# Part I: Code Challenge

This data exercise has been developed to evaluate candidates for the Quality Metrics Analyst role at the Center for Health Systems Effectiveness. A description of the dataset and instructions for the challenge are provided below.

Unfortunately, we cannot provide any more guidance on how to complete the tasks beyond what is in this document. We kindly ask that candidates please use their best judgement and explicitly state any assumptions they deemed necessary to complete each section.

### Background and Data

We are conducting a comparative study of the health care workforce in two states: Idaho and Hawaii. As part of this study, you are comparing the availability of providers with a **primary** specialty of Emergency Medicine (EM) or Obstetrics & Gynecology (OBGYN) in the two states. To do so, you have obtained a database from a nationwide provider directory.

Details about the database are provided in the attached data dictionary. Note that providers can declare multiple specialties, but each provider can choose only one **primary** specialty. For example, a provider might declare both Family Medicine and OBGYN as specializations, but indicate that Family Medicine is their primary specialization.

Please provide the code you use to calculate the summary statistics and extract outlined below along with any assumptions you made.

### Instructions

Your role is to validate the NPI (National Provider Identifier) data and prepare an extract for analysis.

For this study, your team is interested in individual physicians only; do not include organizations in results.

Furthermore, exclude all records known to be updated prior to January 1, 2008.

1. Summary Statistics

Calculate the following summary statistics for providers with a primary specialty of EM versus OBGYN, in the two states of interest (Hawaii and Idaho). Please present the results in a table.

1. Total number of providers
2. Percentage of providers who are female
3. Mean and standard deviation of age.

Describe the steps that you take to validate the data and any concerns that you find.

1. Data Extract

Create an extract from the **dataset.csv** table with all of the records that meet the following criteria:

* Have a **primary** specialty of Emergency Medicine (EM) or Obstetrics & Gynecology (OBGYN)
* Practice in the states of Hawaii (HI) or Idaho (ID)
* Have a record update of January 1, 2008 and after
* Are individual providers (not organizations)

Part II: DEI Statement

CHSE is committed to fostering and promoting diversity, equity, and inclusion (DEI) both internally and in its interactions with external parties. We welcome candidates who demonstrate a strong understanding of inequities and how they impact health, and who will contribute to the intellectual and social enrichment of our center.

In a statement of 300 words or less, please describe any aspects of your intellectual development that reflect your commitment to diversity, equity, and inclusion. For example, this statement may include experiences that have shaped your understanding of social, cultural, economic, and educational disadvantages, and any actions or changes you have initiated or supported as a result.