



## Safe integration from electronic medical records to a menu management system

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# Food allergy prevalence



2.5% of population



6-10% children  
2% adults



TREE NUTS



PEANUTS



MILK



EGGS



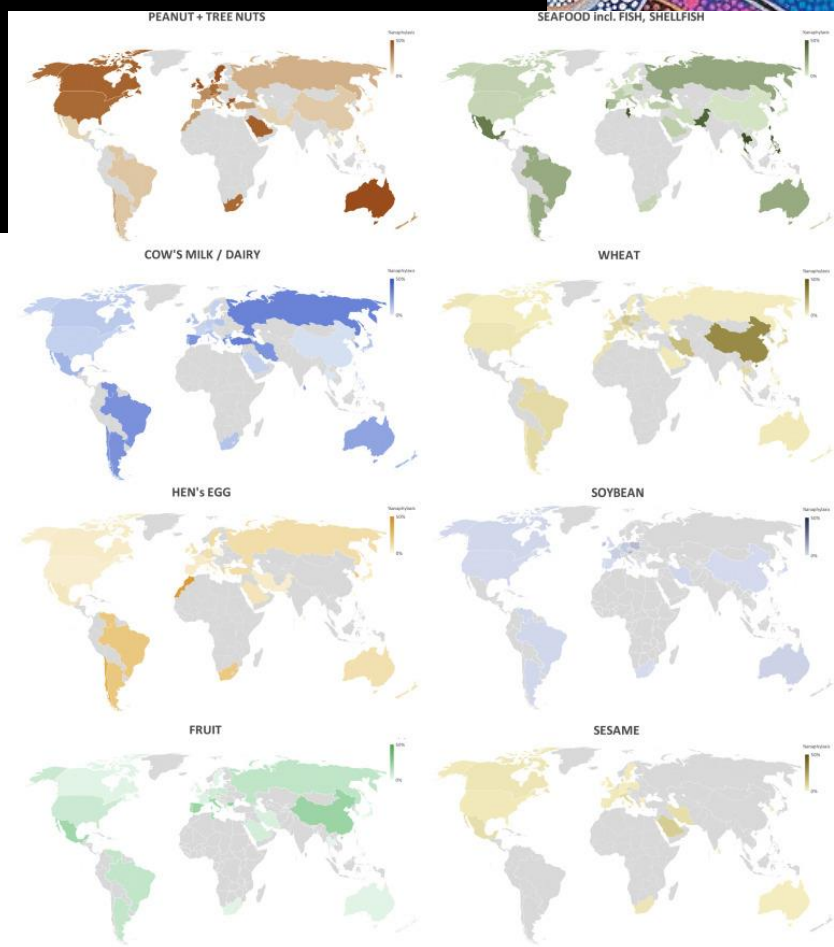
CRUSTACEANS



MOLLUSCS

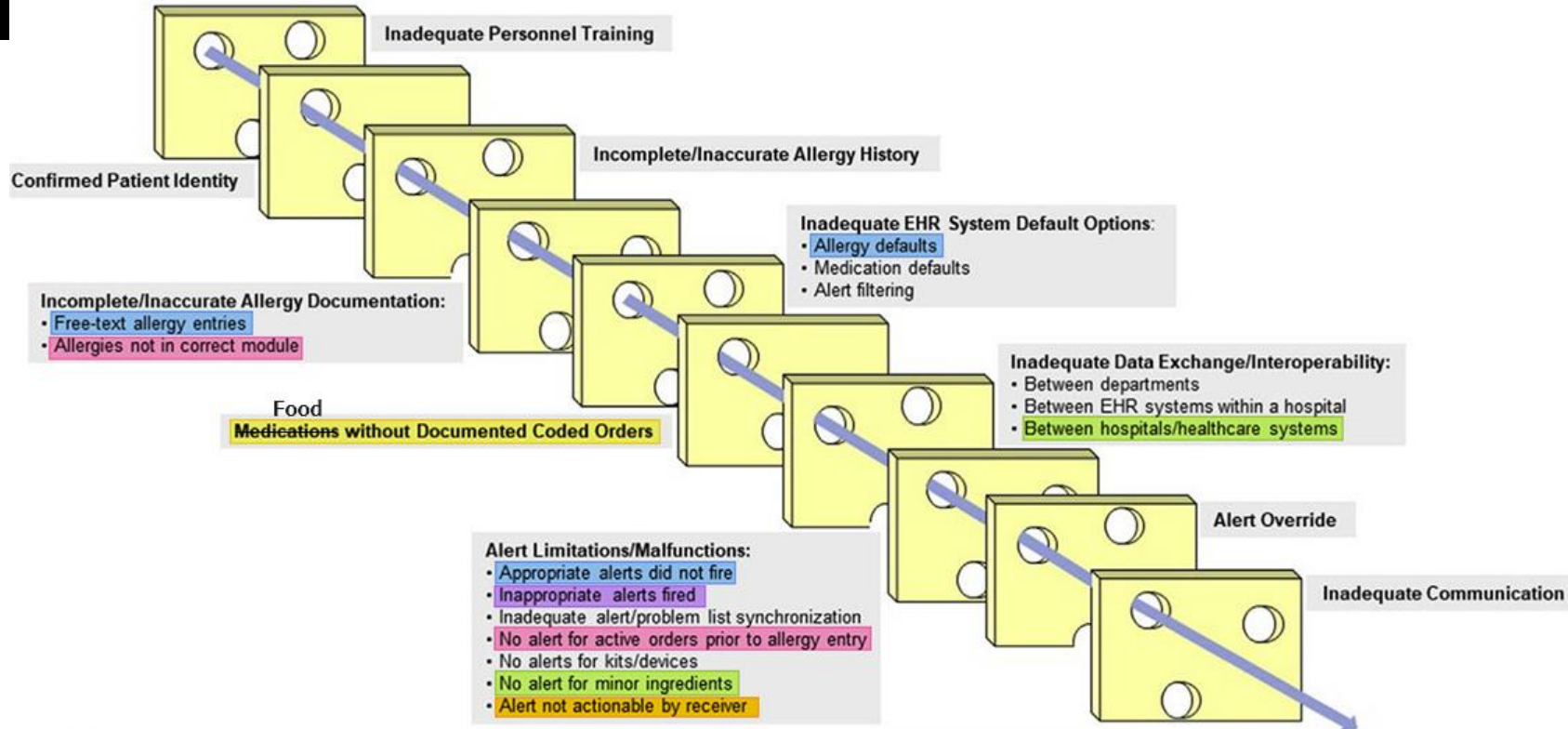


FISH



Alessia Baseggio Conrado, Nandinee Patel, Paul J. Turner, Global patterns in anaphylaxis due to specific foods: A systematic review, *Journal of Allergy and Clinical Immunology*, Volume 148, Issue 6, 2021, Pages 1515-1525.e3, <https://doi.org/10.1016/j.jaci.2021.03.048>. (<https://www.sciencedirect.com/science/article/pii/S0091674921006655>)

# Allergy safety hazards

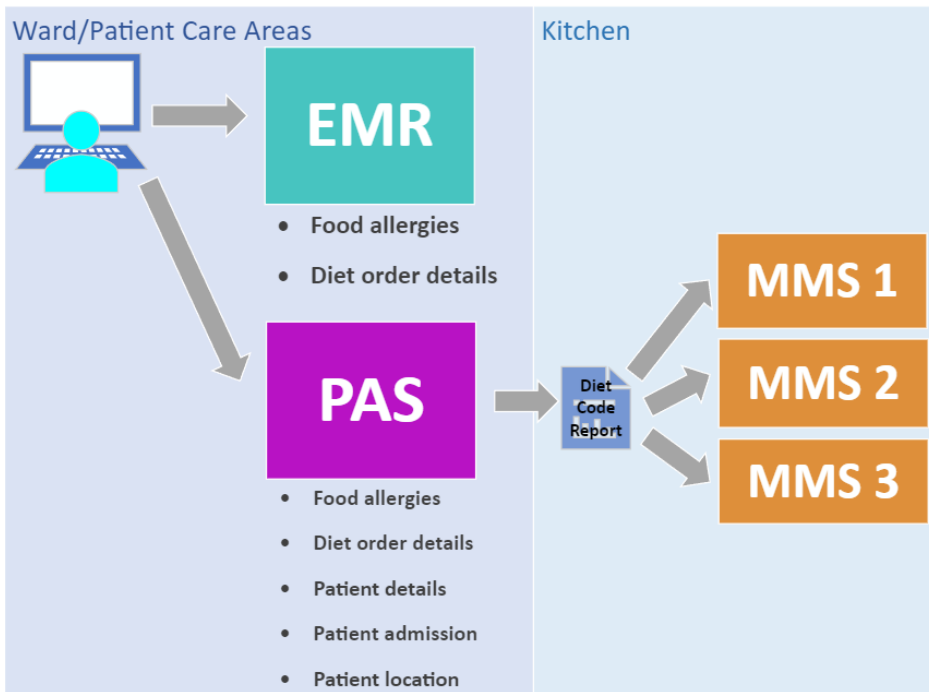


Phadke NA, Wickner P, Wang L, Zhou L, Mort E, Bates DW, Seguin C, Fu X, Blumenthal KG. Allergy Safety Events in Health Care: Development and Application of a Classification Schema Based on Retrospective Review. *J Allergy Clin Immunol Pract.* 2022 Jul;10(7):1844-1855.e3. doi: 10.1016/j.jaip.2022.03.026. Epub 2022 Apr 8. PMID: 35398557; PMCID: PMC9371622.

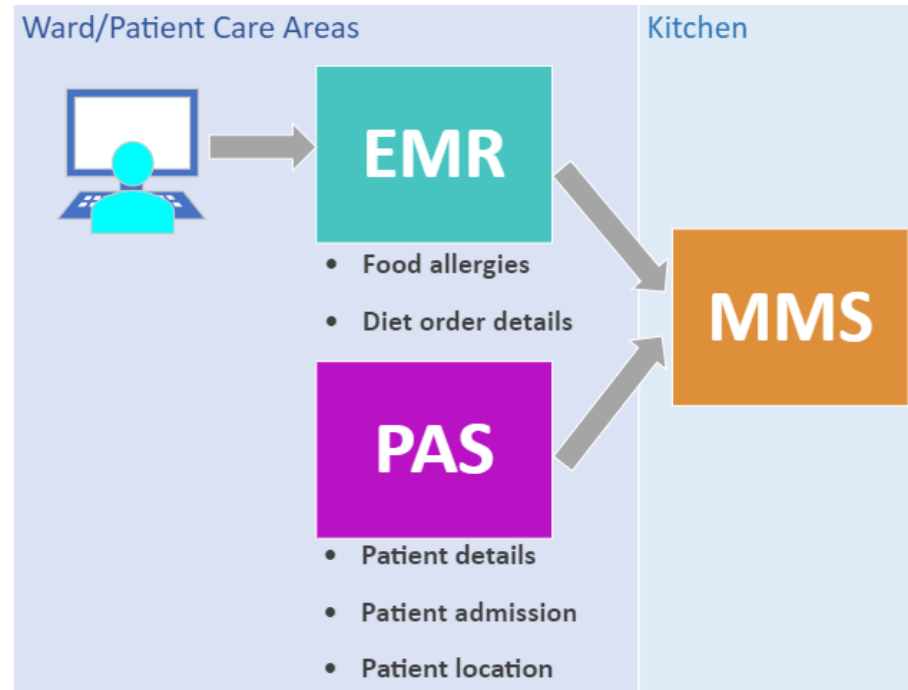
# Before and After



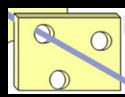
## Where we started



## Where we went



# Existing build in EMR



**Incomplete/Inaccurate Allergy Documentation:**

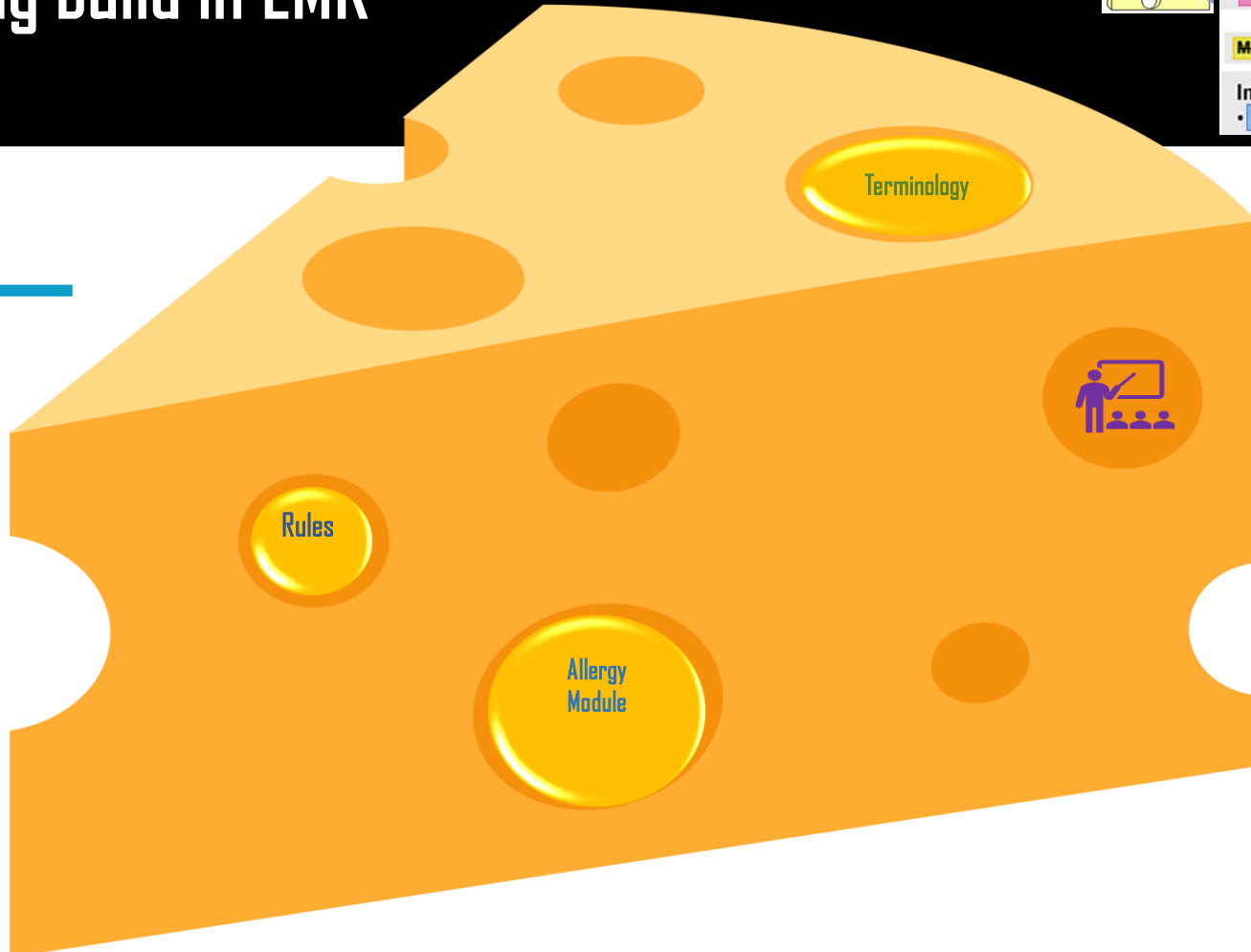
- Free-text allergy entries
- Allergies not in correct module

Food

**Medications without Documented Coded Orders**

**Inadequate EHR System Default Options:**

- Allergy defaults



## Allergy Module

- Mandatory fields
- Codified terms
- No freetext

## Terminology

- 100 food allergen terms
- Other* catch-all term
- Mapped to SNOMED

## Rules

- No allergy info = No order
- Order-food allergy checking rule

## Education

- Mandatory allergy module training

# Why food allergy documentation in EMR is important



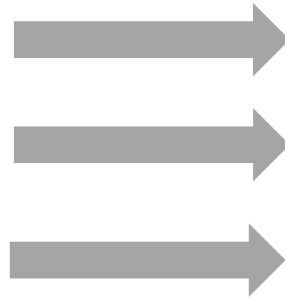
EMR

## Allergies

Soy

Egg White

Other Food



MMS

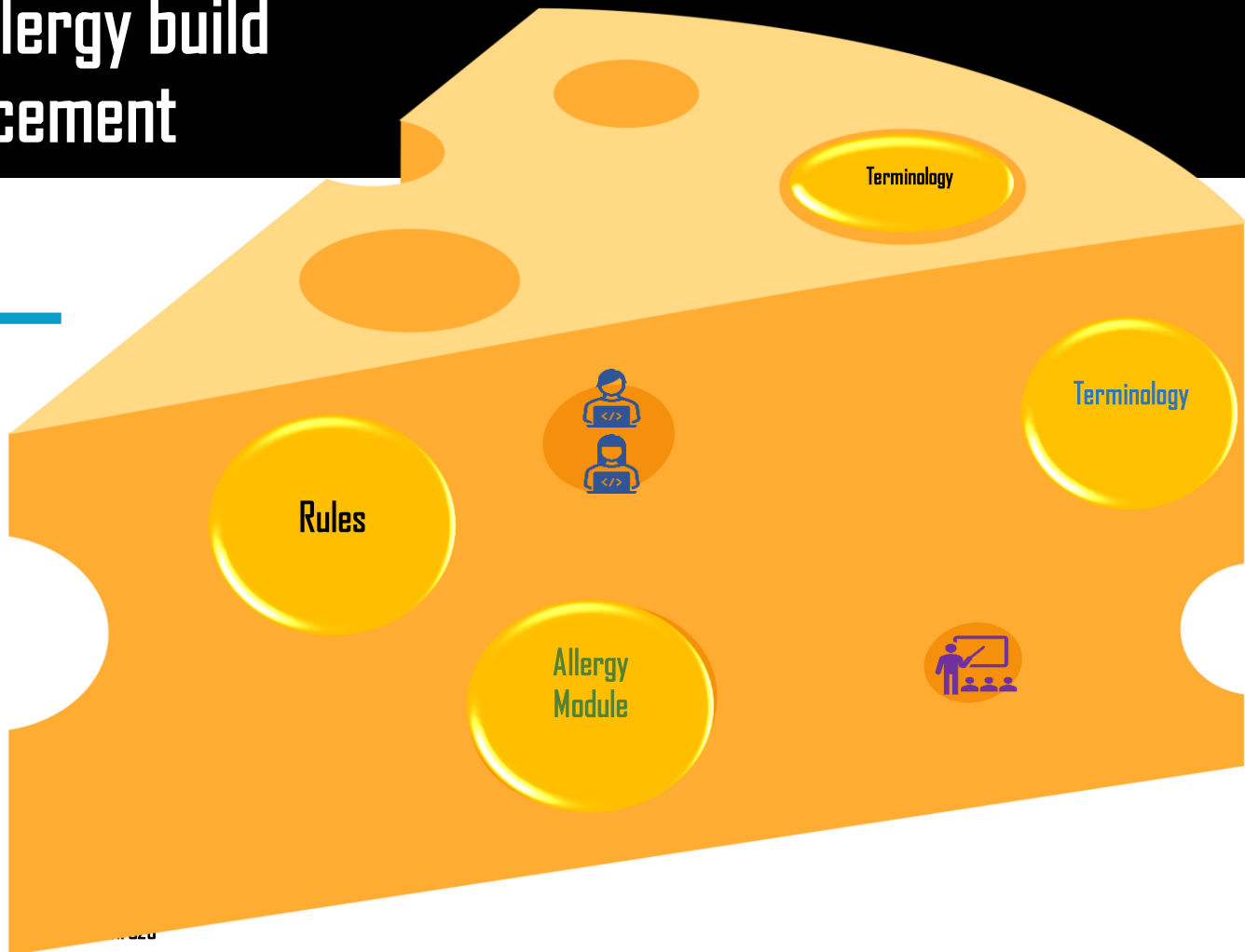


## Menu Options

No meal



# EMR Allergy build enhancement



Review of existing allergy records – content and quality

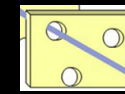
40+ new terms  
Other → Food, Meds, Environ

Top 25 allergies folder  
Reaction field mandatory

Data clean up

Education

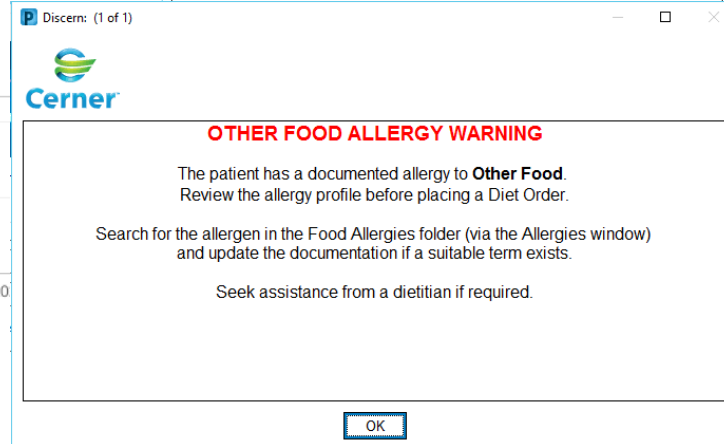
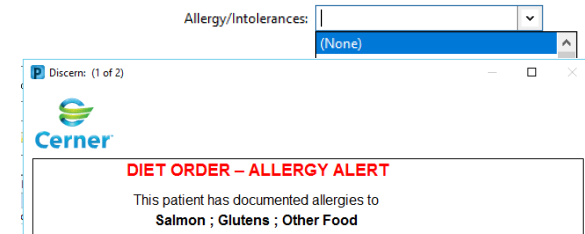
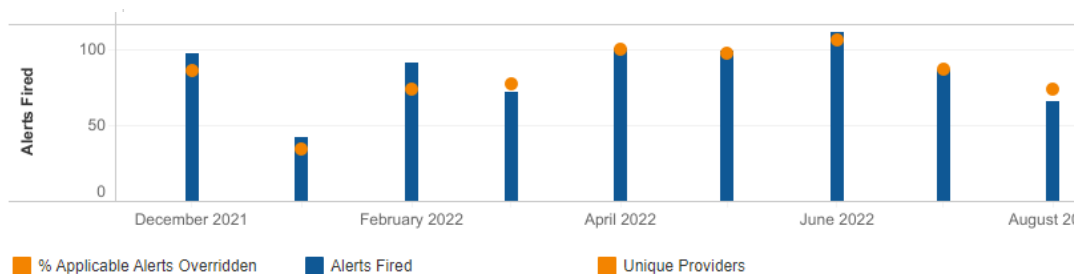
# Decision support when placing diet orders



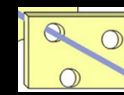
## Alert Limitations/Malfunctions:

- Appropriate alerts did not fire
- Inappropriate alerts fired
- Inadequate alert/problem list synchronization
- No alert for active orders prior to allergy entry
- No alerts for kits/devices
- No alert for minor ingredients
- Alert not actionable by receiver

- Rule to check incoming order against documented food allergies
  - Diet order details (Allergy/Intolerance field) and allergy profile don't match
  - Alert text provides guidance on which codes need to be used
  - Order can't be submitted unless detail is correct
- Rule to alert users to review "Other Food" allergy

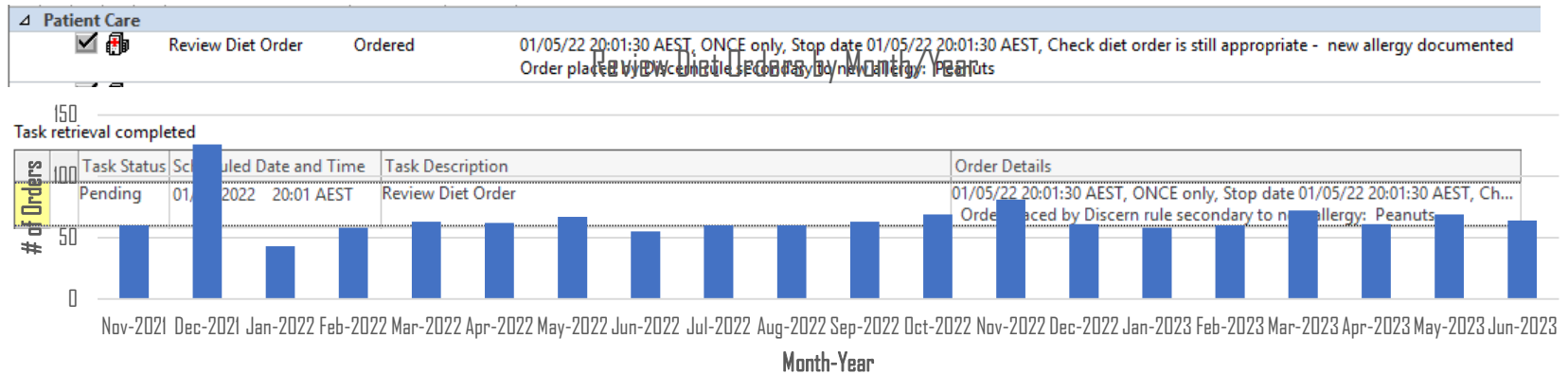


# Decision support when new allergy added



- Alert Limitations/Malfunctions:**
- Appropriate alerts did not fire
  - Inappropriate alerts fired
  - Inadequate alert/problem list synchronization
  - No alert for active orders prior to allergy entry
  - No alerts for kits/devices
  - No alert for minor ingredients
  - Alert not actionable by receiver

- If "Top 10" food allergen groups (e.g. Fish, Nuts, Eggs) added AFTER diet order placed
- Reverse allergy checking rule adds a nursing order/task to prompt to check the diet order and cancel/reorder if required



# Outcomes



Reduction in food allergy related incidents by 60%



Foundation for further decision support build in related processes



Next: Repeat analysis of food allergy documentation

# Food for (final) thought



"Can I be held liable for the after effects of hospital food?"

## CHICKEN WINGS

www.chickenwingscomics.com

BY MICHAEL AND STEFAN STRASSER





## Acknowledgements

- Rob Dashwood (Integration Architect)
- Adrian Morris (Senior Application Specialist)
- Nicole Barna (Project Dietitian)
- Mary-Anne Silvers (Head of Nutrition & Dietetics)
- Kevin White (Senior Application Specialist)

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