GEO-SPATIAL APPLICATIONS IN HEALTH CRISIS MANAGEMENT: A KNOWLEDGE TRANSLATION EXPERIENCE AND ROADMAP

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BACKGROUND

Australian initiatives in knowledge translation were presented in 56th session of COPUOS in 2019 which focused on space-based technology and applications to civic space
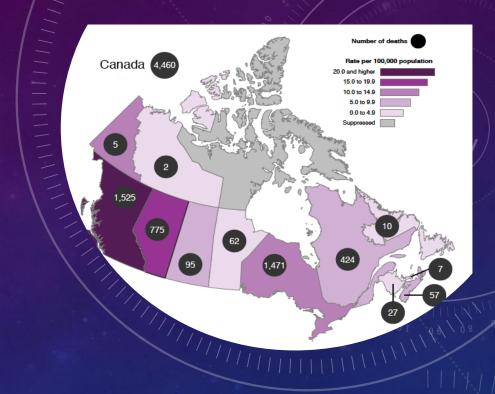
Application of geo-spatial, remote sensing technologies, AI, robotics, next generation comms, big data analytics – in civic space

For building Smart healthy cities, big data synthesis, predictive modelling using real time information, for not only crisis and disaster management, but also for enabling good public health and well being in society
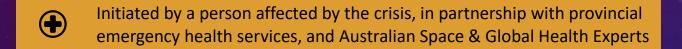
The experience - Transfer of these capabilities in the Canadian Civic space to address a declared public health emergency – the Opioid Crisis and a roadmap to enhancing public health and well being in future

OPIOID CRISIS IN CANADA

- North America is facing an endemic of opioid overdoses - 130 people per day

- Fentanyl and its derivatives laced with powerful enhancers – shuts down nervous system, stops heartbeat, followed by deaths in seconds.

- The epicentre of opioids in Canada in BC – one person dies every 2 hours

- These untimely Deaths are preventable if timely intervention is given

- However, 94% accidental deaths occur when people are at home alone

- Once a person enters the state of unconsciousness, they are unable to function , and discovered too late by family, friends and emergency services – - unfortunately becoming a statistic!

GEO-SPATIAL SOLUTION – FIRST STEP TO REVERSING THE CRISIS

- ⊕ Initiated by a person affected by the crisis, in partnership with provincial emergency health services, and Australian Space & Global Health Experts

- ☎ Connecting EHS (911) direct

- ▢ enables connection to emergency responders in the event a person becoming unconscious and unable to function

- ⏱ Arms front line and emergency responders along with location of the person, drugs taken, time, and other critical info for intervention

- 🚑 Saved **15 lives** in initial deployment within 60 days

GEO-FENCING

- Using GPS technology to identify the person's exact current location and allowing each emergency transmission to be directed to the appropriate emergency response facility;

- Specific functionalities based on location

- Targeted push notifications

- Alternative alerts instead of 9-1-1

SOME CAPABILITIES

- **Text to voice transcription** – in the event of an emergency, the person's critical information is automatically transmitted by the and thereafter transcribed from digital/text to analog/voice and forwarded to the appropriate 9-1-1 or other emergency response facility in a priority sequence;

- **Two-way communication** – allows emergency responders to directly communicate with the person or anyone in the immediate environment, eliminating or greatly reducing false positives and the corresponding unnecessary and costly dispatch of emergency response teams;

- **Urban density response** – Allows each person to provide emergency responders with specific dwelling and other identifying information necessary to effective emergency response in densely populated urban environments;

- **Remote/Rural response** - not only in areas serviced by 9-1-1 and/or other emergency health services, also equally well suited to the timely saving of lives in rural/remote communities without any realistic access to 9-1-1 type emergency services.

- configured such that overdose alerts can instantly reach community-based first responders, volunteers, or even family and friends who, with minimal training, can administer Naloxone or take alternative life-preserving steps

- Security compliant

THE ROADMAP – HARM REDUCTION, PREVENTION, CONTINUUM OF CARE

Cognitive AI assisted enhancement – without requiring personal intervention to use the app
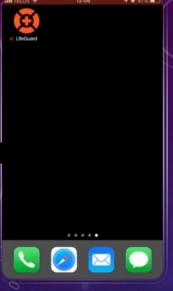
Breath analysis – for quick detection

Visualising emotions – for prevention

Predictive modelling - to inform public health for recovery and prevention strategies

HOW DOES IT WORK? (CURRENT)

https://lifeguardapp.ca