

Activity Guide for Students: Opioid Data Dose

Purpose: To analyze data on opioid use in the United States.

Procedural overview: To study different parts of the U.S. Centers for Disease Control (CDC) website on opioids and then summarize findings for the rest of the class.

Materials:

- Access to related websites, such as the CDC's on opioid use: www.cdc.gov/drugoverdose/opioids/index.html
- Optional: [Molymod biochemistry set](#), [Molymod organic set](#) or other molecular model sets to build models of various opioid molecules

Directions:

For your assigned topic, work with your group members to research the prompts and prepare a five-minute presentation with slides or other audiovisual aids to explain your findings to the rest of the class.

Team 1: Opioid basics

1. Study the CDC web page on opioid basics (www.cdc.gov/drugoverdose/opioids/index.html). Note that it has several subpages accessible from the menu on the left and also some tabs or buttons in the middle of the page. Make sure to list common opioid examples.
2. Summarize the most important information from www.cdc.gov/drugoverdose/epidemic/index.html and its related tabs (in the middle of the page) in one slide. Use a graph or other visual display to summarize the quantitative data.
3. Summarize what you think are the most important and most difficult terms from www.cdc.gov/drugoverdose/opioids/terms.html in one slide. Do not just list the terms and their given definitions. Think of a creative way to share the information, and make sure that the information given is in your own words.
4. Research the chemical structures of the three main classes of opioids. Using a molecular model kit, build a model of an example of an opioid from each of the three main classes. Explain the similarities among the chemical structures.

Team 2: Opioid manufacturing and marketing

1. Read articles to research the companies and strategies that have been involved in manufacturing and marketing opioids. Examples of articles are given below:

- *Science News*, "[The opioid epidemic spurs a search for new, safer pain killers](#)"
- CNN, "[For doctors, more opioid prescriptions bring more money](#)"
- *The New Yorker*, "[The family that built an empire of pain](#)"
- *The Los Angeles Times*, "[More than 1 million OxyContin pills ended up in the hands of criminals and addicts. What the drugmaker knew](#)"
- Center for Public Integrity, "[Politics of pain: Drugmakers fought state opioid limits amid crisis](#)"

2. List some of the major factors that contributed to the U.S. opioid crisis and have caused it to steadily worsen.

3. What are some possible solutions?

4. Summarize your findings, and include at least three graphic visuals, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 3: Opioid data analysis

1. Study the graph and accompanying information in this week's *Science News* article very thoroughly.

2. Study the CDC web page on opioid data analysis (www.cdc.gov/drugoverdose/data/analysis.html).

3. How are the *Science News* and CDC graphs similar or different? What is the approximate population of the United States?

4. Study the linked sources of data on overdose deaths on the CDC web page on opioid data analysis (www.cdc.gov/drugoverdose/data/analysis.html).

5. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 4: Drug overdose death data

1. Study the CDC web page on drug overdose death data (www.cdc.gov/drugoverdose/data/statedeaths.html).

2. Study the subpages of that page (click on the tabs or links near the middle).

3. Study the sources of data linked to those pages.

4. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 5: Prescription opioid data

1. Summarize the most important information about prescription opioids from www.cdc.gov/drugoverdose/opioids/prescribed.html and its related tabs (in the middle of the page). Make the summary visually interesting and try to keep it to one slide.
2. Study the CDC web page on prescribing data (www.cdc.gov/drugoverdose/data/prescribing.html).
3. Study the CDC web page on U.S. prescribing rate maps (www.cdc.gov/drugoverdose/maps/rxrate-maps.html).
4. Study the sources of data linked to these pages.
5. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 6: Prescription opioid overdose data

1. Study the CDC web page on prescription opioid overdose data (www.cdc.gov/drugoverdose/data/overdose.html). Summarize what prescription opioids are and give a few examples that relate to the data on the CDC webpage.
2. Study the subpages of that page (click on the tabs or links near the middle).
3. Study the sources of data linked to those pages.
4. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 7: Heroin overdose data

1. Summarize the most important information about heroin from www.cdc.gov/drugoverdose/opioids/heroin.html and its related tabs (in the middle of the page). Make the summary visually interesting and try to keep it to one slide.
2. Study the CDC web page on heroin overdose data (www.cdc.gov/drugoverdose/data/heroin.html).
3. Study the subpages of that page (click on the tabs or links near the middle).
4. Study the sources of data linked to those pages.
5. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 8: Synthetic opioid data

1. Study the CDC web page on synthetic opioid data (www.cdc.gov/drugoverdose/data/fentanyl.html). Summarize what synthetic opioids are and give a few examples.
2. Study the subpages of that page (click on the tabs or links near the middle).
3. Study the sources of data linked to those pages.
4. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 9: Fentanyl encounters data

1. Summarize the most important information about fentanyl from www.cdc.gov/drugoverdose/opioids/fentanyl.html and its related tabs (in the middle of the page). Make the summary visually interesting and try to keep it to one slide.
2. Study the CDC web page on fentanyl encounters data (www.cdc.gov/drugoverdose/data/fentanyl-le-reports.html).
2. Study the subpages of that page (click on the tabs or links near the middle).
3. Study the sources of data linked to those pages.
4. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.

Team 10: Overdose prevention

1. Study the CDC web page on overdose prevention (www.cdc.gov/drugoverdose/prevention/index.html).
2. Study the subpages of that page (click on the tabs or links near the middle).
3. Study the sources of data linked to those pages.
4. Summarize your findings, including data and graphs, in approximately five slides that you can share with the class. Make sure that your statements are grounded in evidence.