

Ultrasound guided transperineal prostate implants using either  $^{125}\text{I}$  or  $^{103}\text{Pd}$  seeds have recently become very popular. TG-43 of AAPM recommended a new protocol for the dosimetry of interstitial sources. It has been pointed out that for model 6711  $^{125}\text{I}$  seed there is an 11% difference in dose using TG-43 data and the values based on the work of Ling *et al*. The work by Ling *et al* has been reexamined to find the cause of this discrepancy. Ling *et al* proposed the use of equation  $D(r)=A.\Gamma.f.\zeta(r).\phi_{an}.(1/r^2)$  where  $\zeta(r)$  is the measured relative dose distribution factor in water, normalized to 1.0 at 1.0 cm along the seed transverse direction. In the conventional formalism,  $D(r)=A.\Gamma.f_{med}.T(r).\phi_{an}.(1/r^2)$  where  $T(r)$  is the tissue attenuation and scatter factor. The two equations are equivalent except Ling *et al* proposed the use of  $\zeta(r)$  instead of  $T(r)$ . Relative dose distribution factor  $\zeta(r)$  is similar to the radial dose function  $g(r)$  in TG-43. According to TG-43,  $g(r) = T(r)/T(r_0)$ . Since measured values of  $T(r)$  for model 6711  $^{125}\text{I}$  are not available, they have been calculated. The use of  $T(r)$  instead of  $\zeta(r)$  in dose calculation around  $^{125}\text{I}$  seed will produce differences of 17%, 15% and 9% at distances of 1 cm, 2 cm and 5 cm, respectively. Implications of these differences on dose distributions around  $^{125}\text{I}$  implants will be addressed.