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Bounce-back visits in a rural emergency department

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Introduction: The rate of return visits at urban emergency departments (EDs) has been reported as approximately 3% within 72 hours of discharge. However, the current literature does not indicate the rate of return visits for rural EDs. The purpose of this study was to determine the bounce-back rate at a rural ED and to characterize the visits.
Methods: A retrospective chart review was performed on all visits to the ED of the South Huron Hospital between Apr. 1, 2007, and Mar. 31, 2008. Charts were reviewed for patient age, Canadian Emergency Department Triage and Acuity Scale (CTAS) score, most common diagnoses and discharge disposition for each visit.
Results: Of the 9935 ED visits during this 12-month period, 289 (2.9%) were return visits within 72 hours. Median patient age was 46 years. The most common CTAS score for return visits was CTAS-IV (45.3%). The most common diagnosis was unspecified abdominal pain (4.0%). Most patients (88.6%) were treated in the ED and discharged home.
Conclusion: This study demonstrates that the bounce-back rate at a rural ED is similar to that at an urban ED. Most return visits are for low-acuity conditions, and unspecified abdominal pain represents the most common return diagnosis.

Introduction : Selon les rapports, le taux de retour pour consultation aux urgences en milieu urbain dans les 72 heures qui suivent un congé serait d'environ 3 %. Toutefois, la littérature actuelle ne mentionne pas le taux de retour aux urgences en milieu rural. Le but de la présente étude était de déterminer le taux de retour dans un service d'urgence (SU) rural et d'établir les caractéristiques de ces consultations.
Méthodes : Les auteurs ont procédé à un examen rétrospectif des dossiers pour toutes les consultations effectuées au SU de l'Hôpital South Huron entre le 1er avril 2007 et le 31 mars 2008. L'examen des dossiers a permis de noter l'âge des patients, le score sur l'échelle canadienne de triage et de gravité (ÉTG), le diagnostic le plus courant et les conditions du congé suivant chaque consultation.
Résultats : Parmi les 9935 consultations au SU au cours de cette période de 12 mois, 289 (2,9 %) représentaient un retour à l'intérieur d'une période de 72 heures. L'âge médian des patients était de 46 ans. Le score ÉTG le plus fréquent pour les retours était de niveau IV (45,3 %). Le diagnostic le plus courant était la douleur abdominale indéterminée (4,0 %). La plupart des patients (88,6 %) recevaient leur traitement au SU et repartaient ensuite à la maison.
Conclusion : Cette étude montre que le taux de retour pour consultation dans un SU rural équivaut à celui d'un SU urbain. La plupart des retours concernent des problèmes peu aigus et la douleur abdominale indéterminée représente le diagnostic le plus fréquent chez les patients qui reviennent consulter.

INTRODUCTION

Some patients presenting to emergency departments (EDs) for treatment do so unexpectedly, after having just received treatment in the hours or days before. In the medical literature, these unscheduled return visits to the ED within a short period are referred to as "bounce backs." Bounce-back visits contribute to the

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workload of ED staff, which usually includes a single physician for a 24-hour shift in rural areas. Determining the rate of return visits and trying to elucidate their causes may allow for strategies to be developed that would reduce the occurrence of bounce-back visits. Such an intervention could help ease the demands on ED staff and possibly reduce ED wait times.

Bounce-back rates are also used as indicators of the quality of ED care.[1–3] The bounce-back rate of urban EDs has been well studied and reported as approximately 3% within 72 hours after discharge from the ED.[1] The factors influencing bounce backs and the most common bounce-back diagnoses have been examined in urban hospitals but have yet to be studied in a rural centre.[1,4] Previous studies have shown that changes in disease factors,[5] improper follow-up and insufficient patient education contribute to patients returning to urban EDs shortly after discharge.[2,6,7] Rural and urban EDs serve different patient populations.[8] Studies have shown that delivery of emergency care in urban and rural centres differs on parameters such as patients' presenting acuity levels,[8] pain management,[9] time to thrombolysis in myocardial infarction[10] and wait times.[11] These demonstrated differences in rural and urban emergency care highlight the importance of determining the bounce-back rate at rural hospitals. Because of a lack of literature on bounce-back visits to rural EDs, the purpose of the present study was to determine the bounce-back rate at a rural ED and to characterize the visits.

METHODS

South Huron Hospital is a small rural hospital in Exeter, Ont., that provides 24-hour ED care, with approximately 10 000 visits per year. Approval for the retrospective chart review was obtained from the South Huron Hospital Medical Advisory Board.

An electronic retrospective chart review was performed on all visits to the hospital's ED between Apr. 1, 2007, and Mar. 31, 2008. A database search of the patients' electronic charts was done using MED2020 (MED2020 Health Care Software Inc.) to identify all patients with 2 visits to the ED within a 7-day period during the specified 12-month period. The generated list was then manually verified to ensure the reason for the second visit was related to that of the first visit and that neither visit was scheduled (Fig. 1). The patient's demographic information, Canadian Emergency Department Triage and Acuity Scale (CTAS) level assigned by the triage nurse, admitting diagnosis and discharge deposition were obtained for each visit. The 10 most frequent diagnoses for return visits were determined.

A manual retrospective chart review was done for patients who either bounced back resulting in admission to hospital or were transferred to another facility as identified by discharge disposition. Charts were individually reviewed for age, admitting diagnosis, length of stay, triage time, time seen by emergency physician, vital signs, CTAS scores and diagnoses at both ED visits. This chart review was done following many of the chart review methods outlined by Gilbert and colleagues.[12] Specifically, a medical student was trained in chart abstraction and used a standardized abstraction sheet. Chart abstraction by the medical student was monitored.

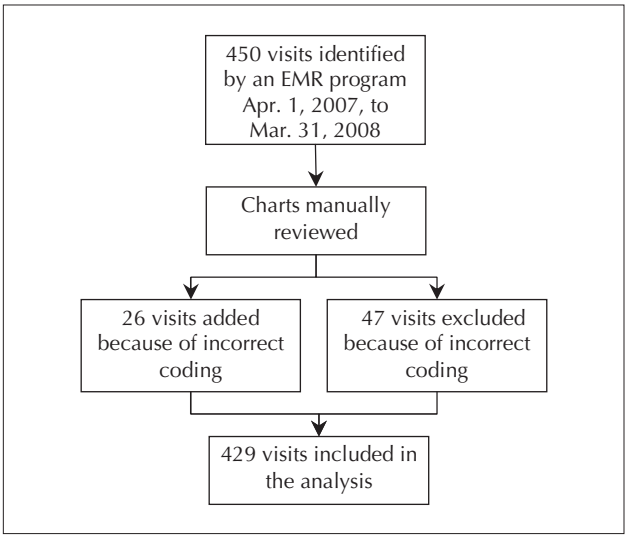


Fig. 1. Derivation of final sample of return visits to the emergency department. EMR = electronic medical records.

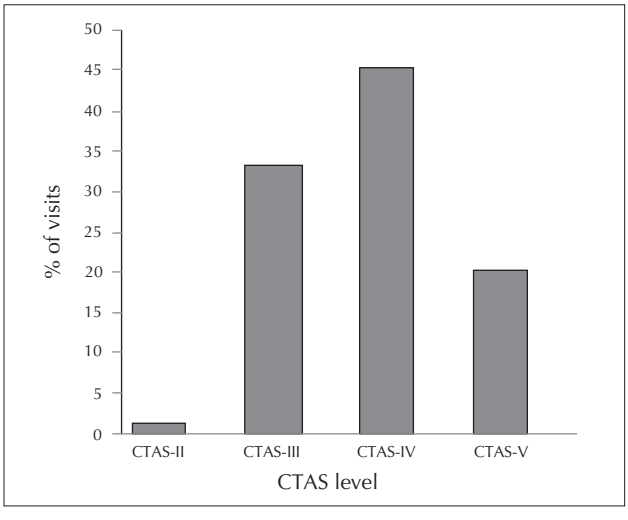


Fig. 2. Canadian Emergency Department Triage and Acuity Scale (CTAS) scores among patients returning to the emergency department.

RESULTS

Of the 9935 ED visits during this 12-month period, 429 (4.5%) were return visits within 7 days, and 289 (2.9%) were return visits within 72 hours. Patient age ranged from 3 months to 93 years, with a median age of 46 years, and 54% were male. The most common CTAS score for return visits to the ED was CTAS-IV (45.3%), followed by CTAS-III (33.3%), -V (20.2%) and -II (1.2%) (Fig. 2). The most common diagnosis was unspecified abdominal pain (4.0%), followed by acute upper respiratory tract infection (3.7%) and asthma (3.3%). The top 10 bounce-back diagnoses are provided in Table 1.

Most bounce-back patients (86.5%) received treatment in the ED and were discharged home. Seven percent were admitted and 3.7% were transferred to another facility. Complete discharge disposition information is provided in Table 2. The median age of bounce-back patients requiring admission was 65 years. The median age of patients requiring transfer to another facility was 33.9 years. There was a variety of diagnoses requiring admission, none of which occurred at a significantly greater frequency than the others.

DISCUSSION

The purpose of our study was to determine the bounce-back rate at a rural ED and to characterize the visits. We assessed a single ED in southwestern Ontario, which limits the extent to which the results may be generalized to other rural hospitals. Our study is limited by sources of error common to all retrospective chart reviews, such as incorrect recording of data on the initial chart, incorrect transfer of data into the electronic medical records system, missing chart information and difficulty interpreting documentation. We did not assess whether the study patients had family physicians and, if so, whether appointments were easily accessible for the patient. Also, South Huron Hospital is 30 km from a very popular summer vacation town. Thus during the summer months the hospital's ED may service an additional temporary population that is away from its primary care providers.

Our study demonstrated a bounce-back rate of 2.9% within 72 hours after discharge from the ED, which is similar to the rate of 3% reported for urban EDs.[1,2] Bounce-back rates are often used as indicators for quality assurance;[1–3] thus, our results suggest that the quality of care at our hospital's ED is comparable to urban EDs. However, not all bounce-back visits suggest a lack of proper care during the initial visit. Patients may be advised to return to the ED if symptoms worsen or for follow-up in some cases. Patients may also return to the ED when they would rather see their family physicians but are unable to access their physicians, which reflects poor access to primary care in the community rather than poor ED treatment.

Most unexpected return visits were for low-acuity conditions (CTAS-IV). This is an encouraging result for the study ED, as it suggests that serious conditions are not being overlooked. It has been demonstrated that a common reason for bounce-back visits is a lack of communication to patients about their diagnosis, treatment and follow-up.[13] At the time of this study South Huron Hospital did not have a formal discharge protocol in place for patient education. The predominance of low-acuity visits may be because of patients who were not properly educated

Table 1. Top 10 diagnoses for 429 bounce-back visits

Diagnosis	No. (%) of visits
Unspecified abdominal pain	17 (4.0)
Acute upper respiratory tract infection	16 (3.7)
Asthma	14 (3.3)
Noninfectious gastroenteritis and colitis	12 (2.8)
Issue of repeat prescription	12 (2.8)
Urinary tract infection, site not specified	11 (2.6)
Unspecified renal colic	10 (2.3)
Constipation	8 (1.9)
Retention of urine	8 (1.9)
Examination and observation following other diagnosis	8 (1.9)

Table 2. Discharge dispositions for 429 bounce-back visits

Discharge disposition	No. (%) of visits
Discharged home	371 (86.5)
Patient triaged and registered, and then left the ED before further assessment by a service provider (e.g., physician, nurse, allied health provider)	7 (1.6)
Patient triaged, registered and assessed by a service provider (e.g., physician) and left without treatment	1 (0.2)
Admitted into reporting facility directly from the ambulatory care visit	30 (7.0)
Transferred to another acute care facility directly from an ambulatory care visit functional centre	16 (3.7)
Intrafacility transfer to clinic	2 (0.5)
Discharged to place of residence (institution; e.g., nursing or retirement home or chronic care, private dwelling with support of home care, VON or Meals on Wheels; or jail)	2 (0.5)

ED = emergency department; VON = Victorian Order of Nurses.

about follow-up during their initial ED visit.

This particular community does not have a significant orphan-patient problem. A recent published study looking at nonurgent use of this rural ED showed that most people in the area using the ED have a family physician.[14] In addition, this rural community also has a walk-in clinic run by the hospital for 3 hours every day of the year, including weekends and holidays. Better education with regard to follow-up may lower the bounce-back rate, because most patients were triaged as low acuity.

It has been demonstrated that most patients visiting an urban ED would prefer to be seen by their family physicians if they were able to access primary care.[15] Patients may not be able to get timely appointments with their family physicians or may have problems accessing care outside of working hours. Our study did not examine the time of day of bounce-back visits to determine whether they occurred primarily after hours. A previous study in this ED showed that many patients with family physicians came to the ED for less urgent problems because they did not have immediate access to primary care.[14] Patients in the area vary in terms of their access to after-hours primary care. There are 8 family physicians in Exeter: 5 are part of a family health team and 3 are part of a family health network. The towns in the surrounding areas have various primary care models. Our study did not examine whether the bounce-back patients had family physicians or, if so, the physicians' type of practice model. Furthermore, it has been demonstrated that patients in a practice providing around-the-clock coverage do not always realize that they have access to a physician 24 hours a day.[15] In urban centres, practice models for primary care have been shown to affect ED visits. The effects that different practice models and access to primary care have on ED visits in rural areas represent potential areas for future research.[16]

A significantly lower number of bounce-back patients were admitted to hospital in this study compared with previous studies in urban EDs that demonstrated rates of bounce-back admissions ranging from 19% to 36.5%.[1,4,17] One explanation for our markedly lower rate of bounce-back admissions may be that South Huron Hospital is not a tertiary care hospital. A higher percentage of patients visiting teaching hospitals are admitted when compared with community hospitals.[8] As such, some of the patients that would have been admitted at larger hospitals with more services, may have been transferred from South Huron Hospital to a larger centre, and were thus represented in our "transfers to another facility" category. The acuity level of our bounce-back visits may also contribute to our low rate of bounce-back admissions. Most bounce-back visits to our facility were of low acuity and were therefore less likely to require admission.

The median age of the admitted bounce-back patient was 65 years, which is significantly higher than the median age for all bounce-back patients of 46 years. This result is consistent with older adults' use of emergency services.[18] It has been shown that older adults use emergency services at a higher rate, are more likely to have repeat ED visits and are more likely to be admitted to hospital, compared with younger adults.

Unspecified abdominal pain was the diagnosis most commonly seen in our bounce-back population. This may be because of the long list of differential diagnoses for presentation of abdominal pain. Our most frequent diagnoses of abdominal pain, asthma and urinary tract infection are among the diagnoses identified by Gordon and coauthors[4] to be at the highest risk for an unexpected return visit to the ED. Our results demonstrate that these diagnoses are similarly prevalent in this rural population. Thus the initial ED diagnosis may be a useful predictor of an unanticipated early return to the ED, allowing ED physicians to be particularly vigilant when a patient presents with a "high risk for return" diagnosis. Communication of these diagnoses to ED staff is important because it has been demonstrated that ED staff may not correctly identify some high-risk diagnoses as such.[4]

Although our study did not examine the factors that contributed to patients returning unexpectedly, it has been repeatedly demonstrated that inadequate patient education contributes significantly to a patient's unexpected return to the ED.[2,7,13] Wilkins and Beckett[13] found that most bounce-back visits occurred because of several forms of inadequate communication, such as failure to explain duration of symptoms, failure to provide adequate explanation or reassurance, and failure to explain the need for ongoing management by the patient. Thus patient education represents a potential area for the development of interventions to reduce bounce-back visits. Patient education represents an area of future research for our group. In November 2008, South Huron Hospital implemented a new discharge protocol that includes a patient education component regarding diagnosis, treatment and follow-up. A follow-up study examining the effect of this new ED discharge protocol on the bounce-back rate at our hospital is currently underway.

CONCLUSION

Our study demonstrates that the 72-hour bounce-back rate of 2.9% at this rural southwestern Ontario ED is similar to the rate reported for urban EDs. Most bounce-back patients have low-acuity conditions and are discharged home. The most common bounce-back diagnosis was unspecified abdominal pain.

Competing interests: None declared.

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