

# EMR changes and resulting changes in prescriber order habits in high dose IV hydromorphone administration in the Emergency Department

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## BACKGROUND:

Hydromorphone (Dilaudid) is a potent semisynthetic opiate agonist of the opiate receptors commonly used for analgesia in the Emergency Department (ED). This high potency increases the potential for adverse reactions and risk of iatrogenic opiate toxicity which can result in respiratory depression and death.

The quick orders tab in Cerner electronic medical record (EMR) allows providers to easily order frequently used item with less EMR clicks. We utilized this feature to give providers options for lowered doses of dilaudid than was previously available and completely remove one time high dose IV push options for 2mg and above.

## OBJECTIVE :

The objective of this quality control study was to identify if reduced dose options on the quick orders tab and the removal of the 2mg hydromorphone order option would result in ED providers ordering high dose IV hydromorphone less frequently.

## METHODS:

We analyzed order of 2 mg IV hydromorphone or more in a time period before the EMR change December 2022 to May 2023 and conversely from December 2022 to May 2024 after the EMR change. We hypothesized that there would be significantly less orders of single IV doses of 2mg hydromorphone or above when this option was no longer available on the quick orders tab. We also ran subgroup analysis to see if any particular provider levels were affected differently. Analysis was done on sheets and groups were compared with a two tail T statistic.

## RESULTS:

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The overall incidence of IV hydromorphone orders over 2mg deceased by 58% (figure 1).  $p < 0.001$ . On subgroup analysis by level of residency training (figure 2) as well as for NP/PA and attending physicians results showed similar findings at all levels of training.

## DISCUSSION AND FUTURE DIRECTIONS:

The ED is traditionally a busy and fast paced environment that is marked by distraction, pressure, and a wide breadth of patient encounters. Therefore, we theorized that the available dosage options on the commonly utilized quick orders tab would have significant influence on how providers ordered medication. Our results showed that in the context of hydromorphone removing the option for orders over 2mg on the quick orders tab had significant influence in provider prescribing habits. This finding has important implications for future work in patient safety efforts as well as any interventions aimed at influencing prescriber habits.

