Opioids: use and abuse

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Disclosure

I am a consultant for:
- Fresenius Kabi (Advisory for novel pain medication development)
- Abbott Laboratories (New product development, clinician education and training seminars)
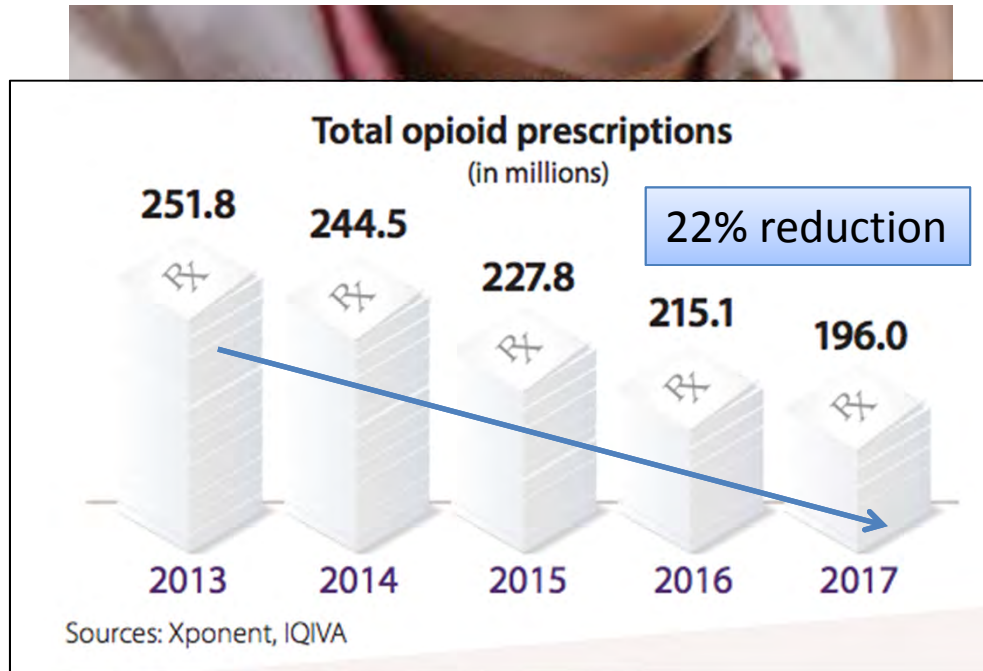
No other conflicts or relationships to disclose.

I do not receive royalties or own stock or stock options of any drug or device manufacturer, or health care company

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Learning Objectives

At the end of this presentation participants should be able to:

- Define pain care outcomes and contributing factors
- Illustrate the incidence of persistent opioid use after surgery and risk factors
- Identify complications related to preoperative opioid use
- Discuss the above as a need statement for integrative comprehensive pain care

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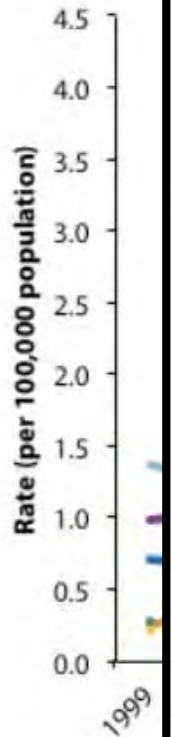
Rates of opioid prescribing

Total opioid prescriptions
(in millions)

251.8   244.5   227.8   215.1   196.0

22% reduction

2013   2014   2015   2016   2017

Sources: Xponent, IQIVA

Sources: CDC, Quintiles IMS

AMA opioid task for progress report

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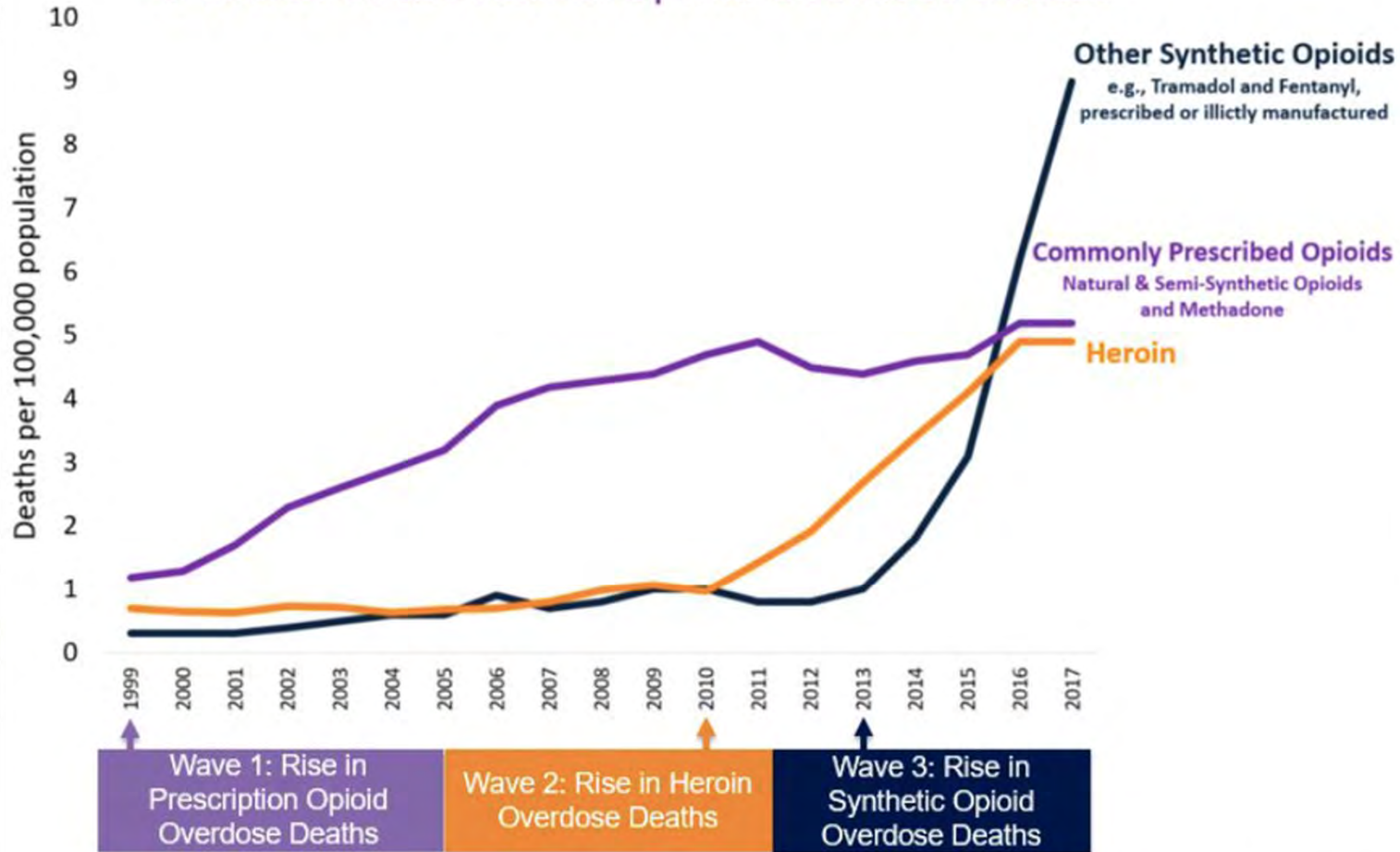**NorthShore**
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All have occurred since publication of the CDC guidelines except for:

1. Reduction in opioid prescriptions
2. Increase in opioid related overdose deaths
3. Increased prescribing of buprenorphine
4. All of the above have occurred

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3 Waves of the Rise in Opioid Overdose Deaths

Other Synthetic Opioids
e.g., Tramadol and Fentanyl, prescribed or illictly manufactured

Commonly Prescribed Opioids
Natural & Semi-Synthetic Opioids and Methadone

Heroin

Deaths per 100,000 population

Wave 1: Rise in Prescription Opioid Overdose Deaths

Wave 2: Rise in Heroin Overdose Deaths

Wave 3: Rise in Synthetic Opioid Overdose Deaths

SOURCE: National Vital Statistics System Mortality File.

Opi

Rate (per 100,000 population)

4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0

1999

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Prevalence of pain

- 1.5 billion people live with chronic pain worldwide

- 100 million Americans affected (1 in 3)

- Affects more Americans than diabetes, heart disease, and cancer combined.

  - Silent epidemic

Global Industry Analysts, Inc. Report, January 10,2011.
American Academy of Pain Medicine
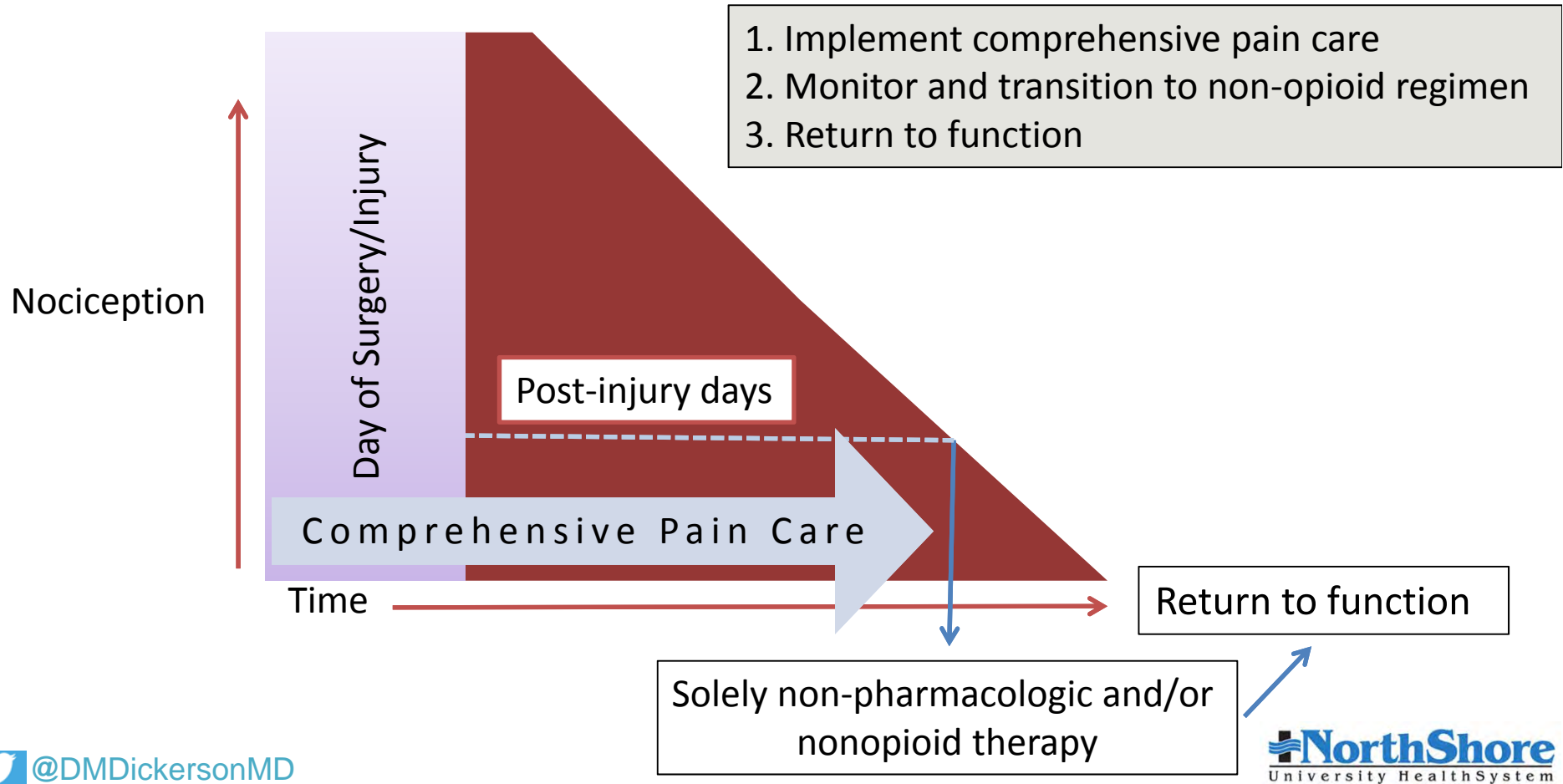
Outcomes in pain care

Persistent (chronic) uncontrolled pain

- Suffering, disability, substantial healthcare cost, decreased function (cognitive and physical), decline of total health
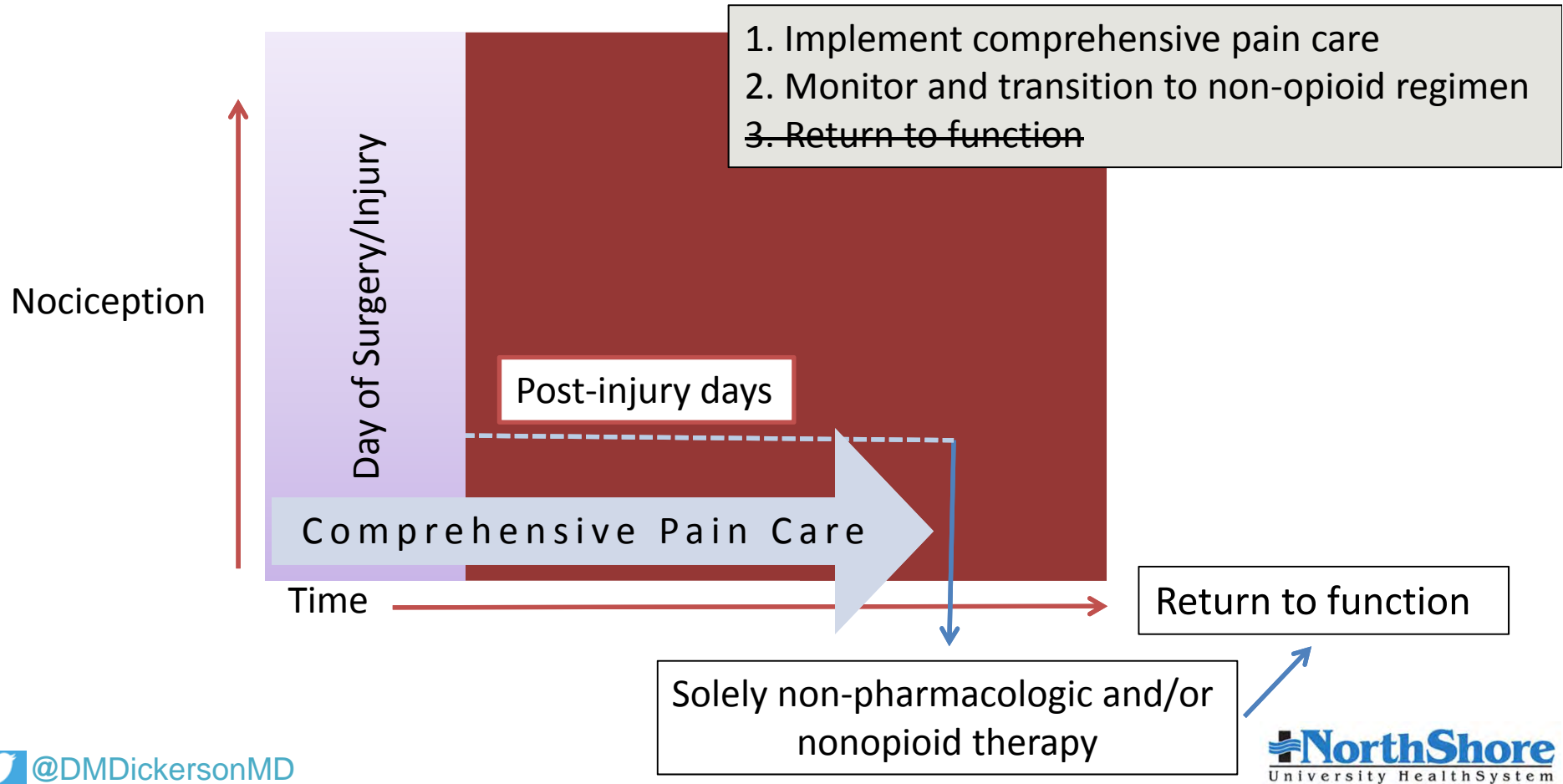
Persistent opioid or analgesic use

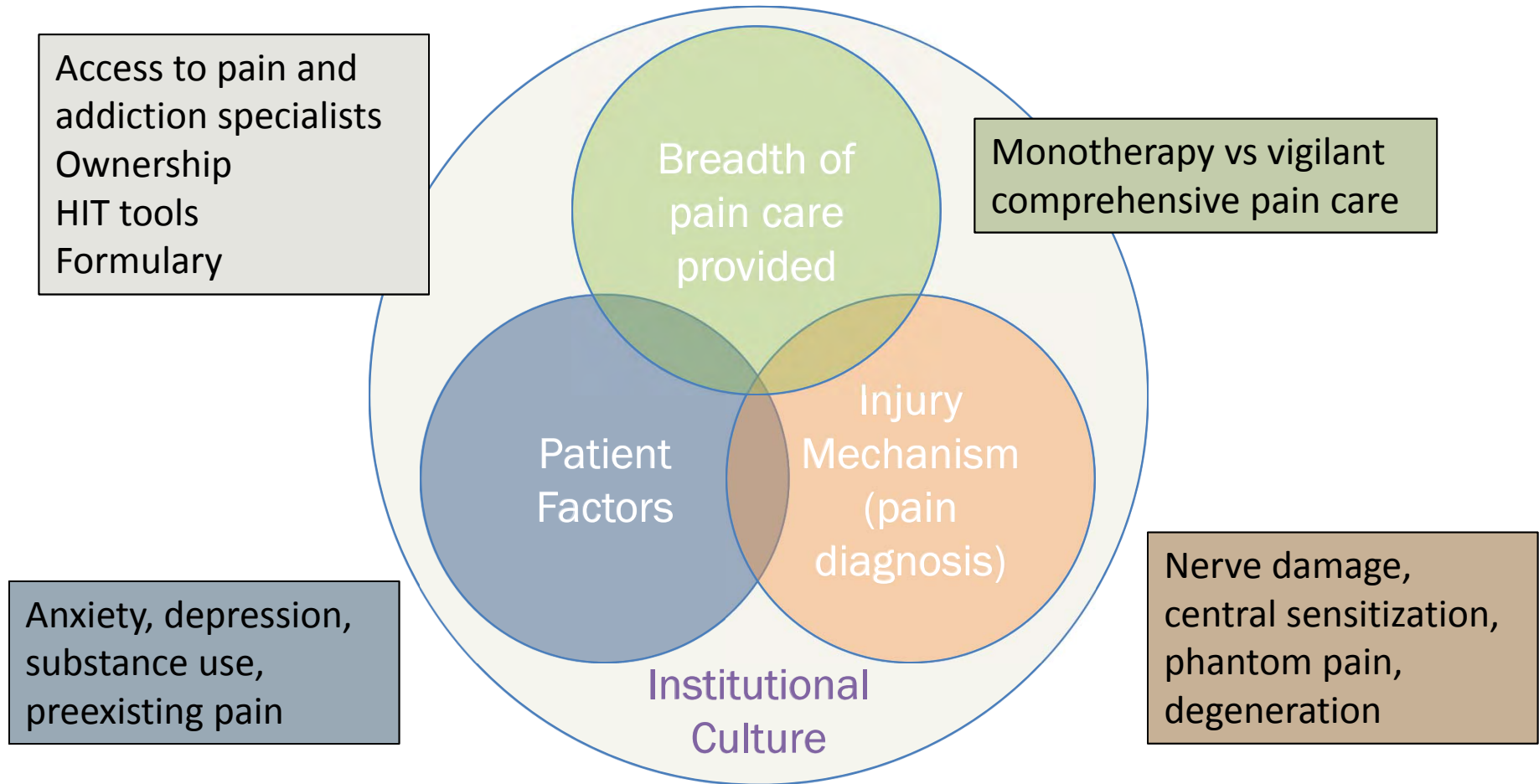- Therapy burden (adverse events, side effects) decline of total health

From injury to recovery

1. Implement comprehensive pain care
2. Monitor and transition to non-opioid regimen
3. Return to function

Nociception

Day of Surgery/Injury

Post-injury days

Comprehensive Pain Care

Time

Return to function

Solely non-pharmacologic and/or nonopioid therapy

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From injury to persistent pain

Nociception

Time

Day of Surgery/Injury

1. Implement comprehensive pain care
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Post-injury days

Comprehensive Pain Care

Return to function

Solely non-pharmacologic and/or nonopioid therapy

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Outcomes in Pain Care: contributing factors

Access to pain and addiction specialists
Ownership
HIT tools
Formulary

Monotherapy vs vigilant comprehensive pain care

Breadth of pain care provided

Patient Factors

Injury Mechanism (pain diagnosis)

Institutional Culture

Anxiety, depression, substance use, preexisting pain

Nerve damage, central sensitization, phantom pain, degeneration

Gateways to persistent opioid use

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Surgical opioid Rx: a gateway to dependence?
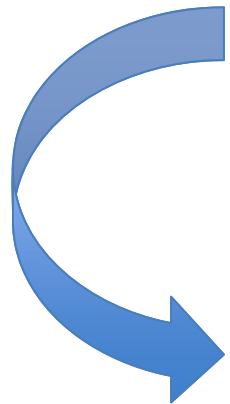
Access/exposure: 40% of opioids prescribed are for post-operative indications

Surplus: 75% of misused opioids by first time users are from surplus prescriptions

Levy B, Paulozzi L, Mack KA, Jones CM. Trends in Opioid Analgesic–Prescribing Rates by Specialty, U.S., 2007–2012. Am J Prev Med. 2015 Sep 1;49(3):409–13

Persistent opioid use after surgery is associated with:

1. Tobacco use

2. Anxiety and depression

3. Preoperative pain

4. Substance use disorder

5. All of the above

Persistent opioid use after surgery is more likely in:

A. Major Surgery

B. Minor Surgery

C. Similar incidence between the two

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New Persistent Opioid Use After Minor and Major Surgical Procedures in US Adults

Chad M. Brummett, MD; Jennifer F. Waljee, MD, MPH, MS; Jenna Goesling, PhD; Stephanie Moser, PhD; Paul Lin, MS; Michael J. Englesbe, MD; Amy S. B. Bohnert, PhD, MHS; Sachin Kheterpal, MD, MBA; Brahmajee K. Nallamothu, MD, MPH

N=*36,177* patients, mean age 44.6y, 66% female, 72% white, 80% minor surg, 20% major surg
Primary outcome: *Opioid Rx 90-180 days post surgery*
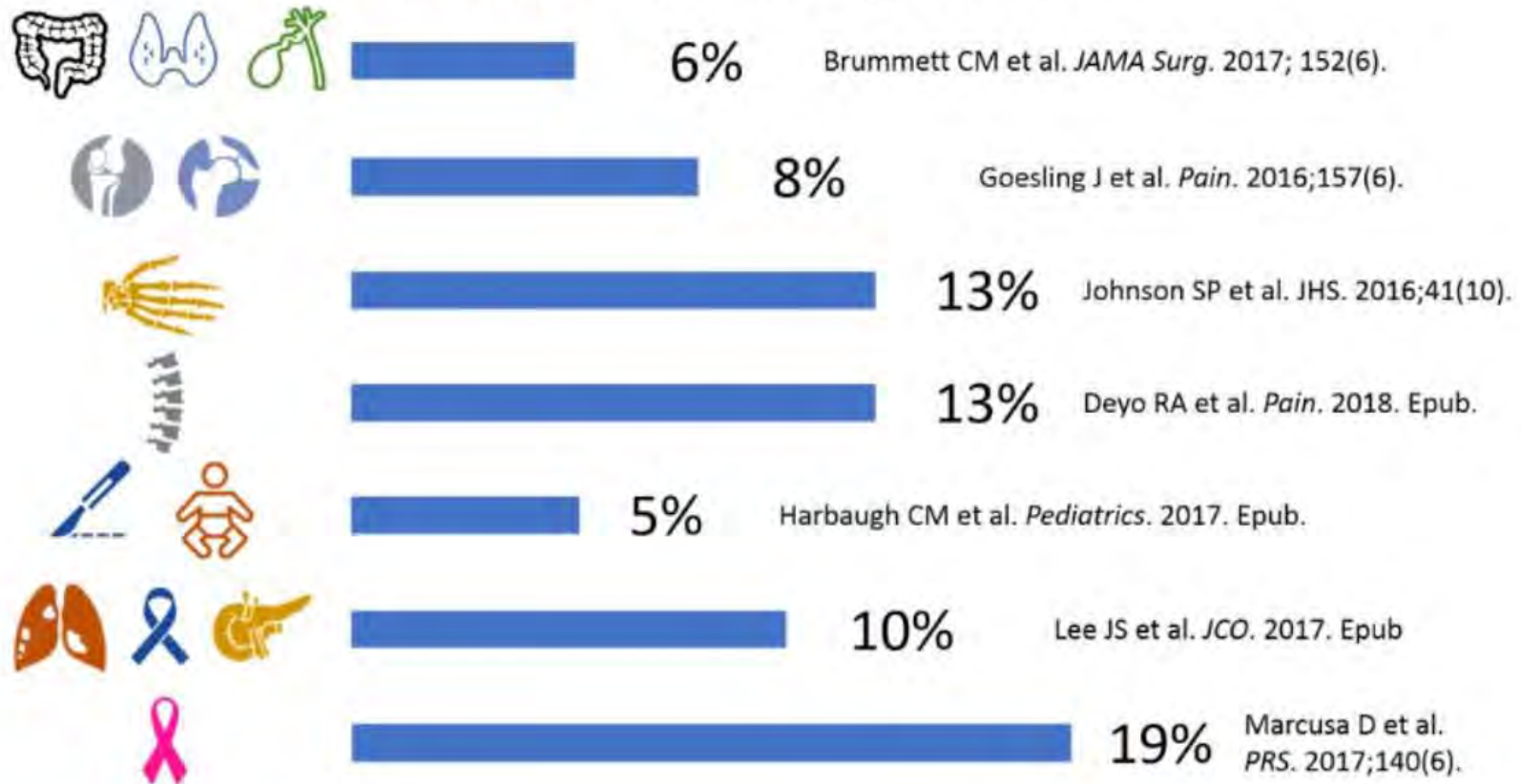**Results: 5.9 to 6.5%;** Non op control group **0.4%**
Risk factors: tobacco use, substance abuse disorders, mood disorders, anxiety**, preoperative pain**

Patient factors may significantly increase persistent use

Ask about preoperative pain!

JAMA Surg. 2017. 152(6) e170504.

New Persistent Opioid Use

6% — Brummett CM et al. *JAMA Surg.* 2017; 152(6).

8% — Goesling J et al. *Pain.* 2016;157(6).

13% — Johnson SP et al. JHS. 2016;41(10).

13% — Deyo RA et al. *Pain.* 2018. Epub.

5% — Harbaugh CM et al. *Pediatrics.* 2017. Epub.

10% — Lee JS et al. *JCO.* 2017. Epub

19% — Marcusa D et al. *PRS.* 2017;140(6).

University of Michigan institute for healthcare policy & innovation

Opioid dependence and surgical outcomes

Preoperative Opioid Use is Independently Associated With Increased Costs and Worse Outcomes After Major Abdominal Surgery

David C. Cron, BS,* Michael J. Englesbe, MD,* Christian J. Bolton, BS,† Melvin T. Joseph, BS,† Kristen L. Carrier, BS,‡ Stephanie E. Moser, PhD,† Jennifer F. Waljee, MD, MPH, MS,§ Paul E. Hilliard, MD,† Sachin Kheterpal, MD, MBA,† and Chad M. Brummett, MD†

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TABLE 3. Complication Rates by Preoperative Opioid Use

Complication	Opioid-naïve	Opioid Users	P
Infectious			
Surgical site infection: any	8.3% (159)	14.9% (75)	<0.001
Surgical site infection: superficial	5.8% (110)	10.4% (52)	0.001
Surgical site infection: deep	0.8% (15)	1.4% (7)	0.19
Surgical site infection: organ space	2.2% (41)	3.4% (17)	0.14
Pneumonia	0.9% (17)	2.0% (10)	0.053
Sepsis	1.6% (30)	3.8% (19)	0.004
Severe sepsis	1.2% (23)	1.4% (7)	0.66
Clostridium difficile	0.6% (11)	0.6% (3)	1
Respiratory			
Intraoperative unplanned intubation	0% (0)	0.2% (1)	0.21
Postoperative unplanned intubation	1.3% (24)	2.6% (13)	0.040
Pulmonary embolism	0.5% (9)	0.8% (4)	0.49
Cardiovascular			
Cardiac arrhythmia	0.4% (7)	0.8% (4)	0.26
Postoperative myocardial infarction	0.3% (5)	1.0% (5)	0.038
Postoperative cardiac arrest	0.2% (4)	0.2% (1)	1
Stroke	0.2% (3)	0.2% (1)	1
Deep venous thrombosis	0.6% (12)	0.8% (4)	0.76
Postoperative transfusion	3.5% (66)	7.2% (36)	0.001
Renal			
Acute renal failure	0.7% (14)	1.4% (7)	0.18

Numbers are unadjusted and represent % (N).
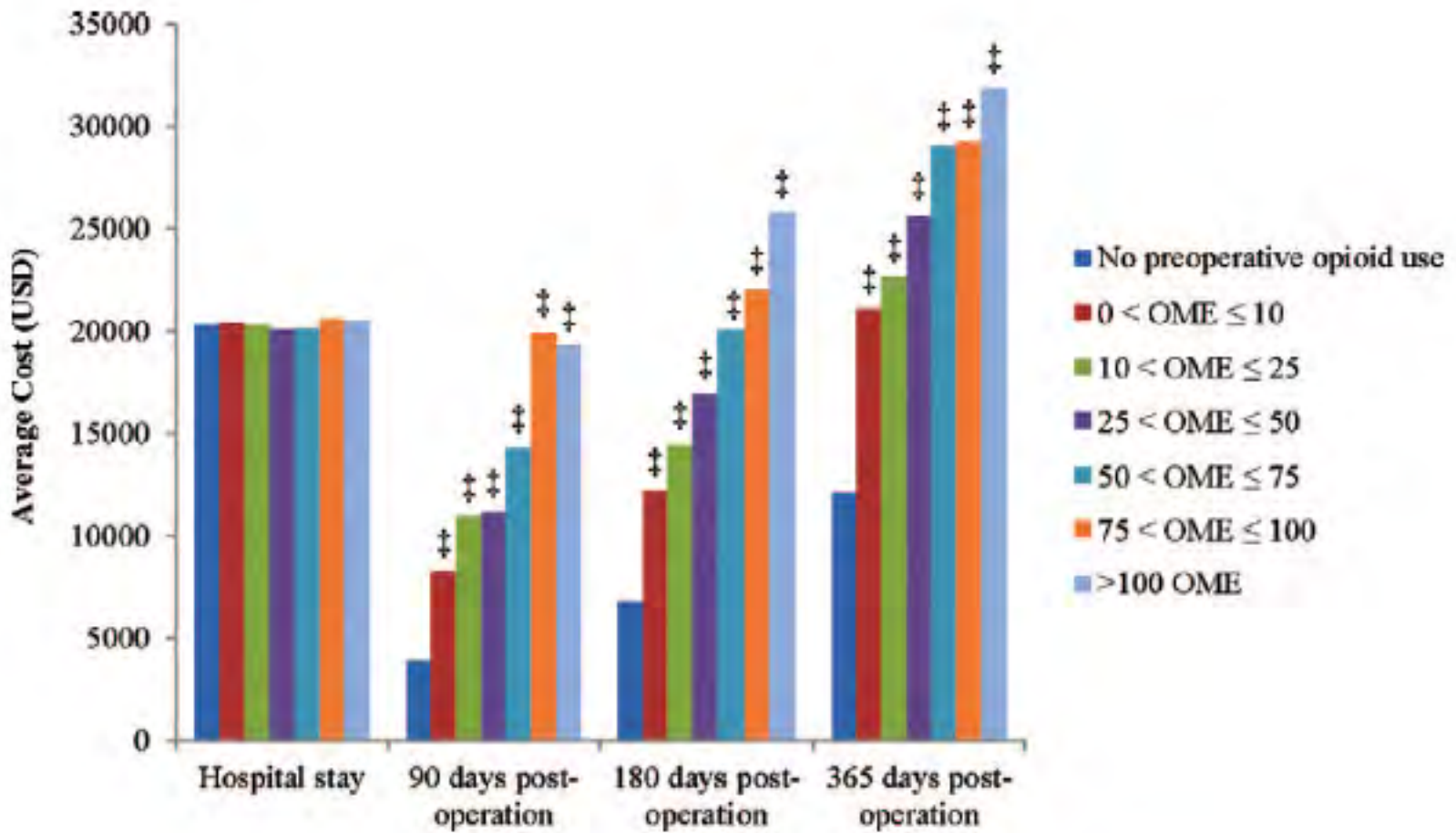
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Pharmaco-therapy

Procedural therapy

Physical therapy services

Primary care wellness

Lab services

Specialty consultation

Personalized Medicine

Imaging and diagnostics

Health psychology

NorthShore Pain Care

Integrative medicine

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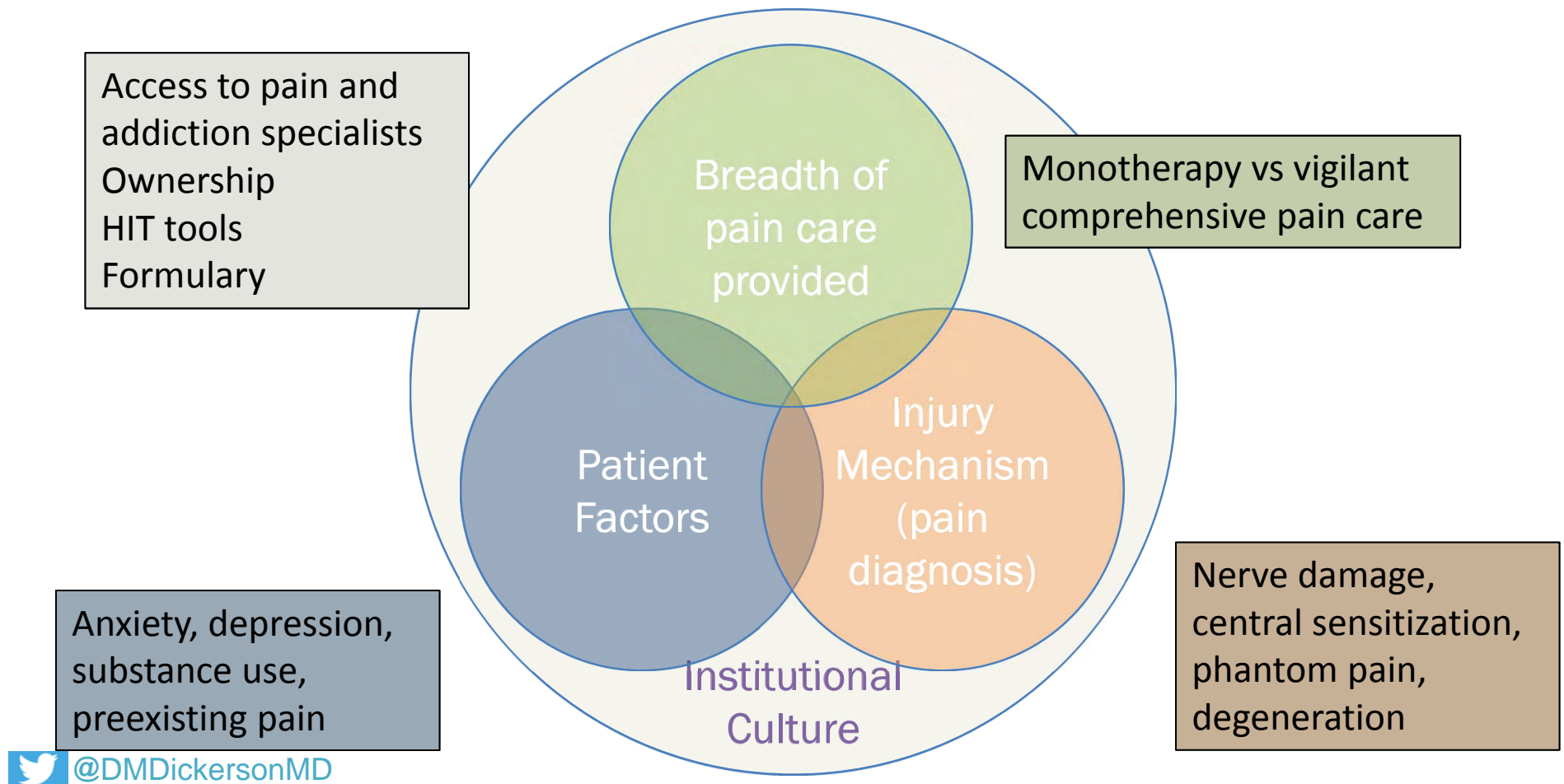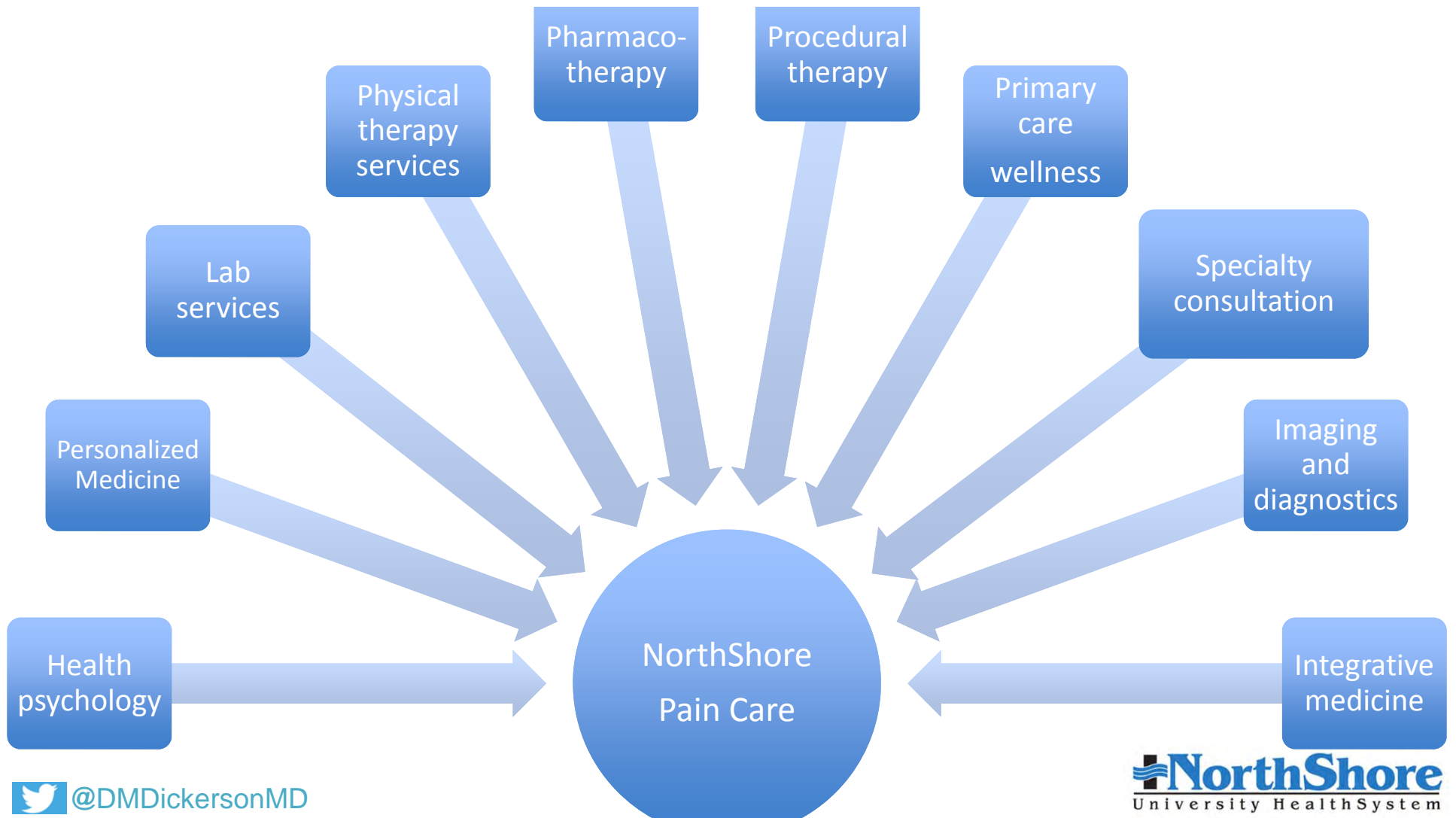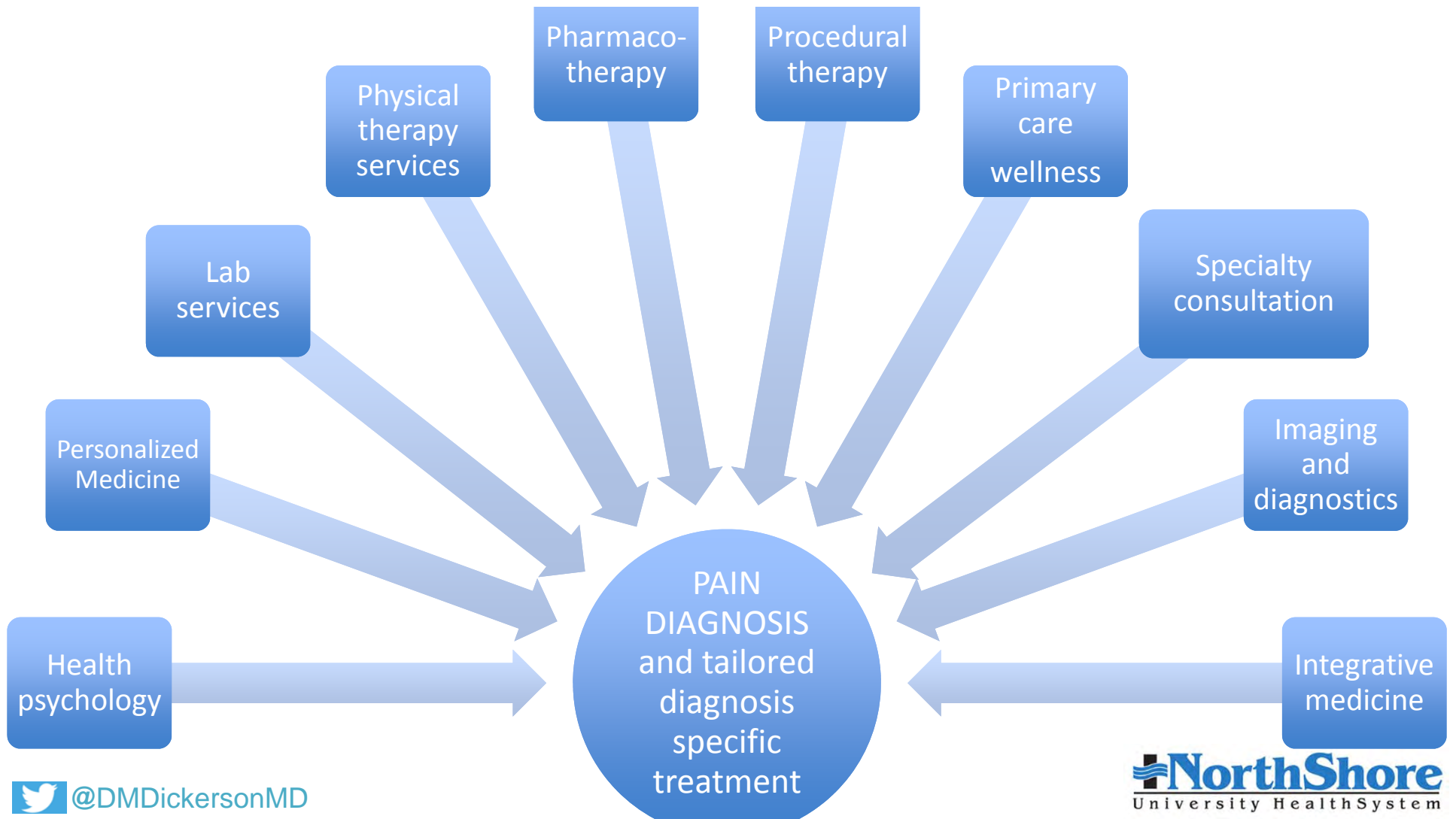
Summary

- Since CDC guidelines and opioid epidemic, less opioids prescribed, increasing overdoses occurring, prevalence of pain remains significant, pain more stigmatized

- Surgery may be a gateway for postoperative pain, patient factors are most influential (Vigilance, follow up)

- Preoperative opioid use increases adverse events and health care costs

- Whether managing chronic pain, weaning opioids, comprehensive pain care supports these scenarios, the patients, providers, and health system.

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