



Transitional Pain Service: Multidisciplinary Pain Care for Surgical Patients

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Disclosures

Traci Speed, MD, PhD has documented that she has nothing to disclose.

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This presentation does not contain off-label or investigational use of drugs or products.

Learning Objectives

- 1) To describe the workflow of a Transitional Pain Service (TPS) (Johns Hopkins)
- 2) To describe the advantages of a TPS
- 3) To describe a human-design centered approach to improve patient engagement in pain management

Intersection of two public health challenges: pain and opioids


Opioid Overdose Deaths

- ~850,000 people have died from a drug overdose since 1999
- 100,000 drug overdose deaths from April 2020-2021
- Opioid overdose deaths accelerating among minoritized populations



Strategies to Reduce Opioid Exposure

- Patients who are opioid-naïve
 - Reduction in excessive opioid prescribing
 - after surgery/trauma
- Patients on long-term opioid therapy (LTOT)
 - Opioid dose reduction policies
 - Abrupt discontinuation

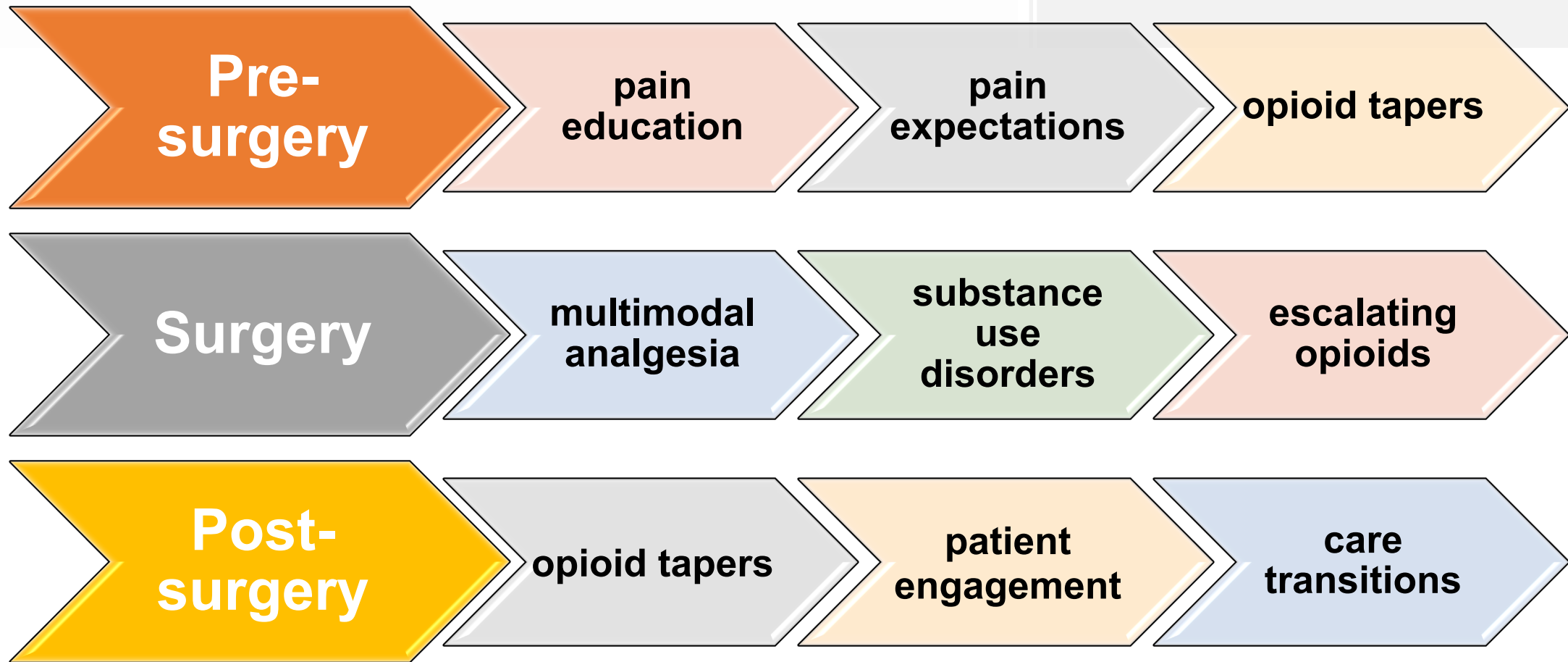


Quality chasm remains for patients on or at-risk of long-term opioid therapy

100 million
Americans
undergo surgery
annually

- Opioids effective for acute postoperative pain
 - Risk of LTOT increases >7 days of dispensed opioids
- Preoperative opioids, psychiatric comorbidities, substance use disorders are consistently robust risk factors for LTOT
 - Siloed surgical care
- Clinical benefits of tapering/discontinuing opioids
 - Limited best practices
 - Risks of opioid misuse, healthcare utilization, death

Gaps in surgical care delivery models increase risks for patients on long-term high-dose opioids



Opportunity Framework



PROBLEM

Lack of standardized perioperative pain management at JHH can lead to unfavorable outcomes:

1. Post-surgical adverse events
2. Increased length of stay (LOS)
3. Increased opioid utilization

OPPORTUNITY

Literature has shown that perioperative care protocols such as Enhanced Recovery After Surgery (ERAS) have resulted in:

1. Reduction in costs
2. Reductions in LOS
3. Reduction in complications

SOLUTION

Perioperative Pain Program:

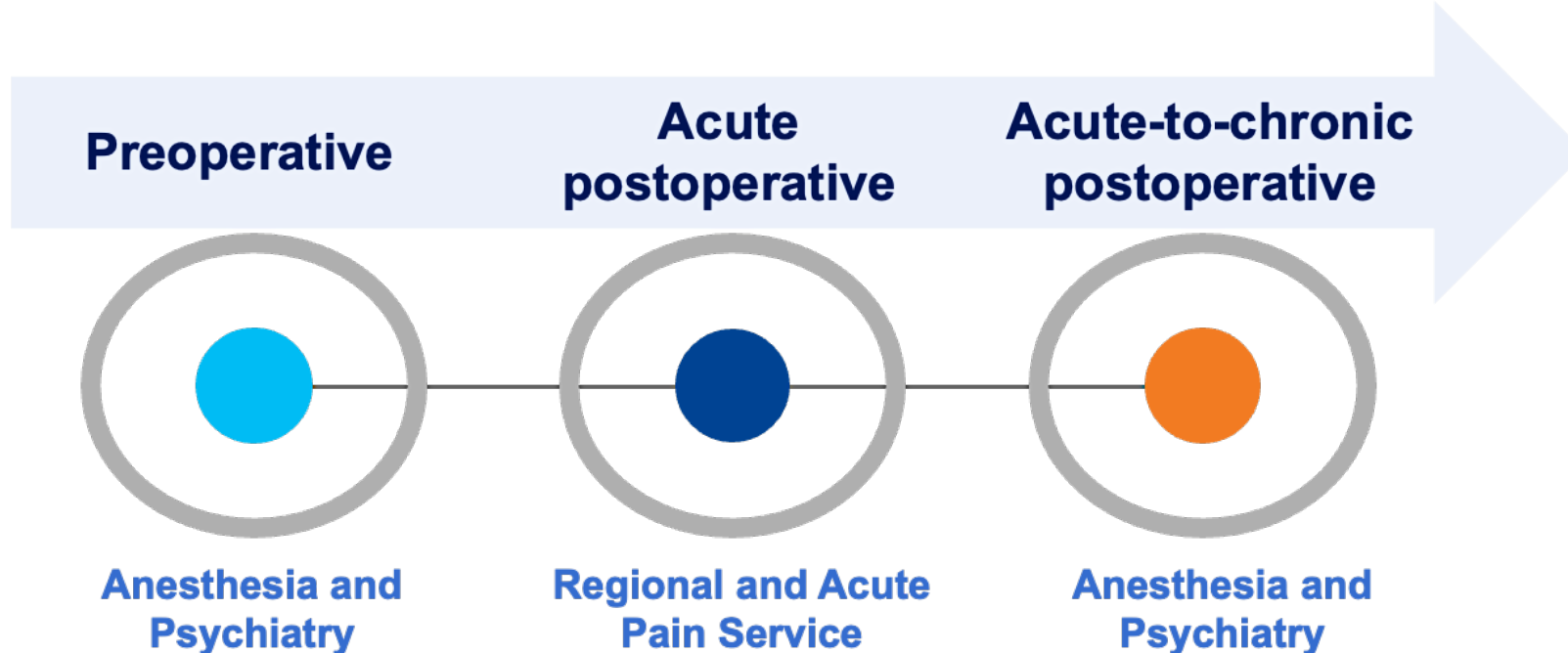
1. New collaborative service
2. Unites surgeons, nurses, anesthesiologists & other care providers
3. Improved care delivery models



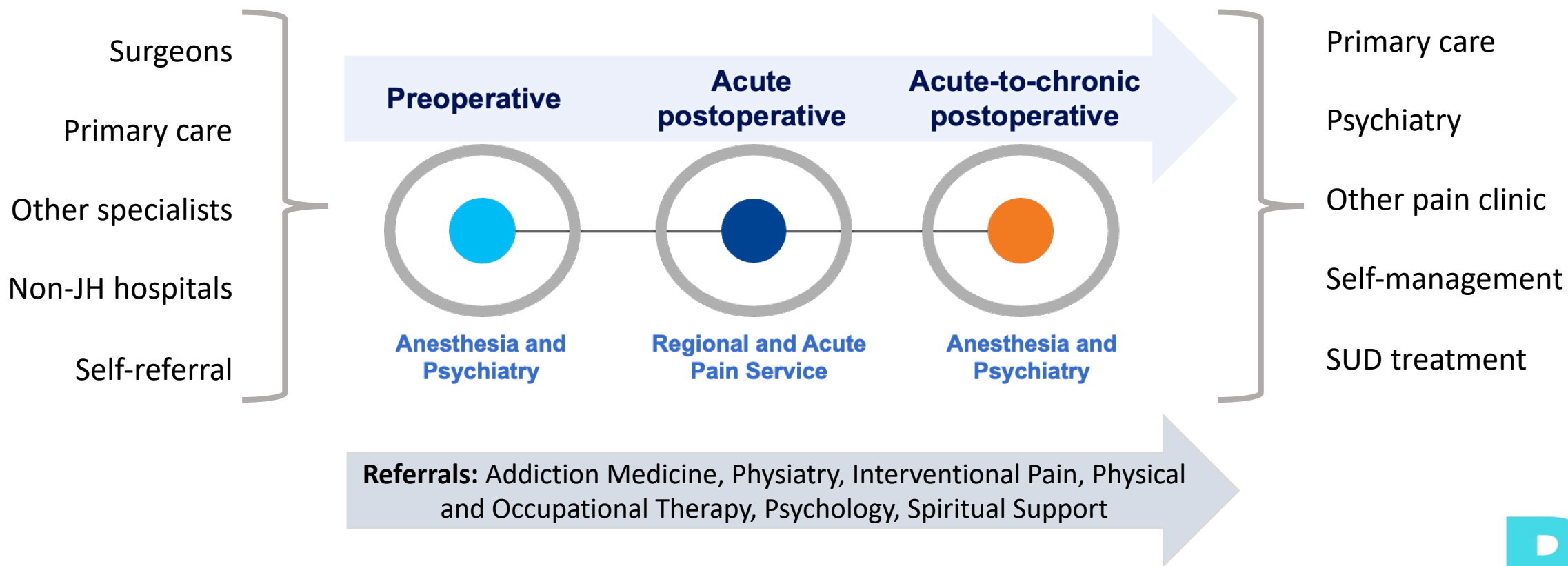
Addressing quality chasms: multidisciplinary transitional pain service where specialists work in parallel

“This model was **not a composite of entirely new concepts and methods**, however, but a **cohesive, effective union of ideas**, several of which had **already been tried** elsewhere. In the stimulating environment created by the early leaders of Hopkins, **these ideas were merged in a novel way.**”

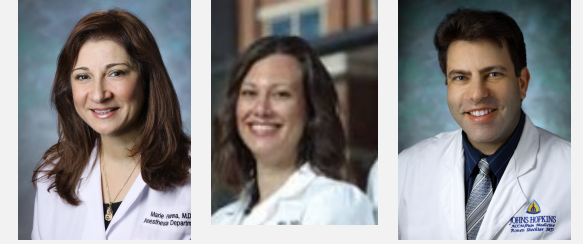
-A. McGehee Harvey, MD JAMA, 1989



Johns Hopkins Personalized Pain Program (PPP), est. in 2017, provides care continuity and coordination across the perioperative period



PPP provides individualized multimodal analgesia and tapers opioids



Eligible patients:

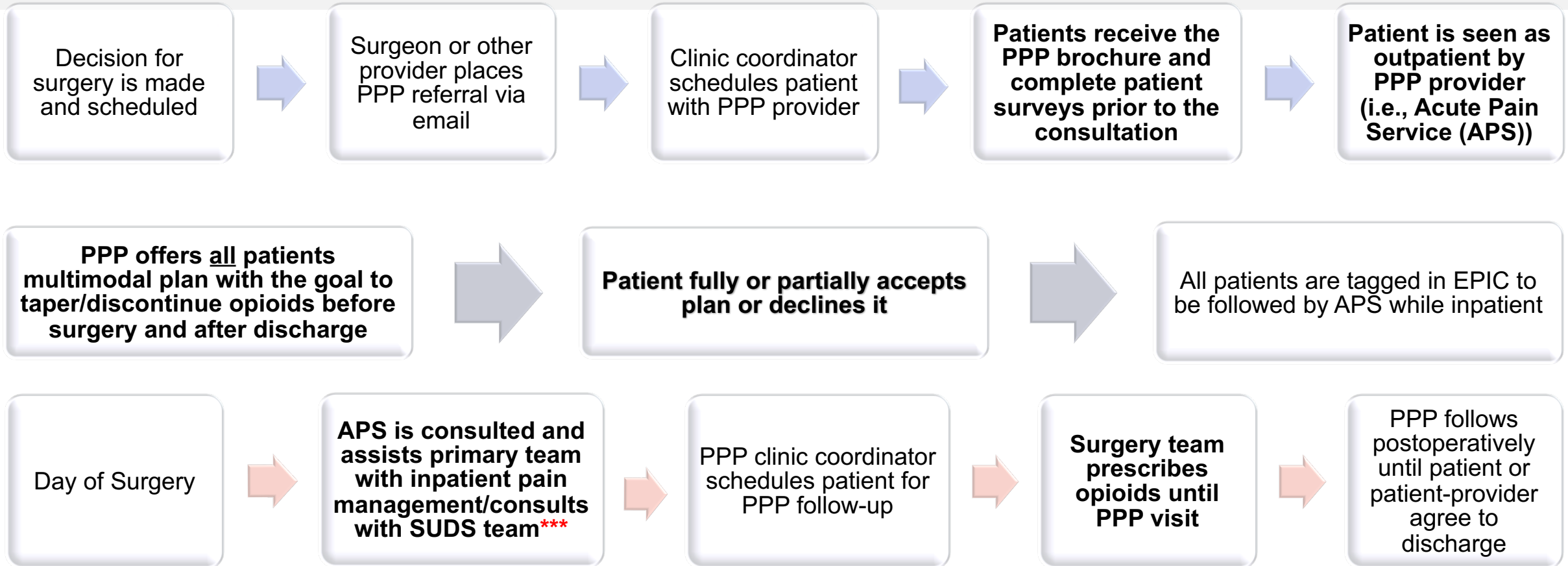
- use long-term \pm high-dose opioids
- have opioid use disorder (OUD)
 - active
 - on maintenance medications
 - in remission
- are opioid-naïve; at risk of long-term opioid use (i.e., trauma or extensive surgical procedures)



https://www.hopkinsmedicine.org/armstrong_institute/ppp/treatments



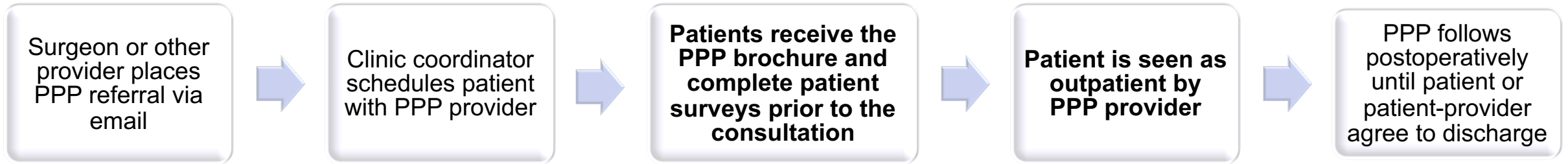
PPP pre-surgery and surgery clinic workflow



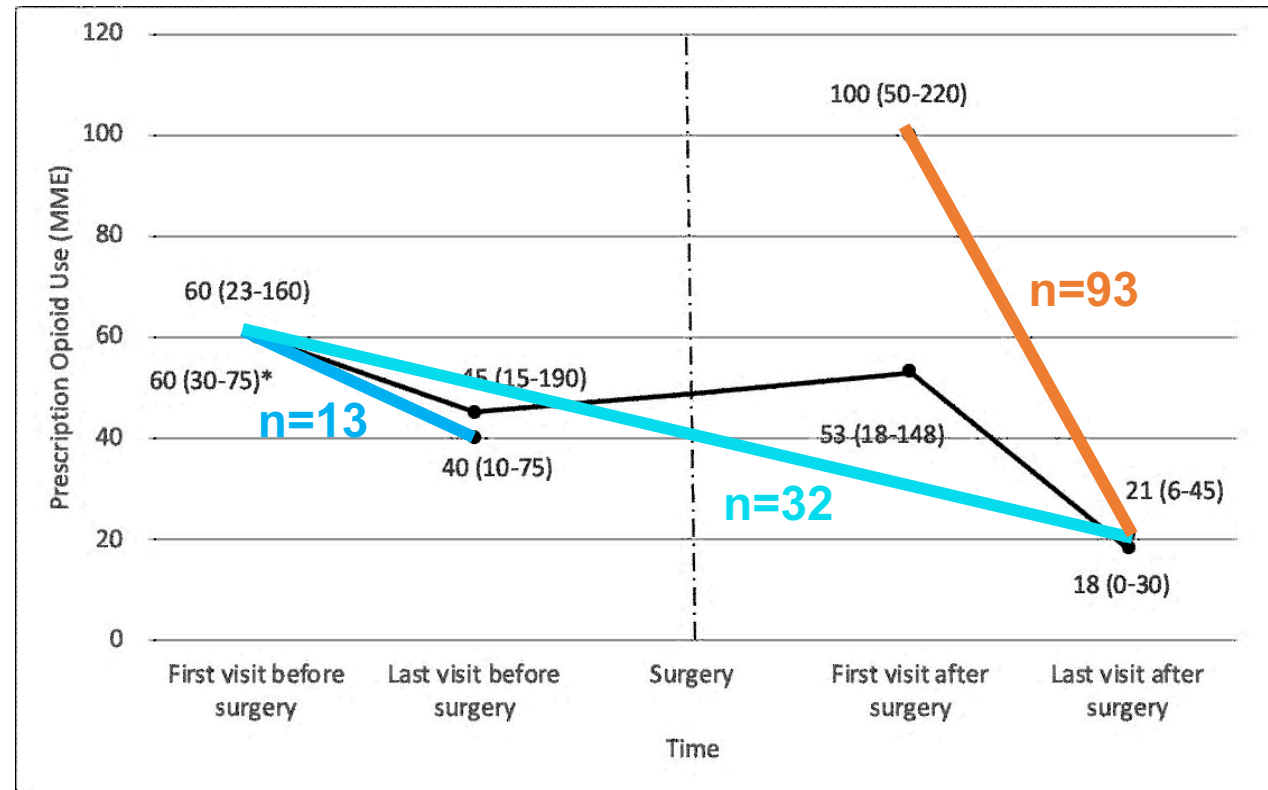
***Kellie Jaremko, MD presenting Flash Talk: Opioid use disorder and perioperative opioid tapering



Post-surgery workflow



- 40 patients visit / week
- 7- 8 new patients / week
- 1800-2000 patients visit/ year
- 250-300 new patients/ year



August 2018 – June 2019; n=138, Xie (in press)

PPP treatment duration varies by # of surgeries and psychiatry treatment

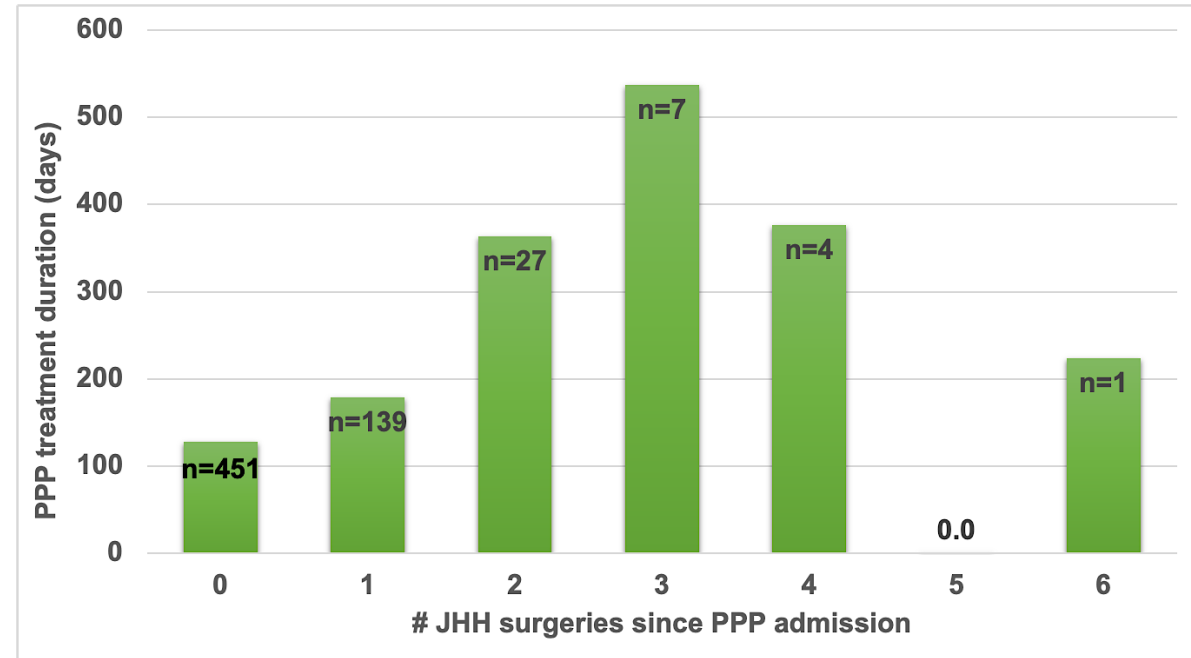
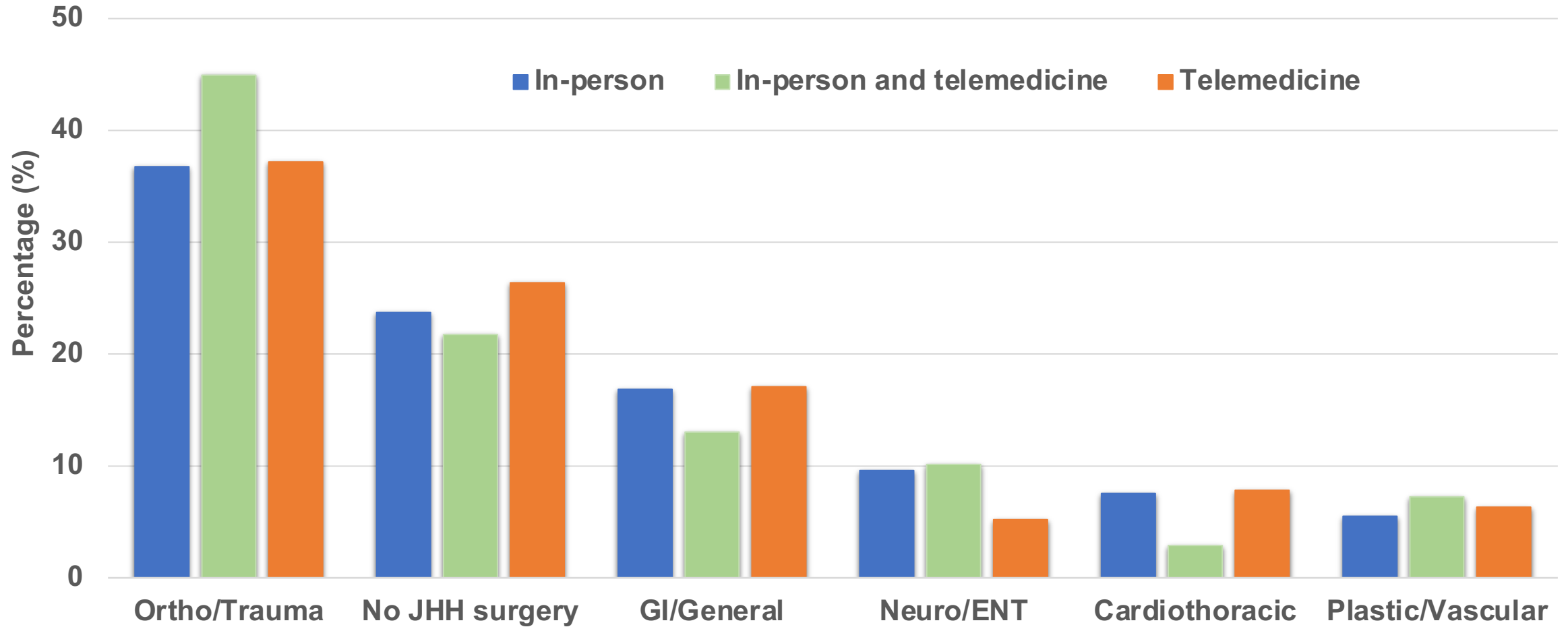


Table 2. Pattern of PPP visits

	No Psychiatry visits						Psychiatry visits						P value*
	n	Mean	SD	Median	IQR	Range	n	Mean	SD	Median	IQR	Range	
# PPP visits	311	5.0	3.5	4	2 - 6	2 - 22	130	12.1	10.3	9	5 - 16	2 - 56	<0.001
# Anesthesiology visits	311	4.9	3.6	4	2 - 6	1 - 22	130	4.2	5.7	3	0 - 6	0 - 40	<0.001
# Psychiatry visits	-	-	-	-	-	-	130	7.9	8.4	4.5	3 - 9	2 - 55	
PPP treatment duration (days)	311	128	134	84	40 - 161	0 - 929	130	344	312	259	112 - 450	7 - 1337	<0.001
Psychiatry treatment duration (days)							130	248	281	129.5	49 - 371	7 - 1155	
Surgery to 1st Psychiatry visit (days)							79	108	102	76	43 - 141	6 - 605	
1st Psychiatry visit							130	3	3	2	1 - 4	1 - 15	
Days between 1st PPP and Psych visit							130	60	115	28	0 - 77	0 - 1078	
1st Psychiatry visit (based on visits), %							130	33	20	28	17 - 50	4 - 86	

*From Wilcoxon rank sum tests

Who does PPP treat?

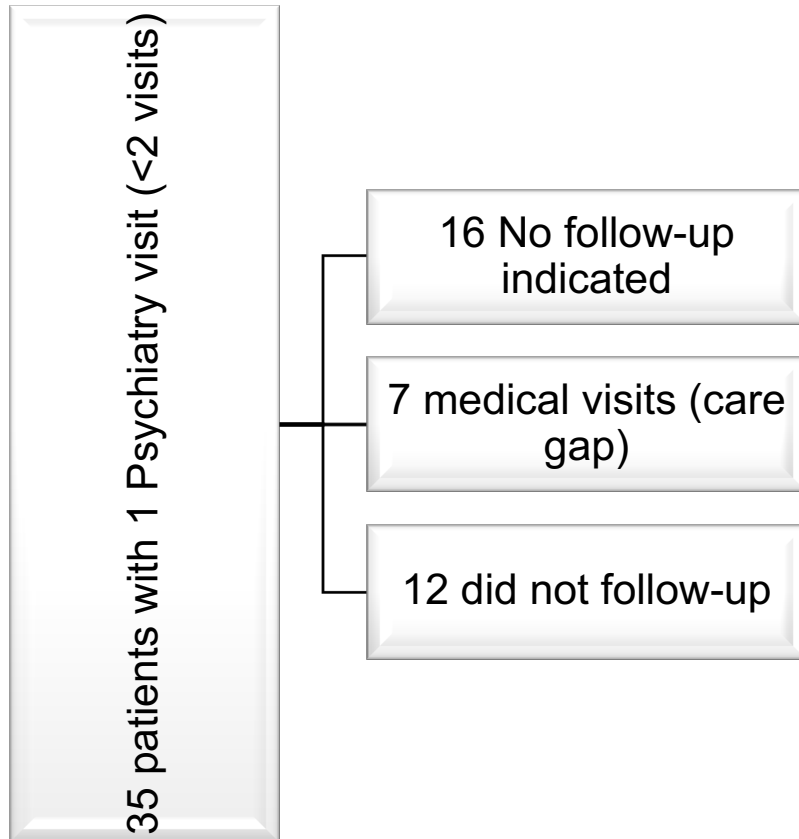


Diverse patient population

	<2 psych visits		2+ psych visits		P value
	n = 311	%	n = 130	%	
Age (year)					
18-29	46	14.8	32	24.6	0.051
30-39	74	23.8	30	23.1	
40-49	74	23.8	20	15.4	
50-59	64	20.6	31	23.9	
60+	53	17.0	17	13.1	
Gender					
Female	163	52.4	74	56.9	0.386
Male	148	47.6	56	43.1	
Race					
Caucasian	183	58.8	79	60.8	0.838
African American	109	35.1	42	32.3	
Other	19	6.1	9	6.9	
Marital status					
Single	131	42.1	64	49.2	0.329
Married	129	41.5	44	33.9	
Separated/Divorce/Widowed	46	14.8	18	13.9	
Not reported	5	1.6	4	3.1	

	<2 psych visits		2+ psych visits		P value
	n = 311	%	n = 130	%	
Education					
High school or lower	156	50.2	64	49.2	0.794
College	68	21.9	26	20.0	
Professional or doctorate	35	11.3	19	14.6	
Not reported	52	16.7	21	16.2	
Employment status					
Employed	90	28.9	39	30.0	0.041
Unemployed	138	44.4	46	35.4	
Disabled	42	13.5	27	20.8	
Retired	34	10.9	10	7.7	
Other	7	2.3	8	6.2	
Insurance					
Private	209	67.2	78	60.0	0.297
Public	94	30.2	47	36.2	
Self-pay or uninsured	8	2.6	5	3.9	

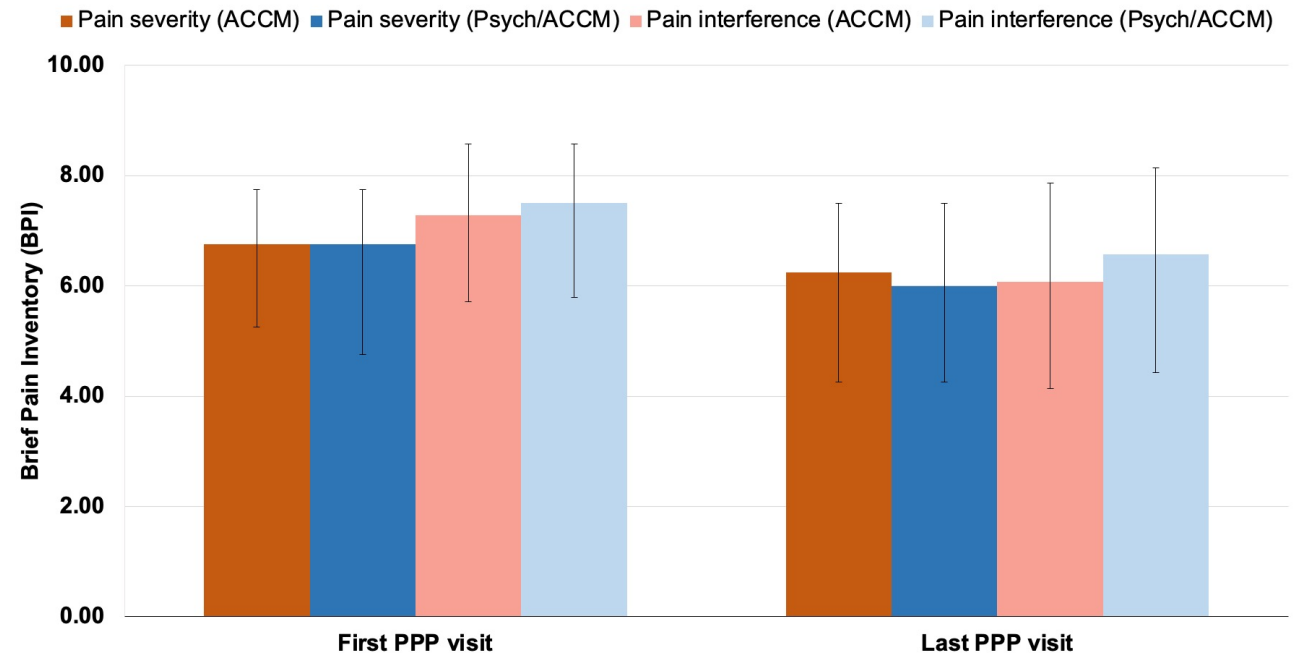
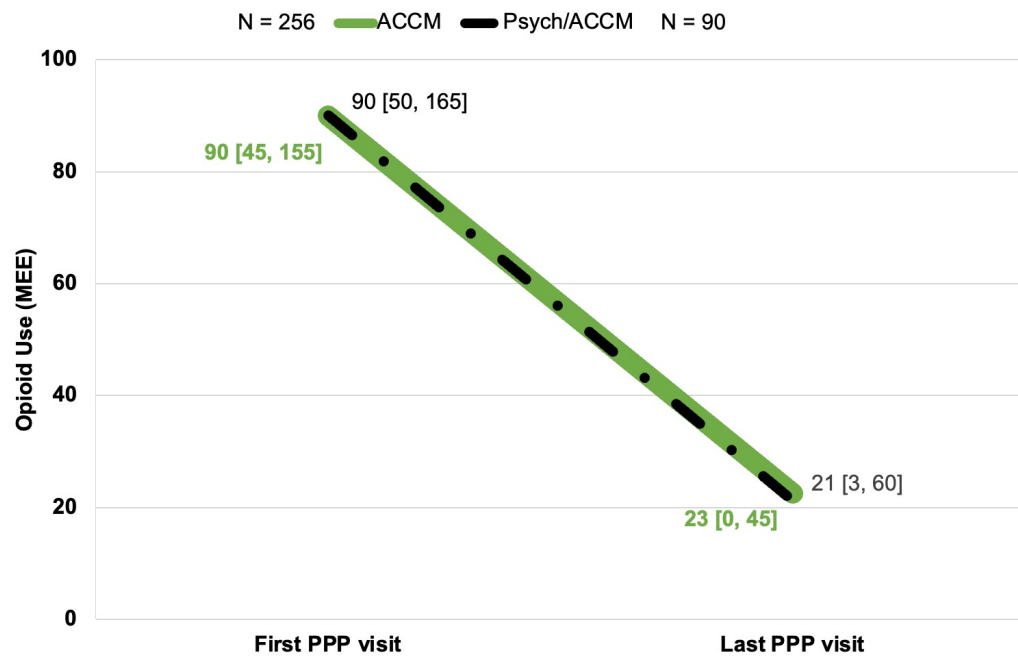
~1/3 patients receive a psychiatric evaluation



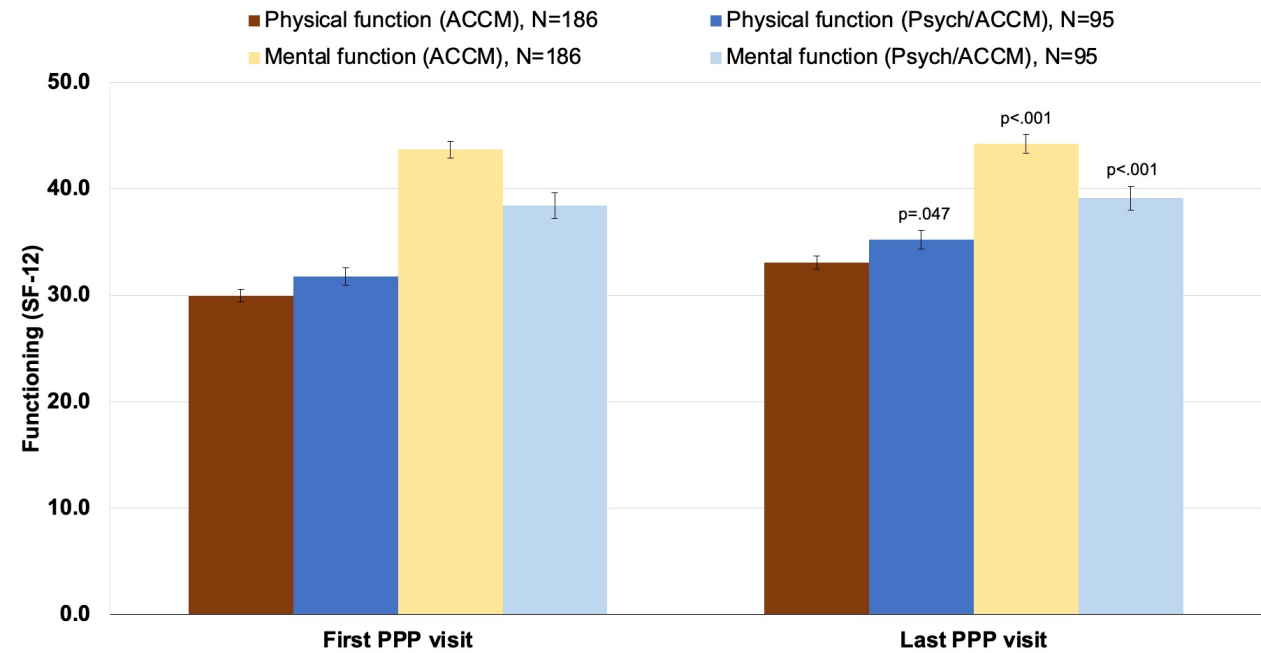
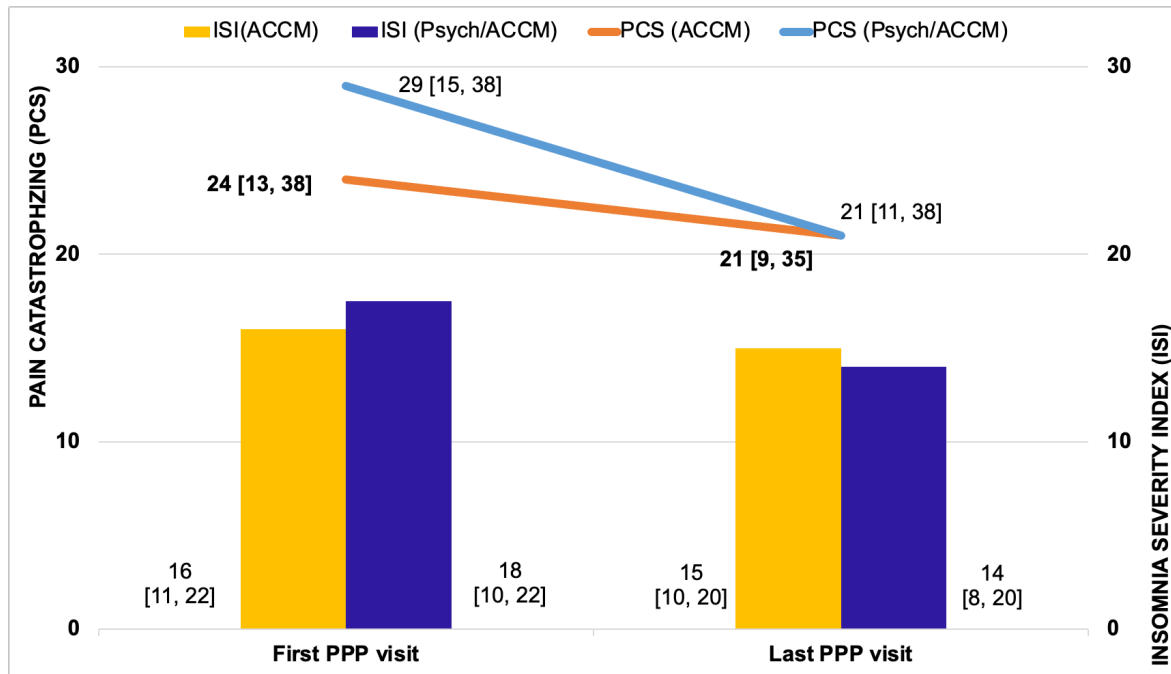
	<2 psych visits		2+ psych visits		P value
	n = 311	%	n = 130	%	
On medication for opioid use disorder (MOUD)					
No	264	84.9	117	90.0	0.153
Yes	47	15.1	13	10.0	
Any selected psychiatric diagnoses					
No	197	63.3	79	60.8	0.610
Yes	114	36.7	51	39.2	
Opioid use disorder					
No	272	87.5	120	92.3	0.140
Yes	39	12.5	10	7.7	
Other substance use disorder					
No	283	91.0	123	94.6	0.200
Yes	28	9.0	7	5.4	
Schizophrenia/Psychosis					
No	308	99.0	130	100.0	0.559
Yes	3	1.0	0	0.0	
Mood disorders					
No	252	81.0	93	71.5	0.028
Yes	59	19.0	37	28.5	
Anxiety disorders					
No	268	86.2	104	80.0	0.104
Yes	43	13.8	26	20.0	
Other mental disorders					
No	305	98.1	126	96.9	0.460
Yes	6	1.9	4	3.1	

Johns Hopkins PPP clinical outcomes

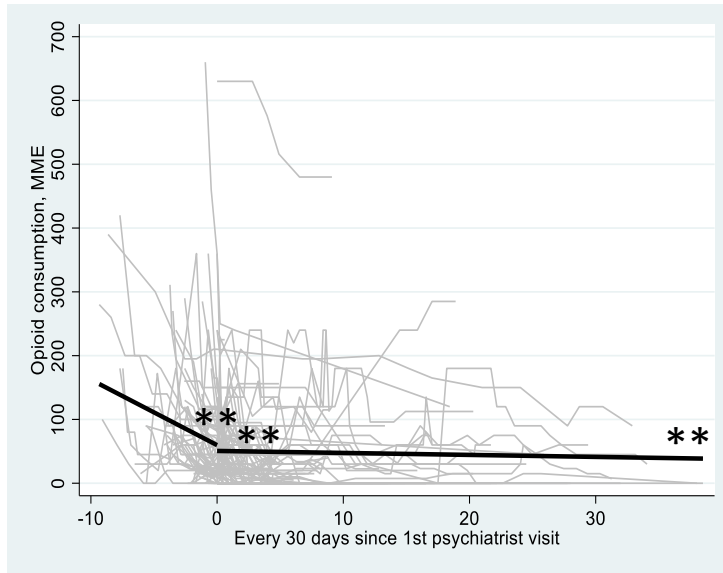
Reductions in opioid use and pain



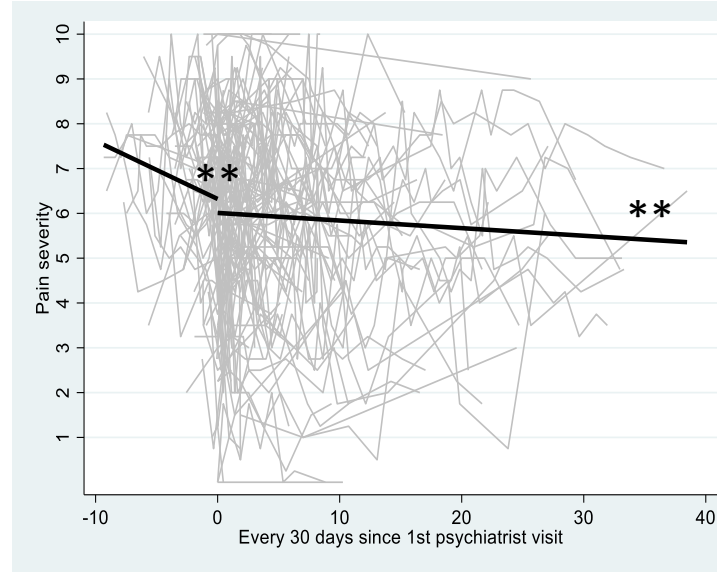
Catastrophizing, insomnia, and function outcomes



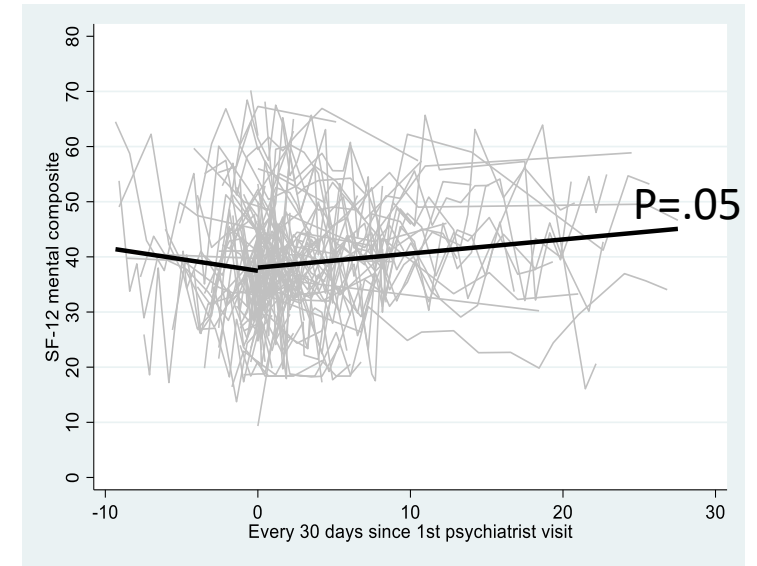
Patient trajectory following psychiatric care



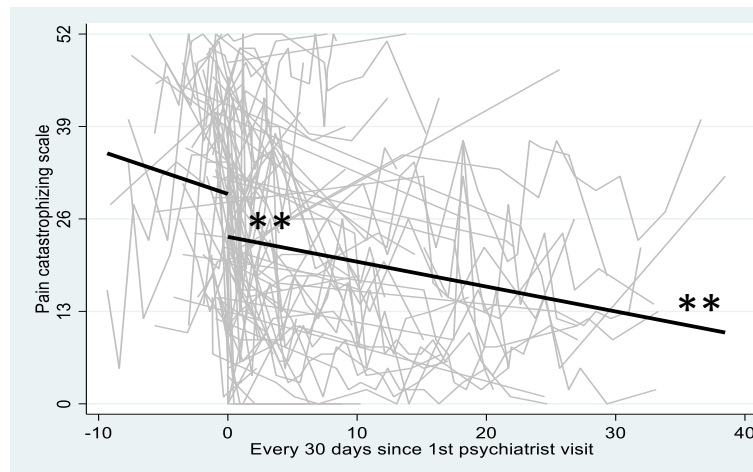
Opioid use, MME



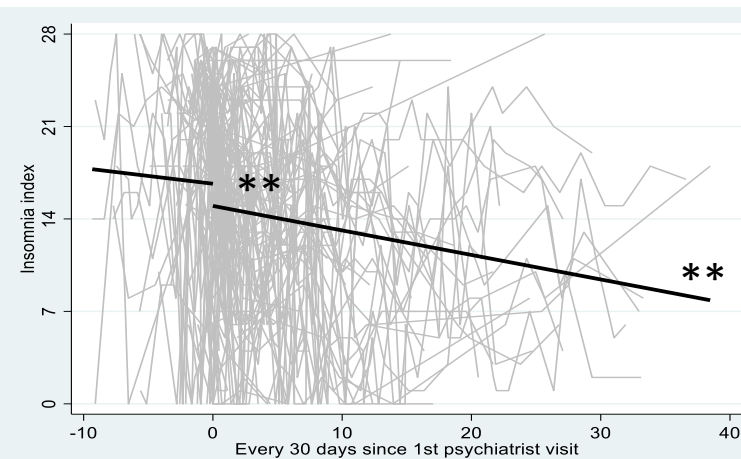
Pain severity



Mental health functioning



Pain catastrophizing



Insomnia severity

**p<.05



Patient Experiences in PPP

Targeted

“I think it’s absolutely brilliant that you guys have this because for somebody who has been opioid-dependent, you need that after surgery. So, I think it’s an incredibly necessary service for a certain population.”

Individualized

“It started in the beginning. **He personalized everything.** He started with me. We got to know each other and then we worked it out so that I can manage it.

Specialized

“And so I definitely like the fact that I have people who understand folks like me, and understand that **our needs are a little different**, and that are sort of **those experts in managing what I need...**”

Measurable Outcomes: Preliminary data

- Reduced length of hospital stay
 - FY18 JHH Surgical LOS, 6.5 days (no PPP) vs 5.8 days (PPP)
- Reduced unplanned hospital admission due to uncontrolled pain (<1%) and reduced ED Visits (<0.7%)
- Reduced Length of Hospital stay for Spine surgery from 7.6 days (no PPP) vs 5.2 days (PPP)

Patient-centered design approach to
improve perioperative pain outcomes



Patient Engagement



- patient activation and interventions designed to promote patient activation and positive patient behavior
 - improved patient-provider communication about the risks and benefits of pain treatment
 - improved safety and effectiveness for pain treatment
 - reduced risks of long-term opioid therapy
 - measurable improvements including improved function and quality of life
- emphasis in CDC's updated 2022 Clinical Practice Guidelines for Opioids

Q1. To what extent are you engaged in your perioperative pain management?

Q2. To what extent is your family engaged in your perioperative pain management?



Patient Engagement and MME Reduction

- preliminary data showing associations between patient and family engagement and opioid use in perioperative pain management***
- Associations between patient engagement in their perioperative pain management and reduction postoperative prescription opioid use (p=0.031)
 - every 1-point increase in patient engagement in perioperative pain management was associated with an additional reduction of 49 MME in post-surgery prescription opioid consumption



Adapting and Piloting an Educational Program to Enhance Patient Engagement

REDUCE PAIN
IMPROVE FUNCTION
RECOVER BETTER



Evaluate PPP

- clinic observations
- patient interviews
- chart review



Adapt educational program

- identify barriers to engagement
 - focus groups
 - finalize toolkit



Pilot educational program

- website
- PPP brochure
- tool to track pain experience



PPP Contributions and Future Directions



Reduce Pain. Improve Function. Recover Better.

- Unique service offering pain and psychiatric pain care across the continuum of surgery
- Provides patient and family-centered care with strategies to further engage patients in their pain care
- Using a human-centered design approach to improve patients' pain care experience
- Shed light on best practices for perioperative pain management and sustainable opioid tapering
- Collaborate and disseminate TPS models to advance pain care delivery models



References

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