to look it up of course. I think that television; newspapers and magazines are much more effective in promoting awareness as they are part of most peoples' everyday lives.
- 11. What do you think newly diagnosed patients should know about breast cancer?**
- a. The main thing that patients should know is that a diagnosis of breast cancer is not automatically a death sentence and that there is hope for them to be cured. Hope is one of the main things that breast cancer patients need.
- 12. Do you have any further suggestions for promoting awareness of breast cancer?**
- a. More projects like our Outreach program which helps educate women about breast cancer, giving them information so they are more aware of it.

Response 3:

- 1. What is your age?**
 - a. 62 years
- 2. In what stage you were diagnosed with breast cancer?**
 - a. I was 41 and diagnosed with Breast Cancer and had a lumpectomy.
- 3. What did you know about breast cancer at that time? What kind of information?**
 - a. My mother had been diagnosed in 1980, had radiation and passed away in 1981. Had not had much information up until then.
- 4. What do you wish you had known about breast cancer at the time of your diagnosis?**
 - a. That I may have been at risk of developing breast cancer myself.

- 5. Did you seek information about breast cancer from resources other than your physician?**
 - a. No, it was given to me by the hospital in the form of counseling at the hospital that I received the radiotherapy.

- 6. Do you think that information about symptoms, diagnosis, stages, and treatment is easily accessible?**
 - a. Not at the time I was diagnosed the first time but it has improved over the years.

- 7. Is information on risk factors and possible causes of breast cancer easily accessible?**
 - a. Still debatable as to causes but being aware of the risks and following a healthy way of life is spoken about a lot more today than in the 1980's.

- 8. Did you feel like you understand your treatments**
 - a. Yes, I had radiotherapy and then chemotherapy in later years and I was told what to expect in both cases by the people attending to my treatment.

- 9. Did you seek any support services during your treatment?**
 - a. I attended meditation classes run by the Cancer Council.

- 10. Which communication channels do you find most effective in promoting awareness (ex: television, radio, magazine, brochures, and websites)?**
 - a. I have several magazines posted to me throughout the year keeping me abreast of the latest treatments etc.

- 11. What do you think newly diagnosed patients should know about breast cancer?**
 - a. That it is not a 'life sentence' and improvements in the treatment of breast cancers are being made every day in trying to eradicate the disease.

- 12. Do you have any further suggestions for promoting awareness of breast cancer?**
 - a. Maybe introduce it as part of the Year 12 curriculum for 17 year old girls just to make them aware of looking after themselves in the future and what to look for as far as differences in their breasts and to do something about it immediately.

Appendix E: Face-to-face Interview with Medical Personnel at the Queen Sirikit Centre for Breast Cancer

Hello! We are students from Worcester Polytechnic Institute in the U.S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tangkijngamvong. Part of our project is to create a brochure and website as channels to convey information about breast cancer in Thailand. In order to do that we are currently researching the public's knowledge on breast cancer and would greatly appreciate it, if you could help us by answering a few questions.

Face-to-face Interview with Doctors:

1. What is some of the information you provide to patients on breast cancer in the areas of:

- self examinations
- symptoms
- treatment options
- post treatment care

- Patients with suspected tumor should check with doctors to confirm and should have a mammogram
- Patients with suspected tumor should do self –examination every week to see if the tumor grew but it will cause the patients stress.
- Women should do mammograms once every 6 months.
- Depends on the patients because every patient has different risk factors, at different stage, different treatments, different age, and different congenital disease.
- Younger patients usually receive chemotherapy.
- Older patients - chemotherapy is not necessary only surgery and radiation
- Treatment options also depend on the case but every breast cancer needs more than 1 treatment (ex. Sugery+radiation, sugery+chemotherapy) medicines are also necessary.

2. Are there certain questions you would advise patients to ask their doctors?

- Everything that they are curious about breast cancer (depends on each patient's level of stress)
- Their lifestyle after the treatments
- Nowadays, patients ask a lot of questions from doctors and doctors give more detailed information to the patients. However, in the end the patients' final decisions are based on the doctors' decision.
- Doctors are still worried about some patients because they choose to ask many doctors vaguely, instead of asking everything they wanted to know. Therefore, the patients have no details or little amount of details on what they are going through.

3. What are some of the common questions/myths patients have?

Common questions:

- Is breast cancer curable?
- At what stage of breast cancer is the patient in when they are first diagnosed?
- Are there any chances of recurrence?
- What are the causes of breast cancer?
- How to prevent breast cancer?
- What are the treatments? (The whole breast needs to be removed? Can the doctors preserve the breast?)

Myths:

- Women with small breasts don't have a chance of getting breast cancer
- Women who are married won't get breast cancer
- Men have chance of getting breast cancer.
- Women get lots of pain from breast cancer
- Only the relatives on the mothers' side brings the risk for the patients in getting breast cancer
- Mastectomy is a required surgery for breast cancer parents.
- Radiation and chemotherapy are extremely dangerous and can severely harm the body.
- If you touch the tumor, it will spread out.
- Prayers can cure you from cancer.
- Some patients are too old to get breast cancer.

4. What is the incidence rate of breast cancer in Thailand?

- Around 7% (not sure come from foreign sources)
- The main problem for Thailand is that the data keeping system is not reliable. There's a large chance of providing misleading statistics. For example: City people are more diagnosed with breast cancer than people in rural areas— might not be true because people living in the city have more access/facilities to do health check-up.

5. Who should patients contact for emotional support?

- Family first or close friends and relatives. However the main problem is that these people are not experts, they have limited knowledge on breast cancer.
- Doctors and nurses
- Volunteers
- Survivors
- Emotional support groups at hospitals (ex. Chula Hospital, Siriraj Hospital) but this is the last emotional support they would seek.
- Psychiatrist (not popular in Thailand)

Additional information

- Breast cancers are more severe than cervical cancer because mammogram is not as thorough as pelvic examination.

Face-to-face Interview with a Nurse:

- 1. What is some of the information you provide to patients on breast cancer in the areas of:**
 - self examinations
 - symptoms
 - treatment options
 - post treatment care
 - a. Early diagnosis is important and women should regularly have a mammogram. Women should have clinical breast exams in addition to having a mammogram. If the mammogram shows any abnormalities, a fine needle aspiration biopsy is performed to determine if the tumor is malignant. If it is, patients are provided with information about treatment options.
- 2. At what stage are most patients diagnosed?**
 - a. Most patients are diagnosed with stages I and II.
- 3. At what age are most patients diagnosed?**
 - a. Most patients are diagnosed between 40 and 50.
- 4. Are most of your patients from Bangkok?**
 - a. Patients come from Bangkok, but also from other provinces.
- 5. Are patients well aware of breast cancer at the time of their diagnosis?**
 - a. Some patients are aware but some do not know a lot about breast cancer. The more educated the patients are, the more aware of breast cancer they are.
- 6. Do patients ask a lot of questions about the treatment?**
 - a. Everyone asks questions about treatments. The most common question is if they will fully recover after the treatment.
- 7. What are some of the myths about breast cancer that patients have?**
 - a. One of the most common myths is that if a core biopsy is performed, the cancer will spread out through the whole body.

Appendix F: College Student Group Discussion to Test the Effectiveness of the Brochure

Hello! We are students from Worcester Polytechnic Students in the U.S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Center for Breast Cancer on a project to promote awareness and early detection of breast cancer in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tanking. As part of our project we designed a brochure for the two organizations to help them deliver improved information about breast cancer. We would greatly appreciate it, if you could take some time to review the brochure and answer a few questions. This would help us evaluate the effectiveness of the brochure and make improvements as necessary. Please note that your participation is completely voluntary and anonymous and all the responses would be used for research purposes only.

Before reading the brochure:

1. How much do you think you know about breast cancer?

- a. Not much, they know the basic knowledge about breast cancer, such as that it mostly occurs in women and the chances of it occurring in men are very slim (9 people).

After reading the brochure:

2. How would you rank this brochure from the scale 1-10? (1= least effective, 10= most effective)

- a. 9 (8people)
- b. 8 (1 people)

3. Does this brochure influence you to get breast check-ups?

- a. Yes, it has definitely made them more aware (7people)
- b. No, because they are too young (2 people)

4. Do you think this brochure provides enough information about breast cancer?

- a. Yes, they never knew about the treatments, checks, and risks (9 people).

5. Does this brochure help you better understand breast cancer?

- a. Yes, they find the brochure very informative (9 people).

6. How much more do you think you know about breast cancer?

- a. They are definitely more aware about the breast cancer. The brochure has given them knowledge that they did not know before, such as the treatments, symptoms, and the ways of early detection (9 people).

Appendix G: Questionnaire for WPI Students and Faculty to Assess the Usability of the Queen Sirikit Centre for Breast Cancer Website

Introductory E-mail

Hi,

My name is Sunil Nagpal and I am a current junior at Worcester Polytechnic Institute (WPI). I am working with three other students from WPI as well two students from Chulalongkorn University in Bangkok, Thailand until mid-March on a project to raise breast cancer awareness in Thailand. One of our goals is to create a catalogue of organized resources for various types of cancer treatments and make the information available by building a website that would be accessible to the public domain with quantified information regarding cancer treatment facilities, qualifications of the medical personnel, and a cost range for treatment, if possible.

In order to achieve our goal, we are analyzing the usability of the current website of our sponsor, the Queen Sirikit Centre for Breast Cancer, so we can make appropriate and effective changes. We would appreciate it if you could assist with our project by doing the following:

1. Go to the website for the Queen Sirikit Centre for Breast Cancer:

(<http://www.queensirikitcentreforbreastcancer.com/en/index.php>)

2. Explore around the website for a few minutes and think about how the website is organized, the importance of how the information presented, the overall quality of the website, and some things that could improve the website.
3. Complete our web-questionnaire about the Centre's website:

<http://users.wpi.edu/~sunilnagpal/webtest.html>

Thank you.

Sincerely,

Nandhini Amranand

Sunil Nagpal

Irina Nesterenko

Aneliya Rankova

Kelly Tam

Natnicha Tangkijngamvong

Website Usability Testing

Please respond to the following statements based on your interaction with the website.

Which of the following describe(s) you? (You can select more than one)

- Cancer patient/survivor
- Cancer researcher/doctor
- Student
- Professor
- Other

1. It is easy to navigate through the web site.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

2. It is easy to find what I want on the web site.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

3. The graphics on the website are appropriate and helpful.

- Strongly Agree
- Agree
- Neutral

- Disagree
- Strongly Disagree

4. It is easy to use the website upon my first visit.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

5. The links are organized in a clear and helpful way.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

6. Clicking on links takes me to what I expect.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

7. I find the website difficult to use.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

8. I find that there is a sufficient amount of information on breast cancer and available treatments on the website.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

9. I can easily find the contact information of the Centre from the website.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

10. I would use the website again.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

11. How often do you visit the website?

- This is my first visit
- About once every several months
- About once a month
- About once a week
- More than once a week

12. Please rate the website's overall quality.

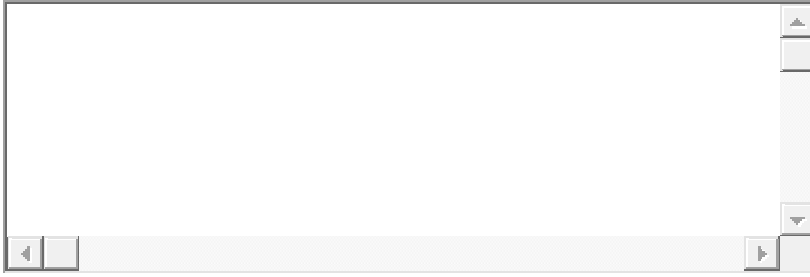
- Excellent
- Above average
- Average
- Below average
- Poor

Please rate the website on each of the following characteristics:

	Excellent	Above Average	Average	Below Average	Poor
General appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of finding information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevance of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What three changes do you think would most improve the website?

Please give us any additional input or suggestions you have regarding the website.



Appendix H: Summary of Results/Recommendations from Web-Questionnaire:

Visual

- Be more visually appealing, with a more unique homepage
- Slow down animation of images on homepage
- Increase font size; it can be visually straining
- Improve visual flow of website, either make the viewer's eyes flow from left to right, or top to bottom, but not all over the place.
- Make the layout of the top banner consistent among all pages
- Label the ambassadors links more clearly; they currently look like calendars
- Have captions for the ambassadors animation

Organization

- There is a repeated FAQ question, but each has a different answer
- All links clearly listed in one place, with all of them actually working
- "How to do a self-examination" and "Treatments" appear as links, though they are not
- The links for "Awareness" and for "FAQ" are the same.
- Design to a grid to reduce layout complexity and equalize white space
- The PowerPoint's are not labeled, so label them and make them pdf or html viewable as well/instead.
- Use dividing borders between different sections on the page, for example between the links and main body text sections.

Content

- Poor English grammar
- Stress the message of early detection
- Define the purpose of the website/ have a mission statement that would tie the website together
- Have a quick summary of what the Queen Sirikit Centre for Breast Cancer is
- Have a donation button on every page, and explain what a simple donation can do and how much of an effect it can make
- Have a page dedicated to allowing people to get involved with the Center as volunteers, in support groups, etc.
- Add pictures of the Centre's leaders/founders
- Add a helpful links section to other breast cancer awareness websites, support groups, etc.
- Change "Activities" to "Events"
- Have more information about breast cancer, how to do a self-examination, treatment options, etc.
- Have a way for women to get in touch with each other via the website to ask questions or share stories.
- Bring to the forefront all the answers a person recently diagnosed with breast cancer would want.
- Have a page dedicated to the Bangkok Breast Cancer Support Group

- Have a page for someone that thinks they might have cancer, such as “I think I have Breast Cancer. What do I do?”
 - Have it explain a self-exam and be soothing

Appendix I: Interview Questions for Thai Breast Cancer Organization and E-mail to U.S. Breast Cancer Organizations

Hello! We are students from Worcester Polytechnic Institute in the U. S. and Chulalongkorn University in Thailand, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, and Kelly Tam, and Natnicha Tangkijng. In order to achieve our goal, we are analyzing the current breast cancer awareness efforts and support services in Thailand. We would appreciate it if you could aid our research by answering the following questions:

1. What kinds of information on breast cancer do you provide to the public?
2. What are some of the key messages you are trying to convey (in your campaign)?
3. Who are the target audiences?
 - Are messages targeted to different groups separated by age, socioeconomic status, education, gender, etc.?
 - Do you provide different materials for each group or do you focus on sending your message to a broader audience?
4. What communication channels do you find most effective in promoting awareness? (ex: television, radio, magazine, brochures, websites)
5. What patient support services do you provide (if applicable)?
 - Do you connect current cancer patients with survivors?
6. What outreach programs do you have (if applicable)?
 - Do you specifically target those who are underprivileged?
 - Do you provide any special services for them?
7. Do you evaluate programs or activities/campaigns for effectiveness?
 - If applicable:
 - Have you observed an increased number of women getting mammograms?
 - Have you noticed a positive trend in the rate of early diagnosis?
 - How do you evaluate the programs/activities/campaigns?
8. Do you have the contact information of someone we can talk to at an organization similar to yours?

Appendix J: Interview Questions for the National Cancer Institute of Thailand

Hello! We are students from Worcester Polytechnic Institute and Chulalongkorn University, working with the Bangkok Breast Cancer Support Group and the Queen Sirikit Centre for Breast Cancer on a project to raise breast cancer awareness in Thailand. Our names are Nandhini Amranand, Sunil Nagpal, Irina Nesterenko, Aneliya Rankova, Kelly Tam, and Natnicha Tangkijngamvong. In order to achieve our goal, we are analyzing the current breast cancer awareness efforts and support services in Thailand. We would appreciate it if you could aid with our research by answering the following questions:

1. What percent of the population in Thailand is covered by the cancer registries?
2. What is the function of the cancer registries and when were they established?
3. How was data collected before the establishment of the cancer registries?
4. What is the incidence rate of breast cancer in Thailand? Is the incidence rate in the rural areas different from that in Bangkok?
5. How many women and men are diagnosed with breast cancer each year in Thailand? How many in Bangkok as compared to the rural areas?
6. How is the incidence rate calculated?
7. How has the incidence rate changed in the past 5 to 10 years in Thailand?
8. What is the overall incidence rate by age? Is it different in the rural areas as compared to Bangkok?
9. What is the incidence trend – increasing/decreasing? If it is increasing, is it because more women get cancer or because more cancers are being detected?
10. How many people die from breast cancer each year? How many in Bangkok as compared to the rural areas?
11. What is the overall death rate of breast cancer in Thailand? In the rural areas as compared to Bangkok? How has it changed over the past 5 to 10 years?
12. How is the death rate calculated?
13. What is the survival rate of breast cancer patients? Has it changed over the past 5 to 10 years? What is the trend – increasing/decreasing?
14. At what stage are most women diagnosed with breast cancer?
15. What is the stage distribution for breast cancer patients? Is the situation the rural areas different from the situation in Bangkok?
16. Is there a national breast cancer screening policy in Thailand? At what age are mammograms recommended?
17. Are mammograms covered by insurance?
18. Are there any special screening programs for uninsured/underprivileged women? If yes, where? What kind of programs?

19. Do you have statistics about how many were screened in Bangkok as compared to the rural areas for the last 5 years? Has this number increases?
20. What is the distribution of screening equipment in Thailand (Bangkok versus the rural areas)?
21. What is the distribution of qualified radiologists in Thailand (Bangkok versus the rural areas)?
22. What other organizations in Thailand (except for the BBCs and QSCBC) promote awareness of breast cancer? In what parts of the country exactly?
23. Are breast cancer awareness efforts in Bangkok equal to those in the rural areas?
24. What campaigns have been done in the rural areas? What communication have been used there? Which ones have been most useful?
25. In what breast cancer awareness campaigns have the NCI participated? What were the target audiences of these campaigns?
26. Does the NCI separate the target audiences by age, socioeconomic status, etc.?
27. Does the NCI design different messages for the different audiences?
28. Has the NCI measured the effectiveness of any breast cancer campaigns? If yes, how? How many people were reached?
29. Is breast cancer research currently being done in Thailand? Where? What kind of research? Is it funded by the government?

Appendix K: Interview with the Secretary of the Bangkok Breast Cancer Support Group about Outreach Programs in Rural Thailand

1. Can you tell us more about your breast cancer outreach programs?

- a. We teach women about breast cancer and how it affects people's lives. We have had ten outreach projects in Suphanburi. Last year we went to Pathangtani. The outreach team consists of the BBCs president, secretary and three or four volunteer nurses from Bangkok Nursing Home. The program starts with the president's speech, followed by a presentation about breast cancer given by the secretary and the nurses. A movie about how to perform BSE is shown after the presentation. After that the audience is divided into smaller groups and women are shown how to perform BSE. If the women find something suspicious, the nurse will check their breasts and if a lump is found, the women are recommended to see a doctor. But hospitals in the rural areas often have only one radiologist who does all the x-ray imaging and is, therefore, very busy. Mammograms are only performed once a week due to unavailability of radiologists.

2. How do you choose which provinces to go to?

- a. We have connections with those hospitals. In addition, we cover an area within one day from Bangkok, because we do not have enough funds to go to provinces further away.

3. How do you advertise the event?

- a. It is advertised on the radio.

4. Are women in the rural areas interested in attending those events?

- a. Last time 500 women lined up because they thought that free mammograms were provided at the event. In order to encourage them to attend, sometime we provide lunch at the event and pay for gas expenses.

5. Are women in the rural areas different from women in Bangkok in terms of their understanding about breast cancer? Are women in Bangkok more aware of breast cancer as compared to women in the rural areas?

- a. Some women that have attended our events are not very educated. Sometimes they cannot read. Most women are housewives. Only a few know about breast cancer. Patients at the Bangkok Nursing Home are definitely more aware of breast cancer. Some women in the rural areas do not know exactly what breast cancer is and they do not know that BSE can be used as a tool to detect a lump.

Appendix L: Queen Sirikit Centre for Breast Cancer Proposed Website Content

1. History of the Centre

- **Why it started:**

Breast cancer is the leading cancer among women in Thailand. It has resulted in an ever increasing number of patients who need treatment in the form of surgery, chemotherapy, and radiotherapy. The King Chulalongkorn Memorial Hospital, in conjunction with the Thai Red Cross Society, developed a plan to build a center for breast cancer which, in the words of Her Majesty the Queen, should be “**a sanctuary for women in need.**”

- **How it started:**

Dr. Kris Chatamra M.B.B.S. (London); L.R.C.P.(London); M.R.C.S.[England], F.R.C.S.(England) , M.D.(London), a consultant surgeon and oncologist at King Chulalongkorn Memorial Hospital, is the founder of the Centre. He returned to Thailand after spending 30 years in the U.K. Being a senior clinician and an internal examiner of the Royal College of Surgeons of England, he provided a strong basis for a plan to be pursued – which would combine the right philosophy, approach, and team. The Centre’s goal was to provide a state-of-the-art service for women with breast cancer that would ensure fast, efficient, and cohesive diagnostic and treatment services.

The Fund Raising Bureau of the Thai Red Cross Society actively sought individual donations and sponsorship to purchase the necessary equipment, in addition to the funds raised by founder of the Centre Dr. Kris Chatamra. The Centre has grown in strength and it was a great encouragement when Her Majesty the Queen graciously agreed to open the facility on June 11, 2005, to celebrate her 72nd birthday.

Her Majesty’s keen interest and support as Patron of this project was clearly illustrated in the gracious personal donation of 2 million baht and the bestowal of the Centre’s name, “**The Queen Sirikit Centre for Breast Cancer.**” The Centre is housed in a newly renovated building. It consists of in-patient wards, outpatient clinics, operating theatre facilities, a chemotherapy day-care unit, and as previously mentioned, the most modern diagnostic and therapeutic facilities available anywhere in Asia.

2. Philosophy of the Center

Team and Philosophy

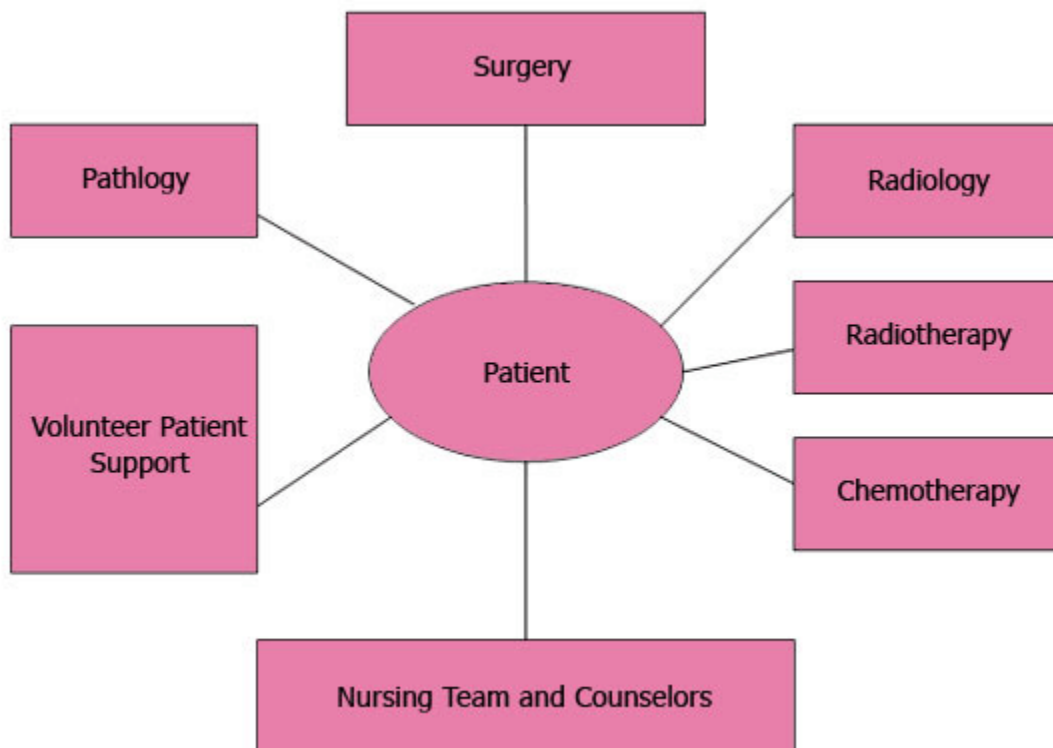
Dr. Chatamra's first aim was to build a team of specialists who were highly motivated and shared the same philosophy. Consequently, a multidisciplinary team was assembled which comprised of a group of surgeons, radiologists, pathologists, radiotherapists and nurse counselors with a high level of experience in their respective fields. This emphasis on a multidisciplinary approach to patient management ensures the best possible results in treatment and care.

Since the patient is not passed between lists of specialists working as individuals, which is often the case in other facilities, the team plans each patient's treatment together. Breast

preservation, whenever possible, is also a core philosophy of the Centre. This allows women to have the best cosmetic results after surgery in addition to reducing the emotional trauma.

Nurse counselors, trained specifically in the U.K. and the U.S., follow the patients from diagnosis through every stage of the treatment plan. They offer emotional support and are there to explain any aspects of treatment that patients find unclear. In addition, the Bangkok Breast Cancer Support Group, which is comprised of volunteers in both their Thai and English speaking groups, is also available for emotional support. Although they are located at the Queen Sirikit Centre, the group's work covers the whole of Bangkok.

The Queen Sirikit Centre for Breast Cancer Approach to Patient Care: The Multidisciplinary Team



The Multidisciplinary Team meets weekly to discuss all patient treatment and management plans. The team uses the most current methods of treatment and diagnosis, and they attend international conferences and seminars abroad on a regular basis. The team is committed to using the most modern equipment available, which is updated on a regular basis. The team also carries out research and teaching programs.

2. Information about breast cancer

3. Available treatments and facilities at the Centre

Treatments available at the Queen Sirikit Centre for Breast Cancer

- Surgery
- Chemotherapy
- Radiation Therapy
- Hormone Therapy
- Targeted Therapy
- Immunotherapy (not as much now, but in the future)

Breast conservation is the Centre's main goal. In fact, the Queen Sirikit Centre is the first in Thailand to be so keen on such goal. Breast cancer treatment at the Centre is a **multidisciplinary** approach: no department is allowed to completely dominate. In other facilities, the surgery department would usually dominate.

Surgery

- Mastectomy is very rarely performed at the Center. About ¾ of all the breast cancer patients (including the most serious cases) have had breast sparing surgery.
- All of the patients at the center have surgery followed by post-operative radiation.

Radiation Therapy

- All patients at the center receive post-operative radiation therapy. **The reason:** patients who have received post-operative radiation therapy have less than a 5% chance of cancer recurrence in the next 5 -15 years. Patients who have not completed radiation treatment following surgery have a 30% chance of local recurrence in the next 5-15 years.
- Patients who have undergone mastectomy still need to complete radiation treatment if the size of the tumor was bigger than 3.5 cm or if more than 2 lymph nodes were affected. If the lymph nodes are involved, the axilla must be radiated too.
- The Centre is the first in Asia to offer intraoperative radiation: after removal of the tumor, the patient is given radiation while still under anesthesia. **Advantages:** The depth of radiation is only 5 mm and the procedure takes only 30 minutes at most. The radiation is low-power and the patient does not need post-operative radiation (which takes at least 5 weeks to complete) after surgery. Less skin is involved during intraoperative radiation which leads to better cosmetic results. **Disadvantages:** Surgeries take more time and the patient spends more time under anesthesia.

Chemotherapy

- Patients with tumor size bigger than 1.5 cm receive adjuvant post-operative chemotherapy.

- **Younger patients (under 45)** are recommended post-operative chemotherapy: young patients tend to get a more severe case of the disease so chemotherapy might be more helpful.
- Chemotherapy for **patients above 65** is considered on a case-to-case basis, since those patients have a lower tolerance for chemotherapy.
- The Centre offers the same regimens as the international standard.

Hormone Therapy

- Hormone therapy is considered one of the biggest advancements in breast cancer treatment in the last 50 years.
- Some malignant tumors depend on the hormones estrogen and progesterone to grow. Lab tests are performed to determine whether the tumor has receptors for these two hormones. If lab tests are positive, hormone therapy may be used to prevent cancer cells from using estrogen and progesterone to grow.
- There are two types of drugs used in hormone therapy:
 - Tamoxifen – this drug blocks the effect of natural hormones by blocking the receptor
 - Aromatase inhibitors – these drugs cut down the production of estrogen and progesterone by the body

Targeted Therapy

- **HER2 (CERB2 in Europe)** is an abnormal protein that is expressed by some cancer cells and stimulates the growth of the tumor. Targeted therapy uses drugs that block this abnormal protein.
- **Triple negative breast cancer:** Tumor that is negative for estrogen, progesterone, and HER2 protein is called triple negative. Targeted therapy and hormone therapy cannot be prescribed to patients with triple negative breast cancer. Available treatments are not as effective for triple negative breast cancer, and scientists do not know much about why it tends to be more severe.

Basic treatment for breast conservation

- Surgery
- Post-operative radiation
- Some patients may receive chemotherapy
- Some patients may receive hormone therapy
 - Patients with tumors under the nipple are the most difficult cases for breast sparing surgery.
 - Patients with very large tumors are usually offered mastectomy.
 - Lumpectomy is not performed at the Centre; wide excision (WE) biopsy is done instead – lumpectomy removes only the lump, while WE biopsy

removes a margin of tissue that is likely to contain some cells that may develop into a local recurrence.

- Axillary assessment: sentinel node biopsy and axillary lymph node dissection are diagnostic methods that allow the treatment to be tailored to the patient.

Diagnostic Equipment available at the Center

- Digital mammogram
- 3D Breast Tomosynthesis: a major improvement of the digital mammography. It takes approximately 7 different views instead of 2, and generates a 3D image of the breast when the different images are assembled together in the program.
- Ultrasound
- MRI of the breast – to be installed this year
- Mammotomy – a very gentle core needle biopsy

Main Diagnostic Biopsies performed at the Center

- Fine needle aspiration cytology
- Very few core biopsies are performed since they rip the sample out, which causes a lot of trauma
- Mammotomy

5. Future projects: Hospice village

The Queen Sirikit Centre for Breast Cancer has been donated 50 acres outside of Bangkok for a hospice village. This will be a state-of-the-art high-nursing facility designed for palliative care. Building materials have been donated and construction is set to begin on [DATE]. The hospice village will allow underprivileged women with terminal breast cancer to escape Bangkok and live in luxury and peace. It will have emotional support services, religious services, and a garden for both enjoyment and sustainability.

6. Ongoing research at the Centre

7. Medical Personnel – divide by department:

- Surgery
- Radiology
- Radiotherapy
- Pathology
- Medical Oncology
 - How many doctors
 - What qualifications
 - Pictures

9. Awareness Campaigns

The Queen Sirikit Centre for Breast Cancer has held awareness campaigns during the month of October since 2007. The Centre partnered with its two patient support groups which comprised volunteers and cancer survivors, the Bangkok Breast Cancer Support Group for English speakers and the Thai speaking patient support group, in order to reach out to both communities. The 2007

campaign consisted of two workshops titled “Well Woman’s Day” that were supported by Director of the Queen Sirikit Centre Dr. Kris Chatamra and his wife Khunying Finola Chatamra. The top four hospitals in Bangkok – the BNH Hospital, Bumrungrad, Bangkok General Hospital, and Samitivej – joined up with pharmaceutical giant Astra Zeneca to sponsor these events, which were seated at full capacity. To specialists from the hospitals along with practitioners from all over Thailand held seminars regarding breast cancer and other relevant health issues for women. Furthermore, slum outreach programs were also established. Aside from helping and supporting patients who have already been diagnosed, the awareness campaign also aimed to bring cancer education programs to schools, universities, and businesses in Bangkok.

Following the success of its first breast cancer campaign, the Queen Sirikit Centre undertook in another venture to spread awareness in 2008: “Think Pink Campaign.” Unlike the previous year, this campaign continued until November in honor of the late Princess Galyani Vadhana who passed away from breast cancer in early 2008. Brochures as well as magazine, radio, and television advertisements were created to spread awareness. They featured both celebrities and cancer survivors from the slums, who have received aid from the outreach programs, as ambassadors. The promotional materials featured the chosen representatives along with facts – myths and truths – about breast cancer. Women, children, and men were included in these notices to stress the need for early detection as well as to show the consequences breast cancer had on families. Outreach programs continued to take place in order to help those who were less privileged. The Queen Sirikit Centre claimed to be the first in the world to have a tomosynthesis machine, which is a diagnostic tool that takes images by sectioning, in its 2008 campaign. The Centre, along with Chulalongkorn Hospital and Thai Red Cross Society, organized the annual Cancer Care Run – which was also sponsored by lingerie company Wacoal.

The 2009 awareness campaign was modeled on the 2008 campaign with brochures and featuring celebrities and ambassadors in magazines and on radio and television. Unlike the previous years, the Queen Sirikit Centre hosted a Valentine’s Day fundraising gala dinner and dance titled “An Affair to Remember,” which managed to raise a total of 410,000 baht

10. Slums outreach

The Queen Sirikit Centre partners with StepAhead, an integrated community development organization, to work on an outreach initiative in the Bangkok slums. The Centre holds health education events in 20 slum communities: nurses visit a community and teach women how to perform a Breast Self-Exam. Then the nurses take 100 women and their children back to the Centre for lunch and a women’s health check.

StepAhead offers many services to slum communities. They do a micro-loans program, run 4 child development centers, support community economic development with projects that provide economic opportunities, and hold capacity building classes to empower their members

12. Messages about early detection – pictures with ambassadors

- Mammograms
- Clinical breast examinations
- Breast self-examinations

13. Emotional Support

- BBCs – description and link

Who are we?

Bangkok Breast Cancer Support Group (BBCs) is a group of volunteer expatriates, who have experienced breast cancer, or have family or friends who have had breast cancer. We are also a group of women who simply want to help, and hence come together to support women who have been diagnosed with the disease. We actively support breast self-examination (BSE), which is the first and most important form of early detection of breast cancer. We understand the fear, anxiety, and emotional trauma associated with finding a breast lump or receiving diagnosis of breast cancer. We also know the importance of obtaining correct information and making informed choices regarding treatments, medications, etc. The BBCs knows that it is possible to lead a fulfilling and active life after breast cancer treatment. We know this because women are doing it every day.

Mission Statement

The mission of the BBCs is to support women who have been diagnosed with breast cancer before, during, and after treatment and to encourage those women to make informed decisions about their treatment with the accurate information provided.

How can the BBCs help you?

- We provide emotional support to women who have been diagnosed with breast cancer
- We lend a sympathetic ear and offer support to patients, and offer encouragement and hope
- We share experiences
- We offer support to patients, and their families before, during, and after treatment
- We can accompany patients to doctor appointments and treatments

16. List of active donors and partners

- American Cancer Society
- Estee Lauder
- Elka
- Avon
- L'Occitane
- Escada
- P. Grimm
- Central Group
- Paragon
- Individual (Private) Donations from Patients
- Singha Water
- National Cancer Institute of Thailand
- Tatler Magazine
- Wacoal
- World Vision
- Step Ahead
- Channel 3
- Channel 7
- Channel 9
- Emporium
- MetroBus

- Pink Prosecco champagne
- Robinson
- 4 Seasons
- Shangri-La Hotel
- Zonta
- Life Center
- Bangkok Bank
- Thai Polo & Equestrian Club Pattaya

17. Donation

19. Working with international organizations

Since 2009 the Queen Sirikit Center for Breast Cancer sponsors joint projects with students from Worcester Polytechnic Institute in the United States and students from Chulalongkorn University in Bangkok. The students from the two countries form teams that work together with the Center on projects that use science and technology to address societal problems.

2009 Team: The students from the 2009 team engineered a new food trolley to streamline the Center's food delivery system.

2010 Team: The students from the 2010 team worked with the Queen Sirikit Center for Breast Cancer and the Bangkok Breast Cancer Support Group to promote awareness and early detection of breast cancer in Thailand. The team designed a brochure containing basic breast cancer facts and improved the content of the Center's website. In addition, they compiled a catalogue of breast cancer treatment facilities in Bangkok.

Appendix M: Breast Cancer Information for the Queen Sirikit Centre for Breast Cancer Website

Note: Information taken from the National Cancer Institute of the United States: *What You Need to Know about Breast Cancer.*

The Breasts

Inside a woman's breast are 15 to 20 sections called lobes. Each lobe is made of many smaller sections called lobules. Lobules have groups of tiny glands that can make milk. After a baby is born, a woman's breast milk flows from the lobules through thin tubes called ducts to the nipple. Fat and fibrous tissue fill the spaces between the lobules and ducts.

The breasts also contain lymph vessels. These vessels are connected to small, round masses of tissue called lymph nodes. Groups of lymph nodes are near the breast in the underarm (axilla), above the collarbone, and in the chest behind the breastbone.

Cancer Cells

Cells are the building blocks of the body. They make up tissues, which make up the different parts of the body including the breasts. Normally, cells grow and divide to form new cells when needed by the body. The body has a check and repair system which enable old or damaged cells to die in order for new cells to form and take their place. However, problems can arise in this balance system: new cells can form when the body does not need them and old or damaged cells do not die when they should. In such instances, extra cells build up and often form masses of tissue called a lump, growth, or tumor.

Tumors in the breast can be benign (not cancer) or malignant (cancer). Benign tumors are not as harmful as malignant tumors:

- **Benign tumors:**
 - are rarely a threat to life
 - can be removed and usually don't grow back
 - don't spread to other parts of the body
- **Malignant tumors:**
 - may be a threat to life
 - often can be removed but sometimes grow back
 - can invade and damage nearby organs and tissues (such as the chest wall)

- can spread to other parts of the body

Breast cancer cells can spread by breaking away from the original tumor. They enter blood vessels or lymph vessels, which branch into all the tissues of the body. The cancer cells may be found in lymph nodes near the breast. The cancer cells can also attach to other tissues and grow to form new tumors that may damage those tissues: the spread of cancer is called metastasis.

Risk factors

When you're told that you have breast cancer, it's natural to wonder what may have caused the disease. But no one knows the exact causes of breast cancer. Doctors seldom know why one woman develops breast cancer and another doesn't.

Doctors do know that bumping, bruising, or touching the breast does not cause cancer. And breast cancer is not contagious. You can't catch it from another person.

Doctors also know that women with certain risk factors are more likely than others to develop breast cancer. A risk factor is something that may increase the chance of getting a disease.

Some risk factors (such as drinking alcohol) can be avoided. But most risk factors (such as having a family history of breast cancer) can't be avoided.

Studies have found the following risk factors for breast cancer:

- **Age:** The chance of getting breast cancer increases as you get older.
- **Personal health history:** Having breast cancer in one breast increases your risk of getting cancer in your other breast. Also, having certain types of abnormal breast cells (atypical hyperplasia, lobular carcinoma in situ [LCIS], or ductal carcinoma in situ [DCIS]) increases the risk of invasive breast cancer. These conditions are found with a breast biopsy.
- **Health history:** Your risk of breast cancer is higher if your mother, father, sister, or daughter had breast cancer. The risk is even higher if your family member had breast cancer before age 50. Having other relatives (in either your mother's or father's family) with breast cancer or ovarian cancer may also increase your risk.
- **Certain genome changes:** Changes in certain genes, such as BRCA1 or BRCA2, substantially increase the risk of breast cancer. Tests can sometimes show the presence of these rare, specific gene changes in families with many women who have had breast cancer, and health care providers may suggest ways to try to reduce the risk of breast cancer or to improve the detection of this disease in women who have these genetic changes.

- Also, researchers have found specific regions on certain chromosomes that are linked to the risk of breast cancer. If a woman has a genetic change in one or more of these regions, the risk of breast cancer may be slightly increased. The risk increases with the number of genetic changes that are found. Although these genetic changes are more common among women than BRCA1 or BRCA2, the risk of breast cancer is far lower.
- **Radiation therapy to the chest:** Women who had radiation therapy to the chest (including the breasts) before age 30 are at an increased risk of breast cancer.
 - The older a woman is when she has her first child, the greater her chance of breast cancer.
 - Women who never had children are at an increased risk of breast cancer.
 - Women who had their first menstrual period before age 12 are at an increased risk of breast cancer.
 - Women who went through menopause after age 55 are at an increased risk of breast cancer.
 - Women who take menopausal hormone therapy for many years have an increased risk of breast cancer.
- **Breast density:** Breasts appear on a mammogram (breast x-ray) as having areas of dense and fatty (not dense) tissue. Women whose mammograms show a larger area of dense tissue than the mammograms of women of the same age are at increased risk of breast cancer.
- **Being overweight or obese after menopause:** The chance of getting breast cancer after menopause is higher in women who are overweight or obese.
- **Lack of physical activity:** Women who are physically inactive throughout life may have an increased risk of breast cancer.
- **Drinking alcohol:** Studies suggest that the more alcohol a woman drinks, the greater her risk of breast cancer.

Having a risk factor does not mean that a woman will get breast cancer. Most women who have risk factors never develop breast cancer.

Many other possible risk factors have been studied. For example, researchers are studying whether women who have a diet high in fat or who are exposed to certain substances in the environment have an increased risk of breast cancer. Researchers continue to study these and other possible risk factors.

Symptoms

Early breast cancer usually doesn't cause symptoms. But as the tumor grows, it can change how the breast looks or feels. The common changes include:

- A lump or thickening in or near the breast or in the underarm area
- A change in the size or shape of the breast
- Dimpling or puckering in the skin of the breast
- A nipple turned inward into the breast
- Discharge (fluid) from the nipple, especially if it's bloody
- Scaly, red, or swollen skin on the breast, nipple, or areola (the dark area of skin at the center of the breast). The skin may have ridges or pitting so that it looks like the skin of an orange.

You should see your health care provider about any symptom that does not go away. Most often, these symptoms are not due to cancer. Another health problem could cause them. If you have any of these symptoms, you should tell your health care provider so that the problems can be diagnosed and treated.

Detection and Diagnosis

Your doctor can check for breast cancer before you have any symptoms. During an office visit, your doctor will ask about your personal and family medical history. You'll have a physical exam. Your doctor may order one or more imaging tests, such as a mammogram.

Doctors recommend that women have regular clinical breast exams and mammograms to find breast cancer early. Treatment is more likely to work well when breast cancer is detected early.

Clinical Breast Exam

During a clinical breast exam, your health care provider checks your breasts. You may be asked to raise your arms over your head, let them hang by your sides, or press your hands against your hips.

Your health care provider looks for differences in size or shape between your breasts. The skin of your breasts is checked for a rash, dimpling, or other abnormal signs. Your nipples may be squeezed to check for fluid.

Using the pads of the fingers to feel for lumps, your health care provider checks your entire breast, underarm, and collarbone area. A lump is generally the size of a pea before anyone can feel it. The exam is done on one side and then the other. Your health care provider checks the lymph nodes near the breast to see if they are enlarged.

If you have a lump, your health care provider will feel its size, shape, and texture. Your health care provider will also check to see if the lump moves easily. Benign lumps often feel different from cancerous ones. Lumps that are soft, smooth, round, and movable are likely to be benign. A hard, oddly shaped lump that feels firmly attached within the breast is more likely to be cancer, but further tests are needed to diagnose the problem.

Mammogram

A mammogram is an x-ray picture of tissues inside the breast. Mammograms can often show a breast lump before it can be felt. They also can show a cluster of tiny specks of calcium. These specks are called microcalcifications. Lumps or specks can be from cancer, precancerous cells, or other conditions. Further tests are needed to find out if abnormal cells are present.

Before they have symptoms, women should get regular screening mammograms to detect breast cancer early:

- Women in their 40s and older should have mammograms every 1 or 2 years.
- Women who are younger than 40 and have risk factors for breast cancer should ask their health care provider whether to have mammograms and how often to have them.

If the mammogram shows an abnormal area of the breast, your doctor may order clearer, more detailed images of that area. Doctors use diagnostic mammograms to learn more about unusual breast changes, such as a lump, pain, thickening, nipple discharge, or change in breast size or shape. Diagnostic mammograms may focus on a specific area of the breast. They may involve special techniques and more views than screening mammograms.

Other Imaging Tests

If an abnormal area is found during a clinical breast exam or with a mammogram, the doctor may order other imaging tests:

- **Ultrasound:** A woman with a lump or other breast change may have an ultrasound test. An ultrasound device sends out sound waves that people can't hear. The sound waves bounce off breast tissues. A computer uses the echoes to create a picture. The picture may show whether a lump is solid, filled with fluid (a cyst), or a mixture of both. Cysts usually are not cancer. But a solid lump may be cancer.

- **MRI:** MRI uses a powerful magnet linked to a computer. It makes detailed pictures of breast tissue. These pictures can show the difference between normal and diseased tissue.

Biopsy

A biopsy is the removal of tissue to look for cancer cells. A biopsy is the only way to tell for sure if cancer is present.

You may need to have a biopsy if an abnormal area is found. An abnormal area may be felt during a clinical breast exam but not seen on a mammogram. Or an abnormal area could be seen on a mammogram but not be felt during a clinical breast exam. In this case, doctors can use imaging procedures (such as a mammogram, an ultrasound, or MRI) to help see the area and remove tissue.

Your doctor may refer you to a surgeon or breast disease specialist for a biopsy. The surgeon or doctor will remove fluid or tissue from your breast in one of several ways:

- **Fine-needle aspiration biopsy:** Your doctor uses a thin needle to remove cells or fluid from a breast lump.
- **Core biopsy:** Your doctor uses a wide needle to remove a sample of breast tissue.
- **Skin biopsy:** If there are skin changes on your breast, your doctor may take a small sample of skin.
- **Surgical biopsy:** Your surgeon removes a sample of tissue.
- **An incisional biopsy** takes a part of the lump or abnormal area.
- **An excisional biopsy** takes the entire lump or abnormal area.

A pathologist will check the tissue or fluid removed from your breast for cancer cells. If cancer cells are found, the pathologist can tell what kind of cancer it is. The most common type of breast cancer is ductal carcinoma. It begins in the cells that line the breast ducts. Lobular carcinoma is another type. It begins in the lobules of the breast.

Lab Tests with Breast Tissue

If you are diagnosed with breast cancer, your doctor may order special lab tests on the breast tissue that was removed:

- **Hormone receptor tests:** Some breast tumors need hormones to grow. These tumors have receptors for the hormones estrogen, progesterone, or both. If the hormone receptor

tests show that the breast tumor has these receptors, then hormone therapy is most often recommended as a treatment option.

- **HER2/neu test:** HER2/neu protein is found on some types of cancer cells. This test shows whether the tissue either has too much HER2/neu protein or too many copies of its gene. If the breast tumor has too much HER2/neu, then targeted therapy may be a treatment option.

It may take several weeks to get the results of these tests. The test results help your doctor decide which cancer treatments may be options for you.

You may want to ask your doctor these questions before having a biopsy:

- What kind of biopsy will I have? Why?
- How long will it take? Will I be awake? Will it hurt? Will I have anesthesia? What kind?
- Are there any risks? What are the chances of infection or bleeding after the biopsy?
- Will I have a scar?
- How soon will I know the results?
- If I do have cancer, who will talk with me about the next steps? When?

Staging

If the biopsy shows that you have breast cancer, your doctor needs to learn the extent (stage) of the disease to help you choose the best treatment. The stage is based on the size of the cancer, whether the cancer has invaded nearby tissues, and whether the cancer has spread to other parts of the body. Staging may involve blood tests and other tests (For More info....)

More Detailed Info:

Test to determine the stage of breast cancer:

- **Bone scan:** The doctor injects a small amount of a radioactive substance into a blood vessel. It travels through the bloodstream and collects in the bones. A machine called a scanner detects and measures the radiation. The scanner makes pictures of the bones. The pictures may show cancer that has spread to the bones.
- **CT scan:** Doctors sometimes use CT scans to look for breast cancer that has spread to the liver or lungs. An x-ray machine linked to a computer takes a series of detailed pictures of your chest or abdomen. You may receive contrast material by injection into a blood vessel in your arm or hand. The contrast material makes abnormal areas easier to see.

- **Lymph node biopsy:** The stage often is not known until after surgery to remove the tumor in your breast and one or more lymph nodes under your arm. Surgeons use a method called sentinel lymph node biopsy to remove the lymph node most likely to have breast cancer cells. The surgeon injects a blue dye, a radioactive substance, or both near the breast tumor. Or the surgeon may inject a radioactive substance under the nipple. The surgeon then uses a scanner to find the sentinel lymph node containing the radioactive substance or looks for the lymph node stained with dye. The sentinel node is removed and checked for cancer cells. Cancer cells may appear first in the sentinel node before spreading to other lymph nodes and other places in the body.

These tests can show whether the cancer has spread and, if so, to what parts of your body. When breast cancer spreads, cancer cells are often found in lymph nodes under the arm (axillary lymph nodes). Also, breast cancer can spread to almost any other part of the body, such as the bones, liver, lungs, and brain.

When breast cancer spreads from its original place to another part of the body, the new tumor has the same kind of abnormal cells and the same name as the primary (original) tumor. For example, if breast cancer spreads to the bones, the cancer cells in the bones are actually breast cancer cells. The disease is metastatic breast cancer, not bone cancer. For that reason, it is treated as breast cancer, not bone cancer. Doctors call the new tumor "distant" or metastatic disease.

These are the stages of breast cancer:

Stage 0 is sometimes used to describe abnormal cells that are not invasive cancer. For example, Stage 0 is used for ductal carcinoma in situ (DCIS). DCIS is diagnosed when abnormal cells are in the lining of a breast duct, but the abnormal cells have not invaded nearby breast tissue or spread outside the duct. Although many doctors don't consider DCIS to be cancer, DCIS sometimes becomes invasive breast cancer if not treated.

Stage I is an early stage of invasive breast cancer. Cancer cells have invaded breast tissue beyond where the cancer started, but the cells have not spread beyond the breast. The tumor is no more than 2 centimeters (three-quarters of an inch) across.

Stage II is one of the following:

- The tumor is no more than 2 centimeters (three-quarters of an inch) across. The cancer has spread to the lymph nodes under the arm.
- The tumor is between 2 and 5 centimeters (three-quarters of an inch to 2 inches). The cancer has not spread to the lymph nodes under the arm.
- The tumor is between 2 and 5 centimeters (three-quarters of an inch to 2 inches). The cancer has spread to the lymph nodes under the arm.

- The tumor is larger than 5 centimeters (2 inches).

The cancer has not spread to the lymph nodes under the arm.

Stage III is locally advanced cancer. It is divided into Stage IIIA, IIIB, and IIIC.

- **Stage IIIA** is one of the following:
 - The tumor is no more than 5 centimeters (2 inches) across. The cancer has spread to underarm lymph nodes that are attached to each other or to other structures. Or the cancer may have spread to lymph nodes behind the breastbone.
 - The tumor is more than 5 centimeters across. The cancer has spread to underarm lymph nodes that are either alone or attached to each other or to other structures. Or the cancer may have spread to lymph nodes behind the breastbone.
- **Stage IIIB** is a tumor of any size that has grown into the chest wall or the skin of the breast. It may be associated with swelling of the breast or with nodules (lumps) in the breast skin:
 - The cancer may have spread to lymph nodes under the arm.
 - The cancer may have spread to underarm lymph nodes that are attached to each other or other structures. Or the cancer may have spread to lymph nodes behind the breastbone.
 - Inflammatory breast cancer is a rare type of breast cancer. The breast looks red and swollen because cancer cells block the lymph vessels in the skin of the breast. When a doctor diagnoses inflammatory breast cancer, it is at least Stage IIIB, but it could be more advanced.
- **Stage IIIC** is a tumor of any size. It has spread in one of the following ways:
 - The cancer has spread to the lymph nodes behind the breastbone and under the arm.
 - The cancer has spread to the lymph nodes above or below the collarbone.

Stage IV is distant metastatic cancer. The cancer has spread to other parts of the body, such as the bones or liver.

Recurrent cancer is cancer that has come back after a period of time when it could not be detected. Even when the cancer seems to be completely destroyed, the disease sometimes returns because undetected cancer cells remained somewhere in your body after treatment. It may return

in the breast or chest wall. Or it may return in any other part of the body, such as the bones, liver, lungs, or brain.

Treatment

Women with breast cancer have many treatment options. The treatment that's best for one woman may not be best for another.

The options are **surgery, radiation therapy, hormone therapy, chemotherapy, and targeted therapy**. You may receive more than one type of treatment. The treatment options are described below.

Surgery and radiation therapy are types of local therapy. They remove or destroy cancer in the breast.

Hormone therapy, chemotherapy, and targeted therapy are types of systemic therapy. The drug enters the bloodstream and destroys or controls cancer throughout the body.

The treatment that's right for you depends mainly on the stage of the cancer, the results of the hormone receptor tests, the result of the HER2/neu test, and your general health.

Your doctor can describe your treatment choices, the expected results, and the possible side effects. Because cancer therapy often damages healthy cells and tissues, side effects are common. Before treatment starts, ask your health care team about possible side effects, how to prevent or reduce these effects, and how treatment may change your normal activities.

You may want to know how you will look during and after treatment. You and your health care team can work together to develop a treatment plan that meets your medical and personal needs.

Your doctor may refer you to a specialist, or you may ask for a referral. Specialists who treat breast cancer include surgeons, medical oncologists, and radiation oncologists. You also may be referred to a plastic surgeon or reconstructive surgeon. Your health care team may also include an oncology nurse and a registered dietitian.

You may want to ask your doctor these questions before you begin treatment:

- What did the hormone receptor tests show? What did other lab tests show? Would genetic testing be helpful to me or my family?
- Do any lymph nodes show signs of cancer?
- What is the stage of the disease? Has the cancer spread?
- What are my treatment choices? Which do you recommend for me? Why?

- What are the expected benefits of each kind of treatment?
- What can I do to prepare for treatment?
- Will I need to stay in the hospital? If so, for how long?
- What are the risks and possible side effects of each treatment? How can side effects be managed?
- What is the treatment likely to cost? Will my insurance cover it?
- How will treatment affect my normal activities?
- Would a research study (clinical trial) be appropriate for me?
- Can you recommend other doctors who could give me a second opinion about my treatment options?
- How often should I have checkups?

More detailed information about treatments:

Surgery

Surgery is the most common treatment for breast cancer. Your doctor can explain each type, discuss and compare the benefits and risks, and describe how each will change the way you look:

- **Breast-sparing surgery**: This is an operation to remove the cancer but not the breast. It's also called **breast-conserving surgery**. It can be a **lumpectomy** (Surgery to remove abnormal tissue or cancer from the breast and a small amount of normal tissue around it. It is a type of breast-sparing surgery.) or a **segmental mastectomy** (also called a **partial mastectomy** (The removal of cancer as well as some of the breast tissue around the tumor and the lining over the chest muscles below the tumor. Usually some of the lymph nodes under the arm are also taken out. Also called partial mastectomy.)). Sometimes an excisional biopsy is the only surgery a woman needs because the surgeon removed the whole lump.
- **Mastectomy**: This is an operation to remove the entire breast (or as much of the breast tissue as possible). In some cases, a skin-sparing mastectomy may be an option. For this approach, the surgeon removes as little skin as possible.

The surgeon usually removes one or more lymph nodes from under the arm to check for cancer cells. If cancer cells are found in the lymph nodes, other cancer treatments will be needed.

The time it takes to heal after surgery is different for each woman. Surgery causes pain and tenderness. Medicine can help control the pain. Before surgery, you should discuss the plan for pain relief with your doctor or nurse. After surgery, your doctor can adjust the plan if you need more relief.

Any kind of surgery also carries a risk of infection, bleeding, or other problems. You should tell your health care team right away if you develop any problems.

You may feel off balance if you've had one or both breasts removed. You may feel more off balance if you have large breasts. This imbalance can cause discomfort in your neck and back.

Also, the skin where your breast was removed may feel tight. Your arm and shoulder muscles may feel stiff and weak. These problems usually go away. The doctor, nurse, or physical therapist can suggest exercises to help you regain movement and strength in your arm and shoulder. Exercise can also reduce stiffness and pain. You may be able to begin gentle exercise within days of surgery.

Because nerves may be injured or cut during surgery, you may have numbness and tingling in your chest, underarm, shoulder, and upper arm. These feelings usually go away within a few weeks or months. But for some women, numbness does not go away.

Removing the lymph nodes under the arm slows the flow of lymph fluid. The fluid may build up in your arm and hand and cause swelling. This swelling is called lymphedema. It can develop soon after surgery or months or even years later. You'll always need to protect the arm and hand on the treated side of your body from cuts, burns, or other injuries.

You may want to ask your doctor these questions before having surgery:

- What kinds of surgery can I consider? Is breast-sparing surgery an option for me? Is a skin-sparing mastectomy an option? Which operation do you recommend for me? Why?
- Will any lymph nodes be removed? How many? Why?
- How will I feel after the operation? Will I have to stay in the hospital?
- Will I need to learn how to take care of myself or my incision when I get home?
- Where will the scars be? What will they look like?
- If I decide to have plastic surgery to rebuild my breast, how and when can that be done? Can you suggest a plastic surgeon for me to contact?
- Will I have to do special exercises to help regain motion and strength in my arm and shoulder? Will a physical therapist or nurse show me how to do the exercises?

- Is there someone I can talk with who has had the same surgery I'll be having?
- How often will I need checkups?

Radiation Therapy

Radiation therapy (also called radiotherapy) uses high-energy rays to kill cancer cells. It affects cells only in the part of the body that is treated. Radiation therapy may be used after surgery to destroy breast cancer cells that remain in the area.

More detailed information:

Doctors use two types of radiation therapy to treat breast cancer. Some women receive both types:

- **External radiation therapy:** The radiation comes from a large machine outside the body. You will go to a hospital or clinic for treatment. Treatments are usually 5 days a week for 4 to 6 weeks. External radiation is the most common type used for breast cancer.
- **Internal radiation therapy** (implant radiation therapy or brachytherapy): The doctor places one or more thin tubes inside the breast through a tiny incision. A radioactive substance is loaded into the tube. The treatment session may last for a few minutes, and the substance is removed. When it's removed, no radioactivity remains in your body. Internal radiation therapy may be repeated every day for a week.

Side effects depend mainly on the dose and type of radiation. It's common for the skin in the treated area to become red, dry, tender, and itchy. Your breast may feel heavy and tight. Internal radiation therapy may make your breast look red or bruised. These problems usually go away over time.

Bras and tight clothes may rub your skin and cause soreness. You may want to wear loose-fitting cotton clothes during this time.

Gentle skin care also is important. You should check with your doctor before using any deodorants, lotions, or creams on the treated area. Toward the end of treatment, your skin may become moist and "weepy." Exposing this area to air as much as possible can help the skin heal. After treatment is over, the skin will slowly heal. However, there may be a lasting change in the color of your skin.

You're likely to become very tired during radiation therapy, especially in the later weeks of treatment. Resting is important, but doctors usually advise patients to try to stay active, unless it leads to pain or other problems.

You may wish to discuss with your doctor the possible long-term effects of radiation therapy. For example, radiation therapy to the chest may harm the lung or heart. Also, it can change the size of your breast and the way it looks. If any of these problems occur, your health care team can tell you how to manage them.

You may want to ask your doctor these questions before having radiation therapy:

- Which type of radiation therapy can I consider? Are both types an option for me?
- When will treatment start? When will it end? How often will I have treatments?
- How will I feel during treatment? Will I need to stay in the hospital? Will I be able to drive myself to and from treatment?
- What can I do to take care of myself before, during, and after treatment?
- How will we know the treatment is working?
- Will treatment harm my skin?
- How will my chest look afterward?
- Are there any lasting effects?
- What is the chance that the cancer will come back in my breast?
- How often will I need checkups?

Chemotherapy

Chemotherapy uses drugs to kill cancer cells. The drugs that treat breast cancer are usually given through a vein (*intravenous*) or as a pill. You'll probably receive a combination of drugs. You may receive chemotherapy in an outpatient part of the hospital, at the doctor's office, or at home. Some women need to stay in the hospital during treatment. The side effects depend mainly on which drugs are given and how much. Chemotherapy kills fast-growing cancer cells, but the drugs can also harm normal cells that divide rapidly:

- **Blood cells:** When drugs lower the levels of healthy blood cells, you're more likely to get infections, bruise or bleed easily, and feel very weak and tired. Your health care team will check for low levels of blood cells. If your levels are low, your health care team may stop the chemotherapy for a while or reduce the dose of the drug. There are also medicines that can help your body make new blood cells.
- **Cells in hair roots:** Chemotherapy may cause hair loss. If you lose your hair, it will grow back after treatment, but the color and texture may be changed.

- **Cells that line the *digestive tract*:** Chemotherapy can cause a poor appetite, nausea and vomiting, diarrhea, or mouth and lip sores. Your health care team can give you medicines and suggest other ways to help with these problems.

Some drugs used for breast cancer can cause tingling or numbness in the hands or feet. This problem often goes away after treatment is over. Other problems may not go away. For example, some of the drugs used for breast cancer may weaken the heart. Your doctor may check your heart before, during, and after treatment. A rare side effect of chemotherapy is that years after treatment, a few women have developed *leukemia* (cancer of the blood cells). Some anticancer drugs can damage the ovaries. If you have not gone through menopause yet, you may have hot flashes and vaginal dryness. Your menstrual periods may no longer be regular or may stop. You may become infertile (unable to become pregnant). For women over the age of 35, this damage to the ovaries is likely to be permanent. On the other hand, you may remain able to become pregnant during chemotherapy. Before treatment begins, you should talk with your doctor about birth control because many drugs given during the first trimester are known to cause birth defects.

Targeted Therapy

Some women with breast cancer may receive drugs called targeted therapy. Targeted therapy uses drugs that block the growth of breast cancer cells. For example, targeted therapy may block the action of an abnormal protein (such as HER2) that stimulates the growth of breast cancer cells. *Trastuzumab* (Herceptin®) or *lapatinib* (TYKERB®) may be given to a woman whose lab tests show that her breast tumor has too much HER2:

- **Trastuzumab:** This drug is given through a vein. It may be given alone or with chemotherapy. Side

effects that most commonly occur during the first treatment include fever and chills. Other possible

side effects include weakness, nausea, vomiting, diarrhea, headaches, difficulty breathing, and rashes.

These side effects generally become less severe after the first treatment. Trastuzumab also may cause heart damage, heart failure, and serious breathing problems. Before and during treatment, your doctor will check your heart and lungs.

- **Lapatinib:** The tablet is taken by mouth. Lapatinib is given with chemotherapy. Side effects include nausea, vomiting, diarrhea, tiredness, mouth sores, and rashes. It can also cause red, painful hands and feet. Before treatment, your doctor will check your heart and liver. During treatment, your doctor will

watch for signs of heart, lung, or liver problems.

Hormone Therapy

Hormone therapy, also called anti-hormone treatment, is a possible option if lab tests show that the tumor in your breast has hormone receptors. Hormone therapy keeps cancer cells from getting or using the natural hormones (estrogen and progesterone) they need to grow.

Options before menopause

If you have not gone through menopause, the options include:

- **Tamoxifen:** This drug can prevent the original breast cancer from returning and also helps prevent the development of new cancers in the other breast. It's a pill that you take every day for 5 years. In general, the side effects of tamoxifen are similar to some of the symptoms of menopause. The most common are hot flashes and vaginal discharge.
- **LH-RH agonist:** This type of drug can prevent the ovaries from making estrogen. The estrogen level falls slowly. Examples are leuprolide and goserelin. This type of drug may be given by injection under the skin in the stomach area. Side effects include hot flashes, headaches, weight gain, thinning bones, and bone pain.
- **Surgery to remove your ovaries:** Until you go through menopause, your ovaries are your body's main source of estrogen. When the surgeon removes your ovaries, this source of estrogen is also removed. When the ovaries are removed, menopause occurs right away. The side effects are often more severe than those caused by natural menopause.

Options after menopause

If you have gone through menopause, the options include:

- **Aromatase inhibitor:** This type of drug prevents the body from making a form of estrogen (estradiol). Examples are anastrozole, exemestane, and letrozole. Common side effects include hot flashes, nausea, vomiting, and painful bones or joints.
- **Tamoxifen:** Hormone therapy is given for at least 5 years. Women who have gone through menopause receive tamoxifen for 2 to 5 years.

Second Opinion

Before starting treatment, you might want a second opinion from another doctor about your diagnosis and treatment plan. Some women worry that their doctor will be offended if they ask for a second opinion. Usually the opposite is true. Most doctors welcome a second opinion, and you may also feel more confident about the decisions you make, knowing that you've looked carefully at your options.

It may take some time and effort to gather your medical records and see another doctor. Usually it's not a problem if it takes you several weeks to get a second opinion. In most cases, the delay in starting treatment will not make treatment less effective. To make sure, you should discuss this possible delay with your doctor. Some women with breast cancer need treatment right away.

There are many ways to find a doctor for a second opinion. You can ask your doctor, a local or state medical society, a nearby hospital, or a medical school for names of specialists.

Breast Reconstruction

Women who plan to have a mastectomy may choose to have breast reconstruction or prefer to wear prosthetic bras, while some choose to do nothing after surgery. Pros and cons exist for all these options and it is important to have these choices available for women.

Breast reconstruction may be done at the same time as the mastectomy, or later on. If radiation therapy is part of the treatment plan, some doctors suggest waiting until after radiation therapy is complete. If you are thinking about breast reconstruction, you should talk to a plastic surgeon before the mastectomy, even if you plan to have your reconstruction later on.

There are many ways for a surgeon to reconstruct the breast. Some women choose to have breast implants, which are filled with saline or silicone gel. You also may have breast reconstruction with tissue that the plastic surgeon removes from another part of your body. Skin, muscle, and fat can come from your lower abdomen, back, or buttocks. The surgeon uses this tissue to create a breast shape.

The type of reconstruction that is best for you depends on your age, body type, and the type of cancer surgery that you had. The plastic surgeon can explain the risks and benefits of each type of reconstruction.

You may want to ask your doctor these questions about breast reconstruction:

- Which type of surgery would give me the best results? How will I look afterward?
- When can my reconstruction begin?
- How many surgeries will I need?
- What are the risks at the time of surgery? Later?
- Will I have scars? Where? What will they look like?
- If tissue from another part of my body is used, will there be any permanent changes where the tissue was removed?
- What activities should I avoid? When can I return to my normal activities?

- Will I need follow-up care?
- How much will reconstruction cost? Will my health insurance pay for it?

Follow-up Care

You'll need regular checkups after treatment for breast cancer. Checkups help ensure that any changes in your health are noted and treated if needed. If you have any health problems between checkups, you should contact your doctor. Your doctor will check for return of the cancer. Also, checkups help detect health problems that can result from cancer treatment. You should report any changes in the treated area or in your other breast to the doctor right away. Tell your doctor about any health problems, such as pain, loss of appetite or weight, changes in menstrual cycles, unusual vaginal bleeding, or blurred vision. Also talk to your doctor about headaches, dizziness, shortness of breath, coughing or hoarseness, backaches, or digestive problems that seem unusual or that don't go away.

Such problems may arise months or years after treatment. They may suggest that the cancer has returned, but they can also be symptoms of other health problems. It's important to share your concerns with your doctor so that problems can be diagnosed and treated as soon as possible. Checkups usually include an exam of the neck, underarm, chest, and breast areas. Since a new breast cancer may develop, you should have regular mammograms. You probably won't need a mammogram of a reconstructed breast or if you had a mastectomy without reconstruction. Your doctor may order other imaging procedures or lab tests.

Sources of Support

Learning that you have breast cancer can change your life and the lives of those close to you. These changes can be hard to handle. It's normal for you, your family, and your friends to need help coping with the feelings that such a diagnosis can bring. Concerns about treatments and managing side effects, hospital stays, and medical bills are common. You may also worry about caring for your family, keeping your job, or continuing daily activities. Several organizations offer special programs for women with breast cancer. Women who have had the disease serve as trained volunteers. They may talk with or visit women who have breast cancer, provide information, and lend emotional support. They often share their experiences with breast cancer treatment, breast reconstruction, and recovery. You may be afraid that changes to your body will affect not only how you look but also how other people feel about you. You may worry that breast cancer and its treatment will affect your sexual relationships. Many couples find it helps to talk about their concerns. Some find that counseling or a couples' support group can be helpful. Here's where you can go for support:

- Doctors, nurses, and other members of your healthcare team can answer questions about treatment, working, or other activities.
- Social workers, counselors, or members of the clergy can be helpful if you want to talk about your feelings or concerns. Often, social workers can suggest resources for financial aid, transportation, home care, or emotional support.
- Support groups also can help. In these groups, women with breast cancer or their family members meet with other patients or their families to share what they have learned about coping with the disease and the effects of treatment. Groups may offer support in person, over the telephone, or on the Internet. You may want to talk with a member of your health care team about finding a support group. Women with breast cancer often get together in support groups, but please keep in mind that each woman is different. Ways that one woman deals with cancer may not be right for another. You may want to ask your health care provider about advice you receive from other women with breast cancer.

Appendix N: Brochure for Bangkok Breast Cancer Support Group – (English Version)

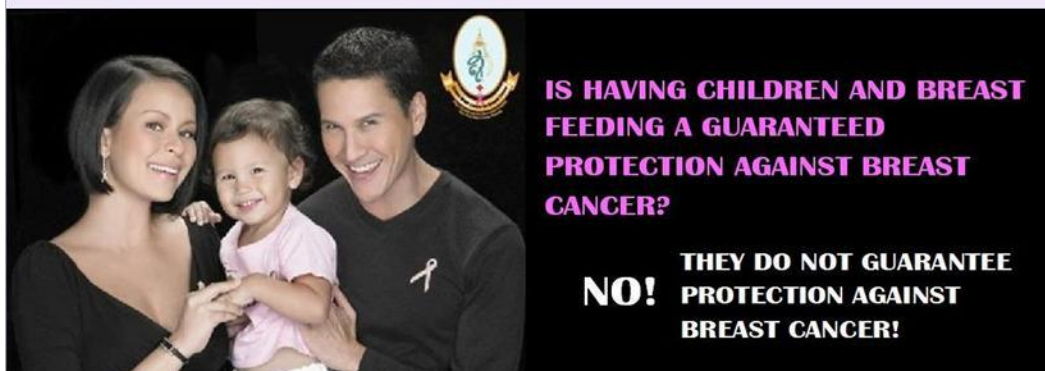


**BREAST CANCER
INFORMATION BOOKLET**



What is breast cancer?

Breast cancer is a disease in which malignant (cancer) cells form in the tissues of the breast. It occurs in both men and women, although male breast cancer is rare. In Thailand, breast cancer is the second most common cancer among women.



IS HAVING CHILDREN AND BREAST FEEDING A GUARANTEED PROTECTION AGAINST BREAST CANCER?

NO! THEY DO NOT GUARANTEE PROTECTION AGAINST BREAST CANCER!

Am I at risk of developing breast cancer?

Anything that increases your chance of getting a disease is called a risk factor. **Having a risk factor does not mean that you will get cancer; not having risk factors doesn't mean that you will not get cancer.** People who think they may be at risk should discuss this with their doctor. **Being a woman and getting older are the biggest risk factors for developing breast cancer.** Other risk factors include:

- Menstruating at an early age
- Menopause after 55
- Older age at first birth or never having given birth
- A personal history of breast cancer or benign (non-cancer) breast disease.
- A mother or sister with breast cancer
- Taking hormones such as estrogen and progesterone
- High alcohol consumption
- Obesity

What can I do to **prevent** breast cancer?

Nothing prevents breast cancer 100% but there are certain steps you can take to lead a healthier lifestyle and possibly reduce your risk of developing breast cancer.

Exercise regularly – high levels of the hormone estrogen can contribute to formation of breast cancer. Regular exercise lowers estrogen levels and helps you maintain a healthy weight. In addition it boosts the function of the immune system cells that attack tumor cells.

Healthy diet – include more fruits, vegetables, whole grains and cereals in your diet and reduce consumption of high fat foods.

Reduce alcohol consumption – several studies indicate a connection between breast cancer and high alcohol consumption. You can lower your risk by drinking less alcohol.

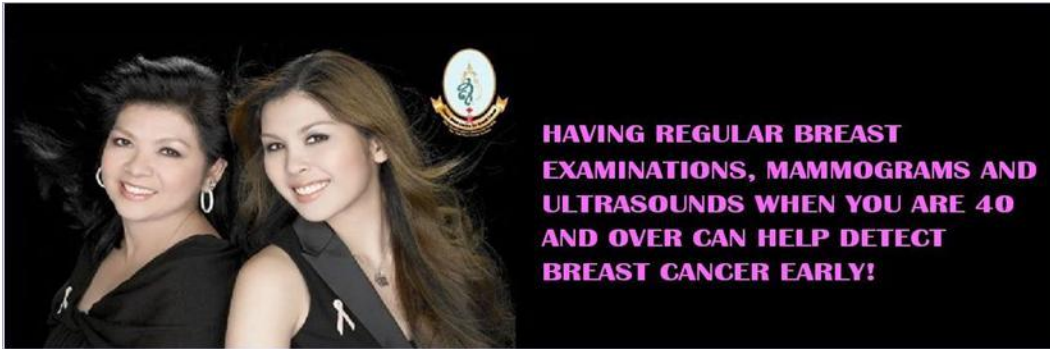
Quit Smoking – if you do not smoke cigarettes, do not start. If you do smoke, get help to quit.

**BREAST CANCER THAT IS DETECTED
EARLY AND TREATED CORRECTLY
CAN IN MOST CASES BE CURED!**



What exactly **causes** breast cancer and is it possible to prevent it?

Causes of breast cancer are still not fully understood and, therefore, it is hard to prevent. However, early detection of breast cancer greatly improves a woman's chances of survival. If a breast tumor is found while it is still small and before any symptoms appear, a woman has more treatment options and a greater chance of keeping her breasts. Early detection can save lives and therefore, it is critical that you get screened for breast cancer on a regular basis.



What is **screening** and how can it help find breast cancer early?

Screening is looking for cancer before a person has any symptoms. This can help find cancer at an early stage. When abnormal tissue or cancer is found early, it may be easier to treat. By the time symptoms appear, cancer may have begun to spread. It is important to remember that your doctor does not necessarily think you have cancer if he or she suggests a screening test. Screening tests are given when you have no cancer symptoms.

There are three important screening methods that can help detect breast cancer at an early stage.

Mammogram

A mammogram is an x-ray of the breast, performed with a specially designed x-ray machine. Your breasts will be positioned between two plates and flattened to spread out the tissue, after which an x-ray picture will be taken. Some women may feel uncomfortable during the procedure due to the firm pressure placed on each breast. This test may find tumors that are too small to feel. Therefore, getting a routine mammogram is important even if you or your doctor do not feel any abnormalities during breast examination. Women should start getting an annual mammogram at the age of 40.

Clinical Breast Examination

A clinical breast exam is an exam of the breast by a doctor or nurse. The doctor will carefully feel the breasts and under the arms for lumps or anything else that seems unusual. A clinical breast examination is recommended every 2 to 3 years for women starting at the age of 20. For women age 40 and above, clinical breast examinations should be scheduled every year.

Breast Self Examination

A breast self examination is similar to a clinical breast examination except that you perform the test by yourself. Self breast examination is recommended for women age 20 and above. It is better to perform the test 7 to 10 days after the first day of your period when your breasts are less tender. You can use a breast self examination as a tool to learn how your breasts normally look and feel. You should immediately contact your doctor or nurse if you notice any of the following changes in your breasts:

- A lump, which may be hard or soft and have rounded or even edges, or thickening in or near the breast or in the underarm area
- Swelling, pain or a change in the size or shape of the breast
- Dimpling or puckering in the skin of the breast
- Nipple pain or a nipple turned inward into the breast
- Discharge (fluid) from the nipple, especially if it's bloody
- Scaly, red, or swollen skin on the breast, nipple, or areola (the dark area of skin at the center of the breast). The skin may have ridges or pitting so that it looks like the skin of an orange

It is very important that you never ignore a lump or any other unusual changes in your breasts. The earlier you detect breast cancer, the sooner it can be treated and the better it will respond to treatments. Therefore, it is critical that you contact your doctor if you find anything suspicious.

**IF YOU HAVE BREAST PAIN, IS IT A
SIGN OF HAVING BREAST CANCER?**

NO! NOT NECESSARILY.



How is breast cancer treated?

A diagnosis of breast cancer does not mean a death sentence. Today, breast cancer treatments are much more advanced and much more sophisticated than they used to be. Your treatment options depend on the stage of your disease and the following factors:

- The size of the tumor in relation to the size of your breast
- The results of lab tests (such as whether the breast cancer cells need hormones to grow)
- Whether you have gone through menopause
- Your general health

There are five treatment options for breast cancer patients:

Surgery

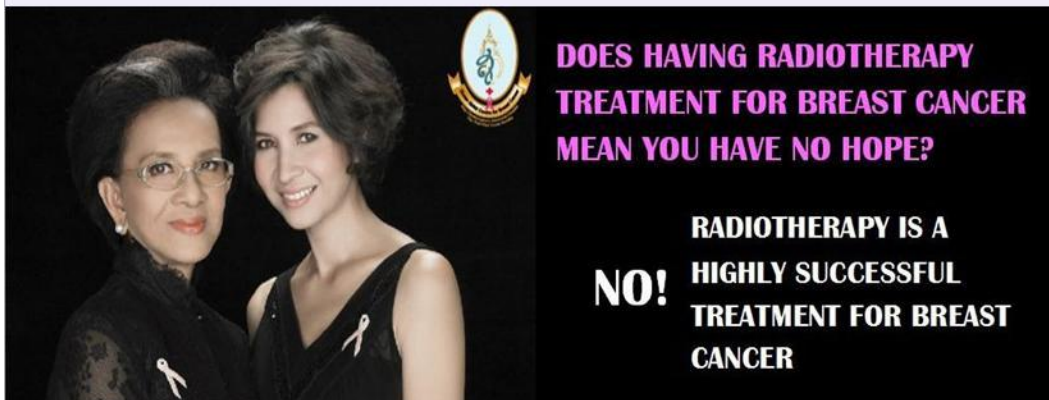
Surgery is the most common treatment for breast cancer. It includes:

Breast-sparing surgery: an operation to remove the cancer but not the breast.

Mastectomy: an operation to remove the entire breast or as much of the breast tissue as possible.

Radiation Therapy

Radiation therapy (also called radiotherapy) uses high-energy rays to kill cancer cells. It affects cells only in the part of the body that is treated. Radiation therapy may be used after surgery to destroy breast cancer cells that remain in the area.



DOES HAVING RADIOTHERAPY TREATMENT FOR BREAST CANCER MEAN YOU HAVE NO HOPE?

NO! RADIOTHERAPY IS A HIGHLY SUCCESSFUL TREATMENT FOR BREAST CANCER

The advertisement features a photograph of two women, one older and one younger, both wearing white ribbons. To the right of the photo is a circular medical logo with a caduceus. The text is in bold, pink and white capital letters on a black background.

**DO BREAST CANCER PATIENTS HAVE
CHEMOTHERAPY WHEN THERE IS NO
HOPE OF RECOVERY?**

NO! CHEMOTHERAPY IS USED
AS A HIGHLY SUCCESSFUL
TREATMENT FOR BREAST
CANCER.



Chemotherapy

Chemotherapy uses drugs to kill cancer cells. The drugs that treat breast cancer are usually given through a vein (intravenous) or as a pill. You may receive a combination of drugs.

The side effects depend mainly on which drugs are given and how much. Chemotherapy kills fast-growing cancer cells, but the drugs can also harm normal cells that divide rapidly.

Hormone Therapy

Hormone therapy may also be called anti-hormone treatment. If lab tests show that the tumor in your breast has hormone receptors, then hormone therapy may be an option. Hormone therapy includes taking drugs that keep cancer cells from getting or using the natural hormones (estrogen and progesterone) they need to grow.

Targeted Therapy

Targeted therapy uses drugs that block the growth of breast cancer cells. For example, targeted therapy may block the action of an abnormal protein (such as HER2) that stimulates the growth of breast cancer cells.

**DO BREAST CANCER PATIENTS
THAT HAVE RADIOTHERAPY
LOSE THEIR HAIR?**

NO! PATIENTS HAVING
RADIOTHERAPY DO NOT
LOSE THEIR HAIR.



Frequently Asked Questions

Q. Does a woman have little or no risk of breast cancer, if she has no family history of breast cancer?

A. More than 75% of women with breast cancer have no family history of the disease. Simply being female puts all women at risk.

Q. Does breast cancer occur in young women?

A. Breast cancer is more common in women older than 50 but it can and does occur in women of all ages.

Q. Will breast cancer always be painless?

A. Most early breast cancers do not hurt. However, some are associated with unusual sensations in the breast including soreness or burning.

Q. Can a cyst in the breast change into breast cancer?

A. Yes, but it is very rare and depends on the type of cyst.

Q. Is breast cancer contagious?

A. No. Breast cancer is not contagious. If you have it, you cannot pass it to other people and you cannot get it from someone who already has breast cancer.

Q. Does being single increase my risk of breast cancer more than being married?

A. No, every woman is at risk of developing breast cancer. Please review the risk factors in this brochure for more detailed information.

Q. Do breast implants increase the risk of breast cancer?

A. No, breast implants don't increase the risk of breast cancer, but they can make it more difficult for mammography to detect an early breast tumor.

Q. If I have breast cancer do I have to get a mastectomy?

A. No. Whether you need a mastectomy or not depends on the size of the tumor. The smaller the tumor is, the safer it is to preserve the breast.



**DOES HAVING BREAST CANCER
MEAN YOU WON'T LIVE LONGER
THAN FIVE YEARS?**

NO! WITH EARLY DETECTION
AND PROPER TREATMENT
BREAST CANCER CAN BE
COMPLETELY CURED.

Q. Do breast cancer patients survive only 5 years after treatment?

A. Not exactly. Breast cancer patients who have completed treatment have a higher chance of recurrent or metastatic cancer in the first two years but after 3 years the chance is much lower. However, if detected early enough, breast cancer is highly curable.

Q. If I have cancer in one breast does that mean that I will get it in the other breast as well?

A. Women with cancer in one breast have a 5% higher chance of developing it in the other breast than healthy women.

Q. Does every lump need surgery?

A. No. Some breast lumps are benign and need surgery only if the size of the mass is more than 2 cm (or maybe less than this depending on the size of the breast). If, however, the lump is malignant, surgery will be performed in any case.

Q. Can men get breast cancer?

A. Yes, although it is much rarer than women (less than 1% of all cases of breast cancer). Breast cancer in both men and women is the same condition where a malignant tumor develops that can metastasize to the lymph nodes and other parts of the body. Men can also develop lumps that are not cancerous, that are called gynecomastia. If you have a lump, you need to see your physician.

CAN MEN GET BREAST CANCER?

YES! 1% OF ALL BREAST CANCER
IS SUFFERED BY MEN.





Women often experience fear, anxiety and emotional trauma after finding a breast lump or receiving a diagnosis of breast cancer. The Bangkok Breast Cancer Support Group understands that being diagnosed with breast cancer is a life changing-experience. Therefore, our mission is to support women who have been diagnosed with breast cancer before, during and after treatment and to encourage those women to make informed decisions about their treatments.

We run a weekly clinic
at the Bangkok Nursing Home (BNH)
on Tuesdays from 4:30pm to 7:30pm.

For more information you can e-mail us at:
info@bangkokbreastcancer.org

Or call:
02 256 4991 ext 1026
Or 085-9088002

Bangkok Breast Cancer Support Group
Queen Sirikit Center for Breast Cancer @ Basement Level
1873 Rama IV Road, Pathumwan,
Bangkok 10330, Thailand

Information in the brochure was adapted from the National Cancer Institute in the United States: *What You Need To Know About Breast Cancer* -www.cancer.gov

Appendix O: Cultural Awareness Essays

Sunil Nagpal

The Klong Toey Mindset: Easy to Look Down, yet Eager to Look Up

I doubt I will ever forget my first visit to the slums of Klong Toey, a district in central Bangkok known for its substandard housing. Khunying Finola Chatamra, a co-founder of the Queen Sirikit Centre for Breast Cancer, and one of my IQP project mentors, led my team into the slums of Klong Toey one hot February day. Each year, the Centre visits the Klong Toey slums as part of its outreach program and walks through the tattered lodging of the slum to invite one-hundred women to the Queen Sirikit Centre for Breast Cancer for free breast cancer and cervical cancer screening. As I walked through with my team and sponsor to select the women that would be involved in the program this year, I could not help but notice how receptive the poor people were of our visiting group. Many of the slum-dwellers welcomed us with smiles, polite greetings of “sawatdii-kha”, and invitations to see what they called home. For many, this simply consisted of dirt or plywood floors, piles of trash, and broken chairs, tables, and windows. Yet, our group was greeted with a sea of smiles and thanks with each step we took through the slums. The dozens of kids living in the slums looked delighted to be playing; with each other, with their broken model cars, or with simple toys like flashlights that truly brightened their day. The people of the slums did not seem bothered by the cameras we had, and did not shy away from the “spotlight.” Instead, they welcomed us, as mothers gathered their children together for a family photo, and each group of kids playing together struck a pose.

There could be several reasons for why the slum community of Klong Toey welcomed us with such open arms. Perhaps the fact that we were there to offer one-hundred women of the slums free screening and testing for vicious diseases such as breast cancer and cervical cancer gave them a great reason to be grateful for our visit. If the poor people greeted their guests with anger and disapproval for entering their area of living it would not demonstrate much thanks to those offering free help and support against their lives of poverty. The families of the slums may

have been deeply touched by the visit and the Centre's offer, and their compassion was thus a true display of their thanks.

A second reason for their gracious reception of the visitors might have been that even though the people living in the Klong Toey slums face economic and social challenges that are quite difficult to overcome, they are still able to find true happiness in their lives, and not just when wealthy visitors come to offer free medical services. The children play together in the dirty alleys of the slum as if they are missing nothing in the world, because they really do not know what else the world has to offer. The mothers and fathers of the slums experience happiness through each other and their children, and though they face obstacles in their lives, they still provide some means for their children and offer them the best lives that they can. The people of the Klong Toey slums might actually be content with their lives and realize that their best bet to step ahead in life is to take each day with a positive outlook and acknowledge that though there are challenges to face, they are not impossible to overcome.

The third and most negative justification of their compassion is that the people are simply trying to take advantage of their visitors. The people of Klong Toey may only see the visitors as a group to target with their chicken or flower selling businesses. Perhaps the slum-residents show their homes willingly so the visitors pity them and feel an obligation to offer more financially than just medical services. The people of the slums might not be willing to just accept the help for what it is without making an effort to push themselves on to the visitors in hope of reaping extra benefits.

I honestly believe, however, that the people of the Klong Toey slums were truly grateful and happy that an organization like the Queen Sirikit Centre for Breast Cancer would reach out to them and offer the services that they do, and that they are genuinely happy people that find satisfaction through simple things in life such as their family and children. Khunying Finola mentioned to me that each year the women are just as receptive, and she and the Thai students on my team also believe that those living in Klong Toey are genuinely happy people. The smiles that people showed throughout the slums did not at all seem like an act to poke at visitors hearts. In fact, the majority of the people we saw were not going to make the trip to the Centre for

screening; however, they showed just as much happiness and gratitude for our visit as those that will receive the testing. If I lived in the Klong Toey community I think I would respond and feel the same way as those I met during my visit. I have a very positive outlook on life and always hope for the best, only wondering what good can come out of a situation. I think the Klong Toey people are no different. They seem to live everyday knowing that their lives could be much worse than they are but looking forward to the future with the hope that things will become better. I think that the people of Klong Toey could have easily nudged us away and given looks of disgust as we toured their homes with cameras and wide-eyes. Instead, they greeted us warmly and happily. This hospitality and mindset, to look positively on life and always keep one's head up, is a part of Thai culture. Thus, it is only fitting that Thailand is coined the "Land of Smiles."

Irina Nesterenko

A Non-Representative Anecdote

One Saturday another student and I decided to visit the Grand Palace and Wat Phra Kaew, Wat Po, and Wat Arun. We started with the first two because they were located within the same walls and closed the earliest. We took a taxi and the driver brought us to the side and pointed us in the right direction. Before we could even exit the car, men started talking at us and pointing to where the entrance was. As we went in that direction, more and more people tried to grab our attention and tell us where the entrance was. We had been walking and walking along this wall until we got to a guarded entrance with a sign that said it wasn't for tourists. At this point, we became skeptical and decided to retrace our steps and try across the road because there was an official-looking building that may have been the Grand Palace. It was actually the Ministry of Defence, so we realized that the real entrance to the Grand Palace and Wat Phra Kaew must have been further along that wall than we thought. We went back across the road and finally found the correct entrance, but they had stopped selling tickets because it was fifteen minutes to closing time. We decided to return the next day with more students who had wanted to come.

That Sunday, we returned with more people, confident that we knew where to enter, and above all, we went early enough that there would be tickets. The taxi left us at the same place as before, and just like the previous day, all kinds of people went out of their way to point us in the right direction. The two of us that had experienced all of this the day before waved the strangers away, trying to convey that we knew the way, thank you very much. However, when we finally arrived at the entrance to the grounds, a man stopped us and told us that the Grand Palace and Wat Phra Kaew were closing for lunch and that he can take us to a different but comparably-impressive temple. It took a mere glance inside the entrance to see that it was still bustling with people that had no intention of leaving. We left the man and entered the grounds to find that we were correct.

This anecdote can be explained in several ways. To us it was clear that the man was trying to scam us, either by taking us to that other temple to pay their entrance fee, or maybe by taking us all over Bangkok to various markets. In either case he would receive a commission because it is

his job to promote this other temple or to take people to places they didn't necessarily want to go in the first place. The Thai people have proven themselves to be very helpful, so a third option is that he actually thought that this other temple is more interesting than both the Grand Palace and Wat Phra Kaew combined and wanted to save us the trouble. This seems unlikely because he lied to us about the grounds being closed for lunch time. We concluded that the man had deceitful motives and was not the extremely helpful type of Thai person that we usually encounter.

I also began to think that if this one man tried so hard to scam us, then maybe this operation is two-fold and the people who had taken extra care to point us to the entrance were making sure we encountered the main con artist. On one hand, both the "helpful citizens" and the scam artist quickly picked out our medley group of *farangs*, but on the other hand, that was indeed the proper entrance to the grounds of the Grand Palace and Wat Phra Kaew. I think that most likely the people we first encountered were genuinely proud of their Grand Palace, not to mention one of Bangkok's holiest temples, and had wanted us to see it.

By and large Thai people have helped me immensely, both when I do and don't ask for it – they always go to great lengths to help if I ask for directions and Thai strangers who speak English have helped me communicate with Thais who don't. Naturally I've taken a taxi and the driver has taken a slightly longer route and I've had to pay more for fruit in popular tourist areas than by the dormitory, but for whatever reason, the man's blatant and desperate lie caused me to doubt, at least a little, everyone who helped us find that entrance. It is good practice to be neither too trusting nor too paranoid of people, but once I identified a scam so easily, it became hard to trust that just any Thai person on the street has good intentions. Except for this one incident, everything we've learned about Thai culture has been supported by my experiences with Thai people thus far – it is natural for them to be extremely polite and helpful. Overall, I'm glad this happened because I probably should be more wary of strangers and more aware of when I might be swindled, but I am also disappointed that I cannot be as trusting of the wonderful Thai people.

I think it's fair to say that scams and con artists will be far more prevalent in areas that tourists frequent: any one of the nine holiest temples and any mall. If I were a Thai national, I doubt this would have happened to me because I would be able to speak the language and read the signs. I think that if I lived in Bangkok, I would be more aware of the scams in the first place because it

is just a fact of life in the city. But, just as I currently feel embarrassed by European tourists' behavior because I find them to be unnecessarily loud and obnoxious, I feel that if I were Thai, I would think that these scam artists give my people a bad name.

Aneliya Rankova

Upon arrival in Thailand, each WPI project team was first introduced to their Thai partners during an orientation at Chulalongkorn University. The orientation finished at around noon and the two Thai girls in my group, Pedd and Nan, took us to lunch at a nearby Thai restaurant. The menu at the restaurant was written in both English and Thai, but we soon realized that even the English descriptions do not mean a lot to us, the WPI group, and, therefore, we needed Pedd and Nan to help us with our choice. I pointed at three different meals from the menu and asked Pedd for her opinion. She explained to me what exactly each one of them contained, but she could see that I was still confused. Then she said to me: “I will order all three, so that you can try all of them”. She turned around and waved to the waiter before I could stop her. As soon as Pedd and Nan realized that the other three WPI students in our group also had trouble choosing what to eat, they ordered eight more different dishes. When the food was served, it was obvious that it was too much for six people; nevertheless, the Thai girls kept asking us if we wanted to try something else. They also asked us several times if we liked the restaurant and the food and if they can do anything else to make us more comfortable. As we were finishing our meals, Pedd and Nan paid for the whole lunch and did not let me and my partners contribute to the bill. Moreover, on our way back to the university, Pedd bought me coffee and again did not let me pay her back.

There may be several different reasons as to why the Thai girls were so kind and helpful to me and my group at lunch that day. The most intuitive and simple explanation is that as local people, Pedd and Nan felt the need to help us, the foreigners, orient better in an unfamiliar environment. My partners and I speak very little Thai and we would have had problems ordering the food, since the waiter did not understand English very well. It was only natural for the Thai girls to order food and coffee instead of us. The reason that Pedd and Nan ordered so many dishes for us may also have a simple explanation. It was my group’s first day in Thailand and the Thai girls could clearly see that we were very eager to try Thai food for the first time. They may have simply wanted us to try as many different dishes as possible, so that we can compare them and get a good first impression on Thai food. In addition, Pedd and Nan may have paid the bill

because they were the ones to invite us for lunch or simply because they ordered so much food that they felt uncomfortable letting us split the bill.

Giving a second thought on my experiences at lunch that day, I see more complex reasons behind the Thai girls' behavior. Clearly, they may have just wanted to help us orient better in a foreign country, but I think that Pedd and Nan were far more kind and hospitable than western students would have been in the same situation, for example. The Thai girls may look at us as not only their work partners but also as their guests. That may explain why they were extremely hospitable with us at lunch that day. They may have ordered eleven different dishes not only because we were indecisive and had no experience with Thai food, but also because they wanted us to feel good as their guests. Throughout our stay in Thailand, I have encountered many other situations, in which our Thai partners would treat our entire group a meal, would be extremely willing to show us around the city, or would organize entire weekend trips for my group. This makes me think that the hospitality displayed by Pedd and Nan during our first meeting, was a result of their cultural values.

As a westerner, I initially felt a little uncomfortable that first day at lunch. First of all, I was worried that I would not have enough money to pay for the extra food. I kept wondering why the Thai girls ordered food I have not even asked for. I also felt a little awkward, as Pedd and Nan were constantly asking me and my group if we were feeling comfortable and if they could do something else for us. I believe that my initial discomfort that day was due to the difference between Western and Thai cultures. I thought it was very unnatural that the Thai students were so kind to people they had just met, because this behavior is not so common in the United States. Based on my personal experience, I think that Americans tend to keep a distance when they meet someone for the first time. Even if they want to treat other people as their guests, Americans, would not express this level of kindness, just because sometimes too much attention creates discomfort and tension. By contrast, my experience with Thai culture shows that hospitality and kindness are considered a normal part of everyday life. I think this is partly because in Thailand relationships between people, even work partners, are much more personal than in the United States. As I have overcome the initial discomfort of my first meeting with the Thai students, I

can now see the benefits of Pedd and Nan's attitude. I feel very welcome in their company and I know I can always count on them for help during my stay in Thailand.

TAXI!!!!

“So...where do we go?” I asked as I stood by the security guards on the first floor of the Chulalongkorn Science Building. It was mid-afternoon and we had just finished our orientation and had met our Thai students for the first time. Lacking any sense of direction, both of my group mates – Annie and Irina – and I stood puzzled: we had no idea which direction we should walk to head back to the dorms. Ignorantly, thinking that all university employees would understand English, I went to one of the guards with my newly acquired campus map and asked them for directions. The guard seemed just as confused as we were when approached. However, instead of simply waving us away, he immediately tried to flag down a faculty member. Unfortunately, she did not appear to understand us either yet she, too, called someone else over: a Chula student. Surprisingly, our latest aid spoke perfect English – no accent whatsoever. We showed her the map and though she was not quite sure on the location of our dorms, she very willingly agreed to share a taxi and drop us off at the right place.

While in the taxi, our Chula student tried to convey the location to the driver. I guess not many people know about the Suksitnives International House for our driver did not know where to go either. Our Chula student told the driver to stop on the side while she called her friend to ask for directions. After a couple of minutes, we were finally on our way back to the dorms. During the ride, we introduced ourselves and had a short conversation with our student. Surprisingly, she was in the same faculty as our two Thai students – Pedd and Nan – and knew them quite well.

When we finally reached our dorms, Annie, Irina, and I reached into our purses to pay for our ride. However, the student immediately dismissed our actions and refused to take the money. We tried to convince her by saying that we felt bad for taking up her time and spending her money, but she very sweetly said, “No it’s ok, save your money for shopping!”

This encounter was rather unexpected and definitely showed the polite and amiable quality of Thai people I so often hear about. Our Chula student took time out of her schedule to

both get directions and send us safely back. Although the taxi ride did not cost much, she was by no means obligated to pay. Moreover, this was also the first time she had met us. In my opinion, this selfless attitude is not commonly seen back in the United States. In fact, if I were in the same situation back at home, I would not willingly choose to pay for a taxi ride for three strangers I had just met. Furthermore, in regards to the situation with the security guards and Chula faculty member, I feel it is more likely for someone in the United States to simply wave off a stranger when he or she does not understand what the other person wants. These differences in mentality can be due cultural and societal differences. There are undoubtedly exceptions but Americans generally seem to be busy rushing around to meetings or other obligations: punctuality seems to be of the utmost importance in many situations. Thus, they usually would not stop and spend time to help a stranger. On the other hand, from my experiences, it appears that most Thai people do not seem as offended if someone is late for a meeting – this is largely due to the unpredictable traffic in Bangkok. In addition, since we are foreigners, the security guard and Chula student may simply have felt bad after witnessing our clueless demeanor. Although I may be generalizing, I believe these are possible reasons for why the Thais are very open to helping others. Therefore, from the encounter described above along with several other similar situations, I sense that Thai people are generally friendly and cordial. Their polite nature can be due to their devotion, loyalty, and respect for their country and the Royal Family: Thais wish to create a welcoming society and a warm and genial image of their country.

Appendix P: Catalogue of Cancer Treatment Facilities in Thailand

	Private or Public	Diagnostic Imaging Equipment					
		Mammogram	Ultrasound	MRI	Breast MRI	CT scan	PET scan
Queen Sirikit Centre for Breast Cancer	Public	Yes - digital	Yes	Yes	coming soon		
Bumrungrad International	Private	Yes	Yes	Yes	No	Yes	Yes
Bangkok Nursing Home	Private	Yes - digital	Yes	Yes	No		
Ladprao Hospital	Private	Yes	Yes	Yes	No		
Chulaporn	Public	Yes - digital					
Rachavithi	Public	Yes					
Vibhavadi	Private	Yes					
Bangkok Hospital	Private	Yes - digital	Yes		Yes		
Vichaiyut	Private	Yes - digital	Yes				
Phayathai 2	Private	Yes - digital	Yes		Yes		
Phayathai 3	Private	Yes - digital	Yes		Yes		
Mission	Private	Yes	Yes				
Central General	Private	Yes	Yes				
Nonthavej	Private	Yes	Yes		Yes		
Samitivej	Private	Yes - digital	Yes				
Ramkhamhaeng	Private	Yes	Yes				
Siriraj	Public	Yes	Yes				
Ramathibodi	Public	Yes - digital	Yes	Yes		Yes	

	Diagnostic Biopsies		
	core biopsy	Fine needle aspiration	Mammotomy
	not preferred	Yes	Yes
Queen Sirikit Centre for Breast Cancer	Yes	Yes	No
Bumrungrad International	Yes	Yes	No
Bangkok Nursing Home	Yes	Yes	No
Ladprao Hospital	Yes		
Chulaporn			
Rachavithi			
Vibhavadi			
Bangkok Hospital			
Vichaiyut			
Phayathai 2			
Phayathai 3			
Mission			
Central General			
Nonthavej			
Samitivej			
Ramkhamhaeng			
Siriraj		Yes	

	Available Treatments							Othe r
	Surger y	Chemothera py	Radiotherapy	Intraoperati ve radiation	Hormo ne therapy	Target ed therap y	Immunothera py	Suppo rt group
Queen Sirikit Centre for Breast Cancer	Yes	Yes	Yes	Yes	Yes	Yes	Research	Yes
Bumrungrad International	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Bangkok Nursing Home	Yes	Yes	No	No	Yes	Yes	No	No
Ladprao Hospital	Yes	Yes	No	No	Yes	Yes	No	No
Chulaporn	Yes	Yes	Yes	No	Yes		No	
Rachavithi	Yes	Yes	Yes					
Vibhavadi	yes	Yes	Outsource to Rachvithi					
Bangkok Hospital	Yes	Yes	Yes		Yes			
Vichaiyut	Yes	Yes	Yes					
Phayathai 2	Yes	Yes	Yes		Yes	Yes		
Phayathai 3		Yes			Yes	Yes		
Mission	Yes	Yes	Yes					
Central General	Yes	Yes						
Nonthavej	Yes	Yes	Yes					
Samitivej	Yes	Yes	Yes		Yes	Yes		
Ramkhamhaeng	Yes	Yes			Yes	Yes		
Siriraj	Yes	Yes	Yes		Yes	Yes		
Ramathibodi	Yes		Yes		Yes	Yes		

Appendix Q: Project Timeline

	week 1					week 2					week 3					week 4					week 5					week 6					week 7					week 8														
	Jan 11-15					Jan 18-22					Jan 25-29					Feb 1-5					Feb 8-12					Feb 15-19					Feb 22-26					Mar 1-5														
	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F					
tour of centre	■																																																	
meetings with khunying finola	■																																																	
meetings with Dr. Kris																																																		
interviews with hospitals/companies																																																		
interviews with survivors																																																		
discuss brochure design	■	■																																																
discussion groups - brochure testing																																																		
current website pretest																																																		
discuss website content																																																		
complete group evaluations																																																		
write report	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
revise report										1																																								
presentations																																																		

- | |
|----------------------------------|
| 1 - revised proposal due |
| 2 - Findings chapter due |
| 3 - final draft of report due |
| 4 - final report submission date |