

Strategies for managing a busy emergency department

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ABSTRACT

In a time of increased patient loads and emergency department (ED) exit block, the need for strategies to manage patient flow in the ED has become increasingly important. In March 2002 we contacted all 1282 members of the Canadian Association of Emergency Physicians and asked them to delineate strategies for enhancing ED patient flow and ED productivity without increasing stress levels, reducing care standards or compromising patient safety. Thirty physicians responded. Their suggested flow management strategies, which ranged from clinical decision-making to communication to choreography of time, space and personnel, are summarized here.

Key words: patient flow; physician practice; emergency overcrowding

RÉSUMÉ

En période d'augmentation du nombre de patients et d'engorgement à la sortie des services d'urgence, il devient de plus en plus important d'instaurer des stratégies de gestion de la sécurité des patients à l'urgence. En mars 2002, nous avons communiqué avec les 1282 membres de l'Association canadienne des médecins d'urgence et nous leur avons demandé de formuler des stratégies permettant d'améliorer la circulation des patients et la productivité à l'urgence, sans toutefois alourdir le stress, abaisser les normes de soin ou compromettre la sécurité des patients. Trente médecins ont répondu. Nous résumons ici les stratégies de gestion de la circulation qu'ils ont proposées et qui vont de la prise de décisions cliniques et des communications à une chorégraphie entre le temps, l'espace et le personnel.

Introduction

Several factors have contributed to the now chronic state of emergency department (ED) overcrowding in North America.¹ Acute care bed closures have necessitated earlier discharge of patients who are still relatively ill. Patients without primary care physicians turn increasingly to EDs for this care, and many patients with chronic illness face prolonged waits for diagnostic modalities and specialty consultation — delays that often lead to decompensation and urgent ED treatment. These changes have led to higher

acuity levels and unpredictable volume surges in EDs. Most important, the lack of access to acute care beds means admitted patients are held in the ED for prolonged periods, interfering with the assessment and management of arriving patients with urgent and emergent problems.¹

In an effort to maintain ED throughput (i.e., number of patients treated per hour), ED stretchers must be used more efficiently. Attempts to “do more with less” have a price: ED overcrowding has been found to correlate with increased patient mortality and decreased patient satisfaction.²⁻⁴ Since ED overcrowding is usually secondary to is-

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sues outside the ED, emergency physicians (EPs) often feel the problem is beyond their sphere of influence.^{5,6}

Overcrowding also impairs EP efficiency,⁷ which further compounds throughput problems. EP characteristics, including decision-making style, use of ancillary resources and work pace may also contribute to ED congestion.¹ While acknowledging the importance of hospital-wide strategies to reduce the number of admitted patients in the ED, this article focuses on enhancing EP efficiency in the face of restricted ED care resources.

There is a paucity of literature describing EP performance,^{4,8} and there is wide variation in EP throughput.^{9,10} Recognizing that management strategies and work habits are highly individual, and that different approaches work for different people, there are many common strategies that can improve patient flow without increasing risk to the physician or the patient. Our objective was to compile an inventory of ED best practices to enhance EP efficiency.

In March 2002, we emailed the 1282 members of the Canadian Association of Emergency Physicians and asked for suggestions on how to maximize ED patient flow and ED productivity without increasing stress levels, reducing care standards or compromising patient safety. Responses were compiled and categorized by the authors, and some suggested strategies were excluded by author consensus. References were sought and provided in cases where support for the recommended strategy was found in the literature.

Thirty physicians responded to the request, including 23 from tertiary centres, 2 from secondary level EDs and 5 who work in both secondary and tertiary centres. Seventeen had Royal College of Physicians and Surgeons of Canada certification, 11 had CCFP(EM) certification and 2 had no emergency medicine qualifications. Eight respondents had additional certification (American Board of Emergency Medicine), and 1 had certification by both Canadian certifying bodies. The median time since medical school graduation was 17 years, with a range of 4–30 years.

Suggested strategies

Manage risk in a defensible fashion and avoid solving non-emergency problems

Tailor investigation and management to risk

Progressing from a low to high level of diagnostic certainty costs time, energy and diagnostic resources. It is not always possible to make an exact diagnosis in the ED. The level of diagnostic certainty required correlates directly with the patient's likelihood of an adverse outcome, which in turn re-

lates to age, current diagnosis, comorbidity, socioeconomic status and pre-morbid health. The physician's desire to achieve diagnostic certainty should be balanced against the costs and the risks of the investigations and interventions necessary to do so, and the consequences of diverting health care resources away from more needy patients.

Physicians should also consider the patient's ability to withstand the consequences of potentially missed diagnoses and to tolerate the invasive investigations required to confirm or rule out a diagnosis. The "worst possible diagnosis" can often be ruled out by history and physical examination. Lower acuity patients often require few, if any, tests. Not every patient with vague abdominal pain requires immediate definitive imaging and surgical consultation. In many cases, patient education, discharge and re-assessment may be appropriate, assuming the patient will follow discharge instructions and has the ability to recognize deterioration and act appropriately. Experienced EPs routinely play the odds against unlikely diagnoses, and this is an important skill for trainees to develop.

Avoid investigations that are better done elsewhere

Consider whether investigations might be more appropriately done in an outpatient setting. It may seem convenient to order x-rays to investigate the extent of osteoarthritis, but consider the impact of doing so. Apart from material costs, this simple decision forces the radiology technician to perform the x-rays and the EP to read the images, and necessitates a second physician–patient encounter. With waits at each step, it only takes a few such decisions to delay new patient assessments and increase ED congestion.¹¹

Before embarking on time-consuming and resource-intensive investigations for patients with complex problems, ponder the urgency of making a definitive diagnosis and consider the possibility of safe discharge or admission. There are places in the health care system for exhaustive workups, and the ED is rarely one of them.

Don't order tests that will not or should not affect patient management^{11,12}

Before ordering a test, determine how the result will influence clinical care. Investigations that will not change management in a way that improves patient outcome are a waste of time and money, and are likely to increase anxiety or provide false reassurance. There are no "routine" tests, and "CBC and lytes" should not be ordered on every patient. The white blood count does not confirm or exclude appendicitis, therefore when clinical likelihood is low, it makes more sense to discharge the patient with appropriate instructions than to order tests. It is quicker and more hon-

est than telling the patient that their “tests are normal.” Avoid “screening” with cardiac markers unless you intend to repeat the assays after an appropriate time. The concept of “benign neglect” should not be feared: Is diagnosing a non-obstructive large bowel tumour in an elderly demented patient with COPD likely to benefit them in any way?

Implement guidelines and clinical decision rules to initiate necessary testing

When they will expedite patient flow without increasing inappropriate utilization, implement standing orders linked to recognized clinical rules or departmental policies. For example, at the point of first contact, nurses can initiate pregnancy testing in women with abdominal pain, ankle x-rays for patients with a positive Ottawa Ankle Rule and ECGs for patients with chest pain that is potentially cardiac in nature. Educate nursing staff and housestaff about appropriate diagnostic protocols and monitor their use; over-ordering can also be counterproductive.

Communicate with patients

Develop a good rapport

Establishing a good relationship with patients is not merely good manners; relationships enhance trust and confidence, reduce medicolegal risk, facilitate more rapid discharge, improve patient compliance and the image of our profession. Apologize for the wait, maintain eye contact and, if possible, sit down while taking the history. Address underlying anger and patient expectations early. Be friendly, respectful and interested, and include family members in the history process. Physical contact (i.e., handshake) will help establish rapport. Inform them if you are using a validated clinical decision rule that indicates if tests are necessary.

Make multiple short visits to the patient's bedside

Several short visits to the patient's bedside rather than one protracted visit just prior to discharge will make eventual disposition easier for the patient to accept. Go into the cubicle for a few seconds between seeing other patients, ask how the patient is, and provide an update; this will enhance communication and strengthen your relationship and credibility.

Anticipate the outcome; communicate expectations early to patients

Explain your intended course of action and the expected outcomes. (It's helpful to clarify these in your own mind also.) If you believe you will be unable to confirm a definitive diagnosis, inform the patient. It is easier to discharge

patients who have had the process explained from the beginning rather than after all tests have returned. If discharge is the likely outcome, involve social work and begin planning this early in the visit to avoid delays.

Don't delay uncomfortable decisions

Recognize situations where an uncomfortable decision is inevitable, and where waiting or doing tests will not make it more palatable. Make that decision as soon as possible.

Use patient handouts

Obtain a supply of problem-oriented handouts from your institution or download them from the Internet. Have patients read them while you are seeing other patients. Information about diagnostic processes and disease management can empower and engage the patient. Ask nurses to help patients understand the contents, and encourage questions. Remember, 47% of Canadian adults have difficulty reading, and about 80% of those over age 65 have serious literacy limitations.¹³ Be sensitive to the fact that they may be embarrassed to admit that they cannot read. Don't assume that patients with poor literacy skills will be easily recognized; most patients try to hide this information.¹⁴

Politely communicate the concept of “emergency facility”

If a patient adds non-urgent problems to their main complaint, politely avoid attempting to solve these problems. An analogy to phoning their accountant at 2 am may help.

Deal with consultants in a professional manner

Get to know your consultants

If you develop good relationships with consultants, patient transfers are likely to be quicker, leaving you with more time for resolving other issues.

Communicate with consultants on bed issues

Honesty and integrity are the keystones to effective relationships with colleagues and consultants. In cases of conflict, ensure that conversation remains patient focused. Do not consider a recommendation of outpatient management simply because “there are no beds.” Avoid putting consultants' schedules above patient needs and ED flow issues.

Make sure your consultation requests are clear, focused and appropriate

If your normal conduct is to make clear, focused, appropriate consultation requests, you will build a bank of goodwill on which you can draw when you simply have no time for intensive, time-consuming workups or procedures.

Don't delay referral when consultation is clearly needed

If the need for consultation or admission is apparent prior to testing, don't wait for test results unless the results will determine management (e.g., x-rays for a fractured wrist). Notifying consultants that referral is imminent may help them choreograph the day to better suit all parties.

Insist on consult response from physicians who have the authority to make decisions

If flow is backed up, as it often is in teaching hospitals, it is inappropriate to allow junior staff with no decision-making power to be the consulting service's first response. Trainees can see new cases on the ward. Patient care trumps education, and teaching "need" should not delay the transfer of patients to available beds.

Constantly monitor departmental flow

Use a board or electronic monitoring system

A "whiteboard" or electronic monitoring device is extremely useful for showing the status of each patient. If gridlock is imminent, reassess each patient's ongoing need to remain in a bed and devise a strategy to hasten their safe disposition. Before taking a new chart, review the status board to be sure you're not forgetting timely reassessments.

Communicate with the charge nurse

Get to know your charge nurses. Discuss patient flow and anticipate problems with them.

Monitor transfers through the ED

Managing the entire hospital is not your responsibility, but managing ED patient flow is. Do not accept transfers to the ED unless an essential urgent service is available only at your hospital. Inpatients at other hospitals should only be transferred to inpatient beds — not to ED stretchers or waiting rooms. Develop and enforce a policy clarifying that only EPs can accept patient transfers into ED care spaces.

Multitask

Choreograph procedures, reassessments, breaks, teaching and family discussion. If a treatment is to occur in steps, intersperse the reassessments with other duties. It only takes seconds to order the next anti-migraine drug in a patient who has failed the first choice, and waiting to see if the medication worked takes only 20 to 40 minutes, so don't make the patient wait an hour while you do another procedure. Assess the need for a "next step" for the first patient before starting something else.

Manage your time

Use slow times to recharge

If the pace slackens but you foresee an impending influx of non-critical patients at triage, seize the opportunity for you and your housestaff to have a nutrition break.

Plan procedures

Whenever possible, delay procedures such as fracture reductions, complicated lacerations or tendon repairs until the end of a shift or after the next EP has arrived to take over the ED. Consider nurse workload before initiating procedural sedation.

Jump-start your history by reviewing previously gathered information

Before seeing a patient, review the paramedic report, the nurses' notes, and old clinical records. This will help direct the history and reduce your time at the bedside. Beware, however, of falling into the trap of "anchoring" to previous diagnoses or diagnoses made by other caregivers.¹⁵

Use the nurses

Ask the nurses to review patient discharge instructions, and conduct "walk tests" with them.

Avoid a paperwork backlog

When taking a history, try to write the chart at the same time.

Streamline the management of uncomplicated patients

Use "flow directed" triage

When presented with several patients of the same triage level¹⁶ you may choose not to see them in order of arrival. It may be more efficient to assess a patient with an obvious UTI before one with a Crohn's exacerbation, so that the former's bed is rapidly available for the next patient.

Scan charts and anticipate care needs

Before you see the next patient, scan all the waiting patients' charts, identify obvious needs or investigations, and order these. In this way, much can be accomplished while patients are waiting to see you.

Use algorithms and care maps

Care maps and algorithms can be time savers. Be sure nursing staff are familiar with them so that orders don't need to be repeatedly explained.

Be an administrator and a delegator

Develop a close working relationship with all ED staff

Team spirit is critical in the high-pressure environment of the ED. Get to know your coworkers — from orderly to charge nurse. Staff who are “on your side” are more likely to work hard, help correct your errors and make your job more enjoyable. Listen to the nursing staff, respect them and understand their responsibilities and accountability. Learn who you can trust for the most accurate patient assessment and let them carry an appropriate load. You will be able to see more patients, and the nurses will be empowered to improve patient flow.

Insist that patients are ready for you

Remember that the EP is often the rate-limiting step in patient flow. It is inefficient for physicians to be performing vital signs, assessing visual acuity, undressing patients, removing dressings and preparing wounds. Patients should be prepared, records waiting, and test results available for review. Let the staff know these are your expectations by being consistently adamant about them. Insist on actual — not estimated — vital signs. Time is wasted when abnormalities are discovered at a late stage.

Be flexible to maximize the use of staff

High acuity patients require more intensive nursing and a greater allocation of nursing coverage, but less acute patients can also be taxing, especially if they are vomiting or in pain. If acute care or resuscitation beds are empty or “blocked” by low-intensity patients, nurses can be redirected to help with patients who have additional needs. Stable patients can be evaluated and treated in resuscitation beds, with the proviso that when a Level I or II¹⁶ patient arrives the less sick patient will be moved back to the corridor or waiting room.

Lead by example

Do not perform administrative or academic duties while you are on shift. If you are less busy, help others with patient care. Show by example that staff members need not always restrict their actions to those listed in their job descriptions. If the nurses are overloaded, start an IV, take blood, give medications, or get the patient a glass of water and a warm blanket. Other staff will pay you in kind when you are overloaded.

Delegate, delegate, delegate

Discharge planning is a task that should be delegated — earlier rather than later! Ask other team members to cap-

ture critical information that you could not. This might involve calls to family doctors, relatives or nursing homes. Teach staff to do mini-mental status tests. Whenever possible, delegate tasks like splinting or dressing.

Inform the hospital administration

When CTAS guidelines¹⁶ cannot be met because of ED gridlock, demand a response from administration. The hospital policy of leaving admitted patients in ED stretchers exposes EDs to increased medicolegal risk; this risk should be shared with administrators.

Be a space administrator

Utilize other space

When there is a “log-jam,” assess patients wherever you can — even in private side rooms or waiting areas. Patients with ankle or upper-limb injuries can wait for x-rays in the waiting room. Stable patients who are awaiting test results and will soon be discharged can be moved to a chair and the next patient placed in the freed-up bed. Tell sicker patients in the waiting room the reasons for CTAS violations.¹⁶

Don't let location dictate treatment

Not everyone needs an IV line or cardiac monitor; nor does the presence of an IV line mandate IV medication. If oral medication will suffice, give oral not IV, and discharge the patient. Always do what is right for the patient, regardless of the location. Don't forego an indicated cardiac workup on a patient in the “fast track” area. But don't do investigations simply because the patient landed in a monitored bed.

Communicate with the inpatient wards

Discharged patients should not occupy inpatient beds while waiting for discharge arrangements or transportation. Explain to the inpatient wards that it is better to put their discharged patients in chairs than for ED staff to have to hold acutely ill patients in ED corridors and waiting rooms. A discharge lounge addresses this issue best of all, and eliminates the need for phone calls.

Develop a policy on waiting room patients

Some hospitals have adopted the philosophy (supported by the Canadian Medical Protective Association) that the ED is responsible for all patients in the ED regardless of whether they have a bed or not. In this system, a designated “waiting room stretcher” is used to rotate patients through for a brief evaluation by a triage nurse, with reassessment every 2 hours. X-rays and blood tests are ordered as per protocol.

Frequently, patients can be seen and discharged in this manner before actually being assigned a bed.

Be cognizant of the ED philosophy

Remember that some patients should not be “rushed”

Patients with chest pain, foreign bodies and fractures should always be assessed and treated with prudence. Beware patients on return visits and those handed over at shift change. Heuristics or “short-cuts” used to facilitate patient flow will increase the risk of misdiagnosis and should generally be avoided.¹⁵

Remember who you are

Emergency medicine differs from other medical specialties, and anyone who prefers to solve one problem before moving to the next is in the wrong profession. One respondent stated: “Working in the ED is like cooking supper; you need to manage multiple patients with a variety of problems that require a variety of questions, examinations, investigations and interventions — and do it all concurrently, just like cooking several different dishes at once.” If you are at a loss about what to do with a patient, if that patient is stable, move on to the next. You will be agreeably surprised by what comes into your mind when you return to this difficult patient after time spent with another.

Limitations

The goal of this article is to suggest strategies that can be tailored to the needs of different settings. It is not a definitive inventory of evidence-based flow strategies, but rather a compilation of expert opinion. Over time, with more strategies submitted and further experience shared, this interesting field might become more exact.

Most of the strategies were submitted by physicians from tertiary care centres, which might limit their generalizability. Nevertheless, flow issues are common to EDs of different sizes and in different settings. Although nursing staff play an important role in ED patient flow, our survey was addressed to practising EPs. Future exploration of this issue should include input from emergency nursing staff.

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References

1. Schull MJ, Slaughter PM, Redelmeier DA. Urban emergency department overcrowding: defining the problem and eliminating misconceptions. *Can J Emerg Med* 2002;4(2):76-83.
2. Miro O, Antonio MT, Jimenez S, De Dios A, Sanchez M, Borrás A, et al. Decreased health care quality associated with emergency department overcrowding. *Europ J Emerg Med* 1999;6:105-7.
3. Egan N. Managing a bed crisis. *J Accid Emerg Med* 1999;16:145-6.
4. Spaite DW, Bartholomeaux F, Guisto J, Lindberg E, Hull B, Eyherabide A, et al. Rapid process design in a university-based emergency department: decreasing waiting time intervals and improving patient satisfaction. *Ann Emerg Med* 2002;39:168-77.
5. Richards JR, Navarro ML, Derlet RW. Survey of directors of emergency departments in California on overcrowding. *West J Med* 2000;172:385-8.
6. Kyriacou DN, Ricketts V, Dyne PL, McCollough MD, Talan DA. A 5-year time study analysis of emergency department patient care efficiency. *Ann Emerg Med* 1999;34:326-35.
7. Drummond AJ. No room at the inn: overcrowding in Ontario's emergency departments. *Can J Emerg Med* 2002;4(2):91-7.
8. Lynn SG, Kellerman AL. Critical decision making in the emergency department in an overcrowded hospital. *Ann Emerg Med* 1991;20:287-92.
9. Campbell SG, Maxwell DM, Sinclair DE. Is individual emergency physician efficiency a significant determinant of ED overcrowding? [abstract]. *Can J Emerg Med* 2003;5(3):202.
10. Cardello D. Monitoring staffing variances and length of stay. *Nurs Manage* 1995;26(4):38, 40-1.
11. Yoon P, Steiner I, Reinhardt G. Analysis of factors influencing length of stay in the emergency department. *Can J Emerg Med* 2003;5(3):155-61.
12. Worster A, Innes G, Abu-Laban RB. Diagnostic testing: an emergency medicine perspective. *Can J Emerg Med* 2002;4(5):348-54.
13. Sibbald B. Can your patient understand you? *CMAJ* 2000;163(8):1039.
14. Weir E. Illiteracy as a public health issue *CMAJ* 2001;164(10):1486.
15. Croskerry P. The importance of cognitive errors in diagnosis and strategies to minimize them. *Acad Med* 2003;78:775-80.
16. Beveridge R, Clarke B, Janes L, Savage N, Thompson J, Dodd G, et al. Canadian Emergency Department Triage and Acuity Scale implementation guidelines. *Can J Emerg Med* 1999;1(3 suppl). Available: www.caep.ca/002.policies/002-02.ctas.htm (accessed 26 Mar 2004).

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