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Christiana Care one of 20 providing advanced treatment *TINY MICROSPHERES DELIVER IRRADIATION*

WILMINGTON, DE (July 22, 2003) Patients diagnosed with liver cancer now have another promising treatment option, thanks to the recent availability of a marvel known as Selective Internal Radiation Therapy at Christiana Care. Christiana Care is one of fewer than 20 health systems nationwide using the treatment. The FDA-approved therapy is named SIR-Spheres®. It uses radioactive "microspheres," tiny ceramic or gel-like orbs that contain and emit beta radiation, to attack tumors in the liver. The first Christiana Care patient to receive SIR-Spheres treatment, on June 12, was referred by his oncologist for evaluation and potential treatment by the cancer team of the Hepatobiliary and Pancreatic Cancer Multidisciplinary Center at the Christiana Care Helen F. Graham Cancer Center. This Multidisciplinary Center team consists of a surgeon, medical oncologist, radiation oncologist, gastroenterologist, radiologist, cancer care oncology nurse and a clinical trials research nurse. The patients are able to meet these individuals in one visit at the Helen F. Graham Cancer Center.

SIR-Spheres is the result of a new field of research known as "small particle technology" that puts Christiana Care on the cutting edge of treatment of liver cancer, along with a select group of health systems nationwide. The tiny microspheres contain the radioactive element Yttrium-90, which is delivered to liver tumors in such a way as to be capable of destroying cancer while leaving most normal liver tissue relatively unaffected. Interventional radiologists infuse the microspheres into the patient's hepatic artery through a small catheter. The SIR-Spheres then travel into the liver, where they become trapped in the small blood vessels of the tumor and irradiate it.

Part of the beauty of the technology," according to Michael Dignazio, M.D., interventional radiologist who performed the procedure, "is that it is not dependent on either the number or location of the tumors within the liver. The SIR-Spheres will target them regardless of where they are." The microspheres rely on the natural blood flow activity that takes place in the liver to target cancer. "Healthy liver tissue receives the vast majority of its blood supply through the portal vein and much less from the hepatic artery," Dignazio explains. "But in liver tumors, it's the reverse: blood is almost exclusively supplied by the hepatic artery. Catheterization of this artery permits the

targeting of therapeutic material to treat the liver cancer. The SIR-Spheres are small enough to pass through the larger blood vessels, but too large to get through the tumor capillary beds, where they become lodged, and begin to irradiate all the surrounding cancer.”

Some limited concurrent radiation to adjacent normal liver tissue occurs. But in comparison with healthy tissue, tumors are estimated to receive about 30 times more radiation. Furthermore, radiation delivered internally through the SIR-Spheres can achieve doses much higher than traditional external radiation therapy, with less toxicity. Following decay of the Yttrium-90, the inert microspheres remain implanted in tissue. According to information posted on the manufacturer’s Web site (www.sirtex.com), SIR-Spheres are currently being used to treat many hundreds of patients with liver cancer, including people in the United States, Australia, New Zealand, Europe and Asia. The therapy has survived rigorous scientific protocols in major teaching hospitals and cancer centers around the world, and Phase I, II and III trials have been completed. Generally, patients with secondary liver cancer are treated with SIR-Spheres during an interval of conventional intravenous chemo-therapy, while patients with primary liver cancer (non-metastatic) are treated using SIR-Spheres alone. The results for both groups of patients have shown response rates higher than other forms of treatment, with some patients currently reaching survival rates up to 27 months post procedure. Additionally, interventional radiologists have noted that SIR-Spheres, when combined with other appropriate cancer treatment therapies, can “downstage” liver cancer in some patients to the point where surgeons can then remove and cure the disease.

Christiana Care Health System, which traces its roots back to 1888, is one of the region's largest not-for profit health care providers, serving the people of Delaware as well as neighboring Maryland, Pennsylvania and New Jersey. A teaching hospital, Christiana Care is recognized as a regional center for excellence in cardiology, cancer and women's health services, as well as Level-I trauma care and Level-3 neonatal intensive care (both highest intensity). Christiana Care operates two hospitals, long-term and transitional care services and an extensive range of outpatient and home health services. Last year, Christiana Care provided \$42.8 million of charity care.