Reducing Antiretroviral Medication Errors Utilizing an Electronic Medical Record in Hospitalized HIV Positive Patients

Jean C. Lee1, Nnaemeka E Egwuatu1, Andrea D Goodrich2, Kymberlee A Moline2, Terry K Kirkpatrick2, David D Baumgartner1,3, Minerva A Galang1,3
1Special Immunology Services, Saint Mary’s Health Care, Grand Rapids, Mi; 2Department of Pharmacy Services, Saint Mary’s Health Care, Grand Rapids, Mi; 3College of Human Medicine, Michigan State University, Grand Rapids, Mi

ABSTRACT

Background: Antiretroviral (ARV) medication errors occur in all settings including during the admission process. These medication errors are a threat to patient safety and increased costs of ARV. Given the potential development of new antiretrovirals to current ARV Therapy and thus, limiting future treatment options, hospital electronic medical record (EMR) may be utilized to provide accurate ARV regimens to reduce medication errors and aid in medication reconciliation.

Methods:
- To determine the sustainability of this process change.
- To reduce the rate of antiretroviral medication errors for HIV positive patients admitted to Saint Mary’s Health Care who are prescribed HAART.

Results:
- Post-intervention, ARV error rate reduced from baseline by 93% (16.0% vs. 1.1%, p=0.002) and was sustained 6 months later (16.0% vs. 1.1%, p=0.004). Comparing baseline to post-intervention, the most common ARV error was wrong time (14 vs. 1), followed by wrong dose (4 vs. 1), drug interaction (4 vs. 1), missing ARV (4 vs. 1), wrong drug (3 vs. 0) and wrong frequency (2 vs. 0).

Conclusions:
- The use of hospital EMR to maintain antiretroviral regimens prescribed by the HIV clinic, decreased error rate by 93%, cost of pharmacist time by 87% and cost of pharmacist time to resolve errors by 87% as previously documented.
- Continuous maintenance of ARV regimen within the hospital EMR allows for accurate medication reconciliation with hospitalized HIV positive patients.

REFERENCES
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3. Mok S et al. AJHP 2008;65:55-9
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EXHIBITS

Image 1: Comparison of error rates and costs

Image 2: Medication error rate, p-value compared to baseline

Image 3: Comparison of types of errors pre and post intervention

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2. Edelstein H et al. JAIDS 2001;284:96
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CONCLUSIONS

- The current process for HIV positive patients admitted to SMHC includes: patient identification by staff or document in chart and do an ARV report.
- The HIV pharmacist reviews the inpatient medical record for accuracy and communication with staff or clinical pharmacist as needed.
- Communication of the admission to the HIV provider and medical case manager, who provide a courtesy visit.

BACKGROUND

Medication errors in the area of HIV medicine may have damaging consequences. There are processes in place within all forms of drug distribution to reduce these problems, without experiencing a gap in health management. This was achieved by continuous maintenance of ARV regimen within the hospital EMR allows for accurate medication reconciliation with hospitalized HIV positive patients.

METHODS

Study Design:
- Single site Outpatient HIV clinic and its affiliated 344 bed acute care hospital
- Analysis of 20 patients during each phase

- Phase 3: sustainability (Nov 2010)
- Exclusion: Patients who had ARVs prescribed by ID physicians.
- Cost of pharmacist time to resolve errors was reduced by 87% as previously documented.
- Continuous maintenance of ARV regimen within the hospital EMR allows for accurate medication reconciliation with hospitalized HIV positive patients.

RESULTS

- To determine the sustainability of this process change.
- To reduce the rate of antiretroviral medication errors for HIV positive patients admitted to Saint Mary’s Health Care who are prescribed HAART.

- Post-intervention, ARV error rate reduced from baseline by 93% (16.0% vs. 1.1%, p=0.002) and was sustained 6 months later (16.0% vs. 1.1%, p=0.004).

- Error rate was based on activity definition's from a benchmarking system on cost of medication errors.
- Methods:
- To determine the reduction in cost of errors and pharmacist time to resolve the errors.
- To determine the sustainability of this process change.

- Background:
- Medication errors and aid in medication reconciliation.
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- Methods:
- To determine the sustainability of this process change.
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RESULTS

- Post-intervention, ARV error rate reduced from baseline by 93% (16.0% vs. 1.1%, p=0.002) and was sustained 6 months later (16.0% vs. 1.1%, p=0.004). Comparing baseline to post-intervention, the most common ARV error was wrong time (14 vs. 1), followed by wrong dose (4 vs. 1), drug interaction (4 vs. 1), missing ARV (4 vs. 1), wrong drug (3 vs. 0) and wrong frequency (2 vs. 0).

- The cost of these errors was reduced by 87% at approximately $337.50. Continuous maintenance of ARV regimen within the hospital EMR allows for accurate medication reconciliation with hospitalized HIV positive patients.

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2. Edelstein H et al. JAIDS 2001;284:96
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