



# Evaluation of Naloxone Administration in the Non-Anesthesia Setting at a Comprehensive Cancer Center

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## Background

Tracking the administration of naloxone, an opioid antagonist, is a surrogate way of looking at safe opioid use. We did not have a standard method of tracking and reporting naloxone administrations to review for possible overtreatment with opioids. We have depended on the submission of safety events to review. To facilitate real time tracking of naloxone administrations, the Department of Pharmacy generated a report with patient detail information based on the month that naloxone was actually administered.

## Purpose

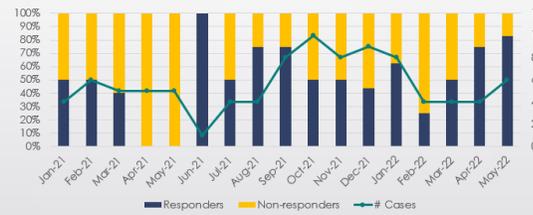
- To evaluate the response to naloxone administration using an implemented tracking and reporting system in the non-anesthesia setting

## Methods

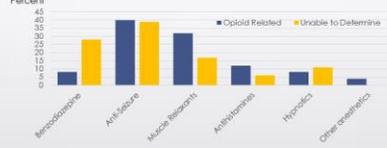
- The Pain Task Force created a multi-disciplinary ad hoc group to identify variables to be collected for each case of naloxone administration.
- A retrospective review was conducted on all naloxone administrations from January 2021- May 2022 using data reported through the Naloxone Administration report found on the Pain Metric Dashboard
- Naloxone administrations related to anesthesia or administered in the emergency department were excluded.
  - The first dose of naloxone administered was used as the reference for the event
  - If multiple doses of naloxone were administered, the administrations were reviewed to determine if they were related to one event
  - Other variables included the following:
    - Location of first naloxone administration (floor vs ICU)
    - Response to naloxone based on documentation from providers, nurses, and/or MERIT
    - Naloxone Non-responders:
      - Reason for administration
      - Opioid Overtreatment or not
    - Naloxone Responders:
      - Reason for administration
      - Involvement of pain service (prior to admission, prior to naloxone, after naloxone)
      - Opioid tolerance as defined by the FDA
      - If not opioid tolerant, opioid naïve or not
      - Timing of naloxone from admission
      - Other sedating medications in prior 24 hours
      - Number of naloxone doses per event
      - Outcomes

## Results

Non-Anesthesia Naloxone Administration Cases and Responses by month  
N=90 over the past 17 months



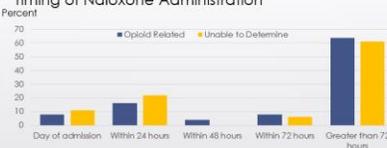
Naloxone Responders N = 43/90 (48%)  
Sedating Medications in Previous 24 hours



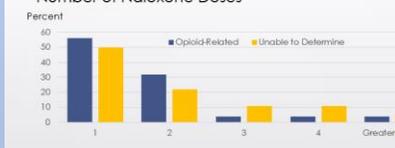
Naloxone Responders N = 43/90 (48%)  
Pain Service

	Chronic Pain	Supportive Care
Outpatient consult prior to admission	10/43 (23%)	10/43 (23%)
Inpatient prior to naloxone	6/43 (14%)	27/43 (63%)
Inpatient after naloxone	6/43 (19%)	19/43 (44%)
Inpatient BOTH before and after naloxone	4/8	17/19
Inpatient only after naloxone	2/8	2/19

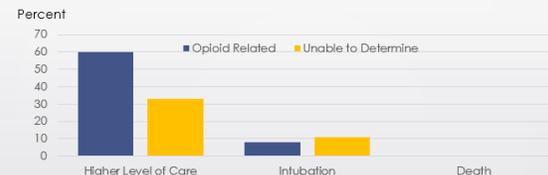
Naloxone Responders N = 43/90 (48%)  
Timing of Naloxone Administration



Naloxone Responders N = 43/90 (48%)  
Number of Naloxone Doses



Naloxone Responders N = 43/90 (48%)  
Outcomes



## Findings

- 90 total cases of naloxone administrations not related to anesthesia and not first given in the ACCC. 16 cases were in the ICU and 74 cases were on the floor.
- 43/90 (48%) of the cases responded to naloxone
- 77% of naloxone responders were being followed by a pain service prior to naloxone administrations
- 56% of naloxone responders were opioid tolerant
- 12% of naloxone responders were opioid naïve
- 58% of naloxone responders were deemed related to opioid overtreatment
- 42% of naloxone responders with multiple other factors which prevented ruling out opioid safety-related event
- 63% of naloxone responders had received other sedating medications within the 24 hour prior to naloxone administration
- Of the sedating medications, anti-seizure medications (e.g., levetiracetam, gabapentin) were the most commonly co-administered

## Conclusion

- Multiple factors to explain sedation in patients include metabolic disturbances and disease progression/end of life
- Changes in opioid management may need to occur in patients with changes in organ function
- Naloxone administrations involved patients on multiple sedating medications
- Majority of cases were medical patients and being followed by a pain service
- Limitations include retrospective review of data and determination of opioid-related events were limited by documentation

## Next Steps

- Continue monitoring each event
- Report events related to opioid overtreatment to respective service Quality Officers
- Summarize findings and report quarterly to the Pain Task Force and Medication Safety Committee
- Develop triggers to highlight patients more at risk for opioid related events:
  - Other sedating medications in combination with opioids
  - Changes in organ function (respiratory, hepatic, renal, etc.)