

# Crisis Intervention Planning Tool For Emergency Response

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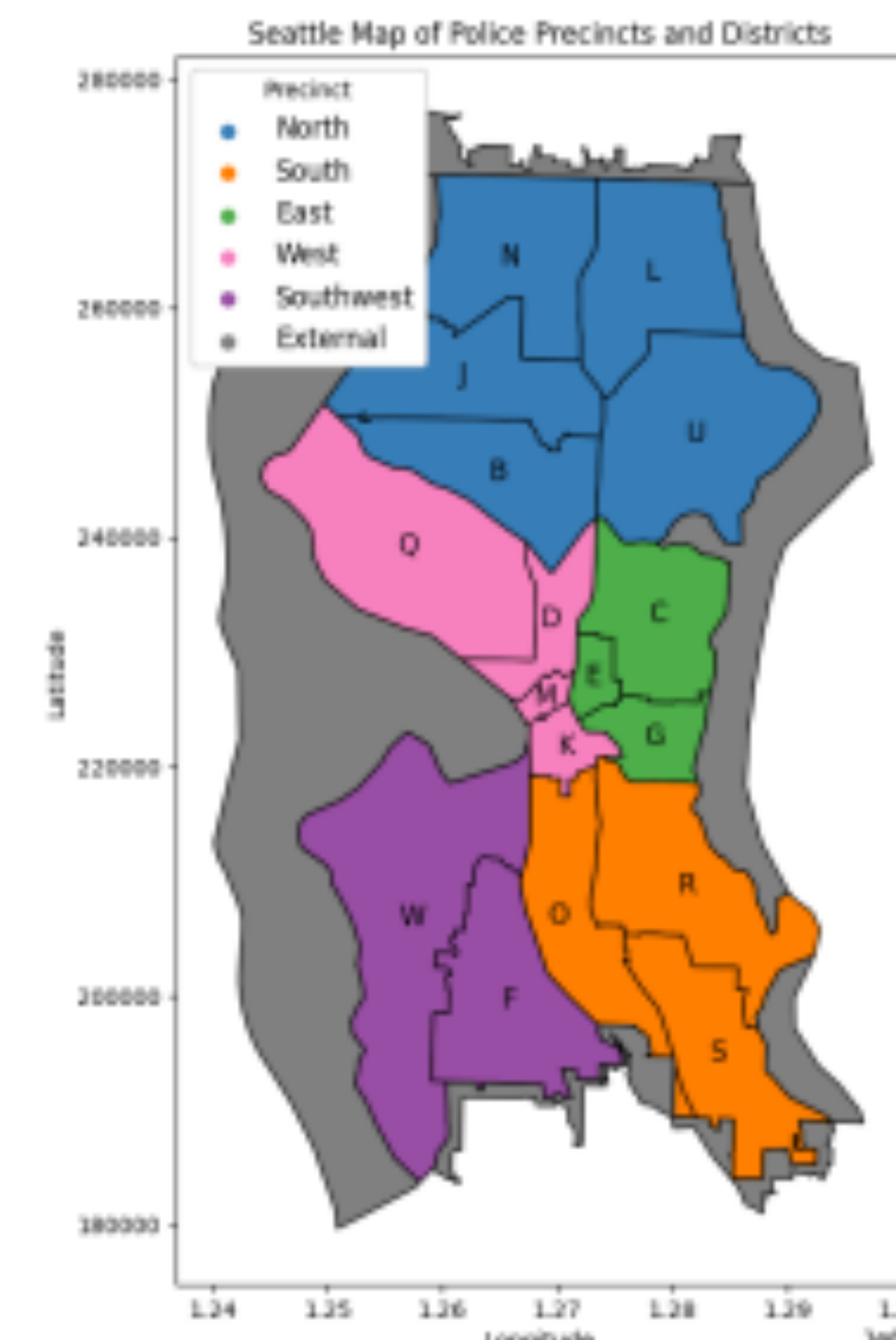
## Introduction:

- Crisis calls involve mental or behavioral health issues requiring police. [1]
- Many police departments now use specialized crisis response teams. [2]
- These teams use alternative strategies, such as dispatching multiple or different vehicles.
- Crisis response teams are replacing traditional police approaches to manage calls more effectively.
- The project transforms raw data into meaningful insights.
- It provides visualization tools to support research and decision-making by analyzing four key models:
  - Police Response Model (PRM): Police respond to all calls, resulting in immediate dispatch but low police utilization. [1]
  - Conditional Crisis Response Model (C-CRM): Either police or crisis vehicles respond, prioritizing crisis vehicles when available. [2]
  - Follow-up Response Model (FRM): Police respond first, followed by crisis vehicles for crisis-specific calls. [1]
  - Joint Response Model (JRM): Both police and crisis vehicles are dispatched together, providing a coordinated response. [2]

## Results:

- PRM shows immediate dispatch but low police utilization. [3]
  - Models like CCRM, FRM, and JRM show improved crisis call quality with enhanced vehicle availability. [3]
- The analysis of key performance indicators (KPIs) includes some areas such as:
- Arrest Rates: The proportion of crisis calls resulting in an arrest. Emergency Department
  - (ED) Referrals: The number of individuals sent to the ED for further treatment after a crisis call.
  - The project is developing a tool to help decision-makers visualize outcomes, adjust vehicle availability, and assess impacts on these KPIs.

Figure 2:  
Seattle  
precinct  
and  
Districts  
[3]



## Discussion:

- The project uses models, simulations, and data to improve crisis call handling.
- A simple design helps decision-makers see the impact of policies based on resources.
- Integrated with R Studio, the tool is transparent, customizable, and easy to understand.
- Data visualization is key for decision-making across healthcare and policy fields.
- However, The model is currently based solely on crisis response data from Seattle, limiting its generalizability to other regions with different population dynamics, resources, and policies.
- Limited data availability can also restrict the scope of the models and simulations.
- We understand that Seattle may not be appropriate data for tool users.
- Therefore, a sperate team is expanding the underlying tool dataset to inform different types of jurisdiction better.
- The layout and graphing is essential for clearer presentation and easier interpretation of data.

## Future:

- Complete the analysis of the four crisis response models and adjust the simulations to cover more scenarios.
- Add more detailed performance measures to the data visualization tool to help decision-makers better understand the results.
- Gather feedback from users to improve the tool's design and ease of use.
- Review the findings, create a final presentation, and share recommendations for improving crisis call management.
- Focus recommendations on improving crisis vehicle dispatch and reducing the need for police in crisis situations.

## Methods:

- On the data analysis team, rigorous data is collected to optimize the accuracy of visualizations and enhance the tool's overall performance.
- This process ensures that the insights generated are reliable and actionable.
- The project is coded on GitHub and integrated into an R Studio platform in the tool development team (which I joined later on).
- Incorporate clear and organized descriptions for each figure (PRM, CCRM, and JRM) in R Studio to accompany the results, ensuring ease of use and accessibility for users.
- This integration supports real-time customization, allowing users to adjust input parameters and instantly view updated visualizations.
- The first version of the crisis intervention planning visualization tool is informed by a case study of Seattle, WA.
- Figure 1 shows the size and structure of seattle, which has five precinct, each with two to five dictriets.

## Resources:

- [1] Watson, Amy C., et al. "Crisis Intervention Team (CIT) Model: Effects on Officer Knowledge and Stigma Related to Mental Illness." BMC Psychiatry, vol. 10, no. 1, 2010, pp. 1-6. PubMed Central (PMC), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3769782/>.
- [2] The Council of State Governments Justice Center. Police-Mental Health Collaborations: A Framework for Implementing Effective Law Enforcement Responses for People With Mental Health Needs. The Council of State Governments Justice Center, 2019, <https://csgjusticecenter.org/publications/police-mental-health-collaborations-a-framework-for-implementing-effective-law-enforcement-responses-for-people-who-have-mental-health-needs/>.
- [3] White, Veronica M., and Albert, Laura A." Evaluating Co-response Models for Crisis Calls." 2025. [in preparation]