We are proud to announce the release of the 2011 publication *Global Breast Health Care: Optimizing Delivery in Low- and Middle-Resource Countries, a Supplement of Consensus Statements & Special Reports to The Breast*. The publication of this important Supplement demonstrates a core goal, and tangible outcome, of the Global Summit on International Breast Health held in Chicago, Illinois, USA, on June 9-11, 2010, convened by the Breast Health Global Initiative (BHGI) in association with the SLACOM-Sociedad Latinoamericana y del Caribe de Oncología Médica, and sponsored by the BHGI global alliance of governmental, NGO, non-profit and for-profit health organizations, for development of a information “tool” for low- and middle-resource country (LMCs) researchers and program administrators to use to translate breast cancer health policy and guidelines into real-world practice.

In recognition of the important differences between low-resource countries and middle-resource countries, in terms of available resources and health system infrastructure, two consensus groups were formed to specifically address breast cancer care delivery in Low-Resource Countries and breast cancer care delivery in Middle-Resource Countries. In addition, a Problem Solving consensus group was formed to provide a more in-depth report on strategies for optimizing breast cancer delivery.

These three consensus reports provide the tools needed to translate previously published BHGI evidence-based low- and middle-resource clinical guidelines into real-world breast cancer program improvements. Equally as important as tools for improvement are the 11 original research articles that provide models of successful breast cancer research.

A goal of BHGI is to facilitate the peer review publication of research from low and middle income countries. Two of these articles included in the Supplement are from regions rarely heard from, Kashmir and Gaza Strip. New studies from Nigeria, Malaysia, and Mexico explore important health system barriers to optimal delivery.
of breast cancer care. Other studies include an information system approach to early detection from Brazil, a report on a regional multi-racial Asian breast cancer database, a report on mixed methodology using case examples from Chile, and a report on tumor boards in Arab countries. Two global reports describe breast cancer civil society in low- and middle-resource countries and the need for more evidence-based research from low- and middle-resource countries.

Message from the Co-chairs of the Summit

Benjamin O. Anderson, MD: “The publication of this Supplement achieves the Breast Health Global Initiative goal to provide system-based solutions for optimizing breast health care and cancer treatment in LMCS, and to provide an opportunity for international studies to be published, that otherwise would never be made freely, globally available. The consensus statements provide evidence and expert insight on societal norms, economic challenges, political and health policy issues related to breast health care and cancer treatment. The original research articles provide new data on effective breast cancer control efforts in LMCS. To further support international research collaborations, BHGI has developed www.bhgi.info, as a virtual global community that includes a library of research on breast cancer from low- and middle-resource countries.”

Eduardo Cazap, MD, PhD: “We hope the publication of the BHGI Consensus Statements, grounded in the relatively new field of implementation science, together with the individual articles presented in this Supplement, will contribute to establishing the foundation needed to move to the next level of the fight against breast cancer, and the global goal of reducing breast cancer mortality for all women.”

Consensus Reports

First Breast Cancer Consensus Report Exclusively for Low-Resource Countries

This is the first global consensus report on breast cancer in low-resource countries, written by 17 breast cancer experts from 12 countries and 5 continents. This report identifies the common breast cancer program problems faced by low-resource countries by asking and answering key questions about the state of breast cancer, and the state of breast cancer awareness, diagnosis and treatment in this economically constrained global community.

While low income countries have diverse geographical, political, socio-cultural profiles, they have similar economic and development constraints. They share common problems with breast cancer program implementation. Key problems identified by the consensus group include: lack of public awareness and misconceptions about breast cancer, lack of advanced pathology services to establish hormone status of tumors; treatment options limited by available equipment and drugs, a need for health professional training; and a need for supportive care services (e.g., side-effect treatment, palliative care, and end-of-life care).
Learning from Countries in the Middle

Middle-resource countries have a unique position in the breast cancer research community, they have a wider range of economic resources available than low-resource countries, but may not have the sophisticated or stable infrastructure found in high resource countries. This first global consensus report devoted to middle-resource countries provides a baseline assessment of breast cancer in middle-resource countries identifies common problems and recommends common solutions. The report, written by 20 breast cancer experts representing 10 countries and 5 continents asks and answers questions on early detection, diagnosis, treatment and health care systems. The consensus report also provides case examples from 5 middle-resource countries (Brazil, China, Colombia, Mexico and Uruguay) that provide models for solving common problems faced by middle-resource countries. The case examples cover health policy and early detection, breast cancer screening in a large population, health system barriers to down-staging, clinical breast exam training and mammography programs, health care professional training, and quality control.

Message from the Low-Resource Consensus Panel Co-chairs

Co-chair Nagi S. El Saghir: “Developing a consensus report for low-resource countries required thoughtful consideration of the diverse range of social, cultural and political influences. As co-chair of the consensus group, I want to thank my colleagues for their valuable country specific contributions as well as their expert, frank discussions on complicated breast cancer topics. The consensus statement was truly a collaborative effort and would not have been possible without such a generous exchange of experiences and ideas.”

Co-chair Clement Adebamowo: “The consensus process brought to light several key areas of breast cancer care that otherwise could have been overlooked. The need to consider available and appropriate anesthesia for breast cancer surgery, value of patient advocates, engagement of community leaders and the importance of high quality laboratory resources to support cancer treatment and prevention in low-resource environment.”

Message from the Middle-Resource Consensus Panel Co-chairs

Co-chair Cheng-Har Yip: “The middle-resource country working group consensus statement comes at a critical time in global health efforts to optimize breast cancer treatment for all women.”

Co-chair Hussein Khaled: “As co-chair of the consensus group, I want to thank my colleagues for their country specific contributions and expert discussions on the state of breast cancer control in middle-resource countries that made this report possible.”

Cheng-Har Yip, FRCS, University Malaya Medical Centre, Kuala Lumpur, Malaysia
CO-CHAIR: MRCs Panel; CO-AUTHOR: The Breast consensus statement, and estrogen receptor factor article and breast cancer registry article; CO-AUTHOR: The Lancet Oncology executive summary

Hussein Khaled, MD, National Cancer Institute, Cairo University, Cairo, Egypt
CO-CHAIR: MRCs Panel; CO-AUTHOR: The Breast consensus statement; CO-AUTHOR: The Lancet Oncology executive summary

CO-AUTHOR: The Breast consensus statement; CO-AUTHOR: The Lancet Oncology executive summary
Collaborative Problem Solving Strategies: Expert Consensus

The Problem Solving consensus report provides in-depth recommendations for problem solving strategies to optimize breast cancer care in low and middle income countries.

The report is authored by 19 breast cancer experts, each with a special expertise in one of the key problem areas identified by the low- or middle-resource consensus reports.

Key Problem Solving Strategies

The key problem solving strategies include international collaboration and information sharing; collaborations between regions and countries to establish breast cancer registries; instituting situational analysis of health system capacity to inform program planning; and international training initiatives that include both in-country training and training abroad to address critical global health care workforce issues.

Other health system solutions include development of multidisciplinary health care programs, creating centers of excellence that include rural outreach programs; and incorporating patient navigation and patient advocacy into breast cancer control programs to improve patient compliance. Research should include qualitative methodologies (e.g., in-depth interviews, focus groups to identify patient and provider barriers to optimal care), quantitative methodologies (randomized controlled trials, retrospective reviews, case studies) and cost-effectiveness methodologies. Collaborative international efforts to improve access to cancer drugs and equipment are also needed. See Sidebar: Top Ten Recommendations for LMCs (Page 14)

Message from the Problem Solving Panel Co-chairs

Co-chair Joe Harford: “The Problem Solving Working Group of the BHGI 2010 Global Summit met to develop a consensus statement on problem-solving strategies. The Group encouraged qualitative and quantitative research as well as the formulation of cancer control strategies to identify both system inefficiencies and patient barriers. The importance of patient navigation programs linked to public advocacy efforts was stressed by the Group as was the use of cost-effectiveness research and implementation science to guide and expand successful pilot programs aimed at improving breast health in LMCs.”

Co-chair Raj Badwe: “The publication of consensus articles that identify common breast cancer control issues faced by different countries based on available resources, and recommends common solutions is long overdue. This companion to the BHGI resource-stratified guidelines is a tool the global community can use to guide discussions and global partnerships.”

Special Reports from Low-Resource Countries

Public Health and Breast Cancer Programs: Landmark research from Kashmir Valley

A study from the Kashmir Valley by D. P. Erwin and colleagues is the first breast cancer study to combine public health outreach with culturally sensitive breast cancer awareness and screening. This landmark study provides a much needed model for low-resource countries that struggle to develop national cancer programs amidst other pressing public health care priorities such as sanitation, water, nutrition, and immunizations. An evidence-based, real-world approach to optimizing breast cancer care globally requires an understanding of the basic public health issues facing women in poor settings.
In this study, 520 women age 18-70 years old, from 5 villages in the Baramulla district near Sopor received breast cancer education and screening following an in-home survey that collected data on public health issues, demographics, lifestyle and breast cancer awareness. The 95% participation rate, which included a clinical breast exam, was attributed to culturally sensitive project planning and a partnership with a trusted community advocacy group. About 76% of women had seen a physician within the last year, however, only 30% reported receiving a vaccination in their lifetime and 99% of women who would be eligible for a mammogram had not had one. At the same time 96% of women reported awareness of breast self examination (BSE) although only 4% had received training in how to perform a BSE prior to the study intervention.

This study report provides a detailed methodology section that will be helpful to other researchers planning similar programs where literacy, health literacy, and cultural challenges such as breast modesty, need to be considered. The study found that almost half of the women were unable to read and another 14% had education below 5th grade level, however, television and radio were commonly used by over 80% of the women, suggesting future educational efforts should consider these communication mediums.

The authors attribute the success of their program to a careful, culturally sensitive, adaptation of a well tested methodology from the US, training of local field workers, and a partnership with a trusted community advocacy group.

**Global Message**

This study shows that even in a politically unstable region such as Kashmir Valley breast cancer awareness and public health data collection is possible and can be an effective method to improve breast cancer screening for underserved women. This is particularly important to low income countries where communicable diseases represent a heavy burden on health care resources. Countries that can broaden public health efforts to include both communicable and non-communicable disease will be well positioned to meet future health care needs of their citizens. This landmark study also models the Global Breast Health Care consensus recommendation that centers of excellence should include rural outreach programs.

**Exposure to New Environments Improves Breast Cancer Understanding: Research from Gaza**

A study from Gaza from R. Shaheen and colleagues presents an important global perspective, comparing expatriates from a war-torn politically unstable region to their in-country cohorts. It challenges researchers and policy makers to consider the influence of place of residency, and consider what role exposure to a new environment and access to an alternative health care system may play in shaping women’s beliefs, attitudes or health care seeking behavior.

The two groups, 100 women living in Gaza, and 60 women residing outside Gaza, were similar in age, religion (over 90% Muslim), marital status (over 90% married), employment and breast cancer risk factors. Expatriates were more likely to have a university education (73% versus 50%). Because both groups were equally interested in lowering their risk of breast cancer and learning about breast cancer, the study results suggests that educational interventions could be effective.
Religious beliefs were not considered a barrier to mammography for 99% of both groups of women, of whom the vast majority were Muslim, and 94% agreed it was not against culture or tradition. However, access to mammography, including concern for safety traveling to a health care facility, was a barrier to women residing within Gaza. Women residing in Gaza had more misconceptions about mammography and breast cancer than expatriates. Almost half of women residing in Gaza Strip thought mammography may cause cancer and 9% thought it can treat breast cancer. Women residing in Gaza were more likely to think breast cancer is contagious (67% versus 16%), not treatable (48% versus 11%), and not common (63% versus 24%).

Breast care seeking behavior was different between the two groups, with 47% of expatriates reporting previous mammograms versus only 17% of women residing in Gaza. Expatriates also were more likely to have had a clinical breast exam (71% versus 25%). The authors conclude: “Educational interventions should provide knowledge about the treatability of breast cancer, the benefits of early detection, and dispelling misconceptions that breast cancer is contagious or that breast cancer is an uncommon disease, as well as consider that women may be embarrassed to have a mammogram.”

Structural barriers in Gaza may be more difficult to overcome than knowledge, beliefs and attitudes. According to Dr. Rola Shaheen, the political conflict and structural barriers to breast health care in Gaza require national and international collaborations to overcome. We hope this study brings to light some of the critical factors that need to be addressed.

While other studies have looked at differences between migrant populations and country of origin, this is the first study to look at expatriate women.

**Dr. Shaheen reflects on the Global Summit and publication process:** “Attending the Global Summit was a wonderful experience and great learning opportunity. It is a great platform for international projects on breast cancer.”

---

**Global Message**

Safety concerns can be a barrier to breast cancer screening. Two studies in the Supplement, one from Gaza Strip and one from Kashmir Valley introduced safety as a barrier to breast cancer early detection. In regions where violent conflict is a daily reality, travelling to medical facilities may not be considered safe. In cultures where breast privacy is the social norm, women may not feel safe seeking breast care from unfamiliar health care providers. Breast cancer early detection and treatment initiatives should consider a woman’s need to feel that she is in a “safe and culturally acceptable environment” one of the elements identified by the Kashmir Valley researchers as a facilitator to 95% participation rate for their outreach efforts. ▲

---

**Research from Nigeria Leads the Way by Exploring how Recommended Treatments are Accepted by Patients**

A study from Nigeria by Stanley Anyanwu and colleagues addresses patient acceptance and adherence to diagnosis and treatment recommendations, a critical area of research that has been little studied. Often patients who do not complete recommended treatments are excluded from final published study results.

This study looks at all patients presenting during a 5-year study period at the specialty Breast Clinic of Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria, a fee-for-service facility. Of the 275 study patients seen for suspicion of breast cancer, over 28% refused a breast cancer biopsy and almost half (47.9%) refused surgical treatment. In addition, only about 38% of patients completed the recommended anti-cancer drug therapy.

The low patient adherence to recommendations may be explained by a lack of health system support that required patients to perform what would be considered standard health system functions in other settings. For example, patients had to deliver their own biopsy to an offsite pathology laboratory (and prepay for processing), patients had to return to pick up their pathology report and deliver the report to the treating physician,

Stanley Anyanwu, MD, Professor, Nnamdi Azikiwe University Teaching Hospital and lead author of the individual article on “Acceptance and adherence to treatment among breast cancer patients in Eastern Nigeria”
and patients had to procure (and pay for) their own anti-cancer drugs and deliver the drugs to the treatment center. Lack of health care coverage is a major problem in Nigeria where 70% of the population lives below the poverty line. The most common reasons study patients gave for discontinuing treatment was lack of money to pay for treatment, lack of an available hospital bed and/or a relative to help care for the patient.

This study also provides important information of breast cancer statistics, confirming that in low-resource countries such as Nigeria, breast cancer continues to be a premenopausal disease. The two most common age groups were 29-39 years old (26.9%) and 39-49 years old (28.0%) and these younger women continue to present with late stage cancers. The average time from self identification of breast complaint to definitive diagnosis was over 6 months. Dr. Stanley Anyanwu added that additional perceived problems include poor public health education measures, excessive reliance on complementary or alternative medicine, and poor health system infrastructure with minimal radiotherapy facilities.

**Dr. Stanley Anyanwu reflects on the publication development:** “It is important for researchers to share experiences in implementing cancer control programs in different settings by publishing research that is accessible to everyone. International alliances are also important as they allow for an open exchange of ideas and implementing collaborative projects.”

---

**Global Message**

What is a patient barrier versus health system barrier? Understanding women’s attitudes and beliefs is important in designing interventions but is it the key to optimizing breast cancer control? Research in the past has focused on women’s attitudes and beliefs as primary barrier to women seeking breast cancer early detection and treatment. The consensus reports and individual articles in the Supplement provide a closer look at health system barriers and challenge global leaders to consider the role of patient barriers within the frame of health system barriers.

---

**Articles from Middle-Resource Countries**

**Report from Mexico: 7.9 Clinic Visits and 6.6 Month Wait before Receiving a Definitive Diagnosis of Breast Cancer**

A study conducted by Kristin Bright and colleagues in a public specialty hospital in Mexico City, Hospital de Oncologia del Centro Medico Nacional Siglo XXI, found health system barriers to timely diagnosis and treatment of breast cancer. The study of 166 new breast cancer patients found 47% of women presented with late stage disease. An analysis of a subset of 32 women found an average wait time of 1.8 months from symptom onset to first primary care consultation and an additional 6.6 months from first consultation to a confirmed diagnosis. Unlike Nigeria, Mexico has a national health care plan for public sector employees that covers breast cancer care, including diagnosis. However, only 20% of suspicious lumps or other symptoms were detected initially by a physician, while the majority of patients presented with a self-detected sign or symptom.

This study provides important quality control data for the health care system, but also helps inform the global community of STRUCTURAL problems that can occur despite community awareness of breast cancer signs and symptoms and free health care coverage.

**Kristin Bright, PhD reports:** “The need for coordinated care, including multidisciplinary teams has been well documented. Our study highlights the need for physicians to be patient advocates rather than health care system gatekeepers.” **Reflection on Summit:** “The BHGI Summit was a wonderful opportunity to share research strategies and to brainstorm about common problems. Survivor advocates as well as scientists, physicians, and policy analysts all contributed to the collective discussion, providing perspective as to what and where should be the new research horizons.”
The Role of Tumor Boards in Arab Countries

According to Nagi S. El Saghir and colleagues in their article on tumor boards in Arab countries, most physicians (93%) surveyed agreed that tumor boards should be mandatory. The survey data from 338 practicing oncology specialists from Arab countries also found that tumor boards were common: 72% of respondents reported attending tumor boards. However, most tumor boards operated at suboptimal levels, meeting less than once a week, and had no standard meeting protocol.

The most common reason for attending tumor boards was to improve management of patients. The majority of physicians agreed that if a full tumor board could not be convened, that “mini tumor boards” should be organized between two or three available specialists.

The majority of surveyed physicians reported seeing over 1,000 patients and over 300 breast cancer patients annually. A fourth of respondents reported no full in-house pathology department and only about 45% of respondents indicated a dedicated breast radiologist was available. This study was developed using a simple free online web-based survey software program.

Authors concluded that tumor boards can fill in the system gap and provide an opportunity for training, education, dissemination of best practices and quality control.

Dr. Nagi S. El Saghir added, “Mandatory tumor boards can be a simple way for a health system to promote quality control and support multidisciplinary care. Global efforts to establish tumor boards are needed.”

Global Message

Multidisciplinary medicine is a requirement for optimal breast cancer care. Multidisciplinary care was identified by the consensus groups as a critical area for global improvement in breast cancer control. Breast cancer diagnosis and treatment requires a full range of specialists for optimal delivery of care. Tumor boards can fill the gap in low-resource settings when the range of recommended specialists are not available.

Using Implementation Science to Improve Utilization of Mammography: A Report from Chile

In this study from Chile, Klaus Puschel and colleagues report on the successful application of implementation science to improve mammography utilization. Implementation science combines both traditional quantitative research (with objective measures, such as hospital statistics) and qualitative research (subjective measures such as in-depth interviews). In Chile, in 2008, only 12% of targeted women had received a mammogram despite a national policy, guidelines, and free coverage for breast cancer services. A pilot program to determine the patient/provider barriers to breast cancer screening was conducted using in-depth patient and provider interviews (qualitative research). Based on these findings, a randomized communications intervention (quantitative research) was conducted that included 3 levels of communication interventions, standard care where patients were advised to receive a mammogram during a regular clinic visit, low intensity intervention of direct mail communication that included information on the importance
of early detection and a personal letter from their physician, and information about how to schedule a mammogram, the high intensity communication that included a follow-up phone call or in-home visit.

**The results of pilot project were impressive:** 6% of women in the standard care group, 51.8% in the low intensity intervention group, and 70.1% in the high intensity intervention group had a screening mammogram. The results of these pilot studies can now be used to scale-up the program to a larger target population.

The authors posed some important questions for health care program managers to consider when scaling-up a successful pilot project. “To what extent will a larger number of clinics apply the components of the strategies tested in this study? What would be the best way to disseminate these findings: using an informational approach, a continuing medical education approach or a community-based program approach?”

“Research in low- and middle-resource countries should include both qualitative and quantitative research methodologies to provide a holistic approach to optimizing breast cancer care delivery,” said Dr. Puschel.

This report provides details of mixed methods approach to optimizing breast cancer and identifies real-world considerations needed for scaling up successful projects.

**Dr. Puschel, on the foundational meeting for this publication development:** “The BHGI Global Summit gave me a great opportunity to realize that we are facing a number of common barriers to improve cancer care in our countries but also create new networks to overcome those difficulties.”

**Co-author, Beti Thompson, reflecting on the summit and reducing the consequences of breast cancer globally:** “The BHGI Summit was an outstanding opportunity to learn about breast cancer detection and treatment around the world. It made us realize that the work that we do on breast cancer detection in Chile may help lead the way to preventing this disease in low and medium income countries.” She added, “As chronic diseases such as breast cancer become more prevalent in low and medium income countries, it is critical to spread what we have learned in the U. S. about early detection and treatment to global environments. In this way, on a world-wide basis, we may reduce the consequences of this major killer of women.”

**Global Message**

It takes more than policy, guidelines and health insurance coverage to optimize breast cancer delivery. National breast cancer policies, breast cancer guidelines, and health coverage are critical components of breast cancer control programs. However, studies have repeatedly shown that just creating a system is not enough. Patient compliance with program recommendations and utilization of offered health care services is a critical component of program success. Understanding what motivates patients and what inhibits patients is equally important.
Data Collection Tied to Reimbursement Improves Information about Mammography Utilization in Brazil

The article from the staff of Brazil National Cancer Institute (INCA) reports on a provider-focused information system that has already captured data from about 1.5 million mammograms in 10 months, demonstrating the feasibility of a sustainable database for quality control of large scale early detection programs and for research. The article from Brazil described how the staff of the National Cancer Institute designed and implemented the system in conjunction with other branches of the Ministry of Health.

The Information System for the Control of Breast Cancer – known by its Portuguese abbreviation SISMAMA: SIS for Sistema; MAMA, Portuguese for Breast – requires providers to submit data electronically on mammograms and other screening and diagnostic services (e.g., ultrasonography and core biopsies) essential to early detection of breast cancer, and ties reimbursement to data submission.

The data collected can then be parsed and analyzed to monitor program services and identify areas for improvement. For example, the study found that diagnostic mammograms had the same rate of negative results (~42%) as screening mammograms (~45%) and there were no differences in report processing times, both unexpected results. Follow-up studies can determine if this data reflects a reporting error or practice error. The authors attribute the success of SISMAMA to careful program development that included involving multiple stakeholders early in the process. The authors concluded: In addition to supporting efforts to define standards, manage health information, monitor the quality of service providers, and foster evaluation and control, SISMAMA also has enormous potential as a regulatory tool, a feature that is particularly important in a public health care delivery system with a mixed network of public and private (contracted) service providers.

Dr. Luiz Santini, Director General of the Institute and co-author of the article, adds: “The government of Brazil is dramatically increasing funding for breast and cervical cancer early detection programs. When a health system is providing financing for millions of screening mammograms, it is incumbent upon us to collect data that enables program managers to generate indicators that permit them to assess if screening services are reaching women in the target age groups, whether test results are returned to the ordering physician in a timely fashion, and whether cases with suspicious findings are tracked to ensure that women are referred promptly for further investigation and treatment.”

“We were very pleased to share our experience with representatives of other countries last June at the BHGI Summit and hope that our contribution to the BHGI Supplement – our description of how SISMAMA was implemented – serves as a model for other middle resource countries with national health systems striving to expand access to breast cancer early detection programs.”

Global Message

A lack of breast cancer data has been identified as a critical problem in low- and middle-resource countries by the consensus reports. Without data to inform breast cancer policy and program development, and data to provide feedback on program performance, decisions regarding funding are made on a best guess method or based on subjective understandings or preferences. The lack of breast cancer registries or equivalent data was seen as an important issue by the consensus panels. The Problem Solving consensus statement provides an overview of cancer registries and alternative data collection methodologies.

A Report from Malaysia and Singapore: the Largest Multi-Ethnic Collaborative Breast Cancer Registry Studies in Asia

The study by N. Bhoo Pathy and colleagues describes a collaborative regional breast cancer registry between two university-centered hospitals, one from a middle-resource country (Malaysia) and one from a high resource country (Singapore). The registry provides important risk-related demographics such as age and race, as well as tumor
characteristics such as size, stage, and hormone receptor status of breast cancer in a multi-racial Asian population. The two merged hospital-based breast cancer databases include 4058 breast cancer patients diagnosed between 1990 and 2007.

The authors describe the purpose of the study: “Besides describing the clinical and histological tumor characteristics of the patients, this study was conducted to shed light into the management and overall survival of patients following the diagnosis of breast cancer in an Asian setting.”

The data from the registry indicates that the presentation of breast cancer of women in an Asian setting may be different from the Caucasian/Western settings. These differences are important to document because national cancer control plans and guidelines are often derived from research from Caucasian/Western settings and may not be contextually relevant.

Medium tumor size was 26 mm and about 25% of women presented with late stage disease; 5-year survival for late stage disease was only 30%. The most common breast surgery was mastectomy (70%), and chemotherapy was administered to 56% of patients and hormonal treatment to 60% of patients. Fifty-seven percent of tumors were estrogen receptor positive and 40% were poorly differentiated. About 50% of women were diagnosed before 50 years of age. Overall, compared to Western studies, this group of Asian women presented with breast cancer at a younger age, with larger tumors, and lower ER positivity tumor rates. Breast cancer management differences were also noted. Mastectomy was the treatment of choice for about 71% of Asian women versus 35-41% in Western settings; and the overall proportion of Asian women receiving chemotherapy was higher than reported in Western studies.

The authors concluded: This is one of the largest multi-ethnic collaborative studies in Asia assessing the presentation, management and survival following breast cancer among Asian women. Based on this study, we conclude that late stage at presentation remains a problem in Asian women and poses a challenge to the health care community in this region. Dr. Bhoo Pathy: “Breast cancer registries are needed in middle income countries to facilitate health service planning and policy-making, by providing valuable information about the local population. Collaborations between countries to develop regional databases adds to the global effort to optimize breast cancer delivery.”

Global Message

Research data and cancer registry data continues to add to our global understanding of breast cancer and how it may present differently in different populations. Reports from around the world are needed to provide a complete picture of global breast cancer.

Study from Malaysia Confirms Racial and Tumor Grade Differences in Rates of ER Positive Tumors

A study from Dr. Cheng-Har Yip and colleagues discusses that knowing the estrogen receptor (ER) status of breast cancer is required for optimal treatment of breast cancer because different drugs are effective against ER positive cancers but not against ER negative cancers. A new study on ER factors from Malaysia is the first study to report on ER factor differences between Asian racial groups (Chinese, Malays and Indians) residing within one country. The well-designed, quality controlled 15-year study includes 3557 cases and provides much needed data on ER status over time, as well as ER risk factors for Asian women. Yip and colleagues found that ER positivity increased by about 2% every five years, and ethnicity and grade were significantly associated with ER positive rates: Chinese women had a higher risk of ER positive tumors compared with Malay women, and grade 1 cancers were nine times more likely to be ER positive compared with grade 3 cancers.

According to the authors: ER positive rates were related to age, grade, stage and ethnicity, but only ethnicity and grade were independent determinants of tumors being ER positive. This study is of particular importance as it contributes new data to an ongoing debate regarding racial differences in breast cancer tumors.
Dr. Yip noted: “Determining ER status is complicated and there are many diagnostic variables to consider, such as tissue handling and processing, that require global standardization of procedures. Globally, we are seeing an increase in rates of ER positive tumors and we expect this trend to continue. Resources need to be made available for standardized ER testing as a cost-effective approach to optimal breast cancer treatment.”

**Global Message**

Determining hormone receptor status of breast cancer tumors is required for optimal treatment at all resource levels. Global efforts to provide advanced pathology services, either through regional centers of excellence or international collaborations are needed. ▲

**Online Library Launched for Research in Low and Middle Income Countries**

The report by Mark Lodge and Marilys Corbex describes a new important resource for researchers and policy makers: an international library of evidence-based literature from low and middle income countries. The library, available at www.bhgi.info includes 4,362 publications from 2000-2008 on breast cancer topics: prevention (372 articles), early detection (296 articles), diagnosis (877 articles), treatment (1952 articles) and palliative care/well of life (575 articles). The report identifies key gaps in topic areas of research as well as countries and regions where more research is needed. Of the 126 countries identified as low or middle income, 55 countries had no studies published. By region, Europe produced the most publications (34%), and Africa the least (5%).

The report also identifies key barriers to accessing research relevant to breast cancer in low- and middle-resource countries. Only 53% of the publications included in the library were indexed in Medline, highlighting one of the critical barriers that researchers face, easy access to abstracts, when searching for literature from low and middle income countries. Accessing full articles often requires a subscription. Another barrier identified by the researchers was the need to apply sophisticated search strategies to be able to identify relevant articles.

This literature search and report provide a much needed framework for global discussion about what new research is needed, what current gaps exist in research on breast cancer in low- and middle- resource countries, and the need for systematic reviews to be applied to this new collection of literature. There are as yet no systematic reviews available to determine the quality or contextual appropriateness of studies. According to the authors: “National cancer control plans, guidelines or research agendas based upon contextually irrelevant or inappropriate research derived from high income countries may be financially wasteful.” Validated research from low and middle income countries is needed.

According to Mark Lodge: “A globally accessible database of research in low and middle income countries is needed to be able to support evidence-based strategic planning by these countries. International collaborations are key to making this information available. Open access to research data should be a global priority. Publications such as the Supplement are needed to provide publishing opportunities to researchers in low-resource countries.”

**Global Message**

MORE RESEARCH FROM LMCs IS NEEDED More published research from low and middle income countries is needed, and it needs to be easily and freely accessible. Access to the most current recommendations and studies relevant to low- and middle- resource countries is critical for quality research and cancer control planning. However, finding the studies most relevant to a project can be time consuming, and logistically challenging. ▲
Breast Cancer Civil Society: Filling in the Gaps

The article by G. Azenha and colleagues provides the first comprehensive global report on the role of breast cancer civil society using data from 154 NGOs in 35 countries. NGOs can play an essential role in breast cancer control, filling in the health system resource gaps. In low-resource settings, where survival rates are lowest, medical professionals often take a leading role in breast cancer civil society efforts. In countries with larger survivor populations, survivors often play the leading role. Breast cancer civil societies provide community awareness and information about breast cancer at all resource levels but other services differ by country resource level.

In low-income countries, NGOs often provide direct medical services. For example, in Ghana, Breast Care International provides a clinical breast examination center and a mammography and treatment center as part of Peace and Love Hospital. In Tanzania, the Medical Women Association provides education to journalists and disseminates evidence-based cancer information to increase public awareness of cancer and dispel local myths.

In middle-resource countries, where health care systems are more available, NGOs may provide supplemental support to existing medical services such as emotional support, health care professional training or financial support for poorer patients. In high-income countries, where health care systems are well established, NGOs focus on research, advocacy and legal rights.

**Author conclusions:** Given that civil society addresses pressing community needs and fills in existing gaps in services, breast cancer civil society also varies according to the breast cancer landscape and resources available.

**According to Dr. Parsons Perez and Dr. Azenha:** “Nurturing an active breast cancer civil society in all countries should be a priority in global breast cancer control. Partnerships between local and national NGOs and national and international NGOs should be encouraged. “

**According to Dr. Cristina Parsons Perez:** “Inter-sectoral approaches to breast cancer control are essential for effective and locally relevant interventions. By engaging patient groups and highlighting their contribution to breast cancer control, the BHGI exemplifies a collaboration model essential to create a holistic approach to breast cancer care.”

---

Global Message

Advocacy has played a major role in breast cancer control efforts in the USA, UK, and other high-income countries. The Breast Health Global Initiative was co-founded by Fred Hutchinson Cancer Research Center and Susan G. Komen for the Cure®. This partnership between a medical institution and an advocate organization allows for a holistic approach to breast cancer that combines evidence-based medicine with real-world experiences.

---

Lancet Oncology Publishes Expert Review of Consensus Reports

In addition to the Global Breast Health Care supplement of consensus statements and special reports to The Breast, another significant achievement of the three Global Summit Working Groups of the Global Summit on International Breast Health held in Chicago last year was development of a comprehensive summary to provide the final information tool for translating previously published BHGI Low- and Middle-Resource Guidelines into practice.


It provides the details of the consensus process used to create the consensus reports and provides a detailed explanation of the economic classification strategy used by BHGI based on World Bank economic status classifications as well as
health care expenditure data. Classification by economic status provides a functional framework for discussions on global health care issues because health care delivery is dependent on resources allocations. As noted in the comprehensive summary, GNI per head is 100 times that in the poorest nations, whereas national health care expenditure per head is almost 200 times that in the poorest countries. This suggests disparities in health care delivery are significantly greater than are disparities in national wealth. In addition, out-of-pocket expenses, an identified barrier to women seeking breast cancer care, is largest in low- and middle-resource countries when these populations can least afford these costs.

The Lancet Oncology article provides a global review of key issues identified in the individual consensus articles, such as breast cancer mortality trends, research on early detection strategies, endocrine therapy for estrogen-receptor (ER)-positive cancers and cytotoxic chemotherapy for ER-negative cancers.

This landmark review provides important comparative data to inform discussions on global breast cancer care delivery, including data on from Sankaranarayanan et al. on breast cancer 5-year survival (ranging from 12% in Gambia to 82% in China), life expectancy (ranging from 52 years in Uganda to 83 years in South Korea), GNI per head (ranging by 2009 US$ from 330 in The Gambia to 34,640 in Singapore), and health expenditure per head (ranging from 22 in Gambia to 1362 in South Korea).

The authors also noted that “individual country survival data for breast cancer do not always correspond directly to World Bank economic stratification or organization of health-care delivery.” And that “In addition to economic factors, these data suggest that social, cultural, and biological issues should all be considered in the assessment of differences in breast cancer survival.”

Benjamin O. Anderson, MD adds: “We are especially pleased to be able to provide this important economic overview of breast cancer in low- and middle-resource countries, and summary of the consensus reports published in the Supplement to the Breast. It allows us to present a more complete report of the current situation of global breast cancer care delivery and provides another tool to help understand how best to translate available data from a myriad of sources into a comprehensive implementation plan.”

---

**Top Ten Recommendations from the Consensus Panels for Low-Resource and Middle-Resource Countries**

1. Cancer registries are needed so that disease prevalence, stage, and treatment outcome can be measured

2. National cancer plans should define health-care networks in which centres of excellence become connected through outreach to rural and surrounding areas for consultation and patient triage

3. Resource-adapted multidisciplinary cancer care models should be used to avoid system fragmentation and to facilitate consistent health-policy reform

4. Training for physician and non-physician staff should be linked to equipment acquisition and quality care initiatives that measure utilisation and clinical outcomes

5. Public awareness that breast cancer outcomes are improved through early detection should be promoted in conjunction with the development of resource-appropriate early detection programmes

6. Clinical breast examination should be promoted as a necessary method for clinical diagnosis of breast abnormalities

7. Diagnostic services, surgical treatment, radiotherapy, systemic therapy, and palliative care should become integrated within coordinated multidisciplinary environments

8. Systems for coordinated tissue sampling and pathology services should be developed to optimise pathology practices for accurate diagnosis and effective treatment planning

9. Barriers to accessing cancer drugs need to be addressed in conjunction with the deployment of properly trained physicians and staff

10. Workforce issues should be addressed through resource-sensitive strategies that provide quality care but without limiting access

With a goal to improve breast health outcomes in low- and middle-resource countries through implementation science, the Breast Health Global Initiative (BHGI) and its partners are focused on collaboratively building local health care capacity through specialized, culturally appropriate resource-sensitive, evidence-based education and training of health professionals and civil societies.

Through an international collaboration, a four-day Ghana Breast Cancer Specialty Training Course was successfully delivered through the HopeXchange Ghana Health Project in Accra, Ghana during August 23-27, 2010. The course was hosted by Korle Bu Teaching Hospital and was sponsored by the BHGI and HopeXchange (an international humanitarian organization) in collaboration with the International Atomic Energy Agency (IAEA) Programme of Action for Cancer Therapy (PACT). As a collaborative activity of the Ghana Breast Cancer Alliance, the course was coordinated with BHGI responsible for the international program, Korle Bu Teaching Hospital responsible for the local program, Susan G. Komen for the Cure® in charge of advocacy training, and the Oncology Nursing Society (USA) facilitating nursing education.

The original education and training course delivered early last year in Kumasi, Ghana to 160 Ghanaian health care and civil society workers, was the basis for expanding this ensuing second course in Accra, to include specialty training sessions for nurses and civil society, surgical training on breast ultrasound and ultrasound guided biopsy modules. The Accra multi-disciplinary breast cancer course, co-chaired by Professor Joe-Nat Clegg Lamptey, MD, Head, Department of Surgery, Korle Bu Teaching Hospital, Professor Benjamin O. Anderson, MD, BHGI Chair & Director, and
Professor Riccardo Masetti, MD, Medical Director of the HopeXchange Ghana Health Project, brought together over 170 participants including doctors, nurses and social workers from 18 health facilities and Non-Governmental Organizations.

A total of 38 faculty members, made up of 16 international and 22 in-country Ghanaian faculty members with a range of expertise were course instructors. The program included lectures and practicum sessions on multi-disciplinary cases (breast cancer treatment panel); the first-ever sentinel node biopsy procedure in West Africa; use of breast ultrasound to assist surgeons in diagnosis and treatment; systemic therapy for prevention or control of metastatic disease; applications of fine needle aspiration sampling and cytology for diagnosis, advocacy and nursing education.

Following the course, Dr. Clegg Lamptey, course Co-chair, said, “The experience from the first course held in January 2010 in Kumasi, Ghana, helped in planning this course. Teams from different hospitals were represented, and the importance of teamwork in breast cancer management was emphasized through lectures and the break-out sessions. There was good international collaboration between the faculty, and the participants benefitted tremendously from the visiting as well as local faculty. The lectures were excellent and participants, including nurses, surgeons, pathologists and radiologists, gained a lot from the hands-on sessions held at the Korle Bu Teaching hospital. It was a tremendous success.”

The BHGI, a founding collaborative partner of the Ghana Health Project, established its first international Learning Laboratory in Kumasi, Ghana. The objective of the laboratory was to design, implement and test education and training modules based on the BHGI clinical breast health and cancer control guidelines that can be adapted and used by diverse communities to expand breast health programs. The program was designed to improve breast cancer outcomes through creation and pilot testing of the education modules that can be expanded in Ghana and extended to other African countries.

Online Educational Curricula

The BHGI specialty education and training courses delivered in Ghana have created significant educational course curricula content, for others around the world seeking training for low-resource environments. The educational and training curricula developed for Ghana is freely available at www.bhgi.info.

Establishment of the BHGI Learning Laboratory via the HopeXchange Ghana Health Project and Ghana Breast Cancer Alliance, is fueling the initiation of integrated classroom, operating room and on-line learning resources that the BHGI endeavors to replicate in Africa and Asia via the web portal through key partnerships, such as with the International Atomic Energy Agency/Programme of Action for Cancer Therapy (IAEA/PACT) and PACT’s new Virtual University in Cancer Control (VUCC).
# Breast Health Global Initiative

## GLOBAL PORTFOLIO of Projects and Programs

### AFRICA

#### Education and Training: Scale up & Sustainability

**Ghana**  
*In process*

*BHGI LEARNING LABORATORY: HOPEXCHANGE GHANA HEALTH PROJECT with the GHANA BREAST CANCER ALLIANCE (GBCA)*

Ghana Breast Cancer Specialty Training Course – Establishment of a Learning Laboratory and Development of Education and Training Curricula in Ghana

Upcoming course: Ghana location TBD – Summer 2011  
Previous courses: Accra, Ghana – August 2010; Kumasi, Ghana – January 2010

### ASIA

#### Healthcare Systems in Early Detection: Scale up & Sustainability

**Indonesia**  
*In process*

*EARLY BREAST CANCER DETECTION THROUGH CLINICAL BREAST EXAM TRAINING FOR MIDWIVES*

PI: Kardinah, MD, Principal Investigator, Dharmais Cancer Hospital, Jakarta  
Funded through Susan G. Komen for the Cure® sub-award

### Situation Analysis: Readiness assessment, tool development

**Sri Lanka**  
*Upcoming: Summer 2011*

*SRI LANKA SITUATION ANALYSIS*

To be coordinated through the BHGI in collaboration Programme of Action for Cancer Therapy (PACT) of the International Atomic Energy Agency (IAEA) educational training course.

### LATIN AMERICA

#### Early Detection: Scale up & Sustainability

**Bogotá, Colombia:** 2 tandem, associated projects  
*In process*

*PILOT INTRODUCTION OF BREAST CANCER EARLY DETECTION PROGRAMS (opportunistic screening)*

Funded by Susan G. Komen for the Cure® sub-award  
PI: Benjamin O. Anderson, MD, Breast Health Global Initiative, Fred Hutchinson Cancer Research Center  
Co-PI: Raul Murillo, MD, National Cancer Institute, Colombia

*READINESS ASSESSMENT FOR IMPLEMENTATION OF BREAST CANCER TREATMENT GUIDELINES*

Funded by Washington Global Health Alliance (former Puget Sound Partners for Global Health)  
PI: Raul Murillo, MD, National Cancer Institute, Colombia

### MIDDLE EAST

#### Situation Analysis: Readiness assessment, tool development

**Saudi Arabia**  
*Upcoming*

*SHEIKH MOHAMMED HUSSEIN AL-AMOUDI CENTER OF EXCELLENCE IN BREAST CANCER (SMHAA-CEBC): BHGI SITUATION ANALYSIS*

Qualitative implementation science project to develop readiness assessment tools, to be coordinated through the BHGI with Dr. Samia Al-Amoudi, CEO, SMHAA-CEBC, Chairwoman of Scientific Breast Cancer Chair, Associate Professor and Consultant obstetrician gynecologist, King Abdulaziz University, Jeddah, Saudi Arabia
GLOBAL PROGRAMS  Scale up & Sustainability

SCIENTIFIC GRANT REVIEWS GlaxoSmithKline Oncology
International Ethnic Research Initiative

Upcoming

BHGI manages scientific reviews of international research grant applications funded by GSK ERI.

Co-Chairs: Peggy Porter, MD, Full Member, Divisions of Human Biology and Public Health Sciences, Head of Breast Cancer Research, Fred Hutchinson Cancer Research Center; Professor, Department of Pathology, University of Washington, and; Benjamin O. Anderson, MD, Chair & Director, Breast Health Global Initiative, Fred Hutchinson Cancer Research Center

Upcoming review: Fall 2011, Seattle

BREAST HEALTH – COMMON INTEREST GROUP (BH-CIG)  Ongoing development

Making Literature Accessible to Low and Middle Income Countries

Library features:
- **BHGI-INCTR Library Catalogue for Breast Cancer Control**: A searchable database of citations
- **Translations** of Guidelines for International Breast Health and Cancer Control
- Available at: [www.bhgi.info](http://www.bhgi.info)

The BH-CIG launched by the BHGI in alliance with the U.S. NCI Office of International Affairs and International Union Against Cancer (UICC) for information dissemination, collaboration and communication.
Researchers and Scientists Honored by ASCO for Improving Prevention, Treatment and Care of People Living with Cancer

Global work led by Benjamin O. Anderson, MD recognized by ASCO 2011 Partners in Progress Award

Each year through its Special Awards, the American Society of Clinical Oncology (ASCO) recognizes quality researchers, patient advocates, and leaders of the global oncology community who, through their work, have made significant contributions to enhancing cancer care. The recipients of ASCO’s highest, most prestigious awards collectively represent significant strides in cancer treatment and leadership in the oncology community.

Among the notable awardees set to be honored by the ASCO at its 47th Annual Meeting taking place in Chicago in June, Benjamin O. Anderson, MD, Chair and Director of the Breast Health Global Initiative (BHGI), will receive the 2011 Partners in Progress Award for his commitment to women throughout the world and his dedicated efforts to improve their quality of care. As Professor of Surgery and Global Health Medicine at the University of Washington in Seattle, he has devoted his clinical practice to the care of patients with breast cancer and breast health issues. For the past decade, Dr. Anderson has been a leading voice in the international breast cancer clinical improvement and best practices movement through establishment of the BHGI, a global alliance of organizations and individuals dedicated to medically underserved women.

Other awardees to be honored include Kenneth C. Anderson, MD, recipient of the 2011 David A. Karnofsky Memorial Award and Lecture; Robert A. Weinberg, PhD, Founding Member of the Whitehead Institute for Biomedical Research and Professor of Biology at the Massachusetts Institute of Technology, recipient of the 2011 Science of Oncology Award and Lecture; Jamie H. Von Roenn, MD, recipient of the 2011 ASCO-American Cancer Society Award and Lecture; Luca Gianni, MD, Director of the Department of Medical Oncology and Head of the Project of Development of New Drugs and Innovative Therapies in Solid Tumors at the San Raffaele Cancer Center in Milan, Italy, recipient of the 2011 Gianni Bonadonna Breast Cancer Award and Lecture; John M. Bennett, MD, Professor Emeritus of Medicine, Pathology, and Laboratory Medicine at the University of Rochester Medical Center in New York, recipient of the 2011 B.J. Kennedy Award and Lecture for Scientific Excellence in Geriatric Oncology; Lee J. Helman, MD, recipient of the 2011 Pediatric Oncology Award and Lecture; David Khayat, MD, PhD, Head of the Department of Medical Oncology at the Pitié-Salpêtrière Hospital in Paris, France, recipient of the 2011 Distinguished Achievement Award; Daniel G. Haller, MD, recipient of the 2011 Special Recognition Award, and; the Honorable Sherrod Brown, senior U.S. Senator from Ohio, 2011 recipient of the Public Service Award.
About the Breast Health Global Initiative

Evidence-based Approach for Translating Theory into Practice

The Breast Health Global Initiative (BHGI), co-sponsored by Fred Hutchinson Cancer Research Center and Susan G. Komen for the Cure®, has become a world leader in women’s health initiatives, pioneering development of comprehensive resource-sensitive, evidence based clinical Guidelines for International Breast Health and Cancer Control to improve breast cancer outcomes in low- and middle-resource countries (LMCs).

The BHGI has accomplished its work, since establishment in 2002, through international collaboration and a biennial series of Global Summits through a strategic global alliance of governmental, NGO, non-profit and for-profit health organizations, doctors, scientists, policy makers and advocates involved in breast health care and cancer control around the world. As a vibrant global network and resource for information, BHGI is now initiating development of Learning Laboratories to define critical in-country methodology for breast cancer care programs for LMCs through global collaborations. In its next phase of innovation through implementation science, BHGI will work with international partners to carry a clear and compelling vision of global health improvement from theory into practice.

For more information on the BHGI, please go to www.bhgi.info and join the Breast Health-Common Interest Group (BH-CIG), a free resource. The BH-CIG provides a platform for researchers, healthcare providers, NGOs and healthcare ministries working in LMCs who are dedicated to finding innovative solutions to critical cancer control issues.

Tell us what you think

This newsletter is designed as a tool to keep global communities and individuals informed on the global implementation science work of the Breast Health Global Initiative and its alliance, related to breast cancer in LMCs, and to develop a relationship with the BHGI and our coalition of organizations and individuals. Please forward this newsletter to anyone who will benefit from the information.

Email any questions or comments to Leslie Sullivan, BHGI Managing Director, at: lsulliva@fhcrc.org
We are deeply grateful to our partners and collaborators throughout the world who have made this work possible by their vision to advance the international fight against breast cancer and disseminate a message about breast health and cancer control.