

Implementation of semi-automated electronic correspondence for a regional TAVI service

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Transcatheter aortic valve implantation (TAVI) improves symptoms and longevity in patients with severe aortic stenosis. At the Royal Infirmary of Edinburgh, we undertake more than 200 implants per year. All referrals received are discussed at a multidisciplinary team (MDT) meeting. This is associated with a considerable administrative burden. Timely communication with the referring clinician and the patient is essential to optimise patient flow. Despite a standardised approach to the MDT process, we recognised several aspects could be associated with delay and aimed to improve the efficiency of this process.

Objectives

- To evaluate MDT performance
- To implement and evaluate a semi-automated correspondence tool

Methods

We evaluated implementation of a semi-automated electronic correspondence tool to communicate outcomes from a regional TAVI MDT using a before and after study design and PDSA methodology.

A dedicated electronic database was created within a secure NHS network to facilitate creation of electronic MDT letters. This incorporated outcomes, including the decision to list for TAVI, the recommended prosthesis type, size, route of access, and any other patient specific details. Following database completion, a standardised letter is generated for each patient using free text and restricted text fields. Letters are reviewed by the MDT chair and uploaded by administrative staff to the electronic patient record, transmitted to the GP and sent to the referring clinician. This system was developed using commercially available electronic spreadsheet and word processing software.

The primary aim was to determine if implementation of the electronic system led to a reduction in time taken for outcomes to be communicated to the referring clinician. Secondary aims included a qualitative analysis, determining acceptability of the system to users and ease of use. Quantitative data were examined for normality and compared using the T test. A two-sided P value of <0.05 was taken to be significant

Example MDT outcome letter

Dear «Dr Smith»,

RE: «Finn Russell» CHI: «1002480197»

Date of MDT: «5th May 2023»

Referring Consultant: «Dr Smith», «A Hospital, Scotland»

Outcome: «Suitable for TAVI» «26mm Sapien S3 Ultra» «RFA»

Thank you for referring «Finn Russell» to the TAVI MDT. We discussed their case on the «5th May 2023». They appeared «suitable for TAVI» with a «26mm Sapien S3 Ultra» via the «right common femoral artery». There were no specific additional concerns. He will be added to the routine waiting list and we will be in touch in due course.

Yours sincerely,

Dr «TAVI Implanter»
Consultant Cardiologist

Copy to:
«Dr Smith», Consultant Cardiologist, «A Hospital»
GP

Figure: Outcome letter generated from electronic database using free text and restricted text fields. Text highlighted in grey is automatically extracted from database. Note fictitious patient data used.

Results

Between the 5th December 2022 and the 27th March 2023, 96 elective outpatient TAVI referrals were discussed across 14 MDT meetings. The semi-automated tool was implemented on the 13th February 2023. We evaluated 47 referrals pre-implementation and 49 referrals post-implementation.

Implementation reduced the time taken from MDT meeting to clinician correspondence from 27.9 +/- 17 days (mean +/- IQR) to 3.7 +/- 3.5 days (P<0.01). Clinicians who used the system felt it was easy to use, taking less than ten minutes per meeting. Administrative staff were supportive as the requirement to transcribe dictation was removed. A number of iterative changes were made to the template during testing with at three generations of the system optimised. As the system has received favourable feedback, it has now been adopted for routine clinical use.

Conclusions

The implementation of an electronic correspondence tool significantly reduced the time taken for MDT outcomes to be communicated with primary and secondary care. The system received positive feedback and has been adopted as part of standard practice. It is simple to develop, can be implemented with relative ease and is highly adaptable. This process could be adopted for other similar healthcare purposes to reduce administrative burden and improve efficiency.



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