



Catalan Clinical Audit
Network for Quality Improvement
in **Radiotherapy**

Quality indicators

Clinical Audits in Radiation Oncology: Training for Auditors and Auditees

Day 4 (13/06/2025)

Aude Vaandering



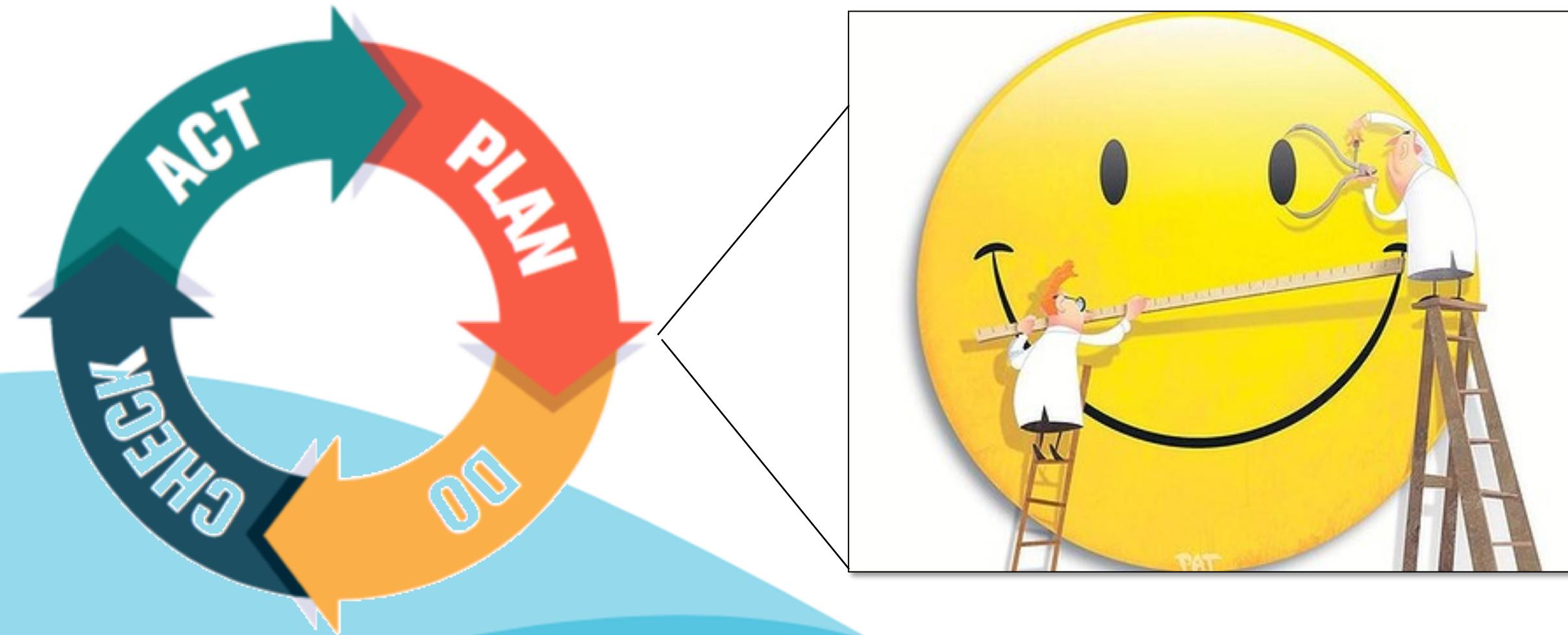
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Definition

A quality indicator is a measurable element that allows for monitoring and evaluating the quality of a specific aspect of a product, service, or process. It can be used to identify strengths and weaknesses, and to guide improvements..

« Measurement tools, screens, or flags that are used as guides to monitor, evaluate, and improve the quality of patient care, clinical support services, and organizational function that affect patient outcomes » (Canadian Council on Health Services Accreditation)



Three types of quality indicators



Structure

Definition	Examples
<p>A structural QI aims at defining the attributes of the settings in which care occurs. This includes material resources, human resources and of organizational structure. (<i>What is the radiotherapy department working with?</i>)</p>	<p>Number of equipment; number of treatments per equipment per year; workload per professional group; imaging capacity of equipment...</p>

Three types of quality indicators



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Examples

Number of equipment; number of treatments per equipment per year; workload per professional group; imaging capacity of equipment...



Process

A process QI aims at denoting what is actually being done during healthcare delivery (*How is the radiotherapy department working? How is a radiotherapy treatment prepared/planned/delivered/monitored?*)

Elapsed time between simulation and treatment; elapsed time for treatment delivery; IGRT practice during treatment delivery; number of consultations during treatment delivery; used fractionation schemes...

Three types of quality indicators



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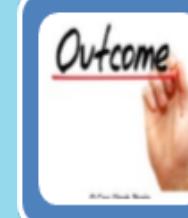
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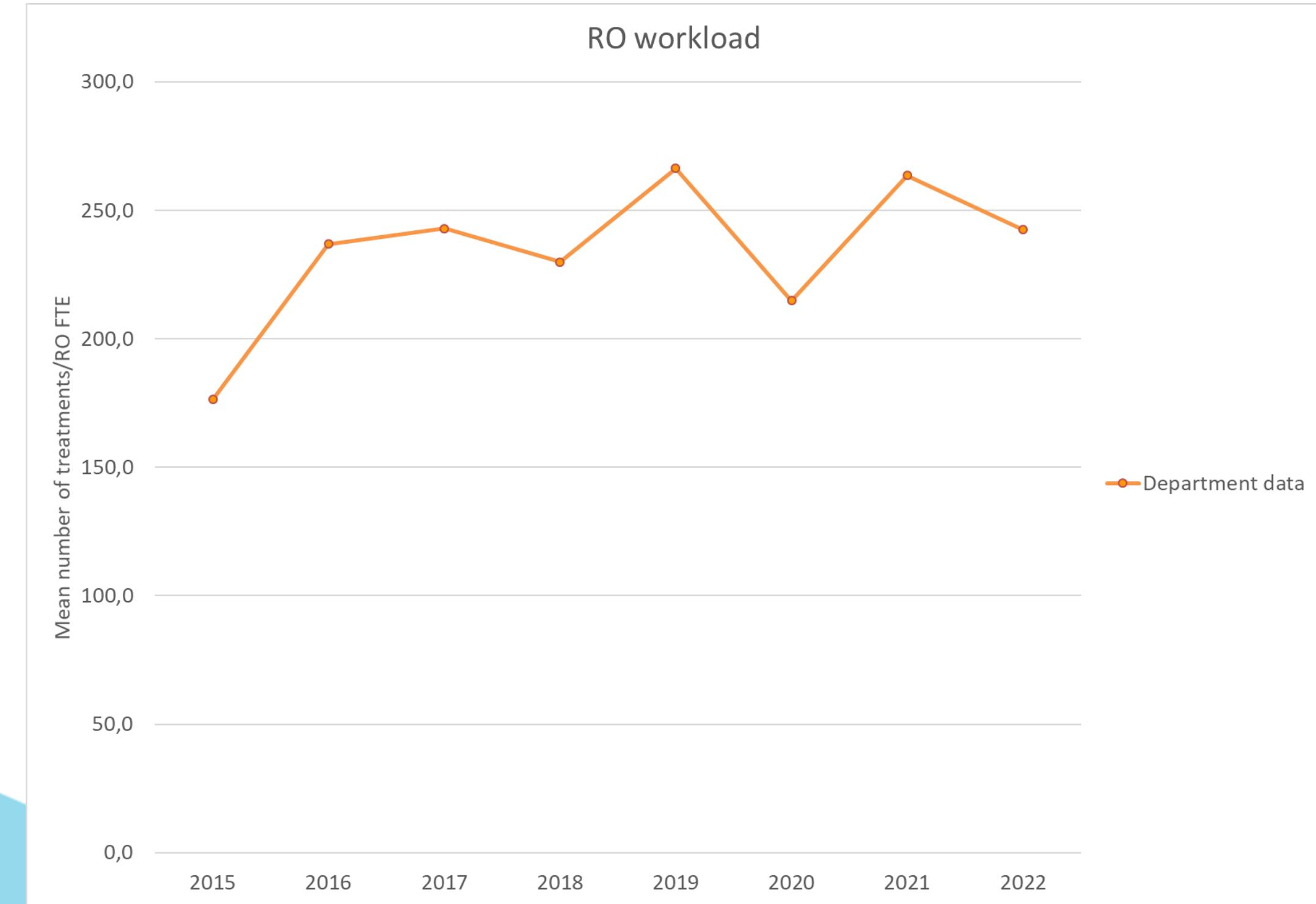
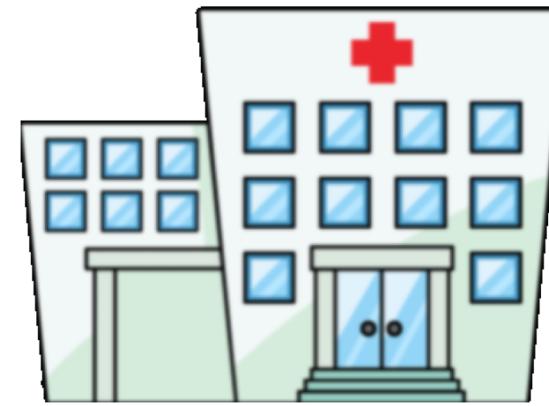


Outcome

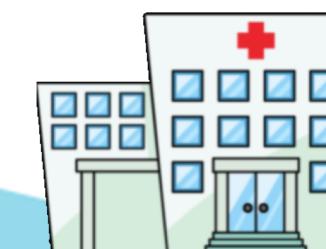
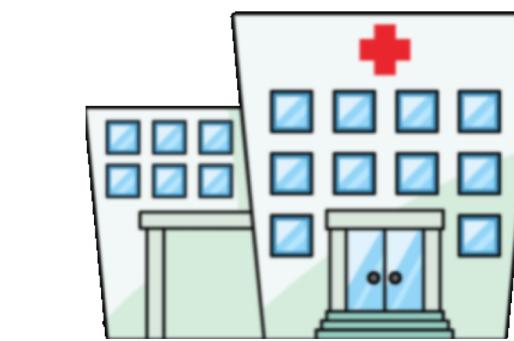
An outcome QI attempts to describe the effects of care on the health status of patients (*What is the result of the radiotherapy treatment?*)

Acute toxicities; long term toxicities; overall survival, disease free survival, (patient satisfaction)....

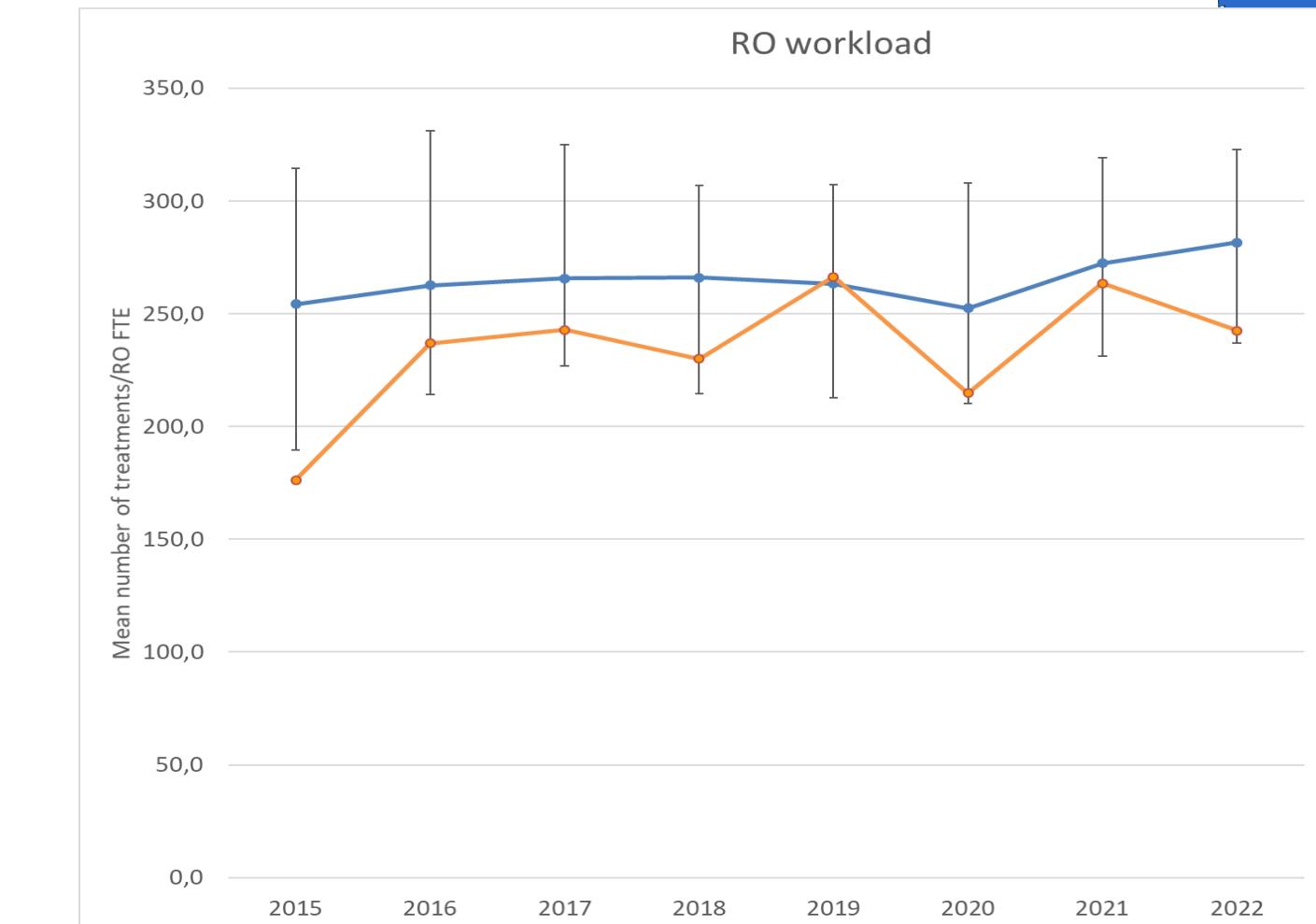
QI monitoring



QI monitoring and benchmarking



Benchmarking



Benchmarking:

« A **standardized** method for **collecting** and **reporting** critical organizational data in a way that enables **relevant comparisons** among the performances of the different organizations or programs, [1]. Benchmarking gives the organisation (or the program) the external references and the best practices on which to base its **evaluation** and to design its working **processes**.”

Vlasceanu et al (2007)

Importance of defining QIs – QI identity card (profile)

Parameters	
Measure definition	Topic (what is measured) A clear and concise title along with a detailed description of what the indicator measures.
	Rationale (why it is measured) The reasoning behind why this particular indicator is important and how it contributes to quality improvement.
	Type of QI (structure/process/outcome)
	Numerator The part of the indicator that counts the instances meeting the criteria
	Denominator The total number of instances that could potentially meet the criteria.
	Definitions and specifications Scope of the QI (who and what is included) Unit used (% , score out of 10...) Data source
	Exclusion criteria Specific conditions or cases that should be excluded from the numerator and/or denominator.
	Recommended stratifications
	Standard/target The standard or goal against which the indicator's performance is compared.
	Time period/target number for data collection How often the indicator is measured and reported.
Goal setting	Frequency of analysis

Belgian National RT Quality indicator project



Structure

Departmental level:

Number of equipment, number of treatments, FTE...



Process

Patient level:

Timing between simulation and treatment, IGRT and treatment technique used....



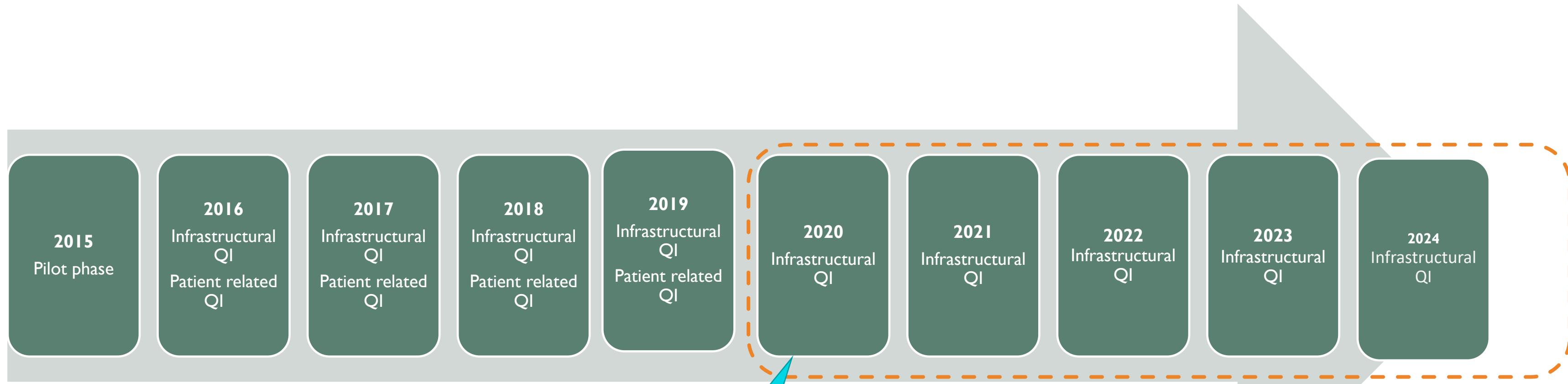
Outcome

Patient level:

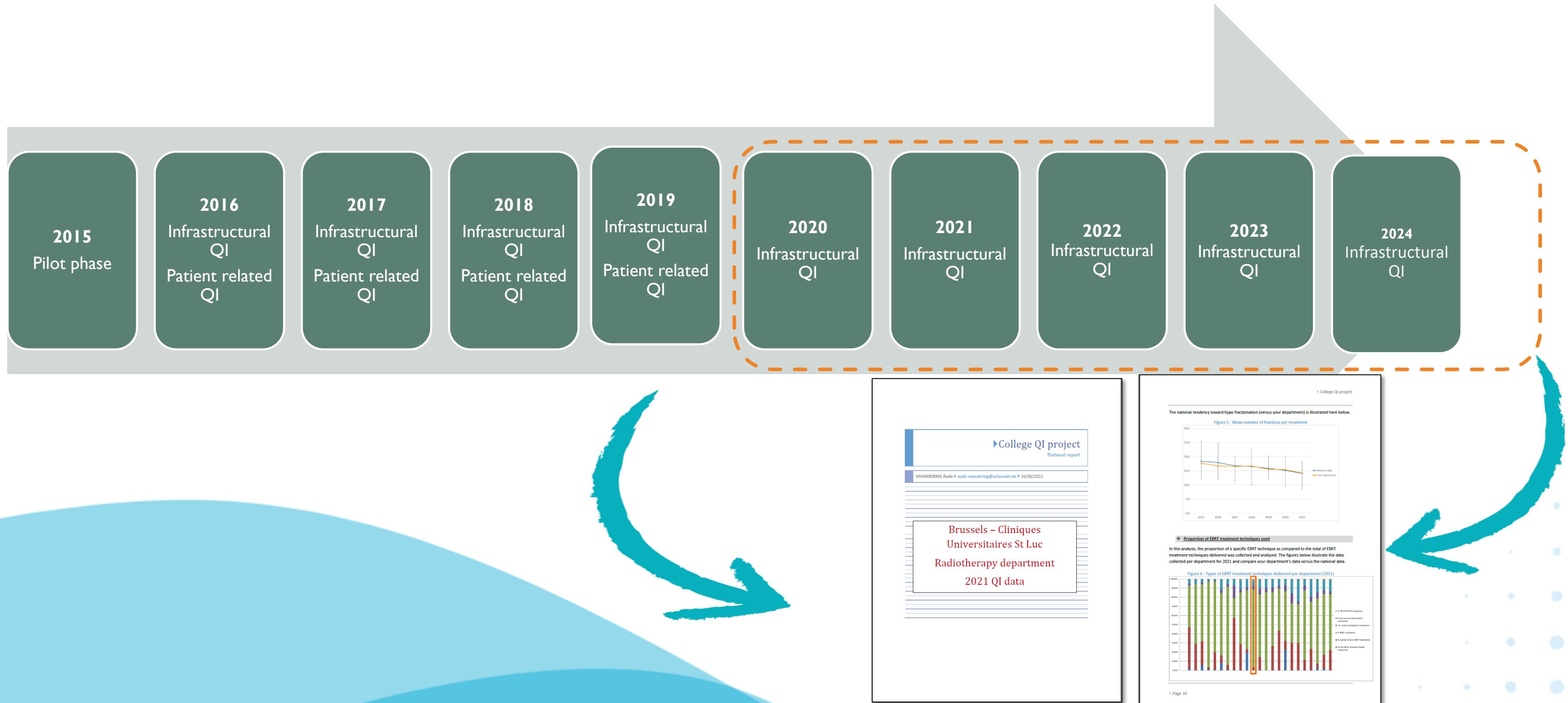
Recorded acute toxicities

54 QI

Belgian National RT Quality indicator project



Belgian National RT Quality indicator project

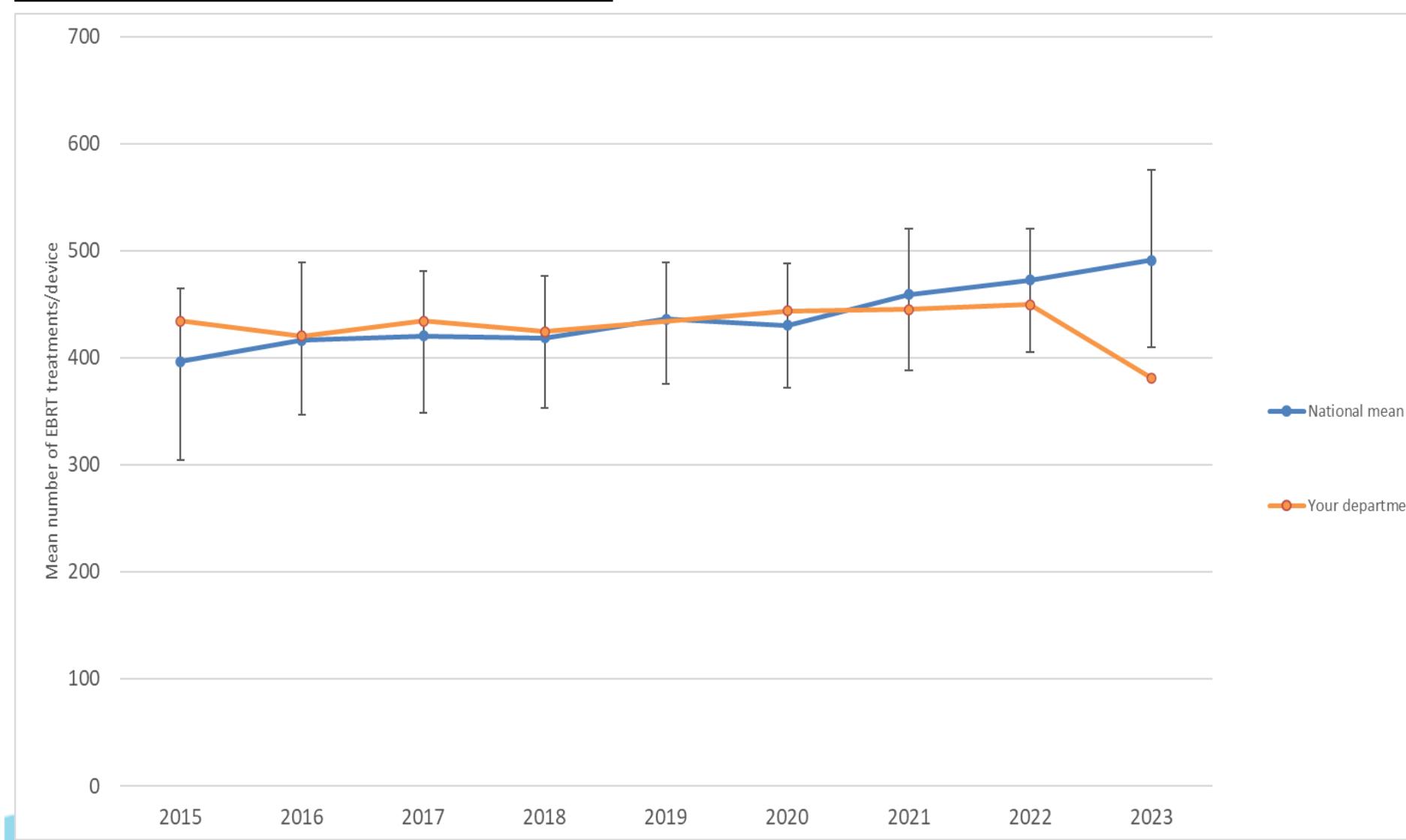


Some examples of measured QIs



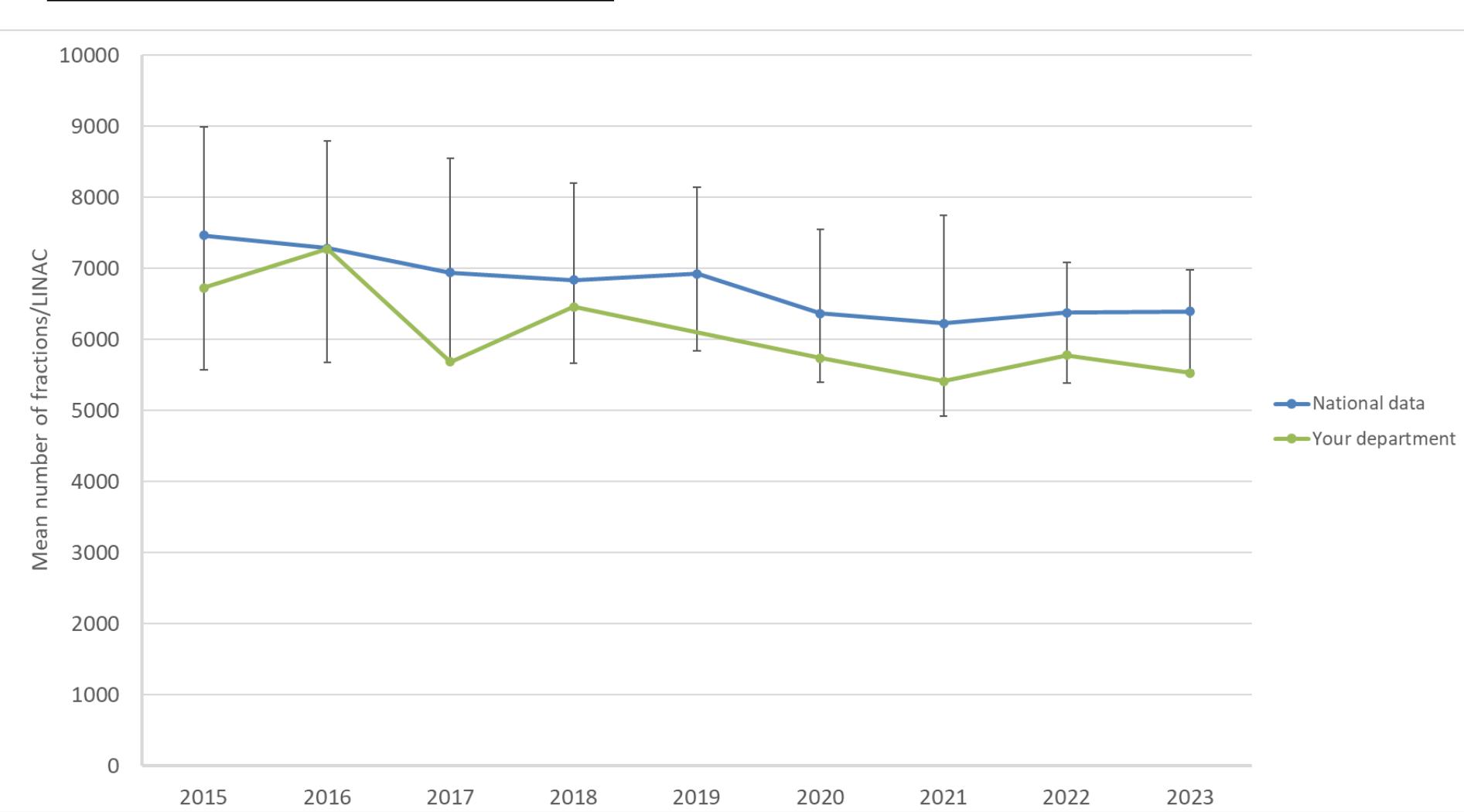
Number of treatments/device

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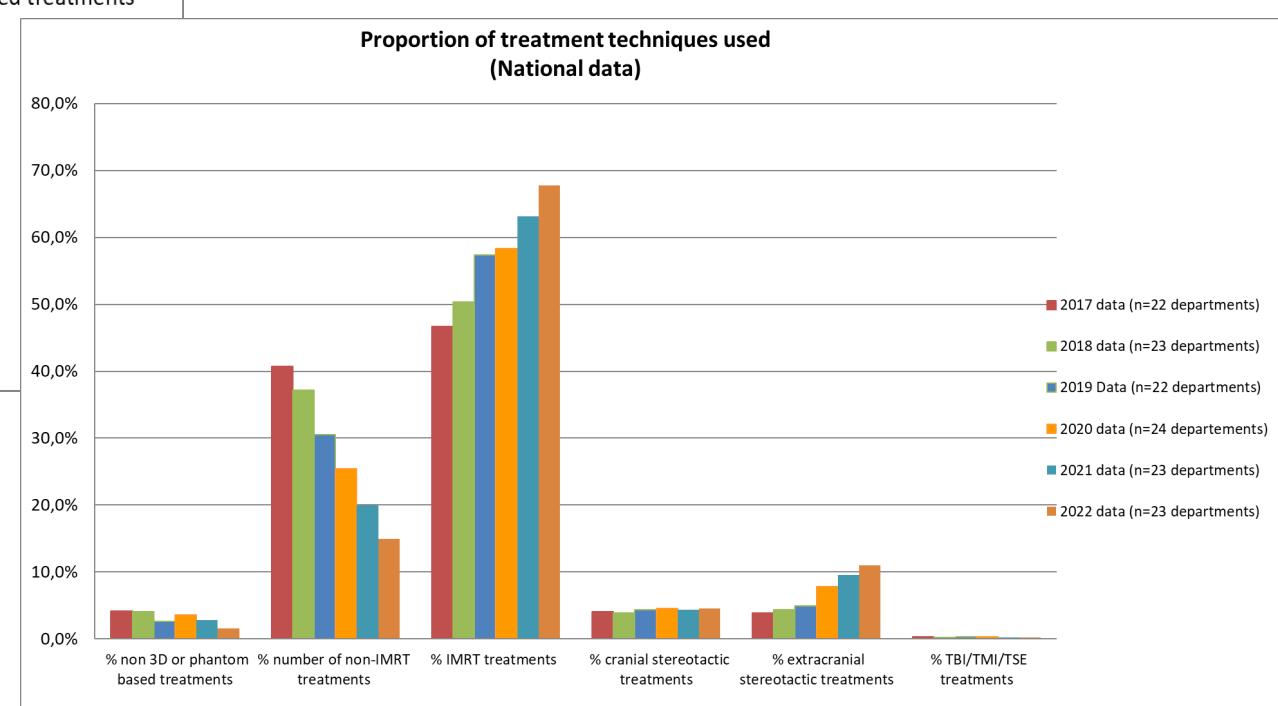
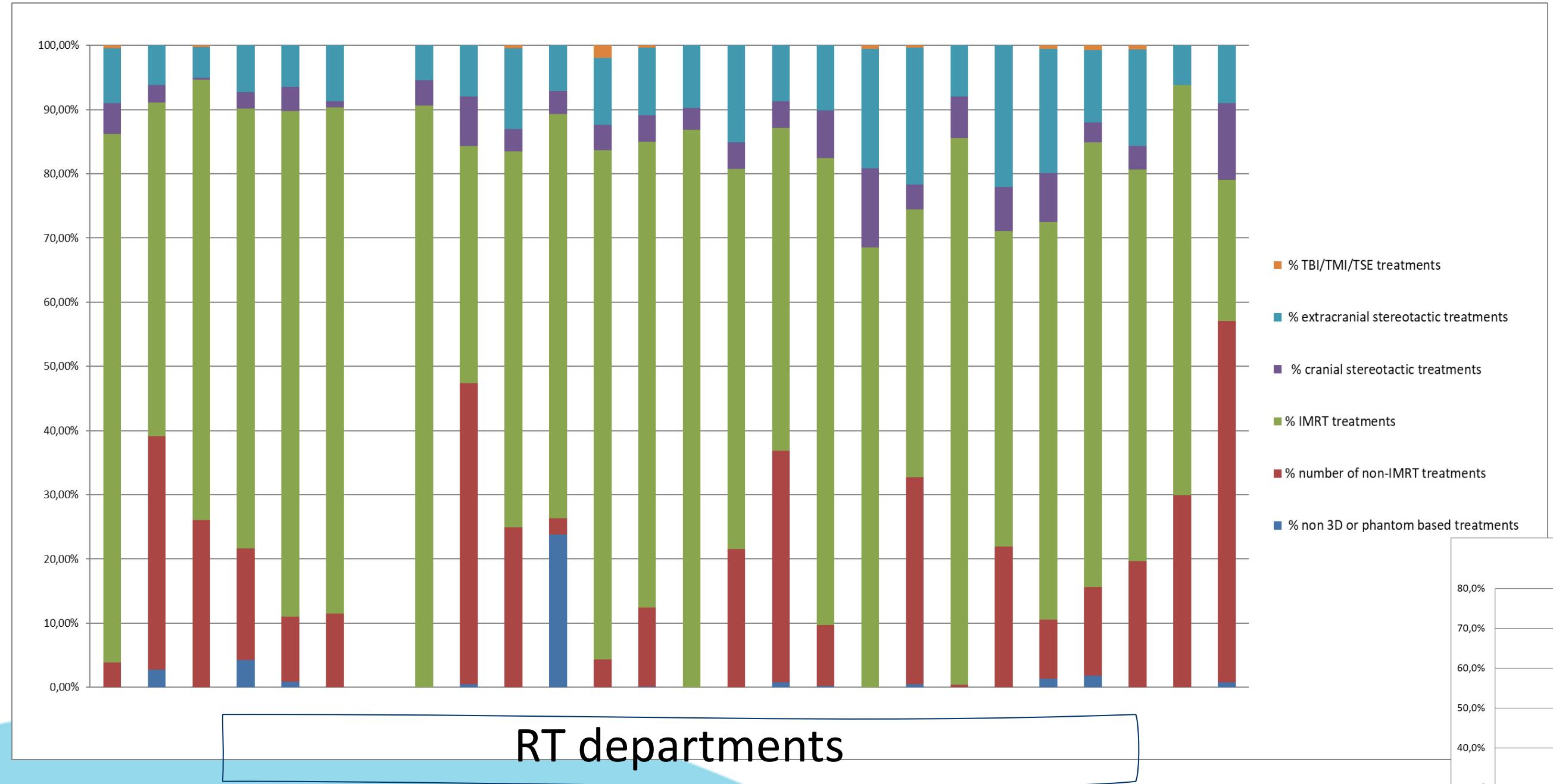


Hypofractionation

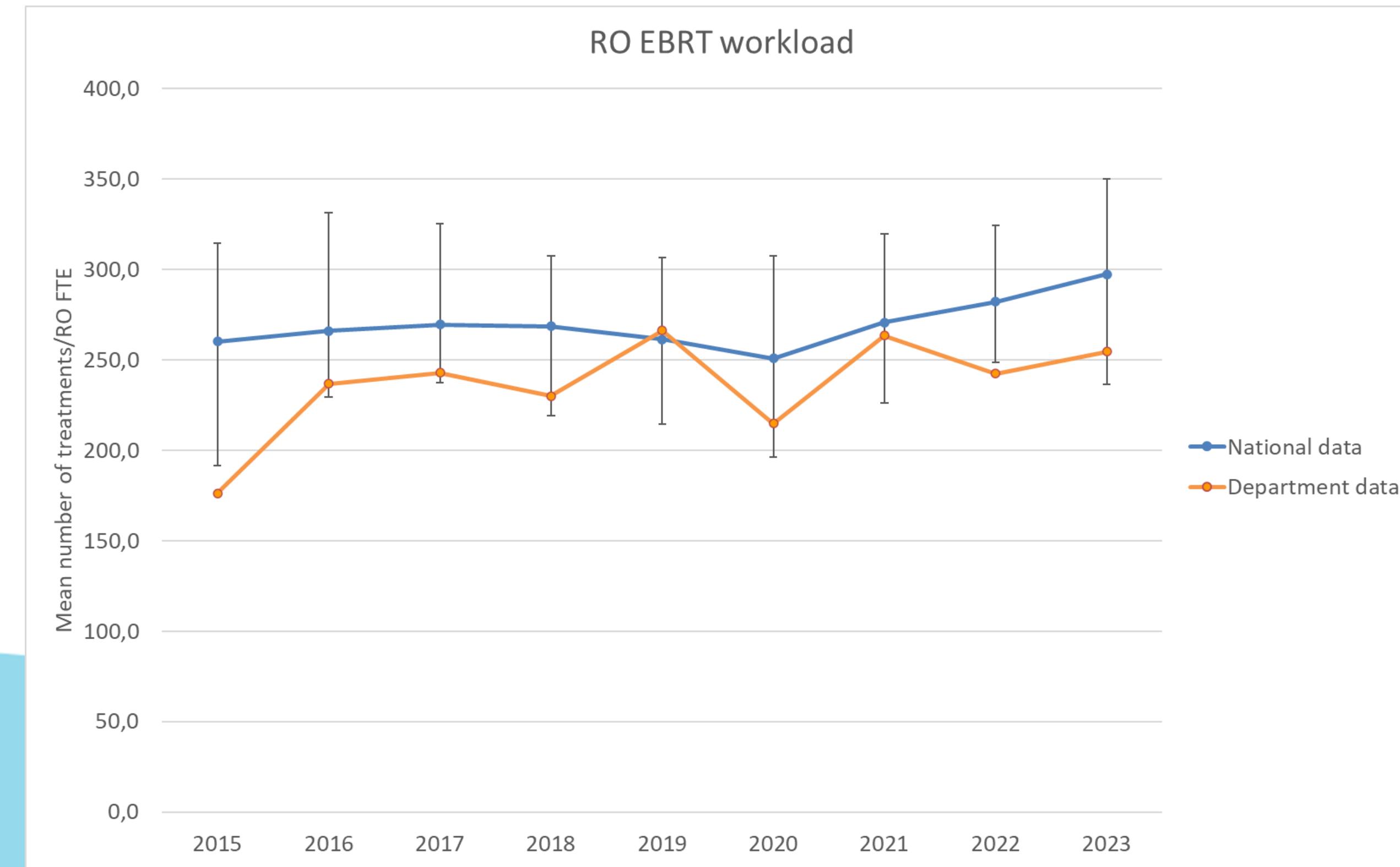
Number of sessions/LINACs



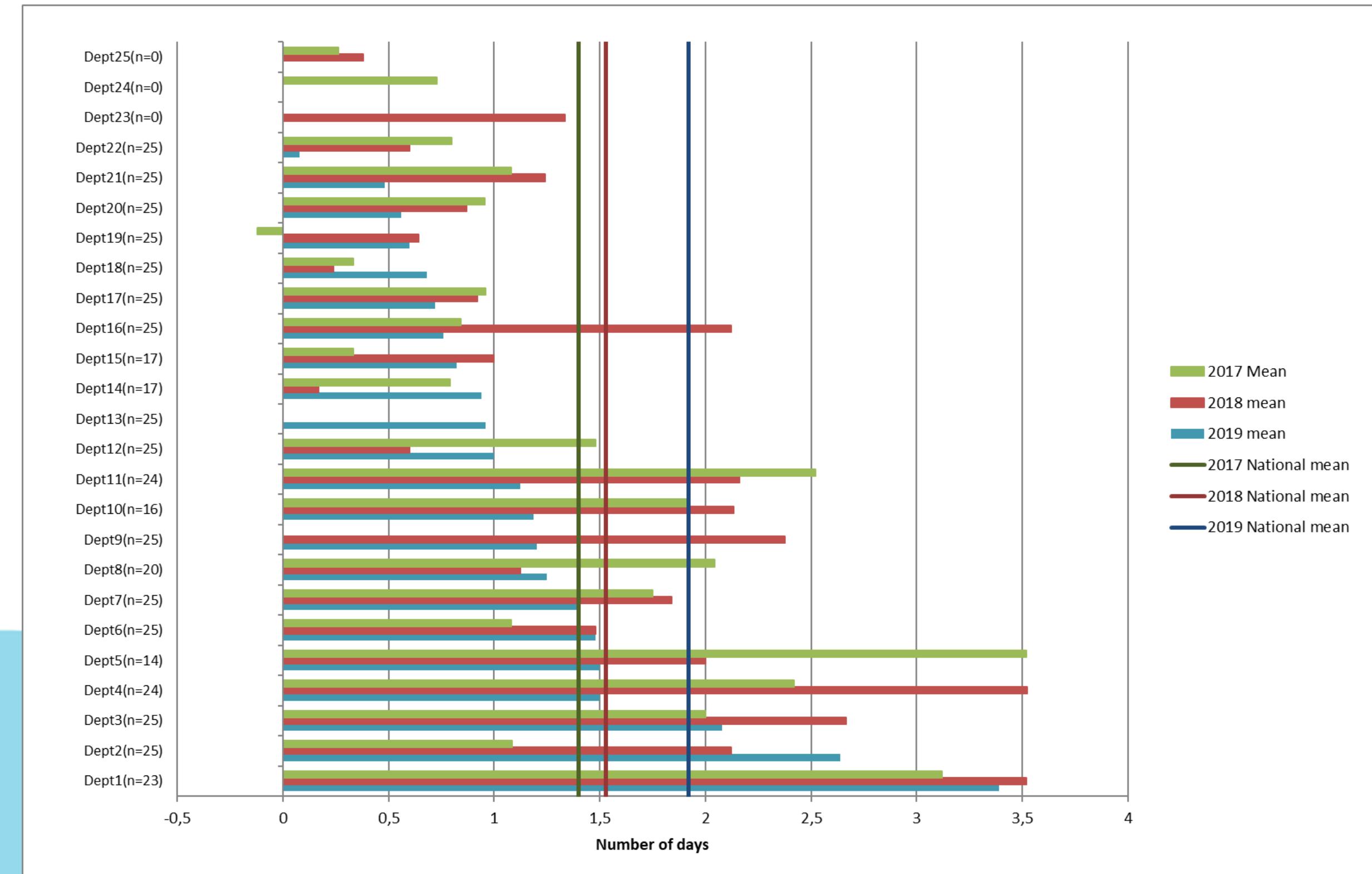
Treatment techniques



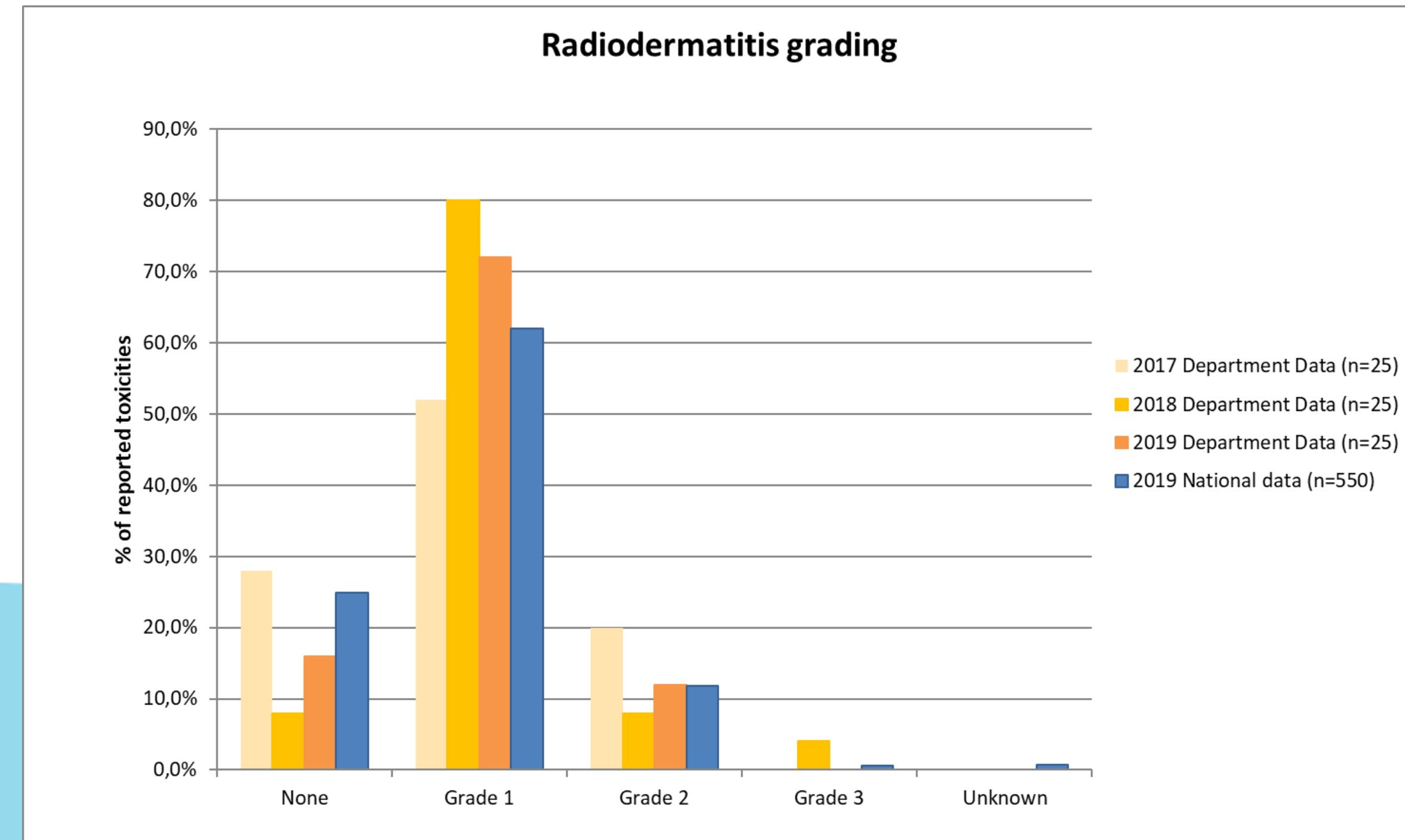
Workload



Mean number of lost days during treatment delivery per department (Prostate cancer patients)



Reported acute radiodermatitis (breast) (2017 - 2019)



Lessons learned/Tips and tricks



- RT specific quality indicators **CAN be collected BUT**
 - They have to be clearly defined
 - Feasible to collect
 - Useful
- Feedback on QI must be well **structured and regular**
- QIs must be regularly **reviewed**
- **!! Not** everything can be represented by a quantitative measure



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Any Questions?