A common concern that has emerged across many Canadian municipalities involves the safety and well-being of vulnerable citizens during emergencies. In Canada, seniors make up the fastest-growing age group and according to Statistics Canada, this trend is expected to continue for the next several decades. Furthermore, with such a prevalent aging population, the percentage of persons with disabilities also increases. As a result, health care in Canada is not only focused on improving hospital services but also the availability of long-term care such as retirement and nursing homes alongside in-home support services. Due to the current shortage of long-term care options and the desire to maintain an independent lifestyle, significantly more seniors and persons with disabilities are remaining in their homes longer than in previous decades. During emergencies, local authorities can plan for the unique needs involved in protecting the safety of residents in retirement homes, group homes, and long-term care facilities. However, addressing the safety of
vulnerable citizens living at home becomes an emerging concern with this demographic group growing in relative size. Thus, the idea of registries aimed at improving the safety of those who may be vulnerable during emergencies has become more apparent. For instance, Miramichi, New Brunswick, launched the first Autism registry in December 2009 with Ottawa, Ontario, becoming the second city to launch in April 2010.

In March 2011, Brantford, Ontario, implemented a registry for persons who are deaf or hard of hearing in order to assist police in responding to 911 calls where the caller may not be able to communicate the need for help. A long-standing registry, known as the Safely Home Wandering Registry, began in 1995 and assists local police with ensuring those with Alzheimer’s disease can return home safely in the event they become disoriented in their surroundings. The United States also has multiple registries which enable response teams with the ability to locate vulnerable residents during large-scale emergencies where evacuation or sheltering in-place is required.

I. THE VULNERABLE PERSONS REGISTRY (VPR)

Amidst the implementation of such registries, a comprehensive model aimed at improving resident safety was simultaneously being developed by the Sault Ste. Marie Innovation Centre in partnership with Accessibility Sault Ste. Marie, a model initiated in 2003. The concept, denoted as the Vulnerable Persons Registry (VPR), is an all-encompassing approach to emergency planning by improving the safety of persons with varying types of vulnerabilities in all types of emergencies. The Community Geomatics Centre, a division of the Sault Ste. Marie Innovation Centre, officially launched the VPR pilot to the City of Sault Ste. Marie, Ontario – population of 80,000 – in October 2011. This was the culmination of an eight-year initiative. The Community Geomatics Centre (CGC) is a not-for-profit organization that is internationally recognized for its use of Geographic Information Systems in creating safer, healthier and more prosperous communities. A Geographic Information System (GIS) essentially transforms the numbers and words from databases and spreadsheets into meaningful visual representations on a map. The VPR uses GIS to allow for immediate access of critical registrant data for use in all emergencies through its direct integration with emergency dispatch systems and the local utility’s GIS solution. The importance of such a comprehensive service initially stemmed from the heart-wrenching tragedy of a young man from Sault Ste. Marie, Lewis Wheelan.

In 2001, Lewis Wheelan, a nineteen-year-old Southern Ontario university student, was ecstatic to be hired for a summer job that allowed him to work in the element he enjoyed the most – the outdoors. Lewis would be spending the summer in his hometown of Sault Ste. Marie, clearing the brush along electrical distribution lines, when unbeknownst to him he would be faced with a life-altering experience. On the second day of his job, a co-worker cut a tree that caused a power line to fall, shocking Lewis with 7,200 volts of electricity three times. This resulted in Lewis having 65 percent of his body damaged by burns and three amputations including his legs, right arm and right shoulder, placing him in a wheelchair. Because of the burns, Lewis also relied on air-conditioning in order to regulate his body temperature.

Lewis surpassed this adversity and eventually came to accept his altered life and new body, insisting he would continue to lead an independent lifestyle. He subsequently moved back to Southern Ontario and re-enrolled in university. Lewis was in Southern Ontario during the widespread electrical outage that blacked out most of the province and the U.S. northeast in August 2003. Lewis, who relied on electricity for air-conditioning, was without power for 22 hours. His family, being eight hours away in Sault Ste. Marie, tried frantically to reach him or anyone who could’ve helped ensure his safety, but to no avail. Lewis died some time early in the morning of August 15, 2003, before power was restored to his building, at the age of 21.

As many tragedies have a silver lining, the ill-fated passing of Lewis Wheelan inspired the concept of the Sault Ste. Marie Vulnerable Persons Registry. The CGC and Accessibility Sault Ste. Marie began a joint-project, one that would use the CGC’s GIS specialty to develop a comprehensive public service that would improve safety and complement an independent lifestyle. The VPR is the first of its kind in North America and potentially across the globe. It is a free, voluntary, and confidential service available to residents of Sault Ste. Marie who are at greater risk during emergencies. The VPR aims to improve the safety of residents who are living at home without 24-hour support and experience difficulty with mobility, vision, hearing, and developmental/intellectual, cognitive, or mental health. Although the focus is for those not receiving 24-hour care or assistance, the VPR has an exception concerning individuals living at home who rely on electricity for life-sustaining equipment such as oxygen, dialysis, or air-conditioning/heat for body temperature regulation. It is the CGC’s responsibility to collect, secure, maintain, and disseminate the information of those choosing to register.

II. IMPROVING EMERGENCY PLANNING

The VPR is a tool that improves safety in all types of emergencies as opposed to focusing solely on large-scale emergencies, thus enabling increased usage and benefits. Through its direct integration with emergency dispatch systems and the local utility’s GIS solution, registrant safety is enhanced during power outages, home emergencies, and large-scale emergencies. First responders, which includes local Fire, Police, and Emergency Medical Services, alongside the local utility, securely receive data updates on a monthly basis in order to keep information current, while the GIS maintains real-time data of registrants. In addition, the CGC updates data every three months through each registrant’s preferred method of communication, and registrants are also encouraged to provide ongoing updates when information changes.

Public cemetery records are also used to cross-reference the database with any registrants who may have passed away. The information provided to authorized users is tailored specifically to the needs of each user while simultaneously ensuring various restrictions to protect privacy. Authorized users are only permitted to use VPR data during emergencies which is reinforced through confidentiality agreements between the CGC and each of the recipient agencies.

In terms of functionality, the VPR offers significant benefits to not only registrants but also to those using the information. During power outages, the local utility company has access to only those registrants who rely on electricity, which allows customer service to directly inform registrants of a planned power outage to ensure preparedness. For extended unplanned power outages, those expected
to last six hours or more, the local utility company informs Canadian Red Cross of registrants in the effected area. Canadian Red Cross has trained staff available 24-hours a day who can contact the registrants to learn if assistance is required at home in order to remain safe. Sault Search and Rescue, a third-party volunteer agency, also offered to assist Canadian Red Cross, when needed, as they have access to crucial resources such as generators and a full-service bus transformed with kitchen capabilities, etc.

The second component of the VPR offers benefits during day-to-day emergencies where 911 is called. When a 911 call is placed to the address of a registrant, key information such as “mental health”, “bedridden”, “oxygen”, or “deaf, deafened or hard of hearing” is immediately available to the emergency dispatcher who can ensure that first responders are aware prior to arriving at an emergency. This awareness assists first responders in planning an efficient and effective response. For instance, firefighters will know if someone using a wheelchair lives on the seventh floor of an apartment building and would not be able to exit without the use of the elevator. If notified of “oxygen”, firefighters can further protect not only the registrant but also themselves and neighbours by knowing there is combustible materials within the home. In small-scale evacuations where police need to evacuate a neighbourhood, police will know if someone in the area is deaf, deafened or hard of hearing and can plan accordingly. These are just a few of the benefits available on a daily basis.

The VPR data is also useful in large-scale emergencies whereby the Community Emergency Management Coordinator has access to all registrant data in order to assist emergency response teams in coordinating an efficient response. An additional convenience is the ability for the CGC to quickly query out vulnerability types that may correspond to particular emergencies. For instance, during a widespread blackout, the CGC can query only those who are electric-dependent. Collectively, the VPR is a multi-purpose and comprehensive system that can not only improve safety but also enhance the efficiency and effectiveness of emergency planning.

The VPR also incorporates a significant educational component. The VPR is not meant to replace the personal responsibility of being prepared during emergencies and thus reinforces Emergency Management Ontario’s mantra of being prepared for at least three days during a large-scale emergency. The VPR equips registrants and the public with helpful resources aimed at raising awareness on how to be prepared. The VPR coordinator, who is the primary contact for registrants, also educates registrants first-hand of various emergency preparedness measures. The VPR coordinator also assists in raising awareness to registrants and the public of the support services available in the community to further enhance the ability for an independent lifestyle, creating a central hub of information for registrants.

The VPR is made possible with pilot funding provided by Accessibility Sault Ste. Marie, the Community Endowment Fund and the District of Sault Ste. Marie Social Services Administration Board and has also attracted over 25 local partners, making the VPR a true community initiative. VPR partners comprise local emergency teams, the utility company and multiple support agencies such as Canadian Red Cross, Canadian Hearing Society, and North East Community Care Access Centre, among many others. Partner involvement ranges from information users and registration locations to information providers and sponsors. The eight-year venture involved a significant amount of in-kind contributions on the part of the CGC as well as the partnering agencies. Efforts included overcoming legal hurdles, technological issues, workflow processes, and defining vulnerabilities. The CGC consulted with all partners throughout the VPR’s development to ensure this public service met the needs of both the partners and the community.

**III. ALTERNATIVES TO A VPR**

Through research, it was discovered that current emergency planning methods often involve seeking updated lists from the local Community Care Access Centre (CCAC) in a large-scale emergency. The CCAC is a provider that offers in-home care for those attaining their services. This particular method creates additional steps for local authorities to obtain critical data and also does not capture the significant number of residents who do not receive services from the CCAC. Another method found was the collection of information directly at first responder locations (i.e., fire or police departments).

Such a method provides no consistency of data because often times it is only one department collecting information or it is left to the resident to ensure they provide their information to each department. This method also puts the onus on the first responders to ensure data is up-to-date. Multiple methods are incorporated in current emergency plans in order to provide the best possible outcome. There is no one method that can guarantee the safety of all residents, including those at greater risk, but the VPR generates a comprehensive tool that attempts to equip key players with immediate access to consistent, up-to-date and crucial data at a moment’s notice and for any emergency situation.

Being the first of its kind in North America and potentially across the globe, the VPR has since attracted international interest. Many communities have halted the development of registries in order to learn from the VPR’s one-year pilot as there are evaluation metrics in place. Following the hopeful success of the VPR pilot, the CGC will incorporate any necessary changes to fine-tune the service in order to create a comprehensive resource package for interested communities to implement a VPR, as it has been designed to be transferable.

Registries are becoming more prevalent as a result of the shifting trends regarding the higher percentage of vulnerable citizens remaining at home. The VPR offers the potential for a cost-effective model because of its comprehensive nature; it is the hope of the CGC that future registries can embody this all-encompassing emergency planning tool.

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