

“Reducing adverse drug event risks for geriatric patients by optimizing prescribing for selected medication records”

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ICHP and IL Chapters of ACHE 2016 Spring Meeting



Conflict of Interest Statement

- The speakers have no actual or potential conflict of interest in relation to this presentation

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Pharmacist and Technician Objective

- State opportunities to leverage the electronic health record (EHR) to provide age appropriate dosing for geriatric patients

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Site



- 616 bed tertiary care medical center located in Peoria, Illinois
- Teaching affiliate of the University of Illinois College of Medicine at Peoria
- Level 1 Adult and Pediatric Trauma Center
- Currently 80+ pharmacists on staff

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Objective of Study

- To improve age-appropriate prescribing for selected medications in patients over 65 years old to decrease the potential for adverse drug events (ADEs)

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Background

- 2014 - OSF Gero-Palliative Care Initiative
 - System-wide project with representation from many disciplines
 - Team members asked to develop and implement a project to improve the care of older adults
 - Pharmacy medication project
 - Noted inappropriate prescribing on inpatient units
 - Decided to focus project on improving appropriate prescribing of selected medications

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Medication Selection

- Which medications to target?
 - BEERs list
 - 1991 – 12 clinicians led by Dr. M. Beers
 - Focus on two key areas
 - Meds that should be avoided
 - Meds that should be used with extra caution
- How many medications to target?
 - All meds on the BEERs list?
 - Small test of change to assess impact

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Medication Selection

- Amitriptyline
- Cyclobenzaprine
- Diphenhydramine (oral and IV)
- Glimepiride
- Glipizide
- Glyburide

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Leveraging the EHR

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Age Based Contexts

- Medication records can be configured by age
- OSF uses 5 age contexts
 - Neonate (0-30 days)
 - Infant (1 month- 1year)
 - Pediatric (1 year – 14 years)
 - Adult (14 years – 65 years)
 - Geriatric (65 years +)

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Age Based Contexts

- 75 year old
- 62 year old

The screenshot displays two medication order forms side-by-side. The left form is for a 75-year-old patient, showing a dose of 12.5 mg and a frequency of 'EVERY 6 HOURS PRN'. The right form is for a 62-year-old patient, showing a dose of 25 mg and a frequency of 'EVERY 6 HOURS PRN'. Both orders are for diphenhydramine (BENADRYL) injection. The interface includes fields for reference, links, dose, administer dose, administer amount, route, frequency, and PRN reasons (itching, sleep, other).

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Methods

- Reviewed current entries in the EHR
- Determined target dose ranges and made changes to default dose/frequency
- EHR orders reports obtained for two six month periods for baseline and follow up
- Percentage of medication orders within target dose range were measured for patients 65 years and older

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Methods

Medication	Target Initial Dose
Amitriptyline	10mg
Cyclobenzaprine	5mg
Diphenhydramine PO	12.5mg or 12.5mg-25mg
Diphenhydramine IV	12.5mg or 12.5mg-25mg
Glimepiride	1mg
Glipizide	2.5mg
Glipizide XL	2.5mg
Glyburide	1.25mg

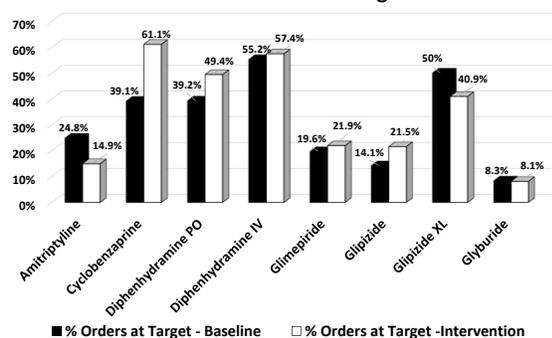
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Results

- Positive changes seen for 5 of 7 medications in the percentage of orders within target range

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Percent of Orders at Target



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Limitations

- Age based dosing applied to new orders only
- Small number of medications selected
- p values not calculated

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Summary

- Improved compliance achieved with provider ordering of cyclobenzaprine, oral/IV diphenhydramine, glimepiride, and glipizide for patients over 65 years
- Although not specifically measured, the risk of ADEs was reduced by adjusting default doses and frequencies of selected medications
- Next steps include reviewing post-op order sets for appropriateness

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Assessment

Age based contexts are one means of improving age appropriate medication dosing for geriatric patients.

- True
- False

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References

1. American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 updated Beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc* 2015 Oct 8. doi: 10.1111/jgs. 13702. [epub ahead of print].
2. Lexi-Comp. Accessed August 2014.

