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Discrepancies in age-based medication dosing

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Discrepancies in age-based medication dosing

Chad Ruger, Anne Keeling, Sera Jacob, Cassidy MacArthur
Family Medicine Residency, Internal Medicine Residency, Transitional Year Residency

Background/Case Description

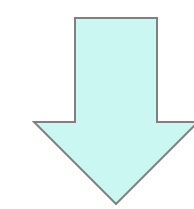
A 4-week-old infant was diagnosed with oral thrush in the urgent care setting and was prescribed nystatin for treatment. The Initial prescription was written for too large of a dose. This was recognized by Pharmacy and overcorrected to a lower dose that was below the recommended dosage for the patient's age. This led to the infant patient being undertreated for oral thrush, causing poor oral intake, and leading to poor weight gain and repeat office visit.

Background/Case Description

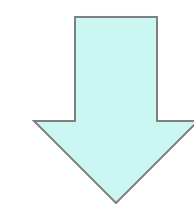
4 week old with poor weight gain despite treatment for thrush.

The Why's

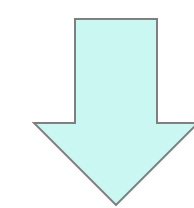
- Why is that?
 - Poor oral intake, increased emesis, fussy



- Why is that?
 - Oral thrush not improving despite being treated with topical nystatin



- Why is that?
 - Patient initially prescribed 100,000 units/mL give 5mL QID.
 - Corrected by Pharmacy to 100,000 unit/mL give 1mL QID
 - Correct dose should have been 100,000 units/mL given 2mL QID



- Why is that?
 - Epic defaults for nystatin vary from inpatient to outpatient
 - Nystatin dosing is based on age and there is potential variation in definition of neonate vs infant vs child

Root Cause

- Lack of clarity in Epic in relation to age related distinction between doses when placing nystatin order makes prescribing for patients of all ages unnecessarily convoluted in the outpatient setting.
- Epic defaults for nystatin vary from inpatient to outpatient
 - Inpatient
 - for >1yr old (peds)
 - Defaults to Peds dosing
 - for 4-days old – 12 months old (infant)
 - Defaults to Neonatal dosing
 - Outpatient
 - Nystatin populates two highlighted options
 - W/O Peds vs neo distinction
 - Epic's default options are based on past searches
 - Nystatin dosing is based on age and there is potential variation in definitions
 - Unclear what epic uses for standardization
 - Organizational standards vary
 - AHA
 - American college of Pediatricians
 - American Academy of Family Physicians

Action items

- Make order options for nystatin with clear age distinctions when in an outpatient context in Epic
 - Coordinate with Epic coders for creating order options while in the outpatient context
 - ✦ Oral nystatin suspension (Infant or 0-12 mos): 100,000 units given 2mL
 - ✦ Oral nystatin suspension (Pediatric > 1 yr): 100,000 units give 5mL QID
- Standardized definitions based on age
 - Epic age definitions should be established for pediatric patients and should coincide with organizational definitions such as those established by AHA for PALS
 - ✦ Coordination between outpatient pediatric providers, pharmacists, and Epic coders to establish and implement adoptable standards

Acknowledgements

Dr. Drobny