ALTO in the ED

Implementation & Results

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Conflict of Interest Disclosure

Rachael Duncan has no financial relationships to disclose.

Learning Outcomes

- Present metrics and results of various ALTO pilots
- Describe the step-by-step process and timeline in order to implement ALTO in the ED
- Explain the process and policy changes that need to occur prior to use of ALTO therapies in the ED
- Discuss barriers and "lessons learned"

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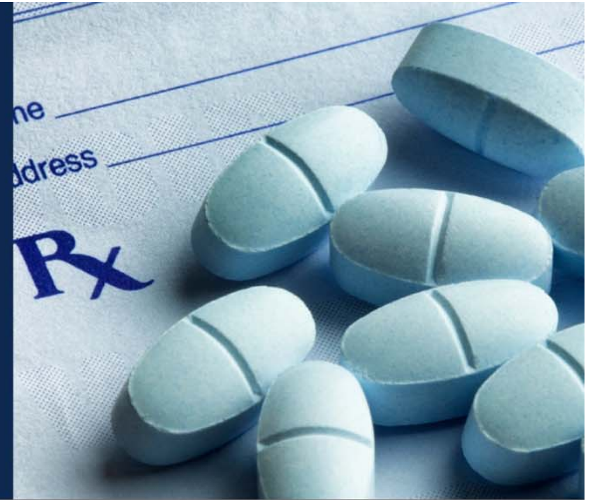

ALTO in Colorado: CO ACEP Guidelines

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How It All Began:
Colorado Opioid Safety Pilot

Need:

CO hospitals requested support for opioid work

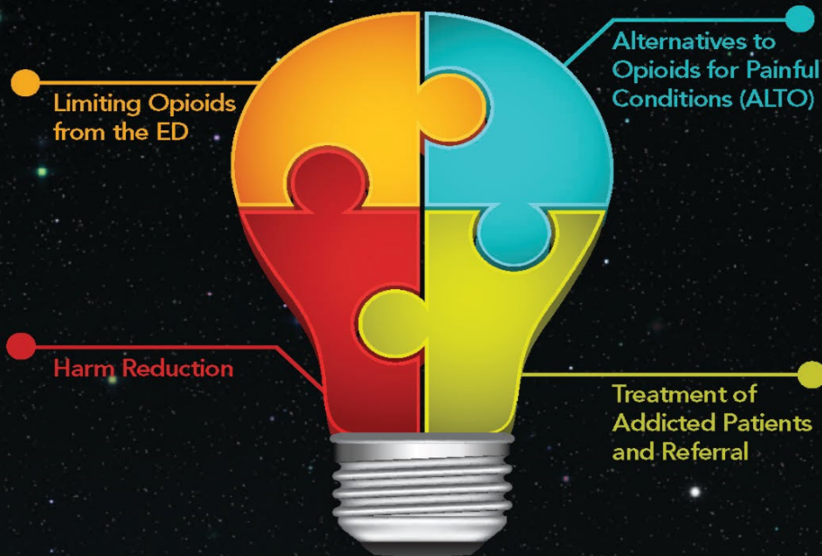
Opportunity:

Pain is the #1 reason for ED visits

Solution:

Colorado ACEP *2017 Opioid Prescribing & Treatment Guidelines* first in the nation to promote alternatives to opioids in **multiple ED's**

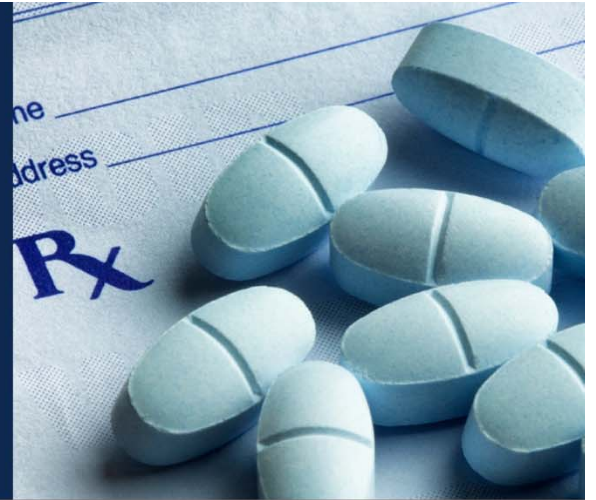
CO-ACEP Guidelines



www.coacep.org

ALTO Approach

- Multi-modal non-opiate approach to analgesia for specific conditions
- **Goals:** To utilize non-opiate approaches as first-line therapy and educate our patients:
  - Opiates will be second-line treatment
  - Opiates can be given as rescue medication
  - Discuss realistic pain management goals
  - Discuss addiction potential and side effects of opioids



ALTO in Colorado: Initial ED Pilot

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ALTO Pilot – Colorado ACEP Guidelines

- Pathways:
  - Renal colic
  - Musculoskeletal pain
  - Open fracture/dislocation
  - Headache/migraine
  - Chronic abdominal pain

COLORADO ACEP
2017 OPIOID PRESCRIBING
& TREATMENT GUIDELINES

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SWEDISH MEDICAL CENTER

- Englewood, Colorado
- 408 beds
  - Level 1 trauma center
  - Comprehensive stroke
  - Burn center
- ED
  - 42 beds
  - > 70,000 patient visits/year

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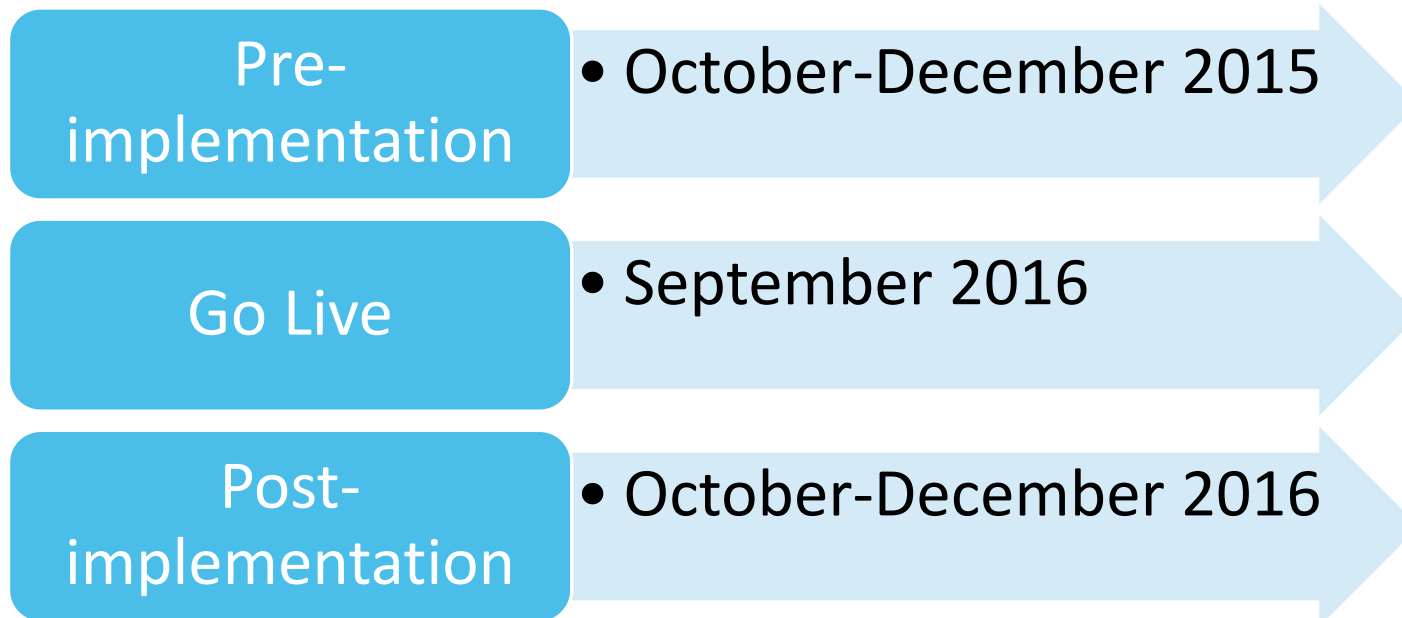
Methods

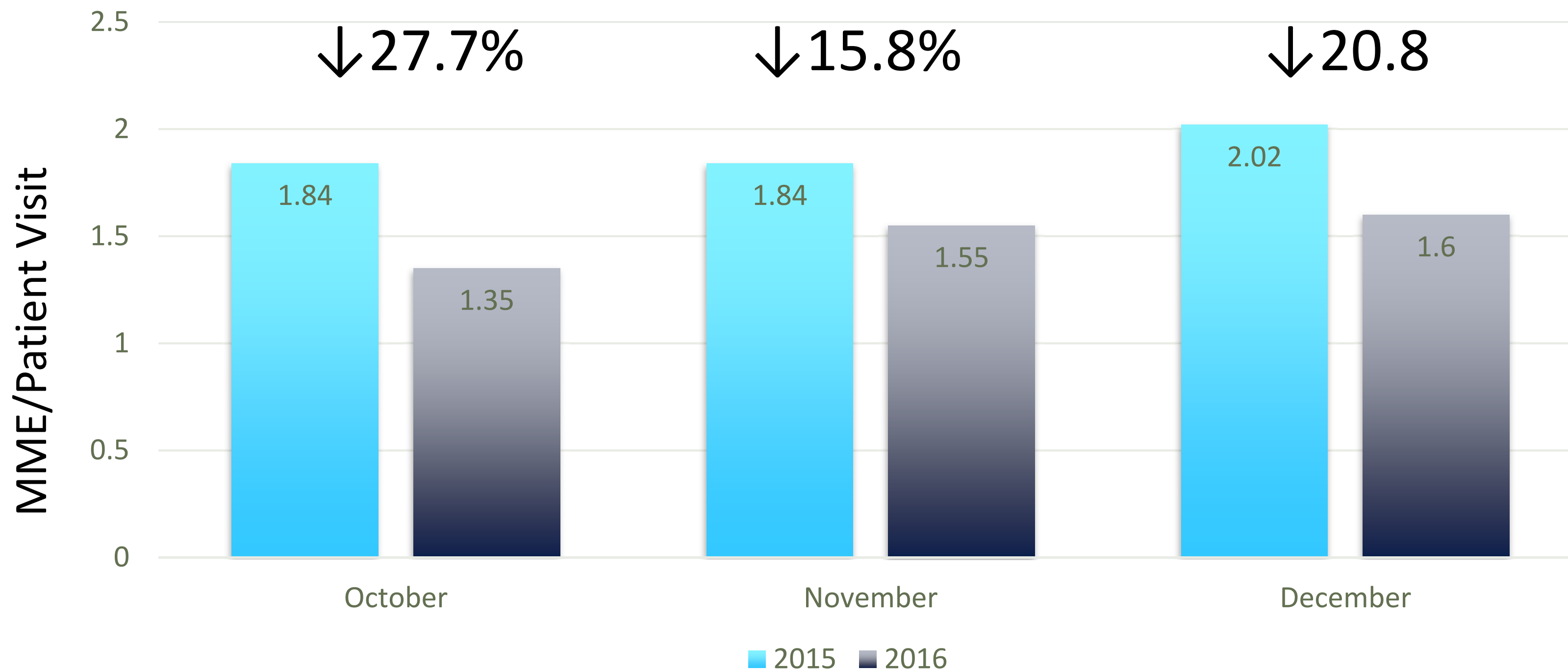
- Compared results pre- and post- ALTO implementation



Primary Outcomes

- Change in ED opioid use pre- and post-implementation
  - Measured in morphine dosing equivalents
  - Per ED patient visit
- Patient satisfaction
  - Press Ganey Scores
    - Overall and for "pain control"

Swedish Results



Mean IV MME/visit in 2015 vs 2016 = 1.9 vs 1.5 (p=0.0146), a reduction of over 20%

Duncan RD et al. *Am J Em Med* 2019; 37 (1): 38-44.

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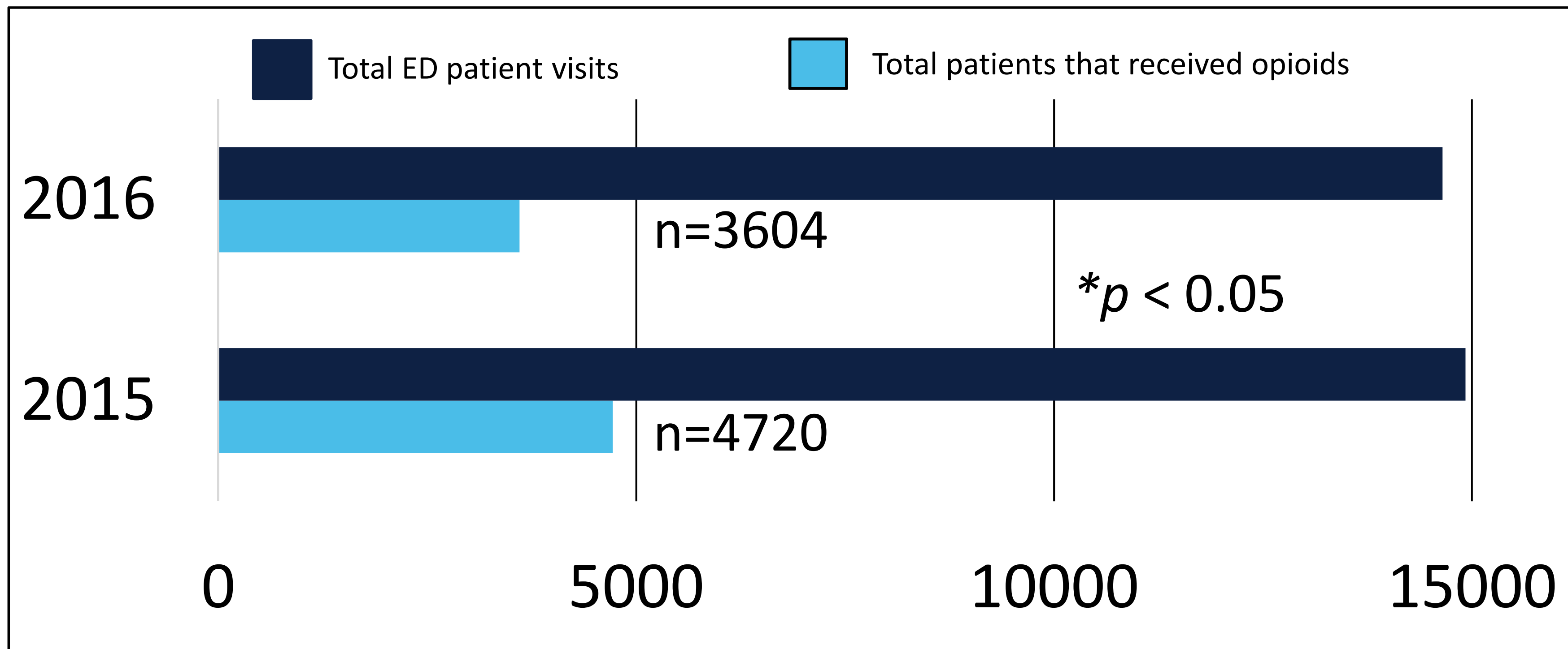
Patients Receiving Opioids During ED Stay

*Total of 29,494 (14,800 in 2015, 14,694 in 2016) visits in the ED



*Almost 1000 less patients received an opioid in the ED following the initiation of opioid reduction initiatives

Duncan RD et al. *Am J Em Med* 2019; 37 (1): 38-44.

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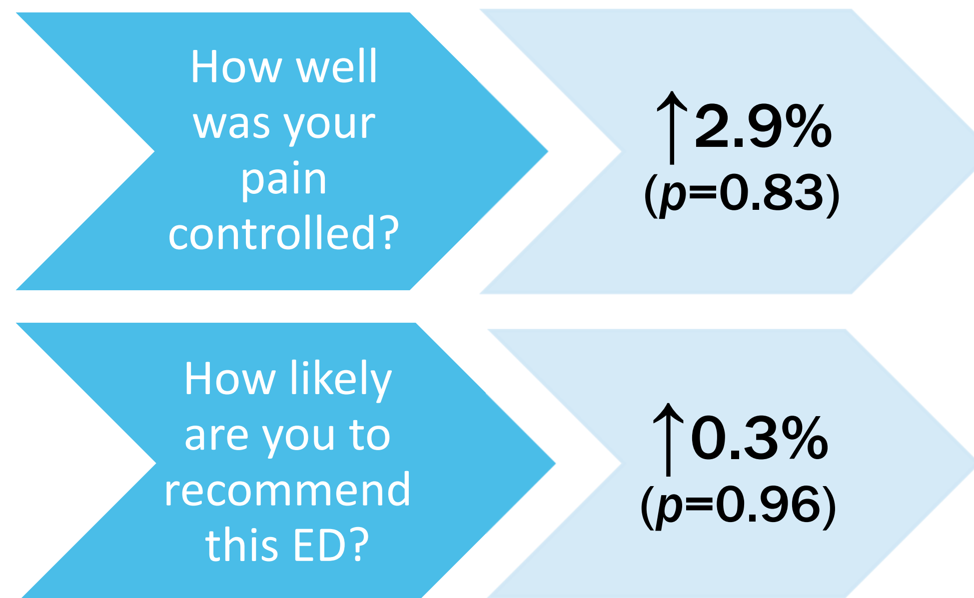
Press Ganey Patient Satisfaction Scores

*Patient satisfaction scores remained consistent!



*No significant difference between 2015 and 2016 responses for each question after adjusting for age, sex, and race

Duncan RD et al. *Am J Em Med* 2019; 37 (1): 38-44.

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AJEM Publication

Alternatives to opioids for pain management in the emergency department decreases opioid usage and maintains patient satisfaction

Rachael W. Duncan, PharmD, Karen L. Smith, PhD, Michelle Maguire, PharmD[1,], Donald E. Stader III, MD

PlumX Metrics

DOI: https://doi.org/10.1016/j.ajem.2018.04.043 |

⊞ Article Info

Abstract | Full Text | Images | References | Supplemental Materials

Abstract

Objective

The objective of this study was to assess opioid use in an emergency department following the development and implementation of an alternative to opioids (ALTO)-first approach to pain management. The study also assessed how implementation affected patient satisfaction scores.

Methods

This study compared data collected from October to December of 2015 (prior to implementation) to data collected between October and December of 2016 (after the intervention had been implemented). Emergency department visits during the study timeframe were included. Opioid reduction was measured in morphine equivalents (ME) administered per visit. Secondary outcomes on patient satisfaction were gathered using the

- > 20% decrease in IV opioid administration
- Patient satisfaction scores remained the same
  - How likely are you to recommend this ED?
  - How well was your pain controlled?
- > 700 patient visits where opioids were avoided

Duncan RD et al. *Am J Em Med* 2019; 37 (1): 38-44.

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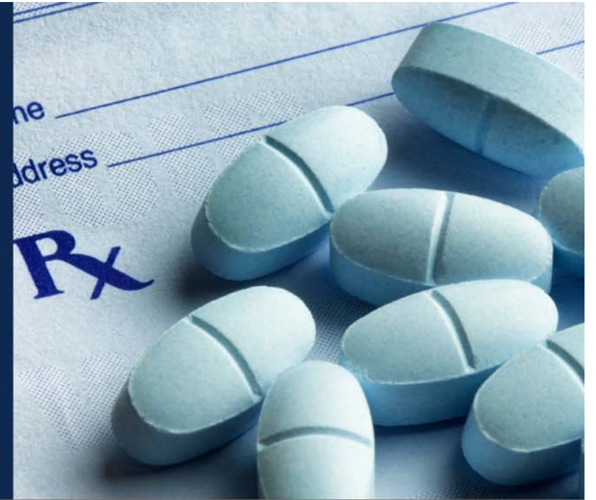

ALTO in Colorado: Statewide Pilot

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Colorado Opioid Safety Collaborative

•What is the Colorado Opioid Safety Collaborative?

Partnership between:

- ❑ Colorado Hospital Association
- ❑ Colorado Chapter of the American College of Emergency Physicians
- ❑ Telligen – QIN/QIO
  - ➢ Colorado's Quality Improvement Network/Quality Improvement Organization
- ❑ Colorado Emergency Nurses Association

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Why did we participate?

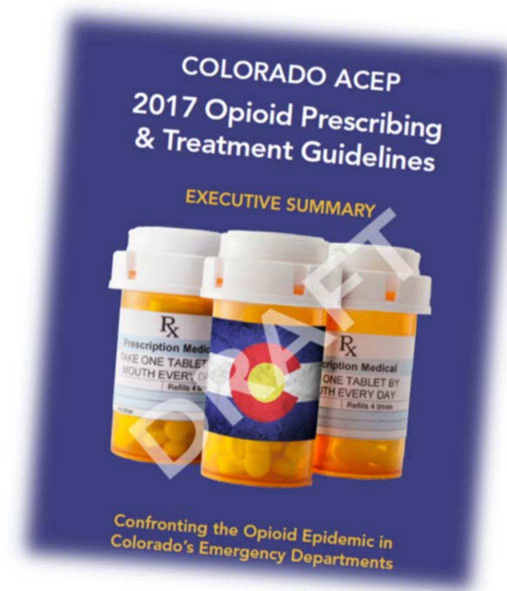
- ❑ Pain is the most common reason for admission into the Emergency Department
- ❑ Colorado is at the center of the US opioid epidemic with the 12th highest rate of misuse and abuse of prescription opioids across all 50 states
- ❑ 4/10 Colorado adults admit to misuse of prescription medication: primarily pain killers
- ❑ Overdoses: 2/3 from pharmaceuticals to 1/3 from heroin
- ❑ Emergency Departments are in a strong position to reduce opioid use in a population at high risk for misuse and abuse through alternative pain management strategies

HTTP://WWW.CPR.ORG/NEWS/STORY/COLORADO-DRUG-OVERDOSES-ALMOST-EVERY-COUNTY-AND-AHEAD-NATIONAL-AVERAGE

What were we hoping to accomplish?

Pilot Objective:

- ❑ Reduce administration of opioid medications by Emergency Department providers through implementation of the *Colorado ACEP Emergency Department Opioid Guideline*



Specific Aim:

- ❑ Reduce Emergency Department opioid administration by 15 percent

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Colorado Opioid Safety Pilot

Opioids Used

Total administration (in MEUs)/1,000 ED visits

Total number of treated pain visits/1,000 ED visits

ALTOs Used

Total administrations/ 1,000 ED visits

Total number of treated pain visits/1,000 ED visits

ED HCAHPS Responses

How well was your pain controlled?

Would you recommend this ED?

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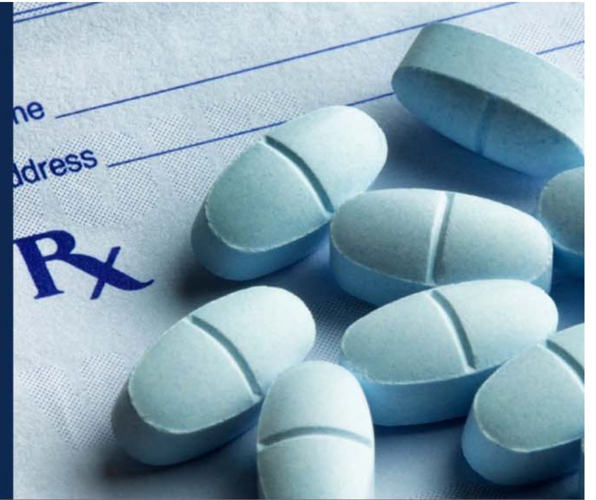

ALTO in Colorado: Implementation - The Details

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Step 1: ID Project Champions

- ED Nursing
  - Director, charge RNs, staff
- ED Physicians
  - Director, staff
- Hospital Leadership
  - CEO, CNO, CMO
- Other Support
  - Quality improvement
  - IT/data support
  - Pharmacy
  - Communications/marketing

Step 2: Provider Education

- Physicians teach physicians
  - Training sessions on trigger point injections and nerve blocks
  - Scripting on how to manage up ALTO options
- Partner with pharmacy to create opioid-free pain management orderset
  - Organized by indication
- Utilization of outpatient prescribing guidelines
  - For when discharging patients home
  - Inclusion of many oral options for each indication
- *Internal publication of opioid prescribing patterns

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Step 3: Nursing Education

- Nurses teach nurses – teach the teacher model
  - Utilized annual "Skills Days" to train all staff
- Learn about the new multimodal, ALTO pathways
  - Education boards
  - Weekly newsletters
  - Podcasts
  - Webinars
  - Badge buddies

Opiate-Free Pain Options by Indication

Headache/Migraine

Immediate/1st Line Therapy
1 L 0.9% NS + high-flow oxygen
Dexamethasone 8 mg IV
Ketorolac 15 mg IV
Metoclopramide 10 mg IV
Trigger point inj w/ lidocaine 1%

Alternative Options
APAP 1000 mg PO + IBU 600 mg PO
Promethazine 12.5 mg OR prochlorperazine 10 mg IV
Sumatriptan 6 mg SC
Haloperidol 2.5 mg IV
Magnesium 1 g IV
Valproic acid 500 mg IV

If Tension Component
Cyclobenzaprine 5 mg OR diazepam 5 mg PO/IV
Lidoderm TD patch

Musculoskeletal Pain

Non-IV Therapies
APAP 1000 mg + IBU 600 mg PO
Cyclobenzaprine 5 mg OR diazepam 5 mg PO
Gabapentin 600 mg PO
Lidoderm TD patch (max 3)
Ketamine 50 mg IN
Trigger-point inj w/ lidocaine 1%

IV Therapy Options
Ketamine 0.2 mg/kg IV + 0.1 mg/kg/hr gtt
Ketorolac 15 mg IV
Dexamethasone 8 mg IV
Diazepam 5 mg IV

Renal Colic

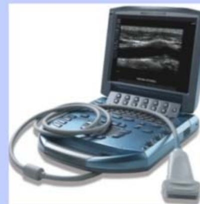
Immediate/1st Line Therapy
APAP 1000 mg PO
Ketorolac 15 mg IV
1 L 0.9% NS bolus

2nd Line IV Therapy
Lidocaine 1.5 mg/kg (max 200 mg)

Alternative Options
DDAVP 40 mcg IN
Ketamine 50 mg IN

Extremity Fracture/ Joint Dislocation

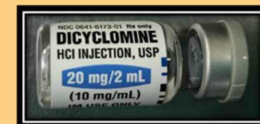
Immediate/1st Line Therapy
APAP 1000 mg PO
Ketamine 50 mg IN
Nitrous oxide (titrate up to 70%)



Ultrasound-Guided Regional Anesthesia
Lidocaine 0.5% perineural infiltration

Chronic Abdominal Pain

Immediate/1st Line Therapy
Metoclopramide 10 mg IV
Prochlorperazine 10 mg IV
Diphenhydramine 25 mg IV
Dicyclomine 20 mg IM/PO



Alternative Options
Haloperidol 2.5 mg IV
Ketamine 0.2 mg/kg + 0.1 mg/kg/hr gtt
Lidocaine 1.5 mg/kg (max 200 mg)

Step 3: Nursing Education

- Be proactive with patient and family concerns
  - Begin conversation regarding best practices to manage pain
    - Manage up ALTOs
    - Discuss risks of opioids
  - Manage pain control expectations – talk about realistic pain goals
  - Utilize scripting: “control” of pain versus “relief” of pain
    - Promote “increasing comfort”

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Step 4: Patient Education

- Patients
  - Educate patients and families on pain assessment tools
  - Provide non-pharmacologic alternatives to medication
    - Warm blankets, ice packs, dim lights, music
  - Handout educational pamphlets
    - ALTO approach to pain management
    - Risks of opioids

Step 4: Patient Education

- Marketing
  - Reach out to community partners to promote the ALTO approach
  - Work with ED staff on creating educational boards, handouts, and signs to advertise ALTO and set expectations
    - Tell the “why”

Step 5: Pharmacy and Committee Work

- Policy Changes
  - Procedural Sedation
  - High-risk Medication Administration
- Smart Pumps
  - Addition of new medications – clearly label “for pain”
    - Lidocaine
    - Ketamine
- Stocking of ALTO medications
  - Readily available in the ADCs

Committee Work: Policy Changes

- Procedural Sedation
  - Ketamine dosing – must clearly define analgesia vs sedation doses
    - < 0.25 mg/kg slow IVP = analgesia
    - >/= 1 mg/kg slow IVP = sedation = "timeout"
- High-risk Medication Administration
  - Lidocaine administration
    - 1.5 mg/kg bolus + 1-2 mg/kg/hr drip x 24 hrs max = floor
    - Cardiac lidocaine = CCU
  - Ketamine administration
    - < 0.25 mg/kg slow IVP + 0.1 mg/kg/hr x 48 hrs max = floor
    - 1-2 mg/kg IVP + 5-30 mg/hr = CCU

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Pharmacy: Drug Shortages

- Greatly affected practice since late 2016
  - Local anesthetics, anti-emetics, ketorolac, ketamine, IV lidocaine, IV diazepam . . . ie the new “normal”
- Strategies to communicate ongoing changes and updates to front-line staff – how do we keep up in CPOE?
- Which drug do you absolutely need to ensure success with ALTO implementation?

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Step 6: IT & Data

- CPOE
  - Creation of ALTO-based pain management order set
  - Create order strings for unique entries – clearly label “for pain”
- Data Collection
  - Opioid and ALTO usage reports built in EHR
  - Other reports off the dashboard to characterize patient population

Timeline for Success

6 months prior

- Enlist project champions throughout hospital
- Work with IT to create ED ALTO order set

3 months prior

- Begin educating nurses and physicians on new medications, orders, and scripting
- Update high risk med and procedural sedation policies

1 month prior

- Stock medications in ED
- Program smart pumps for new medications
- Marketing push to the hospital and community

https://cha.com/wp-content/uploads/2018/01/CHA-Opioid-Checklist.pdf

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Barriers to Success

- Culture change
- Denial that there is a problem
- Knowledge gap about ALTOs
- Logistics surrounding “high-risk” ALTO meds
- Patient satisfaction scores will drop
- ALTO takes more time than opioids
- What about those patients already on opioids?

ALTO in Colorado:
Results - Success in Action

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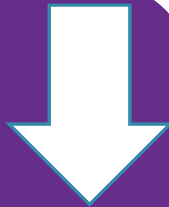
Overall Results from CO Statewide Pilot

36%



in opioid administration

Measured in MEUs/1,000 ED visits across all 10 EDs

2017 vs. 2016

31%

in ALTO administration

35,000

fewer projected opioid administrations

during the pilot than during the baseline period

https://cha.com/wp-content/uploads/2018/01/CHA.090-Opioid-SummitReport_web2.pdf

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Overall Results – By Site

https://cha.com/wp-content/uploads/2018/01/CHA.090-Opioid-SummitReport_web2.pdf

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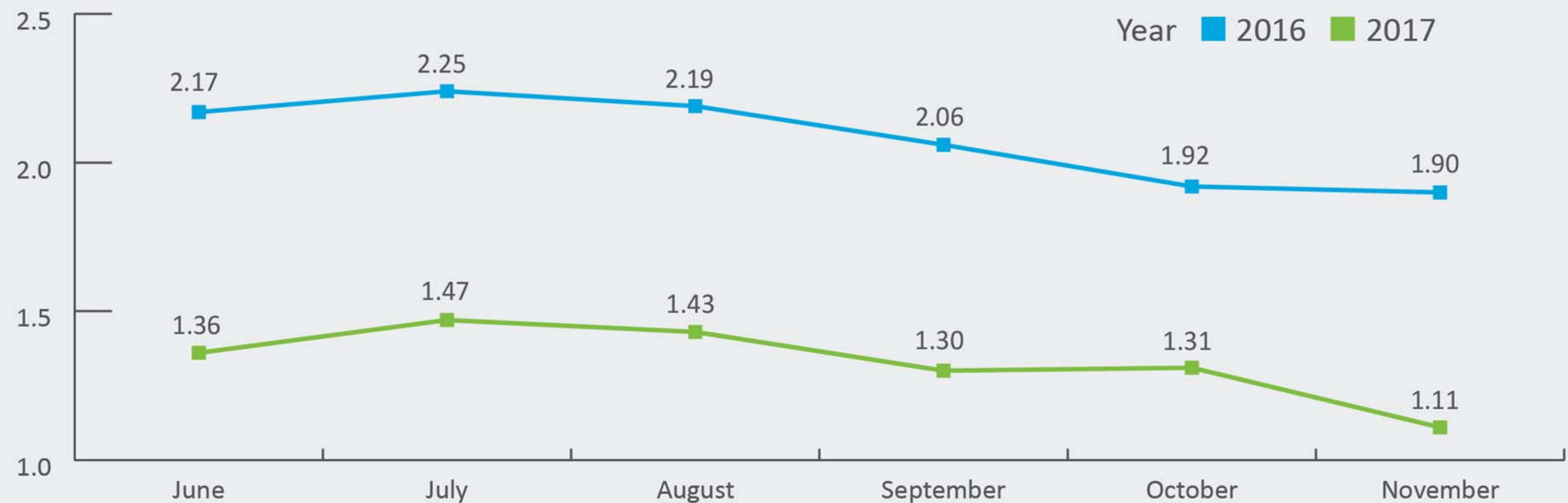
Overall Results – Opioid Use



* Reductions in MEUs/visit decreased throughout the pilot period

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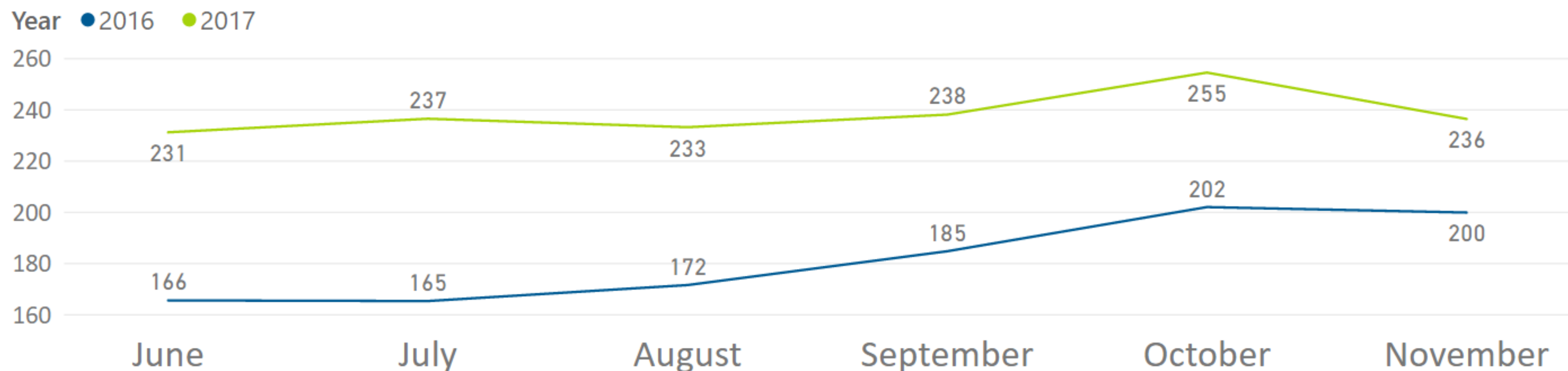
Overall Results – ALTO Use



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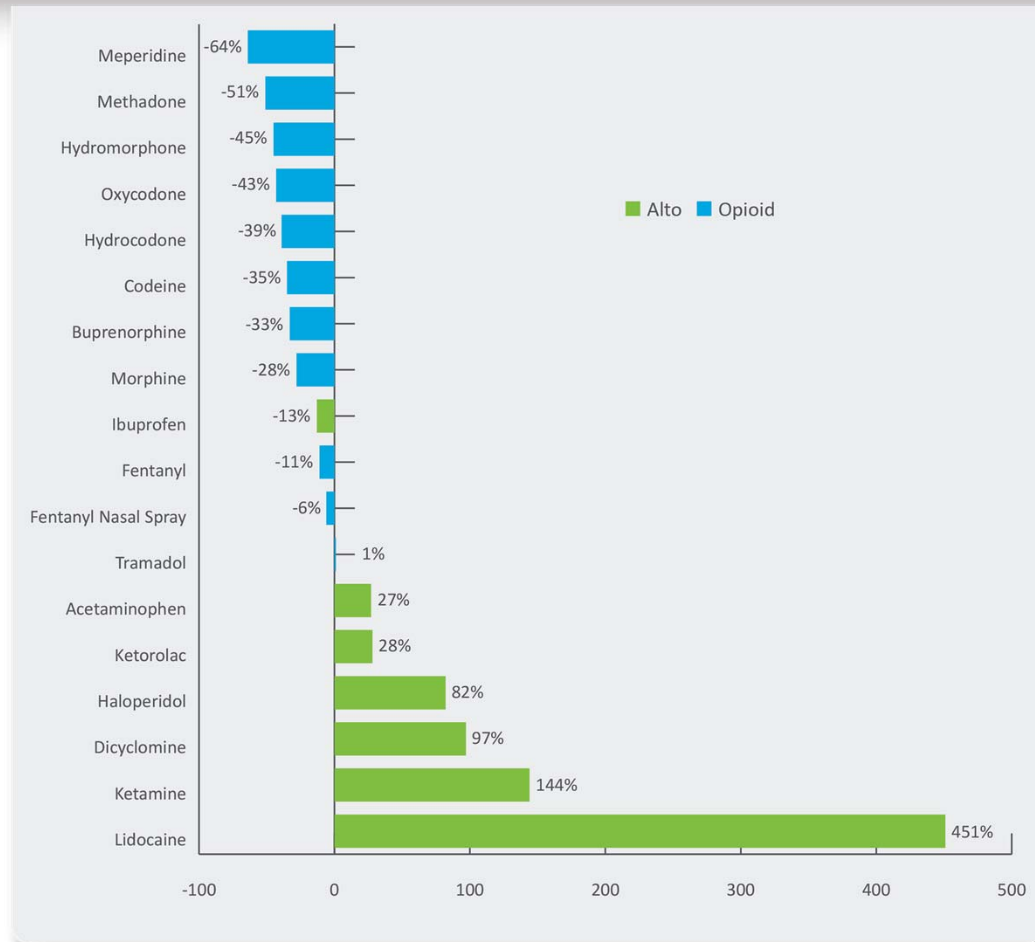
Change in Medication Administration



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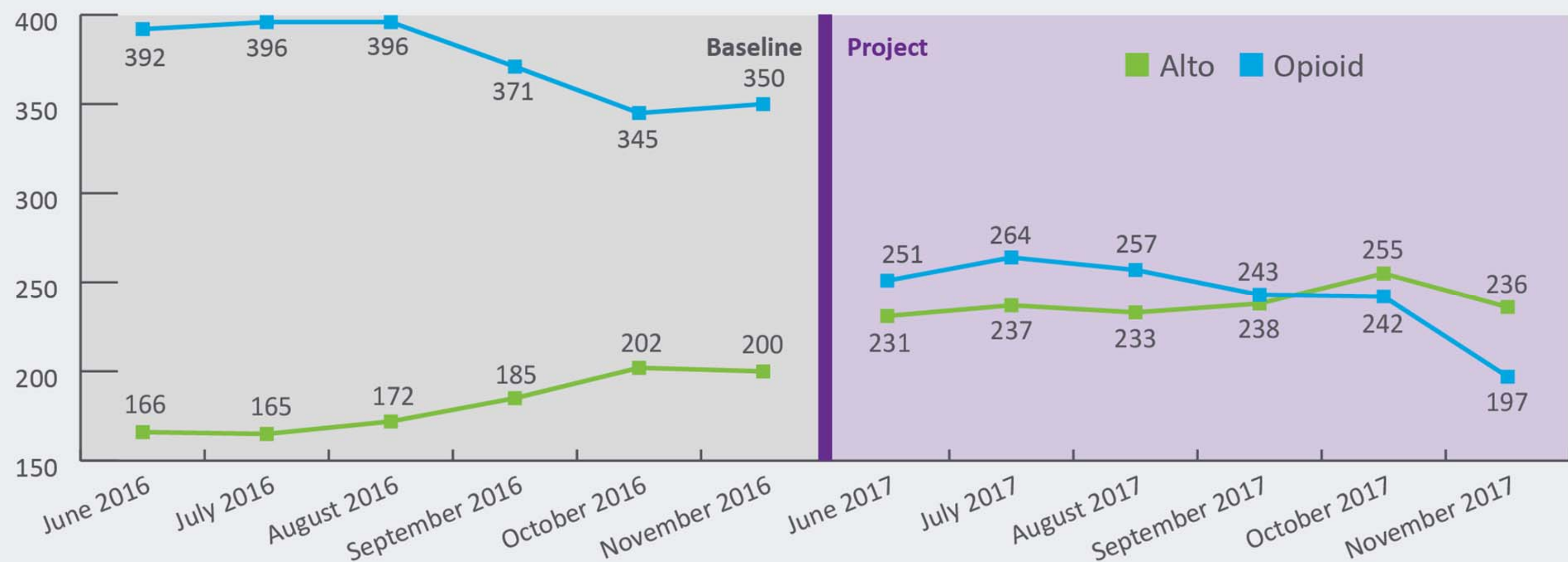
ALTO vs. Opioid Use Over Time



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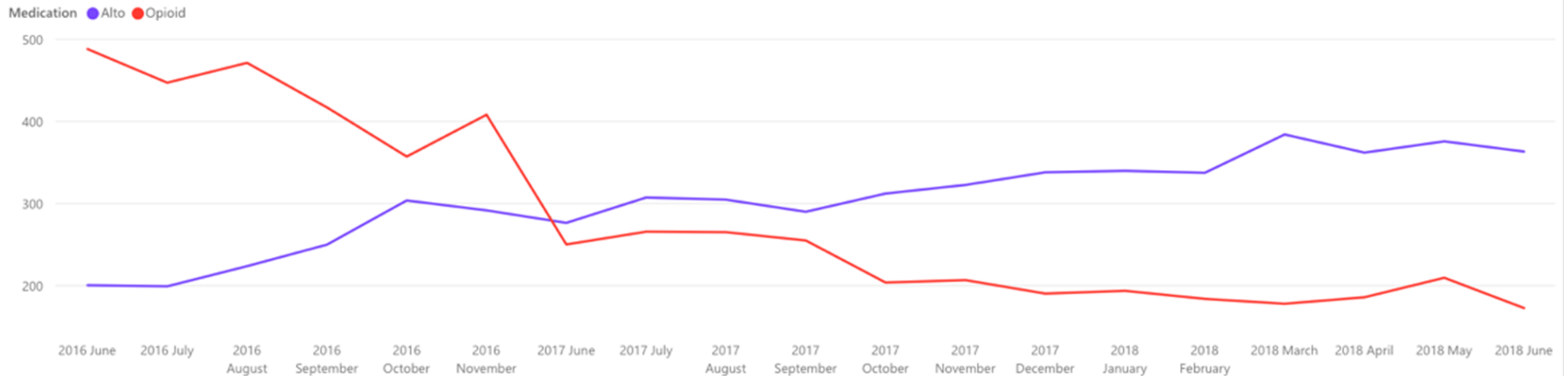
6 Months After the CO ALTO Project

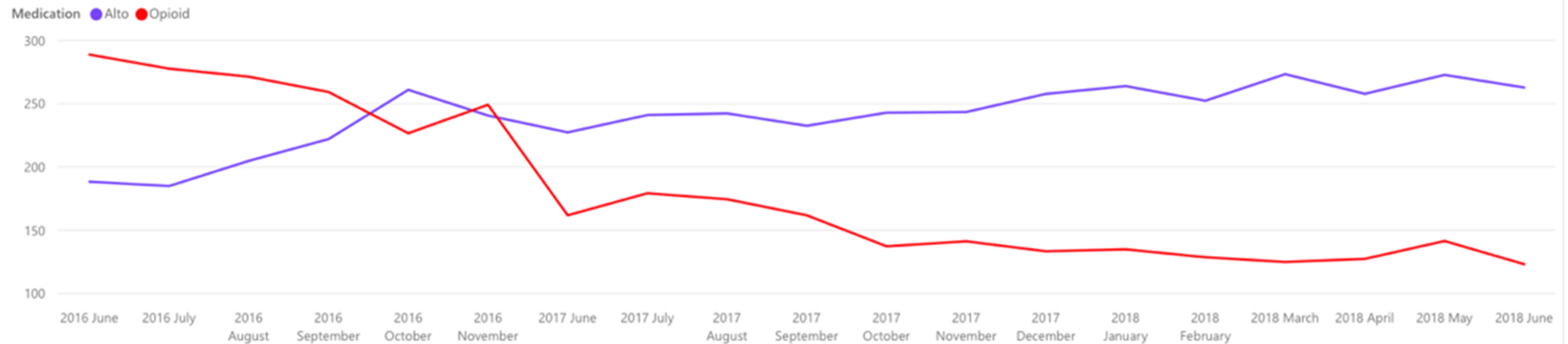
Select location (for systems with multiple facilities)

Swedish

Total Pain Medication Administrations per 1,000 ED Visits



Number of Treated Pain Visits per 1,000 ED Visits



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Continued Work

- Based on the results of the pilot, ALTO has been unrolled to 80% of the EDs in Colorado
  - Regional training sessions around the state
  - Submission of data to CHA
- The COs CURE Initiative
  - https://cha.com/opioid-safety/cos-cure/
- COs CURE Hospital Medicine Pilot
  - https://cha.com/opioid-safety/cos-cure/cos-cure-hospital-medicine-pilot/

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Lessons Learned

- Change is possible!!
- Collaborate – don't feel isolated
  - Reach out to other facilities, states
- Tell the "why"
  - Have all members take ownership of the opioid crisis
- Include patients when making decisions to manage pain
  - Opioid risks vs ALTO benefits

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Lessons Learned

- Partner with your marketing department for messaging to community
- Have a communication plan for within the facility
  - ALTOs will trickle to the inpatient side!
- Do the little things to ensure success
  - Prelaunch checklist
- Gather metrics to show if change is effective
- Share successes with department

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Other Educational Material

Opioid reduction podcasts:

– Emergency Medical Minute

emergencymedicalminute.com

https://emergencymedicalminute.com/opioid-miniseries/

ALTO training materials:

-Colorado Hospital Association

https://cha.com/quality-patient-safety/opioid-safety-updates/colorado-alto-project-resources/

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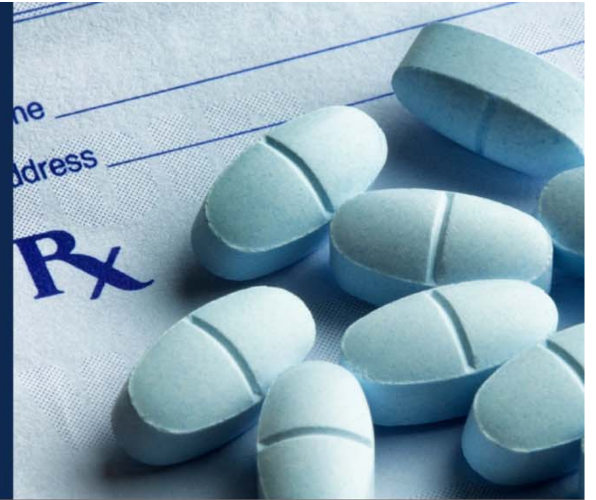

Questions?

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