ACR 2017
The Crossroads of Radiology

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Application of PDSA cycle for auditing preprocedure documentation of image-guided Procedures

QI project to improve efficiency and patient safety at a community hospital

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Disclosures

- None of the authors declare any potential conflict of interest.

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Introduction

- American College of Radiology and Society of Interventional Radiologists published practice guidelines in 2009
  - (Available at http://www.acr.org/guidelines)
  - Detailed recommendation for pre-procedure documentation in regard to image-guided procedures (e.g. biopsy, paracentesis, abscess drainage) by radiologists
    - The plan for each procedure to be performed
    - Indication for procedure and brief history
    - Findings of targeted physical examination
    - Relevant laboratory and other diagnostic findings
    - Risk stratification, such as the American Society of Anesthesiologists Physical Status Classification
    - Documentation of informed consent

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Results of 1st audit

- Audit of pre-procedure documentation of 29 ultrasound-guided procedures performed within the Department of Radiology during a 4-week period in August 2013
  - Poor quality of documentation, with overall adherence rate to the ACR/SIR guidelines of 8%
  - Reasons for poor results: too busy, lack of awareness about the guidelines

Example: 8/16/13 9:00 am

The patient is admitted to MedEase for ultrasound-guided liver biopsy for evaluation of a liver mass. PLT 298, INR 1.03 on 8/14/13. Patient not on any anti-coag medications. Informed consent obtained.

Resident Name and signature

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Objectives

- To improve the quality of pre-procedure documentation by two means

  1. By improving the efficiency of the work flow for residents
  2. By creating a proforma (in which most clinical information is auto-fed) within the EPIC (our electronic medical record system) for the pre-procedure documentation that collects all necessary items listed in the guidelines

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Methods

Topic: Pre-procedure documentation
Standard: ACR/SIR practice guidelines

Initial audit: August 2013

Data analysis: November 2013

Creation of an EPIC proforma

Use of the proforma in practice

Re-audit and data analysis:
March 2014

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Methods

- Using 10 randomly selected procedures as 'simulated requests', we measured time taken to complete pre-procedure documentation, without and with the use of proforma:
  - Five radiology residents performed 'simulated clinical information collection' and 'simulated pre-procedure documentation', both without and with using the new proforma
    - Inter-observer variability assessment
      - To prevent residents entering information by memory, the first session (without proforma) and the second session (with proforma) were held with 4 weeks time interval
  - Two residents repeated the whole process, with 12 weeks time interval between sessions:
    - Intra-observer variability assessment

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- Without proforma:
  - Open the patient's medical record in EPIC (Electronic Medical Record)
  - Manually search the necessary information
  - Manually fill out paper 'pre-procedure checklist'
  - Discuss the action with the attending
  - Type pre-procedure notes in free form in EPIC

- With proforma:
  - Open the patient's medical record in EPIC
  - Launch the smartphrase
    - Information is mostly auto-fed
    - Complete the remaining necessary empty fields (e.g. consent, NPO, issues with coagulation, ASA status, sedation)
  - 'Pend' the document and discuss the action plan with the attending
  - After obtaining approval, fill out the action plan and sign the document

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Methods

- Re-audit:
  - Pre-procedure documentation of 33 ultrasound-guided procedures in a 4-week period in March 2014
  - Pre-procedure documentation entered using the proforma
  - Re-assessment of the adherence rate to the ACR/SIR guidelines

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Results

- Median time taken for information collection and preprocedure documentation per case was reduced in all residents, ranging from 52% (from 7 min 46 sec to 2 min 56 sec: resident E) to 69% (from 8 min 38 sec to 2 min 40 sec: resident A) reduction.
- Repeated measurements by two residents showed similar results.
- Adherence to ACR/SIR guidelines improved from 8% to 100%.

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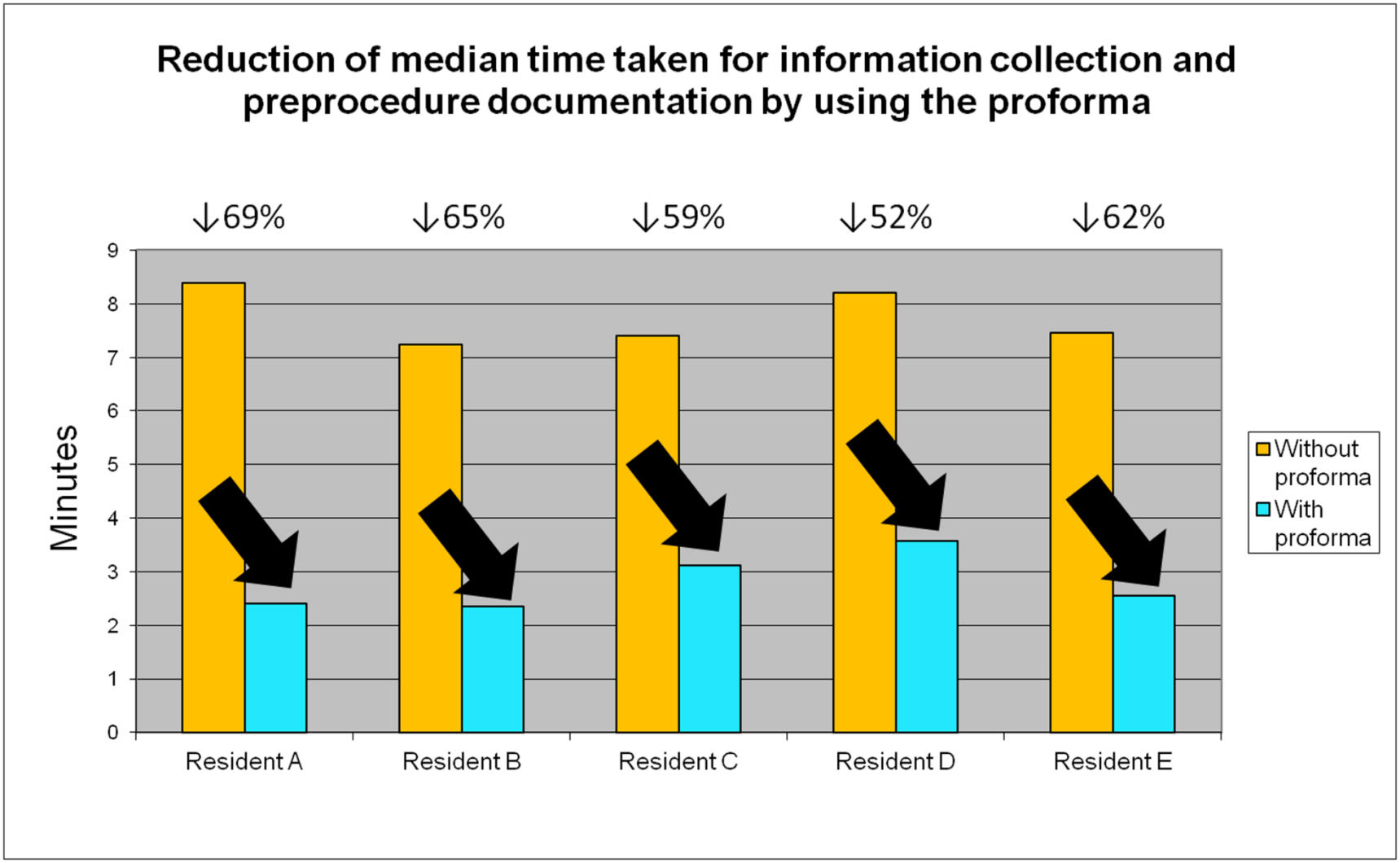
Results



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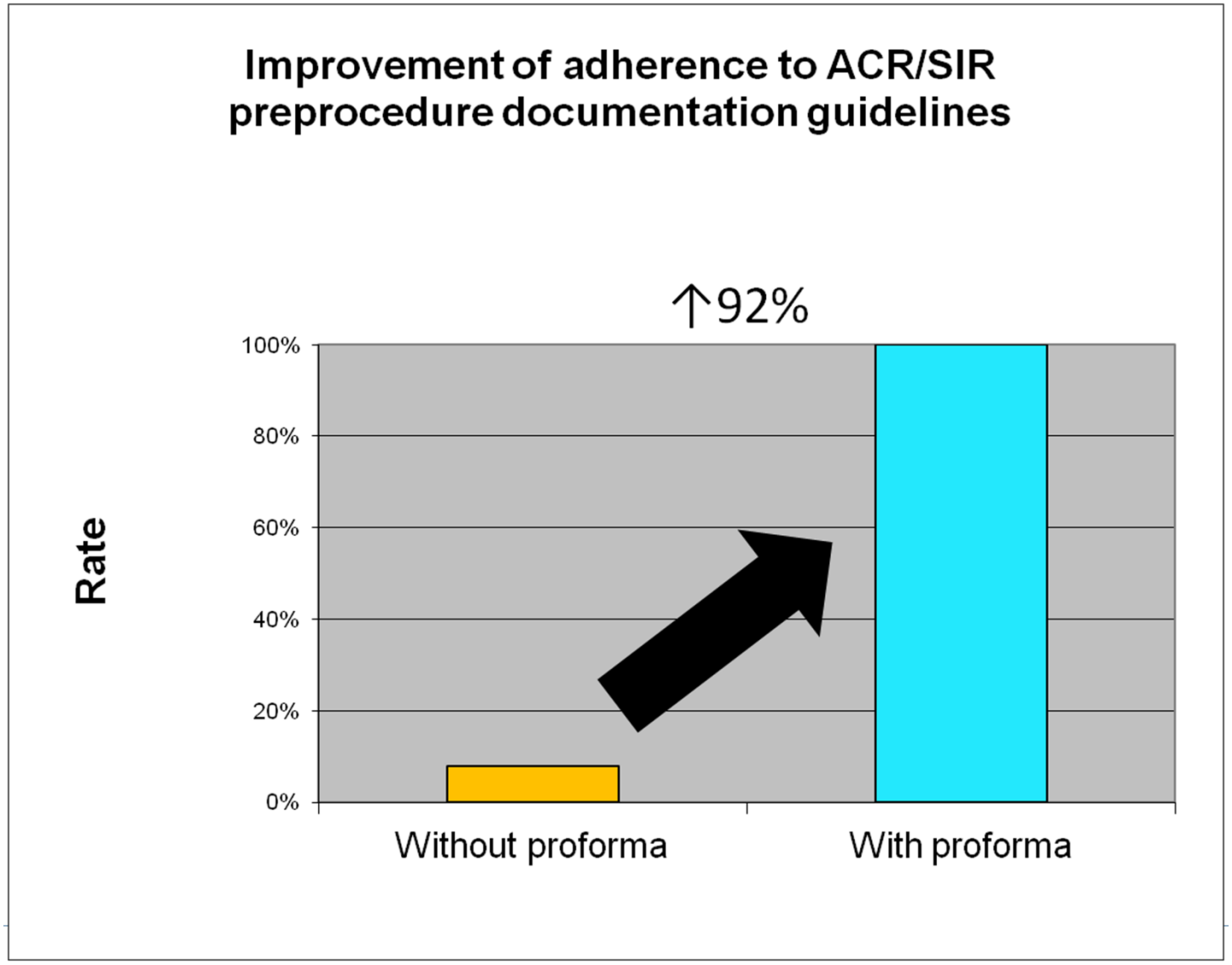
Results



Adverse Events

- Without proforma:
- Delayed discharge due to post-liver biopsy pain (1 case)
- Delayed discharge due to continued leak of ascitic fluid post-paracentesis (1 case)
- With proforma:
- Due to miscommunication among staff, one case was about to be performed without the patient signing the written informed consent
  - ✓ Thanks to the proforma, a resident realized a lack of it and prevented an incident
- None post-procedure

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Discussion

- Use of the new proforma improved both efficiency of work flow and quality of preprocedure documentation
- Improvements are a result of a completion of an audit process
- EPR has been time consuming for physicians due to extensive need for documentation, but this type of tool might streamline workflow, leaving more time for bedside patient care
- Adverse events that occurred before the use of proforma could not have been prevented even if the proforma was available
- The proforma did prevent one potential incident

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Conclusion

- Our QI project using PDSA cycle showed that the effective use of a proforma with autofeeding feature from EPR can improve efficiency and quality of documentation in line with ACR/SIR guidelines, and thus improve patient safety.