In prostate implant, radioactive seeds are implanted into the prostate through a guiding needle with the help of a template and real-time imaging. The ideal locations of the guiding needles and the relative positions of the seeds in the needles are determined before the implantation under the assumption that the needles at different locations will remain parallel. In actual implantation, the direction of the needle is subjected to variations. To examine the dosimetric consequences of these variations, dose distributions were calculated for needle divergence angles of 0, 10, 15, and $20^0$ in typical $^{125}I$ and $^{103}Pd$ implants. The needle divergence created both under-dosage and over-dosage, which was found to depend on seed spacing, target volume and use of margin. However, the choice of radioisotope, i.e. $^{103}Pd$ versus $^{125}I$, did not matter. The implants with a seed spacing of 0.5 cm were more affected by needle divergence than those with a 1.0 cm spacing. The under-dosage effect was essentially the same for target diameters of 3 and 4 cm, but was much larger for implant diameter of 5 cm. Use of a margin around the target volume also made the implant more susceptible to the effect of needle divergence.