Estimate what a city needs in a pandemic

Intermediate · A few weeks · Free · Project idea

Online version: https://ai-safety-sandbox.vercel.app/projects/stockpiling-estimation/

Summary

How many critical workers would a city need to protect? How much indoor space is there? What data would a government want on day one of a crisis?

Why it matters

Planning stockpiles of masks, filters and supplies starts with estimates nobody has made carefully.

What you will have at the end

A transparent estimate with sources and uncertainty ranges.

Possible directions

- Total floor area of a city's public spaces
- Data that would be immediately useful to government in a crisis
- Data needed to estimate critical-worker numbers

How to start (tick each box as you go)

- [ ] **1. Define exactly the quantity you want to estimate.**
- [ ] **2. Find the data sources and note their limits.**
- [ ] **3. Do a rough back-of-envelope version first.**
- [ ] **4. Refine the input you are least sure about.**
- [ ] **5. Present one clear chart and a sentence on uncertainty.**

Key terms

Fermi estimate
A quick, rough calculation that breaks a hard number into easier guesses multiplied together. Good enough to tell whether something is a big deal.

Source and links

Hatta & Bazarragchaa — A hundred project ideas in biosecurity (2025)
https://casualphysicsenjoyer.com/Essays+in+progress/Biosecurity/A+hundred+project+ideas+in+Biosecurity

When you have finished

Write a few paragraphs on what you did, what you found and what you would try next, and share it with a friend, your society or online.

Courses, mentors, small grants and communities:
https://ai-safety-sandbox.vercel.app/next-steps/

Questions? Ask in AI Safety Cardiff University (AISCU): https://aiscu.org/

Notes