

Activities and assignments that utilize BigCitiesHealthData.org for training / education (version 1)

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Introduction

The Big Cities Health Coalition Data Platform (BigCitiesHealthData.org) contains over 250,000 data points for more than 120 metrics. The platform offers downloadable and shareable charts and data points.

Many of the metrics are unique to this platform. The data – which mostly originates from over 25 federal and state sources -- undergo extensive data processing (calculations, age-standardization, harmonization, etc.) and quality checks to ensure comparability across cities and time. The harmonized data cover a wide range of topics and can be used to explore real-world health data and connect classroom concepts to the health of urban communities across the U.S..

Demonstrations of how to navigate the platform can be found on the platform’s [What’s New](#) page. Details regarding metrics and methodologies can be found in the [Technical Documentation](#).

Feel free to use/adapt the attached examples. If you have questions, please contact us through [this form](#).

Short exercises

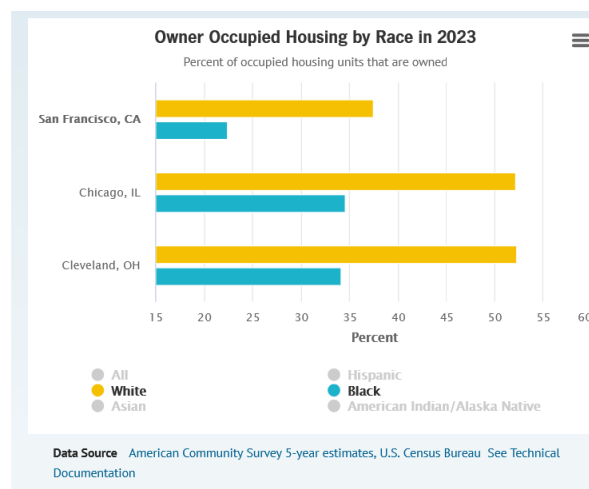
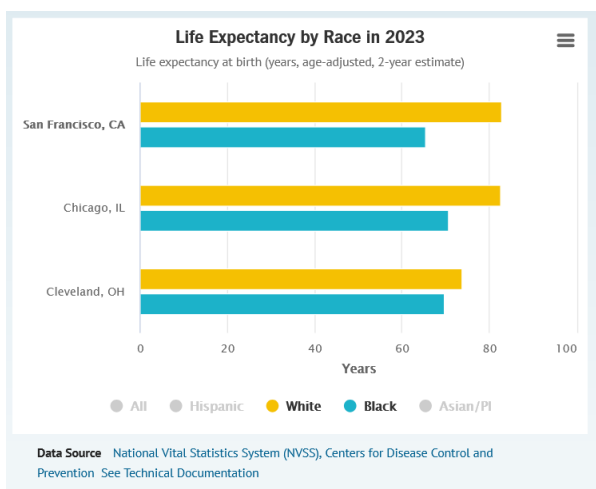
Example 1: Health equity for a single year

To answer these questions, please use the Big Cities Health Coalition data platform, see <https://BigCitiesHealthData.org>

1. Who is responsible for this website? Where do the data come from?
2. Use the Compare Cities page.
 - Select Philadelphia, Boston, and Washington DC.
 - Create bar charts for the following
 - “Life expectancy by Race” in 2024
 - “Owner Occupied Housing by Race” in 2024
 - Make it easier to identify and interpret subgroup patterns by selecting only 2 subgroups.
 - For example, de-select all races except “white” and “black” like below *. To de-select, click on the legend label.

Download the 2 plots you made and insert them below.
3. Summarize the data pattern *overall* and data pattern for 2 of the *racial/ethnic subgroups*.
4. Provide context for the patterns. What may be the underlying historical and current determinants for the patterns? For example, consider the context of [structural racism](#) when discussing the determinants.

* Here is an example of the visualization – for a different list of cities. Users can click on legend labels to de-select subgroups from the visualization.



Example 2: Health equity. A deep dive into a single metric, trends, comparisons with other cities, and by racial and ethnic subgroups

For this exercise, please use the Big Cities Health Coalition data platform, see

<https://BigCitiesHealthData.org>

1. Visualize trends in drug overdose deaths in **Philadelphia** from 2010- most recent year available. Compare the rates for different race/ethnic groups. Download the image and data (see hamburger icon next to chart).

Discuss the patterns you found.

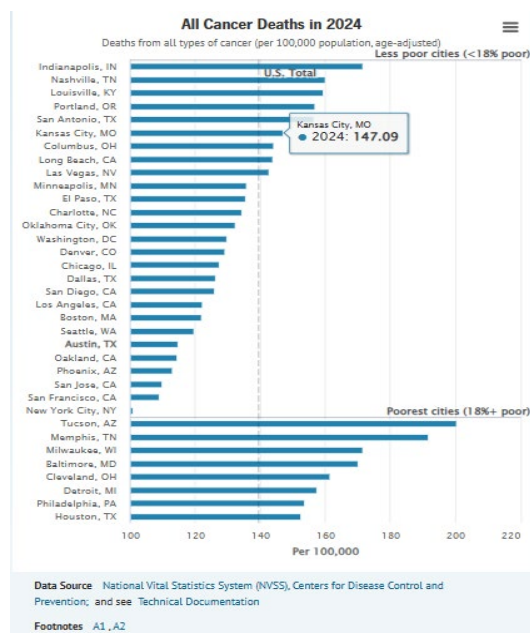
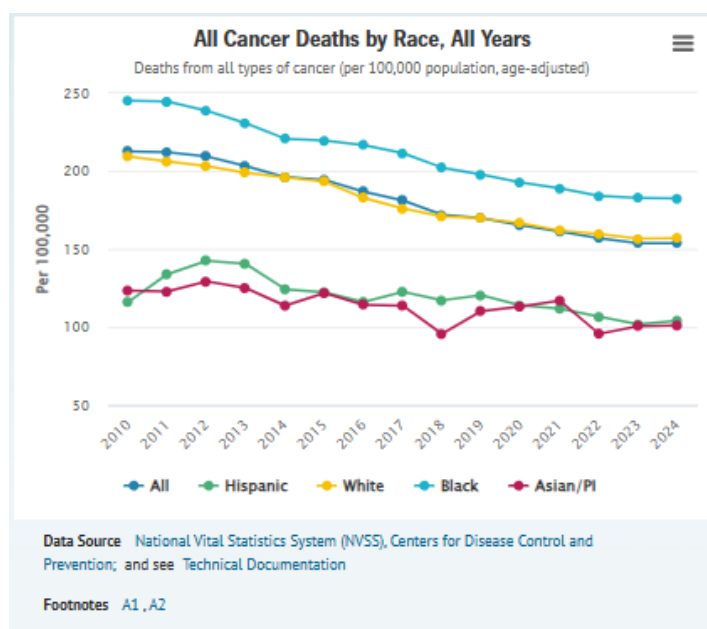
2. Visualize drug overdose rates in Philadelphia compared to all other members of the BCHC in 2024. Group the cities based on poverty level. Do you see any patterns?

Discuss and provide context for the patterns you found, using concepts from this course/workshop.

3. Compare the drug overdose deaths rates in Philadelphia to 4 other cities and the US rate (U.S. total) for 2010-2024. View by race and ethnic groups.

Discuss and provide context for the patterns you found, using concepts from this course/workshop.

* Here is an example of the visualizations – for a different metric



Longer assignment

Example 1: Exploring policy solutions for selected metrics

Please review the Big Cities Health Coalition data platform (<https://BigCitiesHealthData.org>) and submit a 250–400 word essay on one of the following topics:

Breast Cancer

Colorectal

Gun deaths

Uninsured

Download and attach plots from the data platform that provide the best illustration of your findings; attach them as an Appendix.

Your essay should include the following:

1. Select **your city** and review the metric data. What do the data tell you about this city?
2. How does this city compare to other cities?

Depending on the metric selected in question A, select the comparison city listed below.

If selected breast cancer, choose Chicago

If selected colorectal, choose Detroit

If selected gun deaths, choose Milwaukee

If selected uninsured, choose Charlotte

3. Identify and discuss two policy solutions that may improve the metric.
4. Discuss why/how might policy solutions differ in different cities.

Example 2: Health equity. Practice navigating and understanding data on a web platform, and interpreting data visualizations.

For this assignment, please use the Big Cities Health Coalition data platform, see <https://BigCitiesHealthData.org>

1. Who manages and funds this platform? (<30 words; HINT: see the FAQ tab).
2. Which years are data available for? (<10 words).
3. Using the “Inequities” tab, visualize life expectancy, for year 2024 <<*instructors may want to change this to most recent year*>>, for **Philadelphia**.

- i. First copy paste the URL into the space below. Do not attach images of the plot.
- ii. Very briefly, summarize the key findings from your graph(s). (<100 words)
First, what is the plot showing? For example, what are the key findings for the plot White people compared to Black people? White to Asian-Americans/Pacific Islanders? White to Hispanic people? (<100 words).
- iii. Were you surprised by what you found? Why or why not? (<60 words).

4. Use the “Compare Cities” tab. Compare **Philadelphia** with “5 Comparison Cities”.

First select metric *Life Expectancy* for all years.

Then add an additional metric to the page. Select *Lung Cancer Deaths* for all years.

- i. After creating the plot, copy paste the URL (do not attach images of the plots).
- ii. Very briefly, summarize the key findings for one of your graphs (either life expectancy or lung cancer deaths). ¹ For example, look at the pattern in the overall trend. Were cities with the most unfavorable health status consistently higher or lower over time than other cities?
- iii. Very briefly, name one thing that is likely a strong determinant of the pattern in the time trend that you observed. Is the thing you identified a success or failure of **primary**, **secondary**, or **tertiary** prevention? (<100 words). For life expectancy, we expect you will consider population level factors that drove deaths specifically during 2000-2024. For lung cancer, we expect you will integrate course material that discussed drivers of lung cancer.

¹ Important note: when you see a lot of variability - sharp turns in the trend - that can mean a small sample size -- so be cautious about over interpreting. (For example in some cities a particular race or ethnic subgroup is quite small.) Even though the actual year-point may have a lot of uncertainty, usually plots still allow us to see general patterns.

- iv. Calculate the risk difference for **lung cancer mortality** between Philadelphia and Houston in 2024. I am referring to the “attributable risk” AKA risk difference $[RD] = (\text{risk in Philadelphia} - \text{risk in Houston})$.²
- First write the lung cancer mortality rate (age-adjusted per 100,000) for Philadelphia.
 - Next specify the lung cancer mortality rate (age-adjusted per 100,000) for Houston.
 - Finally, what is lung cancer mortality risk difference (age-adjusted per 100,000).

5. How are comparison cities chosen? (HINT: Like all other data dashboards/platforms, this website has a Technical Documentation/Methodology file. You will need to find this file and search within the Technical Documentation file to answer this question.)

6. Go to the “View a Metric” tab. Choose a metric you are interested in and choose a city.
- After creating the plots, copy paste the URL (do not attach images of the plots)
 - Which metric did you choose and which city?
 - What types of data result from this query? (<60 words)

Before interpreting the data, you’ll need to understand what the data is.

- First write out the subtitle for the graph. Tell me what the subtitle says.
- Next, tell me what is the data source? HINT: look for it below graph or look all the way down to the bottom of the graphs / bottom of your screen.
- Finally, are there any footnotes about the metric? If yes, tell me exactly what the footnote says.

Now interpret the data. What noteworthy/important patterns do you see? (<60 words).

Provide context for the patterns you found, using concepts from this course.

² The language of “risk” (risk difference) is reserved for “new” cases (incidence). We can refer to mortality differences as “risk differences” because mortality is a “new” death (new and final event). If the metric was something like % college graduates in the city -- that would be a prevalence statistic and differences between 2 cities would be prevalence differences (not risk differences).