

**Veterans Health Administration response to the inadequate prostate implants performed at the Philadelphia VA Medical Center**

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**Introduction**

Self-initiated, internal investigations by the Veterans Health Administration (VHA) of our prostate brachytherapy programs identified a number of inadequate procedures that were performed at two medical centers: VA Medical Center, Philadelphia, Pennsylvania, and G. V. (Sonny) Montgomery VA Medical Center, Jackson, Mississippi. Senior healthcare managers at both medical centers promptly suspended these prostate brachytherapy programs (i.e., Philadelphia June 11, 2008 and Jackson, September 18, 2008), while verifying follow-up care of the involved Veterans. Cancer relapse-free survival is 90% at PVAMC and 93% at Jackson, results which are as expected for this form of treatment.

VHA completed detailed examinations of each of its prostate brachytherapy programs; identified root causes of performance errors; and implemented the comprehensive corrective actions, which I will detail. Close coordination with the NRC has occurred at every step.

**Background**

On May 12, 2008, staff at the Philadelphia VAMC contacted the VHA National Health Physics Program, (NHPP), our VHA internal regulators, about an error in seed activity for a prostate implant. After performing a follow-up dose assessment, a medical event was discovered on May 15 and on May 16 reported to the NRC Operations Center. NHPP verified the circumstances of the reported medical event via a prima facie site inspection. This regulatory inspection resulted in a promptly initiated, complete review of the entire prostate brachytherapy program at PVAMC.

The national regulatory setting under which this NHPP inspection was conducted is germane to this discussion and bears some mention. Responding to a 2005 report from its medical advisory committee (ACMUI), which identified substantial difficulties with the medical event reporting for these particular implants, NRC was at the time of the events in Philadelphia revising regulations to define methods for medical event reporting for volume implants of the prostate.

The NHPP Director, however, needed to employ a defined metric for the Philadelphia evaluation and for evaluations for other VHA facilities. The metric selected was an absorbed-dose metric offered by the NRC in a 2004 TAR posted on the NRC public Web site. The 2004 TAR advised the use of an absorbed-dose metric, the D90-value, for doses below the planned prescription dose, but cautioned the same metric was inappropriate for doses above the prescription dose.

Unfortunately, it was in part the inherent contradictions in the 2004 TAR, which had prompted the ACMUI meetings in 2005, which led to the eventual report mentioned earlier - a report which proscribed the use of absorbed dose metrics for a volume implant.

Thus, it was with a flawed metric, ultimately compounded with a faulty, retrospective application of that metric that the VHA facilities and NHPP proceeded. I will return to this issue.

## **VHA evaluation and actions re: volume implants of the prostate at VHA sites**

### **Initial actions**

Over the initial 6 months after the medical event was reported for Philadelphia, the VHA initiated or completed the following actions:

1. Coordinated with NRC, Region III, for corrective actions which resulted in an agreed upon 7-point process identified within a Confirmatory Action Letter (CAL).
2. Conducted a 100% evaluation of the Philadelphia prostate brachytherapy program including NHPP issuing an inspection report which cited escalated enforcement.
3. Performed serial 10-case reviews of each of the 14 other extant or former VHA prostate brachytherapy programs.
4. VHA's VISN 4 convened an administrative board for root cause analysis at Philadelphia.
5. VHA Associate Deputy Under Secretary for Health for Quality and Safety convened the Clinical Risk Assessment Advisory Board (CRAAB) for prostate brachytherapy.
6. A specific administrative board, chaired by Dr. J. Bagian, reviewed all issues related to connectivity between treatment platforms and diagnostic imaging within the VHA.

### **CAL related actions**

The CAL process, which included NHPP evaluating the "extent of condition" within the VHA, established requirements for standardized brachytherapy and brachytherapy program procedures within the VHA. The process included the following actions:

1. VHA conducted reactive inspections at active prostate brachytherapy programs, which were completed in January 2009.
2. VHA developed and implemented standard procedures for conducting prostate brachytherapy treatments for all VHA facilities authorized to perform these treatments. These procedures were issued in January 2009. The facilities confirmed implementation in May 2009.
3. VHA corrected the incompatible data transmission problems identified at Philadelphia and Jackson. After verifying that the data transmission problems had been corrected by both facilities before the CAL was issued, VHA committed to re-confirm adequate connectivity prior to either facility restarting these treatments.
4. VHA identified the root causes and implemented corrective actions to prevent recurrence of these medical events. Multiple reviews and evaluations of both Philadelphia and Jackson have concluded that the lack of appropriate programs for quality assessment led to failures both to recognize and to correct faulty implants at each of these centers.

Corrective actions, which establish a comprehensive program of quality assessment, have been incorporated into the VHA Standard Procedures for Prostate Brachytherapy. As I indicated earlier, implementation of the VHA standard procedures has been verified for each program. Compliance with these procedures, documented for each implant by the authorized user and the center's radiation safety committee, is also verified annually by on-site inspections.

5. VHA immediately suspends programs where medical events are identified for 20% or greater of treatments performed. VHA developed enhanced suspension criteria. The VHA National Radiation Safety Committee approved "suspend criteria" on November 13, 2008. These criteria have not had to be used. The four programs that were considered suspended by VHA ceased prostate brachytherapy before formal criteria were approved.
6. VHA will confirm by NHPP inspection prior to restart, the implementation of all corrective actions and notify the NRC. This restart process was completed for the recently restarted program at VA Medical Center, Cincinnati. Restarts are not anticipated for the remaining three suspended programs.
7. VHA will confirm by NHPP inspection prior to initiation, that any new program within the VHA has fully implemented the VHA standard procedures and that individuals performing these procedures have received the training indicated within the CAL.

To date, no new programs have been initiated.

As a result of the external review efforts a total of 19 medical events were reported from the other VHA facilities. Ten of these from the Jackson VAMC may stand. A complete review of all Jackson cases is nearing completion. Nine of these MEs from two other programs are related to the ME definition and will not be upheld. In addition, three other medical events have been reported from facilities after the initial round of inspections. Each of these three is related to a confused ME definition and should ultimately be retracted.

### **Actions since Jan 2009**

As a response, in part, to these efforts I was named in January 2009 as the National Director of Radiation Oncology for the VHA. At that time the final reporting from the medical center at Philadelphia was under internal review. I noted that reporting from this medical center was based on a flawed application of the D90 metric. This same flawed application had occurred for the evaluation of Cincinnati and was to be used for Jackson.

With the controversial use of the D90 metric, so-called, and the absence of published criteria for determining the expected dose to other organs and tissues, required by 10 CFR 35.3045(c), I asked the VHA Under Secretary for Health (USH) to convene a panel of nationally recognized brachtherapy scholars to advise the VHA regarding medical event criteria for these prostate brachytherapy procedures.

This panel, meeting initially on September 3, 2009, issued their recommendations to the USH on December 8, 2009. These recommendations were evaluated by the VHA National Radiation Safety Committee, which recommended their use. On January 14, 2010, the NRSC approved these ME criteria both for review of previously reported medical events and as criteria to evaluate any future prostate brachytherapy procedures.

The previously reported medical events at Philadelphia were immediately re-reviewed under these criteria verifying that medical events had occurred. This review indicated, however, that ME from Philadelphia had been vastly over-reported. On this basis, the NHPP sent a request to NRC, Region III, to retract those inappropriately reported medical events. In the inspection report issued for Philadelphia, NRC rejected the new metric. This month, the Office of the Inspector General reported on prostate brachytherapy at the PVAMC. The report confirming the absence of effective quality assurance at the PVAMC and the JVAMC, also noted that the D90 metric used for the evaluation of the Philadelphia program appeared to be without merit.

## **On-going actions**

In coordination with the NRC, VHA will establish and verify workable ME criteria for prostate volume implants. Largely completed, this effort includes the following projects.

1. Develop the first data ever presented to address NRC reporting requirement 10 CFR 35.3045(c). Develop with the ITC and RTOG, the database and technical report to provide for national use “expected doses to other organs and tissues associated with prostate volume implant brachytherapy.”
2. Conclude the external review of all prostate brachytherapy procedures at the Jackson VAMC. The review is being completed by a national quality assurance center for radiation oncology.
3. Develop and implement a training module for the new ME criteria. A training module has been created.

My office, which has developed credentialing guidelines for prostate brachytherapy to be used by the VAMC P&C Committees, is working with similar efforts underway in the relevant professional organizations.

In coordination with the NCI radiation oncology quality assurance Program Manager, my office will contract for periodic on-site reviews by the Radiologic Physics Center of medical physics operations within the VHA.

In an effort to reduce the likelihood of isolated practice patterns, VHA now requires that, in addition to the VHA standard procedures requirement for internal quality assessment, each program providing these procedures have a minimum of 10 cases annually reviewed externally.

## **Summary**

As a result of these oversight and evaluation processes by VHA, prostate brachytherapy procedures within the VHA are the most rigorous in our industry. Unfortunately, this problematic initial evaluation of the Philadelphia treatments and its sensationalization by the press, may have produced an unintended chilling effect on prostate brachytherapy procedures nationwide.

It is incumbent of those of us who guide these clinical and regulatory processes to insure these therapies are well-designed and safely administered. Investigations by the VHA and OIG have noted that the Veterans at PVAMC and Jackson VAMC are doing well, yet the initial regulatory evaluations have been quite troubling. While the VA’s response to Philadelphia has been both comprehensive and thoroughly coordinated with the NRC, I have described errors in this process - flaws VHA has addressed by reaching out to the country’s radiation oncology leaders.

This is an important juncture with national implications. Truth, not time, is of the essence when an unwise or inappropriate assessment may eliminate a very useful and safe therapy.