# An Answer to the Opioid Crisis: Coordinated Pain Management

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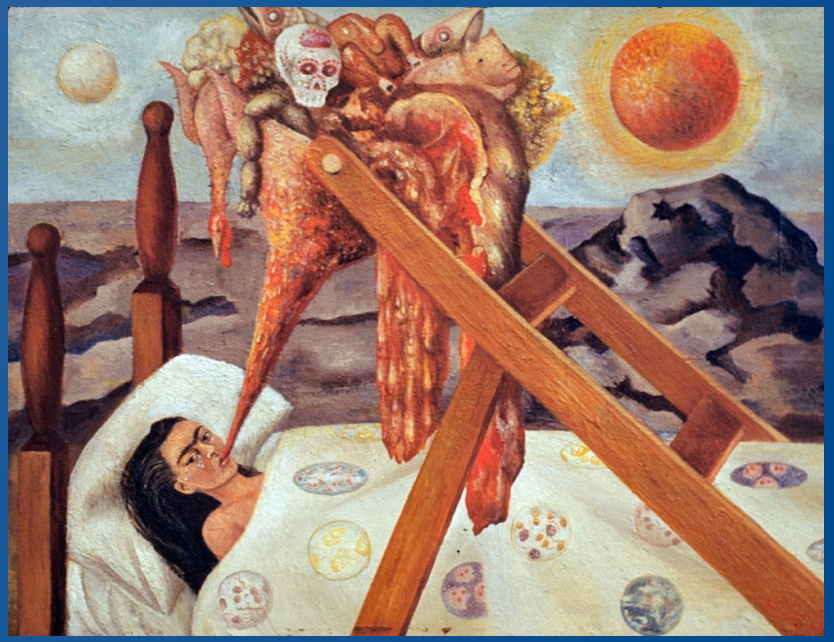
# No Financial Disclosures

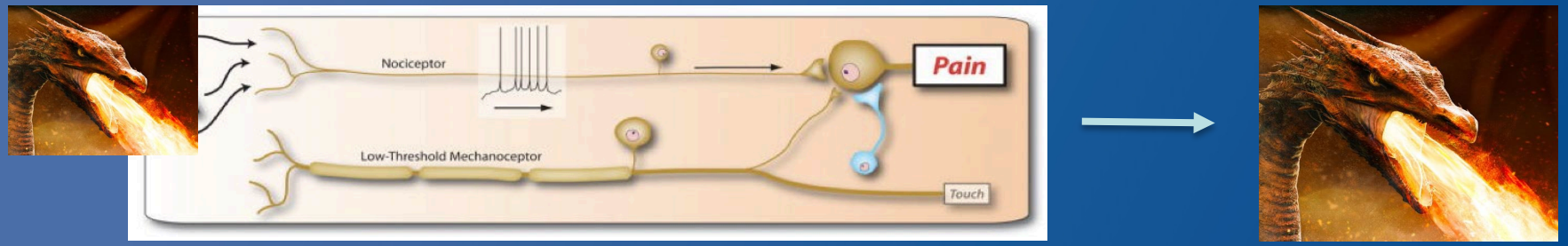
# Pain is made up of 2 parts:

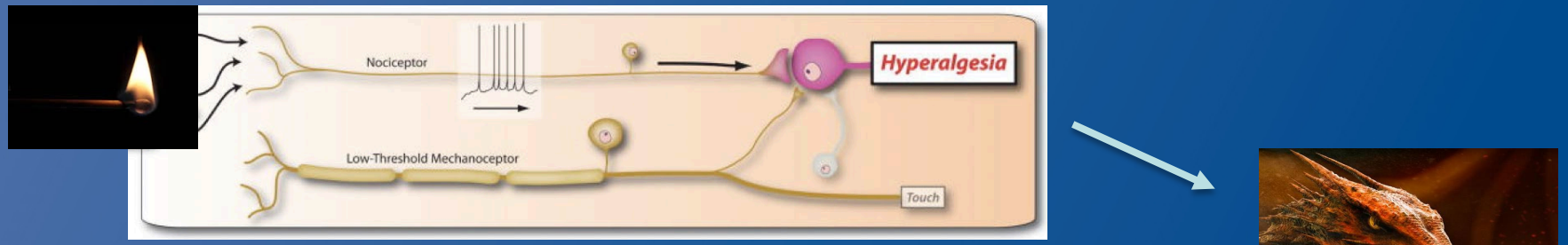
- A sensory experience associated with physical manipulation
- An emotional response of distress and anxiety related to the sensory information

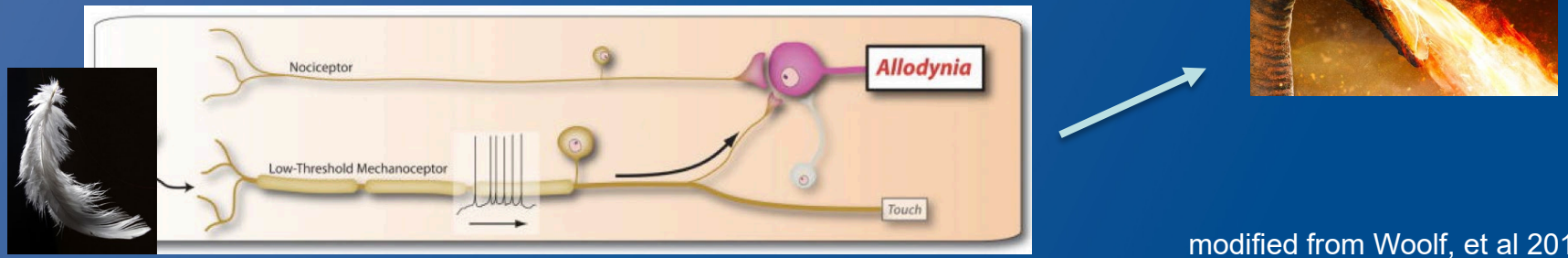


Frida Kahlo *Without Hope* 1945

# What do we mean by “chronic pain”?

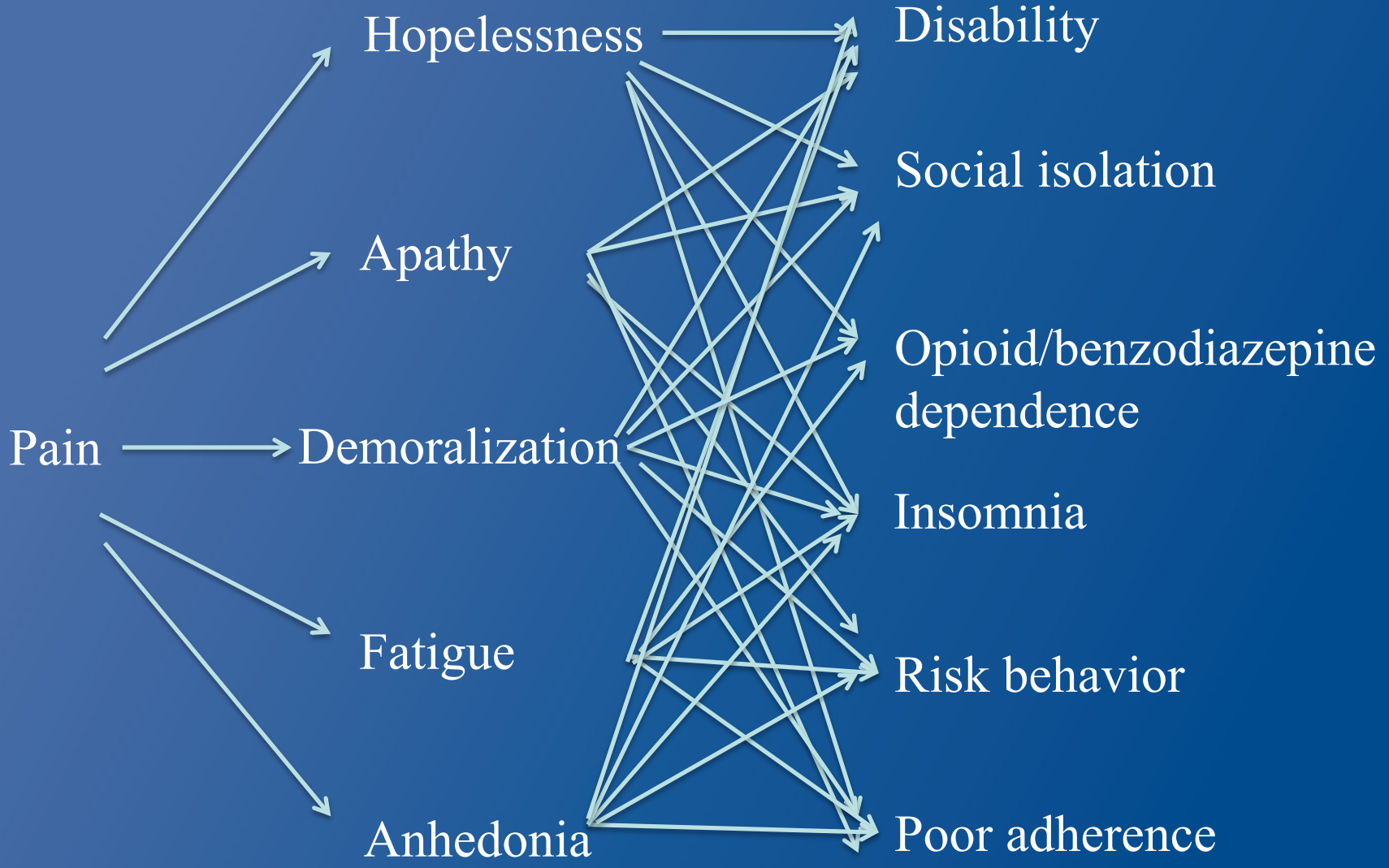



modified from Woolf, et al 2011

# Chronic pain is a public health challenge



# Overdose deaths rising despite reduction in opioid prescriptions

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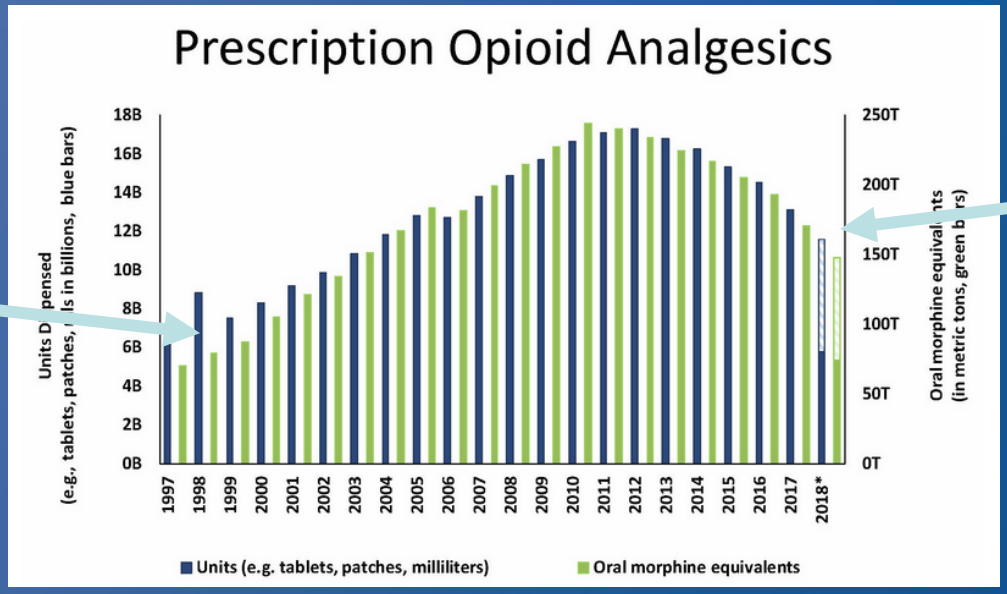
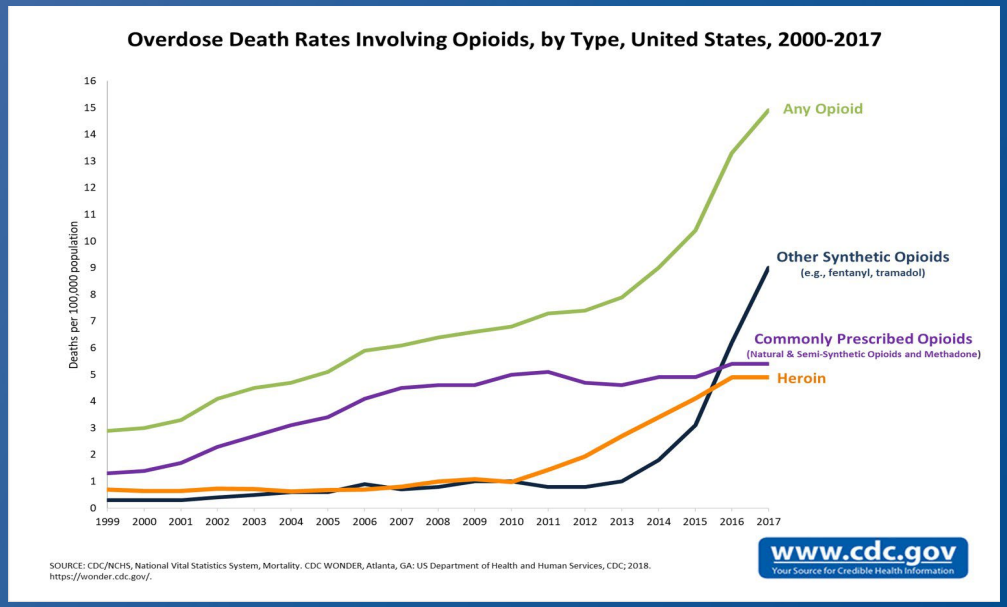
4x

15 year low




https://www.fda.gov



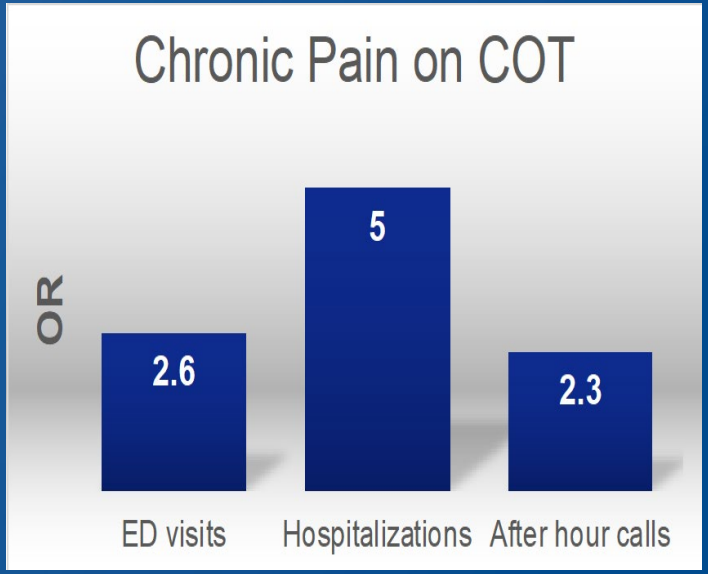

https://www.wonder.cdc.gov

49,000 Americans died from opioid overdoses in 2017

# State of chronic pain management today

**Segmented (and poorly reimbursed) care associated with worse outcomes**

- functional disability in chronic pain increases medical costs
- patients on chronic opioid therapy (COT) utilize greater healthcare resources
- specialty referrals made when patients do not respond to medical treatment or surgery
    - reinforces the belief that pain is not real
    - reduces availability of behavioral-based interventions




Kay *Pain Med* 2017

Blyth *Pain* 2001, Gatchel *J Pain* 2006, Flor *Pain* 1992; Kamper *BMJ* 2015; Semrau *PloS One* 2015; Tompkins *Drug and Alcohol Depend* 2017

# Johns Hopkins Hospital (JHH) Acute Pain Service recognized a problem…

- approximately 100 million Americans undergo inpatient or elective ambulatory surgery annually
  - over 80% receive an opioid prescription afterward
- chronic post-surgical pain is a common (10-50%) complication after surgery
- pain is the #1 reason for post surgery readmissions at JHH
  - 60,126 surgical cases at JHH in fiscal year 2016
    - 10,122 complex cases (Level 1 or 2)
- Perioperative Pain management Program (PPP) will provide our patients and surgeons with continuity of care
  - *manage acute on chronic pain*
  - address the opioid epidemic in the surgical population

# Value Proposition of JHH Integration

- reduce unplanned post-surgical adverse events related to pain
- reduce unplanned hospital admission or readmissions due to uncontrolled pain
- reduce inpatient opioid utilization
- reduce outpatient opioid utilization after recovery
- meaningfully contribute to the opioid crisis

# Johns Hopkins Perioperative Pain Program (PPP)

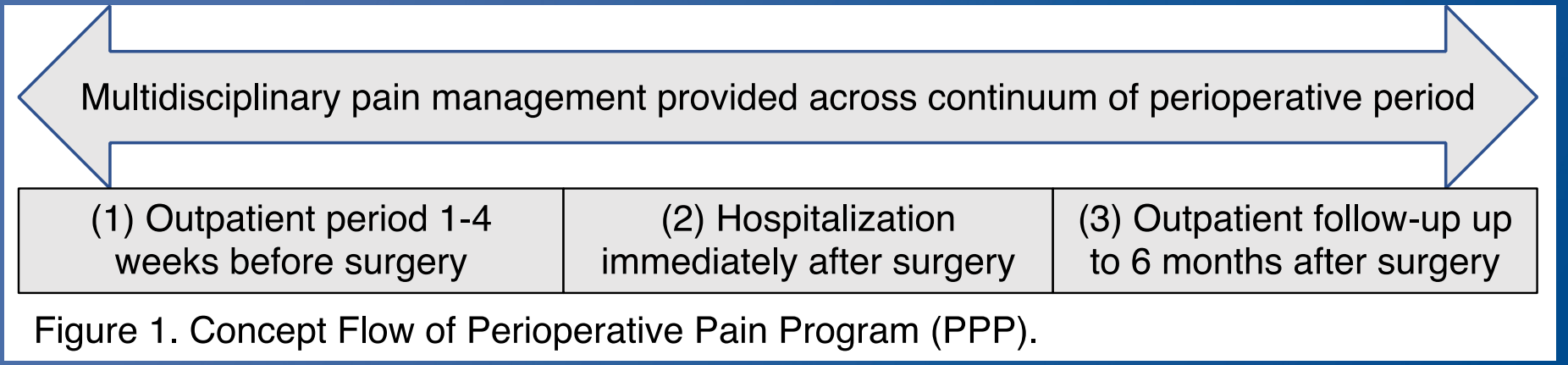



Figure 1. Concept Flow of Perioperative Pain Program (PPP).

| PPP consults on surgical patients who are: |
|---|
| - Currently prescribed any opioid > 1 month |
| - On opioid maintenance therapy |
| - Currently using illicit opioids |
| - Have a history of opioid use disorder |
| - Opioid-naïve patients at risk of long-term postoperative opioid use (i.e., due to trauma or extensive surgical procedures) |

Speed* and Hanna* *Am J Med Qual* 2018

# Continuity of care in the Perioperative Pain Program (PPP)

| | Referral | Consultation | Coordination |
|---|---|---|---|
| **1. Preoperative** | Surgical Team, Primary Care, Center for Perioperative Optimization, other providers | Conduct medical and psychiatric history, pain education, and reduce opioid dose by 10-25% | Update surgical team, primary care, opioid maintenance programs, family |
| **2. Postoperative Hospitalization** | Acute Pain Service proactively consults on PPP patients | Provide opioid and non-opioid pain management recommendations to surgical team | Prescribed opioids at discharge limited to days until PPP follow-up |
| **3. Post-discharge Follow-up** | Follow up PPP appointments offered every 1-4 weeks as needed | Initiate opioid weaning; Psychiatric care embedded in clinic, when needed for more complex cases | Referral to intensive outpatient substance use, physical medicine and rehab, chronic pain procedures |

Modified from Speed* and Hanna* *Am J Med Qual* 2018

# Multimodal therapy

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## Anesthesiologists

Use regional anesthesia and multimodal analgesia to reduce:

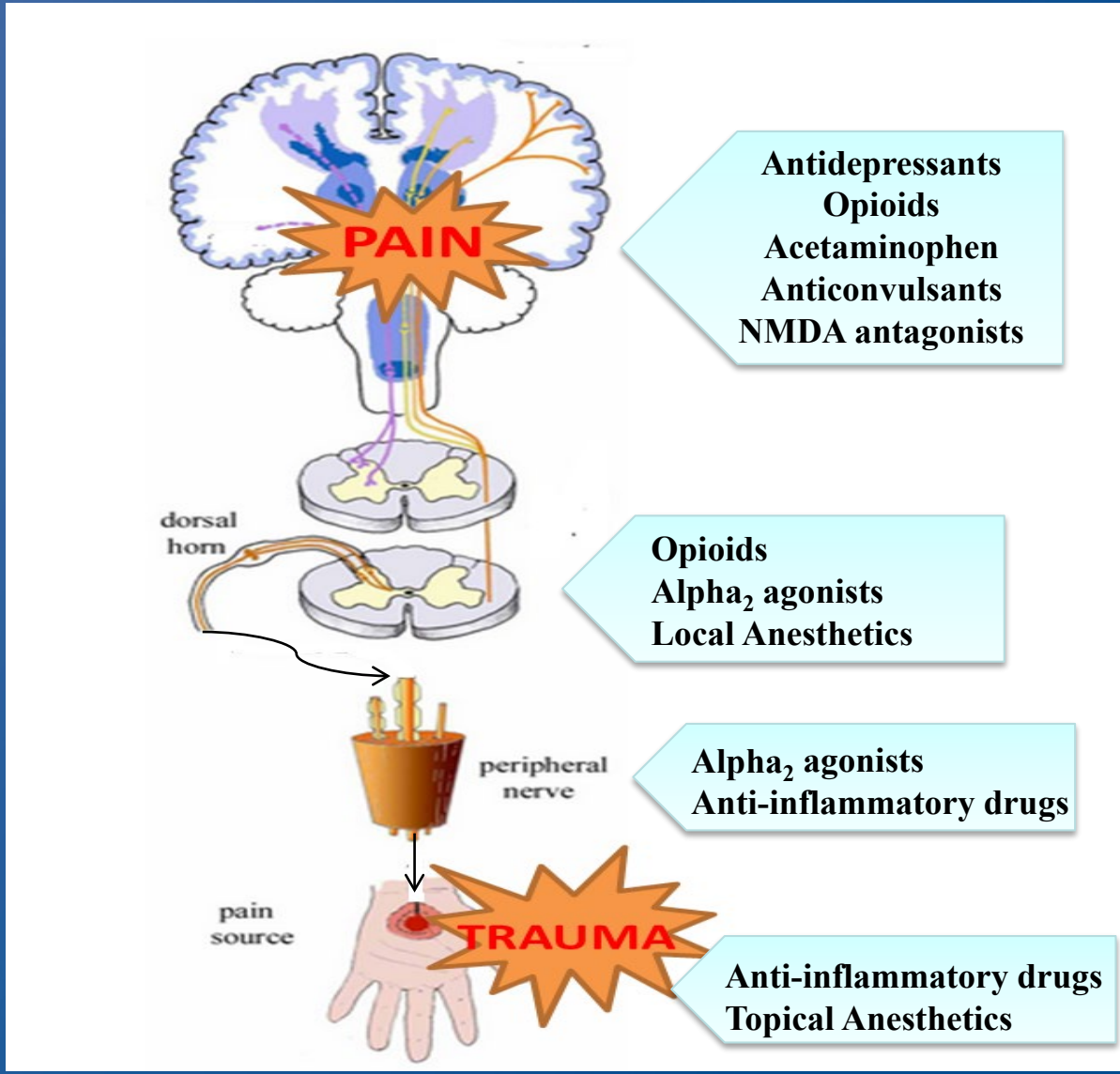
- pain scores
- post-operative opioid requirements
- unplanned admissions for pain control

## Psychiatrists

Treat underlying **psychiatric disease***, monitor **substance abuse***, guide towards rehabilitation and focus on recovery

- pharmacologic and psychological treatments better than placebo

*risks for poor outcomes




Speed* and Hanna* *Am J Med Qual* 2018

# Perioperative Pain Program (PPP): 2017

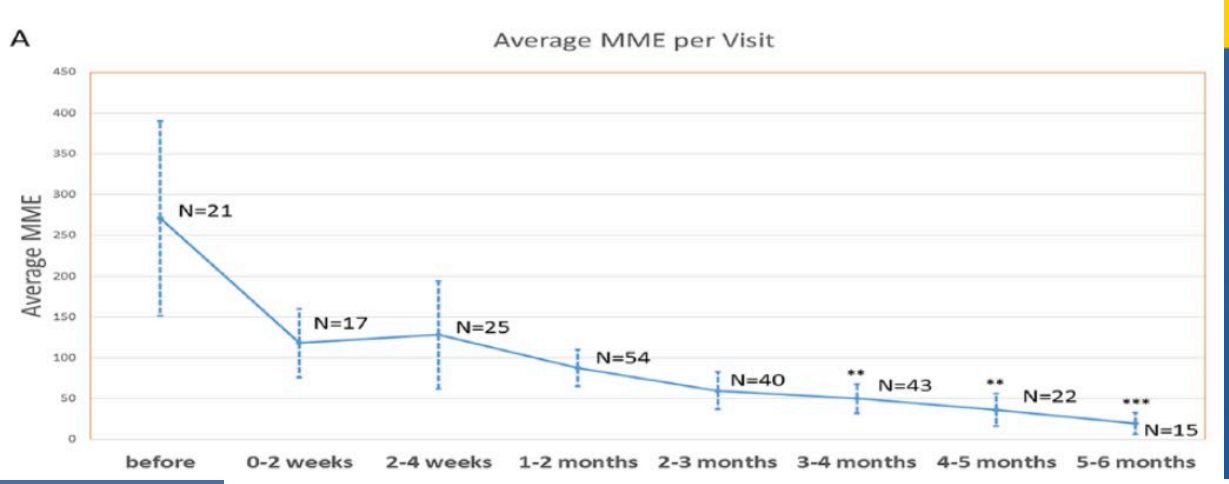
| Patients | | (N = 61) |
|---|---|---|
| % Female (N) | | 48% (29) |
| Age in years (SD) | | 46 (15) |
| Ethnicity | Non-Hispanic White | 34 |
| | Asian American | 2 |
| | African American | 20 |
| | Other | 5 |
| % Chronic opioids (N) | | 92% (56) |
| Years on opioids (SD) | | 5.9 (6.8) |
| % Methadone (N) | | 6% (4) |
| MEQ (SD) | | 206 (266) |
| BPI (SD) | | 6.6 (2) |
| MPQ - VAS (SD) | | 6.9 (2.5) |
| SF-12 (PCS) (SD) | | 27.4 (8) |
| SF-12 (MCS) (SD) | | 43.3 (13.1) |

| Type of Surgery | % Patients (N = 61) |
|---|---|
| Spine | 28% (17) |
| GI | 17% (10) |
| Trauma | 13% (8) |
| General | 11% (7) |
| Orthopedic | 11% (7) |
| Thoracic | 7% (4) |
| Other | 13% (8) |

Other: Plastics, Otolaryngology, Cardiothoracic, Vascular, Urology

Approximately 25% of consults are referred to psychiatry

Speed* and Shechter* *Am J Med Qual* 2019

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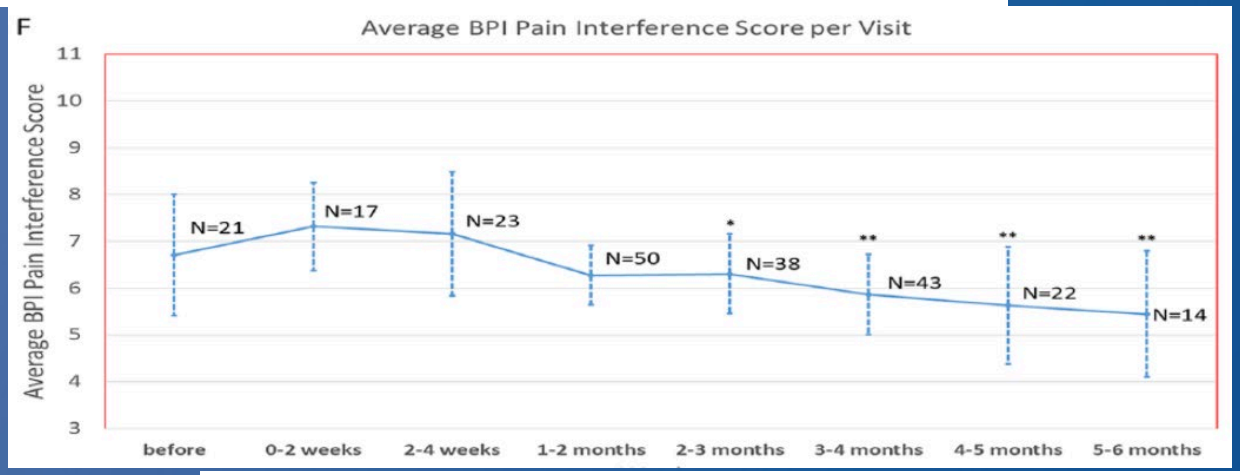
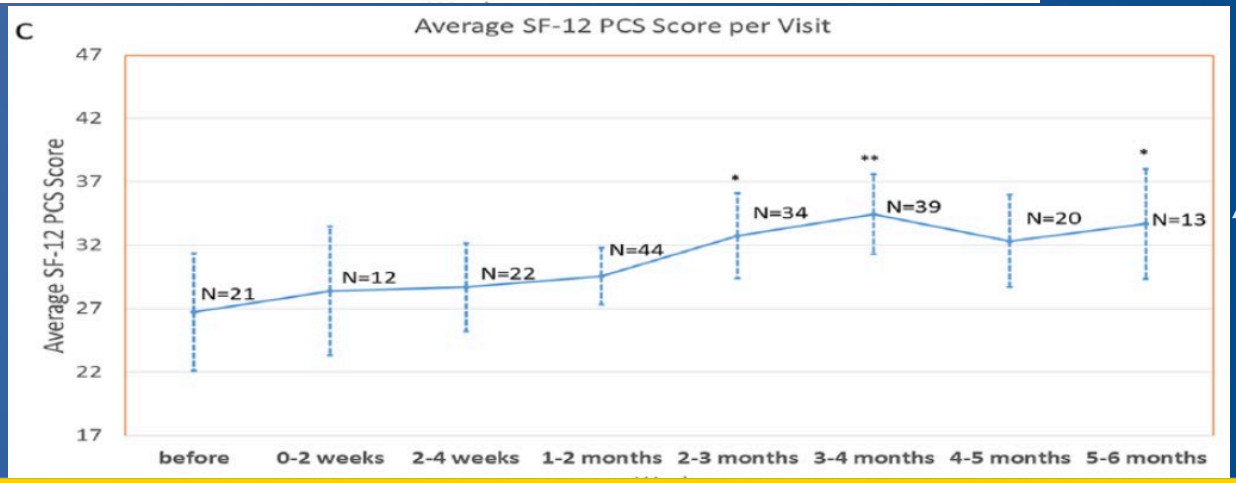
**opioid utilization (morphine equivalents)**




**pain interference**




**physical function**

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# PPP Outcomes

- New Patients = 503 patients
- < 5% referrals have declined care
- 4.6 ± 2.7 PPP visits/patient
- Successful discharges (N = 30 out of 61): 109 ± 59 days after surgery
- Reduced length of hospital stay (unpublished data)
  - FY18 JHH surgical length of stay, 6.5 days (treatment as usual) vs 5.8 days (PPP)
  - for spine surgery: 7.6 days (treatment as usual) vs 5.2 days (PPP)
- PPP reduced unplanned hospital admissions due to uncontrolled pain (<1%) and reduced ED Visits (<0.7%)

# Mr. TS

- 41 year old presents to PPP after 3 surgeries (1st and 2nd finger amputation) after work-related injury
- PMH:  Opioid Use Disorder, currently in sustained remission for past 7 years.  Nicotine use.
- FHx: Father with opioid use disorder
- SH:  Engaged.  Works in construction.
- Presents to clinic on PO oxycodone (60 MME)
- **He successfully tapered opioids to discontinuation**
- He continues to have neuropathic pain and sleeping difficulties
  - Add amitriptyline 10mg HS→ 75mg HS
  - Regular follow-up (2-3 weeks)
- **Earned his GED**
- Walks dog/PT
- Resume care with PMD
- **Continue relapse prevention**

# Conclusions

**Perioperative Pain Program provides efficacious coordinated healthcare**

Add value to:

1. Individual: reduce pain and improve functioning
2. Healthcare: reduce costs and utilization in short- and long-term
3. Society: mitigate opioid risk

# PPP Clinic - Acknowledgements

https://www.youtube.com/watch?v=azmZ_6setcY

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