National School of Healthcare Science

NHS England

IACC 2023 Case-based discussion (CBD) scenario

Specialty:	Radiotherapy Physics

CBD Scenario

CBD Scenario Title	Radiotherapy Prostate Treatment Planning										
CBD Scenario Aim	Trainee can demonstrate their understanding of the steps required to create a radiotherapy plan for a prostate treatment and can assess the quality of the plan to ensure its suitability to proceed to the checking process.										
CBD Focus (please provide the codes of the module(s) this scenario addresses)	*SPE 103:13*			*SPE 157c2:5*							
GSP Domains covered (enter X to indicate all that apply)	**GSP 1**		**GSP 2**	X	**GSP 3**	X	**GSP 4**		**GSP 5**		
CBD Scenario description	Explain to a new STP trainee the steps taken to generate an external beam treatment plan for a patient undergoing prostate radiotherapy. Include in your explanation: • Any information/documentation you need • Prescription dose/method • Target margins and organs at risk that you need to consider • Treatment modality/technique, beam arrangement, energy, planning objectives • How to appraise the treatment the plan to ensure it is suitable to proceed to checking										
CBD Scenario model answer/ assessor guidance Detailed guidance that will be available for the assessors. Include guidance on what kinds	It is important that assessors recognise that treatment planning methods will vary across training centres and assessors should use their own clinical judgement in their assessment of the trainee, however, the following guidance should be considered:										

of behaviours, actions, comments should secure a pass. What should the assessor expect to see? Assessors will be asked to plan questions in advance including links to trainee's IACC submission.	• Trainees should refer to some of the following documentation (this list is not exhaustive) - ○ *treatment sheet/consent forms/referral information (may be electronic), medical treatment portfolios, departmental work instructions/process documents, ICRU guidance* • Trainees should be able to give a suitable dose and fractionation 60Gy/20#, 74Gy/37# (other doses may also be appropriate e.g. hypofractionation 36.25Gy/5#, if the trainee is unable to give an appropriate dose/fractionation due to lack of experience with the prostate treatment site then some reference to checking the medical treatment portfolio should be made) Appropriate prescription method should be described e.g. PTV D50% = prescription dose • As a minimum, trainees should be able to demonstrate an understanding of the use treatment margins even if they are unable to give specific values (they may refer to trial or departmental protocols). Trainees should be able to identify key OARs in the prostate region (Bladder, Rectum, Bowel, Femoral Heads, may refer to Penile Bulb, Urethra) • Trainees should be able to describe a suitable beam arrangement for a prostate plan VMAT or IMRT, with appropriate beam energies. They should also be able to describe planning objectives they could use to optimise the dose distribution (eg min/max dose objectives on target volumes, dose volume or EUD objectives on OARs, dose fall off/ring structures on body), position of isocentre could also be discussed. • In describing how to appraise a treatment plan for suitability to proceed for checking, the trainee may refer to ICRU guidance on min/max dose coverage for targets, reviewing DVH or meeting of defined clinical goals (from local or trial protocols), reviewing dose bath/dose spikes in normal tissue.
Trainee instructions Please include any specific information to be provided to the trainee as part of the CBD scenario	

Criteria being assessed by this CBD scenario

Aspect	Please indicate if this criterion is being assessed
1. Understands the clinical context of the scenario, including priority setting and testing strategies	X
2. Understands scientific principles of scenario	
3. Can discuss the relevant procedures involved in the scenario and associated health and safety issues	
4. Understands and applies the appropriate test validation, IQC, EQA, relevant professional/clinical guidelines	X
5. Understands and applies associated IT/bioinformatics and other appropriate resources	
6. Is able to interpret and report patient results and provide appropriate clinical advice	
7. Can discuss the significance of patient results within the clinical context of the referral	
8. Understands the ethical, legal and social implications of the scenario	
9. Is aware of the importance of audit and can use this tool effectively	
10. Output meets accepted laboratory/professional standards	X
11. Demonstrates awareness of the limits of responsibility and when to seek advice	
12. Consideration of patient/professionalism	
13. Overall ability to perform	