

Figure 1 - Addressing the challenges to design and deliver PBT clinical trials

i] Identify the scientific question – Determine the primary aim of the proposed study

ii] Clinical trial design and methodology – Develop a network of clinical trial units to work with investigators to optimise study design.

iii] Patient and public involvement and equipoise – Use the very strong Patient and Public Involvement in CTRad and site specific groups. Detailed assessment of patient and clinician equipoise.

iv] Disease specific trial development - Engage with the NCRI Clinical Study groups (CSG) for each tumour site. CTRad will host PBT trials workshops.

v] Collaboration and development - Facilitate MalMM and accelerate study development. Encourage the next generation of clinical trial leaders and facilitate senior mentoring. Engage with other countries to identify the opportunities for international recruitment.

vi] Radiotherapy Quality Assurance - Work with the UK RTTQA group to optimise support for the planned clinical studies

vii] Engagement with funding bodies – Work with funders to optimise and prioritise opportunities to fund academic PBT clinical trials.

viii] Translationally rich clinical trials – Evaluate novel therapies in combination with PBT radiotherapy including embedded translational research