

Improving information availability in vascular surgical clinics. A service evaluation and improvement project

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Abstract

This prospective service evaluation was designed to assess the availability of critical information required in vascular surgical clinics. All the data was collected via a repeated questionnaire, and the outcomes from each cycle were used to highlight where intervention was required to improve the surgical clinic experience.

The first audit identified outpatient clinic deficiencies and allowed for problem analysis. Two Plan-Do-Check-Act (PDCA) cycles then were undertaken. Interventions following each cycle included consultant access to online duplex scans and secretarial access to referral letters.

Results from the first cycle showed that approximately 20% of clinic appointments were missing information and only 30% of these issues were resolved during the clinic using a work around.

Following the first intervention; the numbers of missing patient notes reduced to 4.3% (10.5%), and referral letters to 3.6% (4.6%). Although the numbers of missing duplex scan results increased to 6.5% (3.3%), the new system of online scan results allowed for all scans to be accessed during the clinic.

Following results of a second PDCA cycle, vascular surgical secretaries were given access to 'choose and book', a database of GP referral letters. Post intervention, all missing referral letters (2%) could be accessed immediately within the clinic setting.

Data driven interventions and repeated PDCA cycles can improve hospital systems for minimal cost. With an annual clinic turnaround of 2500 patients, these interventions can reduce clinic delays and potential harm caused by unavailable records for up to 500 patients a year.

Problem

It was noted that large numbers of vascular surgery outpatient appointments had inadequate information available to conduct the appointment satisfactorily, and the issue was worsening. Particular problems identified were missing patient notes, referral letters from GPs, and results of recent duplex scans. This invariably resulted in additional work to track down information during the clinic, longer patient wait times, and sometimes incomplete assessments requiring patients to be rebooked into later clinics.

Background

The project was carried out in a vascular outpatient department of a major tertiary referral centre in the UK. Outpatient clinics are run throughout the week by Consultants and Specialist Registrars (SpR), with nursing support throughout the session and secretarial clinic administration.

The service evaluation was designed to assess the availability of critical information available within the clinics, with particular reference to the important diagnostic documents missing during the clinic appointment. All data was collected during consecutive half-day appointments, and a questionnaire was completed by a

consultant surgeon or speciality registrar during the session.

The questionnaire highlighted which clinical documents were absent for each patient, and also whether the issue was resolved during the clinic session. Data was then analysed by a vascular foundation doctor.

Baseline measurement

An initial audit quantified the problem via a prospective questionnaire of 150 consecutive outpatient appointments. Each clinic session documented how many patients were affected by missing data, and whether an alternative method was used to gain access to the documents required.

Initial outcomes showed that approximately 20% of vascular clinic appointments had information missing, and only 30% of these issues were resolved using a work around. With an annual clinic turnaround of 2500 patients, results highlighted potential issues to over 500 patients per year. Time spent chasing these clinic requirements leads to delays, inconclusive diagnostic results, and additional costs to the NHS.

See supplementary file: ds6657.docx - "Figure 1"

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Design

This study was a prospective service evaluation. All the vascular surgical clinics held during a two week period were selected, and consecutive patients attending the clinics were reviewed. Information was collected via a single questionnaire and data on numbers of patients affected by missing documents, and whether a work around was used was extracted.

Following initial results, two Plan-Do-Check-Act (PDCA) cycles were completed. Each cycle ran over a two week period and included approximately 150 patients.

In light of the results, separate interventions were endorsed, and outcomes were measured using repeated data collections. The cycles were conducted two to three months apart to allow sufficient time for intervention action.

Strategy

This initially comprised of staff awareness and engagement to develop and implements solutions. All members of the ward and clinic teams were informed of the problem severity, and how the quality improvement group intended to intervene.

Our following strategies were guided by the positive outcomes of electronic patient records and their ease of availability.[1]

For the first active intervention all consultants and SpR's were given login usernames and passwords to the online duplex results system. This consequently allowed access to duplex results within the clinic setting, and solved the issue of missing paper copies. The process was organised by the vascular SpR's following trust approval, and was completed by the hospitals' IT support network.

For the second PDCA cycle, missing referral letters were addressed by providing secretarial staff access to the 'choose and book' system - an online record of GP referral letters. If any letters were absent from the clinic they could be accessed within minutes and taken to the outpatient setting. Again following trust approval, IT support services endorsed 'choose and book' access to each of the secretaries' trust desktops.

Improvement was measured by repeat audit using the same questionnaire.

Results

Results from the initial audit showed that 10% of appointments were without patient notes, 3.3% were missing duplex scans, and 4.6% had no referral letter. Overall 20% of appointments had inadequate data. The breakdown from this can be seen in figure 1.

After the first PDCA cycle missing patient notes reduced from 10.5% to 4.3%. Missing referral letters reduced from 4.6% to 3.6%. Interestingly, the number of patients without duplex scan reports in the notes increased from 3.3% to 6.5%, but the new solution meant

that all scans were available during the clinic appointment. The quantities of missing data from this cycle can be seen in figure 2.

During a second PDCA cycle, the number of missing duplex scans again increased to 11%, but the number of missing referral letters reduced to 2%. This aside, all could be accessed in the clinic setting following intervention (figure 3).

Following intervention, all duplex scans and GP referral letters could be accessed during clinic appointment. Although not specifically measured, this infers reduced clinic delays for patients, and reduction in inconclusive clinic outcomes.

See supplementary file: ds6658.docx - "Figures 2&3"

Lessons and limitations

The PDCA approach is well suited to this type of small service improvement project. Interestingly, after the advent of online access to duplex reports, the incidence of printed reports in the notes worsened. This was an unintended consequence of the changes implemented, but following instigation of electronic records, not an uncommon finding according to the literature.[2]

To allow access to duplex scans, the trust firstly endorsed approval and IT services were able to instigate password secured logins. Rotating registrars were provided with generic logins to ensure all members of staff could benefit from the system at any one time. Although some resistance from the Trust as present at first, this was rapidly overcome following data provided by the PDCA cycles.

The changes described work at a local departmental level, but such problems are likely to exist throughout the hospital OPD infrastructure. Ideally this quality improvement should be extended to improve the OPD macro-systems hospital-wide.

Conclusion

With a significant proportion of the NHS becoming paperless, patient data is more readily available online. Accessing this data can improve the service offered to patients and may increase productivity, but unintended consequences should also be considered.

References

- 1 Hypponen H et al. Impacts of structuring the electronic health record: A systematic review protocol and results of previous reviews. *International Journal of Medical Informatics*. 2014;83(3):159-159.
- 2 Harrington L, Kennerly D, Johnson, C. Safety issues related to the electronic medical record (EMR): synthesis of the literature from the last decade, 2000-2009. *Journal of Healthcare Management*. 2011;56(1):31-43.

Declaration of interests

There were no conflicts of interest for this study, and no funding was required.

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Ethical approval

No ethical approval was required for this study.