

# Evaluation of Antibiotic Allergy Documentation in Pediatric Patients.

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## Published In/Presented At

Sterner, L., Villalobos-Fry, T., Wheatley, K., (2017, July, 31) *Evaluation of Antibiotic Allergy Documentation in Pediatric Patients*. Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA.

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# Evaluation of Antibiotic Allergy Documentation in Pediatric Patients

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## BACKGROUND

- Diagnosis of antibiotic allergy is based predominantly off clinical history rather than an allergy work-up leading to profound overestimation in pediatric patients.
- Allergic reactions are documented in 10% of all antibiotic prescriptions.
- Documentation of allergies is incomplete in as many as 84% of encounters.
- Consequently, broad-spectrum antibiotics are utilized leading to increased rates of *Clostridium difficile* and other resistant pathogens.

**Primary Objective:** Calculate the percentage of pediatric admissions with a documented allergy to one or more antibiotics.

**Secondary Objective:** Calculate the percentage of properly documented antibiotic allergies and categorize use of broad- vs. narrow-spectrum antibiotics.

## METHODS

Retrospective chart review conducted on pediatric admissions from September 1, 2015 to May 31, 2017. Patients younger than 18 years with a documented antibiotic allergy were included.

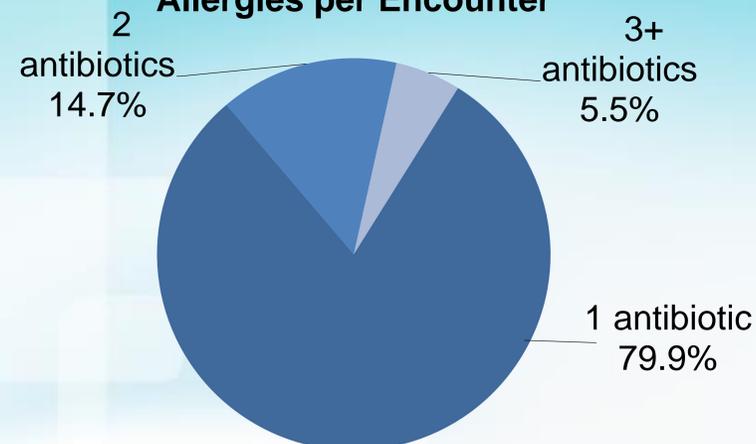
The following information was collected: demographics, documented antibiotic allergy, reaction and type, severity of reaction, recorded notes, antibiotic treatment, and antibiotic spectrum.

Descriptive statistics were used to evaluate the primary and secondary objectives and to summarize the details of each encounter.

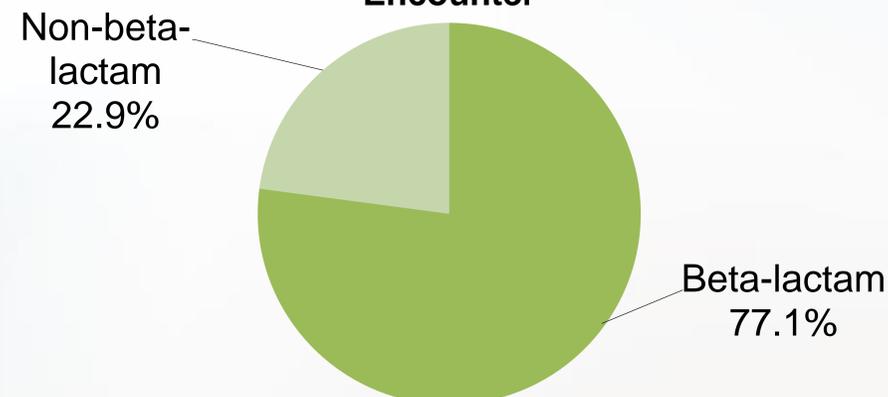
## OUTCOMES

- 536 encounters were included with 424 individual patients.
- Approximately 40% of encounters were in patients aged 12-17 years.
- Of all admissions during the specified time period, 10.3% of encounters had a documented antibiotic allergy.
- Empiric broad-spectrum antibiotics were prescribed in 184 encounters (82.5%) compared to narrow-spectrum antibiotic therapy in 39 encounters (17.5%).

**Figure 1. Frequency of Documented Antibiotic Allergies per Encounter**



**Figure 2. Frequency of Beta-lactam Allergy per Encounter**



## RESULTS

| Table 1. Antibiotic Allergy Documentation | n (%)      |
|---|------------|
| Frequency of documented reactions         |            |
| Anaphylaxis                               | 14 (2.0)   |
| Hives                                     | 102 (14.8) |
| Rash                                      | 231 (33.5) |
| Unknown reaction                          | 32 (4.6)   |
| No documentation                          | 78 (11.3)  |
| Reaction type                             |            |
| Allergy                                   | 43 (6.2)   |
| No documentation                          | 628 (91.1) |
| Severity                                  |            |
| High                                      | 42 (6.1)   |
| No documentation                          | 405 (58.8) |
| No documented date of occurrence          | 66 (9.6)   |
| No documented comments                    | 452 (65.6) |
| Proper documentation                      | 87 (12.6)  |

## CONCLUSIONS

- Approximately 10% of hospitalized pediatric patients had a documented antibiotic allergy during a 21-month period.
- Antibiotic allergies were improperly documented in almost 90% of instances with limited documentation of reaction type and severity.
- Broad-spectrum antibiotics were more commonly prescribed compared to narrow-spectrum antibiotics in patients with documented antibiotic allergies.
- Education to prescribers must be provided on the appropriate evaluation, documentation and rechallenge of antibiotic allergies in pediatric patients.

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610-402-CARE LVHN.org

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