

# Improving the Pain Experience for Cancer Inpatients: A Quality Improvement Project

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## Background/Significance

- 50% of persons with cancer report pain
- 80 % of those with advanced disease report moderate to severe pain
- Inpatient Solid Tumor Unit Pain Satisfaction  
**HCAHPS Composite Top Box Score = 57.7%**

Goal ≥ 70%

## Evidence Summary

Intervention Focus	Staff Reported Intervention					Patient Reported Intervention					Multi-Pronged Intervention					
	Abused	Defused	Dealt	Learned	Score	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Improved Pain Intensity Scores																
Improved Pain Satisfaction Scores																
Improved Satisfaction with Pain Management																
Improved Communication																
Improved Pain Score Compliance																
Improved Pain Assessment or Documentation																
Improved Patient Satisfaction with Communication																
Improved Staff Pain Knowledge and Attitude Scores																
Staff Adherence to Patient Satisfaction																

## Project Aims

Determine the effect of a Pain Stoppers bundled intervention on:

- HCAHPS pain satisfaction scores
- Actual pain intensity scores
- RNs' Knowledge and Attitudes on Pain (KAP) Survey scores

## Methods

**Design:** Pre-post intervention QI project  
Pre-intervention = 05/01 – 07/31/2017  
Post-intervention = 09/01 – 11/30/2017

**Setting:** NCI-designated Comprehensive Cancer Center

**Participants:** HCAHPS respondents requiring pain medication

Solid tumor inpatients with pain intensity score ≥ 1  
Permanent, direct-care RNs

**Procedure:** Inservices, written materials, e-mail communication (including addressing 5 low-scoring KAP questions), pre-packaged patient education materials, Immediate reporting of high pain scores, visual aids

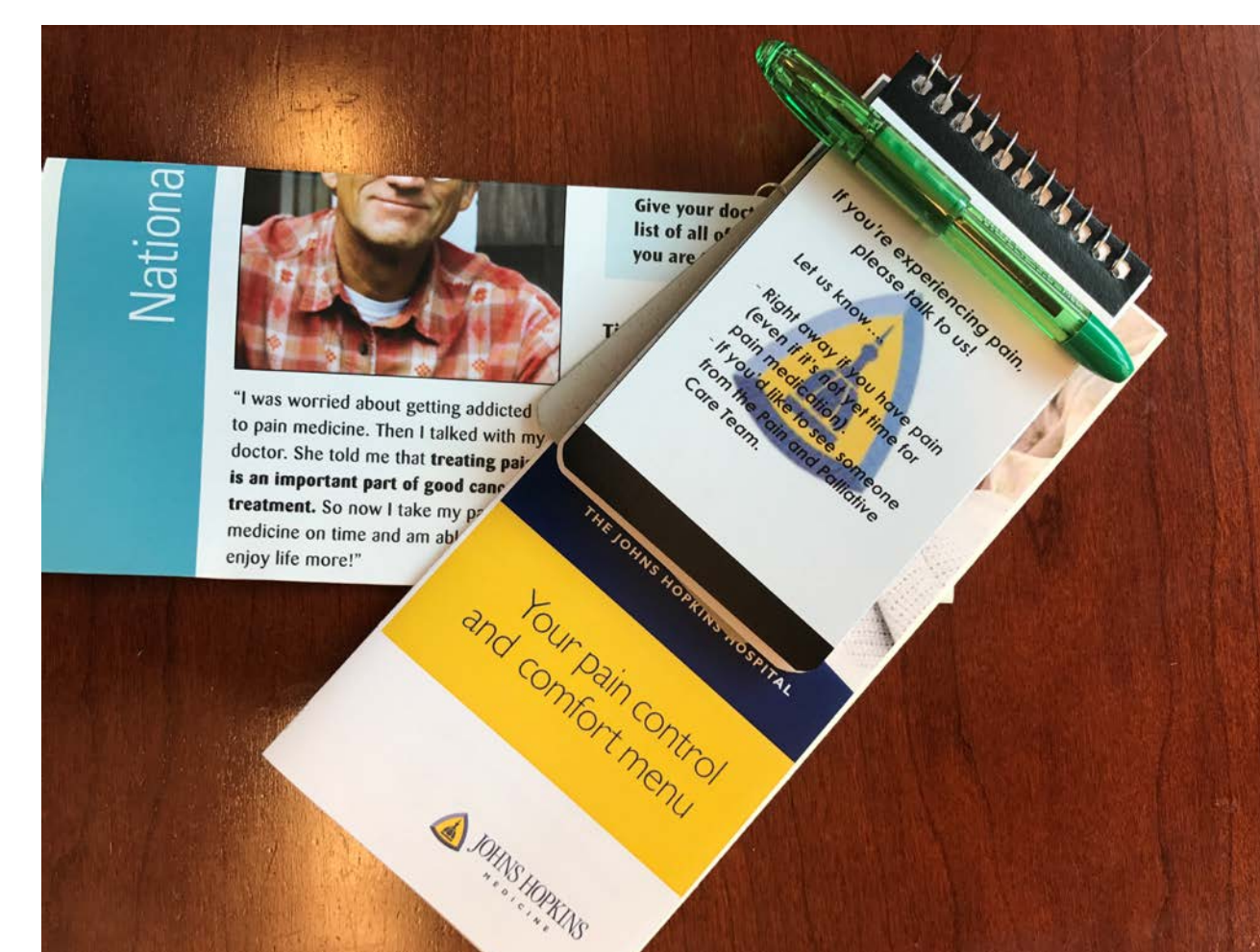
## Evidence-Based Interventions

Communication, Caring Behaviors and Timely Responses	Patient Education	Maintain Analgesic Levels
Clinical Technicians Immediately Report Pain Scores ≥ 5	Utilize a Variety of Patient Education Materials	Work With the Team to Optimize Analgesic Plan
Utilize Caring Language with Patients	Address Myths and Misconceptions	Encourage Around-The-Clock Dosing of Analgesics
Prepare in Advance for Pain Discussions	Provide Continuous and Individualized Patient Education	Consider Maintaining Analgesic Dosing Overnight
Ask Probing Questions About Pain	Provide Pre-packaged Educational Materials to Every Patient	Carefully Manage Parenteral to Oral Analgesic Transitions
Maintain a Positive Attitude		
Validate Patients' Pain		
Provide Timely Responses to Patients' Requests		
Discuss and Set Expectations with Patients		
Utilize Tools to Facilitate Communication		

## Pain Stoppers Visual Reminder



## Patient Education Packet



## Measures/Instruments

HCAHPS surveys

- Random sample
- Press Ganey
- Two pain management-related questions

Pain intensity

- EHR
- Likert scale (0 – 10)

Knowledge and Attitudes on Pain survey

- Email invitations
- Qualtrics

## Statistical Analysis

SPSS 25 (IBM)

- HCAHPS surveys
  - Fisher's Exact Test
- Pain intensity
  - Independent samples t-test
- Knowledge and Attitudes on Pain survey
  - Wilcoxon Signed Rank Test
  - Fisher's Exact Test (individual questions)
- Demographic data
  - Chi-square
  - Fisher's Exact Test
  - Independent samples t-test

## Patient Demographic Data

- No HCAHPS demographic data available from Press Ganey

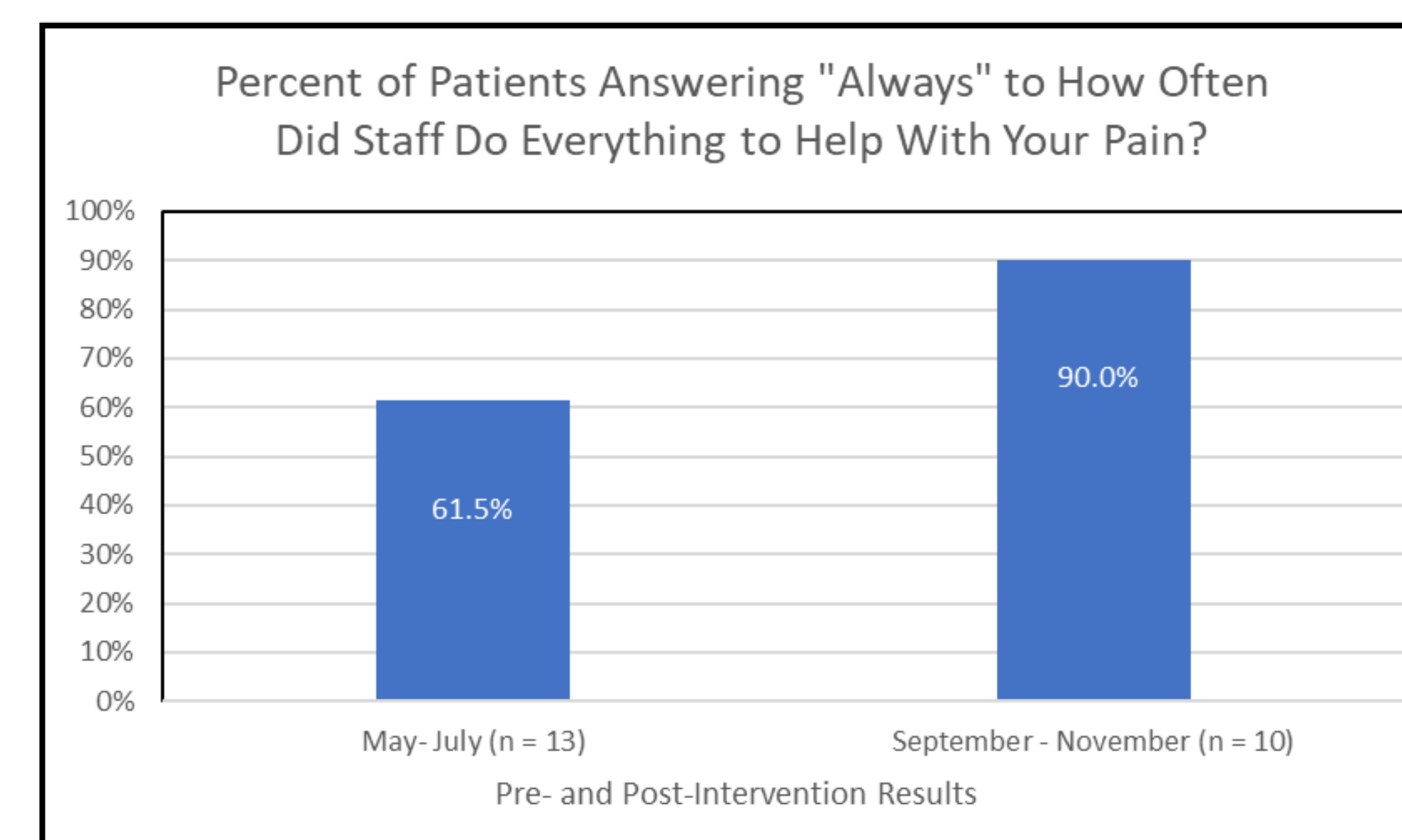
Data Extracted from Electronic Health Record

- Pre-intervention N = 173
- Post-intervention N = 157
- No statistically significant differences in age, sex, race, length of hospital stay, or having received radiation therapy within the past 30 days
- Post intervention group: less likely to have received chemotherapy within the past 30 days at 65% compared to 76.3% ( $\chi^2 (1) = 5.12, p = .024$ )
- Fewer post-intervention patients admitted for chemotherapy administration: 8.3%, compared to 15% ( $\chi^2 (1) = 3.6, p = .058$ )

## RN Demographic Data

- Pre-intervention N = 11 (31% response rate)
- Post-intervention N = 9 (25% response rate)
- 5 RNs completed both surveys
- 100% BSN in both groups
- Attendance at End of Life (ELNEC) training: 18.2% pre-intervention and 0% post-intervention
- Mean years RN experience: 16.7 (SD = 11.8) pre-intervention and 9.4 (SD = 12.3) post-intervention
- No statistically significant differences between the groups

## HCAHPS Pain Satisfaction Scores



## Patient Pain Intensity Scores (t-test)

Pain Intensity Data Retrieved from the EHR			
Documented Scores	Pre-Intervention (N = 173) Mean (SD)	Post-Intervention (N = 157) Mean (SD)	p-value
First	3.14 (3.18)	3.23 (3.31)	0.81
Last	1.79 (2.48)	2.0 (2.67)	0.73
Lowest	0.13 (0.7)	0.17 (0.99)	0.46
Highest	6.66 (2.61)	6.98 (2.61)	0.27

## RN KAP Scores: Two Questions (Fisher's Exact Test)

Registered Nurses' Knowledge and Attitudes on Pain (KAP) Scores			
KAP Scores	Pre-Intervention (N = 11)	Post-Intervention (N = 9)	p-value
Question 5 (% correct)	36.4%	88.9%	0.025
Question 16 (% correct)	45.5%	88.9%	0.058

## Discussion

**HCAHPS top box pain scores improved following implementation of the Pain Stoppers intervention**

Composite pain score:  
Pre-intervention = 57.7 %  
Post-intervention = 73.7 %  
**\*\*exceeds goal of 70%\*\***

- Results achieved with post-intervention group having higher mean actual pain intensity scores
- Post-intervention group may have had more advanced disease
- KAP scores improved on two questions that were addressed in follow-up education

## Limitations

- Small sample size
  - HCAHPS groups
  - RN groups
- Pre-post intervention design
- Generalizability
- Altered KAP survey
- Early implementation

## Conclusions

- Supports findings of previous studies
  - It is possible to improve pain experience without impacting actual pain intensity scores
- Main aim of study realized
  - HCAHPS "How often did staff do everything to help with your pain?" improved from 61.5% to 90% answering "always" post-intervention
- Nurses can improve cancer patients' pain experience using:
  - Enhanced communication, caring behaviors, timely responses
  - Appropriate patient education materials
  - Strategies to maintain analgesic levels



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