

Appendix E.— National Guidelines for Health Planning: Standards for CT Scanners (Federal Register, March 28, 1978)

Section 5121.210 Computed Tomographic Scanners

(a) Standard. A computed tomographic (CT) scanner (head and body) should operate at a minimum of 2,500 medically necessary patient procedures per year, for the second year of its operation and thereafter.

(2) There should be no additional scanners approved unless each existing scanner in the health service area is performing at a rate greater than 2,500 medically necessary patient procedures per year.

(3) There should be no additional scanners approved unless the operators of the proposed equipment will set in place data collection and utilization review systems.

(b) Discussion. Because CT scanners are expensive to purchase, maintain, and staff, every effort must be made to contain costs while providing an acceptable level of service. Intensive utilization of existing units, regardless of location, will prevent needless duplication and limit unnecessary health care costs.

Estimates and surveys for efficient utilization of CT scanners range from 1,800 to over 4,000 patient procedures a year. (One patient procedure includes, during a single visit, the initial scan plus any necessary additional scans of the same anatomic area of diagnostic interest.)

The Institute of Medicine, the Office of Technology Assessment, and others have carefully reviewed these data and the capabilities of various available units. The Department has reviewed these analyses as well as the extensive literature that has been developed on CT scanners.

In arriving at a standard for the use of these machines, the Department has considered a variety of factors, including the difference in time required for head scans and body scans, the need for multiple scans in some patient examinations, variations in patient mix, the special needs of children, time required for maintenance, and staffing requirements. Moreover, the Department considered the actual operating experience of hospitals and institutions reflected in reports on the use of CT scanners.

The standard set in the Department's guidelines is intended to assure effective utilization and reasonable cost for CT scanning. These machines are expensive, and therefore must be used at levels of high efficiency, if excessive costs are to be limited.

The Department recognizes that the cost of some machines is declining, particularly those that perform only head scans which require less time. For machines that do predominantly head scans, the standard represents an efficient but more easily attainable level of utilization.

For scanners capable of performing both head and body scans, it is imperative that they be effectively used in order to spread the high capital expenditures over as much operating time as possible. As the Institute of Medicine report stated, "The high fixed cost of operating a scanner argue for as high a volume of use as the equipment allows without jeopardizing the quality of care."

The Department believes that a .50- to 55-hour operating week is both consistent with the actual operating experience of many hospitals and a reasonable target. Based on reported experience for the time required for both head scans and body scans, the Department estimated that a patient mix of about 60-percent head scans and about 40-percent body scans, making allowance for the other factors identified above, would allow a CT scanner to perform about 2,500 patient procedures per year if it is efficiently used about 50 to 55 hours per week. This estimate assumes a higher percent of body scans than is currently being performed. If fewer than 40-percent body scans are performed, then 2,500 patient procedures would involve less than 50 to 55 hours per week. Basing the standard on a higher percentage of body scans also takes account of current trends toward increased proportions of such scans.

The Department believes that sharing arrangements in the use of CT scanners is desirable, in line with the national health priorities of section 1502. Individual institutions or providers should not acquire new machines until existing capacity is being well utilized.

In planning for CT scanners, the health systems agency should take into consideration special circumstances such as: 1) an institution with more than one scanner where the combined average annual number of procedures is greater than 2,500 per scanner although the unit doing primarily body scans is operating at less than 2,500 patient procedures per year; 2) units which are, or will be, devoting a significant portion of time to fixed protocol institutionally approved research projects; and 3) units which are,

or will be, servicing predominantly seriously sick and pediatric patients.

A summary of the data collected on CT scanners should be submitted by the operators to the appropriate health systems agency to enable it to

adequately plan the distribution and use of CT scanners in the area. The data to be collected should include information on utilization and a description of the operations of a utilization review program.