Standardizing Opioid Administration for an Acute Rehabilitation Unit

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Background

- Pain control is not one size fits all. It is thus common practice for providers to utilize an order set with multiple pain medications of various dosages allowing nurses to find the best option for each patient. Medication management however is a high-risk and error prone process where nurses play an important role.
- In 2021, the Colorado Hospital Association suggested that over 70,000 patients who visited hospitals were at risk of opioid overdose. [1]
- With the increase in overdose risk for patients, it is essential that healthcare professionals intervene by limiting potentially harmful medical practices.
- Although suggestions are available for nurses, they further highlight the overwhelming responsibility nurses bear to safely manage as needed (PRN) medication administration. [2]
- At our academic affiliated, community-based acute rehabilitation unit we noted that our pain management order set had multiple various narcotic options for PRN administration causing nursing practice variability in administration and increased risk for iatrogenic overdose.
- As our objective, we implemented a new standardized protocol and educational series for nursing as needed (PRN) administration of pain medications on our acute rehabilitation floor.

Methods

- The standardized pain treatment administration card included a standardized pain scale with a suggested administration strategy based on pain level reported by the patients. Nurses were asked to keep the pocket-sized cards with them during every shift.
- Education was provided to nurses during daily huddles, emphasizing the pain control strategies such as starting with the lowest dose possible with every pain medication and included reminders of using alternative pain control modalities such as muscle relaxants, cold packs and heating pads.
- For the next month, pain scores and medication administered were recorded by the nurses on 29 random patients.
- A random selection of patient chart reviews was performed prior to the initiation of the cards with similar data collection.

Intervention

Pain level	Suggested medication	Suggested alternative
0-4	Tylenol prn	
5-6	Tramadol	Hydro/Tylenol
7-8	Roxicodone	Oxy/Tylenol
9-10	Hydromorphone	MS IR

Our goal is to decrease the amount of pain medication administered to avoid tolerance and addiction.

1) This is standardized for the general patient population. If a patient has a pain management regimen that works for them, please use that.
2) Always start with the lowest dose possible. For example, if the patient has a pain scale of 7 and Oxycodone/Acetaminophen 5/325MG 1-2 tabs are ordered and available, start with 1 tab and increase if necessary.

Pain Scale		Description
10	Unable to Move	I need assistance for movement
9	Severe	I can barely talk or move due to pain.
8	Intense	It is hard to think of anything else.
7	Unmanageable	I am in pain all the time
6	Distressing	I give up many activities because of pain
5	Distracting	I cannot do some activities
4	Moderate	Can do most activities
3	Uncomfortable	I can ignore it most of the time
2	Mild	Aware of pain
1	Minimal	Hardly noticeable
0	No pain	No pain

Results

	Before QI				After QI				
Patient	Admission	Pain Scale	Administration	Patient	Admission	Pain Scale	Administration	Comments
1	8/4	7	Roxicodone 10 mg	30	8/9	5	Roxicodone 10 mg	
2	8/7	7	Roxicodone 10 mg	31	8/10	6	Roxicodone 10 mg	
3	8/3	10	Roxicodone 10 mg	32	8/11	6	Roxicodone 5 mg	
4	8/1	6	Roxicodone 10 mg	33	8/12	6	Roxicodone 10 mg	Valium 5 mg also given
5	8/4	5	Roxicodone 10 mg	34	8/13	8	Tylenol 2,000 mg	Roxicodone not given, anxiety med given
6	8/3	4	Roxicodone 10 mg	35	8/14	None	Scheduled Tylenol	Roxicodone ordered not given
7	6/29	4	Norco 5/325 1 tab	36	8/16	Not reported	Tylenol 650 mg	Tramadol ordered not given
8	6/25	7	Roxicodone 10 mg	37	8/16	6	Tylenol 1,000 mg	No other narcotics ordered
9	6/21	4	Tylenol 650 mg	38	8/17	7	Morphine 2 mg IV	Order for Ultram
10	6/30	7	MSIR 45 mg	39	8/17	6	Roxicodone 10 mg	Roxi 5-10mg ordered
11	6/23	2	Tylenol 650 mg	40	8/18	4	Ultram 50 mg	Ultram 50-100mg ordered
12	6/27	4	Norco 7.5-325 mg	41	8/19	4	Tylenol 1,000 mg	Only Tylenol ordered
13	6/29	8	Norco 5-325 mg QI	42	8/21	3	Tylenol 650mg	Only Tylenol ordered
14	6/27	8	Tylenol 650 mg	43	8/25	7	Tylenol 650 mg	Only Tylenol ordered
15	6/11	7	Dilaudid 4 mg PO	44	8/23	8	Percocet 5/325-2	
16	6/29	6	Roxicodone 10 mg	45	8/23	4	Tylenol 650 mg	Only Tylenol ordered
17	7/7	7	Roxicodone 10 mg	46	8/24	5	Tylenol 1,000mg	Only Tylenol ordered
18	6/24	6	Roxicodone 10 mg	47	8/25	4	Roxicodone 5mg	Roxicodone 5-10mg order
19	6/29	4	Tylenol 650 mg	48	8/26	5	Tylenol 1,000mg	Refused Percocet scheduled
20	6/14	8	Dilaudid 6 mg PO	49	8/26	9	Roxicodone 10mg	
21	7/5	5	Roxicodone 10 mg	50	8/27	9	Roxicodone 10mg	
22	7/2	6	Roxicodone 10 mg	51	8/27	3	Tylenol 650mg	
23	7/1	6	Tylenol 650 mg	52	8/30	8	Percocet 7.5mg	
24	7/5	6	Ultram 50 mg	53	8/31	7	cold applied	Order for Percocet
25	7/1	6	Roxicodone 5 mg	54	9/1	10	Heat/flexeril	
26	7/8	4	Tylenol 650 mg	55	9/6	6	Ultram 50 mg	
27	7/8	8	Roxicodone 10 mg	56	9/6	8	Roxicodone 5 mg	
28	7/6	8	Oxy 5/325 mg-2 tab	57	9/8	2	Roxicodone 5 mg	
29	7/8	8	Roxicodone 10 mg	58	9/10	7	Roxicodone 5 mg	Robaxin 750mg given
		6.13793				6.03703704		

Conclusion

- The averages of reported pain scores among patients were equivocal before and after the intervention at 6.13 and 6.03.
- There was a decrease in the dose of opioids administered from 337 mg morphine equivalents to 164.8 mg after implementation.
- We also found an increase in nursing implementation of the non-narcotic options.
- In follow-up verbal focus group sessions, the unit nurses reported satisfaction with the tool, increased awareness of non-narcotic pain control options and increased confidence in the safety of administrating PRN narcotic medications. Nurses felt empowered by participating as stakeholders in this project and remain invested in future studies investing other outcomes of this protocol including assess for decreased sedation, increased patient participation in therapy, decreased constipation and decreased length of stay.
- Medication error in acute care settings is a top threat to patient safety and more work such as this is needed in effort to reduce variability in as needed (PRN) medication administration particularly those with high-risk side effects.

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References

1) Colorado Naloxone Project (2022). 2022 Annual Report. https://www.acep.org/contentassets/bc1d413f3cac43949fb84b4caa0b540b/2022-cnp-annual-report-3-1.pdf
2) Drew, D. J., Gordon, D. B., Morgan, B., & Manworren, R. (2018). "As-Needed" Range Orders for Opioid Analgesics in the Management of Pain: A Consensus Statement of the American Society for Pain Management Nursing and the American Pain Society. Pain management nursing : official journal of the American Society of Pain Management Nurses, 19(3), 207–210. https://doi.org/10.1016/j.pmn.2018.03.003

Disclosure

- No conflicts of interest and no outside funding was obtained.