

## **Outpatient Endoscopy: Addressing the Problem of Non-attendance for Scheduled Appointments**

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### **Abstract**

#### ***Aim***

Patient non-attendance for scheduled appointments has significant resource and financial implications and has a knock-on effect for other patients on the waiting list. We set out to establish factors associated with non-attendance and to evaluate the effectiveness of currently implemented preventative measures.

#### ***Methods***

A retrospective observational cohort study of non-attendances for gastrointestinal endoscopy was performed in the endoscopy unit over three-months.

#### ***Results***

During the observation period, 1472 patients were scheduled to attend for outpatient endoscopy, with a non-attendance rate of 12.9% (n=191). Non-attendance was significantly higher for left-sided procedures (30.4%, n=52), non-urgent bookings (15.8%, n=163), direct access endoscopy (19.8%, n=73), patients under the age of 50 (20.6%, n=77), patients without health insurance (15%, n=163) or if the appointment was scheduled for either a Monday or a Friday. Mandatory confirmation of attendance by the patient was more effective at preventing non-attendance than text and letter reminders.

#### ***Discussion***

Non-attendance for endoscopy results in wasted resources, financial loss, longer waiting lists and delayed diagnosis. Patients are more likely not to attend for left-sided procedures, procedures scheduled as non-urgent, procedures booked via direct access and procedures listed on either a Monday or Friday. Younger patients and those without private health insurance are also more likely to not attend. Mandatory confirmation is an effective means of improving patient attendance for scheduled endoscopy appointments.

**Keywords:** endoscopy; gastroscopy; colonoscopy; sigmoidoscopy; non-attendance.

## **Introduction**

Gastrointestinal endoscopy plays an essential role in both the diagnosis and treatment of gastrointestinal disorders. The burden of digestive diseases and the need for investigation has increased over the past decade, with demand for endoscopic colorectal cancer screening far exceeding supply<sup>1,2</sup>. It is essential for patients to have timely access to endoscopic investigation. However, many healthcare services report being unable to meet timeline targets for urgent procedures<sup>3,4</sup>. A significant factor in delayed access to endoscopy is the failure of a cohort of patients to attend for scheduled appointments, with non-attendance rates as high as 23% in some endoscopy units<sup>5</sup>.

Non-attendance or “no-shows” at endoscopy results in wasted resources, financial loss, longer waiting lists and delayed diagnosis of potentially life-threatening diseases<sup>5,6</sup>. Despite non-attendance being well recognised as a serious problem in endoscopy departments across the world, few studies have investigated the factors associated with failed attendance<sup>7-9</sup>. A wide range of approaches have been used to address the problem of patient absenteeism including telephone reminders, letters, text messages, mandatory confirmation and predictive overbooking but have yielded inconsistent results<sup>10</sup>.

Identifying predictors of non-attendance is important as this information may be used to inform the development of strategies within this subgroup of patients so as to avoid the knock-on consequences of non-attendance.

The aim of this study was to establish the factors associated with non-attendance for outpatient gastrointestinal endoscopy in our department and to evaluate the effectiveness of the currently used preventative measures.

## **Methods**

A retrospective observational cohort study of all non-attendances for gastrointestinal endoscopy was performed in the endoscopy unit of a busy Model 3 hospital over a three-month period. Our endoscopy unit receives referrals from different sources: in-patients, specialist outpatient clinics and ‘direct access’ requests (whereby a patient is booked directly for endoscopy without a specialist outpatient appointment beforehand) from General Practitioners or primary care centres, with endoscopy lists performed by both gastroenterologists and general surgeons. All patients referred for an elective outpatient OGD, colonoscopy, sigmoidoscopy or a ‘double procedure’ (concomitant OGD and colonoscopy) who failed to attend over a three-month period were included in the study. These were identified by manually reviewing endoscopy logbooks and recording those documented as not having attended for their appointment. Non-attendance was defined as failure to present for the scheduled procedure without prior notification of cancellation. Investigations performed on in-patients were excluded from the study.

Further data were collected on those who failed to attend by review of patient charts, endoscopy referral forms and Hospital InPatient Enquiry (HIPE) data including patient demographics (age and gender), the source of the referral (outpatient specialist clinic or direct access request), the type of examination (OGD, colonoscopy, left colonoscopy/sigmoidoscopy, double procedure), the urgency of the referral (urgent or routine), the speciality scheduled to perform the investigation (gastroenterology or general surgery), the day of the week the test was scheduled for (Monday to Friday) and the time of day the appointment was scheduled for (morning or afternoon list). The method employed to remind the patient of their appointment was also recorded.

Initially, in our centre, the gastroenterology department would send a reminder of the appointment by both text message and a posted letter, while the surgical department would send a letter only. However, two months into our observation period, mandatory confirmation by telephone call was introduced for all endoscopy appointments. This involves a telephone call requiring the patient to confirm their appointment. If they do not respond, their appointment is cancelled and given to another patient on the waiting list, with notification of the cancellation sent to the patient and the referring doctor.

All patient data was anonymised for the purpose of this study. No identifying information was retained by the authors or included in this article. As this was a retrospective service evaluation, Ethics Committee approval was not required in our institution. All statistical analysis was performed using the software package SPSS (SPSS Inc, Chicago, IL). A p-value of less than 0.05 was considered statistically significant.

## **Results**

### *Procedure and Patient Demographics (table 1)*

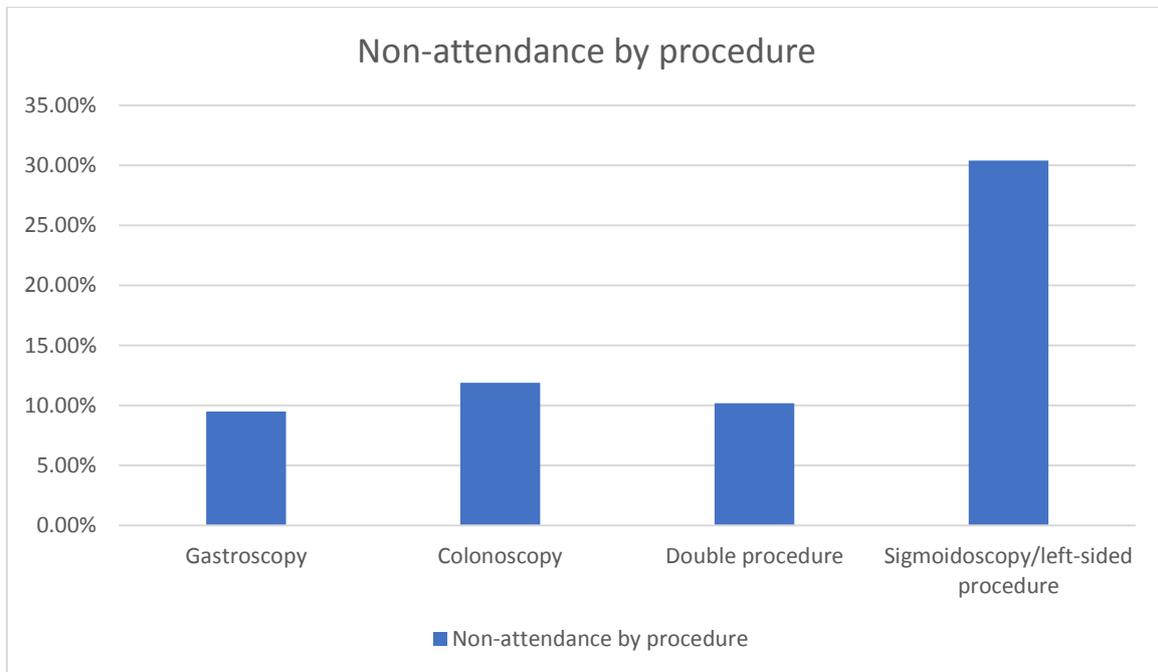
During the three-month observation period, 1472 patients were scheduled to attend for outpatient endoscopy. These comprised of 621 patients for gastroscopy (42.2%), 631 for colonoscopy (42.9%), 171 for sigmoidoscopy or left-sided colonoscopy (11.6%) and 49 for a double procedure (3.3%). With regards to speciality, 1108 appointments were with a gastroenterologist (75.3%) with the remaining 364 (24.7%) with a general surgeon. The mean age of patients scheduled for endoscopy was 63 years (range 18-93 years), with 741 males (50.3%) and 731 females (49.7%).

Predictive Factor		Non-attendance rate (%)	p-value
Gender	Male	13.2% (n=98)	0.77182
	Female	12.7% (n=93)	
Age	Less than 50 years	20.6% (n=77)	<0.001
	50 years and above	10.4% (n=114)	
Referral source	Direct access	19.8% (n=73)	<0.001
	Specialist outpatients	10.6% (n=118)	
Referral urgency	Urgent	6.3% (n=28)	<0.001
	Routine	15.8% (n=163)	
Speciality	Gastroenterology	12.9% (n=163)	0.47152
	General Surgery	13.1% (n=48)	
Time of procedure	Morning list	13.7% (n=111)	0.35758
	Afternoon list	12.1% (n=80)	
Health insurance	Private insurance	7% (n=28)	<0.001
	No private insurance	15% (n=163)	

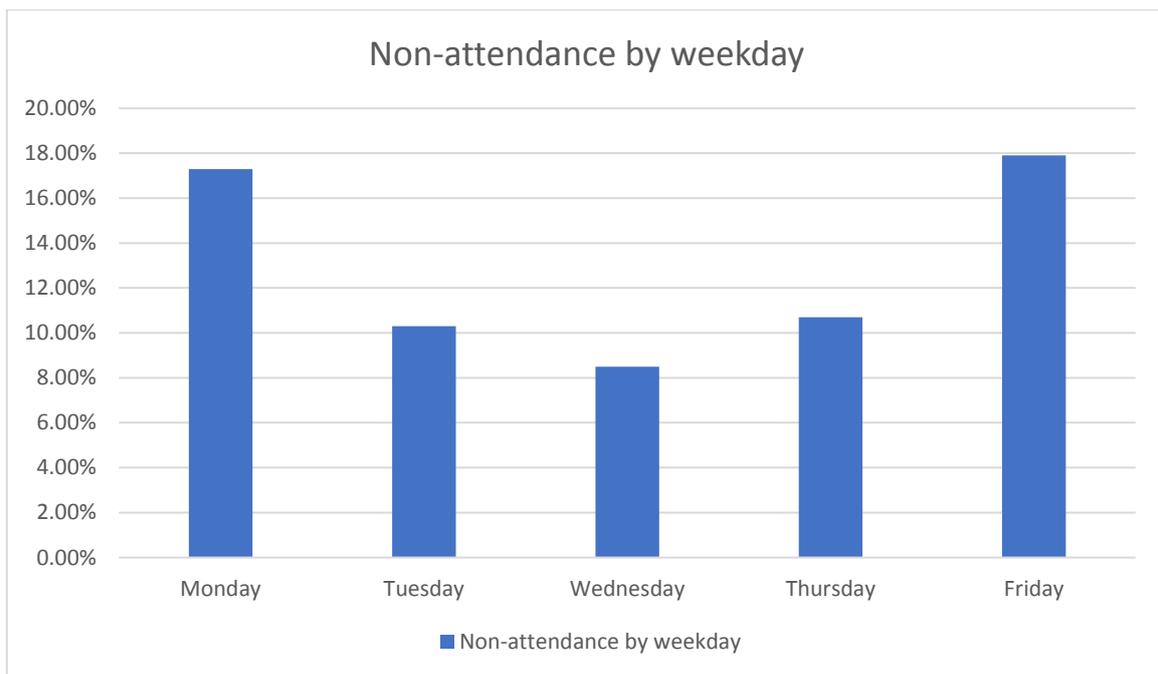
**Table 1:** Predictive factors for non-attendance at endoscopy appointments

#### *Non-attendance and Associated Factors (table 1)*

A non-attendance rate of 12.9% (191 patients) was recorded during the observation period. The mean age of patients who did not attend was 34.2 years, compared to 67.3 years for those that did. The non-attendance rate of those under the age of 50 years was almost double (20.6%, n=77) that of those 50 years and above (10.4%, n=114). There was no association between gender and adherence to the scheduled appointment. Non-attendance was higher with left-sided procedures (30.4%, n=52) compared to OGD (9.5%, n=59), colonoscopy (11.9%, n=75) or double procedures (10.2%, n=5)(figure 1). Non-attendance rates were observed to be higher on Monday (17.3%, n=49) and Friday (17.9%, n=54) compared to other days of the week (figure 2). Non-attendance for morning lists was 13.7% (n=111) compared to 12.1% (n=80) for afternoon lists, demonstrating no statistically significant difference. Patients were more likely not to attend if booked via a direct access request (19.8%, n=73) than patients who were booked after review in a specialist clinic (10.6%, n=118). Non-attendance was higher in those scheduled for routine procedures (15.8%, n=163) compared to urgent procedures (6.3%, n=28). Those with private health insurance were less likely not to attend (7%, n=28) than those without insurance (15%, n=163). There was no significant difference in non-attendance between surgical lists (13.1%, n=48) and gastroenterology lists (12.9%, n=143). (table 1)



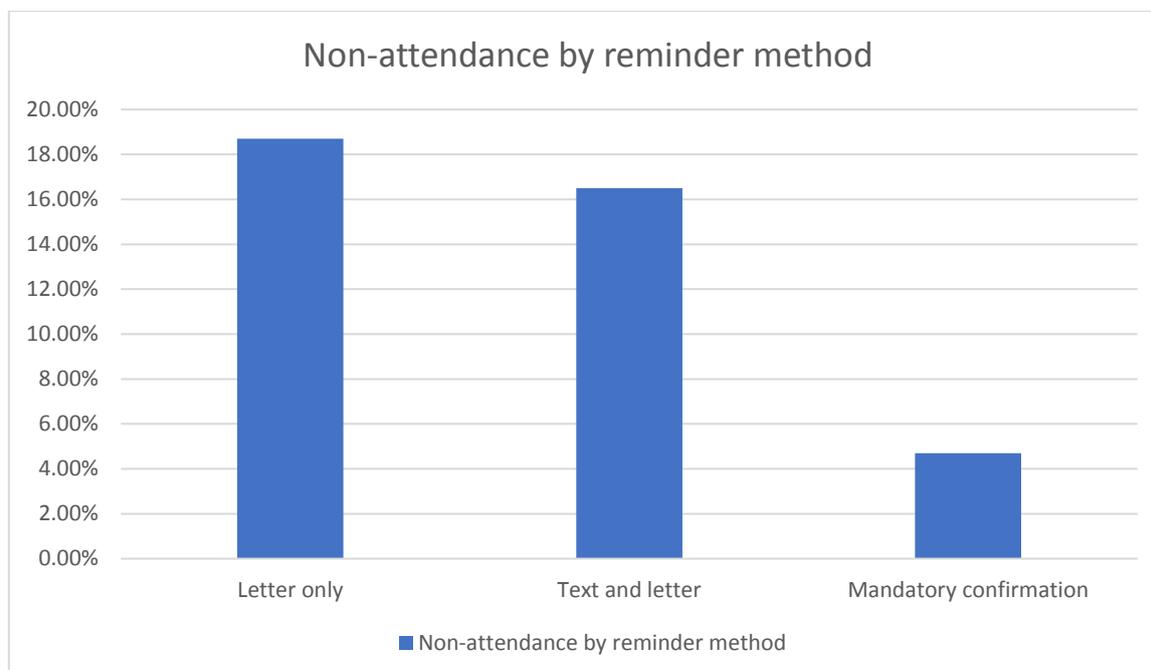
**Figure 1: Non-attendance by procedure.**



**Figure 2: Non-attendance by weekday.**

### *Effectiveness of Reminder Methods*

During the observation period, 731 patients received a posted letter and text message to remind them of their appointment, 252 patients received a posted letter only, and the remaining 489 patients were scheduled based on mandatory confirmation by telephone call. Non-attendance was lowest in the mandatory confirmation group (4.7%, n=23) compared to those who received a letter and text reminder (16.5%, n=121) or those who received a letter only (18.7%, n=47) (figure 3).



**Figure 3:** Non-attendance by reminder method.

## Discussion

Missed hospital appointments represent a serious problem for the healthcare service. They entail a significant waste of resources and have a detrimental effect on waiting lists which can result in delayed diagnosis and treatment of serious and time-critical diseases<sup>11</sup>. Many patients who fail to attend require a further appointment, thereby lengthening the waiting list further. Non-attendance is a significant cause of inefficiency in endoscopy units, leading to underutilisation of very costly equipment, manpower, appointment slots and specialist expertise<sup>11-13</sup>. This appears to be a global issue, with high rates of non-attendance reported across multiple healthcare systems in many countries<sup>14-16</sup>. It is unsurprising that delayed access to endoscopy can have detrimental implications for the treatment of gastrointestinal malignancy<sup>17</sup>. As the demand for access to endoscopy continues to increase and waiting times continue to lengthen, it is essential to address any factors that contribute to inefficient use of limited valuable resources<sup>16</sup>.

Our findings demonstrate a high non-attendance rate for outpatient gastrointestinal endoscopy, with more than one in ten patients not presenting for their scheduled procedure. This is a hugely significant figure, but other units report even higher rates. Lee et al reported non-attendance of 23.3% in a fully open-access department, and the colorectal department of St Thomas' Hospital in London reported 21% of patients failing to attend<sup>7-8</sup>. While the problem of non-attendance and its consequences are well recognised, addressing the problem effectively has proved problematic<sup>4</sup>.

Our study demonstrates that those referred for a left-sided procedure did not attend at a rate almost triple that of those referred for other endoscopic procedures. This is likely as a result of most left-sided procedures being non-urgent or routine procedures, typically performed for benign anorectal conditions or low risk lower gastrointestinal bleeding, both of which may entirely resolve with conservative measures<sup>3</sup>. Similarly, those referred for a routine procedure did not attend at a significantly higher rate than those referred for an urgent procedure.

This would appear to be a result of the severity of underlying symptoms and the presence of worrying red-flag features necessitating such urgency, which in turn results in greater motivation for the patient to attend<sup>3</sup>. Patients booked for routine procedures wait longer for their appointment, during which time symptoms may resolve or they may have had the procedure performed elsewhere. Patients referred via the direct access route missed appointments at a rate almost double that of those reviewed in a specialist clinic prior to booking. This may be a shortcoming of an open booking system, where the importance of the procedure may be poorly understood by the patient in a without an in-depth consultation in a specialist clinic prior to scheduling. Similarly, high rates of non-attendance in open access systems have been demonstrated elsewhere<sup>7,18</sup>.

Younger patients seemed to be at higher risk of non-attendance, as did those without private health insurance. While we did not have access to information regarding patient financial income, we speculate that those with private health insurance may have greater financial resources which enabled them to overcome barriers to attendance. It has been similarly demonstrated in the American healthcare system that non-attendance is higher among patients with a lower socioeconomic status<sup>18</sup>. Interestingly, appointments were more frequently missed on both Friday and Monday, which may demonstrate reluctance to present to hospital either immediately before or immediately after the weekend.

We observed a significant improvement in attendance following the introduction of mandatory confirmation. The positive impact of telephone call reminders on outpatient attendance has been previously demonstrated, with Childers et al showing a 33% reduction in non-attendance<sup>19</sup>. However, to our knowledge, this is the first study to demonstrate the positive impact of a mandatory telephone confirmation strategy in the context of endoscopy lists. No significant difference in attendance was demonstrated between patients that received both text message and letter reminders when compared to those who only received a letter. It is well established that reminding patients about appointments reduces the rate of non-attendance<sup>19</sup>. However, our results demonstrate that a text reminder in addition to a letter does not result in a further significant reduction in non-attendance.

Demand for timely access to endoscopy continues to grow while wastage of resources in endoscopy departments by means of non-attendance persists, with potentially serious implications for both patient outcomes and the healthcare service. We have identified a cohort of patients who are at greater risk on non-attendance for scheduled endoscopy appointments. We have also demonstrated that the use of mandatory telephone confirmation is a particularly effective strategy at reducing such non-attendance.

**Declaration of Conflicts of Interest:**

The authors have no conflicts of interest to declare.

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