Geographic Information Systems For LTC/PCH

A Geographic Information System (more commonly referred to as GIS) is a computer-based system for input, storage, analysis, and interpretation of geographic/spatial/location data. This data can be associated with a location (longitude, latitude) on the globe and thus can be mapped. For example, hospitals, health authority regional boundaries, roadways, cases of disease, and country boundaries are all types of spatial data.

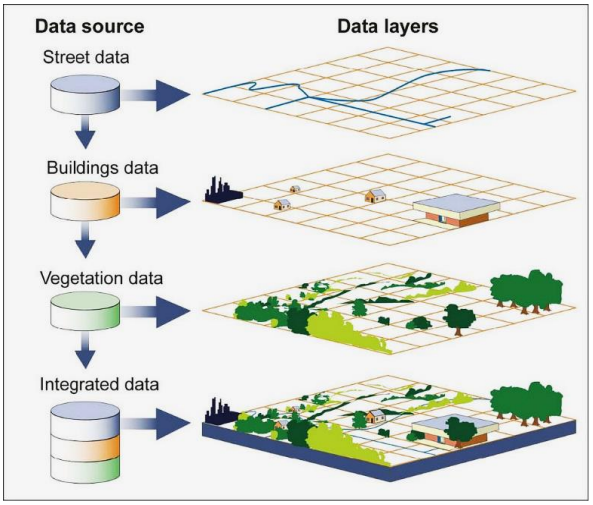

Figure 1: Real-world physical features represented as GIS data layers and integrated to visualize the connection between these features.

By connecting location data (where things are) and descriptive data (what things are like there) to a map, both can be viewed together (Figure 1). Selecting a location on a digital GIS map will provide you data/information stored about that location GIS helps to understand how the world differs from place to place, to find connections between people, to determine where and when to intervene, and to recognize what, where and why a phenomenon occurs. GIS will play a critical role in the provincial healthcare system by supporting operational planning and identifying areas or facilities in need of support during emergencies.

The John Hopkins Covid-19 Dashboard is one example of GIS deployment in healthcare (Figure 2). It is a situational awareness dashboard that integrates and displays real-time COVID-19 data domestically and internationally. This dashboard has been used by people around the world to view the spread and severity of COVID-19, while also supporting operational planning for organizations.

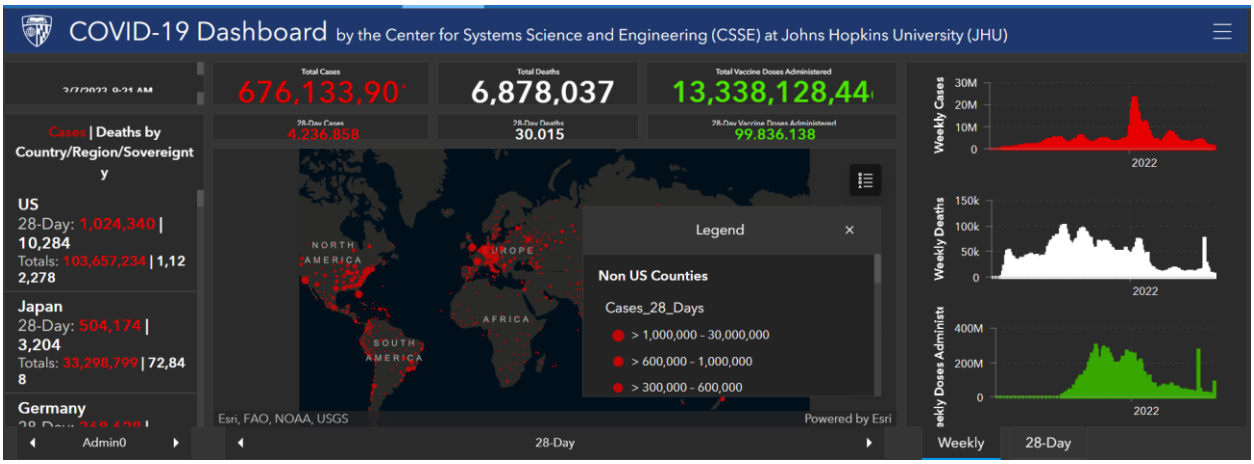

Figure 2: John Hopkins Covid-19 Dashboard showing COVID spread across the world (https://coronavirus.jhu.edu/map.html).

Use of GIS in LTC/PCH

PCH data will be collected and displayed using software called *ArcGIS* and an application within ArcGIS called *Survey123*. These digital tools create GIS data layers (as shown in figure 3) to visualize a digital picture of PCH operations. The digital picture will provide a provincial lens on PCH operations that will be shared with stakeholders to support decision making, assist in emergency responses and provide advanced situational awareness of potential and emerging emergency events, including pandemics.

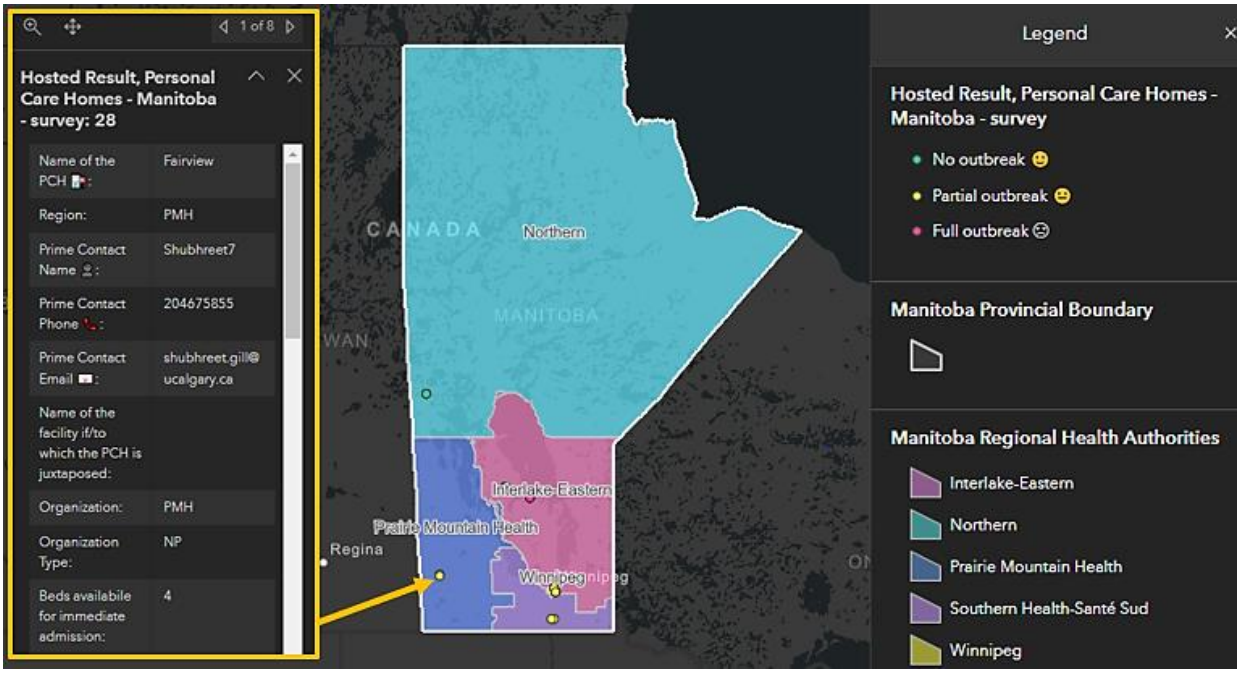

Figure 3: Example of a Manitoba's GIS. Information populated in this example is not accurate and only being used as an illustration.

Preparing LTC/PCH Operators to use GIS

Setting up the GIS begins with collecting basic, 'static' data from all PCHs in Manitoba. This data includes information such as the street address of the PCH, contact information and numbers of different types of beds. Each PCH operator will be asked to record this information on a simple Excel spreadsheet and return it to Shared Health Emergency & Continuity Management (ECM). Once this information is collected by ECM it will be uploaded to the GIS.

The Shared Health GIS Specialist will then issue Mobile Worker licenses for the ArcGIS software to individuals designated from each PCH. These individuals are referred to as "Data Submitters". Data Submitters will be responsible for submitting the PCH's real-time data into the GIS platform. Each PCH is required to identify at least two employees who will be Data Submitters for their PCH.

Data Submitters issued a license will receive an invitation email from ArcGIS with their username and a link to join ArcGIS. Data Submitters will also receive an email from the GIS Specialist with a quick reference guide that includes directions on how to use ArcGIS in their role.

Submitting Real-Time PCH Data in GIS

Real-time PCH data will be submitted into the GIS using Survey123. The surveys can be completed using a work or personal desktop, laptop, tablet or smartphone. Further information and training will be provided in the near future for all Data Submitters on completing the real-time PCH data surveys.

Request for Change of ArcGIS License Form

All Data Submitters are required to complete a 'Request for Change of ArcGIS License' form to obtain a license to use ArcGIS software and the Survey123 application. Once the form is submitted, Shared Health's GIS Specialist will issue a Mobile Worker ArcGIS license to the designated individuals. Licenses are issued based on the information on the 'Change of ArcGIS License' form. This form will be used to add a new Data Submitter and/or terminate an existing Data Submitter. This form can be approved by an existing Data Submitter within the requesting PCH.

Questions?

Further information will be provided in the near future to all PCH operators on the use of the GIS and completing real-time PCH data surveys.

If you have any questions please contact Shared Health Emergency and Continuity Management at SharedHealthGIS@sharedhealthmb.ca.