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Pain Management Trends among Adults Hospitalized with Cellulitis: An Evidence-based Practice Project

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Cellulitis and Pain

- Pain is most common reason why someone comes to the hospital
- Model population
  - Medical, not surgical
  - Not traumatic
  - Similar kind of pain experienced
- Goals of care to alleviate pain

- **Cellulitis**
  - Painful skin Infection
  - Affects 2.5-3.5 million adults
- **Problem**
  - Opioids are commonly prescribed
  - Can be managed with non-opioid
  - Contributes to opioid epidemic

PICOT Question

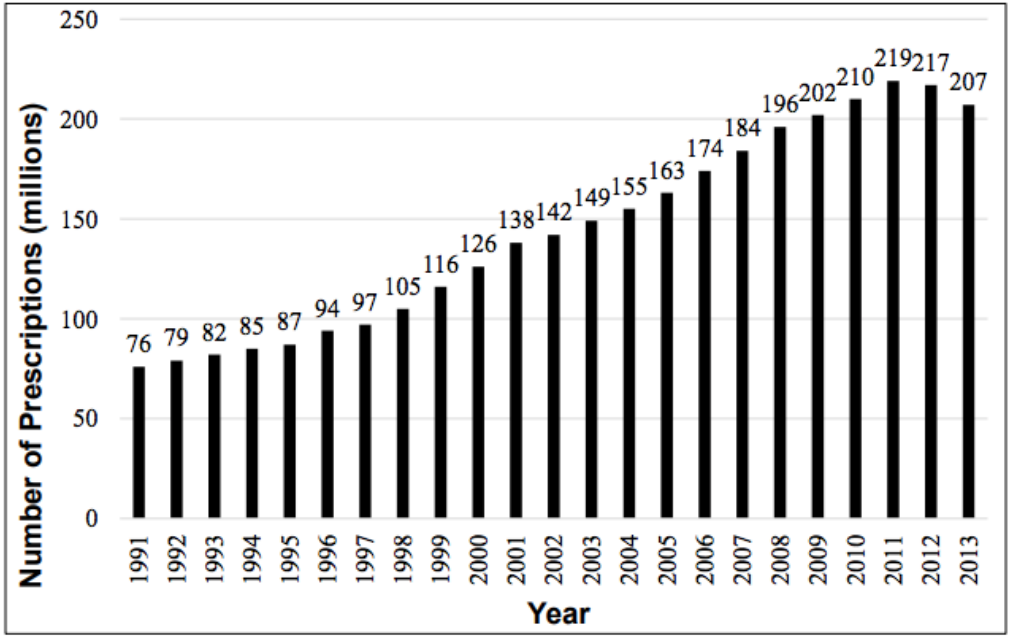
Among patients hospitalized at two acute care hospitals in the Pacific Northwest for cellulitis, how have analgesic administration practices evolved between the years 2014-2020?

Objectives	Describe evolving opioid and non-opioid prescribing practices
	Characterize patients who receive an opioid medication

Opioid Stewardship

- The Joint Commission 5th vital sign (2001)
- Between 2016-2018, efforts implemented to enhance opioid stewardship

Figure 1. Opioid Prescriptions Dispensed by U.S. Retail Pharmacies, 1991-2013.



Changes to the Standards and Examples of Implementation

In response to safety concerns and the misinterpretation of the Examples of Implementation, The Joint Commission made multiple changes to the standards and Examples of

Society of Hospital Medicine Guidelines

- Published in 2018
- Specific to inpatient acute pain
- 16 recommendations
  - Whether to use opioids
  - How to improve the safety of opioid use
  - How to improve the safety of prescribing opioids at discharge

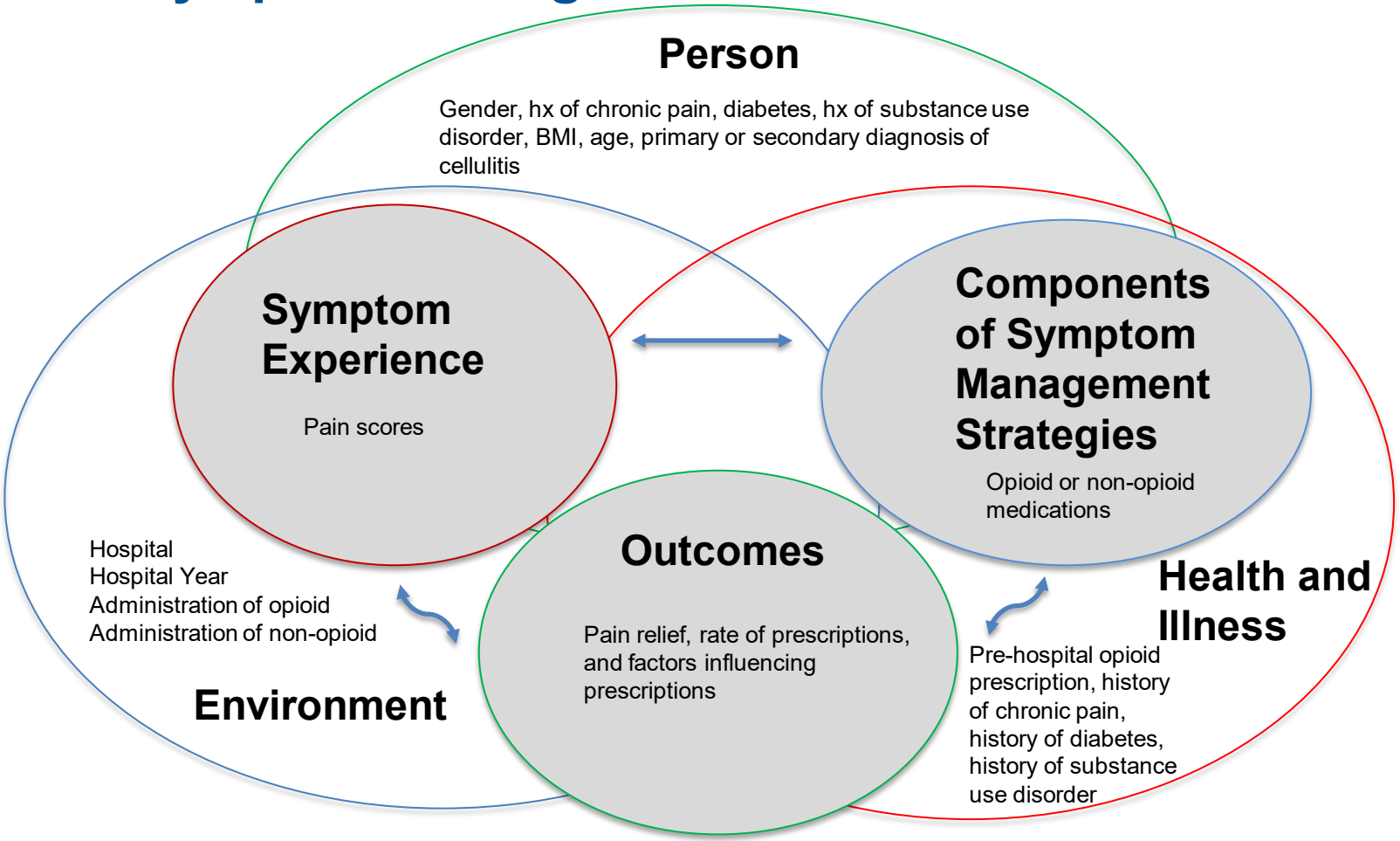
Clinical Practice Guidelines

- Society of Hospital Medicine Guidelines
  - *That clinicians limit the use of opioids to patients with 1) severe pain or 2) moderate pain that has not responded to nonopioid therapy, or where nonopioid therapy is contraindicated or anticipated to be ineffective.*

Practice Gap

What We Know	Practice Recommendations	What we **did not** know
• There is no difference in pain management among adults with non-surgical, non-traumatic extremity pain when treated with opioid compared to non-opioid medications	• Guidelines suggesting how to prescribe	• The evolving practices and alignment with the practice guidelines • Gap in practice

USCF Symptom Management Model



Methods

- Observational descriptive design
- Retrospective, de-identified data, extracted from the electronic health record

- Inclusion criteria:
  - Inpatient admission for primary or secondary reason cellulitis from January 2014 until December 31, 2020;
  - Age 18 years or older at time of hospitalization admission;
  - Inpatient length of stay between 24 hours and one week
  - 4,523 records

Aim 1

1. Describe the sample of patients hospitalized with cellulitis at two acute care hospitals in the Pacific Northwest from 2014-2020. Examine differences in characteristics for patients receiving opioid and not receiving opioid medications in the treatment of pain during hospitalization

- Analytical plan
  - Descriptive statistics

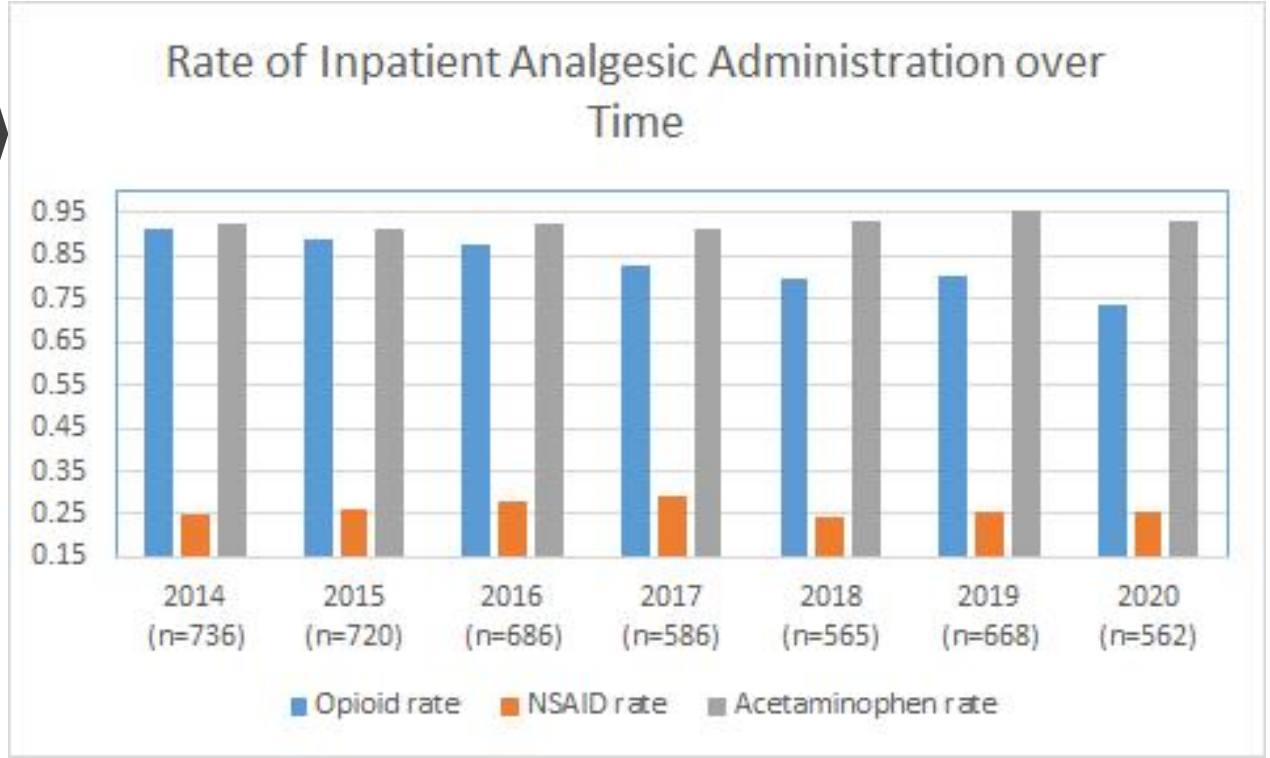
Aim 2

2. Determine the rate of inpatient prescriptions to manage cellulitis over time

- Analytical plan
  - Descriptive report of proportions for each year

Results

- Rate of opioid administration significantly decreased
- Non-opioid administration rates were stable over time



Mean Sample Characteristics (N = 4,523)

Sample Characteristics	Inpatient Opioid Yes (N=3794) Mean±SD	Inpatient Opioid No (N=729) Mean±SD	p-value
Age (years)	57.6±17.4	62.9±18.6	<0.001
Length of stay (hours)	90.9±36.3	75.6±38.2	<0.001
Pain on admit*	6.2±3.2	3.5±3.2	<0.001
Pain on discharge**	4.6±2.8	2.6±2.7	<0.001

*missing n=186 cases

**missing n=249 cases

Frequency Sample Characteristics (N = 4,523)

Sample Characteristics	Inpatient Opioid Yes (N=3794) n(%)	Inpatient Opioid No (N=729) n(%)	P- value
Chronic pain			
Yes	550 (14%)	65 (9%)	<0.001
No	3244 (86%)	664 (91%)	
Pre-hospital opioid use			
Yes	1252 (33%)	64 (9%)	<0.001
No	2542 (67%)	665 (91%)	
Substance use disorder			
Yes	863 (23%)	112 (15%)	<0.001
No	2931 (77%)	617 (85%)	
Average pain severity			
No pain (0)	76 (2%)	96 (13%)	<0.001
Mild pain (0-3)	401 (11%)	223 (31%)	
Moderate pain (3-6)	1751 (46%)	205 (28%)	
Severe pain (>6)	1452 (38%)	70 (10%)	
Missing	114 (3%)	135 (18%)	

Discussion

- Rates of opioid prescriptions decreased each year
- Almost all participants received an opioid
- Many differences emerged between groups

What is next?

- Future studies
  - Alternate analgesics/Eligibility
  - Outpatient opioid use
  - Other types of non-surgical pain

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Questions?

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