Freebies to MDs targeted as drug industry starts publicizing CME fines

Canada's drug companies are now getting their knuckles rapped publicly if they violate industry rules concerning the CME events they sponsor. Several rulings made by the Marketing Practices Review Committee of Canada's Research-Based Pharmaceutical Companies (Rx&D, formerly the Pharmaceutical Manufacturers Association of Canada), are published in the latest issue of the organization's newsletter, *Update* (**www.canadapharma.org**).

President Murray Elston says the organization, which represents 63 drug firms, is publishing the detailed reports because it wants to be to be more transparent about the committee's work. "Transparency is the word these days," he said. "We are trying to inform both our member companies and the public."

When shown the *Update* report, Dr. Joel Lexchin, a Toronto physician who keeps a critical eye on company-sponsored CME (see *CMAJ* 1999;160[11]: 1556), said he is "all in favour of more transparency. However, will it do anything to achieve the ultimate objective, that companies not attempt to bribe doctors?"

Elston says the heightened publicity means that Rx&D members will now have an easier time tracking violations and ensuring that they don't break the same rules when promoting their own CME events. The rules applied by the review committee are contained in the organization's 15-page Code of Marketing Practices (**www.canadapharma.org /en/publications**); complaints that companies have broken the rules are usually lodged by other companies or by doctors who attended the events. Elston, who served as Ontario's minister of health in the mid-1980s, said companies are fined $1000 for a first violation, $5000 for a second, $10 000 for a third and $15 000 for a fourth. After a fourth violation, they must also go before the Rx&D board to face further action. "One rule of membership is that you have to abide by the Code of Marketing Practices," he said, and if rules are violated repeatedly, "we may need to be more aggressive."

Cases outlined in the most recent issue of *Update* indicate that the most common violation is that the "E" in CME too often stands for entertainment, not education.

- Bayer Inc. was fined $15 000 because its CME event at a golf and country club contained only 50 minutes of education and well over 4 hours of entertainment, including a round of golf, tour of a brewery and dinner.
- Merck Frosst was ordered to pay $1000 because its CME event in Coquitlam, BC, "did not adhere to all the principles of adult learning for continuing health education." In this case, the presentation lasted 30 minutes less than the free dinner.
- SmithKline Beecham was fined $1000 because it invited physicians to attend the Royal Winnipeg Ballet's presentation of *The Nutcracker*. Spouses were welcome, and there was discussion on "published clinical evidence on rosiglitazone — soon to be available in Canada." The committee ruled that the company broke the rules "because of the imbalance between educational and social components of the program" and because it paid for a social activity other than meals.
- SmithKline Beecham was hit with a $5000 fine after its CME event on type 2 diabetes, held at Toronto's Berlin Restaurant and Night Club, featured a 1-hour lecture beginning at 6 pm, followed by a "salsa lesson" at 7 pm and dinner at 8. The company was found guilty of "an imbalance between social and educational components."

Lexchin, who described the Rx&D monetary sanctions against drug companies as "meaningless," said the organization shouldn't have to rely on complaints before it acts. "It should go out and monitor proactively," he said.

He also thinks physicians have to take some responsibility for choosing to participate in events that obviously violate the CMA's 1994 guidelines on CME (*CMAJ* 1994;150[2]:256A-256C), and that the CMA itself should be more "aggressive" about promoting its own CME policy. "When you publish guidelines you have to get in their [doctors'] face and make them part of the CME events."

He would like to see more physicians lodge CME-related complaints with Rx&D (**info@canadapharma.org**). "What Rx&D is doing has to be picked up on and followed," he said. "I think *CMAJ* should devote a page to this every time a list of these offences is published."

Dr. Gordon Crelinsten, who chairs the CMA Committee on Ethics and represents the CMA on Rx&D's Marketing Practices Review Committee, described efforts to publicize the committee's decisions as "an important step forward. The important thing is that this committee does meet, that these companies have a code they're accountable to and that they are allowing physician input." — *Patrick Sullivan*, CMAJ

Fitness-to-drive guide flying off shelf

Physicians are snapping up copies of the CMA's new *Determining Medical Fitness to Drive: A Guide for Physicians.* Within 3 weeks of publication, more than 1800 CMA members had ordered their free copy. The revised book reflects changes in medications, the transportation industry and the legal system over the past decade. CMA members can order their copy by calling 888 855-2555, or 613 731-8610, x2307. The book is available to nonmembers for $34.95.

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BC physicians give province's health system dismal marks

Dr. Graham White, a family physician from Parksville, BC, says he's frustrated with the lack of health care resources in the province. When the Nanaimo Hospital opened 30 years ago, it had 245 acute-care beds. It now has 226, he says, "and during that time the area's population has doubled."

There are now 3195 patients on waiting lists for elective surgery in the area. White says there are long delays for many procedures; patients who need an MRI scan must be referred to Victoria, where the wait is 6 to 9 months. "The bottom line is money," says White. "The acute health care system has been gutted."

Parksville News photo

Dr. Graham White: a frustrating lack of resources

White is not alone in giving the health care system poor marks. Doctors in the Vancouver Island city of Nanaimo decided to award "grades" to health administrators, and Dr. Lawrence Winkler, the internist who spearheaded the drive, says the results should make no one proud.

The BC Ministry of Health earned an F, the Central Vancouver Island Regional Health Board received a D and the Nanaimo Regional General Hospital was awarded a C-. The group asked 125 physicians with hospital privileges how they rated the performance of the ministry, the board and the administration.

"For a long time we've been struggling with the concept that physicians' voices have been either diluted or deliberately excluded," said Winkler. "We did this to bring some reasonable pressure to bear on the system."

Grant Roberge, chief executive officer of the health region board, says he respects the physicians' concerns and "improvements have to be made." — *Daphne Gray-Grant*, Vancouver

French at heart

The University of Ottawa Heart Institute is developing a multimedia software package to help physicians and other health care providers learn French medical terms. The program, *French@Heart*, is being developed by the institute's French Resource Centre with funding provided by the Ontario Ministry of Health and Long-Term Care. Elisabeth Crisci, spokesperson for the project, says the software is needed now because many Ontario hospitals are going to be designated bilingual beginning next year. The software, which will be available this fall, is supposed to provide physicians, nurses and other health care providers with the "functional French" they will need in these bilingual institutions. Next year, all Ontario communities in which more than 10% of the population is francophone will have to designate a hospital to provide bilingual health care. Crisci said *French @Heart* will include an extensive lexicon of medical terms and lists of common words used with patients, as well as filmed interviews showing patients seeing specialists from several different fields. — *Patrick Sullivan*, CMAJ

International "poaching" of nurses bound to get worse

Poaching of Canadian nurses by American hospitals is getting worse because of the growing shortage of nurses there, the Canadian Nurses Association warns. "The US is offering Canadian nurses full-time jobs and all sorts of perks," says Mary Ellen Jeans, the executive director. "Canada is doing nothing." She describes the American recruiting as "aggressive."

The American Association of Nurse Executives says there are nursing shortages across the country. A study of the aging RN workforce (*JAMA* 2000;283[22]:1948-54) forecasts that by 2020 the US will have 20% fewer RNs than it needs. Federal officials and nursing groups anticipate an acute shortage beginning in 2010, when today's nurses, who average 44 years of age, begin to retire. Less than 10% of US nurses are under age 30.

Canada faces a similar situations. The CNA predicts a shortfall of between 60 000 and 115 000 RNs by 2010, and the UK needs 20 000 nurses immediately. "There's an international shortage, so everyone is poaching from one another," says Jeans. "If Canada wants to turn that tap off, it's going to have to invest and create full-time jobs and quality working environments." — *Barbara Sibbald*, CMAJ

Montrealers ante up for private surgery

When Fabienne Levesque needed knee surgery last year, she was told that she'd have to wait at least 18 months and be prepared to go to hospital at a moment's notice.

Levesque (a pseudonym), a busy executive who was in chronic pain, didn't want to wait and asked her physician if she could get the operation done privately. To her surprise, the answer was "Yes." And the $450 price tag, which included the cost of medications, was within her means.

Three months later, Levesque's surgery was performed at the Institut de Polychirurgie de Montréal (IPM), a private clinic in a nondescript professional building sandwiched between a school, a church and a park. Despite its unremarkable façade, the clinic has ignited controversy in Quebec, especially after the *Montreal Gazette* published a front-page article about it this spring.

The clinic offers day surgery such as orthopedic procedures to patients willing to pay a few hundred dollars in "facility fees." Currently, about 20% of IPM's surgical work involves payment of the facility fee, and it is the only place in the province charging patients a fee for services that are being paid for by medicare. This underground medical economy is attractive to people like Levesque, who don't want to join a queue.

Presumably, the Régie de l'assurance médicale de Québec knew about IPM's work, because the 14 surgeons working part time at the institute have been billing the provincial insurance plan for the services they provided there since 1997. When asked about the legality of facility fees, Pierre Boucher, a spokesman for the plan, was tight-lipped, saying only that an investigation is under way.

The IPM's 4 operating rooms were originally part of the Guy Laporte Hospital, which was shut during a series of hospital closures in 1997. The clinic was designed to provide elective plastic surgery, which is not covered by medicare and which constitutes 80% of IPM's work.

"But there was a demand for other procedures, so we opened the doors to day surgeries because our operating rooms were not being used 100% of the time," explains Dr. Jacques Letendre, an anesthetist who serves as director of professional services at the clinic. Letendre, a former director of professional services at the Guy Laporte Hospital, is a staunch defender of medicare but maintains that inadequate financing is putting patients at risk and creating long-term costs for society.

Susan Pinker

Dr. Jacques Letendre: faster service, less bureaucracy

As for his clinic, he says nothing has changed since the *Gazette* story appeared. "We are continuing our activities in the same way and at the same pace as before," he said. — *Susan Pinker*, Montreal

Curb use of drugs in farm animals, WHO advises

The World Health Organization wants farmers to curtail and monitor their use of antimicrobial chemicals in food animals in an effort to slow the proliferation of drug-resistant forms of disease-causing bacteria.

The tough new measures call for obligatory prescriptions for all antimicrobial agents used for disease control in farm animals, as well as national systems to monitor the use of these products.

"In the last few years, evidence of the range of public health risks associated with the use of antimicrobials has grown stronger," says Dr. David Heymann, executive director of the WHO program on communicable diseases. "With the adoption of these principles, we have taken a major step to reduce these risks on a global scale." The guidelines, set at a June meeting of more than 70 experts, also advise veterinarians to reduce overuse and misuse of antimicrobial agents.

Overuse and misuse of these drugs has been shown to contribute to new, drug-resistant forms of disease-causing bacteria. These bacteria can then be transmitted to humans, primarily via food, and the resulting infections can be unresponsive to conventional treatment and difficult to cure.

For example, an antimicrobial-resistant *Salmonella* bacteria in food animals in Europe, Asia and North America has caused diarrhea, sepsis and death in humans. — *Barbara Sibbald*, CMAJ

On the Net

Medical matchmaking on the Internet

A few months ago I wrote about some rural communities that went online in search of physicians (*CMAJ* 2000; 162[3]:401). Now an organization that represents Ontario's newest doctors has taken things a step further.

The Professional Association of Internes and Residents of Ontario (PAIRO) represents about 2400 physicians-in-training. Its new Web site (**www.pairoregistry.com**) is an online matchmaking service for physicians and the underserviced communities that are dying to recruit them. And it is yet another sign of the ongoing crisis in rural/remote medicine.

This Web portal brings doctors and communities together under a virtual roof: it allows communities to court doctors online and physicians to search for desirable places to work by spelling out their professional criteria.

"We're offering the system at no cost to all Ontario communities with physician shortages because we think it can be an integral link in helping them recruit and retain the physicians they need," says Dr. Joshua Tepper, PAIRO's president.

The site offers 2 distinct paths. Physicians can use its search capabilities to look for communities that fit their individual preferences. They can search by community name, region, specialty and community size. Once a list is compiled the system lets searchers move to individual community Web pages, where they can find detailed information about the towns and cities they have identified. An email link is usually available, so contact can be made almost immediately.

From the other side, the registry lets communities build a customized set of Web pages extolling their virtues. The communities provide the information and get a free Web site and listing in the PAIRO registry. All the programming is done online through an automated system, so anyone can use it.

The system went live only in May, so it is too early to tell how successful it will be. However, Tepper said an earlier version of the site had more than 30 000 page views in 1999. — *Michael OReilly*, mike@oreilly.net

Are MDs falling behind as demand for info grows?

Physicians now trail the combined popularity of several other sources, including the Internet, as Canadians' major source of medical information, but they remain the most trusted resource. In addition, the information they provide is deemed the most useful.

In a recent survey of 2580 Canadians by PricewaterhouseCoopers, 45% of respondents indicated that tools such as the Internet, medical journals and newsletters, brochures or print and electronic media coverage are their prime sources of health information, while just 33% cited a physician as their number-one resource. The findings were published in a recent issue of the Health*Insider*, a research report on consumer health issues.

"Our findings would suggest that the amount of information physicians are supplying is not necessarily keeping up with consumers' demand," says Dale McMurchy, a senior health care consultant at PricewaterhouseCoopers and author of the Health*Insider*.

"And while patients are going elsewhere for information," adds McMurchy, "this raises the whole issue of information quality. Physicians need to take a larger, more proactive role here, for example by being familiar with and recommending specific journal articles and Web sites."

Although respondents invariably reported that their doctor is a trustworthy information source, less than 5% rated the media as a very trustworthy resource; Web sites scored an 8% rating.

Similarly, physicians were cited as a "very useful" information source by nearly 60% of survey respondents. The media were deemed a very useful information source by 15% of respondents, Web sites by 35%. — *Greg Basky*, Saskatoon

Instant response to *CMAJ* articles now available

The publication cycle for letters to the editor to *CMAJ* has been shortened from months to hours. Readers of *eCMAJ* (**www.cma.ca/cmaj**) can now submit an eLetter in response to articles the journal has published, and the eLetters will then be screened by a *CMAJ* editor. "The goal is to post as soon as possible, and within the next business day at the latest, correspondence that contributes significantly to the topic under discussion," Editor John Hoey said of the service, which was launched with the Aug. 22 issue. The letters may also be published in the journal's paper version.

To send an eLetter, readers simply click on the mailbox icon at the bottom of the HTML text of any article.

Pulse

Drug price index sees first increase in 5 years

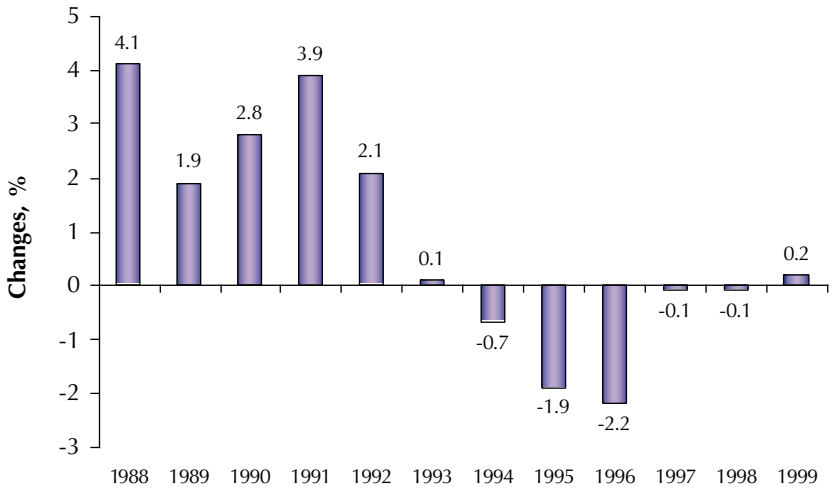
After 5 years of decreasing prices, the Patented Medicine Price Index (PMPI) showed an increase of 0.2% in 1999. The last increase was recorded in 1993, when prices rose by 0.1%. In 1999, Canada's Consumer Price Index registered an increase of 1.7%. The PMPI , which includes only drugs used by humans, measures the average change from the previous year in the average transaction prices of patented drug products sold in Canada. The data are collected by the Patented Medicine Prices Review Board, an independent federal tribunal that has a mandate to ensure that prices of patented medicines are not excessive.

A Statistics Canada index that tracks all pharmaceuticals (both patented and nonpatented) showed a 0.8% price increase for 1999. This Canadian result can be compared with that from a similarly constructed index in the United States that, for the same period, recorded an increase of 3.7%.

Drugs as a percentage of all health expenditures continue to rise steadily, reaching a level of 15.2% in 1999. Factors that affect total spending on drugs include changes in total population, changes in utilization of drugs per patient and new types of treatment.

In 1999, patented drugs accounted for 61% of all drugs sold in Canada. Another 30% of sales involved nonpatented brand-name drugs, with the remaining 9% of sales accounted for by generic drugs. At the end of 1999, manufacturers' total sales of drugs for humans stood at $8.9 billion in Canada, a 16.8% increase from 1998. — *Lynda Buske*, buskel@cma.ca

Year-over-year changes in Patented Medicine Price Index, 1988–99



Note: 1999 figures include drugs for human use only
Source: Patented Medicine Prices Review Board

Medical school enrolment to increase at UBC

Enrolment at the University of British Columbia's medical school could increase modestly by as soon as next year and eventually expand by as much as half of the current total, the province reports. The existing intake of 120 students has remained unchanged since 1980; it is the smallest intake per capita among provinces that have medical schools. Dr. John Cairns, UBC's dean of medicine, hopes that a significant increase in enrolment will be achieved within the next 5 years.

The increase was announced by provincial health minister Mike Farnworth. A formula for increased funding for residents is also planned for 2001. Cairns said the long-discussed need to expand the medical school has been recognized "at last." He said the school's limited enrolment meant the province was "choosing to educate only 25% of the physicians it requires. … There have been severe problems in a number of communities around the province, and we all recognize that they are going to get much worse. The province can't rely on other provinces as it has and it can't rely on other countries as it has."

The medical school is working out the financial details of the expansion, which it plans to present to the provincial government in early fall. The federal government has not made a commitment to contribute to the expansion. Cairns says Ottawa "must step up to the plate. The federal government has not taken a leadership role in medical education since the 1960s."

The new funding will include capital spending on the medical school's deteriorating and overcrowded physical facilities. — *Heather Kent*, Vancouver

Clinical Update

A clinical-decision rule for cervical spine injury

Hoffman JR, Mower WR, Wolfson AB, Todd KH, Zucker MI. Validity of a set of clinical criteria to rule out injury to the cervical spine in patients with blunt trauma. *N Engl J Med* 2000;343:94-9.

Background

Because a missed cervical spine injury can have serious consequences, most physicians exercise caution and order imaging studies in patients who have sustained blunt trauma to the head and neck. A previous study found that a set of clinical criteria identified low-risk patients in whom imaging may be unnecessary.[1]

Question

Can 5 clinical criteria be used to identify patients at low risk for clinically significant cervical spine injury after blunt trauma?

Design

This prospective, observational study was performed at university and community hospitals in 21 sites throughout the United States.[2] Only patients with blunt trauma to the head and neck were enrolled; those with penetrating trauma or the need for a cervical spine film for reasons other than trauma were excluded. Participating emergency department physicians were asked to use their usual clinical decision-making practices when evaluating a patient's need for cervical spine films. Before completing 3 views of the cervical spine in stable patients, physicians obtained demographic data and assessed patients for the following 5 clinical criteria:

- No midline neck tenderness
- No focal neurologic deficits
- Normal level of alertness
- No intoxication
- No clinically apparent injury that might distract the patient from the pain of a cervical spine injury

Patients were considered to be at low risk if they met all 5 criteria. CT scanning of the cervical spine was performed when plain film imaging was not feasible. Radiographic abnormalities were designated as clinically significant or insignificant, according to whether specific intervention or treatment was required. Radiologists were unaware of the clinical information when interpreting the imaging studies.

Results

Of the 34 069 patients who had imaging of the cervical spine after blunt trauma, only 818 (2.4%) had radiographically detectable cervical spine injury. Only 8 of these 818 patients met all 5 criteria for low risk, yielding a sensitivity for the decision rule of 99.0% (95% confidence interval [CI] 98.0%–99.6%) and a negative predictive value of 99.8% (95% CI 99.6%–100%). When clinically insignificant abnormalities were excluded, only 2 of 578 patients were classified as low risk by the decision rule. One of these resulted from misapplication of the rule, while in the other instance the patient had an asymptomatic teardrop fracture of the second cervical vertebra, without swelling or abnormal alignment. Scrutiny of neurosurgical records at participating centres identified 2 patients whose cervical spine injury had not been detected in the emergency department. Neither case was classified as low risk by the decision rule.

Commentary

Considerable discretion was permitted in the physicians' determination of whether patients met the 5 criteria in order to allow for clinical judgement. For instance, deeming an injury to be sufficient to distract a patient from the pain of a neck injury was left to the judgement of the physician, as was the level of intoxication and its effect on a patient's reliability. Nevertheless, interobserver reliability of the instrument had been shown to be acceptable in previous studies (kappa value 0.73).[3] In this study, application of the decision rule would have reduced the number of orders for cervical spine films by 12.6%.

Implications for practice

The application of a simple, 5-item instrument can predict which patients with blunt trauma are at low risk for clinically significant injuries to the cervical spine. However, given the potential consequences of an unrecognized injury, physicians must apply such a decision rule with caution. — *Kathryn A. Myers*

The Clinical Update section is edited by Dr. Donald Farquhar, head of the Division of Internal Medicine, Queen's University, Kingston, Ont. The updates are written by members of the division.

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Clinical Update

Use of a critical pathway for the management of community-acquired pneumonia: the CAPITAL study

Marrie T, Lau C, Wheeler S, Wong C, Vandervoort M, Feagan B. A controlled trial of a critical pathway for treatment of community-acquired pneumonia. Community-Acquired Pneumonia Intervention Trial. *JAMA* 2000;283:749-55.

Background

Many hospitals in Canada and the United States have implemented critical pathways (CPs) to reduce variation and control costs in the management of several common conditions. These pathways combine evidence-based practice parameters with guidelines for the timely completion of specific steps in the process of care. Whether they achieve their goals without compromising quality of care has not been rigorously studied as yet.[1,2]

Question

Does the use of a CP for the management of community-acquired pneumonia reduce hospital resource consumption without adversely affecting clinical outcomes?

Design

This study randomly allocated 20 Canadian hospitals to the use of either a CP or conventional management for the treatment of community-acquired pneumonia.[3] Key components of the pathway included a risk-stratification tool (pneumonia severity index) to guide decision-making about hospital admission, a recommendation to use a single, broad-spectrum antimicrobial agent (levofloxacin, 500 mg once daily) and guidelines for the timing of conversion from intravenous to oral antibiotic therapy and hospital discharge. At the CP hospitals, patients were followed daily by a study nurse, who prompted the health care team about the patient's progress along the CP by means of a written chart note. Steps were taken to ensure that treating personnel at the hospitals allocated to conventional management had no knowledge of any of the constituent parts of the critical pathway.

The number of bed-days per patient was used as the primary measure of resource consumption. Secondary measures included the proportion of low-risk patients admitted to hospital, the length of stay, the duration of intravenous antibiotic therapy and the proportion of patients receiving a single class of antimicrobial agent. Clinical outcomes included a quality-of-life measure (change, from admission to 6 weeks after completion of treatment, in the physical component summary scale of the Short-Form 36 [SF-36] instrument), as well as rates of pneumonia-related complications, admission to the intensive care unit, hospital readmission and death.

Results

Of the 20 hospitals, 9 treated patients using the CP, 10 used conventional management and 1 withdrew before implementation of the CP. Randomization had been stratified to ensure that each study arm comprised a similar mix of teaching and community hospitals. In total, 1743 eligible patients were enrolled; subjects treated at CP and conventional management hospitals were comparable in age, sex, pneumonia severity index score, baseline SF-36 physical summary scale score, room air oxygen saturation and proportion with chronic lung disease and multilobar pneumonia.

The number of bed-days per patient was significantly lower in the CP group than in the conventional management group (4.4 v. 6.1, $p = 0.04$). Although admission rates among high-risk patients were comparable in the 2 groups, the rate among low-risk patients was significantly lower in the CP group (31% v. 49%, $p = 0.01$). Patients in the CP hospitals also had lower median lengths of stay (5.0 v. 6.7 days, $p = 0.01$), a shorter mean duration of intravenous antibiotic therapy (4.6 v. 6.3 days, $p = 0.01$) and a higher rate of use of a single class of antimicrobial agent (64% v. 27%, $p < 0.001$). The change in SF-36 physical summary scale scores and the rates of secondary clinical outcomes did not differ significantly between the 2 groups.

Commentary

This study's major strength is its rigorous design. It represents the first large-scale attempt to assess the efficacy of a CP using methodology appropriate to the evaluation of therapeutic interventions (i.e., randomization). The study was not designed to assess the relative contributions of the various constituent parts of the CP or the extent to which success depended on the availability of a designated study nurse to facilitate adherence to the CP.

Implications for practice

The use of a CP for community-acquired pneumonia reduces hospital resource consumption and leads to clinical outcomes comparable to those achieved through conventional management. Further research is needed to determine optimal strategies for implementation of, and adherence to, CPs. — *Donald Farquhar*

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Public Health

Tornadoes and disaster management

Epidemiology

Canada and the United States experience some of world's worst tornadoes. They develop during severe thunderstorms when cool northern air masses collide with hot air flowing from the Gulf of Mexico, throwing the center of the thunder cloud into an inverted spin. Tornadoes typically move at ground speeds of 20 to 90 km/h in a southwest–northeast path.

About 80 tornadoes are reported in Canada each year, resulting on average in 2 deaths, 20 injuries and millions of dollars of property damage.[1] The tornado alleys are in southern Ontario, Alberta, southeastern Quebec, interior British Columbia, western New Brunswick and a band stretching from southern Saskatchewan to Thunder Bay, Ont.

Most of the serious injuries and deaths occur because the victims became airborne, solid objects become airborne or structures collapse. A review of 10 tornado reports from 1962 to 1994 suggests that most of the injuries are contaminated soft-tissue lacerations (54%) and fractures (30%); the next most common are blunt trauma (7%), head injuries (7%) and minor strains (2%). Most deaths occur at the scene and result from severe head injury, cervical spine trauma or crush injuries.[2]

Clinical management

Disaster planning and response require the cooperation and coordination of many bodies — the head of the local municipality, the public health unit, the Red Cross, social services, public transport, emergency medical services personnel and hospitals. It is up to individual Canadians to know what to do in an emergency.[3] If people are unable to cope, the different levels of government are expected to respond progressively, as their capabilities and resources are needed.

Each hospital and level of government has an emergency management plan, although these are tested only infrequently because of the cost involved. Emergency physicians play a key role during disasters, providing the medical interface between emergency medical services personnel, the community and the hospital. Local emergency response organizations are normally the first on the scene. If they are overwhelmed, they may seek assistance from the province or territory, which, in turn, will ask the federal government for help.

Several recurring problems plague disaster response: a lack of accurate information from previous experiences, poor understanding of the response plan and the unique character of each disaster.[4] Many logistical problems faced during disasters are caused not by shortages of medical resources but, rather, by the failure to coordinate their distribution.[5] It is essential that medical personnel involved in the response understand the key components and phases of an emergency response (Table 1).[4]

Table 1: Disaster planning and response

Key components
Communication
Supplies and equipment
Personnel
Phases
Initial response
Search and rescue
Triage
Casualty collection points
Emergency department and hospitals
Transport
Follow-up

Tornadoes present unique problems. Search-and-rescue efforts are hampered by debris and blocked roads. Communication between rescue personnel and receiving hospitals is typically poor. Many of the casualties, including seriously injured people, present to the hospital by private vehicle instead of ambulance, so staff need to know proper vehicle-extraction methods.

The closest hospital to the disaster receives the largest number of victims, yet may also have suffered damage. The disaster plan should provide for the short-term supply of water and power to the emergency department. Irrigation supplies for wounds will be in high demand, as will broad-spectrum antibiotics and large quantities of tetanus toxoid. The need for follow-up care for delayed primary closure of wounds and counselling should also be anticipated.[2]

Prevention

Adequate warning of an approaching tornado and proper preparation and action by the population are the most important factors in reducing tornado-related injuries and deaths.[2] Physicians in tornado-prone areas can help educate residents about how to respond to these disasters. The information they need is available on Environment Canada's Web site.[1] More important, physicians can help by understanding the nature of these disasters, contributing to the development of a local disaster plan and knowing their roles in it.

Further information is available from Emergency Preparedness Canada[6] and a recent article by Sookram and Cummings.[7] — *Erica Weir*, CMAJ

Thanks to Dr. Edward Ellis, Ottawa–Carleton Health Department.

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