Catalan Clinical Audit
Network for Quality Improvement
in Radiotherapy

Infrastructure checklists

Primož Strojan

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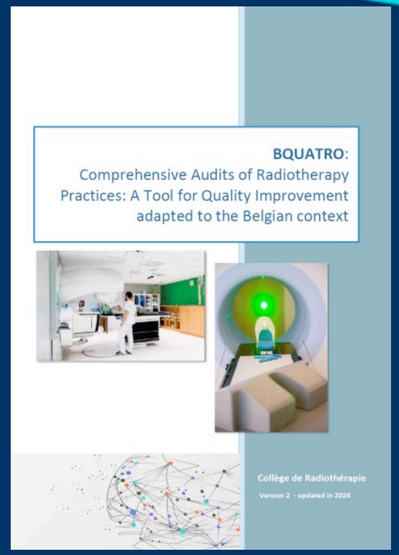
Infrastructure



Checklist number	Item	Link to checklist
A	Infrastructure	Infrastructure
B	Equipment resssources	Equipment resources
C	Human resources	Human resources
D	Workload	Workload

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Department information

Country	
Name of the hospital	
Contact information of the department	
	Head of the department
	Head physicist (MPE)
	Head RTT
	Quality manager
	Other
Dates of the audit	
BQUATRO team	RO
	MPE
	RTT
	QM

Associated satelite sites (N/A if none):

To be completed if the department has a satellite site

SATELITE?

	Department's self-assessment		Auditors' assessment	
Items to be reviewed by the auditor	Evaluation	Comments	Evaluation	Comments
Are simulation procedures carried out in the satellite site?				
Is/are the satellite site(s) connected to the main department within the same network environment and using a common data server?				
Is there a seperate TPS in the satellite site? (*is it interconnected with the main site? Same TPS and version from the main site?*)				
Is there a seperate record and verifiy system? *(is it interconnected with the main site? Same system and version from the main site?)*				
Does the personnel working in the satellite site(s) have the same working conditions as those working in the primary site?				
Is there systematic rotation of staff for ROs?				
Is there systematic rotation of staff for the MPEs?				
Is there systematic rotation of staff for the MPAs?				
Is there systematic rotation of staff for the RTTs?				
Are common staff meetings organized on a daily basis (new patients, TP review)?				
Are the used treatment techniques harmonized between the different departments?				
Are the clinical procedures identical between the satelite department(s) and the main department?				
Is there a single quality management system covering all sites?				

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3.1 Patient demographic

Data to be provided based on one year

Number of new cancer cases (if available)	
Number of patients undergoing RT	
Number of new courses of treatment in RT	
Number of stereotactic treatments	

Types of cancer (primary sites and number)

Primary site	Number

palliative treatment:

Number of treatments with curative intent	
Number of treatment with palliative intent	
Total number of treatments	
Total % of curative treatment courses	#DIV/0!
Total % of palliative treatments courses	#DIV/0!

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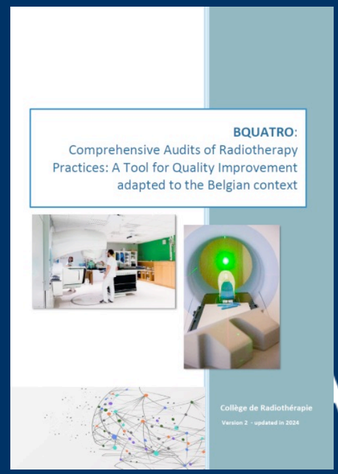
3.1 Patient demographic
TERMINOLOGY

Workload related terminology



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3.2.1 Personnel

Personnel		
Radiation Oncologists		
Number of radiation oncologists		
Number of radiation oncologists, adjusted for FTE		
Minimum number of ROs during treatment hours		
Comments		
Is there a programme for teaching junior medical staff (residents) and students?		
How many residents?		
How many medical students?		
Comments		
Medical Physics (MPE +MPA)		
Number of medical physicists (MPE) in radiotherapy		
Number of Medical Physicist (MPE), adjusted for FTE		
Number of dosimetrist (MPA) in radiotherapy		
Number of dosimetrist (MPA), adjusted for FTE		
Proportion of MPA/MPE (%)	#DIV/0!	
Number of interns/students		
Minimum number of MPEs during treatment hours		
Comments	Free text field	
Radiation therapists (RTT)		
Number of radiation therapists (RTT):		
Number of radiation therapists, adjusted for FTE		
Minimum number of RTTs per each major item of equipment		
Comments	Free text field	

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Quality manager (QM)	
Number of QMs	
Number of QMs, adjusted for FTE	
Please comment	Free text field

Other specialities	
Presence of other staff such as nurses, dieticians, social workers, …within the radiotherapy department?	
Please comment	
Presence of ICT/technicians/engineers…?	
Please comment	Free text field
Is teaching part of routine activity?	
Comments	Free text field
Is research (basic, clinical) p	
Comments	
Are staff allocated to clinical	
Number (number of staff + I	
Comments	
General comments	

Overall Score (auditors' assessment)

Are the department's personnel levels adequate in the context of the department's objectives and operations?	**Overall Score** / **Compliant** / **Partially compliant** / **Non-compliant**
Commendations/Recommendations	

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3.2.2 Departmental operations
3.2.3 Premises

Departmental operation								
Working hours (within the department) of the radiation oncologists:	From		Until:					
medical physicists:	From		Until:					
RTTs:	From		Until:					
Treatment hours of the department:	From		Until:					
Days per week of operation:								
Are emergency radiation services provided after hours?								
General comments on department operation								

Premises	
Location of the radiotherapy department relative to the main hospital:	
	Please specifiy if other

Please comment on the different elements below

Elements	Observations
Treatment rooms	*Free text field*
Control rooms	*Free text field*
Changing rooms/toilets	*Free text field*
Consultation rooms	*Free text field*
Waiting room	*Free text field*
Dosimetry and physics room	*Free text field*
Storage facilities	*Free text field*
Administrative area	*Free text field*

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Other (ex "additional room" for items such as preparing patient immobilisation device, training for DIBH, or small technical tasks such as repairs, 3D-printing, individualised electron inserts)			*Free text field*
Comments on the layout of the department (if any)			*Free text field*
Is there an associated ward?			
Number of beds:	male		
	female		
	paediatric		
	total	0	
Department's proximity to other facilities (including teaching facailities)			Free text field
Is there ease of access to scientific resources(library, medical journals, publications, …)?			
General comments on premises			Free text field

Overall Score (auditors' assessment)

Are the department's premises adequate in the context of the department's objectives and operations?	Overall Score	Compliant	Partially compliant	Non-compliant
Commendations/Recommendations				

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3.2.4 Equipment

Radiation therapy equipment			
EBRT equipment			
Equipment	Type	Commissioning date	Detail and comment on function and location
BT equipment			
Equipment	Type	Commissioning date	Detail and comment on function and location
Imaging equipment			
Equipment	Type	Commissioning date	Detail and comment on function and location

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Treatment planning equipment			
Equipment	**Type**	**Commissioning date**	**Detail and comment on function and location**

Other equipment/facilities	
Equipment	**Observations (Detail and comment on function and location)**
Dosimetry equipment	
Radiotherapy management system (OIS/R&V system)	
Computerized networked imaging	
Patient alignment equipment (IGRT equipment, lasers, SGRT systems...)	
Immobilisation equipment	
Does the institution have an equipment replacement program	
Does the department have a calendar of preventative maintenance?	
Comments	

Overall Score (auditors' assessment)

Is the department's equipment adequate in the context of the department's objectives and operations?	Overall Score: Compliant / Partially compliant / Non-compliant
Commendations/Recommendations	

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orkload

Name of equipment
Sessions (=fractions) per year/machine
Number of patients per machine annually:
Average treatment time, min
Sessions per patient
Number of shifts per working day:
Number of RTTs in shift I
Number of RTTs in shift II
Number of RTTs in shift II
Minimum number of RTTs per shift on machine:
Average number of RTTs per shift on machine:
Comment on complexity of treatments (stereotactic treatment, gating, …)

Type of the unit	
Make & model	
Number of patients treated annually	
Number of applications given annually	
Maximum number of applications in any one day:	
1st most frequent application	
2nd most frequent application	
3rd most frequent application	
Number of shifts	
Number of RTTs per shift	
	Total patients

Number of radiation therapy cases (courses) treated per an
=data encoded in "Patient demographics")
Number of sessions (=fractions) treated per year

0

ernal radiotherapy

Number of External beam radiotherapy machines in the dep

	Mac					chine 6	Machine 7	Machine 8	Machine 9	Machine 10	Machine 11	Machine 12	Machine 13	Machine 14
Name of equipment														
Sessions (=fractions) per year/machine														
Number of patients per machine annually:														
Average treatment time, min														
Sessions per patient						#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Number of shifts per working day:														
Number of RTTs in shift I														
Number of RTTs in shift II														
Number of RTTs in shift II														
Minimum number of RTTs per shift on machine:	No D					Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Average number of RTTs per shift on machine:	No Data	No Data	No Data	No Data	No Data	Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Comment on complexity of treatments (stereotactic treatment, gating, …)														

EBRT summary	
Sessions per year	0
Number of patients on all machines per year	
Average sessions per patient	
Average treatment time, min	
Average number of RTTs per shift	

Brachytherapy

Number of brachytherapy machines in the department

	Mac					chine 6	Machine 7
Type of the unit	LDR					R	LDR
Make & model							
Number of patients treated annually							
Number of applications given annually							
Maximum number of applications in any one day:							
1st most frequent application							
2nd most frequent application							
3rd most frequent application							
Number of shifts							
Number of RTTs per shift							
Total patients							

Brachytherapy summary	
Applications per year	0
Number of patients on all machines per year	0
Average applications per patient	#DIV/0!

Annual total of CT and MR only scans performed for planning purposes:
Annual total of simulations performed:
Annual number of approved treatment plans generated by computer treatment planning:

Imaging and planning

Annual total of CT and MR only scans performed for planning purposes:	
Annual total of simulations performed:	
Annual number of approved treatment plans generated by computer treatment planning:	

Number of new RT patients per radiation oncologist (annually)
Number of courses of treatment per radiation oncologist (annually)
Number of courses of treatment per physicist (MPE) annually
Number of courses of treatment per physicist (MPE) and dosimetrist (MPA) annually
Number of treatment plans per MPE
Number of treatment plans per MPE and MPA
Number of courses of treatment per RTT annually
Number of treatment sessions/fractions per RTT (annually) :

Number of new RT patients per radiation oncologist (annually)				
Number of courses of treatment per radiation oncologist (annually)				
Number of courses of treatment per physicist (MPE) annually				
Number of courses of treatment per physicist (MPE) and dosimetrist (MPA) annually				
Number of treatment plans per MPE				
Number of treatment plans per MPE and MPA				
Number of courses of treatment per RTT annually				
Number of treatment sessions/fractions per RTT (annually) :				

Overall Score (auditors' assessment)

Is the department's workload in accordance with current recommendations?	**Overall Score**	**Compliant**	**Partially compliant**	**Non-compliant**
Commendations/Recommendations				

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Infrastructure

- Infrastructure is relatively easy to assess
- Infrastructure may need interpretation

- Pre-course questionnaire should be filled in by all professions
- The auditor should have a good idea about the infrastructure **prior to the site visit**
- Therefore, the pre-audit questionnaire aims to elicit some of this information

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