

The effects of audit and feedback and electronic referrals on the quality of primary care referral letters

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ABSTRACT

INTRODUCTION: Appropriate referral from primary care to hospital specialists is a critical component of general practice patient management. This study investigated the quality of such referrals in a group of general practitioners (GPs) and nurses.

AIM: To assess whether feedback improves the quality of referral letters from general practice to secondary care and how electronic referrals affect the quality of referral letters.

METHODS: All 15 GPs working on the West Coast in New Zealand and the two nurses in this locality who regularly wrote referral letters agreed to participate in the study. For each participant, referral letters to hospital specialists were assessed using a nine-point checklist. Ten consecutive letters were assessed for each participant. Written feedback on referral letter quality was given and a further 10 letters from each participant were assessed five months later. After a further five months, 10 electronic referral letters from each participant were assessed.

RESULTS: Feedback to general practitioners and nurses improved the quality of referral letters for participants whose original referral letters were of poorer quality. The average score for referral letters was 81.4% at baseline and this improved to 86.9% after feedback. The introduction of electronic referral letters did not lead to a further improvement in referral letter quality.

DISCUSSION: This study demonstrated that feedback to general practitioners and nurses can improve the quality of referral letters to secondary care. The introduction of electronic referral letters as used on the West Coast did not lead to any further improvement in referral quality.

KEYWORDS: Hospital referrals; primary health care; quality improvement

Introduction

One of the core functions of general practice is the appropriate referral of patients to hospital specialists for investigation, diagnosis and management. Previous research has shown large variation in the quality of referral letters from general practitioners (GPs) to specialists.¹⁻⁷ Attempts to improve referral letter quality have included the introduction of form letters⁸ and electronic referrals.⁹⁻¹¹ One UK study has shown that peer-mediated feedback to GPs improved referral letter quality.¹²

The aim of this study was to explore the effect of peer-mediated audit and feedback on referral letter quality and how the subsequent introduction of standardised electronic referral letters affected referral letter quality.

Methods

All GPs and nurses working on the West Coast of the South Island in New Zealand who regularly refer patients to secondary care services were invited to participate in this study. Short-term locum GPs were not included. All eligible

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GPs (15) and nurses (2) agreed to participate in the study. The quality of referral letters was measured using a nine-point checklist (Table 1). This assessment tool was derived from criteria used by other researchers in the field.^{2,3,5,7,8,13,14} The two researchers assessed all referral letters between them, excluding referral letters from doctors in their own general practice. An initial sample of 15 letters was identified. Each referral letter was assessed independently on the nine-point checklist and there was a high degree of agreement between the markers (mean difference 0.1, standard deviation [SD] 11.8; Bland-Altman limits of agreement -23.5 to 23.8). Ten consecutive referral letters were marked at each audit point for all participants. The first audit round assessed 10 consecutive letters written just prior to the participants joining the audit. The letters were obtained from the local base hospital, Grey Hospital, where all referrals are sent in the first instance. Each referrer's letters were given an aggregate score based on the nine-point assessment tool.

At the end of the first round of audit all 17 referrers were given written feedback, which consisted of both their average referral letter score and their ranking in the group by tertile. Five months after receiving this feedback, another 10 consecutive referral letters from each referrer were assessed using the same method, and participants again received written feedback consisting of their average score and ranking by tertile.

At this time, the West Coast District Health Board introduced an electronic referral system. These electronic referrals use a template that pre-populates the referral letter with the patient's personal details and then has additional areas to specify the action requested and the priority for the referral. A space for writing the history is followed by areas where the referrer can include medications and allergies, as well as copies of investigations obtained from the patient's computerised medical records. It is also possible to 'cut and paste' consultation notes into the electronic referral letter. This letter is then sent electronically to the Grey Hospital Booking Unit for distribution to specialists. After these electronic referrals had been in use for five months, the researchers carried out a final round of audit of the

WHAT GAP THIS FILLS:

What we already know: A UK study has shown that peer-mediated feedback to general practitioners improved the quality of their referral letters.

What this study adds: This study also demonstrated that provision of feedback to general practitioners can improve referral letter quality. The use of electronic referrals did not appear to further improve the quality of referrals.

Table 1. Referral letter quality assessment nine-point scoring checklist*

1. The patient's problem requiring referral and its history is clearly stated at the beginning of the referral.
2. The relevant findings on examination are included.
3. Investigations performed and ordered are included.
4. Treatment given for this problem is documented.
5. Current medications and allergies are included.
6. Past medical history relevant to this referral is included.
7. Was referral to a specialist necessary?
8. Was the referral directed to the appropriate specialist service?
9. Is the letter concise and to the point?

* If an item on this checklist was not applicable to the particular referral it was omitted. After adjusting the denominator, a percentage score was derived for each individual referral letter.

electronic referral letters, using the same assessment tools. Two of the referrers from different practices chose not to use the electronic referrals and one GP had left the area, so electronic referrals were assessed for 14 participants only. Participants were again given written feedback on their referral letter quality. These participants were also asked their opinion on the ease and quality of the electronic referral letters, compared to the previous paper-based referral letters.

Paired *t*-tests were used to compare referrers' scores before and after feedback, and after feedback and when they were using electronic referral letters.

The National Ethics Advisory Committee advised that this audit did not require ethical approval.

Results

There was an improvement seen in the quality of referrals after participants received initial

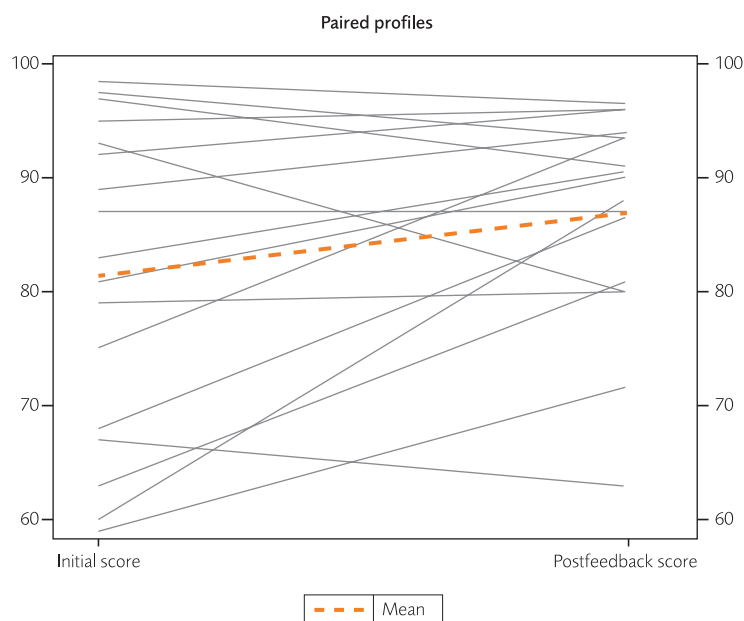
Table 2. Referral letter scores before feedback, after feedback and with electronic referral letters

	Descriptive statistics				
	No. of participants	Mean	SD		
Before feedback	17	81.4%	13.8		
After feedback	17	86.9%	9.3		
Electronic referrals	14	84.7%	11.5		
	Comparisons				
	Mean difference	95% CI	Paired t-test	df	p-value
Before–After	-5.5	-11.1, 0.0	-2.12	16	0.05
After–Electronic	4.2	-2.5, 11.0	1.35	13	0.20

CI Confidence interval

SD Standard deviation

Figure 1. Scores for initial written referrals versus postfeedback scores



feedback on referral letter quality (Table 2). Many GPs had very high quality referral letters both before and after feedback, and unsurprisingly, their scores showed little variation. Referrers with poor initial scores showed the most improvement in the quality of their referrals, as is evident from a comparison of pre- and post-feedback scores (Figure 1). The introduction of electronic referral letters did not lead to any further improvement of letter quality compared to the post-feedback scores (Table 2). Indeed, there was

a small, non-significant decline in quality with the introduction of electronic referrals, although because of the small sample size the confidence interval was wide.

Discussion

This study showed that feedback from colleagues improved the quality of referral letters. Our results are similar to another small study in England of 24 GPs who received feedback from peers on their referral letters to a colorectal surgical service.¹³ Their letters showed an average 5.3% improvement in their quality. Although the current study secured the participation of all referring GPs and nurses in our area, the sample was too small to include a control group not receiving feedback on their referrals to secondary care. All referrers used computerised patient records and, unlike other studies, there were no referral letters that omitted patient registration details (address, phone number, date of birth, etc).² General practice computerised patient records make it very easy to copy both consultation notes and results of investigations directly into referral letters. Our nine-point scoring system only allocated one point for concise, well-written referrals. Many letters consequently scored well because they included much information, but these letters were often difficult to follow as a large amount of information had been copied into the letter directly from the computerised record of the patient. The most coherent letters were those by referrers who instead took time to write a succinct summary of the patient's problem, their examination findings, and relevant treatment and investigation findings.

The coincidental introduction of electronic referrals during this study allowed the assessment of whether this introduction led to any further improvements in referral letter quality. Electronic referral letters did not appear to change the quality of referral letters. This is perhaps not surprising, as all referrers were already using practice computerised patient records, which put patient demographic information, as well as medical classifications, medications and warnings into referral letters. The electronic referral letters made it slightly easier to copy consultation notes and investigation findings into referral letters,

but this did not improve the quality or coherence of referral letters.

The researchers also asked participating GPs for their assessment of how electronic referrals affected the quality of referral letters. Only three of the 17 referrers thought that electronic referrals had improved either the ease of writing or the quality of referral letters. Most participating GPs thought that electronic referral letters took longer to write than conventional referral letters.

Other research on electronic referral letters has been more positive.^{9,10} This may relate to the form of electronic referral used. The electronic referral letters in this study and those in some other studies are essentially only computerised templates that access the patient's computerised medical records.^{10,11} Other studies describe electronic referrals that embed decision support functions in the electronic letter that are specific to different specialties and conditions, and these types of electronic referral letters appear to improve the quality of referral letters.⁹ The Canterbury District Health Board (a neighbouring DHB) has been using similar electronic referrals and has been able to embed links to clinical pathways that appear to be useful to referrers. The Canterbury DHB has already been able to use data collected from these electronic referrals to provide feedback to referring doctors.

The West Coast District Health Board is endeavouring to embed customised referral templates for different clinical conditions, but this is a complex process as the range of conditions is so large. The authors are of the view that this will be useful for referrals for relatively simple problems, such as breast lumps, rectal bleeding and orthopaedic problems. However, it seems less likely that these customised referral templates will be helpful for patients with complex and multiple problems. For such patients, a succinct, well-written summation of the patient's problem and what the GP requests of the specialist will be required.

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COMPETING INTERESTS

None declared.