

Department of

Industrial Engineering

Improving Data Collection Practices and the Anticipation of Health

Outcomes in Family Medicine

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# **Problem Statement**

FACULTY OF ENGINEERING

SDH and DoD can play a key role in predicting patient outcomes and improving patient care, yet they are typically invisible to health care providers. Where such data does exist, it is not in a readily useable format.

# Project Scope

Broken down into two components:



Visualize available community-level SDH data in a way that allows the client to better anticipate health outcomes and better understand the circumstances of her patients.



Establish a mechanism to allow the client to collect SDH data on her patients in a standardized way such that the data is appropriately granular and useable in future initiatives.

# **Acronyms & Definitions**

**SDH:** Social Determinant of Health -> The non-medical factors that influence health outcomes.

**DoD: Dimensions of Diversity** -> Personal characteristics or attributes which vary and distinguish individuals from one another.

**Dissemination Area ->** The smallest standard geographic area in which census data is disseminated throughout Nova Scotia.

**Dependency Ratio:** Number of dependents (20 to 64 years old) divided by number of non-dependents (0 to 19 years old and 65 years and older) **DIDDA**: Diversity Inclusion Dashboard by Dissemination Area.

## SDH and DoD examples

- Primary language
- Age
- Gender identity
- Marital Status

Employment

- Education

Nutrition

Income

- Ethnicity

#### Security

### Children

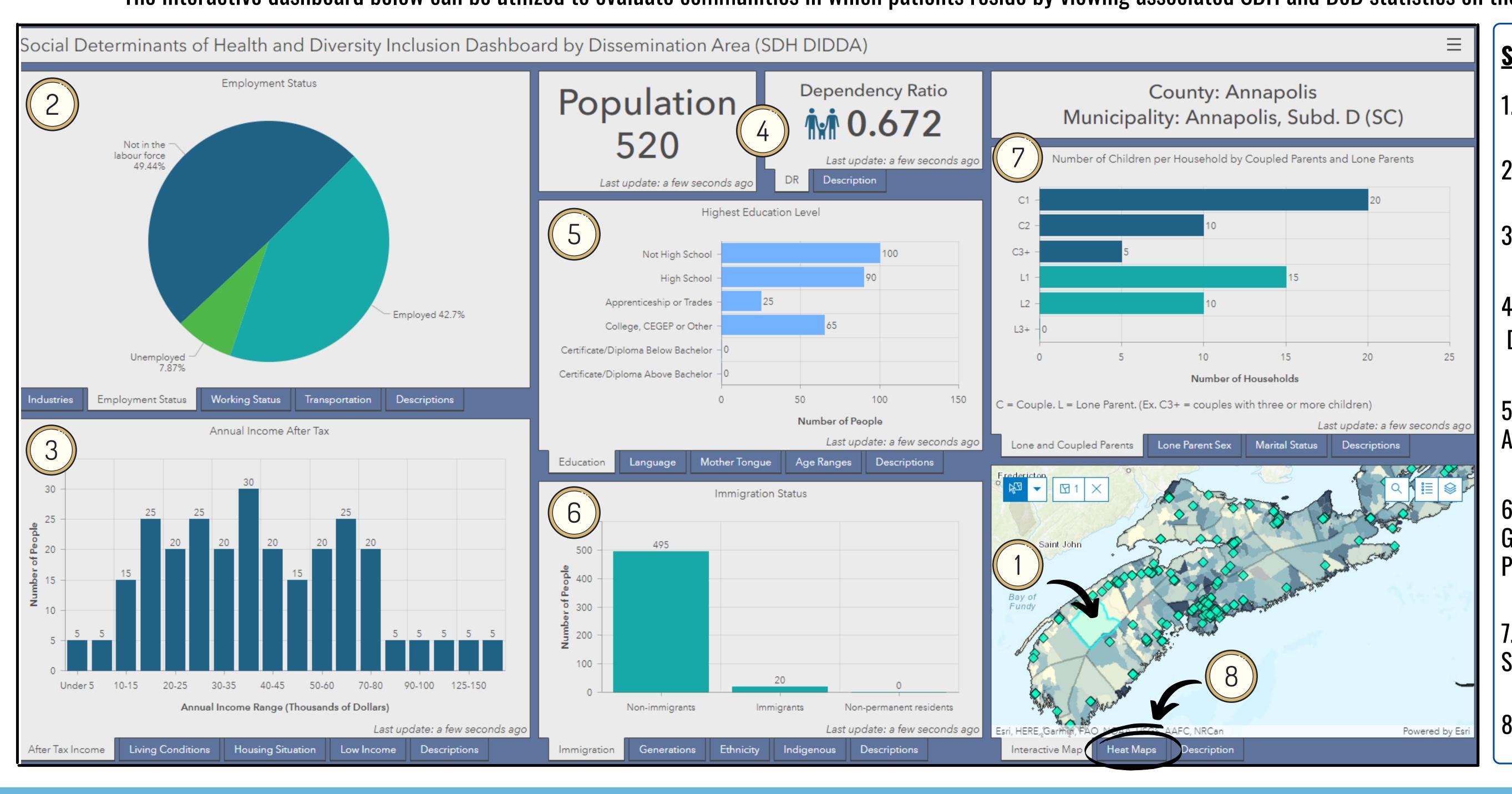
Housing

Disabilities

- Dependencies
- Substance use

## Solution 1: Data Visualization - SDH DIDDA

The interactive dashboard below can be utilized to evaluate communities in which patients reside by viewing associated SDH and DoD statistics on the DA level.



### **SDH DIDDA Features:**

- . Interactive Map
- 2. Employment
- 3. Income & Housing
- 4. Population & Dependency Ratio Status
- 5. Education, Language &
- 6. Immigration, Ethnicity Groups & Indigenous **Population**
- Parents & Marital Status
- 8. Heat Maps

## Solution 2: Data Standardization **SCOPECAN**

A patient questionnaire that standardizes the collection of SDH and DoD

Below are the features of the questionnaire:

- Can be distributed physically, electronically, or administered through a physician.
- Designed for the data to be stored in a standardized format.
- Built into the existing workflow for physician administration.
- Introduces SDH concepts and justifications to patients.
- Several sections including:
  - Lifestyle and Habits
  - Financial and Material Security
  - Housing and Income
  - Relationships and Children
  - Identity
  - Disabilities
  - Language and Dependency



#### questions Standardizing the Collection Of Patient Experiences Characteristics, and Attributes Language & Dependency Ratio How many hours do you work in a typical Which language(s) can you comfortably use t hazardous chemicals are a concern? □ Read **♦** Write **♦**Speak ☐ Yes ☐ No ☐ Prefer not to answer □ Read ♠ Write ♠ Speak . □ Read □ Write □ Speak Yes ☐ No ☐ Prefer not to answer ☐ Read ☐ Write ☐ Speak Do you currently or have you previously worked in the Air Force, Navy, or Infantry? ) How many family members, including yourself live in your home? \_\_\_\_\_ Current member How many 18 and under? \_\_\_\_\_ Past member How many 65 and over? Prefer not to answer 3) Do you offer housing to non-family members? If so, for which country? ☐ Yes ☐ No ☐ Prefer not to answer Other (please write) If yes, how many total? \_\_\_\_\_ How many 18 and under? \_\_\_\_\_ How many 65 and over? Relationships and Children .0) What is your current marital status? Education and Employment Never married What education and training have you High school or GED Training in a trade University degree Prefer not to answer If you are in a trade, which one? ☐ I have not completed high school or GED How many times have you been married?\_ ☐ I prefer not to answer this question. .1) Do you have any biological children? ☐ Yes ☐ No ☐ Prefer not to answer If yes, how many? 2) Are you a parent or guardian to any Temporary work or casual work schedule ☐ Yes ☐ No ☐ Prefer not to answer Full-time work If yes, how many? \_\_\_\_\_

Questionnaire developed as part of a student project in collaboration with Dalhousie University and the Coral Shared-Care Health

SCOPECAN

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## Recommendations

### **Solution 1 - SDH DIDDA:**

 Update SDH DIDDA with latest Census data when it becomes available

#### **Solution 2 - SCOPE CAN:**

- Begin collecting patient data using SCOPE CAN
- Future analysis on client's standardized patient data

