



Catalan Clinical Audit
Network for Quality Improvement
in Radiotherapy

Experience of B-QUATRO: feedback and lessons learned

Clinical Audits in Radiation Oncology: Training for Auditors and Auditees

Day 4 (13/06/2025)

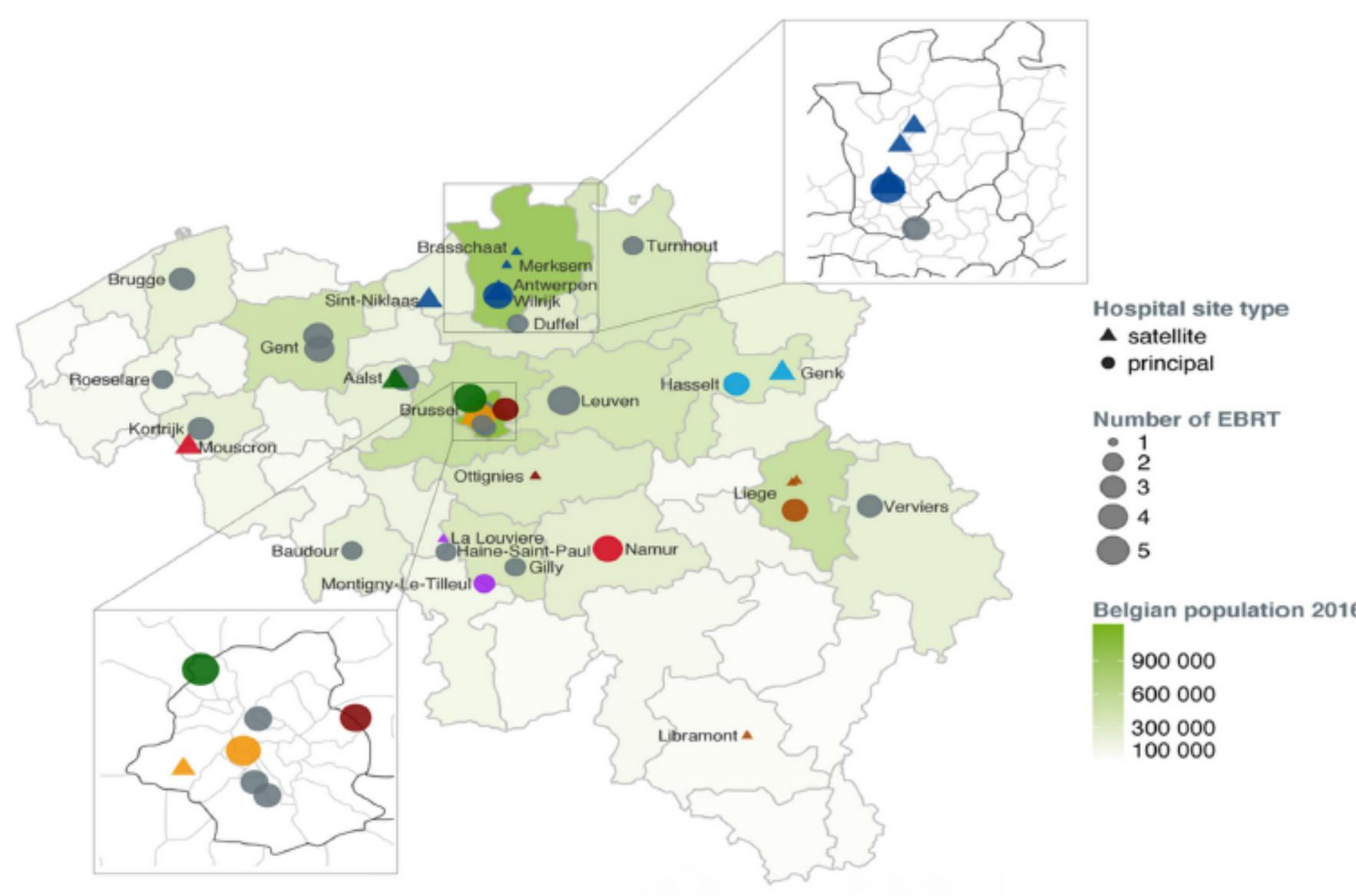
Aude Vaandering



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CAT·ClinART

THE BELGIAN RADIOTHERAPY LANDSCAPE



- 11,5 million habitants
- 24 radiotherapy departments (+ 11 sites satellites)
 - 6 university hospitals
 - Minimum 2 LINACS/department
- External Beam Radiotherapy equipment: 92
- ± 40.000 external beam radiotherapy treatments per year
- ± 1200 brachytherapy treatment per year

Fig from KCE report 289. Required hospital capacity and criteria for rationalisation. 2017

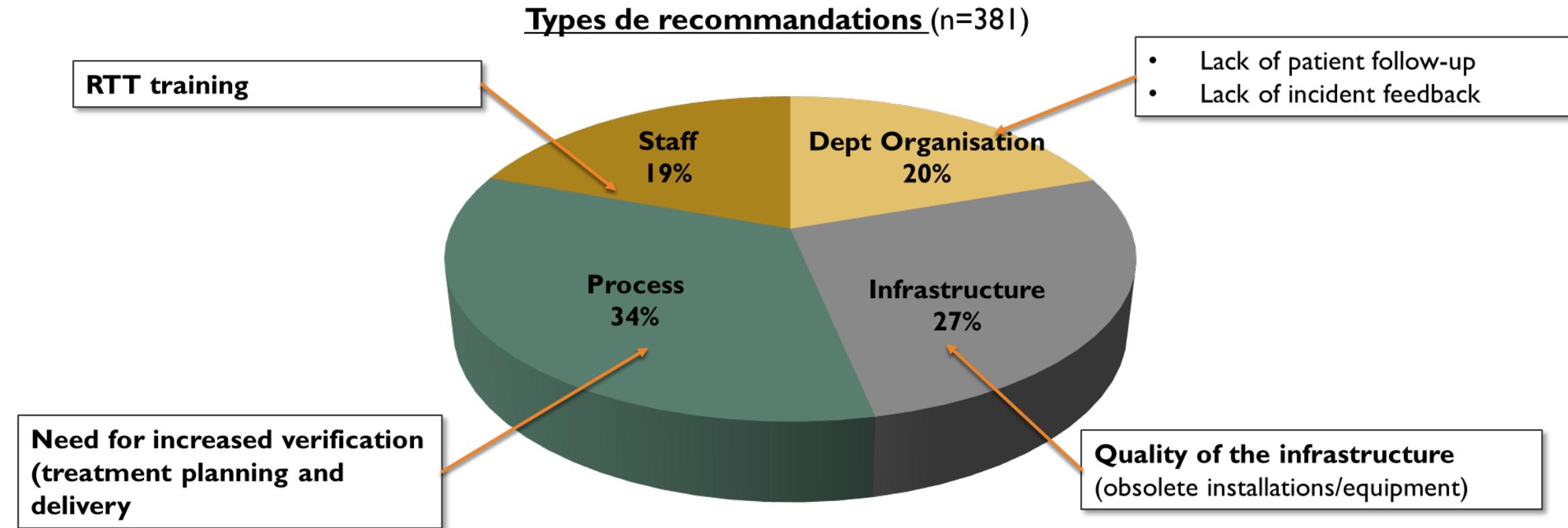
Clinical audits in radiotherapy in Belgium



- **2011-2015:** QUATRO was used to audit **all Belgian RT departments**
- **Team of 14 auditors (RO, MP and RTT)**
 - Benefited from 2 days on site training
- **Contrary to QUATRO**
 - Exclusion of brachytherapy
 - Exclusion of LINAC/dosimetric measurements (→ BELdART*)
 - 3 days of audit per department (versus 5 days for QUATRO audits)
- **25 departments** were audited

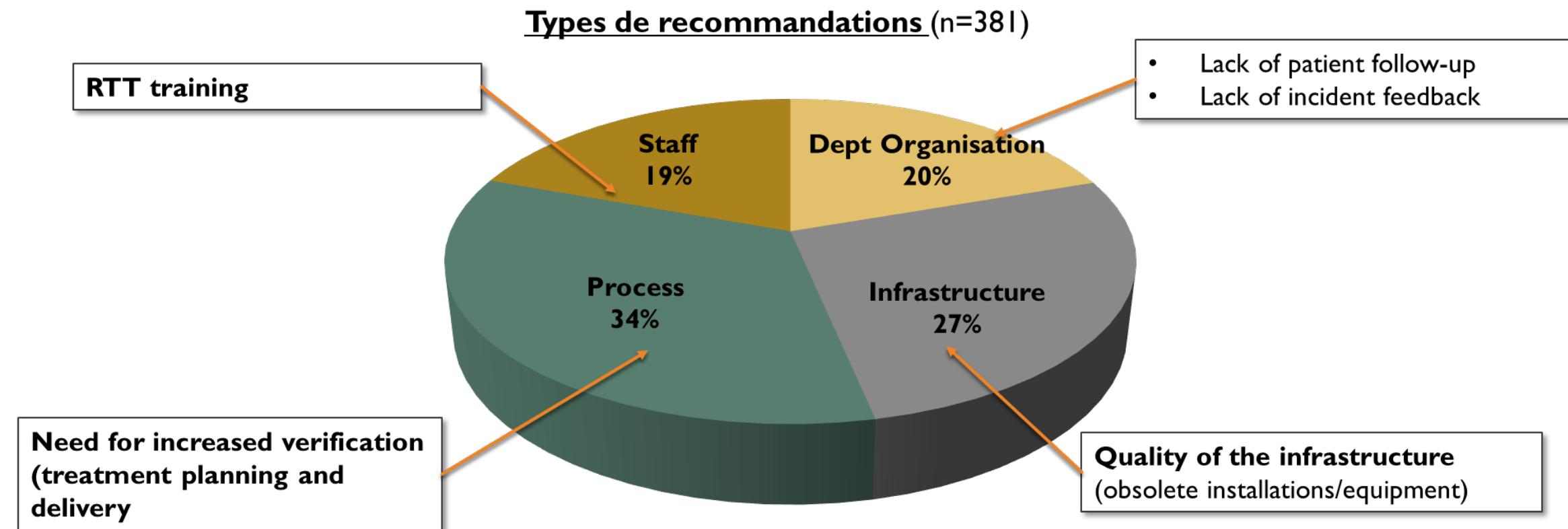


Results of the 1st cycle of QUATRO audits



25 audits reports with 381 emitted recommendations

Results of the 1st cycle of QUATRO audits



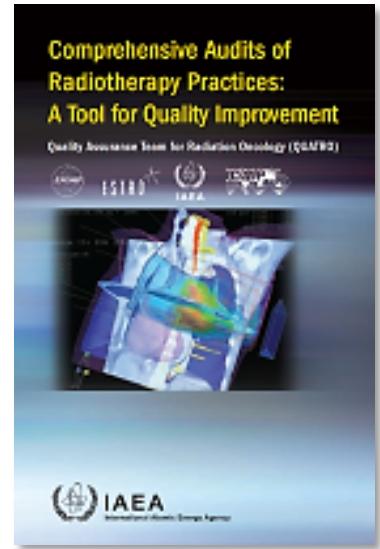
25 audits reports with **381 emitted recommendations**

Feedback from the audited departments

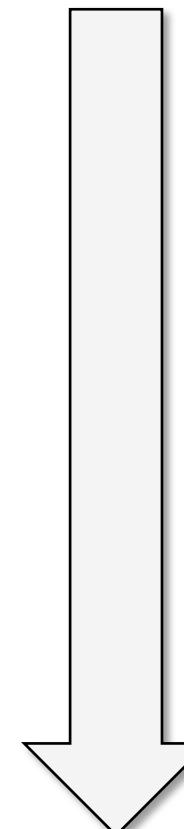


- 42,7% of the recommendations were evaluated as being very relevant
→ those pertaining to staff and organizational issues scored as being most relevant
- 23.5% of the recommendations were deemed to have an important impact, the majority having a moderate impact (30.6%)
→ those pertaining to process optimization deemed to have the most impact

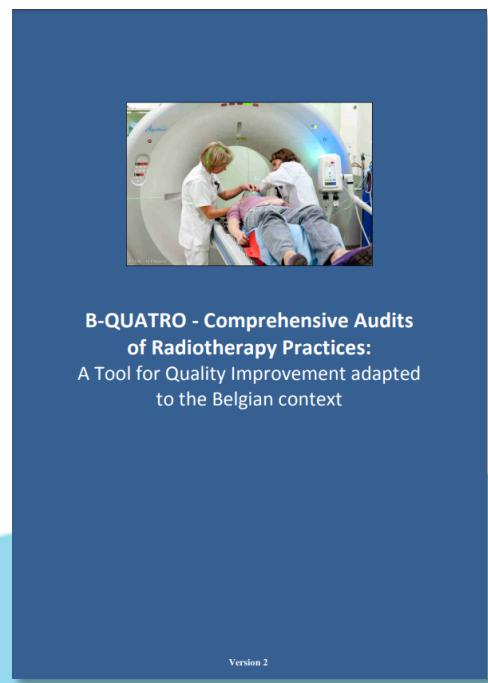
Belgium: from QUATRO to B-QUATRO



QUATRO: Comprehensive peer review clinical audits (2011-2015)



- Integration of new technologies
 - SGRT, 4D planning and treatments, stereotactic treatments...
- Belgian contextualization
 - legislation, satellite sites...
- Chapter focussing on RT quality management (QM)
 - Additional quality criteria and checklists focussing on QM*
- Rewording of the quality criteria and reformatting of the audit checklist
- Development of data analysis tool
 - Radar plots

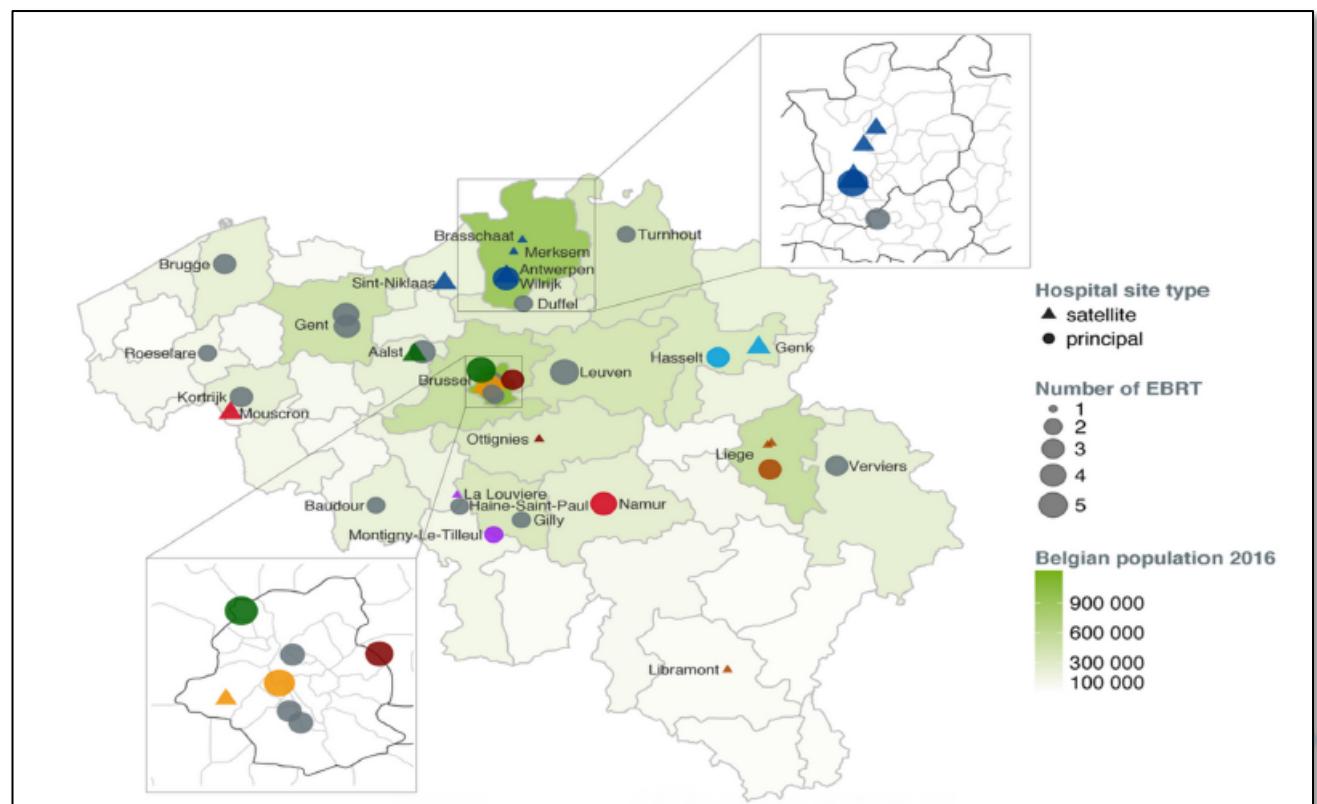


B-QUATRO: Belgian - Comprehensive peer review clinical audits

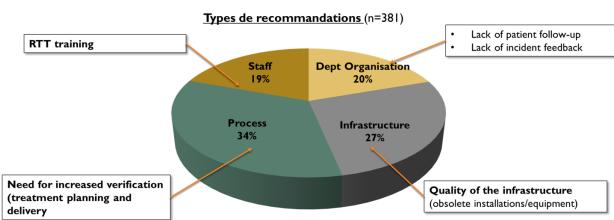
<https://afcn.fgov.be/fr/system/files/2020-01-23-b-quattro2.6vcomp.pdf>

B-QUATRO audits

- 2017-2023: B-QUATRO was used to audit **all Belgian RT departments**
 - Exclusion of brachytherapy 
 - Exclusion of LINAC/dosimetric measurements (→ BELdART*) 
 - 2½- 3½ audit days/department 
 - Inclusion of the quality managers within the audit team 
 - OneDrive platform to allow collaborative editing of the same document in real time 
- **24 departments and their satellite sites (n=14) were audited**

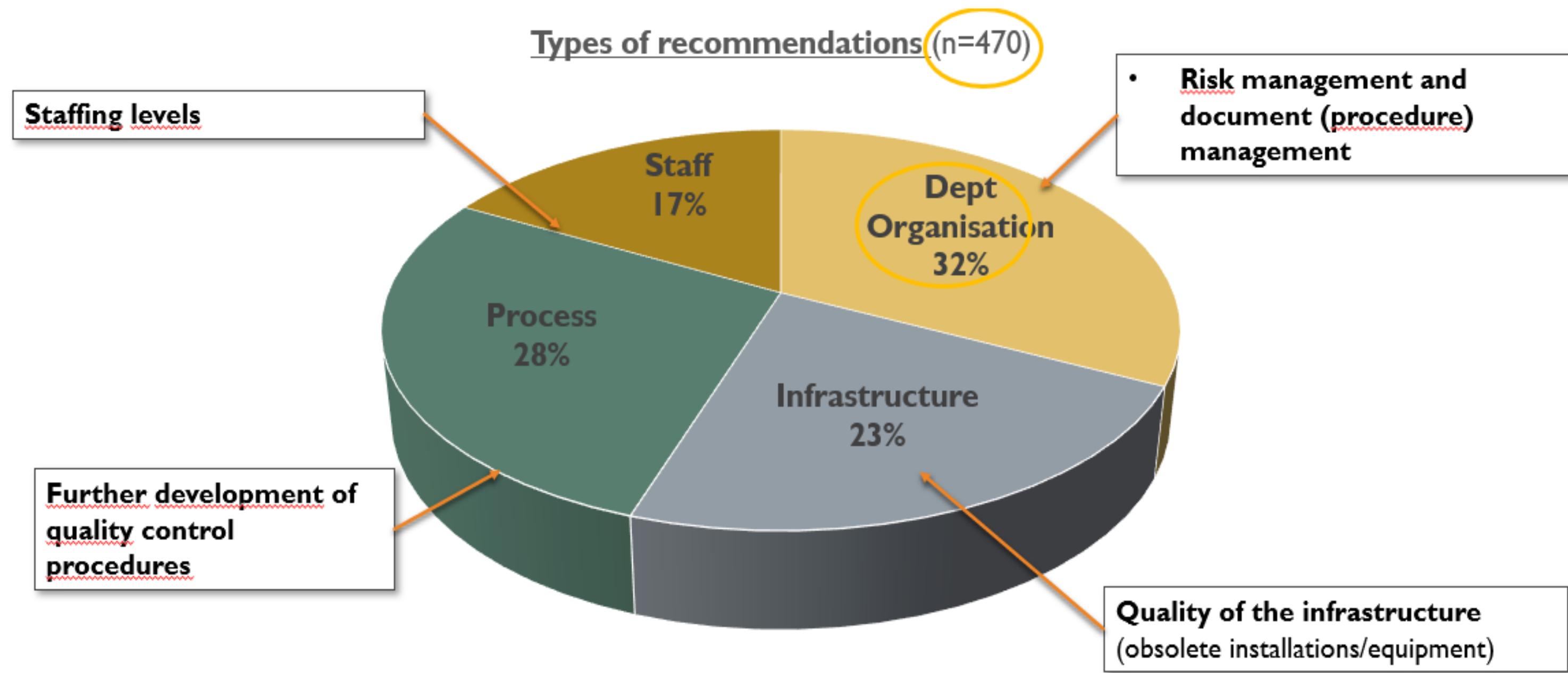


Results of the 1st cycle of QUATRO audits

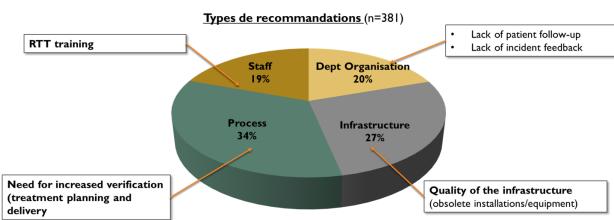


25 audits reports with 381 emitted recommendations

Results of the second cycle of audits

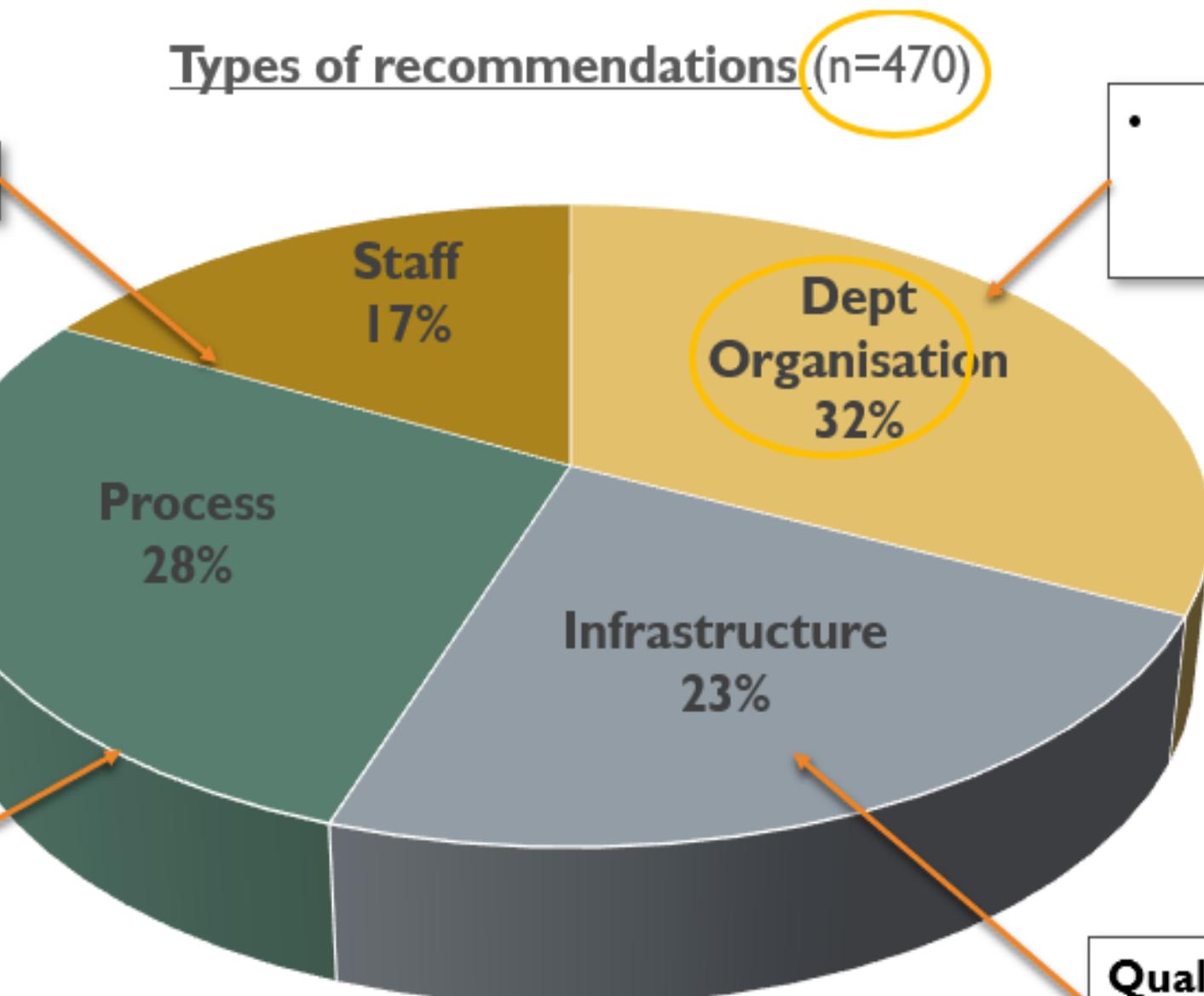


Results of the 1st cycle of QUATRO audits



25 audits reports with 381 emitted recommendations

Results of the second cycle of audits



- **Risk management and document (procedure) management**

Staffing levels

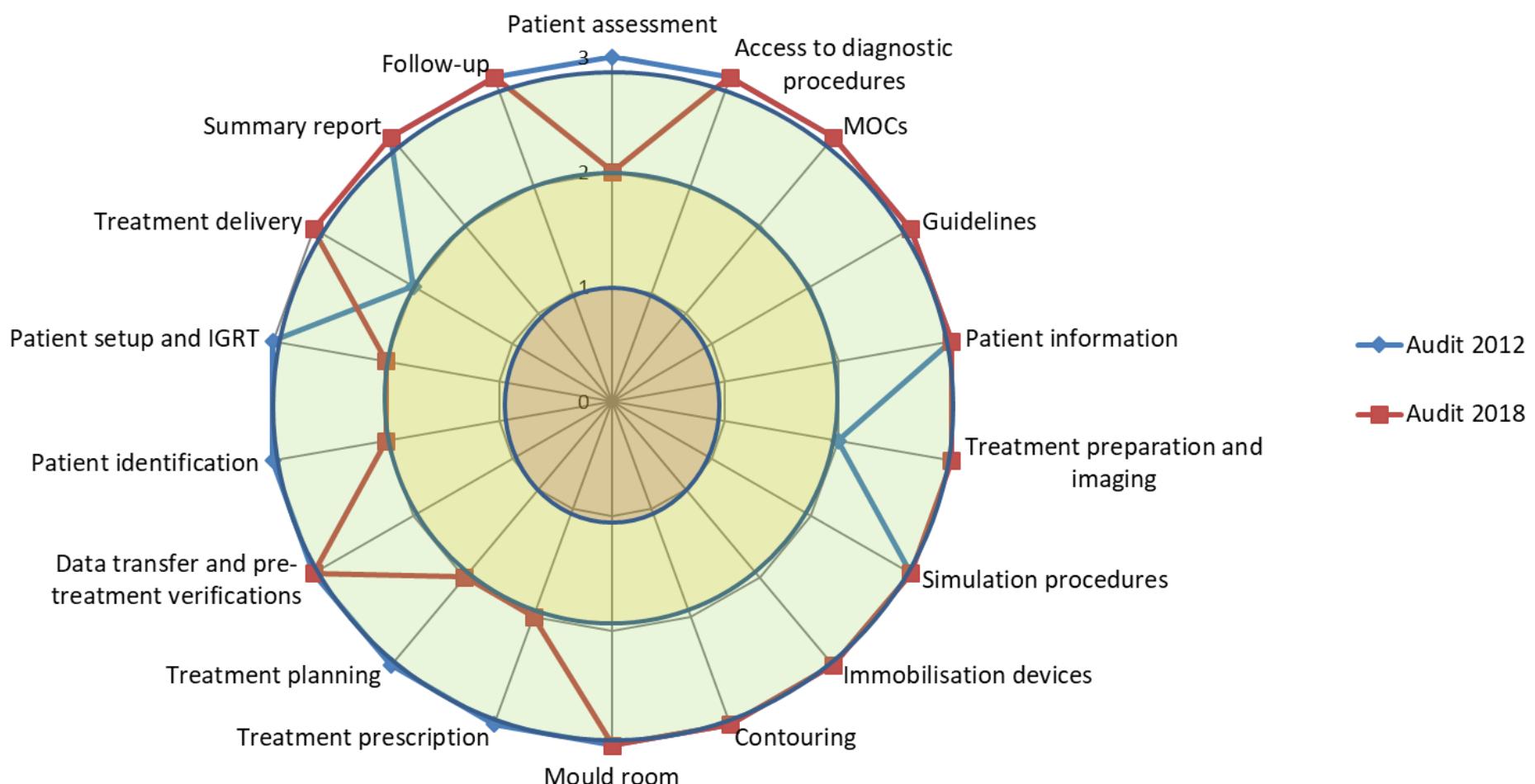
Further development of quality control procedures

Quality of the infrastructure (obsolete installations/equipment)

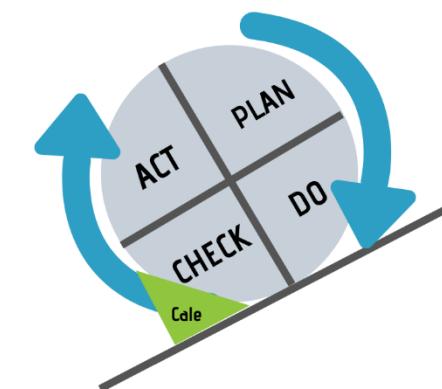
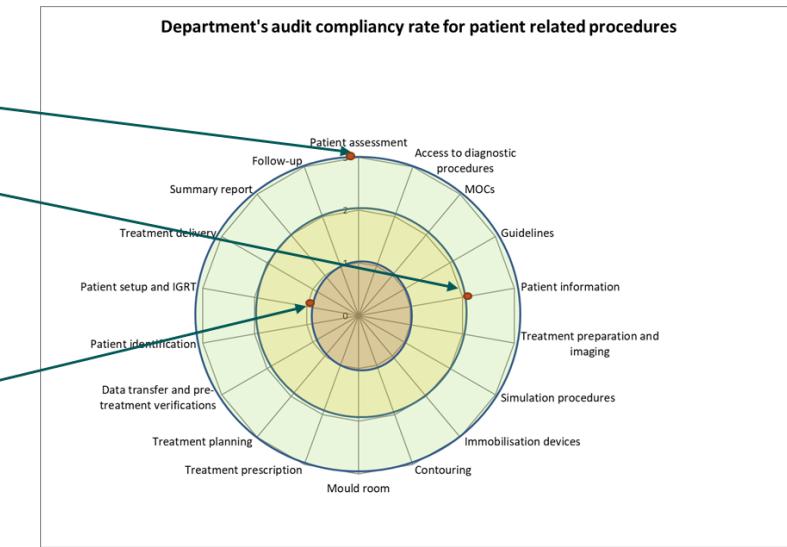
- No formal feedback from the departments

Improvements between the 1st and 2nd cycle of audits?

Department's audit compliancy rate for patient related procedures



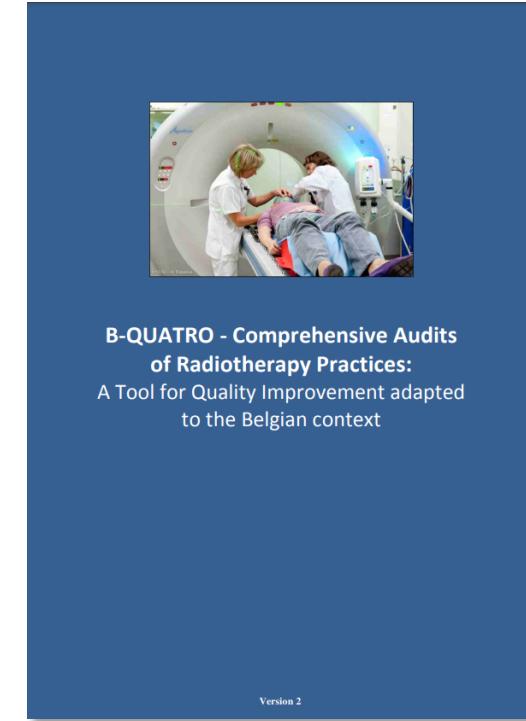
| Checklist | Audited item | Score |
|-----------|-----------------------------|---------------------|
| 1 | Patient assessment | Compliant |
| 2 | Diagnosis | Compliant |
| 3 | MOCs | Compliant |
| 4 | Guidelines | Compliant |
| 5 | Patient information | Partially compliant |
| 6 | Treatment imaging | Compliant |
| 7 | Simulation procedures | Compliant |
| 8 | Immobilization systems | Compliant |
| 9 | Contouring | Compliant |
| 10 | Beam modification | Compliant |
| 11 | Treatment prescription | Compliant |
| 12 | Treatment planning | Partially compliant |
| 13 | Pre-treatment verifications | Compliant |
| 14 | Patient identification | Compliant |
| 15 | Patient setup | Non-compliant |
| 16 | Treatment delivery | Compliant |
| 17 | Treatment report | Compliant |
| 18 | Patient follow-up | Partially compliant |
| 19 | Patient chart | Compliant |



→ A majority of deficiencies observed during the first audits had been addressed by most departments.

BQUATRO I to BQUATRO II

- 2023 Review of the B-QUATRO (BQUATRO I → BQUATRO II)
- 2024-2029: Third cycle of audit using B-QUATRO II
 - Exclusion of brachytherapy 
 - Exclusion of LINAC/dosimetric measurements (→ BELdART) 
 - 3-4 audit days/department 
 - Team of 4 auditors 
 - « Old » and new auditors
 - all auditors were (re-)trained (audit methodology + soft skill required to audit) 
 - **Audited departments**
 - Can give feedback on the content of the report (2-3 weeks) 
 - Are sent a « audit satisfaction survey » right after the audit

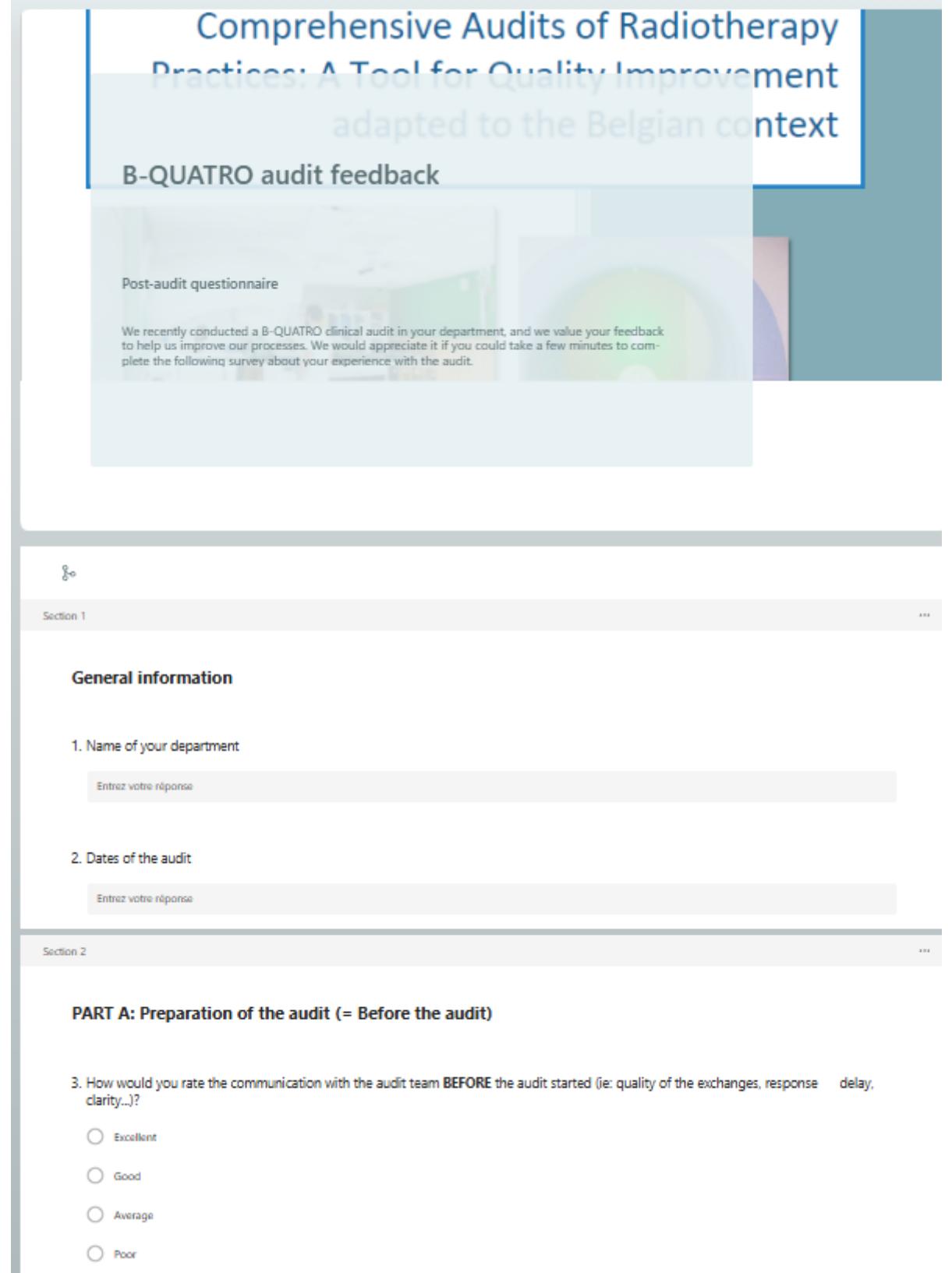


Audit satisfaction survey

Evaluation of:

- The preparation of the audit
 - Clear communication, clarity of the process
- The audit
 - Usefulness of the entrance briefing, audit organisation, auditor interactions, aspects covered, surprises, exit briefing, impact of the recommendations,
- Overall experience

- All departments have responded so far



The screenshot shows a survey titled "B-QUATRO audit feedback" for "Comprehensive Audits of Radiotherapy Practices: A Tool for Quality Improvement adapted to the Belgian context". The survey is a "Post-audit questionnaire" asking for feedback on a recently conducted audit. It includes sections for "General information" (questions 1 and 2) and "PART A: Preparation of the audit (= Before the audit)" (question 3). The interface is in French.

Section 1

General information

1. Name of your department
Entrez votre réponse

2. Dates of the audit
Entrez votre réponse

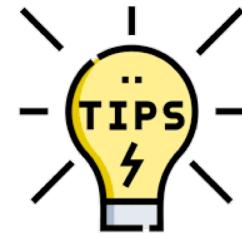
Section 2

PART A: Preparation of the audit (= Before the audit)

3. How would you rate the communication with the audit team BEFORE the audit started (ie: quality of the exchanges, response delay, clarity...)?

Excellent
 Good
 Average
 Poor

Lessons learned/Tips and tricks



- B-QUATRO needs to be **reviewed every 5 years** (change in practice, technological changes, lessons learned from the previous audits...)
- Auditors should benefit from **continuous training**
 - Formal training every 5 years
 - **Yearly auditor meetings** to be able to exchange on:
 - What went well and what did not go well
 - Issues with the audit process
 - Lessons learned
 - Questions concerning the checklist
- **Re-auditing** doesn't make things easier (!! sufficient number of audit days)
- **Sharing platforms** (Onedrive/Google drive) facilitates the audit process
- Striking the **right balance** between earning departmental trust and upholding strict audit standards
- **Communicate**, communicate, communicate



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Any Questions?