

Analysis of Reported Adverse Food Events

Group 4: Mohit Shah, Aditya Rustagi, Jianghong Wan,
Rajasvi Vinayak Sharma, Sydney Larson



Motivation and Objective

- ❖ Everyone gets sick due to bad food products.
- ❖ Study and analyse the [FDA data of reported adverse food events from 2004-2020.](#)
- ❖ Help users be aware of potential health risks before purchasing a product.

Dataset Overview

Vitamins, Cosmetics
Vegetables, Nuts

Category

Age

Time

L'Oreal, Wen, Quorn
Kroger, Trader Joe

Product

Nausea, Vomit
Diarrhea, Headache

Symptoms

Outcomes

Disability

Death

Hospitalization

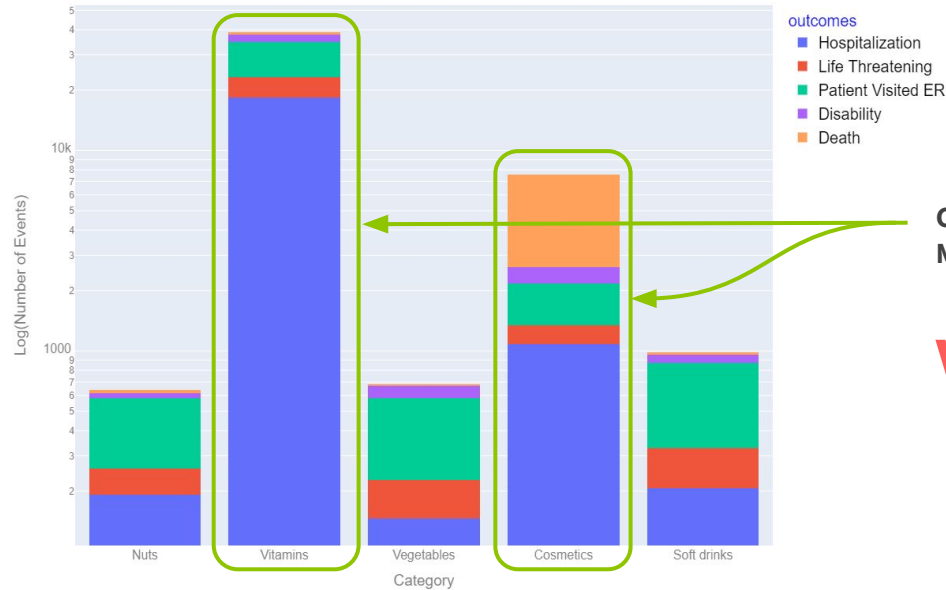
Emergency Room

Life Threatening

Methodology Road-Map



Which categories cause majority outcomes?



Categories with Majority Outcomes

Vitamins > **Cosmetics** > Rest

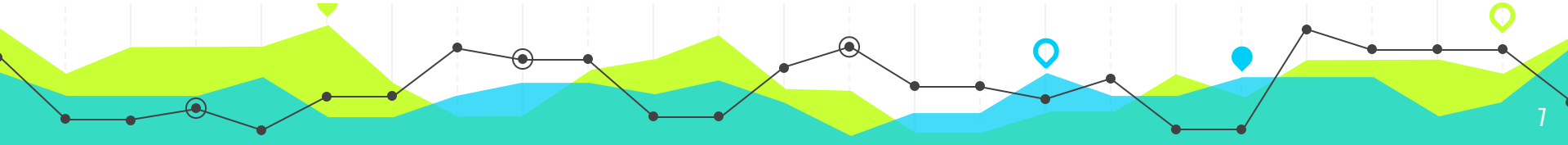
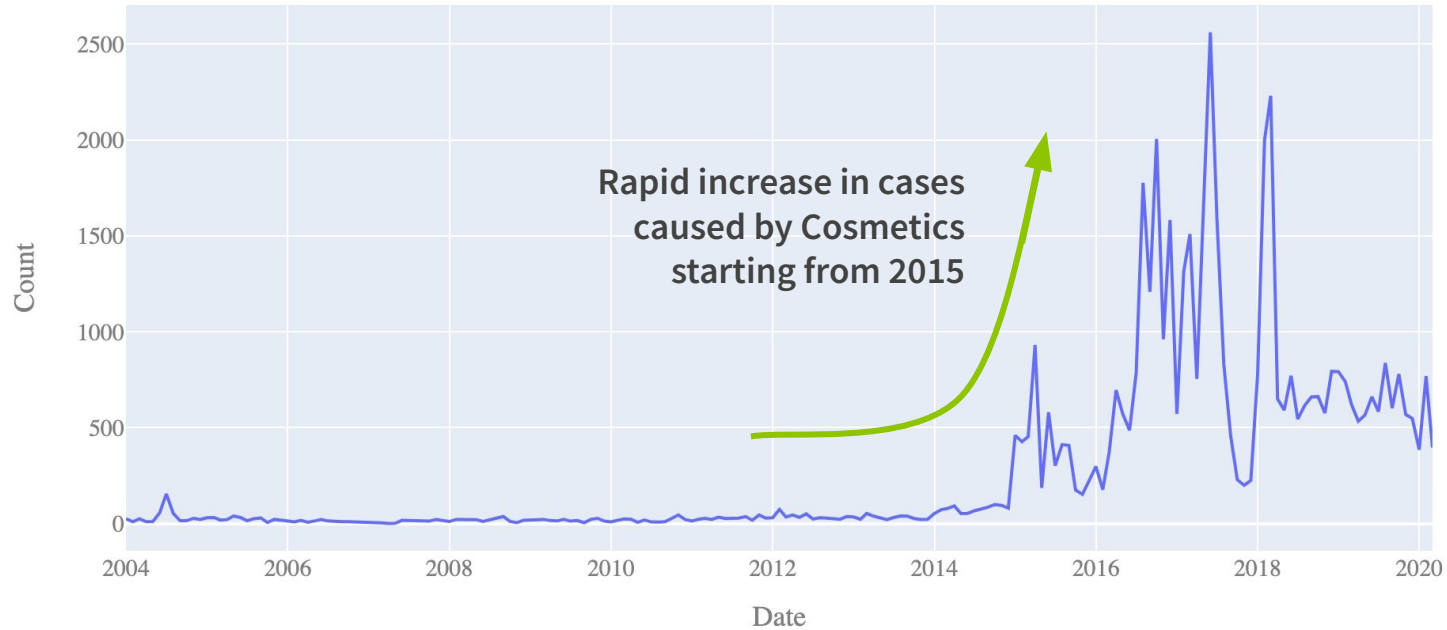


Can Cosmetics really hurt you?

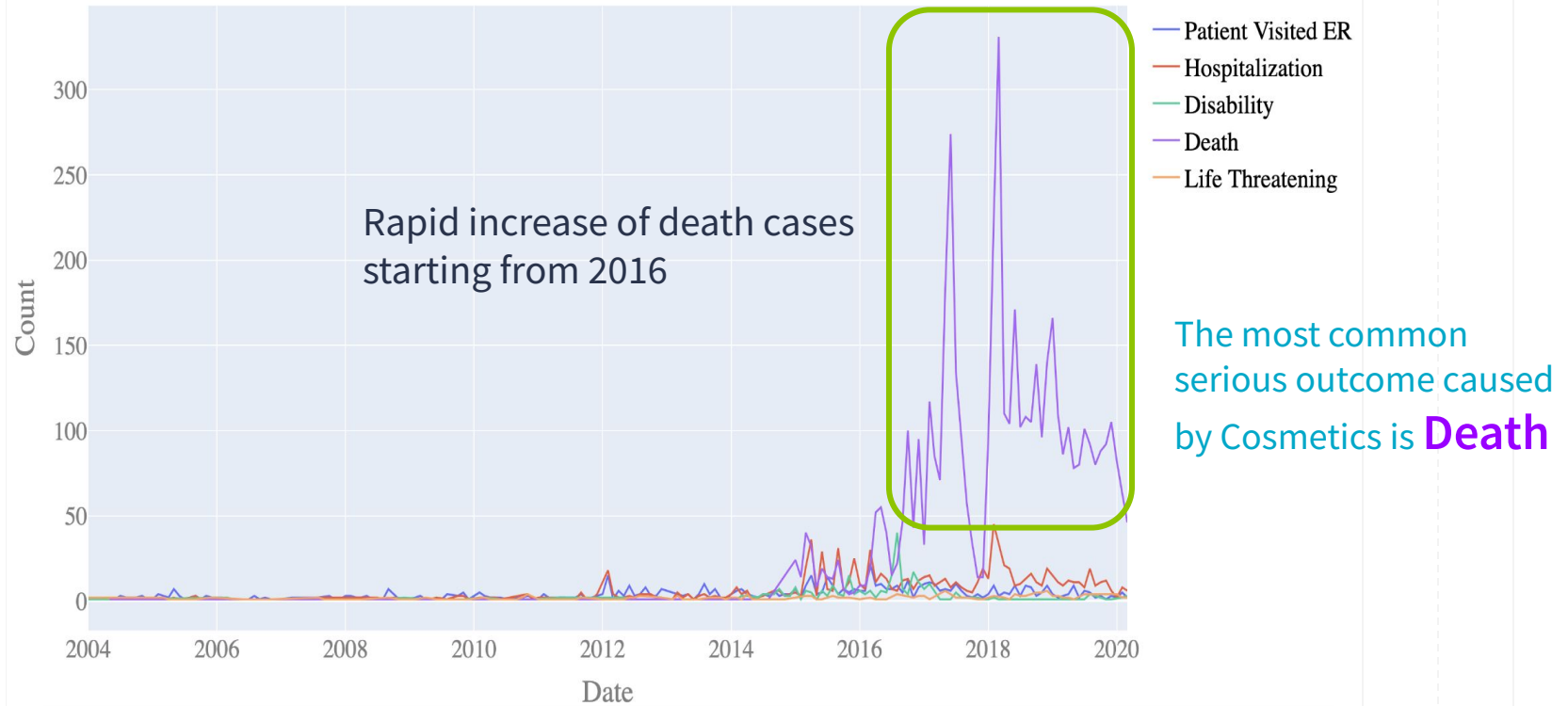
Spoiler Alert: they might even kill you!

Significant Increase in Adverse Events by Cosmetics

Cosmetics Over Time

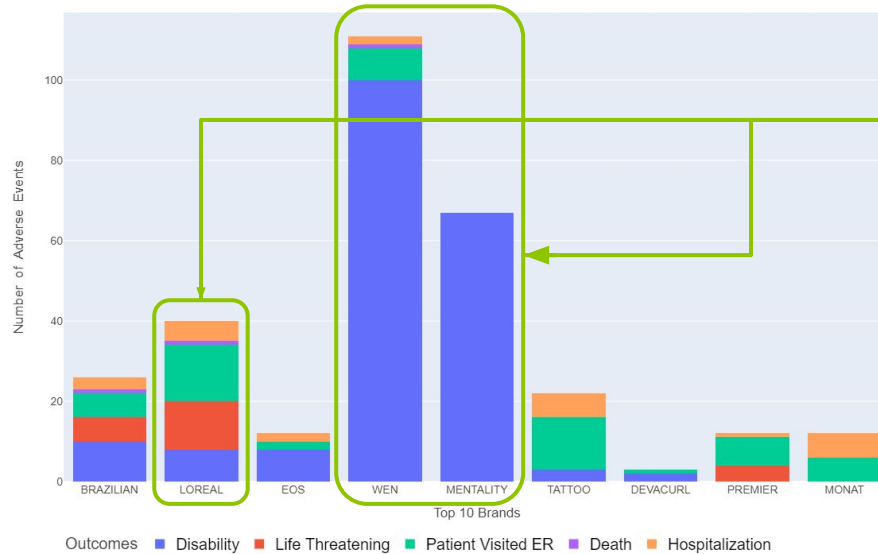


Cosmetics Outcomes with Time



Can you trust the Top Cosmetic Brands?

Cosmetics | Brands/Products vs Outcomes



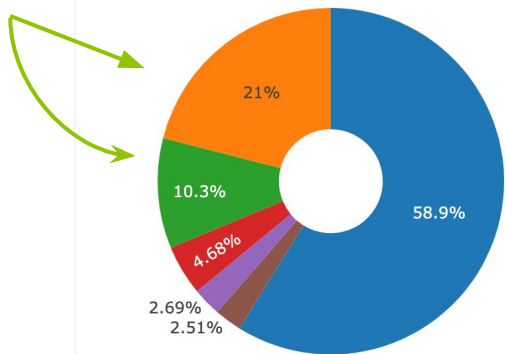
Wen > Mentality > L'Oréal

Apparently among Top Brands
Shampoo and Nail Polish brands
can cause Disability!

Symptoms of Cosmetics

Even though this category is not a food item, its symptoms are very drastic!

Serious symptoms account for one-third!



- OTHER
- OVARIAN CANCER
- ALOPECIA
- PRURITUS
- RASH
- BURNING SENSATION

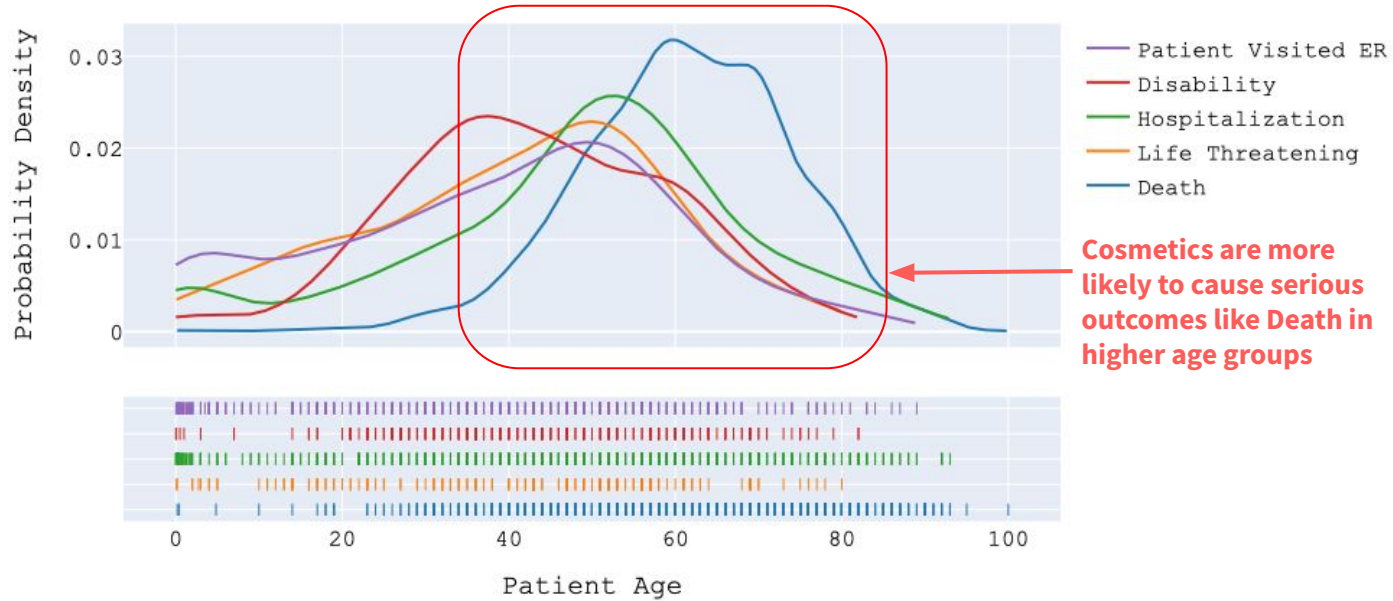
Ovarian cancer is the second highest symptom in our overall dataset.

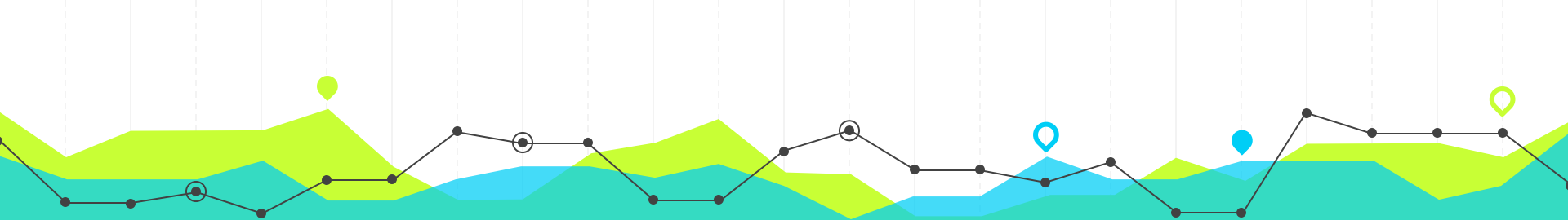
Only occurs in females!

Maybe natural beauty is the best?



Adults Beware!

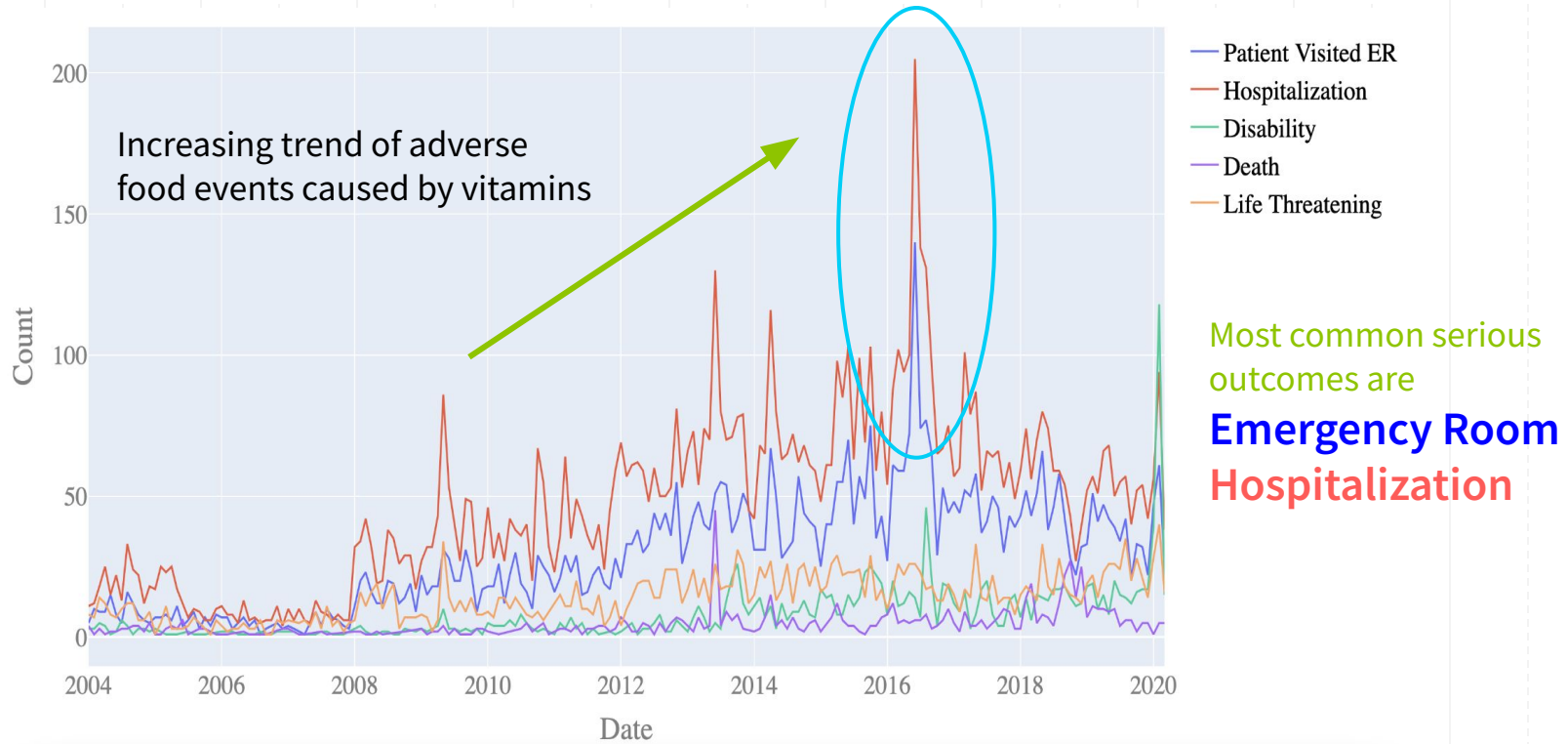




Are Vitamins safe??

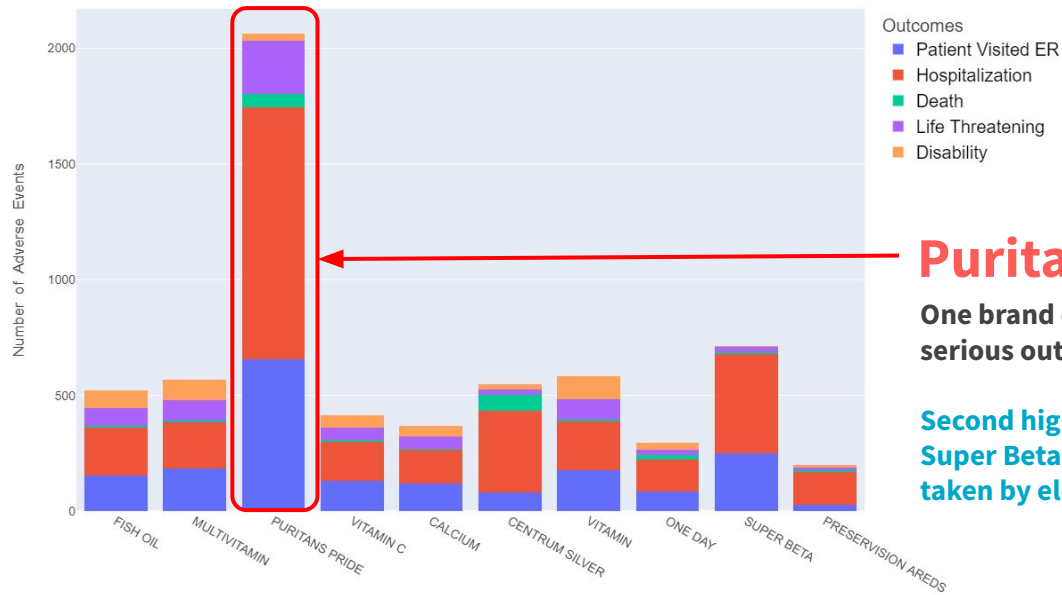
Not all

Outcomes vs Time for Vitamins



Which Vitamin Brand is most dangerous?

Vitamins/Minerals | Brands/Products vs Outcomes



Puritan's Pride > Super Beta Prostate

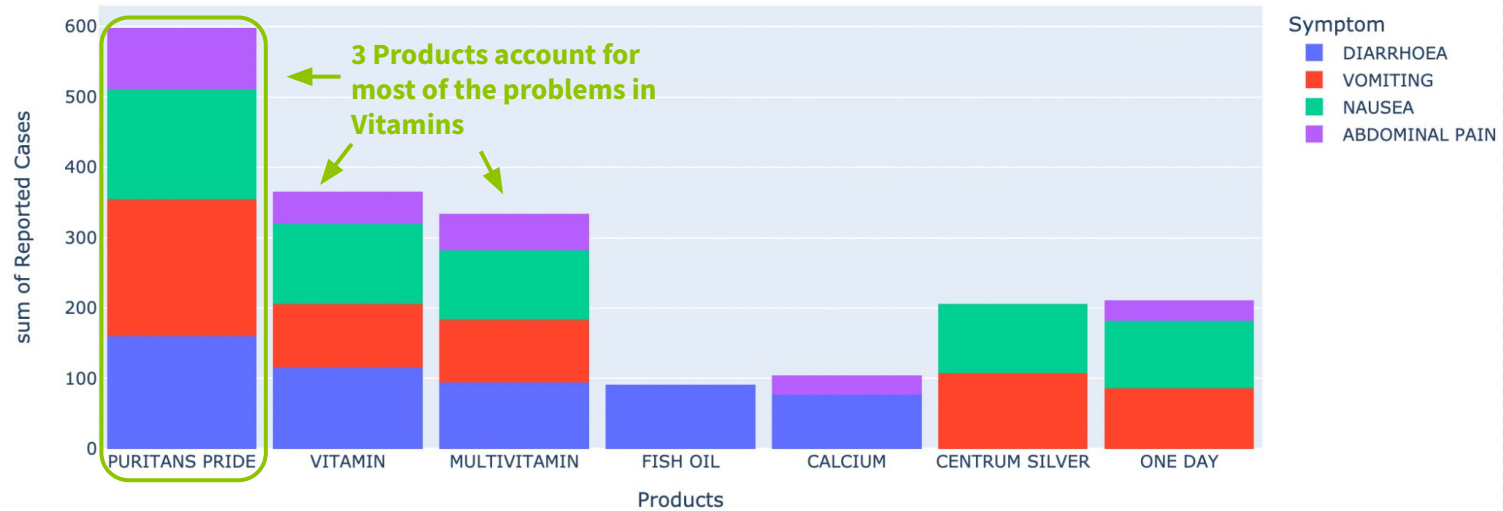
One brand dominates many serious outcomes.

**Second highest vitamins
Super Beta Prostate is primarily
taken by elderly males aged >60**

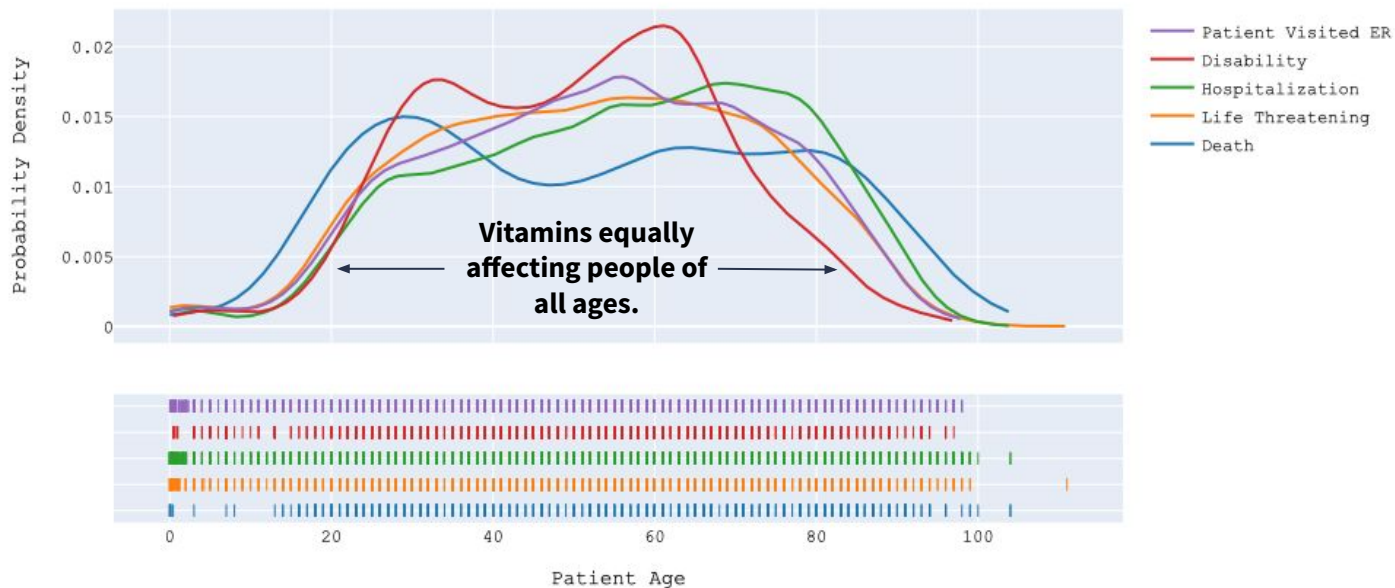
Top 10 Brands

Vitamins : Products vs Symptoms

Puritans Pride causes the most problems!



Vitamins do not spare anyone





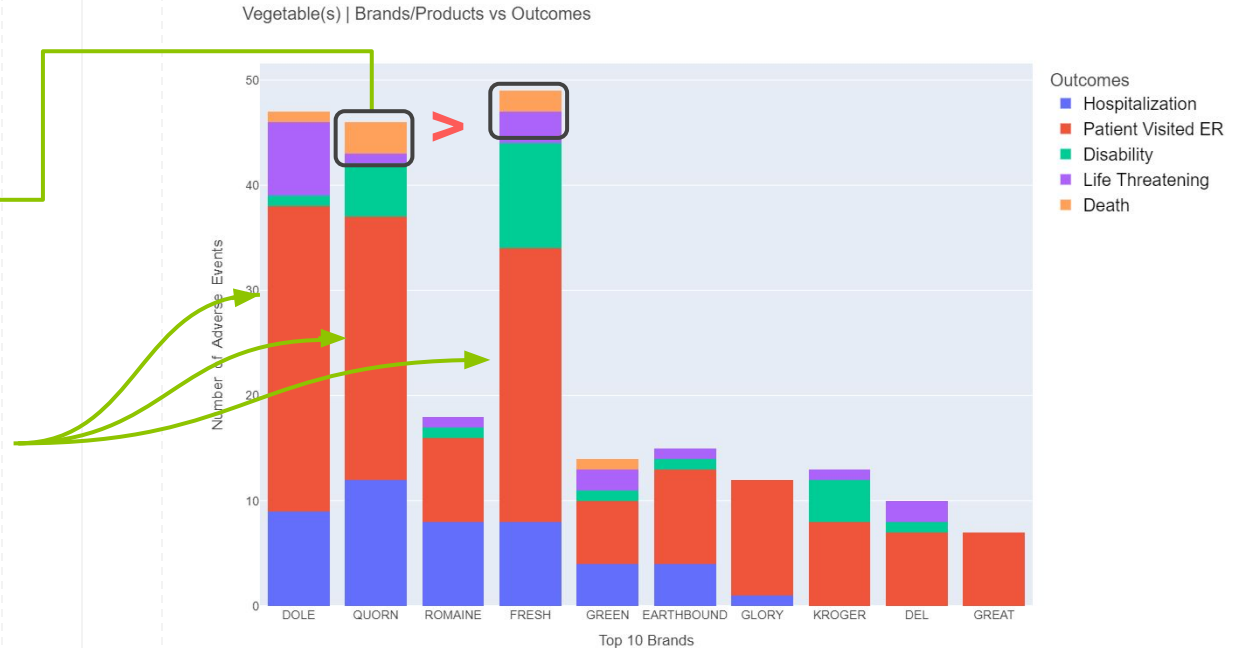
Veggies are good for Health, right?

P.S. Picky-eaters say YAY!

Vegetable Brands that are actually Stale...

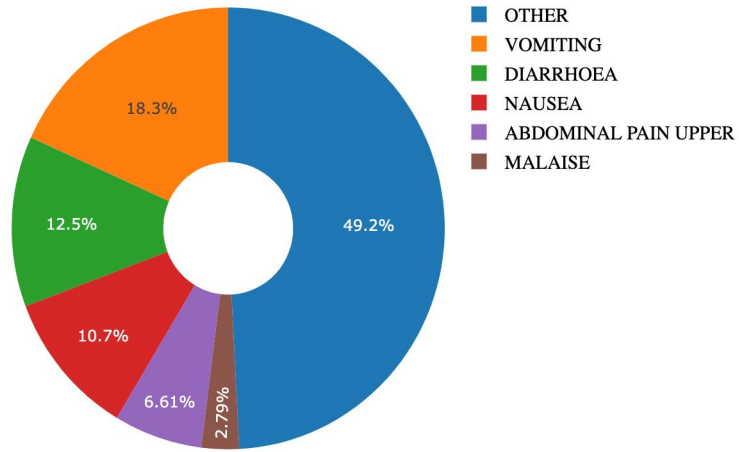
Meat-substitute brand
Quorn quite harmful!
Even causing deaths

It seems the major
vegetable/vegetarian based
brands are sending people to
Emergency Room!

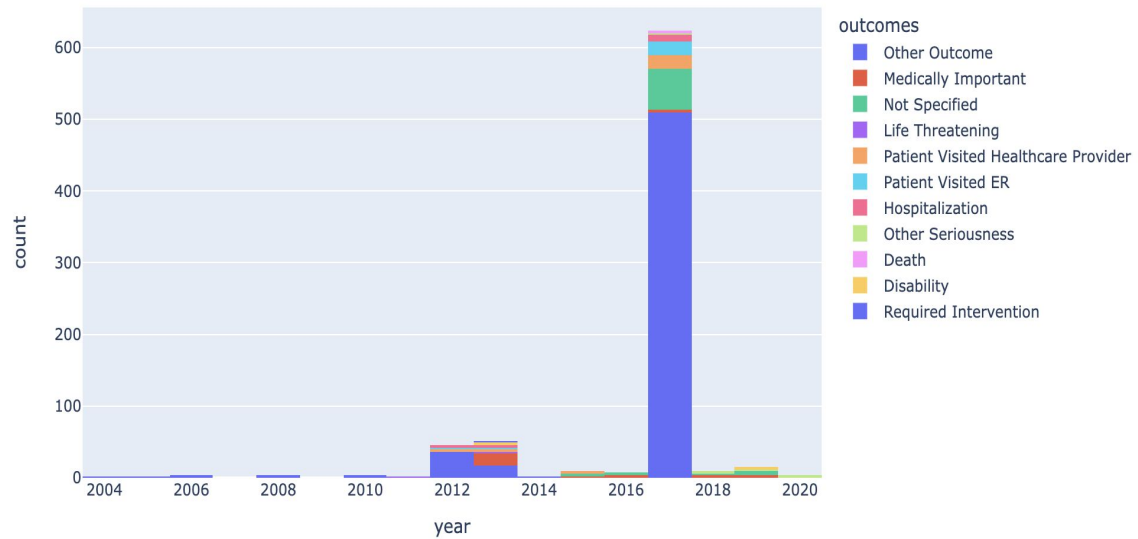


Quorn Analysis

Symptom analysis



Outcome histogram for Quorn



Data does reflect the truth!

Quorn to change labels to reveal its main ingredient is MOLD: Meat substitute brand will add allergy warning after 'two deaths and thousands of allergic reactions'

2017 is the same year which shows rise in reported **Quorn** Adverse events!!

Data shows 3 reported deaths with Quorn. Maybe $\frac{2}{3}$ covered in FDA reports.

- The meat substitute has previously been marketed as similar to mushrooms
- But a pressure group in the US claims two children with mold allergies died after eating Quorn
- Now, after five years in court, the company has agreed to change the labels to say mold is the main ingredient

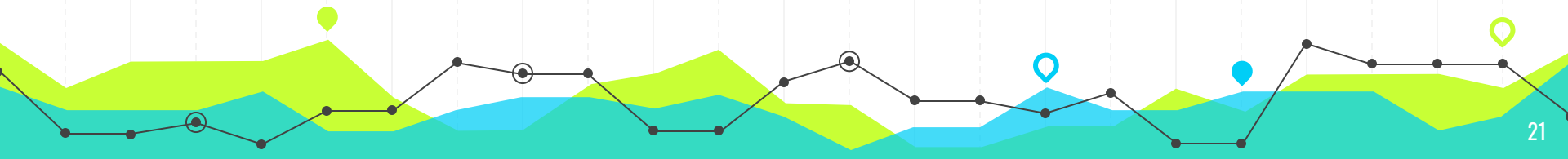
By SEAN POULTER CONSUMER AFFAIRS EDITOR FOR THE DAILY MAIL

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Conclusion

INSIGHTS GAINED

- ❖ Cosmetics, Vitamins and Vegetables are primarily responsible for adverse events.
- ❖ The major serious outcome for Cosmetics is Death, which affects elderly more.
Top responsible brands - Wen - L'Oreal- Mentality Polish.
- ❖ Among Vitamins, Puritan's Pride is a dominant brand causing adverse outcomes.
- ❖ Vegetables sending people to ER; Meat-substitute brands like Quorn among top 3.



THANKS!

Any questions?

