The quality and relationship of referral and reply letters

The effect of introducing a pro forma letter

I. D. Couper, R. J. Henbest

Objective. An intervention study was conducted to assess the effect of a pro forma letter on the quality of referral letters from general practitioners at a rural hospital in KwaZulu-Natal, and on the quality and rate of replies received.

Method. 254 referral letters and 111 replies were evaluated.

Results. The quality of referral letters improved after the introduction of the pro forma letter, but the quality of replies did not. The reply rate (43.5%) did not change, and the quality of replies showed a low correlation with the quality of referral letters, indicating that improvements in the quality of referral letters will not necessarily bring about improvements in the quality of replies. Instead, the reply rate was found to be influenced mainly by the hospital to which the patient was referred. Replies were also observed to function poorly as a means of continuing medical education.

Conclusion. Pro forma letters improve the quality of referral letters, but on their own do not improve the rate and quality of replies. Personal contact between referring doctors and consultants would seem to be an important factor in respect of the latter.

A fully functioning referral system is an important part of the support required for effective primary health care. Letters between the practitioners involved are an essential ingredient of this system.

Consultants in referral hospitals complain about the poor quality or absence of referral letters; this is the subject of numerous journal articles. The intervention most commonly advocated to improve the quality of referral letters has been that of a pro forma referral letter, although no study on the effect thereof could be found.

General practitioners, however, complain about the poor standard of responses they receive from referral hospitals and the lack of reply letters. Various studies have shown that the response rate is often low, with the implication that this poor response rate is due to the poor quality of referral letters. General practitioners often criticise colleagues in referral hospitals, claiming that they do not read referral letters, do not understand the problems of patients outside their hospitals, and do not keep the general practitioner up to date.

Materials and methods

An intervention study, with a before and after comparison of the effect of using a pro forma referral letter, was conducted.

Data were collected prospectively. After consent had been obtained from the doctors at Manguzi Hospital, carbon copies of all outpatient referral letters written between 1 April 1991 and 31 July 1991 were collected and included in the sample. A pro forma referral letter, produced by the then KwaZulu Department of Health, was introduced on 1 June 1991. All replies received to those letters from hospital-based consultants (or their registrars and medical officers) practising at hospitals to which patients were sent, viz. Ngwelezane, King Edward VIII, King George V, Wentworth and Prince Mshiyeni Memorial hospitals, were collected from April 1991.

The scoring system used to rate the referral and the reply letters was based on a list of items considered absolutely essential in the literature reviewed. These items were then tested practically and discussed widely with colleagues in order to improve their validity.

The items chosen to assess referral letters were the following: (i) presentation problem (history and/or clinical findings); (ii) diagnosis/assessment/summary of the problem; (iii) management, including investigations, past or present treatment, or primary care; and (iv) reason for referral or question posed.

The following items were assessed in reply letters: (i) findings, assessment and diagnosis; (ii) interventions including investigations, treatment and/or advice; and (iii) follow-up arrangements, management plan or prognosis.

Scoring was simply 1 for 'present', 0 for 'absent', resulting in a total score of 0 - 4 for referral letters and 0 - 3 for reply letters. A random subsample of 10% of the letters was scored by an independent rater; another rural hospital-based general practitioner, who obtained kappa scores of 0.65 for referral letters (indicating substantial agreement) and 0.93 for replies (indicating almost perfect agreement). Legibility was also assessed. In terms of this, the kappa scores for agreement with the independent rater were very favourable, i.e. 0.95 for referral letters and 1.00 for replies.
Data analysis was by means of the SAS and the EPI 5 programmes. Paired t-tests and chi-square tests were used to assess the differences between the scores of referral letters before and after introduction of the pro forma. A Spearman Rank correlation coefficient was computed to assess the correlation between the quality of referrals and replies. Differences in quality and rate of replies before and after the introduction of the pro forma were assessed using the chi-square test. The relationship between quality of referrals and the reply rate was assessed using the chi-square test for trend.

Results

A total of 254 referral letters were included in the sample, 112 before the introduction of a pro forma letter and 142 after. No letters were excluded. Details of the hospital or clinic to which the patient was referred were missing in 5 letters. There were 111 replies to these letters, 54 before and 57 after the introduction of the pro forma letter. The overall reply rate was 43.7%.

As shown in Table I, varying numbers of patients were referred to 6 hospitals and there was a marked difference in the rates of reply. The reply rate for Ngwelezane Hospital was significantly better than for any of the other hospitals (58%; P = 0).

<table>
<thead>
<tr>
<th>Hospital</th>
<th>No. of referral letters</th>
<th>Reply rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ngwelezane</td>
<td>135</td>
<td>60.7</td>
</tr>
<tr>
<td>King Edward VIII</td>
<td>77</td>
<td>24.7</td>
</tr>
<tr>
<td>Wentworth</td>
<td>13</td>
<td>23.1</td>
</tr>
<tr>
<td>Prince Mshiyeni</td>
<td>7</td>
<td>14.3</td>
</tr>
<tr>
<td>King George V</td>
<td>4</td>
<td>60.0</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>28.8</td>
</tr>
<tr>
<td>Total</td>
<td>254</td>
<td>Overall reply rate 43.7</td>
</tr>
</tbody>
</table>

The presence or absence of the items assessed in both referral and reply letters is shown in Tables II and III. With regard to referral letters, presenting problem and diagnosis were already generally given to the pro forma letter and did not change significantly after its introduction. The management and the reason for referral were mentioned significantly more often after the introduction of the pro forma letter.

Table II. Effect of pro forma on the quality of referral letters

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency before pro forma (%)</th>
<th>Frequency after pro forma (%)</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>94.6</td>
<td>97.9</td>
<td>0.165</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>83.9</td>
<td>90.6</td>
<td>0.122</td>
</tr>
<tr>
<td>Management</td>
<td>56.3</td>
<td>76.7</td>
<td>0.001</td>
</tr>
<tr>
<td>Reason</td>
<td>56.3</td>
<td>74.7</td>
<td>0.002</td>
</tr>
</tbody>
</table>

* Chi-square test.

Table III. Effect of pro forma on quality of reply letters

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency before pro forma (%)</th>
<th>Frequency after pro forma (%)</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Findings</td>
<td>81.1</td>
<td>87.9</td>
<td>0.320</td>
</tr>
<tr>
<td>Intervention</td>
<td>77.4</td>
<td>70.7</td>
<td>0.424</td>
</tr>
<tr>
<td>Follow-up</td>
<td>09.0</td>
<td>82.2</td>
<td>0.108</td>
</tr>
</tbody>
</table>

* Chi-square test.

The name of the responding doctor was given in 63% of reply letters. Furthermore, 49% of the replies indicated which clinic the patient had attended and 84% gave the date on which the letter had been written. Only 4 reply letters contained any continuing medical education or update comments. Of the 33 letters asking specific questions that had received reply letters, 20 included an answer to the question. Only 0.4% of referral letters were judged to be illegible, versus 10.8% of replies.

Effect of the pro forma letter

When the scores of referral letters before and after the introduction of the pro forma letter were compared, there was an increase in the mean score from 2.9 to 3.4, indicating a significant improvement in the quality of the referral letters (P = 0.0001 on a paired t-test).

The introduction of the pro forma letter did not have a significant effect on the quality of reply letters (mean before = 2.28; mean after = 2.41; P = 0.3701).

As shown in Table III, there was no significant difference in the reply rate before and after the changeover to the pro forma (before = 46.2%; after = 40.1%; P = 0.246).

Assessing the relationship between the quality of referral letters and replies as measured by total scores, the correlation was found to be low (r = 0.16; P = 0.10). This was confirmed by scatter plotting.

As shown in Table IV, there was a suggestion that the quality of referral letters regardless of whether a pro forma letter was used, does influence the rate of reply, but this trend was not statistically significant.

Table IV. Relationship of reply rate to the scores of referral letters

<table>
<thead>
<tr>
<th>Referral letters: total score (N = 254)</th>
<th>Reply rate (%)</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (N = 6)</td>
<td>16.7</td>
<td>0 - 55.0</td>
</tr>
<tr>
<td>2 (N = 47)</td>
<td>38.3</td>
<td>24.4 - 52.2</td>
</tr>
<tr>
<td>3 (N = 95)</td>
<td>49.5</td>
<td>39.0 - 58.8</td>
</tr>
<tr>
<td>4 (N = 106)</td>
<td>42.5</td>
<td>32.1 - 50.9</td>
</tr>
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</table>

Discussion

The quality of the letters in this study was measured in terms of the number of expected components included in the letter rather than the actual contents thereof. The introduction of the pro forma referral letter led to an improvement in the quality of referral letters by increasing the frequency with which the treatment given and the reason for referral were included. To our knowledge, this is the first time that a pro forma letter has been shown to bring about
improvements in the quality of referral letters. No medical school is known to teach the art of letter writing, so the presence of a form to remind the referring doctor of what constitutes a good referral letter should be valuable.

The introduction of a pro forma letter in this study did not, however, improve the quality of the replies or the reply rate, in spite of the fact that the pro forma letter had a printed section for a reply and included a comment that the referring doctor looked forward to a reply.

The pro forma letter is therefore a useful tool if the purpose is to improve the quality of referrals, because of the presumed link between this and patient care, but it cannot be expected to change the reply rate.

When total scores are analysed relative to reply rates, a score of more than 1 seems to bring about a better reply rate, though the sample size was inadequate to demonstrate a significant link between quality of referrals and rate of reply. A relationship may have been confirmed if a bigger sample had been used. The assertion sometimes made that the way to improve the reply rate is to improve the quality of the referrals may therefore have some validity, even though a pro forma letter per se will not bring about this improvement.

It was noted that there were widely differing reply rates from different hospitals. One possible explanation for this may be a difference in the commitment of the hospital to serve the periphery, and in the attitudes of the particular consultants in charge of the clinics. It is particularly interesting to note that where a personal relationship existed between Manguzi Hospital doctors and consultants running referral clinics at Ngwelezane Hospital, the reply rate was much higher.

Many other confounding factors, which could not be controlled for, may have influenced the reply rate, such as the patient load in each clinic, the proportion of junior versus senior staff, the attitudes of nursing staff in the hospital and the anxiety of the patient with regard to his preconceived ideas about the hospital in question. We know that patients lose letters, and some are not given their letters by the nursing or clerical staff involved at the referral institution. These factors all bear examination, but it can be argued that they still remain within the scope of responsibility of the receiving hospitals. The correlation between the quality of referral letters and the quality of replies was low. This accords with the study of Jacobs and Pringle.

Only 4 out of 111 replies included any specific update comments or continuing medical education. This is substantially less than in the British study by Jacobs and Pringle, where 28% of letters included some form of education. Where doctors requested more information in the form of specific questions, 20 out of 33 questions were answered. Specific questions therefore increase the chance of a meaningful reply. It is not unusual for receiving doctors to complain about standard of care in the periphery; by replying more frequently and in more detail, they may be able to improve the standard of care and to decrease the number of referrals in the future. Jacobs and Pringle suggest that the general practitioners whose letters are poor are most in need of a good reply.

The accuracy of the reply rate may be questioned given the expected pattern, and that what loss there is, can be expected to be the same regardless of the hospital or clinic involved, and, more pertinently, over time.

Bias could have been present in the scoring, in that the first author was the first rater. The intention was to limit this bias by the use of an independent rater, but the independent rater was also a rural hospital doctor. In one study which used both specialist and general practitioner raters, however, it was found that general practitioners were significantly harsher critics of their colleagues than were specialists, and that they rated specialists' letters much more highly.

What was not assessed in this study is the appropriateness of replies. Many reply letters may have been considered satisfactory in respect of content, yet may have been inappropriate, e.g. letters requesting patients to return for results which could have been given by phone or letters requesting daily or weekly monitoring of patients who live a day's walk from the nearest clinic.

Conclusion and recommendations

A pro forma letter was shown to improve the quality of referral letters, but not the quality or rate of replies. To improve the quality of referral letters, pro forma letters should be introduced. In the interests of improving the reply rate, perhaps the best thing to do would be to increase the amount of personal contact consultants have with the periphery by ensuring regular specialist visits to rural hospitals.

Our thanks go to Salim Abdool Karim, director of CERSA, for his encouragement and advice at the outset, and to Eleanor Gouws of the Medical Research Council in Durban for her assistance with the statistical analysis.

REFERENCES


Accepted 2 July 1996.