Steps from **"Covid19 Syndromic Surveillance Message Generation with Synthea (1).pdf"**:

**Step 1: Install Synthea**

1. **Install Java Development Kit (JDK):**
   * Open the terminal and run:

sudo apt-get install openjdk-11-jdk

1. **Download Synthea:**
   * Navigate to the Downloads folder and download Synthea:

wget https://github.com/synthetichealth/synthea/releases/latest/download/synthea-with-dependencies.jar

1. **Set Up Synthea Directory:**
   * Create a directory for Synthea and move the downloaded file:

mkdir synthea

mv synthea-with-dependencies.jar synthea/

cd synthea

**Step 2: Generate COVID-19 Simulation Messages**

1. **Run Synthea for Aspirus Hospital (Calumet, MI):**
   * Generate synthetic patient data for 20 patients (0.4% outbreak simulation):

java -jar synthea-with-dependencies.jar -p 20 Michigan "Calumet" --config covid19

* + **Explanation:**
    - -p 20: Creates 20 synthetic patient records.
    - Michigan "Calumet": Sets the geographic location.
    - --config covid19: Includes COVID-19-specific events in the data.

1. **Locate Generated Files:**
   * After completion, navigate to the output folder to review the FHIR-formatted JSON files:

cd ~/Downloads/synthea/output/fhir

* + Open the files to verify the synthetic patient data (e.g., demographics, conditions, and COVID-19 events).

**Step 3: Repeat for Other Hospitals**

1. **Portage Health (Houghton, MI):**
   * Replace location and adjust patient count as needed:

java -jar synthea-with-dependencies.jar -p [patient\_count] Michigan "Houghton" --config covid19

1. **BCMH (Baraga, MI):**

java -jar synthea-with-dependencies.jar -p [patient\_count] Michigan "Baraga" --config covid19

1. **MGH (Marquette, MI):**

java -jar synthea-with-dependencies.jar -p [patient\_count] Michigan "Marquette" --config covid19