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A History of Innovation: A PET Program

The Kettering Medical Center in Kettering, Ohio, has a rich history of innovation and dedication in the care of patients. The original hospital was constructed in 1964 as a combined interest of the medical community and the Kettering family as a memorial to Charles F. Kettering, the world-renowned inventor, scientist, and humanitarian, and co-founder of the Sloan-Kettering Institute for Cancer Research in New York City. Kettering, inventor of the spark plug, automatic ignition, and transmission for automobiles, developed

many of his inventions in Dayton.

Kettering Medical Center follows that example by combining a commitment to academic excellence with a high level of responsiveness to community needs. An affiliation with Wright State Medical School in Dayton, coupled with the support of the Kettering Medical Center Foundation, provides KMC with a research impetus that is rare in a community setting. For example, KMC is currently participating in several Phase I studies through its Wallace-Kettering Neuroscience Institute. At the same time, by offering

quality preventive, diagnostic, and treatment services in a variety of settings, KMC is committed to the highest level of health for members of the entire community.

A PET PROJECT

In the same spirit of the famous inventor, Kettering Medical Center is breaking ground in the diagnosis and treatment of cancers using PET scan, or positron emission tomography. PET enables physicians to obtain information on the biochemical state of a tumor; they are thus better able to accurately

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The Charles F. Kettering Memorial Hospital, the flagship hospital of the Kettering Medical Center (KMC), is located in Kettering, Ohio, just outside Dayton. The medical center system also includes Sycamore Hospital, the Kettering College of Medical Arts, the Alliance for Health Cancer Center, and two Breast Evaluation Centers, offering patients a variety of accessible options for receiving care. KMC recently received four-year accreditation by the American College of Surgeons.

VITAL STATISTICS

- Total institutional bed size: 758
- Dedicated cancer unit beds: 39
- Number of analytic cancer patients seen each year: 1,156
- Managed care penetration in the state: 35 percent

PATIENT SUPPORT SERVICES

- KMC's Walk for Women's Wellness raises funds to provide mammograms, mastectomy prostheses, and prosthetic apparel to area women in need.
- The Community Cancer

Information Center, the only publicly available, hospital-based program in the greater Dayton area, provides telephone, fax, and Internet access to national cancer information hotlines and other cancer resources.

- Multiple support groups, screenings, and staff educational programs contribute to a comprehensive

wellness and education network.

- The Wellness on Wheels coach delivers health care services, including mammograms, to the areas of greatest need in the Miami Valley region.
- Transportation service to and from treatments is offered free of charge to some patients undergoing radiation therapy.



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assess its malignancy and rate of growth. Physicians and scientists at KMC are studying PET both in terms of its clinical efficacy and cost effectiveness. Ongoing research includes a study on the use of PET in certain breast cancers and its ability to preclude the often disabling axillary dissections. A phase I trial is exploring PET and neuroblastoma. Another study is exploring the ability of radioactive amino acid to detect recurring brain cancer.

According to Richard Reiling, M.D., a surgeon and medical director of the KMC oncology program, third-party payers are becoming increasingly more attuned to such studies, especially those cases in which PET obviates the need for more invasive testing and/or procedures. According to Reiling, a well-justified PET scan can often preclude many invasive and non-invasive testing such as CAT scans, bronchotomies, and lung biopsies. In such instances, the PET scan, which at first glance may seem cost prohibitive, is actually capable of saving an institution—and payers—thousands of dollars per case. Currently KMC receives third-party reimbursement for the use of PET scan in the diagnosis of solitary pulmonary nodules.

In addition, Kettering Medical Center is one of only eight centers in the nation performing surgery of brain tumors using the "Viewing Wand," a state-of-the-art computer that is used in conjunction with CT, MRI, and PET. The CT and MRI pinpoint the size and location of the brain lesion; PET identifies the most aggressive portion of the tumor to be removed. Using PET in conjunction with the wand allows surgeons to more accurately

remove malignancies with less damage to the surrounding brain tissue. Later this year KMC plans to add gamma knife for treatment of primary tumors and metastases of brain and head cancers.

ONCOLOGY COORDINATION

Implementation of the PET program has required a high level of coordination among various departments, such as radiology and nuclear medicine, involved in the treatment of patients with cancer. As manager of the oncology service line, Sally Kash, M.S., R.N., works closely with departmental directors to coordinate the overlapping components of the oncology program across the entire hospital system.

The oncology service line was developed in 1992 at a time when KMC's local market share was increasing. KMC administration had determined that establishing one dedicated person to look specifically at cancer services overall would better position the KMC cancer program in serving a growing community. "Previously the departments had no formal links for coordinating care for one of KMC's fastest growing patient populations," Kash said. According to Kash, the establishment of patient management guidelines has encouraged medical and radiation oncologists, surgeons, and other members of the interdisciplinary oncology team to consider their decisions and actions in terms of their effect on the program as a whole.

Implementation of the oncology service line has since strengthened KMC's transformation into a regional network meeting a variety of community needs. In 1996 KMC affiliated with Grandview Medical Center, also in Dayton, to form the

Alliance for Health of Southwest Ohio. Together the hospitals operate a 14,000 square-foot Alliance for Health Cancer Center, the only facility in South Dayton equipped to provide a full range of radiation therapy treatment options in one location. This partnership allows patients to receive radiation therapy either at KMC or the Alliance Cancer Center.

For more than twelve years, the Kettering Breast Evaluation Centers (KBEC) have provided women in the Dayton community with easy access to mammography, education, and other services related to breast health. The KBECs were the first in the area to provide mammography services beyond the hospital's walls and in the communities where people live, stated Gena Middleton, M.S., R.N., O.C.N., oncology nurse specialist. As a result, "the KBECs have helped women incorporate breast health as part of their everyday lives," she said.

KMC is also part of the Dayton Clinical Oncology Program, a consortium of eight hospitals in southwestern Ohio. Through the DCOP, KMC has been able to offer its patients access to the recent five-year Breast Cancer Prevention Trial, the seven-year Prostate Cancer Prevention Trial, and numerous others.

Any clinical trials program is dependent on the support of physicians, conceded Reiling. The KMC administration has developed a number of partnerships and alliances with physicians to promote cooperation and participation in clinical trials as well as other KMC programs and services. It is this level of collaboration that Reiling attributes to "an enhanced level of care for patients." ■