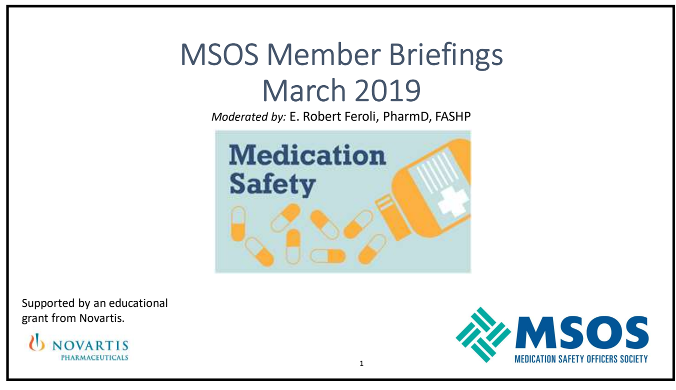
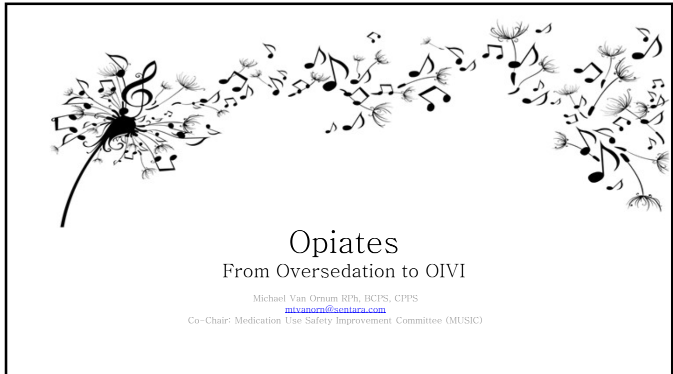
MSOS Member Briefing
March 2019





Sentara Martha Jefferson Hospital (SMJH)

- Sentara Healthcare System
  - 12 hospital system in Virginia
  - Sentara Martha Jefferson Hospital
    - Community Hospital
    - 175 beds

Opiate Induced Ventilatory Inhibition (OIVI)

- More comprehensive descriptor than oversedation
- Encompasses three mechanisms
  - Decreased respiratory drive
  - Decreased level of consciousness
  - Upper airway obstruction
- Result = decreased ventilation

Anaesth Intensive Care 2011; **39**: 545-558

Reversal Review

- Patients receiving naloxone reversals
  - Did not receive doses outside the normal dose range
  - Often had tolerated similar doses in the past
  - Fell across the usage spectrum from first dose to days of doses

OIVI: Where to look

- Significant contributory factor in:
  - Unwitnessed cardiopulmonary event
  - Comorbidities affecting LOC
    - Stroke
    - Sepsis
    - Respiratory disease
    - Hypotension
  - Events with plausible explanations

OIVI behaves like an opportunistic ADE

Meet the Elephant

- The patient's pain scale is subjectively accurate
  - Patient's have widely variant references for comparison
    - For pain quality, intensity, and duration
    - For analgesic quality, intensity, and duration
  - To what is the patient comparing "worst pain imaginable"?
  - How does the patient define efficacy from analgesics?

A Bigger Elephant

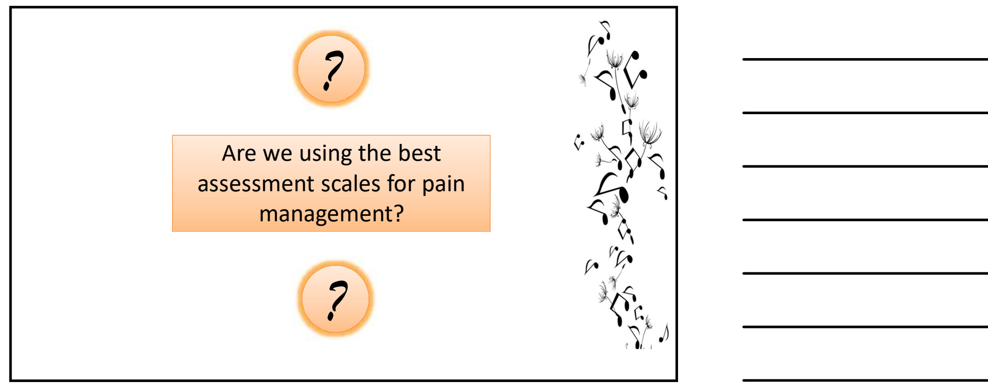
- Higher pain score = more drug
  - Mild, moderate, severe are linear
  - Implicitly assumes goal is <u>ZERO</u> pain

Are we using the pain scales in the right way?

Pain Assessment

- Initial (For Ordering)
  - Tolerant vs Naïve
  - Past medical history
  - Acute Pain vs Chronic Pain
  - Chief Complaint/Initial Diagnosis
  - Anticipated Medical Plan
- Ongoing (For Dose Adjustments)
  - Level of Consciousness (LOC)
  - Pain Scores (mild, mod, severe)
  - Oxygen Saturation
  - Respiratory Quality

Keep Functions Focused!



Different Tools

- Indiana Polyclinic Combined Scales
  - Pain
    - 2 = Small bruise
    - 5 = Headache for days
    - 10 = Being torn apart while still alive
  - Functional
  - Depression
  - Anxiety

The Herd (of fallacies)

- Never give an extra dose before the next dose is due.
- The dose is okay if the patient has been tolerating it for days.
- IV narcotics don’t last as long as their oral counterparts so they can be given more frequently.
- Dosing in anticipation of future pain is always a good practice. Stay ahead.

Lessons from Review

- The pain scale we have could be more effective and patient centric
- Other pain scales suggest broader pain management interventions
- Education and culture require a plan for sustainability

Considerations

- What if:
  - We treated OIVI like an adverse drug event?
    - How do we manage heparin-induced thrombocytopenia or contrast-induced nephropathy?
  - We had a daily review/discussion of patients receiving parenteral opiates or high doses?
    - Assess for changes in condition

Considerations

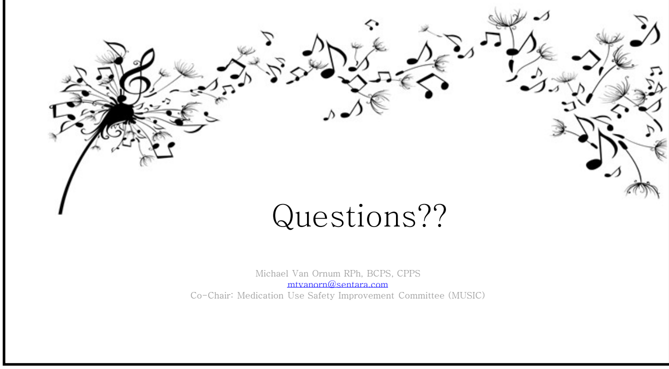
- What if
  - Dose stacking was a friend?
    - Low dose parenteral "Rescue" doses
  - Our level of concern for risk increased with duration of opiate use?
  - Monitoring increased at transitions of care?
  - Patient's <u>baseline</u> functional pain scores were recorded and referenced?
  - Realistic analgesia expectations were discussed BEFORE medication administration?

Summary

- Reducing risk of OIVI still has a long way to go
  - Capital investments in monitoring
    - Capnography
  - Orderset and order build revisions
  - Patient education expectations
  - Clinician education
  - Placement and timing of monitoring activities
    - Define expected monitoring

Great Resources

- "Opioids, ventilation and acute pain management" Anaesth Intensive Care 2011; 39: 545-558
- www.hospitalmedicine.org/MI
  - Reducing Adverse Drug Events Related to Opioids Implementation Guide
- San Diego Patient Safety Council
  - Respiratory Monitoring of Patients Outside the ICU: Guidelines of Care Tool Kit 2014



Questions??

Michael Van Ornum RPh, BCPS, CPPS
mtvanorn@sentara.com
Co-Chair: Medication Use Safety Improvement Committee (MUSIC)

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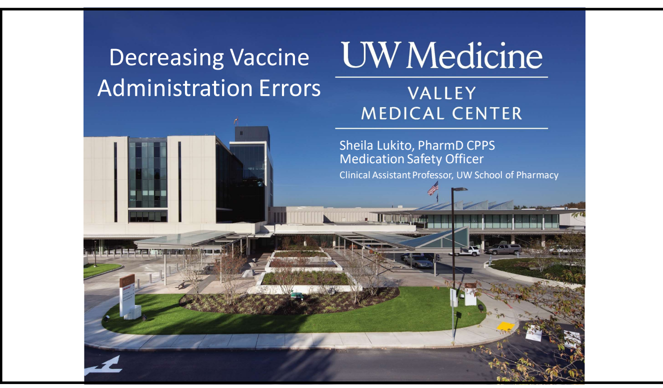
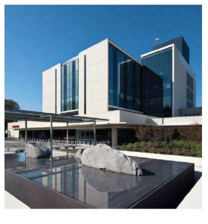


Valley Medical Center

- The oldest and largest public district hospital in Washington State (located south of Seattle)
- Acute Care (321 beds):
  - Medical, surgical, emergency (Level III Trauma Center), birthing, Level II Neonatal ICU, pediatrics, oncology, and other specialties
- **Clinic Network:**
  - Over 60 primary care, urgent care, and specialty care clinics
  - Sees over 400,000 patients every year
  - **Administered over 56,000 vaccines in 2017** (all vaccines for patients < 18 years old are provided free of charge from the WA State Vaccine for Children's program)



Decreasing Vaccination Errors

- The clinic network focused its efforts to redesign the vaccination workflow process over a period of time by:
  - Implementing evidence-based practices
    - utilization of the online state-based immunization registry for vaccine history verification
    - optimization of clinical decision support in the EHR by creating a *Vaccine SmartSet* keying on the patient's age
    - documentation of vaccines in the EHR prior to administration
  - Improving staff engagement
- This initiative resulted in 134 fewer vaccination errors in 2017 compared to 2013 (one of the 21st Annual ISMP CHEERS award recipients)

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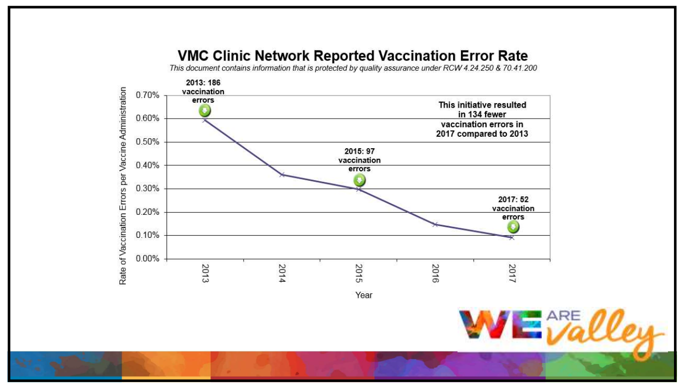

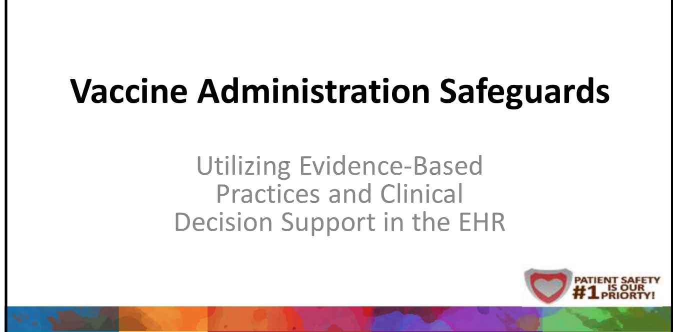

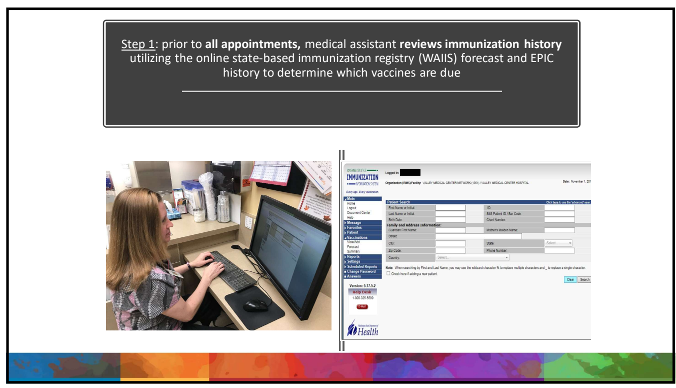

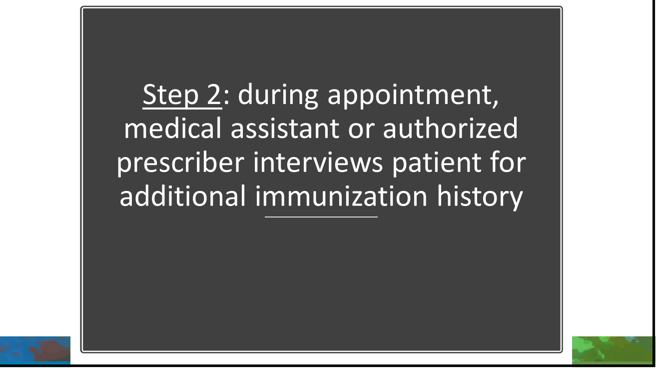

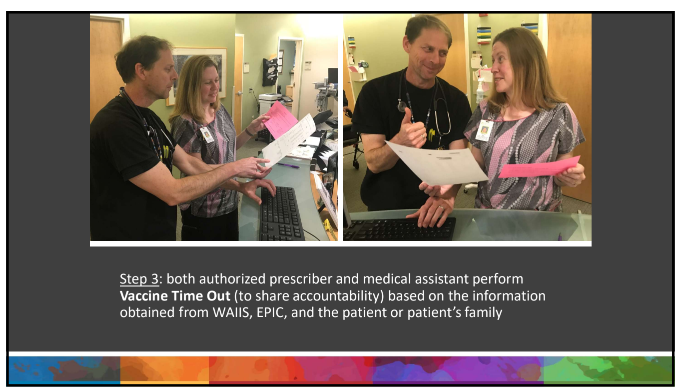

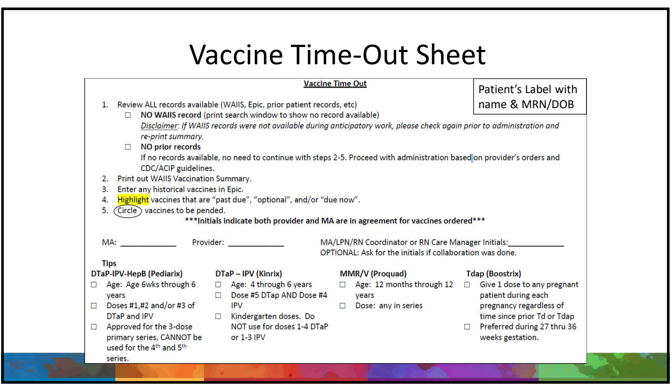

Vaccine Time-Out Sheet

Vaccine Time Out

Patient's Label with name & MRN/DOB

1. Review ALL records available (WAIIS, Epic, prior patient records, etc)
   - ☐ **NO WAIIS record** (print search window to show no record available)
     Disclaimer: If WAIIS records were not available during anticipatory work, please check again prior to administration and re-print summary.
   - ☐ **NO prior records**
     If no records available, no need to continue with steps 2-5. Proceed with administration based on provider's orders and CDC/ACIP guidelines.
2. Print out WAIIS Vaccination Summary.
3. Enter any historical vaccines in Epic.
4. Highlight vaccines that are "past due", "optional", and/or "due now".
5. Circle vaccines to be pended.

*****Initials indicate both provider and MA are in agreement for vaccines ordered*****

MA: ____________ Provider: ____________ MA/LPN/RN Coordinator or RN Care Manager Initials:____________
OPTIONAL: Ask for the initials if collaboration was done.

Tips

DTaP-IPV-HepB (Pediarix)	DTaP – IPV (Kinrix)	MMR/V (Proquad)	Tdap (Boostrix)
☐ Age: Age 6wks through 6 years ☐ Doses #1,#2 and/or #3 of DTaP and IPV ☐ Approved for the 3-dose primary series, CANNOT be used for the 4th and 5th series.	☐ Age: 4 through 6 years ☐ Dose #5 DTap AND Dose #4 IPV ☐ Kindergarten doses. Do NOT use for doses 1-4 DTaP or 1-3 IPV	☐ Age: 12 months through 12 years ☐ Dose: any in series	☐ Give 1 dose to any pregnant patient during each pregnancy regardless of time since prior Td or Tdap ☐ Preferred during 27 thru 36 weeks gestation.

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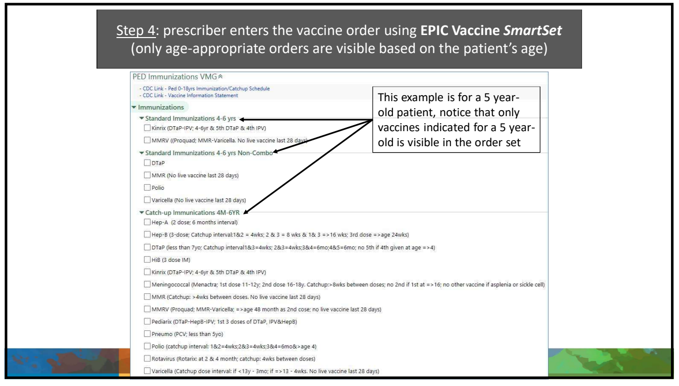

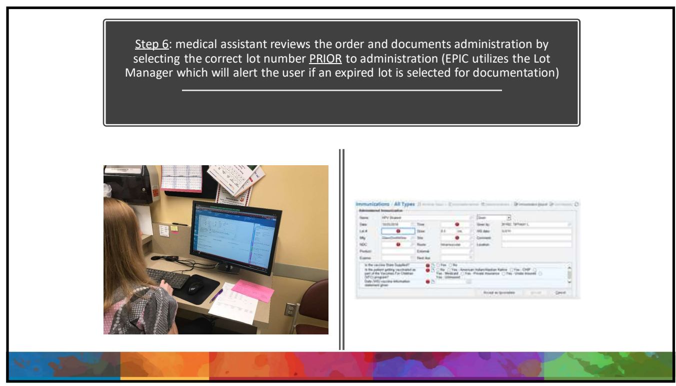

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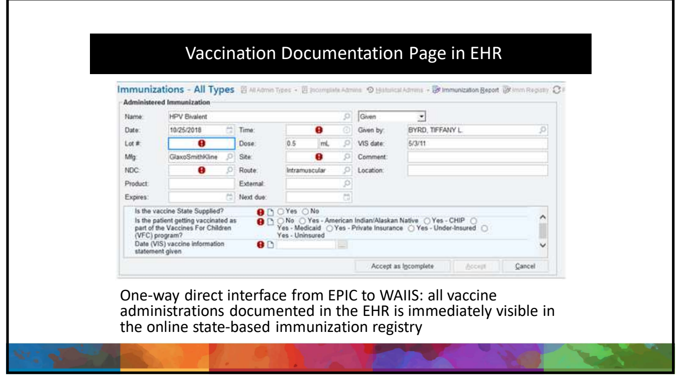

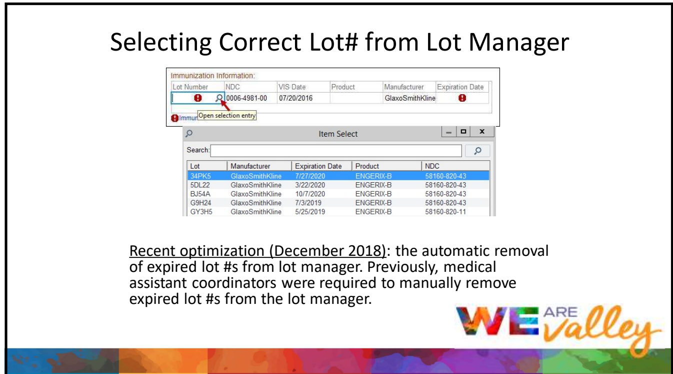

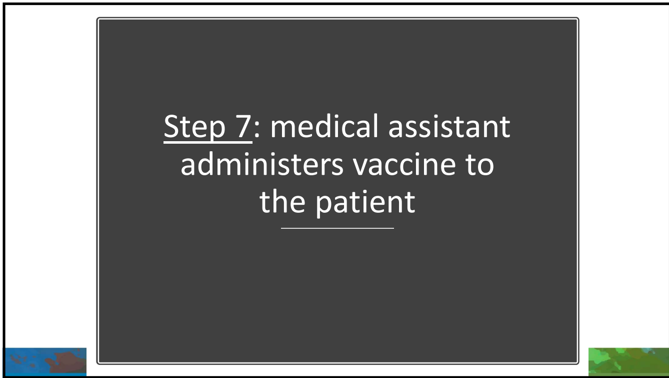

Improving Staff Engagement

- Required "Just Culture" education to all management team members to implement psychologically safe environment for the staff to allow for any feedback of the process
- Shared accountability is practiced among all staff members in the clinic network and real-time coaching is consistently performed to staff whenever drift occurs
- Data is reported to the clinic network patient safety committee every quarter

Future State

Implementation of barcode scanning for all vaccine and medication administrations in the clinic setting (anticipating the creation of updated barcode for all vaccines where the lot # and expiration date are encoded in the barcode)

<u>ISMP Reference:</u> "ISMP Staff Educational Topics and Teaching Points to Prevent Errors during Vaccine Administration" (Acute Care ISMP Medication Safety Alert, June 28, 2018, Volume 23, Issue 13, Page 1-3)

Questions?

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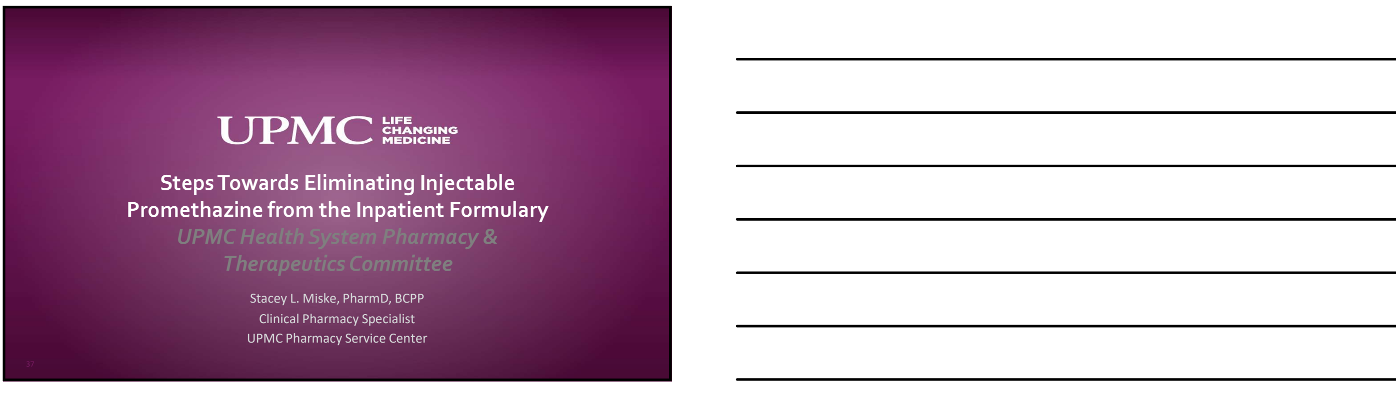

About UPMC

- Integrated Health Care Delivery System
  - Providing acute patient care and multispecialty medical care
- 35 Hospitals
  - Western and Central Pennsylvania
  - Southwestern New York

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UPMC LIFE CHANGING MEDICINE

UPMC LIFE CHANGING MEDICINE

Why is UPMC evaluating the removal of Injectable Promethazine from the Inpatient Formulary?

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ISMP 2018-2019 Targeted Medication Safety Best Practices for Hospitals

Eliminate injectable promethazine from the hospital

- Purpose: To mobilize widespread, national adoption of consensus-based best practices for specific medication safety issues that continue to cause fatal and harmful errors in patients
- Rationale: To eliminate the risk of serious tissue injuries and amputations from the inadvertent arterial injection or IV extravasation of injectable promethazine

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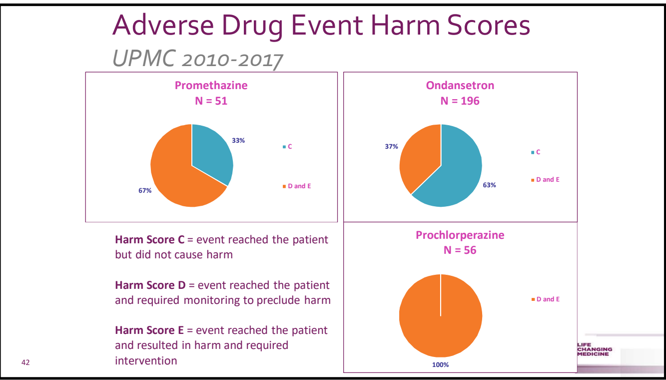
UPMC LIFE CHANGING MEDICINE

UPMC LIFE CHANGING MEDICINE

Are the Alternative Antiemetics Safer?



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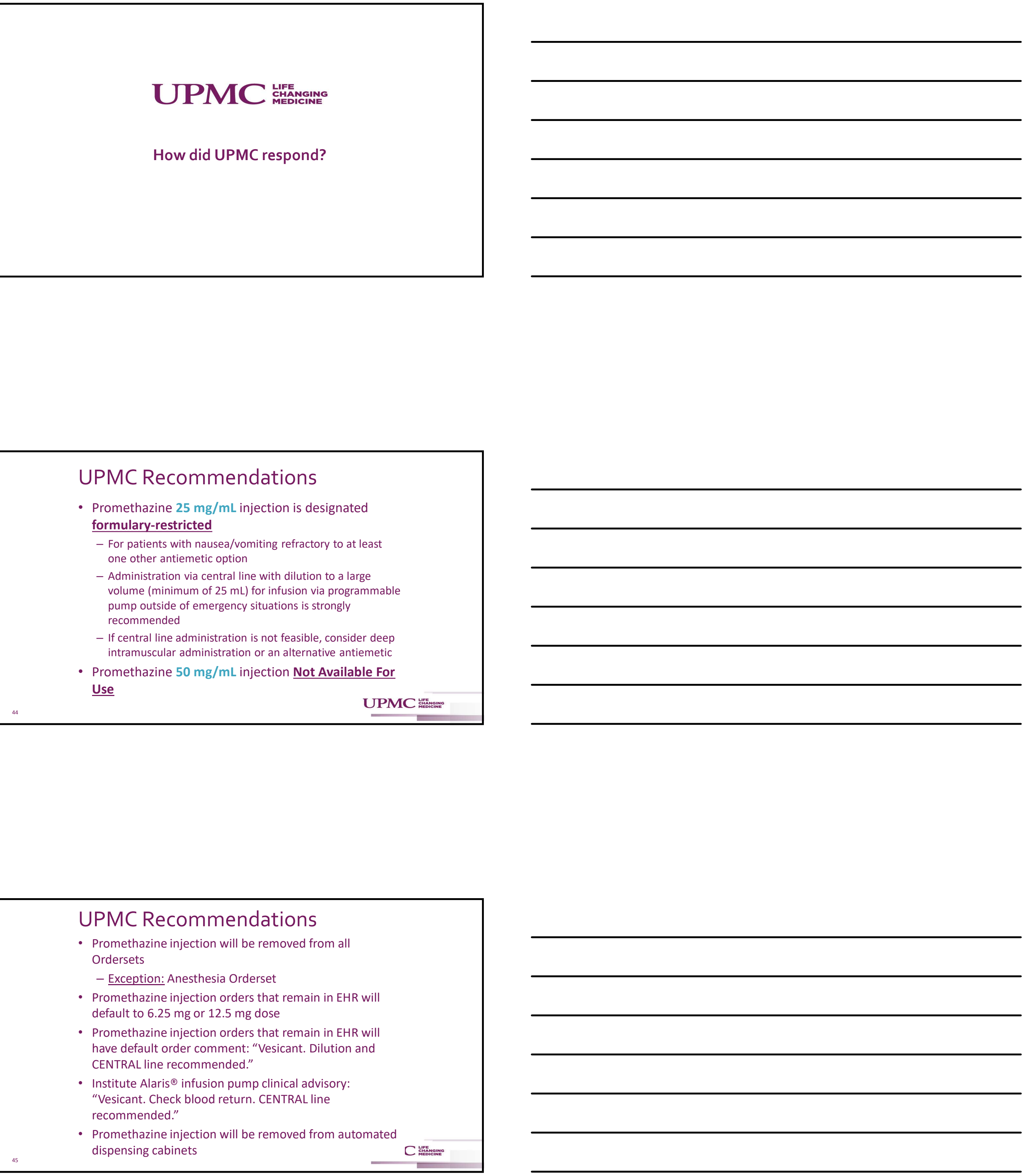
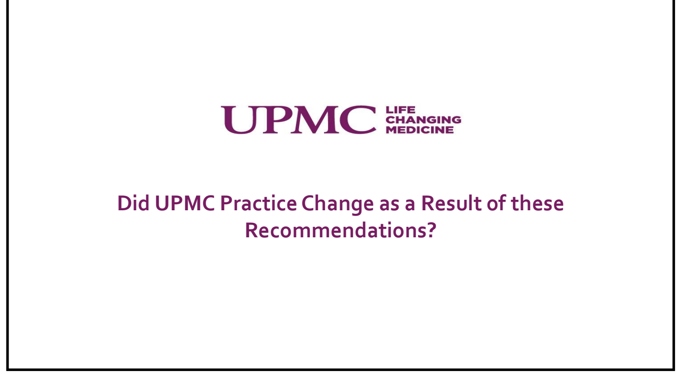
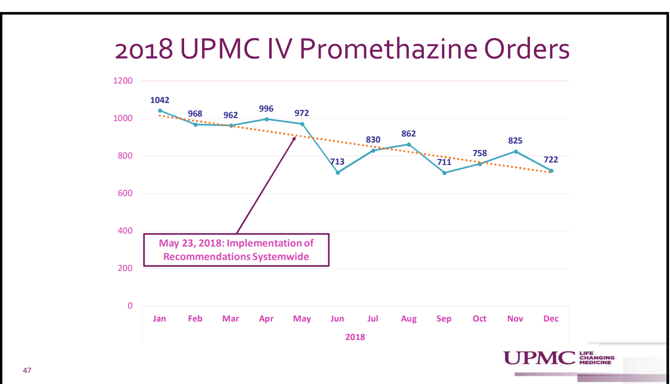
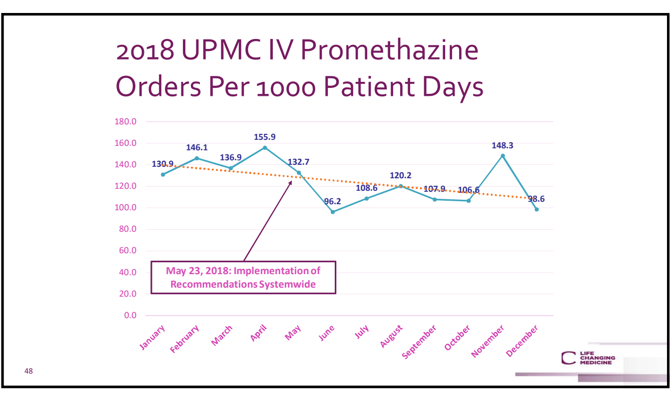



UPMC LIFE CHANGING MEDICINE
Did UPMC Practice Change as a Result of these Recommendations?


2018 UPMC IV Promethazine Orders
1042
968
962
996
972
713
830
862
711
758
825
722
May 23, 2018: Implementation of Recommendations Systemwide
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2018
47
UPMC


2018 UPMC IV Promethazine Orders Per 1000 Patient Days
130.9
146.1
136.9
155.9
132.7
96.2
108.6
120.2
107.9
106.6
148.3
98.6
May 23, 2018: Implementation of Recommendations Systemwide
January February March April May June July August September October November December
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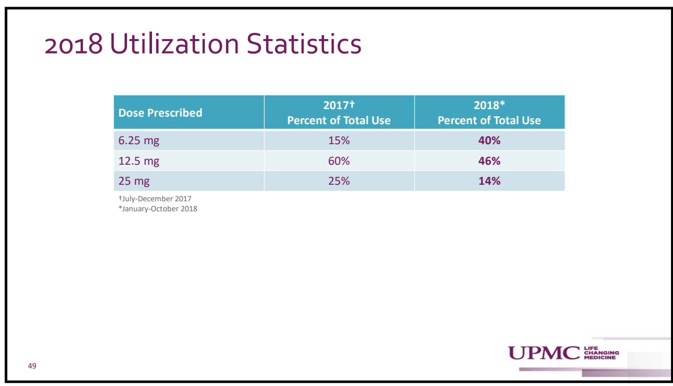
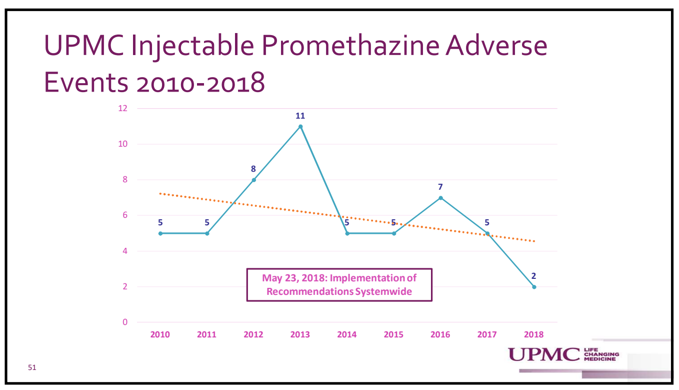


Dose Prescribed	2017† Percent of Total Use	2018* Percent of Total Use
6.25 mg	15%	**40%**
12.5 mg	60%	**46%**
25 mg	25%	**14%**

†July-December 2017
*January-October 2018



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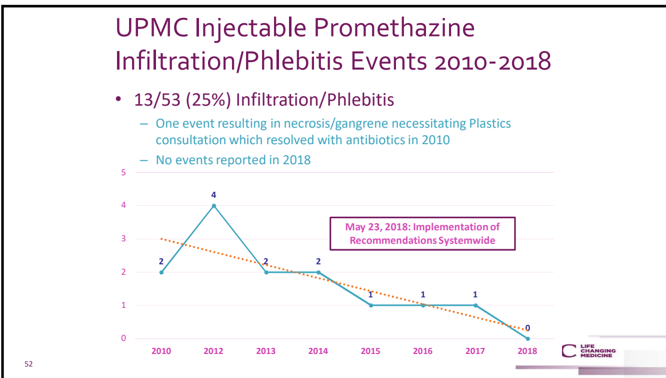

UPMC Next Steps

- Sharing of results systemwide
  - System Pharmacy & Therapeutics (P&T) Committee
  - Health System Medication Safety Subcommittee
  - Focused discussion with sites/groups having highest utilization to identify barriers
- Re-evaluation in 6 months at July Health System P&T

UPMC LIFE CHANGING MEDICINE

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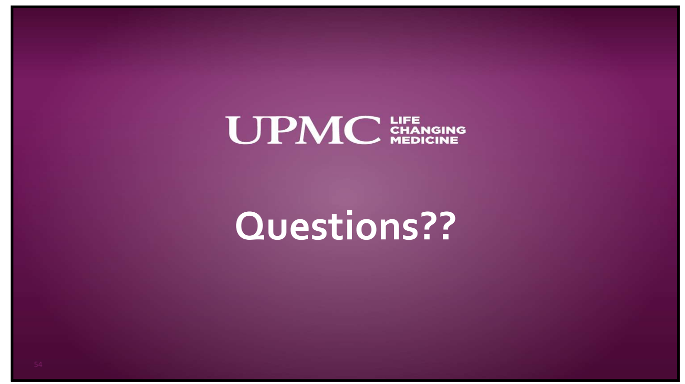

Questions?

- A copy of today's slides will be posted on our website
- Don't forget to mark you calendar:
  - Our next MSOS Briefings webinar will be held on Tuesday May 21, 2019.

Supported by an educational grant from Novartis.