A variety of source forms and radionuclides are under investigation for use in intravascular brachytherapy to prevent restenosis following balloon angioplasty procedures. The source forms include solid seeds, wires, ribbons, and stents. The radioactivity content of these is needed to verify theoretical calculations of depth dose. NIST has developed methods for accurate measurement of several of these sources by dissolution of the solid source followed by liquid-scintillation beta-particle counting. Examples will be given for P-32 and Sr-90. Source forms also include a number of fluid-filled balloons. In this instance the activity content is the primary measurement on which dosimetry is based. NIST has developed methods of measuring the activity and compared these with theoretical calculations and GafChromic film dosimetry for Xe-133 gas-filled catheters, Tc-99m in a perfusion catheter, and a number of high-energy beta-emitters in solution-filled catheters including Y-90 and Re-188. NIST radioactivity standards of these radionuclides are based on internal gas proportional counting (Xe-133), electron-gamma-ray coincidence counting (Tc-99m) and beta-particle liquid scintillation counting (Re-186, Re-188, Ho-166 and Y-90). This talk will concentrate on the activity measurements for these radionuclides, calibrations of the transfer instruments, and measurements of the delivered activity. Instruments used in measuring the delivered activity include dose calibrators, gamma counters and phosphoimaging detectors. The efficacy of many of the new sources under investigation will hinge on accurate measurements of the depth dose in tissue. For most of these sources it is critical to start with an accurate specification of the source activity. The methods and techniques described in this talk will find wide applicability in experimental intravascular brachytherapy.