

Evaluation of interdepartmental calls generated in 8 tertiary care hospitals of Northern Pakistan

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Abstract

Objective: To assess the quality of medical call writing in multiple tertiary care hospitals based on a variety of parameters.

Method: The cross-sectional study was conducted in 8 tertiary care hospitals across Pakistan from May 27 to June 27, 2021, and comprised residents and consultants aged 25-60 years regardless of gender and specialty. Data was collected using questionnaires related to demographic and professional characteristics, quality of calls received, quality of calls sent, and opinion regarding improvements to the existing system. Data was analysed using SPSS 22.

Results: Of the 105 participants, 65(62%) were residents and 40(38%) were consultants. General surgery team received referrals most frequently 26(24.7%). History of the patient along with relevant examination findings were mentioned in 4(3%) and 6(5%), respectively ($p=0.6$ vs $p=0.5$). The timeline was mentioned by 10(9.5%), ($p=0.09$), and it was inconsistent with the clinical relevancy in 13(12.3%) cases ($p=0.5$). The working diagnosis for which the patient was admitted in a particular service was mentioned in 35(33.3%) of the generated calls ($p=0.01$).

Conclusion: The call referral system deserved more attention in order to improve communication among the physicians. Analysis of the quality of referral letters should be part of initial and continuing medical education.

Keywords: Communication, Call system, Electronic medical record, Referral system. (JPMA 73: 1969; 2023)

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Introduction

Miscommunication leads to complications and this is true in the field of medicine as well. Medical call writing is a common practice routinely done by doctors all across the globe. It is still the most prevalent and efficient form of communication in the healthcare sector, which is why the written call must be accurate, clear and relevant.¹ Otherwise it would waste time and can raise risk of errors.

Written communication can be between general practitioners and consultants from various specialties working in tertiary care hospitals. This interaction is important as poor communication may lead to negative outcomes, such as patient dissatisfaction, compromise on patient care and unnecessary workload.

Communication breakdowns are common sources of medical errors. In fact, as high as 70% of medical errors have been attributed to failures in effective communication.² An unstructured consultation, whereby a consultant is asked to provide recommendations regarding the care of a patient without formal assessment and communication, has been characterised as a "high-risk type of interaction".³ Historically, it has been a common practice in medicine,

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which can adversely affect patient care, it is, therefore, of prime importance to have a clear communication to have smooth and efficient delivery of care to the patient.⁴

The current study was planned to assess the quality of medical call writing in various tertiary care hospitals of Pakistan.

Subjects and Methods

The cross-sectional study was conducted in 8 tertiary care hospitals across Pakistan from May 27 to June 27, 2021. After approval from the institutional ethics review board, the sample size was calculated to be 39 using Raosoft calculator with 95% confidence interval (CI) and 5% margin of error.¹ The sample was raised using non-probability consecutive sampling technique, and comprised residents and consultants aged 25-60 years regardless of gender and specialty. Consultants doing only private practice and not part of a tertiary care teaching centre were excluded.

Informed consent was obtained from all the subjects. Owing to confidentiality concerns, the names of the hospitals have not been disclosed. Data was collected through both paper-based and electronic versions of a questionnaire which was developed after identifying the issues in current call referral system at the study site and at other hospital systems. Since the current study was a pilot project, no pre-validated questionnaire was available in literature.

The study questionnaire was divided into four sections. The first section contained the demographic and professional variables, including age, gender, specialty and years of service in that specialty. The second part of the questionnaire contained information regarding a respondent's expectations and experiences with a consultation in terms of patient's exact location, age, gender, diagnosis, vital signs, history and examination findings, reason for consultation and how urgent it is to review the patient. This part of the questionnaire evaluated how much and how correctly the information was being provided to the other teams. The third part of the questionnaire assessed how frequently they generated a consultation in a day, to which specialty mostly, how frequently did they mention important details, the admitting diagnosis, the reason for the consultation, and timeline along with justification to follow the patient. The fourth part dealt with awareness of the individuals pertaining to already defined international call referral systems, about their views on a digital system being introduced, and if they wanted any changes to the current system.

Data was analysed using SPSS 22. Mean and standard deviation were calculated for qualitative variables with paired t test. Frequencies and percentages were calculated for quantitative variables with chi-square test. $P \leq 0.05$ was considered statistically significant.

Results

Of the 105 participants, 65(62%) were residents and 40(38%) were consultants. General Surgery team received referrals most frequently 26(24.7%), followed by Internal Medicine 16(15.2%) and Anaesthesia 12(11.4%). The specialty to send most frequent referrals was Internal Medicine 39(36.2%), followed by Cardiology 13(12.6%) and Surgery 5(4.7%). In terms of frequency of calls, >5 calls were received by 26(40%) residents and 11(28%) consultants ($p=0.16$). Also, 5(8%) residents and none of the consultants sent more than 5 referrals in a day ($p=0.146$). Of the 26(24.7%) calls received by General Surgery, 10(38%) were from house officers, 9(35%) consultants, 6(23%) residents and 1(4%) nursing staff (Table 1).

Table-1: Number of referral received by various departments (n=65).

Job description	General Surgery	Internal Medicine	Anaesthesia n (%)	Orthopaedics n (%)	Vascular n (%)	p-value
Consultants	9 (35)	1(17)	-	-	-	0.104
Residents	6(23)	4(25)	4(33)	6(100)	3(50)	
House officers	10(38)	11(69)	8(67)	0	2(33)	
Nursing staff	1(4)	0	0	0	1(17)	
Total	26	16	12	6	6	

Table-2: Frequency of a particular call parameter mentioned in a received referred call.

	Consultant n (%)	Resident n (%)	p-value
Age (years)	12(30)	23(35)	0.16
Gender	23(57)	33(51)	0.5
Diagnosis	7(17)	27(42)	0.01
History	4(10)	0	0.6
Examination	1(2)	4(6)	0.5
Timeline mentioned	2(5)	8(12)	0.09
Timeline relevant with the clinical indication	6(15)	7(11)	0.53
Clear reason for generating a call	1(2)	4(6)	0.17

Table-3: Study participants mentioning relevant particulars when generating a call.

	Consultant n (%)	Resident n (%)	p-value
Define reason for consultation clearly	31 (78)	55(85)	0.28
Urgency of referral defined	10(25)	26(40)	0.26
Are all team members aware about the reason for call generation	20(50)	44(68)	0.19

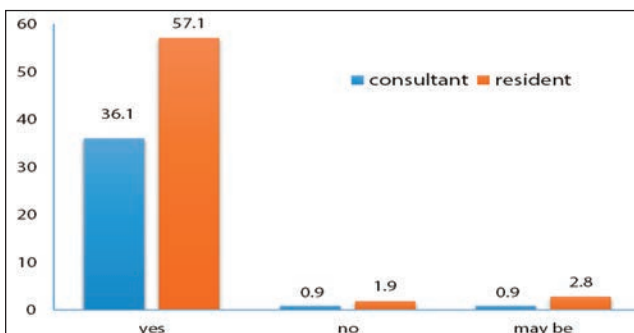


Figure-1: Physicians/ view on a predefined patient referral form.

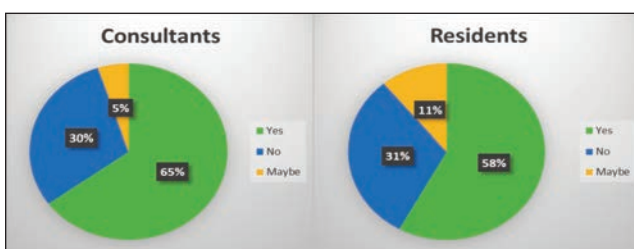


Figure-2: Views of consultants (A) and residents (B) regarding the electronic call referral system.

Frustration on receiving an inpatient referral was reported by 11(10.4%) consultants and 18 (17.1%) residents ($p=0.04$). The awareness regarding international guidelines was present in 24(60%) consultants and 26(40%) residents. Their views about predefined patient referral form and regarding the electronic call referral system were noted separately (Figures 1-2).

Discussion

Referral of patients from one physician to another is a daily practice in most tertiary care hospitals all over the world. However, this has been identified as a high-risk practice.³ Appropriate communication is essential in ensuring the safe ongoing care of the patient and also protection from law suits.

There are multiple modes of patient referral. Referrals over telephone can be a source of misunderstanding and may lead to patient mismanagement. Hence, a detailed written call is always preferred over a telephonic referral.⁵ A written call should be a source of help for the specialist rather than bringing unwanted work, interrupting clinical activities or postponing patients' care.

This practice is achieved by the clear and concise transfer of patient's clinical information from one healthcare provider to another. This mandates that a senior member of the team, preferably the consultant, should write the referral. However, the practice was seen to be very inconsistent in the current study population. The Joint Commission, Agency for Healthcare Research and Quality (AHRQ), Institute for Healthcare Improvement (IHI) and the World Health Organisation (WHO) recognise Situation, Background, Assessment, Recommendation (SBAR) as an effective communication tool for patient referral. SBAR is a reliable and validated communication tool which has shown improvement in communication among healthcare providers.⁶ Although practised worldwide, the SBAR tool was not followed at health centres that were part of the current study.

Another method used to ensure appropriate call writing is the 5 Cs method;⁷ Clarity, Cohesiveness, Completeness, Conciseness and Concreteness.

Electronic Medical Record (EMR) is also a well-known communication method. A study, conducted in Brigham Women's Hospital, Boston, to examine the effects on EMR on the referral process, showed improved physician communication and eventually better patient outcome.⁸ Aga Khan University Hospital, Pakistan, has been using EMR system for some time and has progressed to generating patient referral on a mobile application. A call generated by the app can be viewed by every relevant doctor within seconds. This not only increases the speed at which calls are attended, but also improves the overall awareness of the entire healthcare team with regards to patients' status and ongoing management.⁹

In the present study, all calls were manually generated on a call register, which was then physically sent to the relevant doctor. When asked whether there should be a

predefined referral system and if an electronic call referral system should be used, consultants and residents answered in the affirmative overwhelmingly, indicating the insight among the healthcare team of the flaws of the current system.

In the current study, it was observed that most calls were received by General Surgery, followed by Internal Medicine and Anaesthesia. Consultants generated most of the calls to General Surgery, but this was not the trend with the other specialties, who received most of their calls from residents.

Overall, the majority of calls were generated by residents. This is in contrast to the American Medical Association guidelines of 2005, which state that calls should be generated by consultants, in order to avoid unnecessary calls and burden on hospital systems.¹⁰ Given the limited number of consultants and the overwhelming patient load in most of local health institutions, relegating call generation to just the consultants would not be entirely practical, but a consultant's review or counter-sign of the referral call will be beneficial for effective communication.

Interestingly, it was noted in the current study that parameters of a good call were followed by residents more often than by consultants. This can be attributed to the fact that because of less experience, they include almost everything in a referral, some of which may be irrelevant. Moreover, when residents generated calls, all team members were aware of the reason for call generation more often than when consultants did, which is important for patient care. One of the possible explanations of this is that all junior team members do ward duties and spend more time in wards with patients and therefore are more coordinated.

'Urgency' and 'relevancy of call' were the parameters most often lacking from calls in the current study, along with failure to mention appropriate history and relevant examination findings. It is especially important for urgency to be accurately and clearly defined. As there are limited doctors in every specialty, it is not always possible for them to see every patient as soon as there is a problem. That is why calls generated should clearly state the nature of urgency, in order to avoid unnecessary delay in attending the sickest patients first. On the other hand, falsely labelling a call as urgent can lead to wastage of hospital resources and delays in seeing the patients who genuinely require urgent attention.

A study conducted in Khyber Medical University to explore the trend of medical call writing by doctors working in tertiary care hospitals, concluded that the content of

medical calls was found to be inadequate.¹¹ Similar observations were made in the present study. This was probably because medical colleges and training programmes focus on patient diagnosis, management and bedside manners, but do not include any emphasis on effective communication between physicians. Moreover, medical call writing is not explicitly taught at under- and post-graduate levels.¹²

A study conducted at Mt. Sinai Hospital to assess the quality of trainee consults revealed adequate knowledge of the parameters of a good call but inadequate use of them in call writing. A training session was organised which had a very positive feedback.¹³ This has further strengthened the current findings that a structured workshop on effective communication may play a vital role in this regard.

The current findings suggested a definitive flaw in the current call system at the participating hospitals, and the results were shared with the heads of all departments at the study centre. A new call referral system for the hospital was subsequently designed, and has since become a part of standard documentation.

The current study has limitations as it had a small sample size. Besides, lack of similar studies in the country meant the findings could not be compared. Also, since data was collected from multiple centres, no inference can be made as to which particular city was more advance in terms of effective patient referral system.

Conclusion

The referral letter deserves more attention in order to improve communication between physicians. Analysis of the quality of referral letters should be part of initial and continuing medical education. Moreover, training courses should be conducted to emphasise the importance of good interdepartmental communication, and the vital role a good call has on optimising patient care will have a huge impact on the healthcare system as a whole.

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