ESR EUROPEAN SOCIETY OF RADIOLOGY



[®]CLINICAL AUDIT & QUALITY IMPROVEMENT

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CLINICAL AUDIT – WHAT?

Guidelines for clinical audit:

- Published by the European Commission in 2009
- Statement by the European Society of Radiology in 2011
 - Clinical audit is the "systematic examination or review of medical radiological procedures. It seeks to improve the quality and outcome of patient care through structured review whereby radiological practices, procedures and results are examined against agreed standards for good medical radiological procedures. Modifications of practices are implemented where indicated and new standards applied if necessary"

CLINICAL AUDIT – WHAT?

- Audit involves improving the quality of patient care by looking at current practice and modifying it where necessary
- Measuring what we do against a standard
- Audit should be **ALPINE**
 - Achievable
 - Local
 - Practical
 - Inexpensive
 - Non-threatening
 - Easy

CLINICAL AUDIT VARIANTS

- Internal
 - Local (individual, departmental, hospital) level
 - Own initiative
- Internal with external direction
 - Guidance or direction from external body (e.g. national professional society)
 - Allows coordination of audit across multiple sites
- External
 - External auditing team working across multiple sites in a region or country
- Inspection
 - Competent authority external exercise to verify compliance with legal requirements
 - NOT clinical audit

- What clinical audit isn't
 - Dose audit, radiation dosimetry
 - Healthcare or quality management audit
 - Regulatory audit
 - Audit of radiation protection of workers
- What clinical audit is
 - Audit that has to do with improving patient outcome

THE AUDIT CYCLE



CLINICAL AUDIT – WHY?

BASIC SAFETY STANDARDS EUROPEAN DIRECTIVE (2013/59/EURATOM)

- Must have been transposed into national legislation by February 6th, 2018
- Clinical audit is mandatory:
 - Article 58 (e): "clinical audits are carried out in accordance with national procedures"
- In whatever form the new legal framework is implemented (and there will inevitably be national variation), internal clinical audit within departments will help individual departments to comply with legislation, to monitor their own practice and to be well prepared for any external audit

Summary of the European Directive 2013/59/Euratom: essentials for health professionals in radiology

Insights into Imaging August 2015, Volume 6, Issue 4, pp 411–417

European Society of Radiology (ESR)

CLINICAL AUDIT – WHY?

- Promotes and facilitates high-quality medical care
- Provides educational, teaching and interdisciplinary collaborative opportunities
- Can be used to drive improvements in quality of care
- Allows departments to demonstrate a commitment to patient/staff safety and compliance, according to the requirements outlined within the BSSD.

CLINICAL AUDIT – HOW?

- 1. Choose a topic, Audit Title
- 2. Identify resources
- 3. Define the Standard (incl. source) against which the audit topic is to be compared.
- 4. Set target / compliance percentage to be achieved
- 5. Confirm item or variable to be audited
- 6. Sample details & Data Collection
 - 1. Sources of data
 - 2. Retrospective / Prospective data collection
 - 3. Sample size and time period
- 7. Analyse data
 - 1. Target achieved: Yes / no / not applicable; If no: actual result
 - 2. Document reasons / possibilities for failure to meet standard
- 8. Action plan
 - 1. Present data to local dept.
 - 2. Identify changes to be made, and how they should be made
 - 3. Agree timing for re-audit

SO, LET'S TAKE AN EXAMPLE....

A radiology department has 20 radiologists: 10 men and 10 women.

Audit title:

What percentage of the male radiologists come to work properly groomed?

- Standard: 100% (Everybody)
- Result: 80%
- Why?



2 outliers



SO, DEPARTMENTAL MEETING TAKES PLACE





• Second job, considered vital: reasoning accepted.

- Personal scruffiness: only in one's personal time.
- Re-audit (the following year): New standard is 90%
- Standard achieved!
- And that is all there is to audit.



Esperanto ESR Guide to Clinical Audit in Radiology and the ESR Clinical Audit Tool



myESR.org

ESPERANTO 2.0 (2019)

- Guide to audit processes
- Appendix 1 draft blank template
- Appendix 2 23 regulatory audit topics (regulation of medical exposures using ionizing radiation)
- Appendix 3 7 clinical audit topics (service provision & clinical practice)

APPENDIX 2 – REGULATORY AUDIT TOPICS

1. Is there a departmental mechanism for providing patients (or their representative) with information relating to the risks/benefits associated with radiation dose from the medical exposure?

2. Is there an established mechanism within the department to register and analyse accidental /unintended exposures?

3. Is there a departmental policy for informing patients, or their representative, that they have undergone an accidental exposure?

4. Is there a mechanism for record keeping and retrospective analysis of accidental or unintended medical exposures?

5. Is there a mechanism for referring accidental exposure events to the medical physics expert (MPE) and informing the competent authority of significant events?

6. Does the department utilise criteria, provided by the relevant radiation protection competent authority, for what constitutes an accidental or unintended significant exposure?

7. Is there evidence for appropriate training for individuals with delegated responsibility (in the case of non-radiologists) for the justification process?

8. Is there a departmental mechanism to confirm and document the non-pregnancy status of individuals undergoing medical exposures?

9. Is there a written protocol for the identification of who is responsible for the justification process?

10. For radiation exposure related to health screening by invitation on asymptomatic individuals, is there a local policy affirming justification by a competent authority?

11. What percentage of examinations involving ionising radiation are justified in advance of being performed?

12. What mechanism exists on the request form for contacting referrers to permit pre-exposure justification discussions to occur if necessary?

13. Is there a written protocol for who may be responsible for justification of X-ray/fluoroscopic/ interventional ionising radiological procedures?

14. Is there a written protocol for who may be responsible for justification of CT examinations?

15. What mechanism is used to evaluate patient dose in high-dose procedures?

16. What percentage of radiodiagnostic procedures have established diagnostic reference levels (DRL)?

17. Specific technical requirements for equipment in use for medical exposures.

18. Eye lens dose limits for occupational exposure.

19. Initial education and training in radiation protection.

20. Audit of education plus training in radiation protection, doses and side effects.

21. Provision of clinical information to support justification.

22. Staff dosimetry audit – this includes a draft adapted questionnaire.

23. Evaluation of the role and responsibilities of the medical physics expert.

APPENDIX 3 – CLINICAL AUDIT TOPICS

- 1. Does the radiology department record statistics about patient satisfaction?
- 2. Waiting time for outpatient ultrasound appointments
- 3. Protocols around radiological procedures, information in reports
- 4. The practice of "routine" preoperative chest x-ray
- 5. Audit of inpatient chest x-rays or abdominal x-rays
- 6. What percentage of non-Ionising imaging studies (MR/Ultrasound) are consistent with the referral guidelines?
- 7. Pain sensation during image-guided interventions

ESR AUDIT TOOL

- Is your service safe?
- Is your service responsive?
- Is your service caring?
- Is your service effective?
- Is your service well-led?

EXAMPLE – REGULATORY AUDIT TOPIC 1.

1. Audit Title

- Is there a departmental mechanism for providing patients (or their representative) with information relating to the risks/benefits associated with radiation dose from the medical exposure?
- What is your departmental mechanism for informed consent?
- 2. Standard against which the audit topic is to be compared.
 - EU Directive

3. Source of standard

- Euratom 2013 /59
- 4. Importance
 - Compulsory. Legal requirement
- 5. Target /compliance percentage to be achieved
 - 100%

6. Item or variable to be audited

• Local rules. Pathway for informed consent available widely and implemented

- 7. Method: Retrospective / Prospective / Other
 - Not applicable
- 8. Data or information to be collected
 - Confirmation of informed consent pathway in the local rules
- 9. Sample details
 - Not applicable for an informed consent document
- 10. Target achieved: Yes / no / not applicable; If no: actual result
 - No
- 11. Action to be taken if the target is not met
 - The establishment of an informed consent document

12. Timing for re-audit

• One year

EXAMPLE – CLINICAL AUDIT TOPIC 2

1. Audit Title

- Waiting time for outpatient ultrasound
- 2. Standard against which the audit topic is to be compared
 - Nationally or locally accepted time (e.g. 30 minutes)
- 3. Source of standard
 - Professional organisation, payer, government-set standard

4. Importance

- High / moderate
- 5. Target /compliance percentage to be achieved
 - 90%
- 6. Item or variable to be audited
 - Length of time out-patients wait in department for US

- 7. Method: Retrospective / Prospective / Other
 - Prospective
- 8. Data or information to be collected
 - Time from check-in to entering US room

9. Sample details

- 100 consecutive patients attending as out-patients for US
- 10. Target achieved: Yes / no / not applicable; If no: actual result
 - Mean 40 minutes
- 11. Action to be taken if the target is not met.
 - Increase staff numbers / streamline unnecessary delays / increase toilet facilities etc.

12. Timing for re-audit

• 1 year

CLINICAL AUDIT 2011:

"EFFICACY OF PLAIN FILM ABDOMEN (PFA) IN THE EMERGENCY DEPARTMENT SETTING"



UNIVERSITY HOSPITAL



MUH referral criteria for PFA, as agreed by the Emergency and Radiology Departments (derived from RCR iGuide):

INDICATIONS:

- ? perforation
- ? obstruction
- ? haematuria
- ? chronic pancreatitis
- history of Inflammatory Bowel Disease
- pain warranting hospital admission and surgical consideration

Standard – 100% justified

Abdominal x-rays <u>should not be</u> <u>routinely</u> performed for:

- vague abdominal pain
- constipation
- ? appendicitis
- ? acute pancreatitis
- ? gall stones
- haematemesis
- jaundice

AUDIT DATA, METHOD, SAMPLE

- PFA referral from ED from Aug 11 to Dec 11
- Consultant Radiologist recorded
 - RID,
 - Age,
 - Gender,
 - Clinical Indications,
 - Justification using MUH referral Criteria as standard,
 - Radiological Report Normal (no findings) /abnormal
 - Further radiological imaging and outcome related to the ED referral for the PFA

Results: N=350 Indications:



Radiological Report: Normal 92% vs. Abnormal 8%



PFA radiological Report N=350



Normal PFA to Further Imaging N= 147 (42%)



PFA AUDIT – HIGHLIGHTS OF OUTCOMES

- Target achieved? No.
- Too many unjustified PFAs being done
- Poor understanding among referrers of appropriateness criteria
- Many PFAs being requested "to do something quickly", while awaiting cross-sectional imaging
- Rapid access to cross-sectional imaging (US, CT) sometimes inadequate

ACTIONS TAKEN

- Extensive education for referrers
 - Medical Grand Rounds
 - Small group teaching sessions
 - Poster display within ED
 - Presentation during hospital Audit meeting
- Improved rapid access to US/CT where appropriate
 - Urinary tract calculi
 - ? appendicitis

RE-AUDIT 2016

- 200 consecutive patients presenting to ED, had PFA
- Random selection from all patients over 4-month period

Justification of clinical indications



Radiologist report







Fig 4. Follow up imaging required

Fig. 5 Follow-up imaging modality



CONCLUSIONS

- Justification of PFAs improved between 2011 and 2016
- Faster access to US/CT has decreased inappropriate PFAs
- Follow-up imaging reduced from 42% to 37%
- Still too many non-contributory PFAs being performed

CLINICAL AUDIT

- What?
- Why?
- How?
- Who? everyone
- When? always
- Where? anywhere

CLINICAL AUDIT

- Intended to improve patient outcome (directly or indirectly)
- Easy
- Doesn't always require a lot of resources
- Continuous process
- Should be part of regular clinical activity
- Self-reflection
- Always trying to do better



"Regulatory audit today?"

