

Background

Despite the digital revolution, many operation notes worldwide are still written by hand. In the UK we lack a single universal electronic system for recording and accessing patient data.^{1,2}

Clear and accurate documentation is crucial, not only for the post-operative management of patients but also for medico-legal reasons.

The Royal College of Surgeons (RCS) has clear guidelines on 'Good Surgical Practice' - the gold standard for operative note documentation.^{1,2} This audit examines compliance at Withybush General Hospital (WGH).

Aims

1) Evaluate the quality of surgical operative note taking by reviewing the completeness in recording and accuracy of:

- Correct filing and time taken to find the operation notes
- Overall legibility, number of illegible words and number of abbreviations
- Patient identification details
- Name of operating surgeon, assistant and surgeon's signature
- Date and time of the operation
- Name of procedure, operative diagnosis and description of operative findings
- Incision type, type of wound closure and type of anaesthetic
- Type of surgery, i.e. elective or emergency
- Post-operative management plan

2) Compare the results of operation note documentation with the RCS 'Good Surgical Practice' guidance, i.e. the gold standard.

Methods

Audit

A retrospective review of 75 randomly selected patients' notes at WGH, Hywel Dda University Health Board.

The inclusion criteria were patients who had undergone a general surgical operation between August 2015 and August 2016.

Two junior doctors reviewed the operation notes against the RCS 'Good Surgical Practice' guidance.

A score of $\geq 90\%$ compliance with the guidance was considered a favourable outcome.

Intervention

Education about RCS 'Good Surgical Practice' and aide-mémoire in theatre.

Training sessions on how to record electronic operation notes on WelshPAS (our current Hywel Dda Health Board electronic system).

Computer typed electronic notes recorded on WelshPAS, and printed copies filed in the patients notes.

Re-audit

Review of 68 randomly selected patients' electronic operation notes who had undergone a general surgical operation between January-May 2018 at WGH, after the above interventions had been implemented.

Two junior doctors reviewed the operation notes against the RCS 'Good Surgical Practice' guidance.

References

- ¹ Ghani, Y et al. 2013. 'Smart' electronic operation notes in surgery: An innovative way to improve patient care. *International Journal of Surgery* 12, 30-32.
- ² Ip, B et al. 2013. From knife to paper: an audit of surgical communication. *Clinical Governance: An International Journal* 19(1), 41-51.
- ³ Royal College of Surgeons (RCS). 2014. *Good Surgical Practice*. From: <https://www.rcseng.ac.uk/standards-and-research/gsp/>

Results

Figure 1: Results of audit

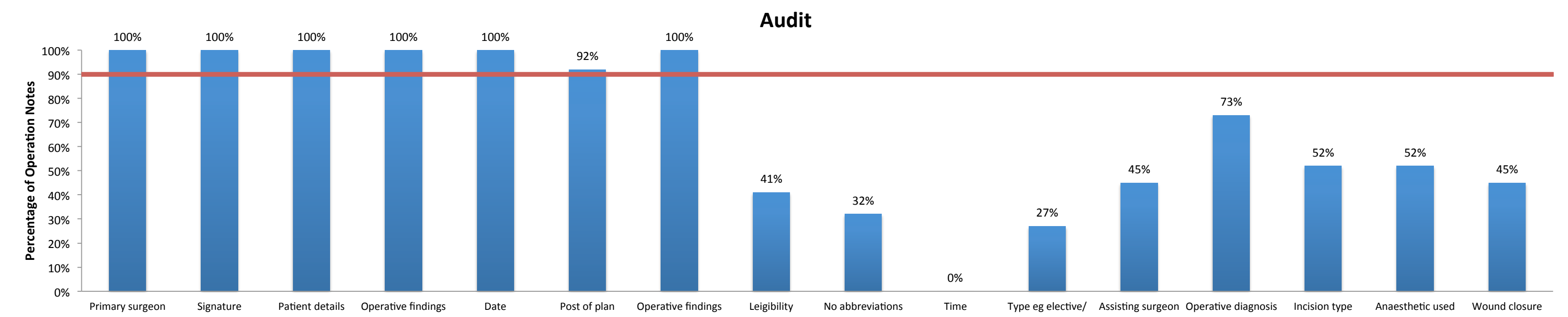
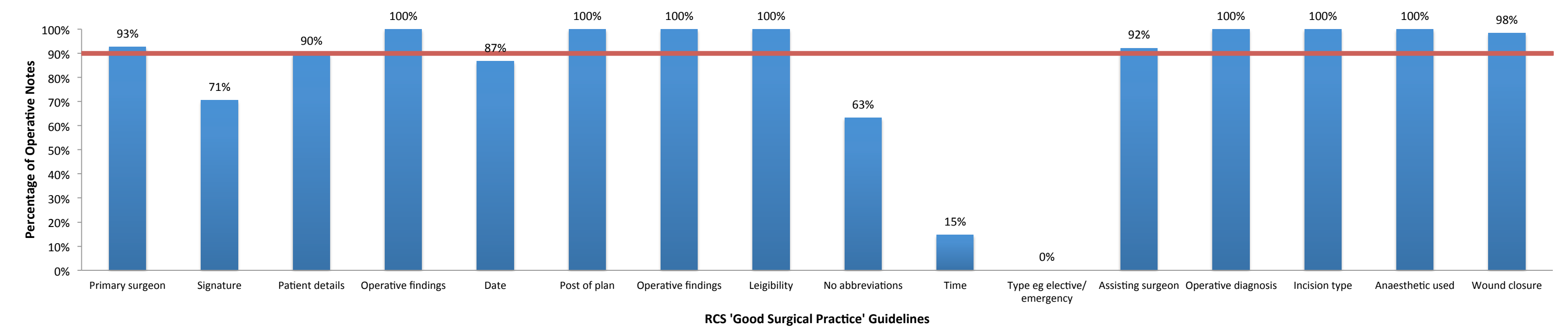


Figure 2: Results of re-audit



RCS 'Good Surgical Practice' guidelines	Audit (% of operation notes)	Re-audit (% of operation notes)	Percentage change (%)
Primary surgeon	100	93	-7
Surgeon signature	100	71	-29
Patient details	100	90	-10
Operation findings	100	100	0
Date of surgery	100	87	-13
Post operative plan	92	100	+8
Operative findings	100	100	0
Legibility	41	100	+59
No abbreviations	32	63	+31
Time of Surgery	0	0	0
Type e.g. elective/emergency	27	0	-27
Assisting surgeon	45	92	+47
Operative diagnosis	73	100	+27
Incision type	52	100	+48
Anaesthetic used	52	100	+48
Wound closure	45	98	+53

Table 1: Comparison of results of audit and re-audit

Discussion

No (0%) single operative documentation, in either the audit or re-audit cohort, met *all* of the RCS guidelines. **The re-audit results with electronic documentation showed improvement in:** legibility (100%), no abbreviations used (63%), name of assisting surgeon (92%), operative diagnosis (100%), incision type (100%), anaesthetic used (100%) and wound closure (100%). Furthermore we note that retrieving hard copy patient files is time-consuming. Although no objective measurement of this was taken for comparison, electronically recorded operation notes allowed for more rapid access for data collection in the re-audit cohort.

There were deteriorations in some areas of the re-audit: the name of the primary surgeon (93%), the surgeon's signature (71%), the patient's details (90%) and date of the operation (86%).

Why have these deteriorations occurred? The answer is likely to be multifactorial: 1) inexperience of the primary surgeon with electronic system – the function that automatically adds the patients details, knife-to-skin time, primary surgeon to the operation note was not utilised, 2) inexperience of theatre staff – in an out-of-hours scenario a patient may not be registered onto the electronic system and therefore it is impossible to enter an electronic operation note, leading to 3) poor-compliance with electronic operation note recording, 4) no clear electronic template prompting all that RCS 'Good Surgical Practice' criteria be included – our current WelshPAS system uses a freestyle box for entering the patient operation note, 5) difficulties in signing the electronic operation note and finally, 6) technical issues with electronic operation notes not saving onto WelshPAS, requiring retrieval of paper notes to review the typed hard copy of the operation note.

Conclusions

Implementing electronic operation note keeping has improved WGH's overall compliance with the RCS 'Good Surgical Practice' guidelines.

The re-audit has highlighted specific areas of operation note documentation that require improvement, including staff training.

The results also highlight technical challenges of the current electronic WelshPAS system that need to be addressed.