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Host Institution: Fondazione Policlinico Universitario Agostino Gemelli IRCCS,  
Rome, Italy

### **Developing image adapted interventional radiotherapy (brachytherapy) skills in definitive as well as palliative management of malignancy**

Application of radioactive source in close proximity to a tumour is conceptually straightforward but is fraught with challenges in execution which requires adequate image guidance and operating room skills. Brachytherapy application in management of malignancies requires knowledge and skill to a certain level for optimum results. Outcome of brachytherapy is primarily influenced by the geometry of application which in turn depends upon anatomical knowledge and expertise in placing implants. The learning curve in this oncological specialty demands adequate exposure and training like many other skilled practices in medicine. Management of malignant tumours by brachytherapy though effective and cheap is waning across globe due to dwindling expertise resulting from gradually diminishing training.

This fellowship will allow me to receive training from the reputed Gemelli Advanced Radiotherapy Center, Rome Italy. It will be an interactive training session of 4 weeks duration in the course of which there shall be guided participation in center's clinical activities. The scope of training is wide and covers all most all malignancies and organ systems; focus shall be on interstitial brachytherapy of head & neck, prostate, gynaecological malignancies and intraluminal brachytherapy of cholangiocarcinoma. The skill development shall include interactive participation in the operation room procedures, practical exercitation on dummies, treatment planning exercises on TPS and front teaching lectures.

The training is expected to improve skills incorporating all aspects of patient care by brachytherapy, starting from identifying the right patient/tumor characteristics to insertion of implant and optimizing dose distribution and brachytherapy plan. Identification and management of morbidities resulting thereof shall be an integral part of the training. The overall improvement in knowledge and skill pertaining to application of brachytherapy in management of malignancies will be highly contributory in setting up a programme in developing country like India where the expertise for above has faded in recent times. It not only will revive a situation specific alternative to External Beam Radiotherapy [EBRT]; but also will save cost and time in resource constrained setup.