



## The Impact of Clinical Decision Support on Amiodarone Prescribing Errors

**Author:** Tasong N. Metangpa

**Practice Site:** Sentara RMH Medical Center; Harrisonburg, VA

**Background:** Amiodarone is accompanied by many side effects and toxicities, for that reason, it is designated as a high alert medication by the Institute of Safe Medication Practices (ISMP). One of the ISMP's recommendations to reduce the risk of errors and minimize harm is to standardize the ordering of high alert medications like amiodarone. Transitions of care are a risk point for medication errors. According to an article by Pronovost P, et al., approximately 46% of medication errors occur on admission or discharge from the hospital. Recognizing that medication errors are a serious threat to patients' well-being and finding ways to prevent them by implementing a standardized ordering process can reduce potential medication errors.

**Objective:** The objective of this study was to investigate whether amiodarone prescribing errors decreased after implementing amiodarone clinical decision support (CDS) tools including amiodarone panels and best practice alerts (BPA).

**Methods:** This was a multicenter, retrospective, 2 cohort study conducted in twelve hospitals across the Sentara Healthcare System. Patients  $\geq 18$  years old who were prescribed oral amiodarone during hospital admission and at discharge were included in the study. The primary outcome was amiodarone prescribing error during admission (Cohort 1) and amiodarone prescribing errors at discharge (Cohort 2). The secondary outcome was 30-day all-cause readmission in each cohort. Each cohort had two arms: the pre-intervention (pre-CDS) and the post-intervention (post-CDS) groups. The pre-intervention period was from April 1, 2019, through June 30, 2019. The post-intervention period was October 1, 2021, through December 31, 2021.

**Results:** Amiodarone prescribing errors during admission was 5% in the pre-intervention group compared to 2.9% in the post-intervention group (38/758 vs. 24/834, p-value 0.033). Amiodarone errors at discharge were 8.9% in the pre-intervention group compared to 0.1% in the post-intervention group (11/124 vs. 1/854, p-value  $<0.05$ ). There was a statistically significant difference in the 30-day all-cause readmission rate between the pre-intervention and post-intervention groups in the discharge cohort (4.8% vs. 0.9%, p-value 0.005). However, there was no statistically significant difference in the 30-day all-cause readmission rate between both groups in the admission cohort (13.2% vs. 13.9%, p-value 0.688).

**Conclusion:** The implementation of clinical decision support tools led to a decrease in amiodarone prescribing errors during admission and at discharge. Despite the decrease in error rates, amiodarone prescribing errors did not seem to have been attributed to 30-day all-cause readmission rates. This study helped to emphasize the importance of using CDS tools to improve the safety of amiodarone.