HI-3 Innovation and Complexity Management

Target Group:

Healthcare Professionals: This includes doctors, nurses, allergists, and other medical staff involved in diagnosing, treating, and managing patients with allergies.

Medical Researchers: Researchers and data analysts focused on studying allergy trends, causes, and treatment efficacy.

Public Health Officials: Individuals in public health departments or organizations responsible for monitoring public health trends, developing health policies, and implementing interventions. They have a background in public health and epidemiology.

Pharmaceutical Companies: Professionals working in pharmaceutical companies who need to understand allergy trends to develop and market relevant medications. They include medical scientists, product managers, and sales representatives.

Specific Objectives:

Identifying Common Allergens:

Users need to determine which allergens are most prevalent within the dataset. This helps in understanding what substances cause the most allergic reactions and require more focus in terms of treatment and prevention.

Assessing Criticality of Allergic Reactions:

Users need to evaluate the severity (criticality) of allergic reactions. This is crucial for healthcare professionals to prioritize treatment plans and for public health officials to allocate resources effectively.

Categorizing Allergic Reactions:

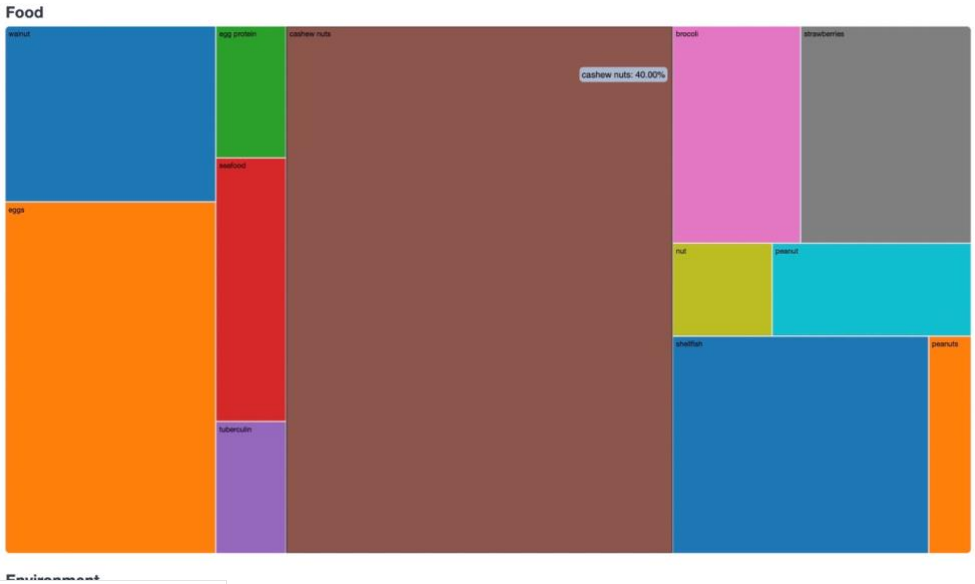
Users aim to categorize allergic reactions into different categories (e.g., food, drug, environmental). This helps in identifying patterns and specific areas that need attention.

This pie chart provides a breakdown of the major allergy categories, showing the proportion of each category relative to the total number of allergies.

Insights:

- Food allergies are the most prevalent, comprising 33.95% of all cases.
- Medication allergies make up 33.33%.
- Environment allergies account for 29.01%.
- The Other category is minimal, at 3.70%.

Use: This chart is useful for getting an overview of the distribution of allergies across major categories, highlighting the predominance of food and medication allergies.



Treemap (Food):

This treemap visualizes various specific reasons for food allergies. Each rectangle represents a different allergen, with the size of the rectangle proportional to the prevalence of that allergen.

Insights:

- Cashew nuts are significant allergens, indicated by the larger rectangles.
- Other notable allergens include Seafood and Egg.

- Lesser but still significant allergens include Broccoli, Peanuts, and Shellfish.

Use: This visualization helps users quickly identify the most common food allergens and their relative importance.

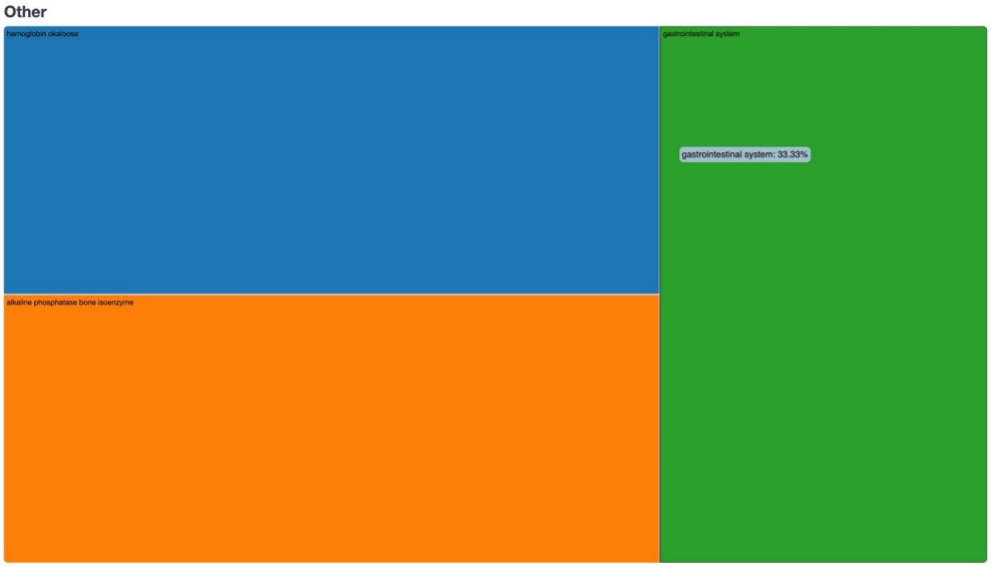
Allergy Treemap (Medication):

This treemap shows specific medication-related allergens. Similar to the food allergy treemap, the size of each rectangle represents the prevalence of that specific allergen.

Insights:

- Penicillin G is the most prevalent medication allergen, accounting for 42.59% of cases.
- Amoxicillin is another significant allergen.
- Other notable allergens include Benadryl, Paracetamol, and Codeine.

Use: This visualization aids in identifying common medication allergens, which is crucial for healthcare professionals in prescribing medications and managing patient allergies.



Allergy Treemap(Other)

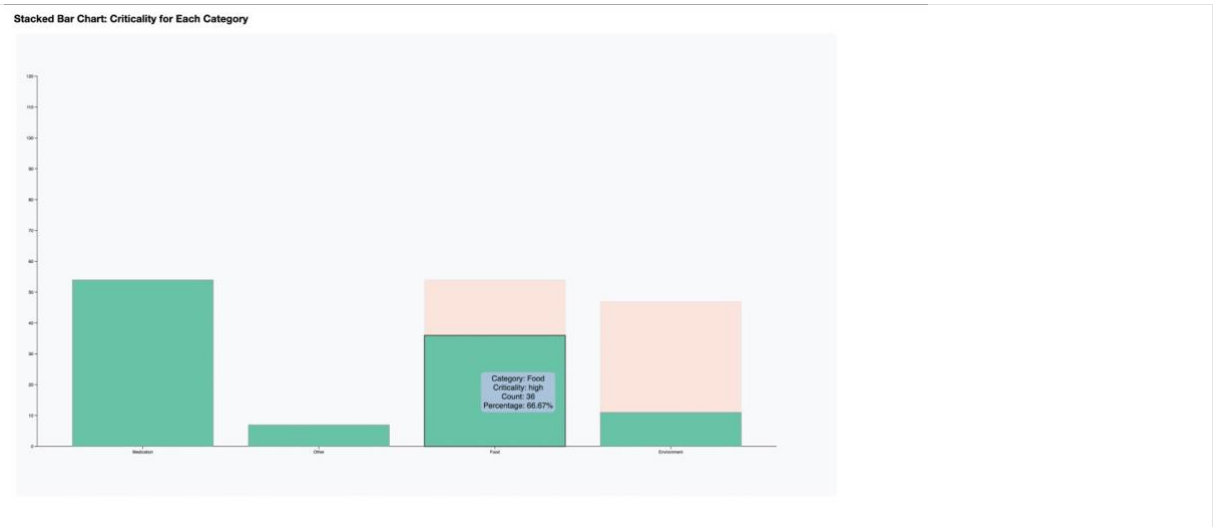
This treemap categorizes less prevalent allergens into an 'Other' category. It helps to visualize specific reasons for allergies that don't fall under the major categories.

Treemap (Environment):
This treemap visualizes specific reasons for environmental allergies.

Insights:

- Pollen is a major allergen, encompassing various types like tree pollen and grass pollen.
- Mould is another significant environmental allergen.
- Other notable allergens include House Dust Mite, Cat Dander, and Feather.

Use: This visualization helps in understanding the distribution and prevalence of environmental allergens.



Stacked Bar Chart of Criticality for Each Category:
This stacked bar chart displays the severity (criticality) of allergies within each major category. Different colors represent varying levels of criticality.

Insights:

- Medication Allergies: Medication allergies show a significant count with only high critical reactions.
- Food Allergies: Food allergies display a high count and distribution of criticality levels, with a considerable portion being high criticality.

- Environment Allergies: Environmental allergies also have a notable distribution of criticality, with a mix of high and low severity reactions.
- Other Category: The Other category has minimal counts but indicates the presence of allergens with different criticality levels.

Use: This chart helps in understanding the distribution and severity of allergic reactions in different categories, which is crucial for healthcare professionals in prioritizing treatment and resource allocation.