

The number of prostate cancer patients receiving I-125 and Pd-103 seed therapy implants is projected to increase to over 200,000 by 2003. The objective of this study is to provide absorbed dose estimates for the spouse and co-workers who may be in close proximity for extended periods with these patients. The treatment volume of the prostate is assumed to contain either 45 mCi I-125 or 150 mCi Pd-103 and located at an effective depth of 10 cm in the pelvis. The spouse is assumed to spend an average of 8 hours per day at 1 meter from the radioactive source, and her uterus is assumed to be 10 cm deep in the pelvis. The residence times for I-125 and Pd-103 were calculated assuming decay to zero in the prostate. The half value layers for the 28 and 21 KeV photons emitted by I-125 and Pd-103 were taken as 2.0 and 1.3 cm in soft tissue respectively. For I-125 and Pd-103, the maximum skin entry dose rates at 1 meter were calculated to be 0.15 and 0.09 mR/h, and the corresponding integrated doses 108 and 59 mrem. The integrated uterus dose estimates for I-125 and Pd-103 were 3.0 and 0.08 mem. These estimates indicate that the spouse and members of the public will receive whole body doses from these implant patients that are an order of magnitude lower than natural background radiation levels. Consequently these patients should not be considered a radiation hazard for the spouse or the general public.