

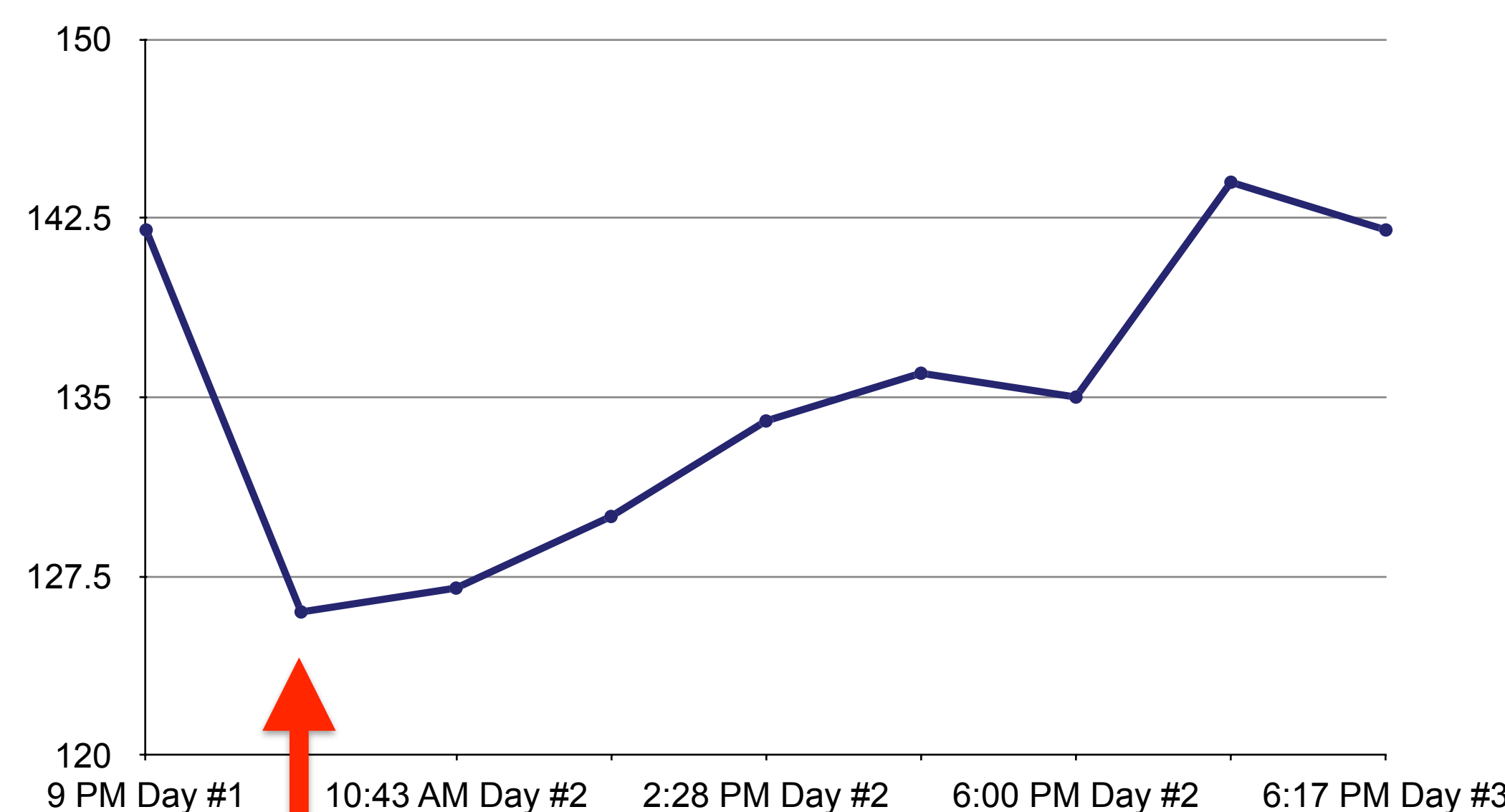
Introduction

- Intravenous N-Acetylcysteine (NAC) causes few adverse drug events with anaphylactoid reactions being the most common
- A case of hyponatremia from NAC's hypoosmolar diluent was reported in 1967 but this occurred before electronic medication ordering was commonplace

Case Report

- 13 month old female with no past medical history presented to a hospital after ingesting Tylenol Extra Strength
- The 4 hour acetaminophen level was 343 mcg/mL and she was started on IV NAC
- 12 hours later she developed tonic-clonic seizures with sodium measuring 124 mEq/Liter, decrease from 142 mEq/Liter at the time of admission
- Was treated with hypertonic saline, lorazepam, levetiracetam and had no further seizures
- Brain MRI and EEG were both normal

Blood sodium concentration (mEq/Liter) vs Time



Seizure

Results

- EMR ordering system did not allow for volume adjustment of NAC for a young child
- NAC dose was correct, however, the diluent volume was a standard amount for an adult but not an 8 kg child

Discussion

- Because the 21 hour IV NAC administration involves preparation of 3 different doses, an order set was developed to reduce ordering errors
- With the exception of patient's weight, no other aspect of this order set was adjustable
- The present values caused the pharmacist to prepare a solution that contained too much free water decreasing patient's intravascular sodium and resulting in a seizure

Acetadote® Dosing - Received vs FDA Recommendation

	Actually Received	FDA Approved
Bag #1	25 mL/kg	3 mL/kg
Bag #2	62.5 mL/kg	7 mL/kg
Bag #3	25 mL/kg	14 mL/kg
Total Volume	112 mL/kg	24 mL/kg

Conclusion

- Development of an order set intended to reduce ordering errors may lead to an adverse drug errors if volume of diluent cannot be adjusted for pediatric patients

