Code for Philly: Data Hackathon 2020
Team 2- Visualizing Narcan Distribution and Administration

Executive Summary

- Our team focused on joining Prevention Point Philadelphia's programmatic data with publicly available data around opioid use and narcan availability in Philadelphia to help PPP strengthen the case for more narcan funding.
- When audiences become fixated on one data point, it is important to redirect by illustrating the larger picture, which can usually be described by data in many different ways.
- Resources provided by this team tell a data story through the use of data visualization and firsthand accounts, provided by PPP.
- Programmatic data provided by PPP allows us to draw many insights about its narcan distribution program, there may be a way to revise the survey questions to provide more targeted insights.

Contributors

Jay Alston – Jay worked as a Strategic Project Manger for Vanguard Charitable, overseeing projects for the non-profits Offer team. He previously worked for a community healthcare organization in Philadelphia, and has a BA in Marketing from the University of Delaware.

Katy Ament- Katy is currently a data analyst for Vanguard Charitable, where she interprets data for client facing teams, using the Tableau program suite and Excel. She has also helped a variety of small organizations- from farm businesses to City programs- collect, organize, and utilize data to obtain funding and maximize efficiency.

Nikhil Elias- Nikhil is a Data and Analytics MA student at Pennsylvania State University. He has worked at companies around the world, including the UAE and India, and he has experience in multiple coding languages, including Python, R, SQL, and Matlab.

Vicky Kelberer – Vicky manages the Research & Strategy Group at Vanguard Charitable, and has spent her career developing data-driven insights for mission-driven organizations. She's a Tableau enthusiast and amateur Excel wizard, and focuses on the effective communication of technical information.

Lei Liao – Lei has worked as a Data & Research Analyst at Vanguard Charitable for seven years, and in addition to his technical skills in SAS, R, and Tableau, Lei is a passionate data communicator. He manages a portfolio of critical projects, and coaches a team of 3 other analysts to have impact with their work.

Bruce Segal – Bruce is a Sr. Marketing Measurement Analyst at Vanguard, where he has worked for the last two years. He focuses on identifying the right metrics to measure success, and on improving the quality of insights and visualizations available to inform decision-making.

Annalisa Szymanski – Annalisa joined the Vanguard team three years ago, and currently works with the Client Experience Lab as a Data Analyst. She has experience working in SAS, SQL, and Tableau.

Laura Taddei- Laura has worked in the email marketing space in the last three years, utilizing Tableau and SQL to make sense of its data. She is currently a data analyst on the Participant Strategy team at Vanguard, a team dedicated to using analytics techniques to help retirement plan participants engage and reach retirement success.

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Jackie Taylor – Jackie Taylor is a Sr. Data Analyst at Vanguard, where she has worked for the last two years. She holds a BA from St. Joseph's University, and is passionate about using Tableau to tell a visual story with data.

Problem definition and dataset

The Problem: *Funders took the 8% decline in deaths to indicate a decline in need for Narcan in 2018***.** Prevention Point needs to tell the story of the impact of Narcan provision in saving lives. The data that Prevention Point has access to can only tell one part of the story. Additionally, much of the publicly available literature around opioid use in Philadelphia focuses on numbers and fails to humanize the data.

The Solution: *We researched, scraped, and merged publicly available datasets with the datasets provided by Prevention Point and other groups to tell the full story.* We aimed to create a suite of fundraising resources that Prevention Point could use with any audience, even those with little to no knowledge of the crisis. By incorporating quotes from people directly affected by opioid use disorder, we convey the important fact that each number represents a human life.

Datasets:

Pp_refill_events: We used this dataset to assess the outcomes of Prevention Point's narcan distribution program. Some challenges we faced with this dataset are listed below:

- Data is missing for the months of April, May, and more than half of June.
- H_id field that listed a unique ID for each participant was very helpful, but it seems like id 999999 represents more than one person, since demographic information varied for many of the records.
- N_pp_refill field asks participants to self-report how many times they have received Narcan from Prevention point, but some people under-represent the number of times they've visited the program. Rather than using this field to determine the number of times an individual received a refill from prevention point, we counted the number of times a unique id appeared in the dataset.
- Some records in the dataset indicate that individuals received refills from PPP up to 43,634 times, received refills from other places up to 9,999 times, witnessed up to 43,664 overdoses, administered narcan and revived someone up to 43,163 times. Considering these figures are larger than the sum of all other records in the dataset, we assumed these large numbers were coding for another response, so we excluded them from the dataset.

- While we could could the number of OD's witnessed (excluding records mentioned in the last bullet point), we could not analyze the outcomes and od drug present of all reported ODs. Someone may have reported 7 overdoses, but it wasn't clear if their responses to questions about outcomes and od drugs involved were referring to only 1 of the 7 ODs or all.

Psp_overdose_events: We used this dataset to compare Philadelphia to other counties in the state of PA. We decided to use this dataset for comparison purposes only after noticing that Philadelphia was greatly under-represented in the dataset due to Philadelphia State Police having a much lower presence in Philadelphia in comparison to cities like Pittsburgh.

Other Resources:

The Department of Public Health resources:

- *Substance Abuse Data Report*- https://www.phila.gov/media/20200226121229/Substance-Abuse-Data-Report-02.26.20.pdf
- *Opioid Program* Tableau Public page https://public.tableau.com/profile/pdph#!/
    - Metrics were scraped from a few of the dashboards including *Unintentional Drug Related Deaths*, *Naloxone Administrations by First Responders* to incorporate into the design of our final presentation.

Whelan, Aubrey. "Drug overdose deaths dropped 40% last year in the Pittsburgh area. Why can't Philadelphia do the same?" *The Philadelphia Inquirer*. December 9, 2019. Accessed March 29, 2020.

- This article contained the chart titled "Overdose Deaths in Allegheny County and Philadelphia," which showed the counts with an 8% decrease in deaths in Philadelphia.

Quotes from staff at Prevention Point Philadelphia, collected by Lei Liao and Vicky Kelberer via email.

Results

With our expertise in data visualization and communicating to funders our team assembled a suite of resources, which are being uploaded to the github shortly

Fundraising presentation

This resource can be used to present to funders.

Fundraising 1-pager

This resource can be shared with funders if there is not an opportunity for presentations

Tableau Public landing page

Because this resource can be accessed by the public, we removed the ability to download underlying data, and we only displayed information in aggregate. Prevention Point staff can draw upon these resources for additional data visualizations illustrating trends in the narcan refill program throughout 2018.

Conclusions

- Presenting data alongside quotes and stories from opioid users and people close to them can help to humanize the data and appeal to the emotional side of potential funders.
- When funders become fixated on one data point, it is important to illustrate a larger view of the data story. For example, while deaths due to overdose decreased 8% from 2017 to 2018 in Philadelphia, 2018 still had 20% more deaths due to overdose than 2016.
- Because many organizations and officials are involved in the opioid crisis, data is collected and distributed in disparate ways, our report attempts to compile as much as possible, but it is still difficult to know the full scale of the situation.

Next steps

- With the knowledge that your data collection and entry process is highly manual, it might be helpful to make use of a data collection consultation from either Code for Philly or members of this team. Based on our challenges with the pp_refill_events dataset listed above, you may be collecting data that isn't actually telling you what you need to know. Starting with the questions you hope to answer with your data collection, then considering how you will use that information and what actions you will take based on the findings- may help you determine which information is the most useful to collect.