## Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message From Sinai Leadership</td>
<td>3</td>
</tr>
<tr>
<td>The Cancer Committee Chair Perspective</td>
<td>4</td>
</tr>
<tr>
<td>The Racial Disparity in Breast Cancer Mortality in Chicago</td>
<td>5</td>
</tr>
<tr>
<td>2008 Cancer Registry Data Overview</td>
<td>7</td>
</tr>
<tr>
<td>The Cancer Committee Liaison</td>
<td>10</td>
</tr>
<tr>
<td>Sinai Cancer Care Center</td>
<td>13</td>
</tr>
<tr>
<td>Diagnostic Breast Radiology</td>
<td>15</td>
</tr>
<tr>
<td>Pathology Department</td>
<td>16</td>
</tr>
<tr>
<td>Radiation Oncology Department</td>
<td>17</td>
</tr>
<tr>
<td>Plastic Surgery – Breast Reconstruction Options</td>
<td>18</td>
</tr>
</tbody>
</table>
A Message from Sinai Leadership

Sinai Health System, serving its community for 90 years, continues to provide access to treatment for cancer to a diverse community of over 750,000 people. This report will describe the commitment Sinai has made and carried out both inside the hospital as well as in the community in the fight against cancer.

Sinai has been a leader in the Chicago Community in providing patient navigators to support individual patient needs across an array of oncologic diagnoses. This personalized care supplements the screening and diagnostic capabilities of digital mammography and the latest in ultrasound imaging. The radiation therapy service utilizes partial breast radiation techniques to minimize patient’s exposure while maximizing curative opportunities.

Sinai has conducted ground-breaking research on disparities in breast cancer mortality between African American and Caucasian women. This research found a rising mortality rate among African Americans and a declining rate among Caucasians. Sinai used this data to establish a Chicago-wide task force to improve access to screening, diagnostic studies and care.

All of these efforts are aimed at addressing the breast cancer disparity that allows African American women to die at a rate twice that of Caucasian women. This effort is organized within a comprehensive breast cancer clinic.

Sinai Health System’s mission is to care for both individuals and the community. Its vision is to be the national model for the delivery of urban health care. One element of reaching toward this vision is speaking for those who can not speak for themselves while creating an environment that provides state of the art technology and clinical protocols to our patients.

Alan Channing • President and CEO
Sinai Health System
On behalf of Mount Sinai Hospital’s Cancer Committee, I am privileged to introduce our 2009 Cancer Program Annual Report. The Cancer Committee is a multi-disciplinary group including physicians, nurses, social workers, rehabilitation specialists, pharmacists, hospital administrators, diagnostic imaging staff, quality improvement staff, and cancer registry staff. The committee is charged with developing and monitoring the annual goals for clinical, educational, and programmatic activities related to cancer care at Mount Sinai Hospital while promoting a coordinated multidisciplinary approach to cancer patient management. This report presents a summary of our Cancer Program’s activity over the past year and analyzes our cancer treatment experience in 2008 through the Cancer Registry Report.

As an urban facility, Mount Sinai Hospital continues to provide high quality oncology care to an underserved patient population. Community screening programs for breast, colon, and prostate cancer are actively sponsored. In the year 2008, new cancers were detected and treated in more than three hundred patients through our programs. Over one-third of these patients were presented at our multidisciplinary Cancer Conference, linking our medical oncologists, radiation oncologist, surgeons, pathologists, nurses, and social workers in coordinated decision-making and care efforts.

Mount Sinai Hospital is proud to be accredited by the American College of Surgeon’s Commission on Cancer (CoC). Accreditation is granted to those facilities that are committed to providing the best in cancer care and comply with the CoC’s rigorous standards that promote cancer prevention, early detection, and a high quality of cancer care delivery.

The subject of this year’s report is breast cancer. As can be seen from the information that follows, breast cancer patients in our community present at a younger age, and with more advanced disease than the general population. Steve Whitman, PhD, Director of Sinai Urban Health Institute, has extensively researched breast cancer outcome disparities in Chicago and documents the increased mortality of African-American women (the majority of women treated at Mount Sinai Hospital) with breast cancer. With the help of charitable sources and the dedication of our health care workers, we strive to improve the mammographic screening programs and breast cancer treatment provided to our at-risk population. This report reflects the perspectives of surgeons, oncologists, radiologists, pathologists, and radiotherapists involved in that endeavor.

As an urban facility, Mount Sinai Hospital continues to provide high quality oncology care to an underserved patient population.

It is our hope that the information contained in this report will be of interest and use to caregivers, patients and their families, support groups, and the Mount Sinai community at large. The progress in our Cancer Program has been substantial, and reflects the committed hard work of all involved in the care of our patients. We look forward to another year of further improving the quality and compassion with which we are able to deliver oncologic care.

Stephen Wise, MD • Surgeon and Cancer Committee Chair
Mount Sinai Hospital
In 2007 researchers at Sinai Urban Health Institute published a startling analysis of breast cancer mortality in Chicago. This work was updated two years later and the main results are presented on the next page in Figure 1. The graph contains breast cancer mortality rates for Black and White women in Chicago between 1980 and 2005. Note that in 1980 the death rates were about equal, at about 38 (per 100,000 women) and they stayed that way until the early 1990s. At this point the rates began to separate because the White rate went down very quickly and the Black rate did not go down at all. Thus, 25 years later, in 2005 (the last year for which we have data) the Black rate was 41.4, more than two times as high as the White rate (which was 19.2). The most common measure for such a difference or disparity is the ratio of these two rates which was 2.16.

The Racial Disparity in Breast Cancer Mortality in Chicago

Steven Whitman, PhD
Director of Sinai Urban Health Institute
Everywhere in the United States, including Chicago, White women are more likely to get breast cancer than Black women. For example, in Chicago White women are about 20 percent more likely to acquire the disease. Despite this, Black women in the city die twice as often from the disease.

When we compared the disparity (the ratio of the Black and White rates) for other cities we found that Chicago had a much worse disparity. For example, the disparity was about 1.35 for the United States as a whole, about 1.25 for New York City, and about 1.40 for Houston and Boston. Compare these ratios with the 2.16 in Chicago.

These data, developed by Sinai Urban Health Institute, were used as a foundation to establish the Metropolitan Chicago Breast Cancer Task Force. Virtually all relevant institutions in the metropolitan area send representatives to this Task Force, which is dedicated to reducing the racial disparities in breast cancer mortality.

Mount Sinai has made an essential contribution to illuminating this disparity. Now, armed with these findings, it is hoped that the metropolitan area will be able to work together to eliminate this disparity and bring the highest quality of breast health care to all women.

Steven Whitman, PhD • Director
Sinai Urban Health Institute

Kristi Allgood, MPH
Sinai Urban Health Institute

---

2008 Cancer Registry Data Overview

The Cancer Registry at Mount Sinai Hospital has a beginning reference date of January 1, 1999 and is under the management of the Oncology Administration and the Cancer Committee.

In 2008, a total of 385 new patients were added to the registry; 354 (over 90 percent) of these patients were initially diagnosed and/or received their first course of treatment at Mount Sinai Hospital, which reflects the joint efforts provided by the comprehensive cancer care team.

The Cancer Registry records information for each malignancy including but not limited to: patient demographics, primary site and histology, stage of disease, treatment, recurrence, and follow-up data. Each patient in the database is actively followed annually (as required by the Cancer Program Standard) in order to acquire necessary information on recurrences, subsequent treatment and survival data that is vital for continued patient care. This information provides physicians and administration with statistical data for research, education and planning. Patient confidentiality is strictly maintained.

Our patient population consists of 58 percent females and 42 percent males; 58 percent African-American, 30 percent Hispanic, 8 percent Caucasian, and 5 percent Asian and other races. Patients of all age ranges were included in the registry database, most were between 40 years to 69 years.

In 2008, a total of 385 new patients were added to the registry; 354 (over 90 percent) of these patients were initially diagnosed and/or received their first course of treatment at Mount Sinai Hospital, which reflects the joint efforts provided by the comprehensive cancer care team.

In 2008, 67 percent of patients presented to Mount Sinai Hospital with cancer confined to the initial tumor site and/or extending to the regional lymph nodes or surrounding soft tissues. An additional 24 percent of patients presented with cancer already spread to distant sites or organs.

### Table 1. Mount Sinai Hospital Cancer Registry - 2008 Patient Data Summary

<table>
<thead>
<tr>
<th>Class</th>
<th>No.</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analytic cases</strong></td>
<td>354</td>
<td>92</td>
</tr>
<tr>
<td><strong>Non-Analytic cases</strong></td>
<td>31</td>
<td>8</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>161</td>
<td>42</td>
</tr>
<tr>
<td>Female</td>
<td>224</td>
<td>58</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>African American</td>
<td>222</td>
<td>58</td>
</tr>
<tr>
<td>Hispanic</td>
<td>115</td>
<td>30</td>
</tr>
<tr>
<td>Asian &amp; Other</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>40-49</td>
<td>82</td>
<td>21</td>
</tr>
<tr>
<td>50-59</td>
<td>89</td>
<td>23</td>
</tr>
<tr>
<td>60-69</td>
<td>92</td>
<td>24</td>
</tr>
<tr>
<td>70-79</td>
<td>64</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>8</td>
</tr>
<tr>
<td><strong>Stage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Situ</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Localized</td>
<td>156</td>
<td>41</td>
</tr>
<tr>
<td>Regional</td>
<td>75</td>
<td>19</td>
</tr>
<tr>
<td>Distant</td>
<td>92</td>
<td>24</td>
</tr>
<tr>
<td>N/A</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Unstageable</td>
<td>26</td>
<td>7</td>
</tr>
</tbody>
</table>
Table 1. Mount Sinai Hospital Cancer Registry – Top 10 Cancer Sites in 2008

*Analytic = First diagnosed and/or first course of treatment at this institution. **Non-analytic = First diagnosed and first course of treatment elsewhere.
Figure 2: MSH Cancer Registry – 2008 Analytic Female Patients – Top 5 primary sites

Source for national data: American Cancer Society Cancer Facts & Figures 2008

Figure 3: MSH Cancer Registry – 2008 Analytic Male Patients – Top 5 primary sites

Source for national data: American Cancer Society Cancer Facts & Figures 2008
The Cancer Committee Liaison

As both the liaison of the cancer committee and a general surgeon, I know the benefits of closely monitoring the health of our cancer patients. One of our goals is to prevent our patients from being lost to follow-up. With the hard work of our cancer navigators and breast health navigators, we make it our mission to ensure that patients have all their appointments explained and arranged before they leave the hospital. We recognize that our patients are working, raising children, taking care of other sick family members and trying to make ends meet. Having cancer is overwhelming and our goal is to reduce the confusion and fear that often go along with multi-faceted care.

We have a responsibility to assist our patients and their families “navigate” through the continuum of care, from diagnosis to survivorship. An oncology nurse navigator is always available to coordinate care to ensure that the patients and their families move through the complex system of health care in a timely manner. Education is provided to the patients and families throughout their cancer journey. Patients are also linked to community resources. Communication is facilitated not only between patients and providers but also between physicians and referring physicians with the help of our oncology nurse navigator.

Our hospital has a full complement of patient care. A patient who is diagnosed at our center can receive surgery, radiation treatments, chemotherapy and targeted therapy at our institution. We provide hepato-biliary surgery, laparoscopic colon resections and cutting edge radio frequency ablation, 3-D conformal radiation therapy, Intensity-Modulated Radiation Therapy (IMRT) and electronic Xoft brachytherapy to our patients. Our standard of care rivals our neighbors in the Medical District. We pride ourselves in offering state-of-the-art treatments to our patients including minimally invasive procedures which yield excellent outcomes.

This annual report focuses on breast cancer. Breast cancer is the most common cancer in women. One in eight women will be affected by breast cancer during her lifetime. According to the 2008 Cancer Facts & Figures of the American Cancer Society, there were an estimated 182,460 new cases of breast cancer diagnosed in women in 2008 and 40,480 women lost their lives to breast cancer. It is the second leading cause of cancer-related death for women in the United States.

While the exact cause of breast cancer is not clearly understood, risk factors such as age, genetic risk factors, family history of breast cancer and certain lifestyle behaviors could increase the chances of developing breast cancer. Positive lifestyle changes and regular screening examinations such as a mammogram and self-breast examination can help in prevention and early detection.

According to the 2008 Cancer Facts & Figures of the American Cancer Society, there were an estimated 182,460 new cases of breast cancer diagnosed in women in 2008 and 40,480 women lost their lives to breast cancer.

A total of 85 new breast cancer patients were diagnosed and/or treated at Mount Sinai Hospital in 2008. The incidence of breast cancer increases with age, which is similar to the national trend. Majority (74 percent) of our patients diagnosed with breast cancer are within the ages of 30 – 59 years.

Figure 4 compares the age at diagnosis for breast cancer patients seen at Mount Sinai Hospital in...
2008 to the National Cancer Data Base (NCDB). Figure 5 compares the stage at diagnosis for breast cancer patients seen at Mount Sinai Hospital in 2008 to the National Cancer Data Base.

Figures 4 and 5 clearly show that the majority of our breast cancer patients present at a younger age, and with more advanced stage of disease as compared to the general population.
Figure 6: Race Distribution of Breast Cancer Patients at MSH 2008 vs. NCDB 2007

Figure 6 shows that the majority (87 percent) of our breast cancer patients are either African Americans or Hispanics. Our institution is well aware of the disparities that exist with breast cancer in the minority community. These disparities have encouraged the institution to streamline functions and expand our breast cancer comprehensive clinic with the goal to close this disparity gap. Every patient admitted to our hospital who is of screening age is advised to have a screening mammogram. Those who agree to have a screening mammogram are immediately contacted by our breast navigators, who arrange for a primary care visit for those who require one, and a mammogram is ordered. The same initiative is taken for pap smears.

Patients receiving surgery for breast cancer often require post operative treatment that ranges from chemotherapy, radiation treatment and targeted treatments with endocrine drugs and Herceptin. Patients who are positive for the gene HER-2 Neu are candidates to receive the drug Herceptin. It is the responsibility of the physicians and the cancer committee to make sure patients receive the proper treatment in the appropriate time frame. For example, patients who receive a lumpectomy need post-operative radiation.

- In 2008, a total of 35 patients out of the 85 diagnosed breast cancer patients had lumpectomies. All of these patients received radiation treatment.
- In 2008, a total of eight patients were positive for the gene HER-2 Neu. All eight patients appropriately received Herceptin.
- In 2008, there were 40 patients with hormone positive breast cancer and 80 percent of these patients received Tamoxifen or an Aromatase Inhibitor

Anngell Jones, MD • Surgeon and Cancer Committee Liaison
Mount Sinai Hospital
Sinai Cancer Care Center

In the last two years we have been proud to see expansion of the cancer program at Sinai Health System. My colleague Dr. Ervin Hire and I eagerly awaited the opening of the new Sinai Cancer Care Center on the 6th floor of Olin Sang in June of 2008. It was supported by a generous grant from the Coleman foundation. The goal was to consolidate and streamline comprehensive outpatient clinical Hematology and Oncology services in the same physical space as the outpatient infusion center for chemotherapy and related services. This allowed creation of a comprehensive oncology patient chart allowing consolidation of chemotherapy orders with outpatient visit clinic notes. It also provided more space for the patient waiting room and ten infusion stations including a private room. The patient throughput has improved significantly and patient satisfaction scores have been consistently high.

We were proud to receive full re-accreditation of our cancer program by the American College of Surgeons’ Commission on Cancer for three years in June of 2008.

Activation of Clinical Research Studies in Oncology in collaboration with Northwestern University was the next big accomplishment for our team. We are able to offer clinical trials through the Clinical Trials Support Unit of the National Cancer Institute. More than twenty patients were enrolled last year. We also initiated new pharmaceutical studies with novel agents to benefit our patients with advanced malignancies.

Picture above: patient being examined by Pam Khosla, MD, Chief of Hematology/Oncology Department
Cancer Survivors Day was celebrated enthusiastically with our team of care providers volunteering their time planning a very successful event. More than 200 patients and families along with caretakers participated on June 5, 2009.

The American Society of Clinical Oncology (ASCO) Quality Oncology Practice Initiative (QOPI) is a physician-led voluntary program for measuring practice quality, while providing practices with semiannual practice-specific and comparative data. QOPI became available to all ASCO members in January 2006. With the help of our dedicated team of nurses, under the leadership of our Oncology Nursing Director Anna Liza Rodriguez, we successfully completed requirements for the Quality Oncology Program Initiative certification by American Society of Clinical Oncology in fall of 2008. The goal is to promote excellence in cancer care by helping oncologists create a culture of self-examination and improvement. It also helps the physicians maintain active certification in Hematology and Oncology through the American Board of Internal Medicine.

We actively participate in the Chicago Breast Cancer Quality Consortium. It is an initiative of the Metropolitan Chicago Breast Cancer Task Force in collaboration with the Illinois Hospital Association to understand disparities in health care in Chicago, focusing on minority patients.

The first annual Oncology Symposium was held on October 29, 2009. Target audience included practicing physicians, both general practice and subspecialty interests in oncology, oncology nurses and physicians in training.

Medical oncology, gastroenterology and surgery attending physicians spoke on very educational topics aimed at:
- Describing new breast cancer risk reduction methods
- Assessing prognosis in node negative breast cancer patients using gene profiling like the Oncotype DX—an RT-PCR based tool
- Identifying indications for adjuvant therapy in lung and colon cancers.
- Identifying indications for surgery in lung cancer in African Americans
- Describing the use of endoscopic ultrasound in pancreatic cancer
- Describing the most common primary and metastatic brain tumors and their treatment including the role of surgery

Last but not the least, in July 2009 we established a comprehensive breast cancer clinic. Any newly diagnosed breast cancer patient can be referred to the clinic and will be seen by a multidisciplinary team including a medical oncologist, a surgeon and a radiation oncologist on the same day. With the help of our patient navigator program, new breast cancer patients are scheduled on timely bases. It helps the team of physicians in planning complex treatments prospectively in a truly multidisciplinary and academic format.

Pamela Khosla, MD  •  Chief of Hematology/Oncology Department
Mount Sinai Hospital
Diagnostic Breast Radiology

At Mount Sinai Hospital we perform more than 10,000 mammograms, over 3000 breast ultrasound exams and over 500 breast biopsies every year. We have two full field digital mammogram Senographe GE units; one with stereotactic biopsy capability and one GE Instrumentarium analog unit off-site. We have two MRI units for breast MRI. One unit is a Toshiba Atlas located on site at Mount Sinai Hospital. The other is a Siemens Espris located off-site at Hawthorne imaging. Both units utilize dedicated breast coils and are 1.5-tesla –magnetic –strength. The ultrasound department operates with 3 Accuson Sequoia units and one state-of-the-art Siemens S200 unit.

The diagnosis mammography section is closely supervised by a radiologist at all times. All diagnostic mammograms are read within 24 hours and all screening mammograms are read within 72 hours. Technologists are trained to alert the radiologist of any potentially suspicious cases. The radiologist checks cases in ultrasound whenever the ultrasound technologist has a question. The radiologist personally scans the patient whenever there is a question and at the same time obtains a full patient history and performs a thorough breast examination to achieve overall evaluation. Patients with suspicious lesions are biopsied on the same day.

Figure 7: MSH Mammography Volumes in 2008, 2009 and Year 2010
The pathology department renders diagnoses on breast specimens, including needle core biopsies, lumpectomies, and mastectomy specimens. Our board certified Pathologists use immunohistochemistry and other diagnostic tools to correctly diagnose and categorize breast neoplasms into their many distinctive subtypes.

We adhere to CAP/ASCO guidelines for processing, to ensure accurate prognostic markers including Estrogen Receptors, Progesterone Receptors and Her-2-Neu results. These markers guide therapeutic decisions by the oncologists, part of the relentless progression toward individualized therapy, i.e. personalized medicine.

Where appropriate, pathology uses CAP Cancer Protocols to ensure comprehensive reporting of all required elements for cancer specimens. Through

The breast imaging team is assisted by navigators who are funded by a grant from the Avon Foundation. The navigators assist in providing previous films both in house and outside of the Sinai Health System. In addition, they provide personal counseling for patients with positive diagnosis and help organize exams and transport patients on the day of surgery. Finally, the navigators assist the patients with insurance issues and give patients information regarding their eligibility for the Stand Against Cancer Program.

Breast MRI is used in cases where there is positive diagnosis and full extent of disease as well as satellite lesions and contralateral lesions are sought. In addition, breast MRI is used in cases where a patient has the BRCA gene and in cases where there are mammographic findings and ultrasound findings that do not initially appear to correlate. In these cases, MRI can be very useful for clarification.

Communication with referring physicians is of key importance in our department. Referring physicians are informed of our intent to add procedures and are informed of positive results as soon as they are transcribed into the system by the pathologist.

There has been a steady increase in the volume of breast imaging at Sinai Health System. Since the introduction of digital mammography at Sinai, a total of 12,000 or more patients are seen annually as compared to the 7,700 patients seen annually using analog mammography. Figure 7 shows a general increase in the volume of digital mammography from 2008 to present. We look forward to further growth to meet the needs of the community.

Robert Gross, MD • Diagnostic Breast Radiologist
Mount Sinai Hospital

Pathology Department

Jack Garon, MD
Pathology Department Chair
The Department of Radiation Oncology at Mount Sinai Hospital has the state-of-the-art equipment and highly qualified staff members. The Department has a modern linear accelerator with MLC (multileaf calimator) and dual photon energy with a wide range of electron beam energies, allowing performing the treatment of different types of malignancies with most advanced contemporary techniques including IMRT (Intensity-Modulated Radiation Therapy). The department recently acquired its own dedicated CT-scanner, which is used for planning radiation therapy for our patients and allows improving patient satisfaction by eliminating unnecessary waiting. The department has full time medical physics support and contemporary planning software. We treat approximately 300 cancer patients per year. We constantly and closely collaborate with the Medical Oncology Department to optimize the scheduling of combined modality chemo-radiation therapy.

Treatment of the breast cancer has always being our priority. We utilize modern normal tissue-sparing techniques, minimizing the dose of radiation to the lung, heart and contralateral breast. We routinely use three-dimensional conformal and IMRT techniques for treatment of our breast cancer patients. Such an approach allows holding skin toxicity to a minimum. The majority of the patients are finishing the recommended treatment course without interruptions.

Recently the Department purchased a new Xoft brachytherapy machine. This machine allows us to administer high dose rate electronic brachytherapy. This treatment modality is utilized for treatment of gynecological malignancies and breast cancer. We are now able to offer our patients partial breast irradiation with treatment administered over a period of one week as opposed to conventional whole breast irradiation which takes approximately 7 weeks of daily treatments.

We also plan to participate in NSABP research study which offers partial breast irradiation with 3D conformal external beam radiation. This study will be offered for the patients who do not qualify for partial breast irradiation with brachytherapy technique. The highly qualified, experienced and dedicated staff and excellent equipment make our department an integral part of our cancer program at Mount Sinai Hospital.

Marina Kuznetsova, MD  •  Radiation Oncology
Mount Sinai Hospital
A breast cancer diagnosis can place a great deal of stress on a woman. While she reflects over her diagnosis and treatment, she will also have to meet with medical oncologists, radiation oncologists and a breast surgeon to discuss her care. While partial mastectomies often do not require consultation with a plastic surgeon, a woman undergoing resection for larger defects or considering total mastectomy should have an opportunity to speak with the plastic surgeon in order to make an informed decision regarding her treatment. In particular, a discussion with the plastic surgeon will consider aspects of her treatment such as adjuvant therapy (radiation/chemotherapy) and the type of mastectomy planned in order to facilitate a meaningful discussion regarding the method, timing and patient's expectations of a reconstructive breast procedure.

**Tissue Expander/Implant reconstruction:**

Implants are one of the main ways utilized by the breast surgeon to restore the breast. Oftentimes, this method of reconstruction is suited to patients who are not candidates for an autologous method or who do not want to undergo a more involved type of operation. Typically, a tissue expander is placed in the breast at the time of mastectomy, but can also be placed at a later date (delayed, discussed later) months or years after the initial mastectomy. The tissue expander is a silicone device that resembles a balloon that is gradually expanded over a period of several weeks (6-8 weeks) in order to stretch the chest skin to accommodate a permanent implant. The expander is typically placed under the pectoralis major muscle and serratus fascia, but occasionally the pectoralis major is used with a biomaterial such as Alloderm to create a pocket for the implant and reduce donor morbidity, or with a flap from the back known as a latissimus flap if the patient has undergone previous radiation. Patients typically start in-office expansion 2 weeks after surgery and gradually continue expansion on a weekly basis until the final volume is achieved. The expander is later exchanged, usually 1-2 months later, for a permanent implant consisting of saline or silicone material.

The advantages of tissue expander / implant reconstruction are decreased donor morbidity, less scars and possibly less pain, and a faster, less involved operation. Disadvantages of the tissue expander / implant procedure include need for multiple visits for expansion, a less natural look and feel of the breast, and complications from the implants such as rippling, capsular contracture (hardening of the implant, sometimes with pain), extrusion, deflation or rupture, difficulty with matching the other side and need for replacement in the future.

**Autologous Reconstruction:**

Breast reconstruction can also be accomplished by using a woman's own tissues in order to recreate the breast. While there is another surgical site created to “borrow the tissue” from, the tissue used can provide a soft and natural feeling breast that is long-lasting. The most commonly employed technique for this method of reconstruction is the transverse rectus abdominus myocutaneous flap or TRAM flap. This flap is often favored by patients because of the “tummy tuck” that is done to harvest the tissue and recreate the breast. For some patients who are not suitable candidates because of a lack of tissue in the abdominal area, other flaps can be carried out to donate tissue for the breast. These other procedures often require free tissue transfer and utilizes a specialized surgeon with microsurgery skills to hook up small arteries and veins to keep the tissue alive in its new location. Some
patients will be less ideal candidates for autologous reconstructive surgery because of existing medical problems or inability to tolerate lengthy operations. Also, patients who are to undergo radiation may wish to reconsider using their own tissues immediately because of the poor outcomes seen when flaps are radiated.

Advantages of autologous breast reconstruction include a soft, natural and long-lasting breast mound, that can provide additional cosmetic benefits (tummy tuck), and provides tissue which integrates with the patient’s other body tissues (the new breast will gain and lose weight as the patient gains and loses weight). Disadvantages of the procedure include lengthier and more involved surgery, creation of another surgical site, donor site-related complications such as hernia, bulge, or scarring, and flap-related complications including problems with the blood supply (inflow/ outflow), fat necrosis, and possibility of partial or total tissue loss.

**Timing of the Reconstruction:**

Breast reconstruction can be carried out either at the same time as the mastectomy (immediate) or afterwards upon completion on adjuvant therapies up to months or even years after the initial mastectomy (delayed). The decision to proceed with immediate or delayed reconstruction is often dependent on the patient’s own preferences and the consideration of any postoperative adjuvant therapy that may be required. Immediate reconstruction can ameliorate the psychological burden experienced by a woman after removal of the breast, forgoing the need for a period of time with absence of breast. However, as discussed earlier, the final reconstructive outcome can be adversely affected by the need for postoperative radiation and potential delays in adjuvant therapy if wound healing problems are encountered.

Delaying the reconstruction allows the patient to proceed to neoadjuvant therapy in a timely fashion with less risk for delays. However, the patient will have to experience absence of the breast and post-mastectomy chest tissues (mastectomy skin, pectoralis major muscle) exposed to radiation can scar down and be more difficult to expand or use for reconstruction.

**Final Thoughts:**

Regardless of the method chosen or the timing of the reconstruction, a discussion with plastic surgeon can help the patient make an informed decision during a stressful and difficult time. Breast reconstruction is truly an artistic endeavor in which reconstructive plastic surgeons feel they are truly helping patients. Breast reconstruction can help a woman recover psychologically, restore her self-image and sense of femininity. Awareness and knowledge of breast restorative procedures and their potential advantages and disadvantages can be extremely comforting and empowering for a woman with a breast cancer diagnosis.

Anuja K. Antony, MD • Plastic and Reconstructive Surgeon
Mount Sinai Hospital
We thank the Coleman Foundation for their generous support and contributions to the Sinai Cancer Program.

Picture above from left to right: Beth Hayden, Nursing Unit Director, Oncology; Alan H. Channing, President and CEO, Sinai Health System; Dr. Pam Khosla, Oncologist; Michael W. Hennessy, President and CEO, The Coleman Foundation; Clark McCain, Senior Program Officer, The Coleman Foundation; Dr. Ervin Hire, Oncologist and Abraham Morgan, immediate past Chairman of Board.

Sinai Cancer Program
Annual Report 2009