

Design Summary

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In this assignment, I have tried out using different variables in the given data and thought about various design ideas. After inspecting different data externally, I decided to explore how ambulance response time relates to injury and fatality amount caused by road accident, and how can it be improved. In order to improve ambulance response time efficiently. We would need to know where accidents likely to occur, when does accidents often happen, what cause of crash accidents is more serious and who has a higher risk.

Response time in relation to Injury or Fatality

Firstly, I inspect weather the there is any relation between the ambulance response time and the amount of injury or fatality. This is sufficient because if there is no relation, then there is no need to improve ambulance response time. From the map, we could see that saturated red circles are generally bigger than those desaturated red circles. We could see that the ambulance response time does have some effect on the injury or fatality amount. We can now explore and display information that might help to improve ambulance response time.

Where:

A bar plot was made to show the amount of accidents occur each region. Bar plot is chosen because it is great for comparison. From this plot we can easily see that the crash accidents are likely to occur in Metropolitan north west and Metropolitan south east regions.

When:

A heat map is used to present the amount of accidents occur in different times by week, month and year. It obviously shows that accident is likely to happen during 8:00 and 15:00 – 18:00. More ambulance workforce would be required during these times, to attend the accident on time.

Cause:

This section tells what type of accident is more dangerous and likely to cause serious injury and fatality. It is shown by stacked bars, where the distribution of different level of severity can be seen. It is shown that fall from vehicle can cause serious injury or fatality at about 50% likelihood.

Who:

“Who” refers to the type of transportation the person / people are on while the accident occurs. This information would help to tell what the background of the accident are to expect. Information is shown by text only, percentage information and visualization can be view when hover the text box. This visualization provides direct information and enable more detailed visualization if the viewer is interested. The text boxes are sorted in order and show that drivers are most likely to have road accident compare to others. From this message and the chart in the “Cause” section, the ambulance crew could make decision on which accidents can be more urgent, these can be prioritised and provide timely treatment.

Conclusion

From all sections, we can see that where, who, when and what cause does crash accident normally occur / involve. This information can be useful when making improvement on the ambulance improvement time to provide on time emergency treatment. For example, improvement at Metropolitan north west and Metropolitan south east regions can be made first during 15:00 – 18:00 every day. When there are multiple accident happening at the same time, emergency treatment should be provided to those serious accidents first, which are very likely to reduce serious injury rate as well as the life losses.

Appendix:

Crash last five years data

<https://discover.data.vic.gov.au/dataset/crashes-last-five-years>

Ambulance Victoria LGA response time performance data

<https://discover.data.vic.gov.au/dataset/ambulance-victoria-lga-response-time-performance>