

**Technology and Equipment  
Committee Meeting**

**Gamma Knife  
Material**

**April 21, 2008**

## Gamma Knife

### Definition

"Gamma Knife," as defined in General Statute § 131E-176(7c), means "equipment which emits photon beams from a stationary radioactive cobalt source to treat lesions deep within the brain and is one type of stereotactic radiosurgery."

Two types of equipment, both using photon beams, are available for performing this kind of radiosurgery. In one type, LINAC, beams from a linear accelerator are focused from a device that rotates around the patient. The other type of equipment, gamma knife, emits 201 beams from stationary radioactive cobalt sources.

### Facility Inventory-Service Volume

Gamma knife fixed and movable equipment capital costs exceed \$3,500,000. In the 2008 Hospital Licensure Renewal Applications, which reflect 2007 data, there are nine linear accelerators in seven different locations in North Carolina reported as being operational and providing stereotactic radiosurgery treatment: Carolinas Medical Center (118 procedures); CMC-NorthEast (62 CyberKnife procedures); Duke University Hospital (170 procedures on two linacs); Memorial Mission Hospital (248 CyberKnife procedures); Pitt County Memorial Hospital (48 procedures on two linacs); UNC Hospitals (98 CyberKnife procedures); and Wake Forest University Baptist Medical Center (11 procedures). There is one gamma knife that was approved for acquisition pursuant to Policy AC-3 of the 1998 SMFP. The approved unit is located at Wake Forest University Baptist Medical Center, and became operational effective September 1, 1999. During FY 2006-07, 322 gamma knife procedures were reported. Pitt County Memorial Hospital received a Certificate of Need pursuant to a need determination in the 2003 State Medical Facilities Plan (SMFP) for one gamma knife to serve the eastern portion of the state (HSAs IV, V and VI). Pitt began offering service as of October 2005. During FY 2006-07, 119 gamma knife procedures were reported.

### Gamma Knife Need Determination Methodology

The gamma knife located at Wake Forest University Baptist Medical Center in HSA II serves the western portion of the state (HSAs I, II, and III). The gamma knife located at Pitt County Memorial Hospital in HSA VI serves the eastern portion of the state (HSAs IV, V and VI). The two gamma knives assure that the western and eastern portions of the state have equal access to gamma knife services.

There is adequate capacity and geographical accessibility for gamma knife services in the State.

### Need Determination

It is determined that there is no need for an additional gamma knife anywhere in the state.

**Table 9E: Need Determination for Additional Gamma Knife**  
(Scheduled for Certificate of Need Review during 2008)

Gamma Knife Planning Region	HSA	Gamma Knife Need Determination*	CON Application Due Date**	CON Beginning Review Date
It is determined that there is no need for an additional gamma knife anywhere in the State.				

\* Need determinations as shown in this document may be increased or decreased during the year  
State Policy GEN-2 (See Chapter 4)