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A mixed methods study of the operational impact of digitized hospital records

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Background

- Digitized (scanned) medical records have been seen as a means for hospitals to reduce costs and improve access to historical records.
- This can be part of an EPR programme or independent.
- Clinical usability of digitized records can potentially have negative effects on productivity.
- Two NHS hospitals collected data on outpatient clinic timings as part of their implementation.

Objectives

- How do consultation timings vary by site and specialty?
  - Paper records
  - Digitized records
- How do clinicians perceive the change?

- Mixed methods approach:
  - Quantitative work sampling by non-clinical observer
  - ANOVA and Mann-Whitney U
  - Qualitative focus group (1 site)

Quant findings

- Paper records (n=280): significant difference in median consultation times between sites (p=0.016) and between specialties within a site (p=0.003).
- Digitized records (n=126): no significant difference in median consultation times between sites (p=0.166) but there is between specialties within a site (p=0.001).
- Excluding outliers, no significant difference between paper and digitized records at the level of site (p=0.935, p=0.285) or specialty (p=0.122, p=0.685).
- Tasks: both sites swap time between search types; site B also increased time in direct patient care

Qual findings

- About half said latest clinic letter provided most information required for consultation.
- Overall standard of clinical letters had improved due to increased reliance on them in the digitized record.
- General perception that clinics take longer.
- Also having to adapt to online lab requesting/reporting.
- No obvious analogue to nurse doing ‘clinic prep’.
- Most agreed that benefits of scanned records outweighed the disadvantages.

Synthesis

- On average, clinics don’t take longer with scanned records but they feel as though they do.
- Specialty has more effect on timing than digitized record.
- Simultaneous adoption of other EHR solutions adds to sense of disorientation; processes don’t change smoothly.
- Some unexpected benefits of digitized record: remote handover, timeline in record, (indirectly) improved letters.