Original Article

# Evaluation of the Pattern and Quality of Referrals from Inpatient Wards to Hematology Department of a Tertiary Hospital in Nigeria

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## Abstract

**Background:** The overall quality of care may be hampered by poorly written referrals. Referral letters should be detailed to elicit prompt response by the invited unit. This will enhance ideal management of cases that are referred. **Aim:** The aim of the study is to determine the quality (content and usefulness) of referral letters received from inpatient clinical wards of University of Nigeria Teaching Hospital (UNTH), Ituku/Ozalla by hematology department of the hospital. **Materials and Methods:** This was a retrospective study of all referral letters received in hematology department of the hospital over a 1-year period (January to December, 2019) using a validated questionnaire. **Results:** A total of 231 referral letters were received and evaluated. The median age of the patients was 35 (range: 20–59) years with male-to-female ratio of 1:1.3. Initial statement identifying the reason for the referral was observed in 88.7% ($n$ = 205). Majority (176/213, 82.5%) of the referrals did not include the results of investigations the patients did before the referral. Less than a quarter of the referrals (41/231, 19.3%) contained information on the treatment given to the patient. More than one-tenth (24/231), 11.3%) of the referrals were unhelpful while 13.6% ($n$ = 29) were helpful. **Conclusion:** The referrals sent to the hematology department were deficient in quality. These deficiencies could be ameliorated by tutoring the younger doctors on the content of an ideal referral letter. Furthermore, a well-structured "referral form" with prompts for easy filling could be designed by hospitals as a guide to physicians for writing appropriate referral letter.

**Keywords:** Content, hematology, letters, patient, quality, referral system

## Introduction

Hematology is that unique medical specialty that has a core laboratory and clinical arms. The laboratory arm is involved in the performance and interpretation of laboratory results. The clinical segment deals with complex clinical scenarios like abnormalities of the coagulation system such as venous thromboembolism and bleeding disorders, benign and malignant disorders of the blood and the blood-forming organs, transfusion, and transplantation medicine.[1]

Transfer of authority and responsibility over patient care is referred to as referral. Referrals are communication channels between health-care professionals.[2] It is also a way of transferring a patient from one doctor to another from a lower level of care to a higher one;[3] and "for a continuum of care in which case a health-care worker assesses that his client may benefit from accessing additional or expert services elsewhere."[4] According to the World Health Organization, the referral system is defined as "a process in which a health worker at a one level of the health system, having insufficient resources, and/or capacity (in terms of drugs, equipment, skills, etc.) to manage a clinical condition, seeks the assistance and involvement of a better or differently resourced facility or health worker at the same or higher level to assist in, or take over the management of the patient's or client's case."[5]

Such transfers can be temporary, where the referring physician expects a reply from the receiving doctor on

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his opinions on the referred patient's management or permanent where the patient continues his care with the receiving physician. It is usually triggered by insufficient resources by way of drugs, skills, or equipment to manage a particular ailment necessitating transfer to units with requisite capabilities. Good referral systems lead to efficient communication between all levels of patient management and this greatly improves cost effectiveness of health-care delivery.[6] It also reduces unnecessary repetition of investigations, delays in making a diagnosis and instituting treatment, and improves patients' satisfaction with the health-care system and the caregiver.[7-9] Vital components of an ideal referral should include biography of the patient (especially age and sex), reason for the referral, clinical history, treatment given, diagnosis being managed or entertained.[8,10,11]

Studies done over a decade ago showed evidence of poor communication in terms of referrals between the managing physicians.[12-14]

Routine hematology practice usually involves honoring significant numbers of such referrals received from other medical specialties (inpatient and outpatient). These requests commonly occur because primary evaluation of patients normally requires baseline full blood count and peripheral blood film.[15,16]

Demands on the hematologist will continue to be on the increase due to improved and available investigative tools that highlight abnormalities in blood parameters. Furthermore, hematological disorders usually have nonspecific symptoms and as such undiagnosed patients with hemato-oncology and bleeding disorders, bleeding resulting from systemic illness such as chronic liver disease, chronic renal disease with uremia will routinely require hematologist review. Obstetric complications as preeclampsia/eclampsia, placental previa, abruptio placentae that may result in HELLP (hemolysis, elevated liver enzymes, and low platelets) syndrome/disseminated intravascular coagulopathy, platelet disorders, anticoagulation due to venous thromboembolism (VTE) and related disorders, warfarin overdose are other clinical scenarios that require consults to the hematology unit.

It is therefore important that a good communication channel be established between the primary physician managing a patient and the new unit invited to review the patient. This is why a referral letter becomes a very important tool in the clinical chain of patients' management.[17,18] A well-written referral system no doubt benefits the patient by reducing delays in accessing clinical care. It is therefore imperative to evaluate the adequacy of its content and quality with view to advising the physicians accordingly. The objective of this study was to investigate the content and quality of referral letters received by the hematology department of University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla Enugu from doctors managing the patients at different wards of the hospital.

## Materials and Methods

### Setting

The study was carried out at the UNTH Ituku-Ozalla, Enugu. It is a 500 bed multispecialty tertiary hospital located in Enugu, Enugu state, South East Nigeria. The hospital is the oldest of that stature in that region and thus also caters for the health needs of the neighboring states.

Design: It was a retrospective study carried out over a 1-year period from January 1, 2019, to December 31, 2019. We reviewed consecutive referral letters from inpatients that were received in the department of Hematology and Immunology of the hospital. Referrals from outside the hospital were excluded since only inpatients were studied.

Data collection: Excel sheet was used to record information obtained from the referral letters. Information from the referral was assessed for quality and content using "the Consultation and Referral Request Letter Assessment Tool."[19] This is a validated instrument for measuring the quality and content of a referral letter. There are two major sections in this assessment tool: Content (13 items), and overall appreciation of the referral letter by the receiving doctor (this has a 5-point Likert scale; ranging from unhelpful referral to informative/helpful referral). We studied the content and overall appreciation of the referral letter. Data extracted included patients' demographics (age and sex), initial statement identifying the reason for the referral, past medical history, past surgical history, relevant psychosocial history, current medication list, allergies, relevant clinical findings, results of investigations to date, outline of management to date, provisional diagnosis or clinical impression, and a statement of what was expected from the referral. Other information we extracted included the medical specialty that initiated the referral, the wards patients were admitted and the reasons for the referral.

Data analysis**:** Analysis of the data was done using the statistical package for the social sciences (SPSS) version 21 (IBM Chicago IL. USA). Descriptive analyses of frequencies were done for all variables. Relationships where applicable were expressed using odd ratios (ORs) and 95% confidence intervals. A $P < 0.05$ was considered statistically significant.

## Results

### Demography

A total of 231 referral letters were reviewed within the study period. The patients were referred from various departments including Surgery, Pediatrics, Obstetrics and Gynecology, and others [Figure 1]. The patients' age ranged from 1 to 81 years. The median age was 35 years with an interquartile range of 20.5–59 years. The male-to-female ratio was 1:1.3. All the referrals were written by doctors who were either house officers or residents. None was written by a consultant. Details of demographics including the referring wards, bed, and folder patients of the patients were as shown in Table 1.

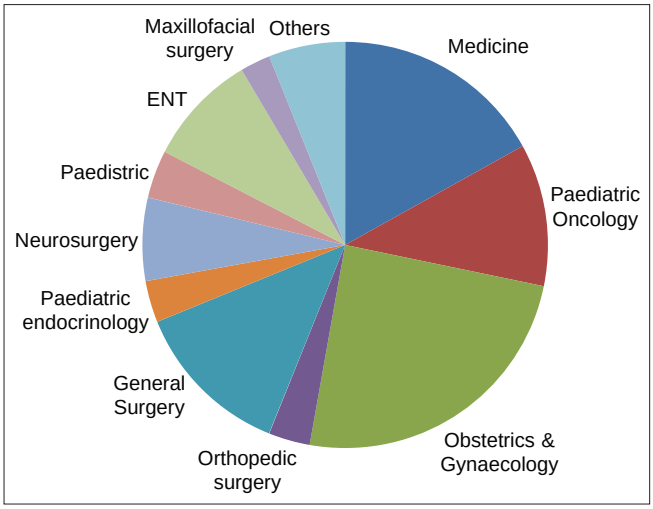


**Figure 1:** Distribution of various departments that send consults to hematology department

## Reasons for referrals

Thirty percent (69/231, 30%) of the referrals were due to abnormal blood count while the least proportion was due to request for a bone marrow aspiration (7/231, 3.0%). Bleeding episodes and thrombosis accounted for 24.9% ($n$ = 53) and 10.3% ($n$ = 22), respectively. Further details were as shown in Table 2.

Distribution of referrals based on departments: Obstetrics and Gynecology referrals accounted for the single largest bloc of referrals (53/231, 25%). Majority of the patients referred from the department were obstetric cases with bleeding (39/53, 73.6%) and those with deep venous thrombosis (13/53, 24.5%). The maxillofacial department referred the least number of patients– with histological diagnosis of hematological malignancies (5/231, 2.4%). Figure 1 shows the details of distribution of the referrals by departments. Quality of referrals: Initial statement identifying the reason for the referral was observed in 88.7% ($n$ = 205) of the referrals while patients' demographics were available in 99.1% ($n$ = 229). Majority (176/213, 82.5%) of the referrals did not include the results of investigations the patients did before the referral. Less than a quarter of the referrals contained information on the treatment (medication list) given to the patient (41/231, 19.3%). On a Likert scale of 1–5 (unhelpful to informative/helpful), 11.3% ($n$ = 24) of the referrals were unhelpful while 13.6% ($n$ = 29) were helpful. Details of the content and usefulness of the referrals were as shown in Table 3. Referrals written by resident doctors were significantly more informative/helpful than those written by the house officers (21/103, 20.4% vs. 8/110, 7.3%; OR = 3.27; 95% confidence interval = 1.4–7.7; $P$ = 0.007).

**Table 1: Characteristics of the referrals to the hematology department**

| Variables | Number of referrals, *n* (%) |
|---|---|
| Age (years) | 35 (1-81) |
| Gender | |
| Male | 91 (42.7) |
| Female | 122 (57.3) |
| Reasons for referral | |
| To make diagnosis | 142 (66.6) |
| For treatment | 71 (33.3) |
| Referring doctor | |
| Consultant | 0 |
| Senior registrar | 28 (13.2) |
| Registrar | 75 (35.2) |
| House officer* | 110 (51.6) |
| Folder no | |
| Yes | 163 (76.5) |
| No | 50 (23.5) |
| Bed no | |
| Yes | 176 (82.6) |
| No | 37 (17.4) |
| Ward | |
| Yes | 197 (92.5) |
| No | 16 (7.5) |

*Usually on instruction by a senior colleague

**Table 2: Various reasons for referrals to hematology department**

| Variable | *n*=213, *n* (%) |
|---|---|
| Abnormal blood count | 69 (32.4) |
| Bleeding episodes | 53 (24.9) |
| Thrombosis | 22 (10.3) |
| To procure blood product | 10 (4.7) |
| Transfusion reaction | 9 (4.2) |
| Deranged clotting profile | 7 (3.3) |
| For bone marrow aspiration | 6 (2.8) |
| HELLP syndrome | 9 (4.2) |
| To commence anticoagulation | 7 (3.3) |
| Lymphadenopathy/organomegaly | 11 (5.2) |
| Others* | 10 (4.7) |
| Total | 213 (100) |

*Others include leukocytosis, thrombocytosis, and recurrent fever. HELLP: Haemolysis, elevated liver enzymes and low platelet

## Discussion

This study showed that the quality of the referrals in terms of content and usefulness to hematologists was deficient. Many of the items including description of associated symptoms, description of relevant collateral history, past medical history, relevant clinical findings, current medication list, relevant psychosocial history, outline of management to date, results of investigations to date, allergies, and past surgical history were omitted in majority of the referrals. It appeared the referrals were sent with aim of transferring the patient to the hematologist. Even at that, an ideal referral is expected to have all the relevant components above. This is to ensure efficient communication, and reduce unnecessary repetition of investigations, and avoid delays in making a diagnosis and/or instituting treatment. A similar trend as observed in this study was noted by Esan *et al*. who reported that >80% of referrals

**Table 3: Quality of referral letters to the Department of Hematology, University of Nigeria Ituku/Ozalla**

| Content of letter | Yes ($n$=213), $n$ (%) |
|---|---|
| Initial statement identifying the reason for the referral | 182 (85.5) |
| Patient demographics | 211 (99.1) |
| Description of chief complaint | 199 (93.4) |
| Provisional diagnosis or clinical impression | 147 (69.0) |
| Statement of what is expected from the referral | 138 (64.8) |
| Description of associated symptoms | 32 (15.0) |
| Description of relevant collateral history | 75 (35.2) |
| Past medical history | 4 (1.9) |
| Relevant clinical findings | 81 (38.0) |
| Current medication list | 41 (19.3 |
| Relevant psychosocial history | 0 |
| Outline of management to date | 11 (5.2) |
| Results of investigations to date | 37 (17.4) |
| Allergies | 0 |
| Past surgical history | 0 |
| Overall application (Likert scale 1-5)* | |
| 1 | 24 (11.3) |
| 2 | 49 (23.0) |
| 3 | 80 (37.6) |
| 4 | 31 (14.6) |
| 5 | 29 (13.6) |

*1-unhelpful up to 5-helpful letters

to their Psychiatric unit lacked relevant information needed.[20] Akinmoladun *et al*. also noted that only 3% of the referrals they assessed were properly written with quality content.[21]

The medical history was not provided in more than 80% of the referrals received in this study. This finding is similar to reports from previous studies.[13,14] The reason could be because the referring doctors might have erroneously thought that the purpose of referral is merely to call a specialist's attention to the need of the patient. This underscores the need for formal teaching of writing referral letter to doctors by including the topic in the medical curriculum.

It was observed that majority (85.5%) of the referrals provided the reason for the referral and also described the chief complaint patient had at presentation However, Ibiyemi *et al*. found that only 20.1% of referrals in their study provided a reason for the referral.[22] This could be because we evaluated only referrals from inpatient wards where a diagnosis may have been made and a need for co-management of the patient necessitated the referral. Furthermore, in the current study, <30% (19.4%) of the referral had provided the hematologists with results of the investigations done for the patient. Comparable findings of 28.4% were reported by Osinaikea *et al*.[23] A provisional diagnosis was documented in 69% of referrals in this study. This is in contrast to a South African study which showed that 29% of the referrals lacked a clear provisional diagnosis or clinical history.[24]

The management protocol and treatment given to the patients were not indicated in 94.8% and 80.7% of the referrals, respectively. Inadequate medication history could lead to adverse drug reactions on the patient as found by Abuyassin *et al*.[25] Other studies have also shown that inadequate/insufficient communication across the health-care delivery system is a significant cause of medication errors.[26,27] At present, there is increased WHO effort to globally raise awareness of medication errors and also encourage member nations to reduce frequency of medication related morbidity and mortality.[28]

It was also noted that most referrals were due to abnormalities in blood count such as anemia, thrombocytopenia/thrombocytosis, or leukopenia/leukocytosis. This finding was at variance with what was seen by Aworanti *et al*. where hematologist assessment for possible definitive diagnosis of sickle cell anemia was the most frequent reason for the referrals. The reason for this observation in the current study may be due to the fact that full blood count is usually the first and the most common initial investigation requested by clinicians.[15] It is also readily available as a baseline investigation.[16]

The highest number of referrals came from Obstetrics and Gynecology department which is in keeping with the results of Aworanti *et al*. in Ibadan, Nigeria, who also found 25% of all referrals to be from Obstetrics and Gynecology.[29] However, this was at variance with Onoja *et al*. who reported that the bulk of referrals came from medicine department.[30] From our study, the least number of referrals were from the Maxillofacial department (2.4%), whereas in the Aworanti *et al*. study, the radiation oncology department with 0.4% of the referrals formed the least number of referrals whereas Onoja *et al*. reported that ENT had the least number of referrals.[30]

Interestingly, our study showed that none of the referrals was written by a consultant but rather by junior doctors (resident doctors and house officers). This is a common practice in Nigeria where consultants delegate this function to their residents in training.[20] More than half of the referrals were written by house officers who are the most junior in the medical cadre. This may explain the poor quality of the referrals received within this study period. These letters did not include the ward, bed number, and folder number of the patient referred in 7.5%, 17.4%, and 23.5%, respectively. Furthermore, referrals written by resident doctors were three times more likely to be informative/helpful than those written by house officers. It is therefore necessary that the letters written by the younger doctors, especially house officers be scrutinized for content and relevance by the consultants or the senior residents before delivery.

This study is limited by the fact that it analyzed only the inpatients referrals from the ward admissions. A more comprehensive analysis including the outpatient referrals from peripheral hospitals will be obviously more instructive.

## Conclusion

A significant proportion of referral letters to hematology department was deficient in quality. These deficiencies could

be ameliorated by tutoring the younger doctors on the content of an ideal referral letter. Furthermore, a well-structured "referral form" with prompts for easy filling could be designed by hospitals as a guide to physicians for writing appropriate referral letter.

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## Conflicts of interest

There are no conflicts of interest.

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