

# Architecture Design Document

## Healthcare Data Analysis

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### Introduction

At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, prompting the World Health Organization (WHO) to declare a public health emergency in late January 2020 and to characterize it as a pandemic in March 2020. The virus that causes coronavirus disease 2019 (COVID-19) is designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

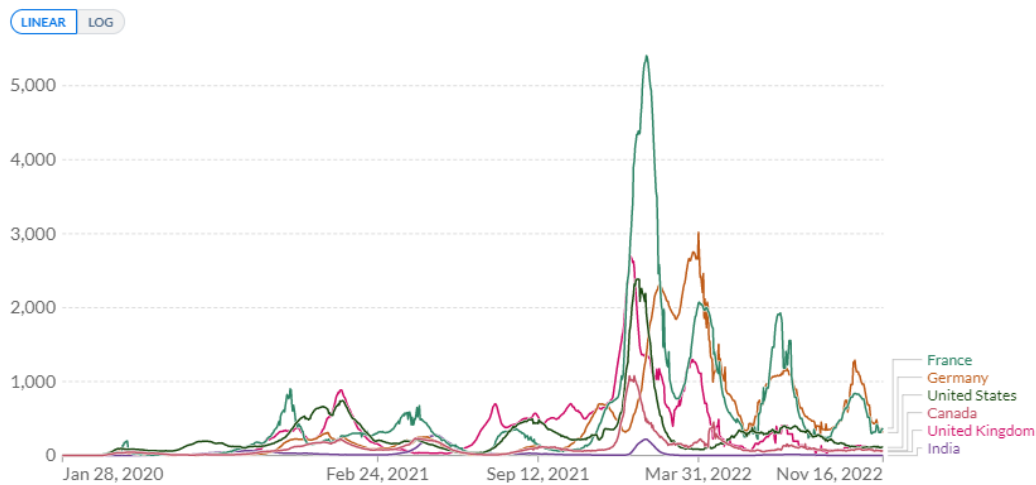
Infection prevention interventions to reduce transmission of SARS-CoV-2 include universal source control (e.g., covering the nose and mouth to contain respiratory secretions), early identification and isolation of patients with suspected disease, vaccination, quarantine after exposure, the use of appropriate personal protective equipment (PPE), and environmental disinfection.

This topic will review general infection prevention principles when caring for patients in areas with community transmission of SARS-CoV-2. Detailed information on prevention in the community and infection prevention policies and procedures when caring for patients with suspected or confirmed COVID-19 in the health care and home settings is presented elsewhere. (See "[COVID-19: Infection prevention for persons with SARS-CoV-2 infection](#)".)

#### Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

Our World  
in Data



During the COVID-19 pandemic has put some health systems under immense pressure and stretched others beyond their capacity. As such, responding to this public health emergency and successfully minimizing its impact requires every health resource to be leveraged. Failure to protect health care in this rapidly changing context exposes health systems to critical gaps in services when they are most needed, and can have a long-lasting impact on the health and wellbeing of populations.

In other countries where attacks on health care have been noticed, the COVID-19 pandemic has sometimes created hostile environments for health care providers who have reported incidents of violence, discrimination and harassment. Stigmatized as vectors of contagion in many countries, some have been assaulted, others were denied transport while commuting to work, and entire families were evicted from their homes. Furthermore, reports of attacks on medical vehicles carrying COVID-19 samples, on-duty COVID-19 drivers as well as patients are accumulating and raising concerns worldwide.

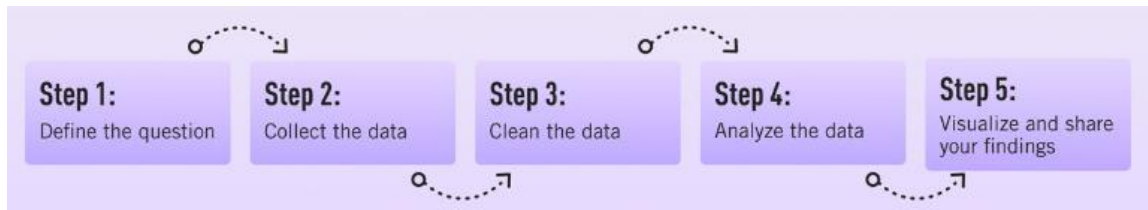
However, attacks on health care not only have a direct impact on the ability of health systems to deliver services to those most in need, but also take a heavy toll on the psychosocial health of patients, critical health care providers on the frontline and their families. As those continue to be targeted by acts of violence during this public health emergency, health systems must – among other things – prepare for shortages of health care workers unwilling or unable to report to work due to unsafe environments or obstruction in their personal lives.

In this scenario Data Analysis can help us to understand the how many people are dead; how many people are recovered and how many people are affected and the gap or the failure of the health care system and also helps to improve the better health care system worldwide.

### Scope

Architecture Design Document (ADD) is an architecture design process that follows a step-by-step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work.

### Architecture



#### **Step 1 (Define the Questions):**

Define the question, means understand the business goal, understand the requirements as well as understand the data.

#### **Step 2 (Collect the data):**

Collect the data based on the requirements.

#### **Step 3 (Analyse the data):**

Based on the data, you need to analyse the data. But before analyse you need to pre-processed the data.

#### **Step 4 (Visualize & Share Your Findings):**

Create the multiple visualization graphs or plots to analyse the data and then share to your clients or stakeholders.

----- Thank You -----