

The 'natural history' of declined outpatient gastroenterology referrals

Emelie M de Boer¹, David Pincock MBA², Sander Veldhuyzen van Zanten MD MSc PhD²

EM de Boer, D Pincock, S Veldhuyzen van Zanten. The 'natural history' of declined outpatient gastroenterology referrals. *Can J Gastroenterol* 2012;26(11):785-790.

OBJECTIVE: To evaluate the 'natural history' of outpatients who were referred to the Division of Gastroenterology at the University of Alberta Hospital (Edmonton, Alberta) for gastrointestinal problems and were subsequently declined.

METHODS: Patients were tracked for 12 months after they were referred and declined for the following indications: abdominal pain, rectal bleeding, fecal occult blood test-positive stools and iron deficiency. For each patient, data regarding consultations by other gastroenterologists or surgeons working in the region, clinically relevant diagnoses and the number of gastrointestinal-related x-rays performed were obtained.

RESULTS: Of a total sample size of 230 patients, 110 (47.8%) were seen by another gastroenterologist or surgeon after decline. A significant diagnosis was made in 21 patients (9.1%), which had immediate clinical consequences in 29%. Forty per cent of patients underwent one or more gastrointestinal-related x-rays before being declined, which increased to 55% after decline.

CONCLUSION: Approximately 50% of declined patients were seen by other gastroenterologists or surgeons in the region. In 9.1% of these patients, a clinically important diagnosis was made, of which one-quarter had immediate medical consequences.

Key Words: *Gastroenterology; Triage; Wait times*

Wait times for access to gastroenterology (GI) outpatient services are a well-documented problem in Canada (1-4). Access to GI outpatient consultations in the Edmonton (Alberta) zone ranks as the third worst specialty service after orthopedics and mental health (5). Over the past 24 months, a comprehensive wait time management program was implemented by the GI Division at the University of Alberta (UofA) Hospital in Edmonton. As part of this project, several new components of the referral and triage process were developed, subsequently tested and evaluated to improve the overall process and its efficiency. This included an analysis of the type and quality of outpatient referrals, development of a list of the 40 most common indications for patient referral, creation of a suggested action plan for each of these indications to be performed by the referring physician and a move toward a centralized referral access point. As part of this process, all requests for GI outpatient referrals are entered into a central database, which now contains more than 16,000 patients.

The overall goal of the triage system is to have a uniform and transparent referral path that helps physicians triage patients according to their need (ie, seriousness of the problem and acuity). A major problem is that demand for available outpatient clinic and endoscopy time slots at the UofA hospital is higher than supply. In 2010, 38% of 9648 referrals were declined (data on file). The reason for the majority of declined referrals was a lack of GI or hepatology physicians and endoscopy suite space to perform endoscopic procedures in a timely fashion.

« L'évolution naturelle » des patients ambulatoires aiguillés en gastroentérologie qui sont rejetés

OBJECTIF : Évaluer « l'évolution naturelle » des patients ambulatoires aiguillés vers la division de gastroentérologie de l'University of Alberta Hospital d'Edmonton, en Alberta, en raison de problèmes gastro-intestinaux et qui sont ensuite rejetés.

MÉTHODOLOGIE : Les patients ont été suivis pendant 12 mois après leur aiguillage et le rejet pour les indications suivantes : maux de ventre, saignements rectaux, présence de sang occulte dans les selles et carence en fer. À l'égard de chaque patient, les chercheurs ont colligé des données sur les consultations par un autre gastroentérologue ou chirurgien de la région, les diagnostics pertinents sur le plan clinique et le nombre de radiographies gastro-intestinales connexes effectuées.

RÉSULTATS : Sur un échantillon total de 230 patients, 110 (47,8 %) ont été vus par un autre gastroentérologue ou un chirurgien après le rejet. Vingt et un patients (9,1 %) ont reçu un diagnostic significatif, qui a eu des conséquences cliniques immédiates chez 29 % d'entre eux. Quarante pour cent des patients ont subi au moins une radiographie liée aux problèmes gastro-intestinaux avant le refus, qui est passé à 55 % après le refus.

CONCLUSION : Environ 50 % des patients refusés ont été vus par d'autres gastroentérologues ou chirurgiens de la région. Chez 9,1 % de ces patients, on a posé un diagnostic important sur le plan clinique, dont le quart a eu des conséquences médicales immédiates.

Recently, an analysis of all referrals that were received for four indications was performed: fecal occult blood test-positive (FOBT+) stools, rectal bleeding, iron deficiency anemia and abdominal pain (6). Our data showed that approximately 50% of patients were seen within the maximally accepted wait times, as recommended by a consensus publication (7).

The objective of the present study was to evaluate the 'natural history' of outpatients who were referred for one of four gastroenterological problems and declined. Specifically, over a 12-month period following the decline of the referral, we investigated whether patients were seen by other GI specialists or surgeons in the region, whether additional gastrointestinal investigations were ordered and whether a new relevant gastrointestinal diagnosis was made. In addition, the type and number of gastrointestinal-related x-rays that patients underwent in the 24 months before and 12 months following the referral was investigated.

METHODS

In 2010, the Division of Gastroenterology at the UofA Hospital consisted of 19 gastroenterologists, 11 of whom predominantly specialize in luminal GI and eight in hepatology. In 2010, the Division moved toward central triaging, with increased numbers of referrals coming in through a central fax number. All physicians participated in triaging, although the number of referrals per physician varied between 77 and

¹Leiden University, Leiden, The Netherlands; ²University of Alberta Hospital, Edmonton, Alberta

Correspondence: Dr Sander Veldhuyzen van Zanten, Division of Gastroenterology, 130 University Campus, University of Alberta, Edmonton,

Alberta T6G 2X8. Telephone 780-492-9840, fax 780-492-9865, e-mail vanzanten@ualberta.ca

Received for publication April 11, 2012. Accepted April 12, 2012

972 in 2010. All received referrals are assigned one of 40 referral indication codes and acuity (emergent, urgent, semiurgent and nonurgent), and entered into a central database. For each referral, a decision is made whether to accept or decline. Most referrals (49% of all declined referrals in 2010) are rejected because of a lack of physician resource to see the patient and a shortage of endoscopy space to perform the required endoscopic procedures in a timely fashion. However, there is consensus among the GI community that patients who were seen by a different gastroenterologist for the same problem in the past five years should return to that physician. Such patients are declined for that reason and this accounted for 14% of all declined referrals in 2010. It is important to point out that outpatient gastroenterology consultations are also provided by gastroenterologists in three other hospitals. In addition, consultation and endoscopy services are provided by surgeons and a few internal medicine specialists in the same three hospitals and four smaller community hospitals in the Edmonton region. No site is expected to be responsible for all GI referrals in the region.

The present study included patients who were referred for one of four referral diagnoses: abdominal pain, rectal bleeding, FOBT+ stool and iron deficiency. The sample consisted of all patients who were declined during the period between January and June 2010. Referrals that were declined because the patient had been seen by another GI physician in the region in the past five years were excluded.

For each patient, data regarding consultations with other gastroenterologists and surgeons, and relevant diagnostic gastrointestinal-related investigations such as endoscopy reports, gastrointestinal-related x-rays and histology results were obtained. Data were collected for 12 months following the decline of the referral. Data were obtained through the electronic medical record, which is linked to the regional patient data information base that is available in the Edmonton region. Retrieved data were, therefore, largely restricted to the Edmonton region. In addition, information regarding diagnostic radiology examinations, such as barium enema or abdominal computed tomography scan, that were performed in the 24 months preceding the referral and that may influence the decision to reject a referral was retrieved.

Outcome measures

The proportion of patients that were seen by a gastroenterologist or surgeon performing endoscopic procedures during the subsequent 12 months was calculated. A patient was considered to be seen by a GI specialist or surgeon when information was found about endoscopic procedures, outpatient visits or histology reports of endoscopic biopsies. The primary outcome measure was the number of clinically important gastrointestinal diagnoses that were made after the decline of the referral. For the analysis, gastrointestinal diagnoses were allocated to one of three diagnosis categories: significant; possibly clinically relevant; and not relevant. A significant gastrointestinal diagnosis was defined as a diagnosis that would influence the medical management of the patient. This category was further subdivided into diagnoses that would have immediate consequences, such as cancer or inflammatory bowel disease, and those that had longer-term management implications, such as adenomatous polyps. An example of a possibly clinically relevant diagnosis is the presence of gallstones in a patient with abdominal pain. An example of a 'not relevant' diagnosis is the finding of a hyperplastic polyp in a patient who underwent a colonoscopy. The presence of diverticular disease was not specifically assessed unless it was extensive and the physician believed it to be contributing to the patient's symptoms. The age of a patient with a significant or not significant gastrointestinal diagnosis was also recorded.

Secondary outcome measures included the number and type of relevant gastrointestinal x-ray investigations patients underwent before and after the declined referral.

The UofA Research Ethics board was informed of the study and it was deemed that the project was a quality improvement project and, as such, did not require research ethics approval. All patient data were entered in a database, which was securely stored. No patient identifiers were used in the analysis.

RESULTS

The study sample consisted of 263 patients. Of these, 33 were excluded because they had been seen by another gastroenterologist in the previous five years, leaving 230 patients: 83 patients were referred for 'abdominal pain', 59 for 'rectal bleeding', 48 for 'FOBT+ stools' and 40 for 'iron deficiency anemia'. Over the same time period, 131 referrals in the 'abdominal pain' group, 159 in the 'rectal bleeding' group, 89 in the 'FOBT+' group and 150 in the 'iron deficiency' group were accepted.

Table 1 summarizes the diagnostic findings. In total, 47.8% (110 of 230) of patients were seen by a gastroenterologist or surgeon after being declined and, in 9.1% (21 of 230), a significant diagnosis was made. Therefore, 19.1% (21 of 110) of the patients who had a GI-related consult had a significant diagnosis in the year following the decline. Of these, 23.8% (five of 21) had immediate clinical implications.

In 13 patients, adenomatous polyps were found and, in one patient, an inflammatory polyp. None of the cases had advanced polyps, defined as a polyp >1 cm in size, a polyp with high-grade dysplasia or >3 adenomatous polyps (7). They were all considered to have longer-term medical consequences.

There were five cases whose findings had immediate consequences including a case of Crohn disease, one ulcerative colitis, one colon cancer, one celiac disease and one an incisional hernia that required surgery. One patient in his or her thirties was diagnosed with terminal ileal Crohn disease nine months after decline. A patient between 40 and 50 years of age was diagnosed with ulcerative colitis two weeks after being declined. Colonoscopy in one patient (early 70s) with a borderline low hemoglobin and low ferritin level showed an adenocarcinoma, stage T3, N0, M0, in the sigmoid colon six weeks after decline. Celiac disease was diagnosed in one patient (late 40s) using small bowel biopsies obtained during a gastroscopy eight weeks after being declined. In this patient, no tissue transglutaminase blood test was available at the time of the referral. The incisional hernia case was a patient who presented with abdominal pain in his/her 80s. Further investigations demonstrated a related small bowel obstruction and the patient underwent surgery.

Additional gastrointestinal-related x-rays

Tables 2 to 5 show the proportion of patients who underwent gastrointestinal x-rays before and after being declined; Tables 6 to 11 show a breakdown of the different types of x-rays for each of the four indications; and Tables 12 to 15 summarize the cumulative number of different x-rays patients underwent.

Abdominal ultrasound was, by far, the most commonly used test by physicians; approximately 50% of patients in all four diagnostic groups underwent an ultrasound before or after being declined.

The data in Tables 6 to 11 show that for all gastrointestinal-related x-rays, the percentage of patients who underwent different x-rays was similar in all four referral groups, although there were some small differences.

The data in Tables 12 to 15 demonstrate that approximately 40% of patients underwent one or more gastrointestinal-related x-ray(s) before being declined, which rose to approximately 55% in the year after the decline. The iron deficiency group had slightly different percentages; approximately 30% underwent one or more gastrointestinal-related x-ray(s) before decline and 60% underwent one or more gastrointestinal-related x-rays after decline.

DISCUSSION

It is well documented that access to outpatient GI services in Canada is constrained and wait times are considered to be long (1-4,6).

Based on a yearly survey conducted by the UofA Hospital, access to GI services has been rated as the third worst after orthopedics and mental health for specialty services in the Edmonton zone (5).

Because the demand for outpatient consultations currently outstrips supply, gastroenterologists decline a significant number of patient referrals. The main reasons for declining referrals are the lack of physician resources and shortage of endoscopy slots. There is evidence that the number of

TABLE 1
Patients with significant diagnosis and seen by a gastroenterologist (GI) or surgeon after decline at the University of Alberta (Edmonton, Alberta)

Indication	Significant diagnosis, n (%)	Seen by GI or surgeon, n (%)	Proportion of patients seen by GI in whom a significant diagnosis was made, n/n (%)
Abdominal pain (n=83)	10 (12)	40 (48.2)	10/40 (25) Immediate consequence: 2 cases <ul style="list-style-type: none"> • Crohn disease (age 30s) • Incisional hernia requiring surgery (age 80s) Long-term consequence: 8 cases <ul style="list-style-type: none"> • 1 inflammatory polyp (age 40s) • 5 adenomatous polyps (single [age 60s; n=3]); (age 50s [n=1] and 70s [n=1]) three polyps • 1 Barrett esophagus (age 40s, no dysplasia) • 1 benign small 0.5 cm <i>Helicobacter pylori</i>-negative gastric ulcer (age 40s) Uncertain consequence: 2 cases <ul style="list-style-type: none"> • 2 <i>H pylori</i> gastritis (age 50s and 70s) Diagnosis not relevant: 1 case <ul style="list-style-type: none"> • 1 single hyperplastic polyp (age 70s)
Rectal bleeding (n=59)	3 (5.1)	30 (50.8)	3/30 (10) Immediate consequence: 1 case <ul style="list-style-type: none"> • Ulcerative colitis (age 40s) Long-term consequence: 2 cases <ul style="list-style-type: none"> • 2 single adenomatous polyps (age 40s and 50s) Uncertain consequence: 3 cases <ul style="list-style-type: none"> • 3 <i>H pylori</i> gastritis (age 30s [n=1] and 60s [n=2]) Diagnosis not relevant: 1 case <ul style="list-style-type: none"> • 1 single hyperplastic polyp (age 40s)
Fecal occult blood test positive (n=48)	3 (6.3)	19 (39.6)	3/19 (15.8) Long-term consequence: 3 cases <ul style="list-style-type: none"> • 3 single adenomatous polyps (age 50s and 70s) Diagnosis not relevant: 4 cases <ul style="list-style-type: none"> • 3 single hyperplastic polyps (age 50s, 60s and 80s) • 1 fundic gland polyp (age 60s)
Iron deficiency (n=40)	5 (10.0)	21 (52.5)	5/21 (23.8) Immediate consequence: 2 cases <ul style="list-style-type: none"> • 1 sigmoid colon cancer (age 70s) • 1 celiac disease (age 40s) Long-term consequence: 3 cases <ul style="list-style-type: none"> • 3 single adenomatous polyps (age 60s [n=2] and 70s [n=1]) Not relevant diagnosis: 2 cases <ul style="list-style-type: none"> • 2 single hyperplastic polyps (age 60s)
Total (n=230)	21 (9.1)	110 (47.8)	21/110 (19.1) Immediate consequence: 5 cases Long-term consequence: 16 cases

TABLE 2
Abdominal pain. Percentage of patients who underwent gastrointestinal (GI) x-ray investigation (n=83)

Modality	Decline		Total before and after
	Before	After	
X-ray, abdomen	15.7	8.4	24.1
CT scan, abdomen	12.0	6.0	18.0
Ultrasound	32.5	16.9	49.4
Upper GI series	16.9	9.6	26.5
SB follow through	16.9	8.4	25.3
Barium enema	10.8	0.0	10.8

CT Computed tomography; SB Small bowel

available gastroenterologists in Canada is lower than in the United States, Australia and France, but higher than in the United Kingdom (8). Another contributing factor that leads to the decision to reject outpatient

TABLE 3
Rectal bleeding. Percentage of patients who underwent gastrointestinal (GI) investigation (n=59)

Modality	Decline		Total before and after
	Before	After	
X-ray, abdomen	23.7	8.5	32.0
Computed tomography scan	11.9	10.2	22.0
Ultrasound	32.2	22.0	54.2
Upper GI series	22.0	10.2	32.0
Small bowel follow through	16.9	15.3	32.0
Barium enema	8.5	0.0	8.5

referrals is that it may not be possible for a gastroenterologist to see a patient in a timely fashion. In our own recent study, approximately 50% of patients referred for four common indications were seen within

TABLE 4
Fecal occult blood test positive. Percentage of patients who underwent a gastrointestinal (GI) investigation (n=48)

Modality	Decline		Total before and after
	Before	After	
X-ray, abdomen	10.4	8.3	18.8
Computed tomography scan	8.3	16.7	33.0
Ultrasound	27.1	18.7	45.8
Upper GI series	14.6	2.3	16.7
Small bowel follow through	14.6	0.0	14.6
Barium enema	12.5	6.2	18.8

TABLE 5
Iron deficiency. Percentage of patients who underwent a gastrointestinal (GI) investigation (n=40)

Indication	Decline		Total before and after
	Before	After	
X-ray, abdomen	17.5	12.5	30.0
Computed tomography scan	12.5	7.3	20.0
Ultrasound	32.5	12.5	45.0
Upper GI series	32.5	2.5	35.0
Small bowel follow through	30.0	7.3	37.5
Barium enema	15	2.5	17.5

TABLE 6
Patients who underwent an abdominal x-ray

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	15.7	8.4
Rectal bleeding (n=59)	23.7	8.5
Fecal occult blood test positive (n=48)	10.4	8.3
Iron deficiency (n=40)	17.5	12.2

TABLE 7
Patients who underwent an abdominal computed tomography scan

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	12	6.0
Rectal bleeding (n=59)	11.9	10.2
Fecal occult blood test positive (n=48)	8.3	16.7
Iron deficiency (n=40)	12.5	7.3

the maximally accepted wait time of eight weeks, as recommended by a consensus panel (6,9). Our most common reason for decline (49.8% in 2010, data on file) was that patients could not be seen in a timely fashion. By declining these referrals, one may argue that up to 50% of patients had a chance to be seen by another gastroenterologist in the region rather than end up on a wait list that exceeds accepted wait times. However, this still leaves many patients without timely access to a GI specialist.

Management of wait lists is complex and poorly understood: wait lists are often inaccurate; patients may be waiting for the same indication on different wait lists; and up to 30% no longer belong on the wait list (eg, problem resolved or patient seen by other specialist). Furthermore, there are physician concerns about managing wait lists, including costs and time involved, uncertainty as to who is administering and monitoring the list and legal responsibility once a patient is accepted on a wait list (9-11).

We defined a clinically relevant diagnosis as one that would alter the patient's management. They were further subdivided into those that had immediate and longer-term consequences. For some, such as the patient diagnosed with sigmoid colon cancer, it seems likely that

TABLE 8
Patients who underwent an abdominal ultrasound

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	32.5	16.9
Rectal bleeding (n=59)	32.2	22.0
Fecal occult blood test positive (n=48)	27.1	18.7
Iron deficiency (n=40)	32.5	12.2

TABLE 9
Patients who underwent an upper gastrointestinal series

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	16.9	9.6
Rectal bleeding (n=59)	22	10.2
Fecal occult blood test positive (n=48)	14.6	2.3
Iron deficiency (n=40)	32.5	2.4

TABLE 10
Patients who underwent a small bowel follow through

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	16.9	8.4
Rectal bleeding (n=59)	16.9	15.3
Fecal occult blood test positive (n=48)	14.6	0.0
Iron deficiency (n=40)	30	7.3

TABLE 11
Patients who underwent a barium enema

Indication	Decline, %	
	Before	After
Abdominal pain (n=83)	10.8	0.0
Rectal bleeding (n=59)	8.5	0.0
Fecal occult blood test positive (n=48)	12.5	6.2
Iron deficiency (n=40)	15.0	2.4

the cancer was the cause of the FOBT+ stool. For others, such as the finding of adenomatous polyps in patients with abdominal pain, it is unlikely that the polyps caused the pain, but it is possible that they caused FOBT+ stools in patients referred for that indication. The finding of any adenomatous polyp was considered clinically relevant because it affects the future management of such a patient. In contrast, hyperplastic polyps were not deemed clinically relevant because, generally, a finding of hyperplastic polyps has no clinical consequences.

Little is known about the 'natural history' of declined referrals despite the fact that this has been a reality in Canadian health care for many years. A literature search (using "decline" in combination with variations of "referral system/referring") in PubMed retrieved no relevant literature. As our 'natural history' study of declined referral patients makes clear, a clinically relevant diagnosis was made in approximately 9.1% of patients and, in 23.8%, this diagnosis had immediate implications for patient management. We did not investigate the rate of important clinical diagnoses in patients whose referrals were accepted. Although this information would be helpful in substantiating the capability of our triage system to accept patients who are more likely to have serious underlying disease, it would not be significantly meaningful because, for example, in the case of iron deficiency, serious abnormalities become more likely the more anemic and the more iron deficient a patient is. Our database does not capture the potential seriousness within a diagnostic category, such as severity of anemia or the number of stool samples that are FOBT+, although the assigned acuity in a category may vary among patients.

TABLE 12
Abdominal pain. Patients who underwent a number of gastrointestinal (GI) investigations (no gastroscopy or colonoscopy) (n=83)

GI investigations, n	Decline, %	
	Before	After
0	57.8	45.8
1	24.1	22.9
2	12.0	15.7
3	4.8	13.3
4	1.2	1.2
5	0.0	1.2

TABLE 13
Rectal bleeding. Patients who underwent a number of gastrointestinal (GI) investigations (no gastroscopy or colonoscopy) (n=59)

GI investigations, n	Decline, %	
	Before	After
0	62.7	44.1
1	15.3	22.0
2	15.3	16.9
3	6.8	10.2
4	0.0	5.1
5	0.0	0.0
6	0.0	1.7

In Edmonton, 47.8% of all declined patient referrals are subsequently seen by other gastroenterologists in the region or surgeons who perform endoscopy.

Our study makes clear that the number of gastrointestinal-related x-rays is high in this patient population both before and after the decline of a referral. It is very difficult to determine with certainty whether the availability of normal investigations at the time of referral makes it 'easier' for a physician to decline a referral because serious pathology is believed to be less likely. Similarly, it is not known whether a subsequently declined referral leads the family physician to order more additional gastrointestinal-related tests, particularly if the patients are not seen by another gastroenterologist; however, on balance, it is plausible that referring physicians, both before and after the decline of a referral, order more gastrointestinal-related x-rays because they face uncertainties as to whether a patient will be accepted by the gastroenterologist or surgeon if they are referred. The latter is supported by our data because the percentage of patients in whom additional gastrointestinal investigations are ordered after being declined increases by approximately 15% (Tables 12 to 15).

Unfortunately, the reality of the current situation in Edmonton is that triaging of patients is a necessity, given that there is an insufficient number of outpatient consultation and endoscopy slots available. The problem of declining referrals is not limited to the GI Division at the UofA Hospital. Many gastroenterologists working in Edmonton face the same problem of being unable to meet the demand for outpatient referrals. The UofA triage system is constructed in such a way that patients with more serious and more acute problems have a higher likelihood of being seen. However, any triage system that deals with 40 different reasons for referral is inherently complex and imperfect because even within diagnostic codes, it is not known which patients have the highest likelihood of serious pathology.

Our study has some limitations. One was the follow-up period that was used: we only searched for GI/surgeon visits and significant diagnoses in the 12 months after decline. A significant gastrointestinal diagnosis can manifest itself after a longer period of time has passed.

Another limitation of the present study was the information that we had access to. The electronic database in the region captures many,

TABLE 14
Fecal occult blood test positive. Patients who underwent a number of gastrointestinal (GI) investigations (no gastroscopy or colonoscopy) (n=48)

GI investigations, n	Decline, %	
	Before	After
0	62.5	56.3
1	25.0	16.7
2	10.4	12.5
3	2.1	12.5
4	0.0	0.0
5	0.0	2.1

TABLE 15
Iron deficiency. Patients who underwent a number of gastrointestinal (GI) investigations (no gastroscopy or colonoscopy) (n=40)

GI investigations, n	Decline, %	
	Before	After
0	68.3	40
1	24.4	12.5
2	4.9	27.5
3	2.4	12.5
4	0.0	0.0
5	0.0	7.5

but not all, outpatient visits in physician specialist offices. Data regarding a patient who was seen outside the Edmonton region may not be available in the system. Therefore, there is a small chance that relevant diagnoses were missed.

SUMMARY

Our data showed that almost one-half of declined patients are seen by other gastroenterologists or surgeons in the Edmonton region. In 9% of patients, a significant diagnosis is made and, in 23.8%, these diagnoses have immediate clinical consequences. Patients referred to a gastroenterologist undergo a significant number of gastrointestinal-related x-rays both before and after being declined. However, the relationship between those gastrointestinal investigations and acceptance or decline of the referral is unclear. The problem of the 'natural history' of declined outpatient referrals has largely been ignored in the medical literature.

DISCLOSURES: The authors have no financial disclosures or conflicts of interest to declare.

REFERENCES

- Paterson WG, Barkun AN, Hopman WM, et al. Wait times for gastroenterology consultation in Canada: The patients' perspective. *Can J Gastroenterol* 2010;24:28-32.
- Leddin D, Bridges RJ, Morgan DG, et al. Survey of access to gastroenterology in Canada: The SAGE wait times program. *Can J Gastroenterol* 2010;24:20-5.
- Leddin D, Armstrong D, Barkun AN, et al. Access to specialist gastroenterology care in Canada: Comparison of wait times and consensus targets. *Can J Gastroenterol* 2008;22:161-7.
- Armstrong D, Barkun AN, Chen Y, et al. Access to specialist gastroenterology care in Canada: The Practice Audit in Gastroenterology (PAGE) Wait Times Program. *Can J Gastroenterol* 2008;22:155-60.
- Joffe M. Capital Region Medical Staff Association. Patient access survey 2005. December (data on file).
- Crespin M, Schreuders E, Veldhuyzen van Zanten S. Comparison of actual wait times of University of Alberta gastroenterology outpatients to published Canadian Association of Gastroenterology maximal acceptable wait times. *Can J Gastroenterol* 2011;25(SupplA):122A (Abst).

7. de Jonge V, Sint Nicolaas J, van Leerdam ME, Kuipers EJ, Veldhuyzen van Zanten SJ. Systematic literature review and pooled analyses of risk factors for finding adenomas at surveillance colonoscopy. *Endoscopy* 2011;43:560-72.
 8. Moayyedi P, Tepper J, Hilsden R, Rabeneck L. International comparisons of manpower in gastroenterology. *Am J Gastroenterol* 2007;102:478-81.
 9. Paterson WG, Depew WT, Pare P, et al. Canadian consensus on medically acceptable wait times for digestive health care. *Can J Gastroenterol* 2006;20:411-24.
 10. The Taming of the Queue: Wait Time Measurement, Monitoring and Management Colloquium Report March 31 to April 1, 2004, Aylmer, Quebec.
 11. Esmail N, Walker M. Fraser Institute. Waiting Your Turn: Hospital Waiting Lists in Canada. (October 29, 2009) <www.fraserinstitute.org/research-news/display.aspx?id=13589> (Accessed February 2012).
-
-