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ANALYSIS OF REFERRING PROCESS FROM THE EMERGENCY DEPARTMENT TO GENERAL SURGERY

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ABSTRACT

Referring patients from the emergency department to specialty doctors is crucial but frustrating. This study identified discrepancy and common ground in the referring process between emergency doctors and general surgeons. A 32-day database of surgical referrals was analysed. Moreover, a ten-question survey was sent to both emergency and surgical doctors. Inappropriate referrals were 19%, with a peak of 50% in 24 hours. Appendicitis (23%) and small bowel obstruction (15%) were the commonest inappropriate diagnoses. The survey showed frustration was reported more by surgeons (P <.05), believing patients are not yet sufficiently assessed when referred (P <.05). A common consensus was found on the need for specific criteria to guide surgical referrals. Improvement of communication is recommended, especially with regard to the attitude used during referrals. Specialties' relevance for specific conditions needs to be clarified. Eventually, a specific system is required to formally report inappropriate referrals and unprofessional behaviour.

1. Introduction

Referrals start when competence finishes. If the care required by the patient falls outside the provider's competence, it is necessary to arrange for a different relevant practitioner to see that patient and provide the service. Referring a patient serves his or her needs. All the necessary information about the condition and history must be passed on to the next healthcare professional [1,2]. Competence, communication and time all play a crucial role in establishing appropriateness of the final referral to the relevant specialty doctor.

In everyday reality, referring a patient from emergency department (ED) to specialty doctors is a fragile and stressful process. Criteria to identify and address surgical patients during first-line evaluation are often not clear enough, resulting in frustrating arguments between emergency and surgical doctors [3,4].

Refusal to see a patient represents a serious matter and rejecting a referral might result in disciplinary action. A common feeling among surgeons seems to be that referring should be feared as an act of predominance rather than a safe transfer of patients between colleagues. At present, a satisfactory protocol for the management of inappropriate referrals (IR) is yet to be conceived [3,5].

This study shows a detailed analysis of the current referring process between ED and general surgery (GS) with emphasis on appropriateness of surgical referrals (SR). The scope of the work was to identify areas of improvement and mutual understanding. Recommendations and changes of practice have been proposed in order to reduce current difficulties, increase safety and improve the system.

2. Material and methods

The study consisted of a database and a survey. The database was prospectively maintained with data of referred patients collected on a daily basis from the GS on-call handover list. Discordance between initial referred diagnosis and the final one was evaluated on a case-by-case basis by two senior surgical registrars, and confirmed with a surgical consultant. We only included referrals by qualified doctors working at our Trust's ED. Patients referred by advanced nurse practitioners were excluded. General practitioners, referring from practices outside the Trust, were not considered in this study. Patients simultaneously referred to different teams, i.e. both to medics and surgeons, were included. Trauma calls were not considered. In addition, patients with testicular pain, raising suspicion of torsion, or with breast pathology, which both need to be referred to GS

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as per Trust's protocol, were also excluded. Patients already referred to other specialists, who later asked for a surgical review, were not taken into account.

The referral has been marked as *"inappropriate"* when the patient had been erroneously sent to the non-relevant GS specialist on the basis of an inaccurate understanding of the clinical scenario leading to a final incorrect decision. In cases where additional investigations were later required by the surgeons to clarify the relevance of the pathology, these referrals were still considered appropriate. A referral was deemed appropriate even if the correct final diagnosis was different than the initial referred one, as long as it remained of surgical relevance.

All emergency and surgical doctors, who respectively had or had been referred to at least once during the study period, were invited to complete the survey (Fig. 1). Only referring ED doctors identified in the clerking document and with a valid NHS email address could participate in the survey. Responses from the ten-question survey were collected using SurveyMonkey (San Mateo, California, USA). A five-point Likert scale was asked for the evaluation of nine statements, and free text was required to comment on the last question.

Q	Statements
1	Discussing a patient who is being referred is a very frustrating experience
2	The information provided during referrals is sufficient to believe the patient is surgical
3	The attitude and tone showed by the doctor you are referring to or you are being referred by is courteous and professional
4	The emergency department first assessment and evaluation is sufficient to identify surgical patients
5	Rigid criteria for surgical referrals should be outlined
6	"Referrals cannot be refused" Instead of discussing a referral, it would be preferable to only give/receive essential information (i.e. hospital number, diagnosis, urgency/stability)
7	*"Inappropriate referrals cannot be returned to sender"* The wrong receiver should then refer to the appropriate specialty without being refused
8	*"Patients often present with a complex picture or multiple comorbidities"* Addressing only the main complaint will save time and reduce misleading conclusions
9	*"Patients in emergency department must be seen, admitted or discharged in under four hours"* This time pressure is somehow affecting the quality of the service provided
10	***How could you improve appropriateness of surgical referrals?***

Figure 1. Ten-question survey

Statistical analysis

Data were analysed using IBM SPSS Statistics (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp). Chi-square test was adopted for nominal variables whereas Mann-Whitney test was run for continuous variables. The latter, along with ordinal regression, were used for ordinal data, and Pearson coefficient to evaluate correlation. A P value of $< .05$ was considered statistically significant. Thematic analysis was applied for qualitative data from free text comments. Final themes were agreed and discussed.

3. Results

Data were collected for thirty-two continuous days, from 30th April to 31st May 2021. Bank holidays encountered during the period of study were considered as part of weekends.

Thirty-seven ED doctors had referred to GS in this time period. The ED doctors involved in the study included junior doctors, senior house officers, registrars and consultants. Fourteen surgical doctors had taken referrals during the study period, and included senior house officers and registrars (including two authors), who participated in the study.

During the month of the study, 280 patients were referred from ED to GS (range: 2 – 14 per day). We have identified 52 IR (19%), ranging from 0 to 4 in 24 hours (0 – 50%). Mean percentage of IR was 17% per day (Fig. 2). IR appeared to be strongly correlated with the number of total SR ($P < .05$). No difference was found in terms of inappropriateness of referrals between days and nights or weekdays and weekends ($P > .05$).

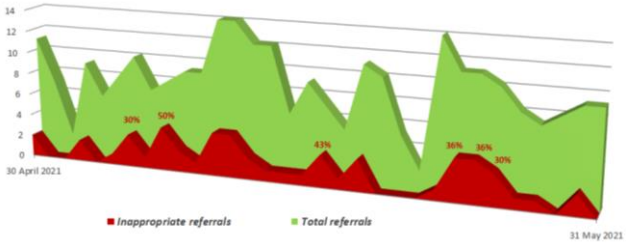
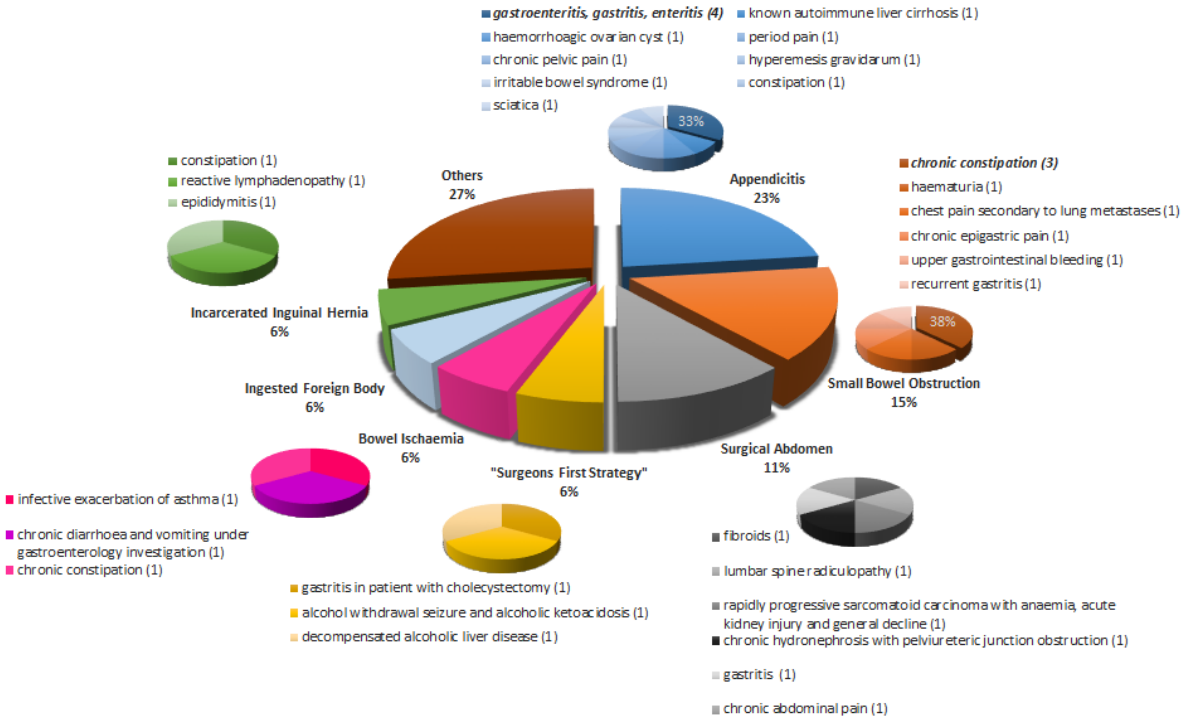


Figure 2. Inappropriate referrals during month of study. Peaks ≥ 30% are displayed

The most popular inappropriate diagnosis was appendicitis (23%), which revealed to be gastroenteritis in 33% of the cases. Small bowel obstruction followed in 15%, where 38% of the patients were eventually chronically constipated. Patients were inappropriately referred in 11% of cases as *surgical abdomen*, which included *acute abdomen*, *abdominal pain* or *"for surgical assessment"*, without a valid formulated suspicion or diagnosis. In 6% of IR, the medical team refused to accept referred patients unless surgeons had reviewed them first. This particular recurrent scenario has been labelled as *"Surgeons First Strategy"*. Bowel ischaemia, ingested foreign bodies and incarcerated inguinal hernias were inappropriately referred in 6% of cases each (Fig. 3). Exceptional cases will be discussed in the next section because of their peculiarity, along with the analysis of detected common mistakes.

The survey was closed after thirty-two days, with 14/14 responses from all participating general surgeons (100%) and 19/37 from emergency doctors (51%) (Fig. 4). Frustration seemed to be more likely experienced by surgeons when discussing a referral (Q1; $P < .05$). GS believed that ED's first assessment and evaluation of the patient are not sufficient, as well as the information provided, to establish the case is surgically relevant (Q2, Q4; $P < .05$). Although there was no significant difference between the groups in perceiving tone and attitude used during referrals as courteous and professional (Q3; $P > .05$), on each side no one had "strongly agreed" with the statement. There was instead a common agreement from both teams on the need of outlining rigid criteria for SR (Q5; $P > .05$). GS would still prefer to discuss extensively patients who are being referred rather than receiving only essential details (Q6; $P < .05$). Given that inappropriately referred patients cannot be returned to ED, emergency doctors would be significantly more in favour that the subsequent direct referral from GS to the relevant specialty was not rejected (Q7; $P < .05$). Both groups agreed that addressing only the main complaint in patients with complex picture or multiple comorbidities could reduce misleading conclusions and save time (Q8; $P > .05$). Finally, they both confirmed that the time pressure of the *four-hour rule* does indeed affect the quality of the service (Q9; $P > .05$).

Figure 3. Inaccurate initial referrals with final correct diagnoses



The free text question was answered by 15 doctors (ED: 9 and GS: 6) and skipped by 18 doctors. Three main themes were identified: attitude change, criteria of appropriateness and management of IR.

4. Discussion

In a flawless fictitious system, the process of referring patients from ED to GS should be easily comprehensible and achievable. Detailed protocols should be in place locally to facilitate the understanding of the presenting scenario and to support and validate the decision to transfer the patient to the appropriate specialty. At present, Trusts' policies for SR do not cover all the aspects. They are quite complex and tangled. Often, they do not offer clear algorithms to manage the situation [3,4,6].

The universal assumption is that "referrals cannot be rejected" [3,5], but compliance with local protocols is nevertheless required [6]. That exposes the current referring system to a grey area where it should be virtually legitimate to refuse patients "not relevant to the specialty". In our experience, GS was referred two urologic cases presenting with a clinical picture that should not have allowed any second-guessing. More specifically, a patient with haematuria was referred as "obstruction/perforation"; and a case of epididymitis, presenting with groin pain, haematuria and haematospermia, was referred as "incarcerated inguinal hernia" (Fig. 3).

Following local policies for SR is always mandatory. If the clinical picture is unclear, senior help should be sought rather than referring to the wrong team.

Investigations and other evidence needed to confirm surgical suspicion are necessary beforehand. Despite local policies stating that referrals must not be delayed waiting for pending blood or imaging tests [3,4,5], relevant information about the patient may not be satisfactory enough at the time of referral.

It is not unexpected then if surgeons do not believe patients' assessment and information are sufficient to warrant a referral and therefore, why both GS and ED claim for clearer guidelines (Fig. 4, Q2, Q4-5) [4].

Communication has to improve. The problem of the "magic phrases" was pointed out in a previous study [4] but it does not seem to have radically changed. It is quite rare to hear: "I would like to refer a patient" as the opening speech of a referral. Whereas other ambiguous introductory strategies are more often in use: "Can I have your opinion on this case?" or "Can I discuss a case with you?" Rather than a formal referral, it looks like a request for an opinion. The surgeon might simply give suggestions only to discover later on that the patient has been marked as "referred to GS." This frequent scenario brings to light another grey area where officially ED does not accept advice. Once the specialty team is contacted, the patient must be physically examined [4,5]. In fact, despite the ideal common belief among surgeons that "referring" is a bilateral mutual process involving givers and takers equally, for ED this is meant to be a one-way commandment [3]. But if there is no escape, why the need to discuss the patient? This last grey area questions the importance of gathering all necessary information ready to discuss, whereas providing only essential data would possibly avoid frustrating tensions between the parties. What is the surgical suspicion? Is the patient stable? Where to find him? What is the identification number? Providing an answer only to these few questions would seem more than sufficient to finalize a referral. Unfortunately, this has shown in our study mixed responses with surgeons significantly disagreeing and still preferring to discuss the case in details (Fig. 4, Q6).

A frequent sophisticated strategy has been discovered in our research where referrals are initially rejected by the referred team who claims for "surgeons to see the patient first" (Fig. 3). This scenario has been brought to attention with serious concern. As extensively reiterated, no specialty doctor can refuse to see the patient referred. If deemed inappropriate, the same specialty doctor can then re-refer that patient to the relevant team in a second stage [3,5].

This “strategic fraud” happened three times during the month of study but is very well known to GS as a continuous attempt to buy time before having to unavoidably accept the patient. Zero tolerance should be shown to such a situation and ED should immediately escalate if referrals are diplomatically rejected.

“What made you come to hospital?” is the best opening question for a patient who is being seen for the first time at ED. It allows the examiner to focus on the reason that brought that patient along and on what kind of help they are seeking. Addressing the main complaint comes in handy and facilitates first-line evaluation. Most importantly, it avoids misleading conclusions. A systematic assessment of the patient, on the other hand, takes time and effort adding unnecessary disorienting details (Fig. 4, Q8). In our experience, a patient complaining of vertigo was referred to GS as “bowel obstruction” since the abdominal x-ray showed possible dilated bowel loops. *Not to look for hidden treasure* is the key not to get lost in multiple deceptive findings. The abdominal plain film was not useful to investigate his symptom. This scenario puts the surgeon in an awkward position where they are required to address an incidental finding which is not the real reason for his presentation.

The final part of the referring process is indeed declaring a surgical diagnosis or at least that there is a surgical suspicion. In our research, 11% of SR have been vaguely diagnosed as “surgical abdomen, acute abdomen or abdominal pain”, or directly without any diagnostic attempt such as “for surgical assessment”. A very peculiar one was referred as: “?gastritis, to rule out pancreas/liver/spleen pathology”. It remains very obscure what the role of a surgeon should be in such a case.

Our analysis showed 19% of all SR from ED have been deemed inappropriate (Fig. 2), which is comparable to other similar experience [3]. Although in another study this rate reached 74%, with a significant financial burden [7], we still believe our finding is high enough to raise concern. A single IR might be significantly time-consuming and resource-intensive. It is unequivocally a source of frustration. The patient will not receive satisfactory care due to the fact they are not under the relevant team. This will inevitably delay the assessment and prolong the waiting time of the appropriate surgical candidates. What to do then with the wrong patient? Unfortunately, the right of “not to be rejected” is only conferred to ED, and the lottery of *re-referring* them to the relevant specialty is rarely won [3]. It appears that ED voted in favour of extending this right to the wrong receiver but with surprise, GS did not seem to appreciate (Fig. 4, Q7). Probably this paradoxical specular conclusion needs to be interpreted as a protest to the fact that it would still be preferable to give the patient back to ED.

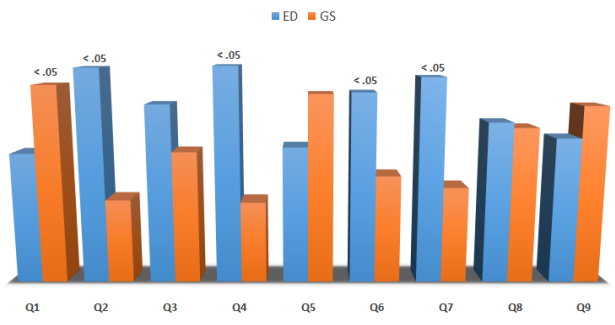


Figure 4. Summary of Emergency Department and General Surgery’s differences on the nine-statement survey. Significant results are shown

Common mistakes have been detected and analysed. In particular, knowledge of anatomical landmarks should be improved. The groin was found to offer the most arduous challenge, where a woman with purulent discharge from a swollen labium majus was referred as “perianal abscess”. It is a border zone between buttock, upper thigh, perianal and vulvar area. An abscess in the groin is too easily referred to GS but gynaecology or orthopaedics might be the relevant specialty to involve instead.

As a matter of fact, specialty relevance for pathology needs to be clarified. Tender and or swollen groin nodes should not be referred to GS. The workup always starts from general practice and may require further diagnostics with haematologists. Surgeons are rarely consulted and only in the final stage for excisional biopsy. It is not infrequent to receive a case of tender inguinal node as “incarcerated inguinal hernia” as we have reported. Furthermore, whereas *rectal foreign bodies* require a SR, our three cases of *ingested foreign bodies* should have come under gastroenterologists, unless perforation was suspected and surgeons would have needed to be concomitantly involved (Fig. 3) [8,9].

Collecting “specific” history is much more advantageous rather than proceeding systematically and missing important details. Suspecting acute cholecystitis in one of our referred patients, who had previously undergone cholecystectomy, is the consequence of not aiming “specifically” for his abdominal pain. That would have prompted a search for previous surgical history and old scars.

Elevated lactate levels do not warrant immediate SR. Patients found to have hyperlactataemia should be suspected for a wide-range spectrum of pathology on the basis of their whole clinical picture [10,11], rather than solely bowel ischaemia. Elevation of lactate is associated with late-stage irreversible ischaemia, after transmural infarction has occurred; and for this reason, it cannot be used as a marker for mesenteric ischaemia [10,12]. In our study, hyperlactatemia found in two patients triggered a direct referral to GS as “bowel ischaemia”, although no abdominal pain or rectal bleeding was complained.

Patients with a well-known background or multiple recurrent presentations with same outcome, should be recognized and addressed accordingly, especially given that history and findings are almost never different from the usual ones. In our analysis, this has occurred in 14 cases, where the known routine diagnoses included binge drinking, gastritis, cyclical vomiting syndrome, chronic pelvic pain, period pain and chronic constipation.

ED and GS jobs are radically different. While a surgical job is quality-related, with aimed assessment and treatment to cure pathology, the emergency job is quantity-based, where priority is to clear a constant flow of presenting patients. Keeping the number under control in a limited amount of time becomes paramount. As expected, both teams have come to strong agreement in concluding this latter scenario does not guarantee enough time and attention to dedicate to the care of the single patient, unavoidably affecting the quality of the service received (Fig. 4, Q9) [3].

A change of attitude is urged. Surgeons have commented on the referring ED doctors more aggressively than their counterpart and the level of frustration was significantly higher in the GS group (Fig. 4, Q1). Rudeness and abusive behaviour are not part of the referring system and must not be tolerated. So far, a specific system to formally report IR and unprofessional behaviour has never been considered [3], which leaves the surgeons in a discriminated position, with no equal rights between referring and referred team. We would propose a process of *active monitoring* for unequivocal IR and related unethical behaviour in the form

of “constant vigilance” with a dedicated incident reporting system that should give specialty doctors the possibility to raise and address concern.

5. Conclusions

Our study has statistically demonstrated a well-known often dramatic picture that easily reflects worldwide. Future multicentric studies might demonstrate how results can vary when diverse systems are in use. The referring system can be significantly improved from communication and attitude to establishing criteria and guidelines in order to define appropriateness of referrals. Periodic joint educational meetings might be mutually organized to analyse together IR and complex difficult scenarios. Eventually, a specific system is required to officially report IR. Actions need to be taken with aim to prevent future mistakes and potential harm. Our “active monitoring” solution would provide more balance to the delicate relationship between emergency and surgical doctors at the time of referral.

Abbreviations

ED: emergency department
IR: inappropriate referrals
GS: general surgery
SR: surgical referrals

Disclosure statement

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