Automating fire department EMS data to inform treatment of cardiac arrests

"Innovation & Performance provides a one-stop shop for a growing number of data sources, allowing easy analysis, visualization, and export. We are already seeing the benefits of this system as it reduces manual, repetitive data analysis and provides a window for department leadership into trends and hotspots."

- Jon Ehrenfeld, SFD Mobile Integrated Health Program Manager

THE NEED

The Seattle Fire Department (SFD) identified an opportunity to review the treatment of out-of-hospital cardiac arrest (OHCA) incidents and increase the survivability of an out of hospital cardiac arrest with its own operational data, but faced a series of obstacles:

- *Disparate and inaccessible data sets:* Operational data was stored in two different systems – one on-premise, the other in a vendor hosted solution, in different formats.
- *Reporting tools that did not meet the need:* The vendor solution did not provide a way to filter for diagnosed cardiac arrests (versus presenting as a cardiac arrest) and did not have the capacity to handle the complex filtering required to return the data.
- *Manual data introduces error:* Data for this kind of problem solving is expected to be 99% accurate. Manual assembly of the data introduces a greater error rate requiring a minimum of a week of review and correction by multiple staff members.

OUR APPROACH

Innovation & Performance (IP) worked with SFD to expand the SFD data warehouse built in a previous project to incorporate electronic health record (eHR) data from the vendor. The project delivered infrastructure – in the automation and transformation of eHR data and a workflow to produce the specific data for cardiac arrests, allowing SFD Medic One to interrogate the data by treatments, medications, and other categories.

THE RESULTS

The project resulted in a self-serve dataset that reduced the amount of time required to assemble cardiac arrest data from 3 months to 5 working days. It also automated the workflow, increasing the accuracy of the data and removing the need for a manual review of individual eHR records. Not only did the work support automation of assembling the data, but the work supported identifying insights in the treatment of out of hospital cardiac arrest which can lead to increased survivability.

DEPARTMENT PARTNERS
Seattle Fire Department
Medic One
Seattle IT

PROJECT DURATION
November 2021 – August 2022

IMPACT
Enables SFD to identify insights in the treatment of out of hospital cardiac arrests

KEY DEPARTMENT CONTACTS
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