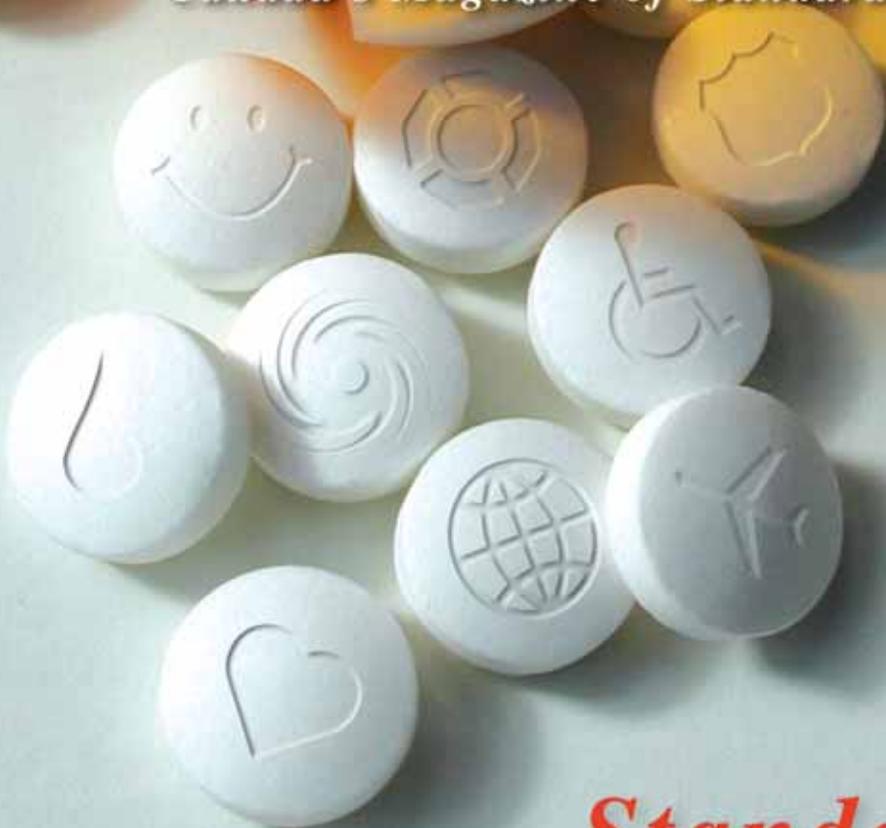


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CONSENSUS

Canada's Magazine of Standardization



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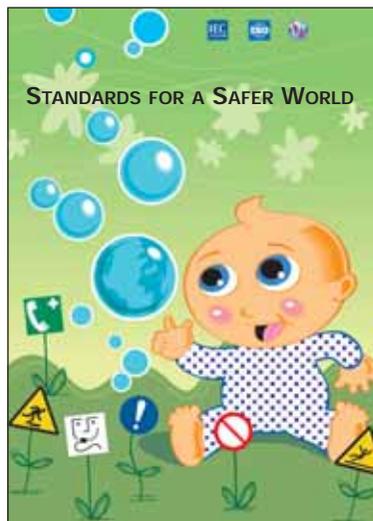


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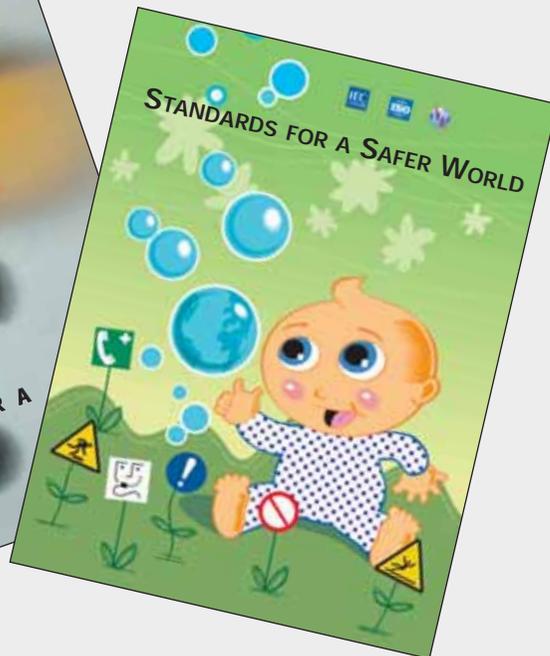
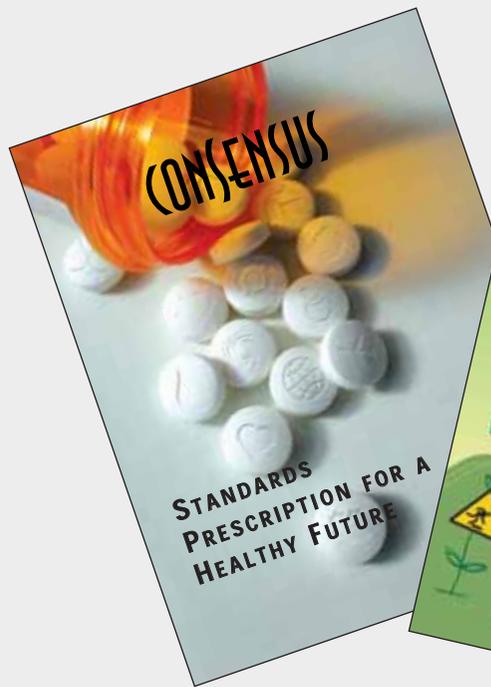
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World Standards Day



On October 14th, 2005 the SCC joins the international community in celebrating World Standards Day.



Dear CONSENSUS Readers,

As Canadians there are so many things for which we can be thankful, including a quality of life that is envied by much of the world. And although society has certainly been confronted in recent years with some new and disturbing threats to health and safety, there have also been many inspirational acts that give us hope for the future.

One cause for optimism is the positive impact of voluntary standardization and its potential to further enhance our quality of life in the areas of health care, emergency preparedness and consumer product safety—to name just a few. Working in support of regulation and as a solid foundation for global trade, standards and conformity assessment greatly contribute to the betterment of our daily lives.

Of course, these achievements would not be possible without the thousands of individuals and organizations within Canada's National Standards System. This includes the experts who have contributed to the development of national and international standards, industry, government and others who have committed to implementing voluntary standards, and the organizations who do the testing to ensure that standards are being met.

It is this dedication to making our planet a friendlier, safer and healthier place for ourselves, our children and our grandchildren that is at the core of the 2005 World Standards Day theme selected by the international standards community: "Standards for a Safer World".

It is also the inspiration for this special edition of CONSENSUS. The stories featured within these pages represent only a small sampling of the countless contributions being made by the standardization community in Canada. There are many more examples all across this great country and we dedicate the Magazine to the many who believe as we do that a healthy future is one that includes the right dose of standards.

Sincerely,

Peter Clark
Executive Director





Good medicine for poison prevention

Picture it. The kids are fighting, the dog is barking, and the phone is ringing again! To make matters worse, a splitting headache has settled in and you're struggling to get the lid off the bottle of pain medication. Although this might sound like a nightmare, it's a dream any parent would gladly choose over the real horror of their child being accidentally poisoned.

Today, thanks to heightened awareness and vigilance that includes mandatory child resistant packaging for many over-the-counter and prescription medications and other toxic household substances, child fatalities and serious injuries caused by accidental poisonings in Canada are relatively low.

This wasn't always the case.

When the late Dr. Henri J. Breault became chief of pediatrics and director of a new poison control centre at the Hotel Dieu Hospital in Windsor, Ontario in 1957, he was appalled by the number of children being accidentally poisoned by swallowing products found in their homes. When he realized that public education alone was not having a big impact, he turned his focus to making it harder for kids to get into potentially fatal products.

Armed with the input of local physicians and pharmacists, Dr. Breault enlisted Peter Hedgewick, president of ITL Industries, who after several attempts, successfully created the first child-resistant cap in 1967. The "Palm-N-Turn" technology, which is still being used today, requires users to push down while turning. By 1974, Ontario had made the use of child resistant packaging mandatory for certain products. Similar regulations were quickly adopted nationwide.

As is the case for many health and safety regulations, standards play a vital role in assuring that packaging is manufactured to meet the requirements for safety that are sought by regulators. Many manufacturers are choosing to use the standards to ensure the safety of their packaging even if they are not required by law to do so.

In collaboration with stakeholders representing manufacturers, consumers, and regulators, the Canadian Standards Association (CSA) has overseen the development of national standards for both reclosable (CAN/CSA Z76.1) and non-reclosable (CAN/CSA Z76.2) child-resistant packages. CSA

is one of four standards development organizations (SDOs) accredited by the Standards Council of Canada (SCC).

The standards, which have been adapted for Canada from existing international and American standards, set out requirements for construction and performance. Thanks to input from a broad range of stakeholders including manufacturers, health and safety experts, and consumers, the requirements aim to ensure that while packaging is difficult for young children to open, it remains convenient for use by adults, including senior citizens who may have reduced dexterity.

Eleanor Warren is someone who has seen first hand how child-resistant packaging has impacted child health and safety in Canada. She works at the Ontario Regional Poison Information Centre within the Children's Hospital of Eastern Ontario in Ottawa. As a registered nurse with expertise in poisoning, she has seen too many cases of children accidentally poisoned.

"There is no question that there has been a significant decrease in the number and severity of accidental poisonings due to child resistant packaging," says Warren.

She cautions, however, against the use of the term "child-proof" when it comes to any packaging. She says this can lead parents to a false sense of security. "There isn't any kind of device that can replace good parental supervision," says Warren.

To illustrate her point, she recounts the story of a parent who called the poison hotline complaining their child had been poisoned after it managed to open a bottle of Tylenol. When questioned about how the child had gotten access to the pills, the parent admitted that they had given the bottle to their child to play with, thinking it was safe because the lid was supposed to be childproof.

Warren is quick to defend the use of child resistant packaging, even if it is not infallible. She says it is just one of a series of measures that needs to be taken to reduce the risk of accidental poisonings, the most important of which is to keep harmful substances out of reach of children, preferably locked up. ■



Be Aware of **FAKES** for **SAFETY'S** Sake

When a bargain-hunting Vancouver teacher found glue guns on sale for only a dollar apiece, she was delighted. But her delight quickly turned to horror when one of the glue guns caught fire, severely injuring one of her young students.

It's a tragedy that never should have happened. After all, the glue guns bore the certification mark of Underwriters Laboratories Inc. (UL). These types of marks are the cornerstone of product safety, providing consumers with assurance that the products bearing the marks have been properly tested. In this case, however, the mark was a fake. The components and workmanship were substandard and dangerous. UL Director Brian Monks recalls this as one of the saddest cases involving counterfeit certification marks that he has seen in the course of his career.

Monks' concern is echoed across Canada's standardization community, by all product certification bodies and members of Canada's National Standards System (NSS). "Each new case of counterfeiting that appears seriously jeopardizes the integrity of our national system" commented Dennis Durrant, Chair of the Standards Council of Canada (SCC)'s Advisory Committee on Conformity Assessment. "In order to serve their intended purpose, the public must be able to trust certification marks."

Thankfully, the glue gun story ended with some resolution. Called in to investigate the case, Monks visited the importer, and an incoming shipment of the deadly glue guns was seized by customs officials. What the incident highlights is the seriousness of problems posed by counterfeit products, and the need for greater collaborative effort among all affected parties.

All would agree that more could have been done to prevent the glue gun tragedy from happening. Obviously the manufacturer who knowingly made shoddy, unsafe products and applied the phony mark is ultimately to blame. However, there were many points at which the fake certification mark might have been revealed and the product taken off the market, whether during an inspection in the product's country of origin, upon its arrival in Canada, or by a consumer who questioned a 'too good to be true' price tag.

"Counterfeit products place public safety at risk and

Canadians need to get the message that faulty counterfeit items can kill," says RJ Falconi, Vice President, General Counsel and Corporate Secretary of CSA Group. He stresses that fake marks can show up on all types of products from circuit breakers and extension cords to safety boots and light bulbs.

Falconi says counterfeiting is a massive problem that cannot be ignored. "It is estimated that it accounts for more than six per cent of world trade, or \$450 billion per year. For individuals, counterfeit products are a serious safety threat. For industry, they represent a liability risk, a crisis in consumer confidence and a drain on profits. Furthermore, counterfeiting has been linked to money-laundering, terrorism and organized crime."

"The time to act is now," says Doug Geralde, Director of Corporate Audits & Investigations at CSA Group, who also serves as co-chair of the International Anti-Counterfeiting Coalition (IACC) and is a member of the Canadian Anti-Counterfeiting Network. "Counterfeiting is endemic in countries whose standards are not as strong as those in Canada, EU and the U.S.," says Geralde. He suggests that Canada risks becoming a haven for this type of counterfeit activity if it does not take steps to address the problem.

Education and cooperation

As the overseer of the NSS and the organization that accredits product certification bodies in Canada, the SCC is very concerned about the impact that the use of counterfeit certification marks is having.

"As Canada's national accreditation body, we have a responsibility to protect the integrity of the product certification system in Canada and to ensure that Canadians can continue to have confidence in the certified products they use," says Pat Paladino, SCC's Director of Conformity Assessment. "When the public hears stories about products with a fake mark that have caused injury or worse, they begin to lose faith in the System. It is vital that we work together with our partners to put the problem into context and make everyone aware of what they can do to address it".

In Canada, alliances are being formed between various

different groups, including product certification bodies, industry associations, law enforcement agencies, inspection authorities and legal experts. Among these partners, the shared objective is to strengthen their ability to identify counterfeit marks, track down the individuals responsible for putting them there, and prosecute them.

One such example of collaboration is the day-long conference jointly hosted by the Canadian Standards Association (CSA) and the Canadian Manufacturers and Exporters (CME). Held in Mississauga, in April 2005, the event, called “Caveat Emptor: Let the Buyer Beware”, brought together representatives from various industries and organizations in Canada to share information and strategies for tackling the problem.

“Increasing awareness of counterfeiting is a key goal of CSA’s Anti-Counterfeiting program,” says Manny Gratz, CSA’s Manager, Anti-Counterfeiting and Intellectual Property Enforcement. In addition to the conference, CSA has undertaken several other proactive initiatives including training programs to help retailers understand product approval marks and detect counterfeit marks, enhanced market surveillance of various commercial outlets, and cooperation with regulatory and legal authorities on investigations.

Underwriters Laboratories of Canada (ULC) is likewise taking an awareness-based approach to the issue says G. Rae Dulmage, Director of ULC’s Standards Department and Government Relations Office. In addition to providing courses on detecting counterfeit marks, in 2003 the company published a Canadian Reference Guide to UL & ULC Markings and Labels for inspection authorities.

“The Guide Book solved two problems,” says Dulmage. “It showed regulators what constitutes a mark and covered key items to look for. It also changed regulator perceptions, and gave them a logical way to determine whether a mark is in fact legitimate.”

Another way that product certification bodies are keeping the public and regulators informed about incidents of counterfeiting is through their web sites. As a condition of their accreditation, certification bodies are required to take steps to protect their marks. By publishing information about any product bearing a forged or improper application of their certification mark, and communicating with the manufacturer of that product, product certifiers are an important catalyst for positive change.

Global strategies

In the battle to stop counterfeit certification marks, encouraging domestic cooperation is just the start. Canada must also look to countries whose standards and conformity assessment systems are less rigorous for their support.

“The success of various national standards systems under globalization has to an extent led to the growth in the current level of counterfeiting,” says Dulmage. He believes that the global acceptance of marks is a double-edged sword. Applying a fake certification mark to a product may be tempting to some, especially if it is likely to go undetected by authorities in

that country. On the flipside, countries that lack the resources to put a strong standards system in place are more likely to be the recipients of shipments of potentially dangerous counterfeit products.

Dulmage, who is a member of the SCC’s advisory committee to the International Organization for Standardization (ISO)’s policy committee on developing countries (DEVCO), adds that this is a key issue for emerging economies. While it is one of many issues being tackled by DEVCO, it is an integral part of larger efforts to provide emerging economies with the technical and financial assistance, as well as the experience they require to institute strong national standards systems.

“As these countries enter into international markets, they need to conform to the agreed conventions of standardization,” adds Dulmage. “A strong standards system in a country can be a key influencer in preventing counterfeiting or the importation of counterfeit products into their country. This is due to the fact that the country has effectively adopted a standardization process that is sustainable and accepted—in other words it facilitates market access”.

What’s old *is not* new again

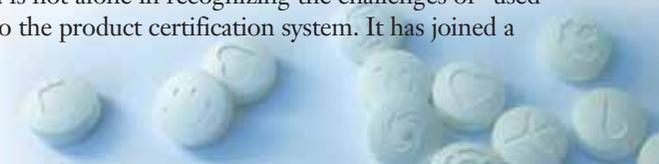
Perhaps one of the most disturbing trends in counterfeit products is the passing off of old items as new, using the original certification mark as a means to market the products as being safe. Honest organizations may even be unwittingly contributing to these activities in the belief that they are being both economical and environmentally conscious.

Consider, for example, a hospital that is replacing an obsolete circuit breaker that originally cost \$18,000. The hospital staff would like to recoup some of its investment and at the same time is faced with an environmental push to recycle knowing that many dumps won’t accept old electrical equipment. Not surprising that the hospital might sell this equipment to a refurbisher, rather than destroy or otherwise dispose of it.

Unfortunately, in the hands of unprincipled people, these products may be “repaired” using faulty or incompatible components, packaged to look new and, sold at discount prices.

This type of activity is especially prevalent with certain electrical devices, including molded case circuit breakers, which are commonly used in public buildings like schools and hospitals. In response to a sudden increase in the number of hazardous circuit breakers on the market, in March 2005, Ed Tymofichuk, President of the SCC-sponsored Canadian National Committee on the International Electrotechnical Committee (CNC/IEC), wrote to Health Canada’s Consumer Safety Branch, urging the department to prohibit the sale of used and or salvaged molded case circuit breakers. In July 2005, the CNC/IEC further emphasized the dangers of these items to SCC’s Provincial Territorial Advisory Committee, which includes among its members representatives from various regulatory bodies.

Canada is not alone in recognizing the challenges of “used” products to the product certification system. It has joined a



number of its global counterparts, including many from developing countries, in support of the development of standards that address the testing of used equipment.

When it all comes together ...

Certification bodies are taking a zero tolerance policy with respect to anyone found illegally using their certification marks. And with the help of regulators and prosecutors, have already achieved some success.

Earlier this year the RCMP seized thousands of power bars and extension cords bearing forged UL certification marks. When tested, the counterfeit extension cords melted and caught fire within minutes. The power bars were found to have undersized wiring, no surge suppression, reverse polarity wiring (a shock hazard), and a plastic casing that was not made of fire-resistant material.

While enforcement breakthroughs like this one may only scratch the surface, they do send a powerful message to counterfeiters. Canadians will not tolerate this serious affront to their quality of life. Through its partners, the NSS is dedicated to protecting consumers from these threats using a combination of education, training, surveillance and prosecution of those found guilty. Now that's a mark of commitment that all Canadians can have confidence in.



STANDARDS FOR A SAFER WORLD

Path to Safety

If you're ever forced to flee a public building because of a fire, chances are that the door you pass through will conform to ULC-S132-93 (R2001), the **Standard for Emergency Exit and Emergency Fire Exit Hardware**. The design specifications in the standard call for latch bolts to release on the door when a fire is detected. This keeps the door closed, containing the smoke and fire. At the same time, when minimal pressure is applied, the door will open easily, offering a speedy path to safety.

Suspect a fake: *When in doubt, consumers are encouraged to check with the product certification body whose mark appears on the product; their websites enable consumers to verify that the marks are accurately used.* ■

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ON HIGH ALERT and prepared for anything

The way people think about health, safety and security has been forever altered. 9/11... the South Asian Tsunami... Severe Acute Respiratory Syndrome (SARS)... Hurricane Katrina and her aftermath...

These are just a sampling of the incidents in recent history that have changed our collective consciousness, as we watch with horror the shocking death tolls and witness the serious damage inflicted on the quality of life of our fellow citizens around the globe.

In 2004-2005, natural disasters claimed hundreds of thousands of lives and caused economic losses in the billions of dollars. Losses of this scale can create economic turmoil and lead to social and political instability and environmental catastrophe. The same impacts are true of terrorism, as the events of September 11, 2001 have demonstrated so clearly.

Canada has by no means been immune to these types of emergencies. Just ask anyone who experienced the 2003 SARS outbreak in Toronto, the great Winnipeg flood of 1997, the 1985 Air India Bombing, or the explosion that ravaged Halifax in 1917. The need to take precautions and have a plan in place to respond to emergencies of this magnitude is not a new concept. It is, however, one that has been given much more attention in the last couple of years.

Governments – federal, provincial and municipal – have all identified emergency preparedness as a key priority, as have the organizations and agencies traditionally involved in this type of work, including the Canadian Forces, the Royal Canadian Mounted Police (RCMP) and other police forces across the country, firefighters, emergency medical services, and hospitals. But they aren't the only ones.

Also looking seriously at the issue of emergency preparedness are many of the organizations and individuals who make up the National Standards System (NSS), which is overseen by the Standards Council of Canada (SCC). Together with their counterparts in the international standards community, they are looking at the role that standards and conformity

assessment can play in ensuring that we will be prepared for the next emergency, whatever it might be.

National Commitment to a Global Problem

Canada was among the countries represented when the International Organization for Standardization's (ISO) Advisory Group on Security was formed in January 2004 to look at the role standards should play in global security and emergency management. In addition to examining the critical role for standards in the face of terrorism threats, ISO also called upon the group to consider how international standardization work could address natural or accidental disasters or cyber attacks.

The advisory group concluded that ISO has "a large role" to play in international security standardization, with 35 of 205 ISO technical committees being involved in work related to security including such areas as biometrics, detection of the illicit movement of radioactive materials, infectious disease control, maritime port security and information security. It also recommended extending the work areas of several of ISO's existing technical committees to allow them to address emerging threats and, to reactivate the ISO technical committee on civil defence, which had been dormant for several years.

"Global problems require global solutions," says Husam Mansour, member of the Canadian National Committee on the International Organization for Standardization (ISO), and one of two Canadians on the international advisory group. "Security is a global problem. Equipment crosses borders, first responders cross borders, so we need to approach this on a global basis."

Mansour says the advisory group recognized the need to take a more strategic, "top down" approach to security in ISO work. He acknowledges that while ISO is involved in many security issues, including illegal immigration, accidents and natural disasters, the approach hasn't always been coordinated.

Mansour also represents Canada on a permanent security

advisory group, a joint initiative between ISO and the International Electrotechnical Commission (IEC) that was created as a result of the ISO advisory group's recommendations. In Canada, a parallel committee is to be formed to provide the country's point of view to the new advisory group.

The development of a guide that outlines how and where security issues should be incorporated into the development of new standards or as part of revisions to existing ones is among the priorities of the joint ISO/IEC security group, as is the development of an ISO web portal that links users to security standards.

Homegrown Standards Solutions

Not only are Canadians demonstrating leadership in international standards work, they are also looking at security and emergency preparedness issues at home. Canada's national standard on Emergency Preparedness and Response, (CAN/CSA Z731-03), in place since November 2003, is one example.

Many provincial and territorial governments are encouraging the use of CAN/CSA-Z731 as part of emergency planning initiatives in their jurisdictions. The standard contains advice on planning, administration, training, resource utilization, auditing and other aspects. Organizations also use CAN/CSA-Z731 to help them meet emergency planning requirements in other standards including ISO's two best known series of management system standards, ISO 9000 (quality management systems) and ISO 14000 (environmental management systems), as well as ISO/IEC 18000 (Information technology – Radio frequency identification for item management).

North American approach

As part of efforts to arrive at a more coordinated North American approach, Public Safety and Emergency Preparedness Canada (PSEPC) is working with the Canadian Standards Association (CSA) to develop a new standard that incorporates existing U.S. work in this area. The Canadian National Emergency Management and Business Continuity standard will be based on the U.S. National Fire Protection Association (NFPA) 1600 *Standard on Disaster Management, Emergency Management and Business Continuity Programs*.

"Our intention is to develop a harmonized North American approach and bring as much consistency as possible to emergency management," says Mansour.

The current version of NFPA 1600, published in 2004, is designed to help organizations and jurisdictions mitigate, prepare for, respond to and recover from disasters and emergencies. It can be used to evaluate an existing program or establish a new program in the public or private sectors. When it is published, early in 2007, the new Canadian standard will follow the latest edition of NFPA 1600.

Endorsed by the U.S. Department of Homeland Security (DHS) and many key U.S. emergency organizations, the

Security: More than preventing terrorism

These statistics, presented by the ISO Advisory Group on Security, reflect the toll that disasters and emergencies of many kinds take annually.

Type of event	Fatalities per year
Earthquakes	13,000
Transportation disasters	7,800
Epidemics	6,500
Floods	5,000
Industrial disasters	2,900
Terrorism	2,500
Catastrophic storms	1,300

National Commission on Terrorist Attacks Upon the United States (9/11 Commission) has recommended that NFPA 1600 be accepted as the common framework standard for private sector national emergency preparedness.

Using the consultative process inherent in the voluntary standards development process, the adaptation/adoption of NFPA 1600 is expected to give businesses a foundation for emergency and business continuity planning and also to provide those companies operating in both Canada and the U.S. with cost savings and fewer complexities.

Building a more secure nation

Helping to address some of the more specific safety issues associated with terrorism attacks is another key role for standards. One such issue is the need for a coherent approach to security in the design and construction of new public

As security needs have evolved, electronic access control systems have become a reality in most modern buildings. They are as simple as the plastic access card that grants entry to the underground parking lot. Or, as complex as the retina scan used to ensure that only authorized personnel can access areas housing sensitive or valuable information or materials.

By definition, an electronic access control system is a system designed to grant to authorized persons entry to and/or exit from a controlled area and deny such entry and/or exit to non-authorized individuals by electrical, electronic or mechanical means.

Underwriters' Laboratories of Canada (ULC) has been working in collaboration with the Royal Canadian Mounted Police (RCMP) to ensure that these systems meet the minimum requirements for construction, performance and operation that correlate to the level of protection they are intended to provide. This has resulted in the development of the proposed first edition of CAN/ULC-S319, Standard for Electronic Access Control Systems, under the purview of the ULC Technical Committee on Security and Burglar Alarm Equipment and Systems.

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government buildings, which includes a framework to assess the safety of existing buildings. Among the affected facilities are airports, embassies, passport and taxation service centres and office buildings.

In light of the increased threats of terrorism facing Canada, both the RCMP and Public Works and Government Services Canada (PWGSC) have voiced this longstanding need. The RCMP, responsible for the security of federal government buildings, approached the National Research Council (NRC) to take on the project one month after the 9/11 terrorist attacks in the U.S. four years ago. The initiative is part of the federal government's far-reaching National Security Policy.

The NRC has drafted a proposal for a *National Security Code for Buildings* (NSCB), fulfilling the RCMP's request for a flexible approach that is compatible with the national building, fire and plumbing codes. Once the proposed code has been approved by Cabinet and the necessary funding is in place, work will begin on the technical requirements.

The goal of the Code is to address "reasonable" security risks using a threat-risk assessment process. "This will look at, 'How likely is a bad thing to happen?', and, if it does happen, 'What are the consequences?'" explains John Archer, Senior Research Council Officer, Canadian Codes Centre, NRC. It will facilitate cost-effective, security-effective decisions. For example, in considering the possibility of a plane loaded with fuel crashing into a building, the process could be used to examine the expense of equipping a structure to withstand such a crash, which is possible, versus the chances of it happening.

Standards will play an essential role in the proposed regulatory Code. As is the case with other national construction



STANDARDS FOR A SAFER WORLD

Staying Afloat

Whether it's being worn to help a child learn to swim, or to make sure they'll stay afloat if the boat they're on overturns, parents rely on personal flotation devices (PFDs) to help keep kids safe from drowning. In Canada, these lifesaving devices must conform to the standard, **CAN/CGSB-65.15-M88, Personal Flotation Devices for Children.**

codes, numerous voluntary standards will be referenced as technical requirements. Archer says it is important to ensure that the related expertise continues to rest with standards development organizations (SDOs), rather than the code "owner" having to acquire it. He says the document would also be physically unmanageable if every technical requirement was detailed within it. Both national and international standards will be considered for referencing. Canadian SDOs will be called upon to develop standards in new areas such as building access systems and fire services equipment tampering. About half of the proposed budget for developing the technical requirements of the Code is earmarked for standards development activities.

Although the Code will in effect be law, a vital aspect of voluntary standards development—consensus building—is central to the project. "They (Canadians) should have some confidence that the use of a consensus-based process will provide the ability to arrive at an appropriate balance of public security concerns and the rights of the individual," says Archer.

Putting it into perspective

Like all microcosms, the standards community must adapt to address new realities of a changing global dynamic. Standards have an important role to play in helping the global community as a whole, and Canada as a member, to make vigilance and preparedness part of our new collective consciousness, so that if the unthinkable becomes reality, we are prepared to react. ■

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The new electronic access systems standard, which sets out guidelines for various types of buildings with relatively low to very high security requirements, will be one of the key standards in future security codes.

Adaptability to both government and private sector needs was among the goals identified by stakeholders who worked on the development of the standard. It was written to reflect current and future applications, and to establish minimum scalable construction, operation and performance requirements.

As the lead agency for physical security for the Government of Canada, the RCMP provided a classification scheme relating assets, threats and security system objectives consistent with government and private sector applications. The private sector contribution was to rationalize current industry practices and scale performance requirements in accordance with the classification scheme and to propose desirable trends for the future.

The end result is a unique modular approach, based on needs rather than technology that can ensure availability of reliable and cost-effective equipment capable of satisfying private sector as well as government needs.





Heads Up

on Recreational Helmet Standards

By Pat Keindel

Governments, industry and consumers have come to rely on standards as enablers of public safety. Nowhere is this truer than in recreational safety where expert minds have come together to help protect Canadians from injury. Over the past three decades, a truly remarkable record has been achieved.

In the early 1970s, a committee of dedicated volunteers pioneered the first Canadian standard for ice hockey helmets, CAN/CSA-Z262.1. Their work has not only helped reduce the frequency of severe head injuries, but garnered international recognition for advancing performance levels for hockey helmets.

The Canadian Standards Association (CSA) first published face protector and visor standards for hockey players in 1977. Since then, the number of reported eye injuries has dropped from about 290 per year to less than 10. All the while, participation in the sport has grown. Turning its attention to cycling safety, CSA recognized that a child's tolerance to a head impact differs from an adult's. The result was the only standard in North America to have separate helmet performance criteria for children five years and under. The number of young children killed in cycling accidents has declined significantly since CAN/CSA-D113.2, *Cycling Helmets*, was approved as a national standard of Canada.

These are impressive results, but if we, as a society, wish to continue to reduce head injuries during recreational activities, more work needs to be done.

Pain and prevention

Almost 10 per cent of hospital admissions for head trauma are related to injuries sustained during recreational sports and there is plenty of evidence to show that helmets reduce the severity and incidence of these types of accidents. Field studies from around the world indicate that helmets can reduce the risk of head injuries in cyclists from 45 to 88 per cent.

A study of young skiers and snowboarders conducted by Children's Hospital in British Columbia concluded that helmets reduced the risk of head injury in children 13 years and younger by 50 per cent. This is consistent with other studies in the U.S. and Sweden. Other recent U.S. studies of the incidence of injury and effectiveness of protective equipment for in-line skating concluded that the use of wrist guards, knee pads, elbow pads and helmets does prevent injuries.

With our health care system under increasing pressure to contain costs, helmet use has taken on a legitimate public policy dimension. The Ontario Brain Injury Association estimates the direct hospital cost of acquired brain injury at more than \$2,800, yet a helmet which can help prevent such injuries costs just \$30 to \$50. What's more, brain injuries tend to be more severe than other types of injuries sustained at play, take much longer to heal and can lead to lifelong disability.

Rising tide

With findings like these, it's no wonder that public support for helmet use is rising.

National and provincial polls conducted in the last five years show that 79 per cent of parents favour mandatory use of helmets for adults and children (Envionics, 2002). Some ski operators in the U.S. have adopted policies requiring children to wear helmets while skiing or snowboarding at their facilities.

Today, over 30 per cent of Canadians are subject to cycling helmet legislation (British Columbia, Alberta, Ontario, New Brunswick, Prince Edward Island, Nova Scotia, as well as various municipalities). With injury rates 25 per cent lower in these provinces, many jurisdictions are also considering mandating helmets for other recreational activities such as in-line skating, skateboarding and scootering. Nova Scotia already has such regulations and Ontario is proposing a similar bill.



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A Call to Action

While helmets are widely available across Canada, there is no consistent approach to ensuring their safety. Recreational helmets, beyond those donned for cycling and hockey, are not required to meet safety standards. And there is no consistent, national standards framework for recreational helmet standards. Meanwhile, the popularity of inline skating, snowboarding and skateboarding is on the rise.

Governments, health care providers, manufacturers, retailers and consumers are all looking for solutions – standards that can be used to support regulation and injury prevention initiatives.

For that reason, CSA is partnering with SMARTRISK, a leading national injury prevention organization, to establish a recreational helmet standards program with an education component aimed at recreational facilities and the general public. Earlier this year, the B.C. government generously donated \$50,000 towards the program, and more funding is being sought. Standards development is expected to start in late 2005.

CSA's partnership with SMARTRISK will serve both regional and national goals to promote healthy living and injury prevention. Industry Canada, Health Canada and various provinces and territories have signaled support for

such a program, combining standards with education.

The standards development process will include a Canadian peer review of existing standards (ASTM, CEN), incorporating data and best practices to update any gaps identified. It will build and leverage partnerships with key injury prevention organizations that have expertise in recreational helmet safety to reflect the needs of Canadians. And it will embrace industry and government stakeholders so that any resulting recreational helmet standards – be they sport-specific or multi-purpose – serve the interests of people and business.

Facing the many challenges of recreational safety head-on, requires support, cooperation and persistence. Given the interest shown by jurisdictions across Canada, the increased consumer awareness of recreational safety issues, and the need being expressed by manufacturers to create a fair, level and predictable playing field, the time to act is now.

Pat Keindel is President of the Standards division of the Canadian Standards Association (CSA). One of four SCC-accredited standards development organizations (SDOs) in Canada, CSA standards play an important role in protecting and preserving the health and safety of Canadians. ■



ATTESTING TO FAIR PLAY



Run faster, jump higher, go farther and above all, be the very best.

These are just some of the pressures faced by Olympic calibre athletes. They know that a little more muscle will allow a little more lift, and a little more oxygen will allow a little more distance.

So, how far will they go for an edge?

Some athletes are willing to go as far as paying for performance-enhancing drugs.

But is it worth the price?

Drugs in sport is a serious problem. Ethically, the athlete is cheating. Physically, they are destroying their bodies. And, when they get caught, the public loses faith and the athlete loses everything.

Like many countries, Canada has faced its share of doping infractions. But, rather than ignoring the issue, it has taken a leading role on the international scene in doing something about it.

That something is the World Anti-Doping Code.

Adopted by governments and sports organizations including the International Olympic Committee (IOC), and the International Paralympic Committee (IPC), the main objectives of the Code are prevention and deterrence.

“It’s a document that comprises rules regarding anti-doping around the world, accepted by all governments of the world, and also by all sporting organizations around the world,” says Rune Andersen, Director of Standards and Harmonization at the World Anti-Doping Agency (WADA).

Applying Existing Standards

The Code incorporates elements from a number of existing international best practices and standards, including ISO/PAS 18873, International protocol for doping control, which provides guidelines for implementing a doping control program based on the International Organization for Standardization’s renowned ISO 9000 series of quality management system standards.

In addition to its contributions to the development of ISO/PAS 18873, through its leadership in the International Anti-Doping Arrangement (IADA), Canada was also one of

the first countries in the world to implement ISO/PAS 18873 as part of its national anti-doping program.

Canada at the helm of new Code

The decision to establish the World Anti-Doping Code and an independent organization to deal with doping arose out of the 1998 Tour de France when a number of banned substances were seized in a police raid.

The following year, in advance of the 2000 Summer Olympics in Sydney, a document calling for the creation of an independent anti-doping agency was presented at the World Conference on Doping in Sport. By the end of the year WADA was established and Richard Pound, a Canadian and long-time supporter of tougher drug-testing, was named president of the organization.

In 2001, the agency’s headquarters were moved to Montreal where work began on the Code, the document that would become the framework for countries and sporting organizations to develop their anti-doping policies.

For Canada, this initiative is a great achievement. In 1988, when the country was drawn into the international spotlight by sprinter Ben Johnson’s infamous drug scandal, the Canadian government launched the Dubin Inquiry to look into the doping situation in sports. The end result was a report calling for an international set of rules for drug testing.

The report led to the establishment of the Canadian Anti-Doping Organization in 1991 which was put in charge of developing an anti-doping program for the country. The organization is now known as the Canadian Centre for Ethics in Sport (CCES) and is Canada’s representative at WADA.

“Canada has played a very important role in the development of the Code,” says Andersen. “Canada has given very valuable input to the creation of the Code’s standards which have been used in Canada for many years.”

Anne Brown, Senior Manager of Planning and Program Implementation at CCES agrees, adding that the Code is having a positive impact on Canadian sport.

“For our Canadian athletes, the Code means that they

will know what to expect abroad. We have always had a standardized way in Canada for collecting samples for athletes and protecting their rights during this process. The Code puts in place mechanisms so that the athletes know that they can expect the same process in New Zealand that they will undergo in the United States or Denmark. That is a great step forward for athletes,” says Brown.

Deciphering the Code

The Code consists of four main sections. The first specifies the prohibited drug list and anti-doping rules for testing, hearings and sanctions, the second focuses on education and research, the third outlines the roles and responsibilities of the signatories to the Code, and the fourth refers to acceptance, compliance, modification and implementation.

“One challenge is to have testing systems which are effective in order to take away those who want to cheat in sport,” says Andersen. “The other challenge is to have an educational system so everyone is aware of the dangers of doing the drugs and the ethical side of being a cheater.”

Among the guidelines referenced in the first section is ISO/IEC 17025, the international standard for the competence of testing and calibration laboratories. The Code stipulates that only testing results from accredited laboratories that have demonstrated that they meet the requirements set out in the standard will be accepted. In Canada, these testing and calibration laboratories are accredited by the Standards Council of Canada.

Although voluntary, both the IOC and the IPC require countries to conform to the Code. Essentially, if a country wants to participate in the Olympics, they must adopt the Code as their anti-doping program. Compliance is monitored by WADA. International sporting federations are also being asked to comply with the Code.

“The Code is not the rule in itself. It has to be each organization that implements the provisions of the Code into their rules,” says Andersen.

Having this standardized set of rules is very important in the fight against doping in sports. Because many of the

prohibited substances listed in the Code may also be found in common over-the-counter products, such as cold medications, it is important that athletes are clear about what they can and cannot take. An internationally recognized prohibited list of substances eliminates this confusion and ensures everyone gets the same treatment.

Ensuring that all athletes are treated equally is another reason for setting out a single and accepted set sample collection and testing procedures.

But the Code isn't just about the testing. It is also a way to encourage all countries to take the responsibility to educate their athletes, not only about how the anti-doping procedures work in international competitions, but more importantly why they should not be using banned substances.

Andersen says that national sporting authorities can influence athletes to make the right choices, by setting a good example themselves. “The countries are close to the athletes in building the right attitudes,” says Andersen. “They should say no because they have gotten the right attitudes from sports leaders, coaches and trainers.”

He says that countries need to emphasize all the risks taken by athletes every time they use performance-enhancing drugs, and that the Code is another means of showing them just how much they have to lose.

The Code sets out strict penalties for cheaters. If caught, an athlete's records are disqualified and any medals won are taken away. They are also banned from competition for two years for a first infraction, and barred for life if they are caught again.

Even scarier than losing a medal is that an athlete risks their health, and even their life.

Performance enhancing drugs have unwanted physical and psychological side-effects says Andersen. “If you do steroids, women become men. That's one of the side effects. For men they have kidney problems and liver problems. There are many, many side effects.”

Andersen says implementation of the code is already helping to make the doping situation better than it was. Even if it may seem like drug use by athletes is increasing, according to Andersen, what the numbers really show is that more extensive and reliable testing is leading to more cases of doping being caught.

“All athletes around the world have an equal chance to be treated in the same way,” he says. “The way athletes are being tested, the follow-up and the sanctions are now harmonized and equal for all athletes.”

When testing becomes equal and the cheaters are removed from the mix, sport becomes fair again, restoring our confidence in the athletes and the sport.

By removing drugs from the equation, the pressures that athletes feel are the one's that will lead them to be their very best, and not the one's that will lead them to lose it all. ■

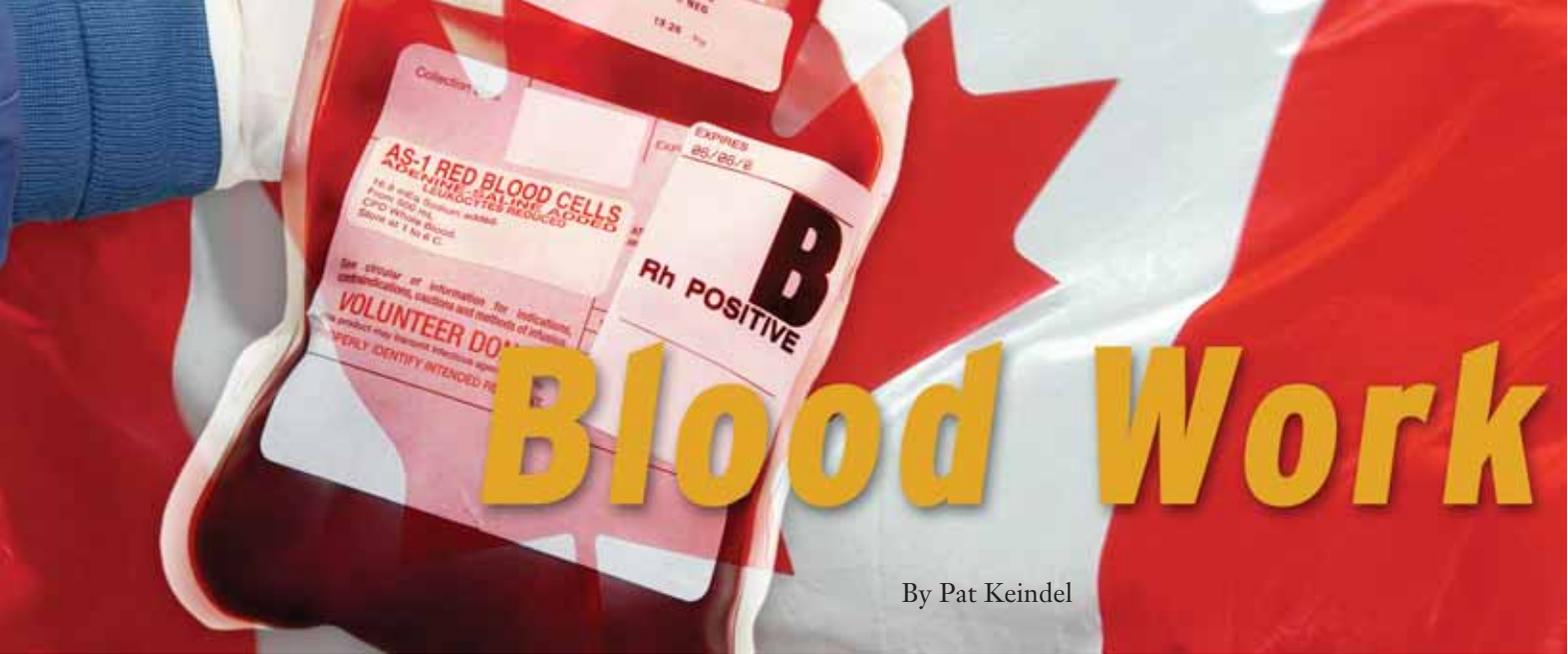


STANDARDS FOR A SAFER WORLD

Riding in Ambulances

Everyday, paramedics in cities and towns across Canada respond to hundreds of requests for medical help. And at each call, an ambulance is ready to transport patients to the nearest hospital. The BNQ standard **1013-110 (1999), Ambulances – Vehicle Specifications** is intended to ensure that the ride will be as safe and comfortable as possible for patients and paramedics alike.





Blood Work

By Pat Keindel

Standards are commonly thought of as applying to mechanical devices, plumbing fixtures and electrical appliances. But do they really have a place in people's veins?

In a way, yes.

In the 35 years since the inception of the Standards Council of Canada (SCC), standards have reached into aspects of our lives previously unexplored. Into our forests and farms. Computers and telecommunications equipment. Matters of privacy. Issues of climate change. And even, human blood.

The National Standards System, overseen by the SCC, has enabled industry, government, consumers and the standards community to work collaboratively on a wide range of practical solutions to the challenges of the day.

The safety of Canada's blood supply is one such example. In 1993, the Krever Inquiry was called to investigate the operation of Canada's blood system, including the HIV and Hepatitis C infections that occurred in the late 1970s and early 1980s. One of its recommendations was the implementation of a national blood standard.

At the request of Health Canada, a technical committee of the Canadian Standards Association (CSA) undertook the serious task of addressing the issues of quality and safety in Canada's blood system. Building on the work of a Health Canada Expert Working Group, the technical committee completed the first comprehensive standard to encompass Canada's blood system. CAN/CSA-Z902-04, Blood and Blood Components provides a consistent national management framework for use by medical institutions throughout Canada. It was published and accepted by the SCC as a national standard of Canada in 2004.

Although guidelines and standards for blood management had been developed before, the CAN/CSA-Z902-04 committee created something unique for Canada, and indeed for the world: a comprehensive national standard covering all aspects of blood collection, processing, storage and use.

The standard also exemplifies the positive outcomes the

standards community can achieve through close collaboration with stakeholders, a rigorous and consensus-driven process and an outward focus on societal needs.

The heart of the issue

While blood has been regulated and closely monitored at a federal level, the Food and Drugs Act (and associated documents) covers the collection, preparation and storage of blood components, but not transfusion. Meanwhile, the Canadian Society for Transfusion Medicine had the only major blood standard in Canada, but it covered only the hospital side of blood management and transfusion. Matters of patient safety have generally come under the purview of provincial and territorial hospital acts.

In the wake of HIV and Hepatitis C infections, the Krever Report documented the importance of national standards for the handling of blood and blood components. One of its recommendations referred to the importance of national standards in ensuring that "all persons in Canada needing blood components or blood products have access to products of uniform quality." Another recommendation was the setting and enforcement of standards. And a third stated, "the regulator must set minimum standards for all phases of the collection, processing and storage of blood and blood plasma, [and] enforce compliance with the standards." As the regulator of Canada's blood system, Health Canada commissioned CSA to develop this standard.

Collaboration and consensus

What ensued was the kind of close collaboration among experts for which Canada's National Standards System is renowned.

As a neutral third party, CSA provided the structure and forum for a committee of expert volunteers and stakeholders to develop the standard, using the "balanced matrix" approach that capitalizes on the combined strengths and expertise of members from various areas – with no single group dominating. Members were drawn from professional

associations, governments, patient groups and blood centres, and included representatives of the Canadian Blood Services, Héma-Québec, the Canadian Hemophilia Society and the Canadian Society for Transfusion Medicine.

The rigour with which standards are developed in Canada is essential to their acceptance in the marketplace.

CAN/CSA-Z902 was developed through close consultation with a variety of stakeholders, and extensive research into best practices around the world. While CSA's blood standard is voluntary unless referenced in law, its adoption is made more likely by the inclusive nature of its development.

As one indication of uptake, the Ministry of Health and Social Services in Quebec is requiring all hospital transfusion services to be enrolled in a recognized audit program based on the standard by December 31, 2005. Other regulatory authorities, having been involved in the process, are likely to mandate use of the standard too.

A living standard

CAN/CSA-Z902-04 does not replace detailed specifications and operating procedures. It is a management standard that provides flexibility for addressing emerging issues in the constantly changing health care field. The standard directs testing labs to perform any additional screening tests required by Health Canada. In this way, testing for new health threats can begin as soon as Health Canada has approved the test method.

The standard also provides consistency. With a national management framework for medical institutions, participants throughout the blood system understand their responsibilities and can act appropriately and efficiently.

Today's health care issues demand solutions such as these ones — that combine flexibility with consistency and predictability, ones that accommodate new technologies and new practices while helping to ensure safety.

What's most satisfying is that this standard has the power to influence perceptions and affect behaviour in positive ways. In a recent poll by Leger Marketing, 20 per cent of

Canadians polled said they would be more likely to give blood knowing that a national standard was in place covering Canada's blood system from collection to transfusion. Given that only about 3.5 per cent of us currently give blood, CAN/CSA-Z902-04 will help reinforce in Canadians' minds that the blood system is safe. What's more, it could have a significant impact on the quality of Canada's blood supply.

Pat Keindel is President, Standards, Canadian Standards Association (CSA), one of four SCC-accredited standards development organizations (SDOs). CSA has developed hundreds of standards that are playing an important role in protecting and preserving the health and safety of Canadians. ■



The Standards Council of Canada (SCC) invites you to nominate individuals, committees and/or organizations for an SCC award. Nominations are due by February 17, 2006.

The awards recognize significant contributions made to voluntary standardization and conformity assessment activities.

Information detailing the series of awards, including the nomination process and eligibility criteria, is available on the SCC Web site at: www.scc.ca.

For additional information on the SCC Awards, contact:

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STANDARDS FOR A SAFER WORLD

Breathe Easy

Oxygen is one gas we literally can't live without. The standard **CAN/CSA-ISO 7767-98 (R2003) for oxygen monitors** specifies the safety requirements for medical devices including anaesthetic machines, ventilators, infant incubators, and oxygen concentrators. It stipulates how these are to be designed to keep the gas flowing in the right mixture so that hospital patients and those who are caring for them can breathe more easily.

Protecting our Protectors



A firefighter never forgets his first fire. For Roy Hollet, it took place in the paint shop of a hardware store. As each can exploded, the flames became the colour of the paint.

“It was the first time I understood why you stay low. You were standing up, and the visor appeared to be warping, it was so hot,” says the deputy fire chief at Halifax Regional Fire and Emergency.

A firefighter’s life involves risk from any number of sources — human rescue, chemical spills and contamination, severe weather emergencies or carbon monoxide leaks, not to mention collapsing buildings, and the stress from working in environments reaching several hundred degrees while wearing 50 pounds of gear. Then there’s the danger of staying in the fire too long, building up internal metabolic heat.

“It’s like the proverbial roast beef. You take it out of the oven and it continues to cook,” says David Ross, chief health and safety officer at Toronto Fire Services. In the old days, a firefighter knew it was time to retreat when he could no longer bear the pain on his ears. Today the ears are protected by a balaclava, and there’s an army of scientists, researchers and organizations working in concert to minimize a firefighter’s risk.

Standards play a crucial role in this process, affecting every facet and protocol of a given fire department. And while the general public is often unaware of the role a standard plays in producing a safe society, the firefighters themselves are very aware, because they need to trust their gear as absolutely and unconditionally as they trust their fellow firefighters.

“Most firefighters don’t even think about their gear because they know it’s been tested,” says Hollet. “Even though it’s a tendering process, we buy the best gear out

there for our firefighters. That’s somewhere where you cannot cut corners, when it comes to Personal Protective Equipment. You want the firefighter to focus on the job, and not have to worry, is my jacket going to rip? Is it going to sustain the heat? Is my Self Contained Breathing Apparatus (SCBA) going to work? That’s the last thing you want them to think about. They should be so comfortable in it that they’re not even thinking about it,” he says.

Standards also make firefighters aware of the limitations of their gear, such as how much heat it can withstand before it begins to burn. If a firefighter is caught in a flashover, his gear may provide between five and 10 seconds of protection, hopefully enough time to get back out.

A firefighter’s gear includes the SCBA, and the bunker suit ensemble consisting of boots, bunker pants, bunker jacket, flash hood, helmet, helmet liner and gloves. The boots have a steel toe and shank to protect against puncture or crushing injuries. The bunker pants and jacket consist of three separate layers. The outer shell has some degree of fire retardance, so it won’t continue to burn.

“There are specific things that are in the standard, like how much heat it can withstand before it will burn,” says Ross. The middle layer is GORE-TEX™ and acts as a moisture barrier, allowing steam to release, but keeping water out. The inner layer is a thermal liner, which protects a firefighter from the heat. “There’s pretty rigorous specifications as to materials you can use, as to how they’re sewn and everything else,” says Ross.

Firefighters face a trade-off between personal protection and cardiovascular and thermal strain when performing their duties. A suit could be made that would withstand much more heat or flame, but it would be much heavier and more difficult for the firefighter to move in. These kinds of factors are all considered when developing a product standard.

While large urban fire departments may have entire sections devoted to education and awareness, many small towns rely on volunteer fire departments. According to Christian Tardif, a standardization team leader at the Bureau de normalisation du Quebec (BNQ), this type of smaller organization is particularly reliant on the authority that a standard gives them.

Like its counterparts, the Canadian Standards Association (CSA), Canadian General Standards Board (CGSB), and Underwriters' Laboratories Canada (ULC), BNQ is committed to developing standards that address the needs identified by Canadians while at the same time minimizing duplication or overlap.

"In a perfect world, only one standard that covered all of North America would be better," says Tardif. So since both the BNQ and CGSB have similar standards governing protective equipment for firefighters, BNQ is phasing out their four applicable standards effective January 2006.

"The CGSB has a national standard for garments (CAN/CGSB-155.1-2001), so the reason for keeping a different standard here in Quebec doesn't exist anymore," says Tardif.

The CGSB standards are very much in harmony with the National Fire Protection Association (NFPA), an American standards development organization that has developed over 300 consensus codes and standards affecting building, process, service, design and installation. Its standards not only establish performance and design requirements for manufacturing protective clothing and equipment, but also recommend guidelines for a fire department's standard operating procedures. Working together, these standards ensure the gear performs the way it was intended, from creation through to retirement.

But while the CGSB and NFPA standards are very similar, Philip Miller, a standards specialist at CGSB, believes it is beneficial to have a separate Canadian standard because the Canadian laboratories that actually do the testing are more familiar with it. And different nations have different operating procedures, thus different needs, requiring separate standards.

In addition to standards governing firefighter protective gear, CGSB also has a standard for Personal Body Armour (CAN/CGSB-179.1-2001). Body armour is the most important piece of protective gear in a police officer's arsenal, as Ontario Provincial Police (OPP) Constable Dan Brisson learned first hand. On March 10, 2001, during a routine traffic stop, a suspect with a 45 calibre handgun fired a shot directly at Brisson's back, three inches below the collar of his protective vest. The vest did its job that day, stopping the bullet from entering Brisson's spine. "I have confidence in my vest, especially after what happened," he says. "Some officers' lives have been saved, even in car accidents, wearing those vests."

Manufacturers spend thousands of dollars each year

testing and researching their products. Being certified by an accredited product certification body identifies them to both public and private sector buyers as a supplier committed to quality and safety.

Certification by an accredited organization shows that the manufacturer has met the requirements for performance, safety and/or quality set out in a nationally or internationally recognized standard. The process includes an audit of the facility and testing of the product. A product that meets the necessary criteria may be issued a unique listing number that is displayed, along with the certification mark, on the garment's label. The description of the supplier, along with a list of products and services, is then displayed on the certified product list online, accessible to purchasers, government, corporations, retailers and the public.

Toronto-based Starfield Lion Company recognizes the value of having its products certified by an accredited product certification body. They spend \$60,000 to \$80,000 a year in testing criteria, and manufacture firefighter protective gear to five different Canadian and American standards.

"It is important that the product sold is built under standards, and is respected for that. There's a lot of design development expense for the manufacturers of both the materials and the final component. It is important that the manufacturer is using recognized components. The firefighter has enough issues on his plate to take care of the fire and not have to worry about the gear that he's been given to use," says Loren Lori, general manager at Starfield Lion.

When purchasing textiles to manufacture bunker gear, Lori says consistency of fabric is an important factor. And because the North American textile mills build to the same standards that he uses in manufacturing, he knows the proportion of Nomex™ with Kevlar™ and graphite for static discharge will remain the same. Textiles coming from offshore mills do not build to the same standards. "It may be labeled Nomex™, but there's still an uncertainty to it," says Lori. "Is it 100 per cent Nomex™? Does it build to any test or standard? Because when you buy it, it will just say Nomex™. It's like buying cheese. What is the percentage of fat and everything else? That's still an uncertainty. The fire suit stuff, you can't fool around with this."

Revision Eyewear Ltd., based in Montreal and Williston, Vermont is another company that recognizes the value of standards. They manufacture ballistic eyewear, including a pair of goggles that can withstand a shotgun blast from a distance of 16 feet (five metres). Their list of clients includes the Canadian Forces, Royal Canadian Mounted Police (RCMP), OPP and various policing units throughout the country.

"When we decided to get into this element of the business, the military side, it was critically important for us to embrace not only standards in and of themselves, but the mentality that standards were important, and that meeting them consistently and understanding them was the best way



to ensure that our products were as good as they can be,” says CEO Jonathan Blanshay. Their eyewear underwent 14 different tests to validate the quality of the product, including tests for impact resistance, abrasion resistance and flame retardancy. “I think what standards do in the end, is force companies to make a decision – either you are a company that invests in quality and in development and testing, or you’re one that says no, it’s really more important that it’s fashion and style and colours and packing.”

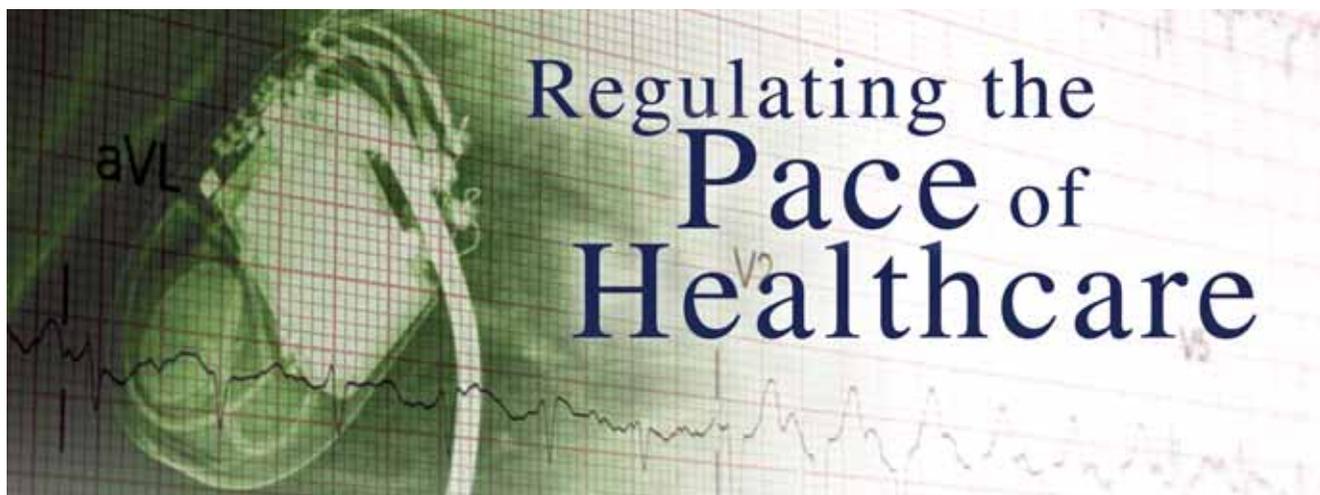
Typically standards are reviewed every five years to ensure they remain useful and relevant. As manufacturers, scientists and professional organizations worldwide work to improve protective gear for firefighters and other first responders, the standards will continue to evolve. ■



STANDARDS FOR A SAFER WORLD

Not Lost in Translation

There are 6,800 known languages spoken around the world and almost as many nursing terms in each one. This realization was the basis for creating the standard **CAN/CSA-ISO 18104-05 for nursing terminology**. The international standard provides a model for creating a universal nursing language that enables the comparison of patient data and paves the way for accessible electronic health records. Most importantly, when it comes to your health, this standard makes sure nothing is lost in translation.



Among the most significant medical advances of the 20th Century, the cardiac pacemaker has undergone some dramatic changes since its invention. And nobody is more grateful for these advances than the estimated 100,000 Canadians who are maintaining an active lifestyle because of this technology.

Either used externally in a hospital setting, or more commonly implanted in the chest, a pacemaker sends small electric charges from the battery-powered pulse generator to the lower chambers of the heart through a group of small metal electrodes called the lead. These charges keep the heart beating at a normal pace.

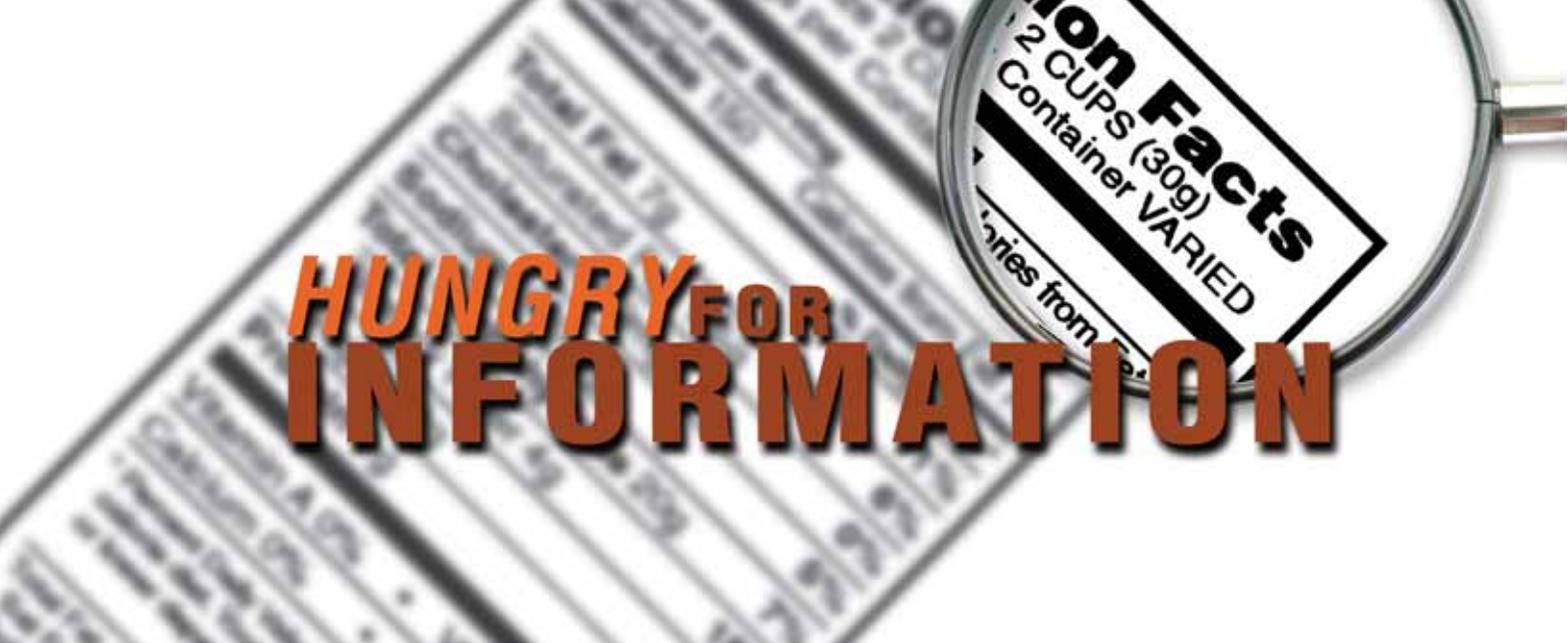
The list of experts who have contributed to the modern cardiac pacemaker is long, but three Canadians are owed special credit. Thanks to the efforts of Dr. Wilfred G. Bigelow, a resident surgeon at the Toronto General Hospital, his colleague Dr. John Callaghan, and electrical engineer Jack

Hopps of the National Research Council, the first functional version of this lifesaving device was presented to the medical community in 1950.

In the years since, the pacemaker has undergone numerous re-designs and improvements, not only in terms of its functioning, but also its comfort and safety. While much of this has happened in laboratories and hospitals, some very important work has taken place in meeting rooms where experts from around the world have gathered to develop voluntary standards for the performance, safety and quality of these and other life saving devices.

Despite being designed with the goal of helping patients, a medical device that doesn’t work properly could do more harm than good. For this reason, the sale of medical devices

Regulating the pace of healthcare
(continued on page 22)



HUNGRY FOR INFORMATION

At one time, an apple a day might have kept the doctor away, but these days many Canadians are putting a little more thought into the impact that the foods they are eating may have on their overall health.

A Statistics Canada report released in July 2005 shows that despite a growing emphasis on good nutrition and achieving a healthy body weight, obesity among Canadians has risen significantly over the last 25 years. The same is true of a number of serious health conditions that have been linked to obesity, including Type 2 diabetes, heart disease and certain types of cancer.

Faced with these unsettling statistics, where are Canadians turning for reliable information about nutrition?

While it might not be the most fascinating reading, many are taking a closer look at food labels. In fact, a survey of nutrition trends conducted by the Canadian Council of Food and Nutrition (CCFN) in 2004, found that 75 per cent of respondents used food labels as their primary source of nutritional information.

“Consumers do want to know more,” says Francy Pillo-Blocka, president and CEO of CCFN. “They’re hungry for information about what they’re eating and how this affects their health”.

The CCFN survey suggests that a majority of Canadians are reading labels, and that in general they trust what they read, something that can’t be said for much of the diet and health information they receive from the media. What label-reading Canadians have probably noticed in the last couple of years is that even more of their favourite foods now prominently display nutritional information, and that the labels include more, easier to read data, than in the past.

This is due in part to amendments to Canada’s Food and Drug Regulations announced on January 1, 2003, requiring most pre-packaged foods to include a “Nutrition Facts” box that follows a standardized format.

The fact boxes must provide the amount of calories per stated serving size, and also list the percentage of the daily requirement and the amount of 13 core nutrients found in a

serving of the food. The revised regulations also set out strict rules for manufacturers making nutrient claims (ie: fat-free, high in fibre, reduced sodium) or claims associated to the health benefits of certain nutrients. Most food manufacturers are required to be completely compliant with these changes by December 12, 2005. Small businesses have until 2007 to make the necessary changes.

As the body responsible for enforcing compliance to the labelling regulations, the Canadian Food Inspection Agency (CFIA), strongly recommends that producers use a laboratory accredited by the Standards Council of Canada (SCC) to conduct the necessary nutritional analysis testing to support labelling claims. SCC-accredited labs have demonstrated that they meet the requirements of ISO/IEC 17025, the internationally recognized standard for the competence of calibration and testing laboratories.

Ron Reddam is the Senior Technical Representative of Food Sciences at Maxxam Analytics, a national laboratory, accredited by SCC, that provides nutritional testing services to thousands of Canadian clients, including large and small food producers, grocery store chains and fast food outlets.

“Companies want to make sure that their speedometer is reading the same as the radar gun that could be pointed at them,” says Reddam. He explains that accreditation is one way that Maxxam can demonstrate to its clients that the results it gives them are reliable and accurate. Another, according to Reddam, is by using the testing methods recommended by CFIA for key nutrients such as the fatty acids (total, saturated and trans) and Vitamin C.

He says that clients want to ensure that they receive the most accurate data possible for their products, not only to comply with regulation but also as a way of demonstrating their accountability to increasingly demanding consumers and retailers in a competitive environment.

“This trend is not just based upon regulations, it’s also based upon consumers that are asking, demanding, accountability for reliable nutrient data and nutrient claims.”

According to Reddam, there has been some increase in

nutritional analysis clients since Health Canada announced its new requirements in 2003, but many Canadian producers were already doing nutritional testing. For some, this was a way to meet U.S. requirements, where mandatory labelling has been in place for several years. In many cases, others in the supply chain have made nutritional testing by an accredited laboratory for all mandatory nutrients a requirement.

“Whether they put it on their packages or not, now most companies, even if they have exemptions are complying with the regulation,” says Reddam. He says market demand is another key reason that companies chose to test and label their products.

Accurate testing results are especially important with respect to the new stricter guidelines for nutrient and health claims, adds Reddam.

Manufacturers don’t want to risk having someone else, whether it is CFIA, a competitor, or a concerned consumer, test their product and find that it does not live up to the claim that is being made. Reddam believes that using an accredited lab and having these results at hand is a way for companies to demonstrate that they are accountable.

In addition to being accountable to consumers about what is in their products, Pillo-Blocka suggests that more

stringent nutrition labelling requirements are putting increased pressure on manufacturers to explain why their products contain what they do. She points to the example of trans fats, which have been linked in several recent medical studies to obesity and diabetes. The Health Canada regulations require the presence of trans fats to be disclosed on labels. As a result, she notes that a number of companies have reformulated their products to either significantly reduce or eliminate the use of trans fats.

It is encouraging that consumers are using labels to take control of their eating habits, and adopt a healthier lifestyle, one that might just include an apple a day. ■

Regulating the pace of healthcare

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in Canada is strictly monitored to ensure the safety of patients.

Manufacturers of medical devices are required to demonstrate conformance to the standard, ISO 13485, Quality management systems, Medical devices, requirements for regulatory purposes, in order to have their medical devices licensed for sale. The standard, which was developed specifically for the medical device sector, is based on the world renowned ISO 9000, Quality Management System series.

According to Health Canada, certification to a quality management system provides assurance that devices will be designed and manufactured in such a manner that over time they will consistently meet safety and effectiveness, and post market requirements, that are set out in the regulations. Health Canada requires that manufacturers submit a certificate from a quality management system certification body that has been qualified by the Standards Council of Canada (SCC) as part of the Canadian Medical Devices Conformity Assessment System (CMDCAS). The CMDCAS program was developed collaboratively by SCC and Health Canada’s Therapeutic Products Directorate.

This commitment to quality and consistency is one that is echoed in the efforts of all the individuals who have been contributing over the last half century to the pacemaker. Its steady pulse is a reminder of Canada’s many important contributions to medical innovation. ■



STANDARDS FOR A SAFER WORLD

Lighting the Way

During the 2003 blackout, it was essential that hospitals had an electricity supply to operate their life-saving equipment. The standard **CAN/CSA Z32-04, *Electrical Health and Essential Electrical Systems in Health Care Facilities***, sets out general guidelines on the safe use of electrically operated equipment in Canadian hospitals, with one clause devoted specifically to maintaining an emergency power supply in case of a power failure. This ensures that in emergencies, patients are not left in the dark.

ISO 14001 2004 TRANSITION



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