Developing NWO Navigate:
An App for Navigating Stroke Care

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Background:

A coordinated system of care is essential to provide timely access to treatment for patients who present with a suspected acute stroke.

In Northwestern Ontario (NWO), resources are limited and healthcare providers often must transfer stroke patients to a different regional hospital to ensure care is provided within recommended timeframes.

However, there is often insufficient information about which transfer route would be the most efficient and appropriate for the circumstance.

Objectives:

To address this gap in knowledge, a comprehensive geomapping navigation and estimation smartphone/desktop application "NWO Navigate" was developed.

Development of the application involved a retrospective simulation study for building a geomapping system.

Historical data from land and air emergency (EMS and Ornge) medical services of previous patient transportation times between hospital locations was collected and processed (Figure 1).

Results:

This data was used to develop a prediction model using machine learning methods and incorporated into the application.

The aim of the application is to aid healthcare providers by presenting the best possible transfer options for a stroke patient based on the circumstances such as last time the patient was known to be well, patient location, treatment options, imaging availability (Figure 2).

Conclusions:

NWO Navigate has the potential to be a useful tool for healthcare providers navigating stroke care in NWO, and impacting patient care and outcomes.

The next step for the application is to undergo usability testing with the end-users to ensure the tool provides the assistance needed when caring for a stroke patient.
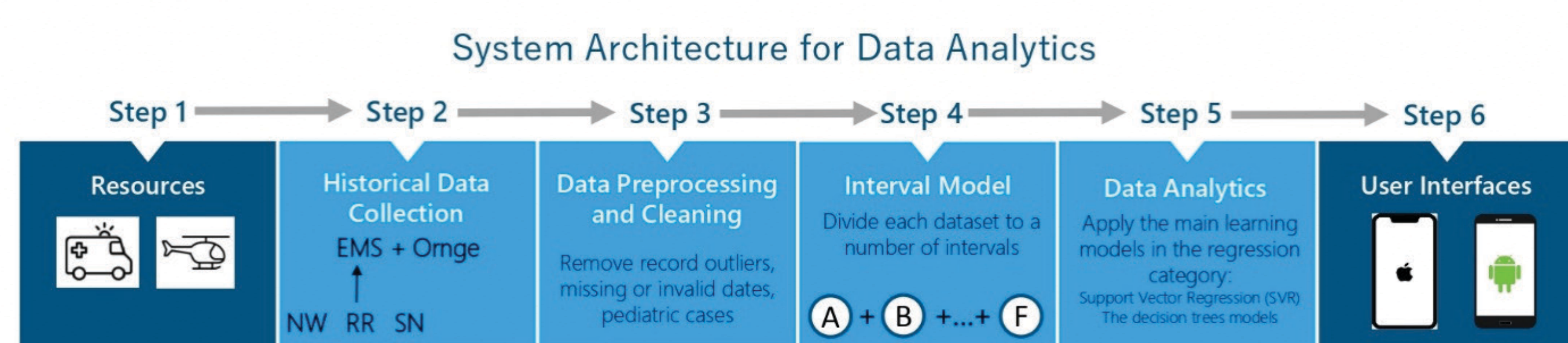
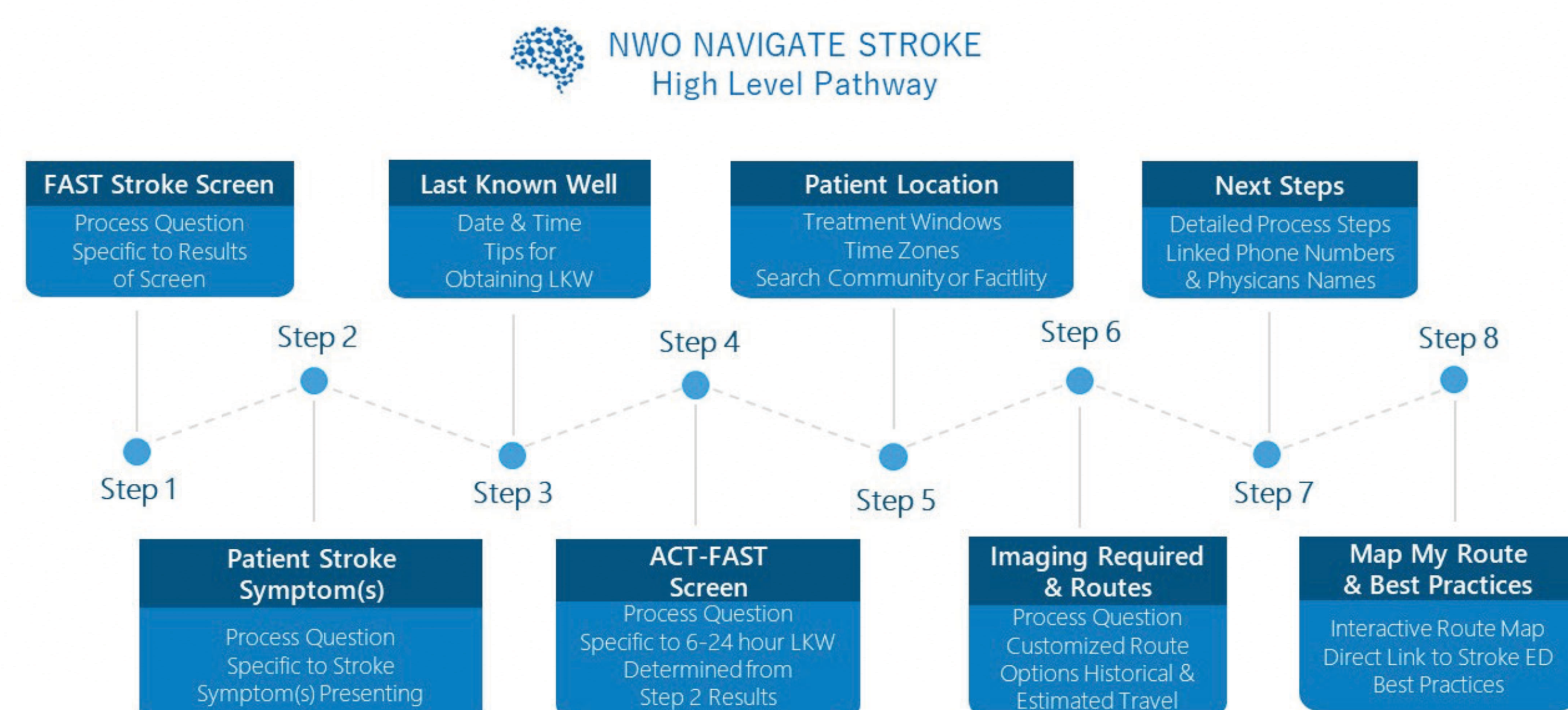Figure 1: Data Analytics Process

Figure 2: Process Pathway Screen Shots

Figure 3: Application Screen Samples of Pathway