Positron Emission Tomography
Report #3

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Primary Objective: To assess VA’s experience with and use of positron emission tomography (PET), and to determine whether VA should establish additional PET centers.

Methods Used: Surveys and site visits of VA PET centers to collect information on PET imaging utilization, center operations, and research activities; systematic review of published literature of PET in diagnosing selected cancers (head and neck, breast, lung, solitary pulmonary nodules, colorectal) and Alzheimer’s disease.

Background: PET is a nuclear medicine imaging technology that is recognized as a valuable basic research tool, with possible clinical diagnostic applications. VA has made a substantial resource commitment to its PET imaging facilities.

Key Findings: VA researchers widely credited PET as an important basic research tool; • research into the clinical utility of PET for selected conditions is in its preliminary stages; • methodological weaknesses seriously limit the validity and generalizability of available evidence; • critical research into defining the clinical consequences of using PET for diagnosis has yet to be performed or reported; • a wide range of research and clinical activities in VA PET centers remain largely uncoordinated.

Conclusions/Recommendations: VA should not invest in additional PET centers at the present time. Rather, it should maximize the value of its existing commitment, which could include:

• implementing a VA PET registry;
• organizing a cooperative group of VA PET centers and their academic affiliates to identify research needs and design multi-center studies;
• supporting rigorous, prospectively designed studies that expand the body of PET literature in a manner that is methodologically sound; and
• submitting currently unpublished data from studies of high methodologic quality for peer review.