The boron neutron capture (BNC) research program at Harper Hospital in Detroit is geared towards improved BNC dosimetry and the use of BNC in BNC enhanced fast neutron therapy (BNCEFNT). Complementary dosimetry techniques such as paired A-150/Mg ion chambers, paired A-150/A-150+^{10}B proportional counters, ^{6}LiF TLD's, ^{10}B coated Mg ion chambers, GM tubes, foil activation, etc., have been developed to measure the various dose components in beams designed for BNCEFNT, and their radiation quality. Dosimetry intercomparison studies have been performed in a d(48.5) + Be fast neutron beam and several modified d(48.5) + Be beams to gain a better understanding of the dose-response of these detectors. Significant differences in the boron dose measured by the different detectors have been observed. BNCEFNT for glioblastoma multiforme (GBM) is based on the premise that a sufficiently large tumor boost obtained by combining BNC with a modified fast neutron beam will result in tumor sterilization with a therapeutic gain (TG) greater than one. Preliminary physics studies have been performed to test the feasibility of BNCEFNT in the d(48.5) + Be fast neutron beam. We have observed that approximately 20 cm of steel or tungsten can sufficiently modify this beam to produce a biological tumor dose enhancement of about 30% over the range of clinically relevant depths, for commonly reported ^{10}B concentrations in tumor and brain. Clinical implications of these results and practical considerations in patient treatment are discussed.