



Hot Spotting Falls to Promote Optimal Distribution of Injury Prevention Activities at a Level 1 Trauma Center

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Abstract

Since minor falls (falls less than 10 feet, using the Trauma Data Bank definition) are the number one cause of injury in our region, as documented in our Level 1 trauma registry, we would like to focus more injury prevention resources in the highest risk areas. In order to match our injury prevention initiatives to the areas that could benefit the most, we have utilized a tool that uses heat mapping or “hot spotting” software that identifies where the highest percentages of falls occur. Using zip codes and cause codes, we can allocate more appropriate resources to these areas.

Introduction

- Hot spotting is the practice of finding areas with high concentrations of health problems
- Falls are common among geriatric populations
- Our Level 1 Trauma Center offers many fall prevention activities
- Target fall prevention events to the areas with the greatest need

Required Resources

Mapping resources needed:

- Trauma registry data
- Mapping software (Microsoft Excel 3D maps)

Injury prevention intervention resources:

- Matter of Balance
- Senior Tai Chi
- Home safety fall prevention course
- ... any other injury prevention course your institution offers!

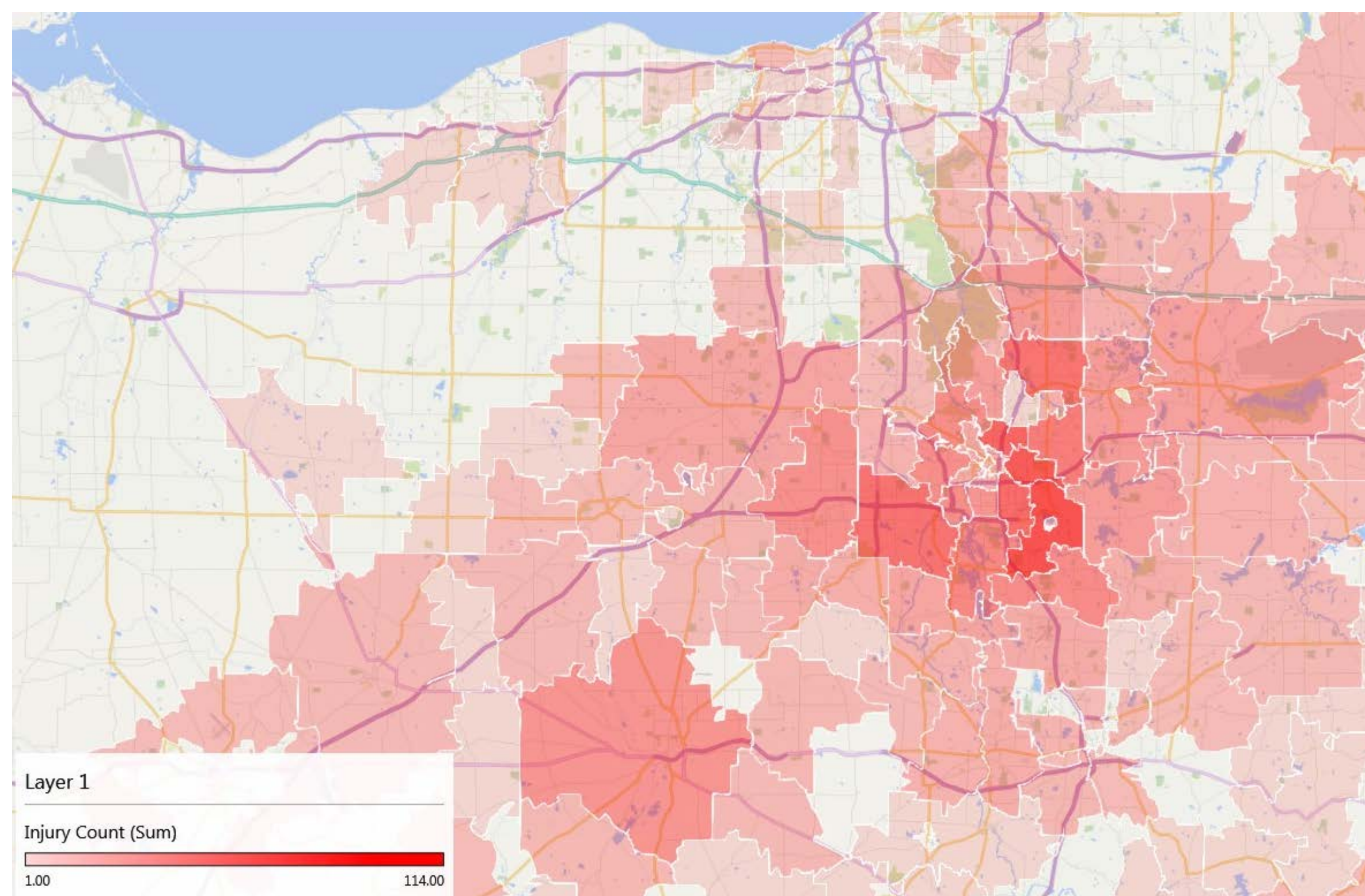
Results

All injury cause codes from 2017 were exported from the Trauma Registry by zip code. Approximately 1800 injuries occurred in 2017 at our Level 1 Trauma Center.

The number of injuries for each zip code were tabulated and mapped by Microsoft Excel 3-D maps.

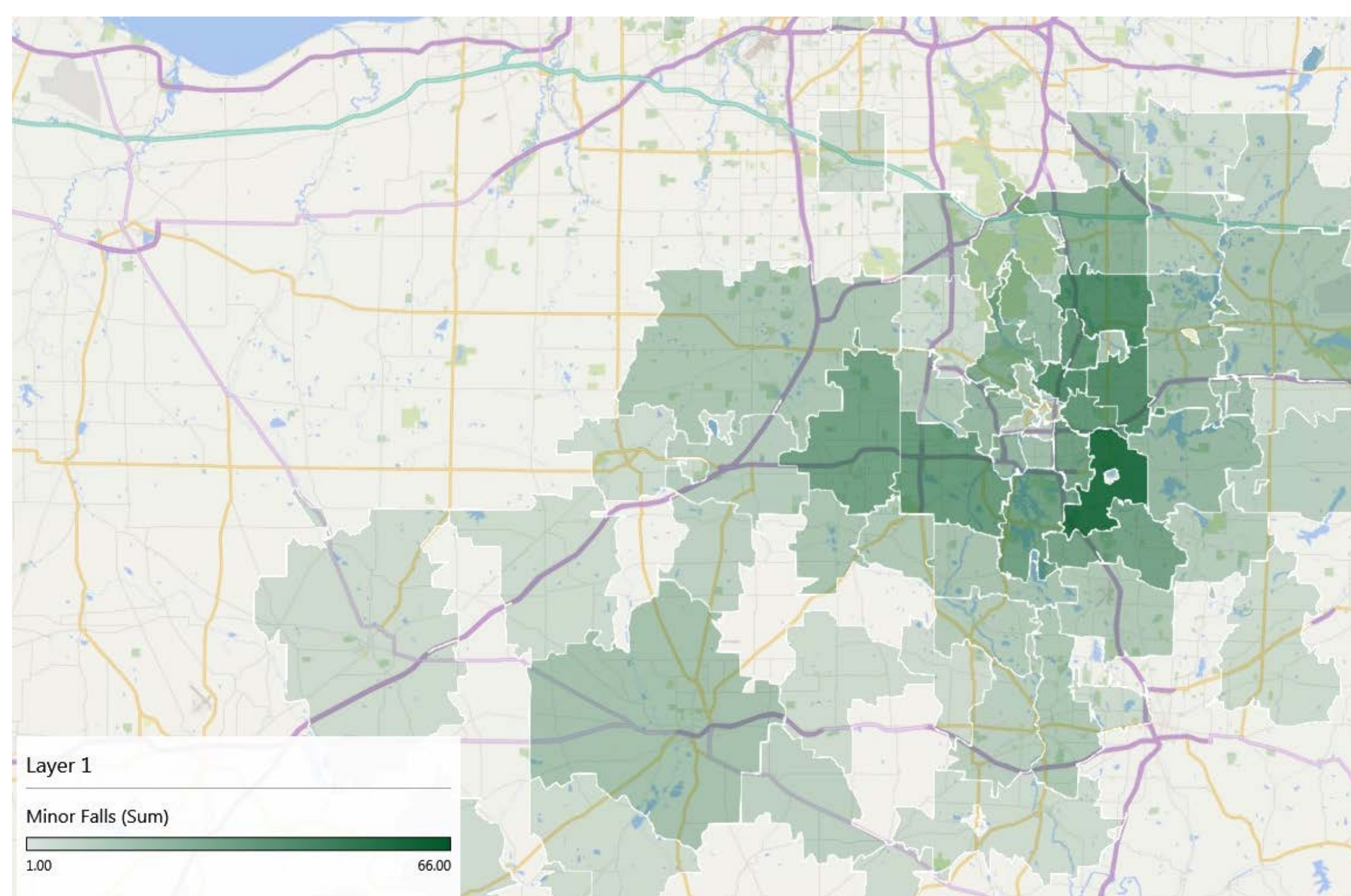
Heat map of All Injuries

High density of injuries on the south and southeast side of the hospital service area



Heat Map of Falls

High density of falls on the east, southeast, and southwest side of the hospital service area



Discussion

How are we using this information?

- We have scheduled more fall prevention activities in the highest need areas, as identified by the heat maps
- Helps to focus resources in the areas where they are most needed
- We still offer fall prevention activities in areas outside of the high density for falls areas to ensure we maintain equitable geographic coverage

How can you recreate this at your site?

- Identify which fall prevention resources you want to target (fall prevention, safe helmet use prevention, pedestrian accidents)
- Download injury data from your trauma registry
- Use heat mapping software to create heat map (e.g., Microsoft Excel 3-D Maps, Tableau, etc.)
- Identify the hotspots!
- Target your injury prevention resources to those areas (keeping in mind that you still want to maintain a level of equitable distribution)

Conclusions

- Easy way to use Trauma Registry data to optimize distribution of injury prevention resources
- Most Trauma Centers have access to Microsoft Excel and can easily create heat maps

References

1. Gawande, A. 2011. The Hot Spotters. *The New Yorker*.

2. Schuurman, N., Cinnamon, J., Crooks, V., and Hameed, S.M. 2009. Pedestrian injury and the built environment: an environmental scan of hotspots. *BMC Public Health*. 9(233).

Acknowledgement

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