Implementation of a Pharmacist-Driven Pain Management Service for Patients at High Risk for Respiratory Depression

Southwest General
Partnering with University Hospitals

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ashp Accredited

Background: Pain Management

- Significant disparities exist in safe and effective pain management
- Pain is subjective
- Numerous classifications of pain
- Multidisciplinary and multimodal pain management

Background: Opioid Analgesics & Safety

Opioid analgesics rank among the drugs most frequently associated with adverse drug events[2]

- Lack of knowledge about potency differences
- Improper prescribing and administration
- Inadequate monitoring

Drug	Equianalgesic Doses Parenteral (IV, IM, SQ)	Equianalgesic Doses [Oral]	Dosing Interval (hours)
Morphine	10 mg	30 mg	3 – 4
Fentanyl	0.1 mg	Transdermal 25 mcg/hr ≈ 45 mg of oral SR morphine	IV: 1 TD: 72
Hydrocodone		30 mg	3 – 4
Hydromorphone	1.5 mg	7.5 mg	3 – 4
Oxycodone		20 mg	4
Tramadol		100 mg	4 – 6
Tapentadol		100 mg	4 – 6

The Joint Commission Sentinel Event Alert #49

- Addresses safe use of opioids in hospitals
- Various patient populations at higher risk for development of respiratory depression
- Actions suggested ➔ Create and implement policies and procedures for the second-level review of pain management plans with high-risk opioids by pain specialists or pharmacists[2,3]

Purpose

To evaluate the effect of an inpatient pharmacist-driven pain management service and opioid stewardship on:

- Amount and types of opioids prescribed
- Pharmacist interventions
- Overall patient outcomes and quality of life

Methods

Study Design

- Approved by Institutional Review Board (IRB)
- Single-centered, prospective study
- Data Collection: August 2015 – March 2016
- Study Population: Control (n = 52); Intervention (n = 50)

Patient Selection and Enrollment

Inclusion Criteria	Exclusion Criteria
Age: Greater than or equal to 70 years	Age: Less than 18 years
Weight: Greater than or equal to 150 kg	Cancer diagnosis
SCr: Greater than or equal to 1.4 mg/dL	Decisionally impaired
Presence of sleep apnea	Intensive Care Unit (ICU) stay
Having undergone general anesthesia	Patient Controlled Analgesia (PCA)
Consult request, high severity of illness	

Intervention

Patient Assessment
- Daily computer-generated report of "high risk" patients

Follow-up
- Evaluate effect(s) of interventions made

Medication Reconciliation
- Evaluation of pain medication regimens

Interdisciplinary pain medication therapy management
- Make appropriate, evidence-based recommendations

Outcome Measures

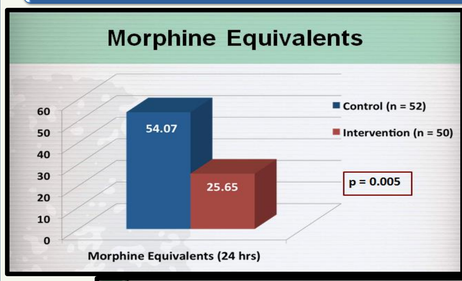
- Primary Endpoint: Oral morphine equivalents
- Secondary Endpoints: Number and types of opioids prescribed and administered; Pharmacist interventions; Length of stay

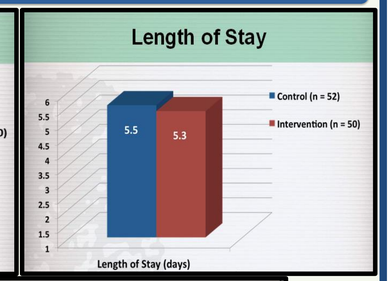
Results

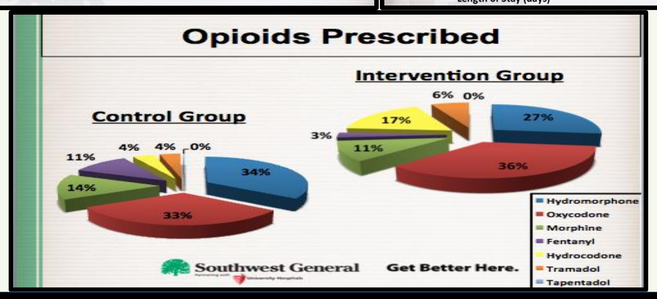
Baseline Characteristics

Patient Demographic	Control Group (n = 52)	Intervention Group (n = 50)
Age	69.65 years	62.98 years
Male Sex	50% (26/52)	48% (26/50)
Weight (kg)	81.63	87.08
Serum Creatinine (SCr)	1.44	1.06
Sleep Apnea	12% (6/52)	24% (12/50)
General Anesthesia	90% (47/52)	68% (34/50)
Other	4% (2/52)	24% (12/50)
Total Number of Risk Factors	1.79	0.99

Primary and Secondary Endpoints







Moving Forward

- Failure Modes and Effects Analysis (FMEA)
- Hospital-wide capnography monitoring
- Opioid stewardship
- Pharmacogenomics testing
- Collaborative Practice Agreements

References

1. Gatchel RJ, McGeary D, Lippe B. Interdisciplinary Chronic Pain Management: Past, Present, and Future. American Psychologist. 2014 March;69(2):119-30.
2. Ghafoor VL, Phelps P, Pastor J. Implementation of a pain medication stewardship program. Am J Health-Syst Pharm. 2013 Dec 1;70:2070-75.
3. Joint Commission. Safe use of opioids in hospitals. www.jointcommission.org/assets/1/18/SEA_49_opioids_8_2_12_final.pdf (accessed 2015 Oct 7).