MSIS 638

Case 2.3a

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a)

Consider a problem regarding the public health and safety in an urban area. You can search the internet to find good examples.

References: <https://www.osha.gov/dte/outreach/intro_osha/7SafetyHealthProbsWorkplace.pdf>

<https://online.regiscollege.edu/blog/what-is-the-relationship-between-public-health-and-urban-planning/>

<https://www.who.int/health-topics/urban-health>

b)

List 6 potential causes for the problem.

a. Chronic disease due to water contamination

b. Physical injuries by transportation and vehicle-related accidents

c. Lung and respiratory diseases due to air pollution

d. Infection disease in urban area

e. Catching flu due to confined space and smaller environment

f. Stomach problem due to food contamination

c)

For each of the potential causes,

* + Propose a method to figure out if that is the true cause.
  + What data you need for your proposed method? Is that data quantitative or qualitative?
  + How can you obtain the relevant data?

1. Problem: Chronic disease due to water contamination

Potential cause: Heavy metal dissolved in water pipes.

Proposed test: Taking samples from the water network in that specific area and testing the results.

Data: For water quality, the data is qualitative.

1. Problem: Physical injuries by transportation and vehicle-related accidents

Potential cause: Defects in the urban transportation network and specific road sections.

Proposed test: Cross comparison by searching the local ICU injuries report and road sections with traffic accidents, testing the correlation between these two data.

Data: For car accident, the data is quantitative.

1. Problem: Lung and respiratory diseases due to air pollution

Potential case: Poor air quality by factories exhaust in the city.

Proposed test: Using air quality monitor by detecting radon levels, carbon monoxide and chemical particle. Then evaluate health symptom of the residents as the samples.

Data: For air quality, the particle and radon levels can be quantitative.

1. Problem: Infection disease in urban area

Potential cause: Contamination in city transportation network and public sewer.

Proposed test: By examining the infection cases’ past contacts and passing areas, taking samples of that area and analysis the contractors. Testing the samples that we collected, and check contractors’ symptom.

Data: Both quantitative and qualitative. For cases and pain caused by disease.

1. Problem: Catching flu due to confined space and smaller environment

Potential cause: Air controller contamination in certain buildings.

Proposed test: Collecting the samples from the air controller in affected buildings and testing them.

Data: For virus, it is the quantitative data.

1. Problem: Stomach problem due to food contamination

Potential cause: Contaminated farms and food sources.

Proposed test: Taking sample from the grains, materials and contaminated food in the city and testing the samples.

Data: For food, the data is quantitative.