Influence of Provider Type and Patient Characteristics on Chronic Pain Management in Veterans with Chronic Non-Cancer Pain

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Acknowledgements

Background

Impact of chronic pain in the U.S.

Biopsychosocial guidelines, including non-opioid medications & non-pharmacologic care

Can be difficult: lack of access to non-pharmacologic care, prolonged utilization of opioid medications

Often seen in primary care
- Physician shortage
- Pts increasing in age and complexity
- Very limited appointment times, can't fit it all in

Chronic Pain Management Among Veterans

Higher rates of chronic pain + opioid overdose

Rapid expansion of younger vets returning from overseas

Obligation to care for all patients

Fixed budgetary model → lower salaries for providers and difficulty responding to rapid patient increases

Role of Nurse Practitioners (NPs)

NPs may have unique role to play

- Documented high-quality providers, including of pain management, with high satisfaction scores among patients
- Entering primary care at higher rates than physicians
- Training in chronic disease management that encompasses biologic & psychosocial components of health status → aligns well with recommended chronic pain approach

However, barriers exist

- Practice regulatory restrictions → reduce access
- We don't know how NPs manage chronic pain
- Important team-based care & primary care transformation

Specific Aims

Aim 1: Describe and compare primary care provider group (MD, NP, and PA) differences in opioid and non-opioid medication prescription rates for VA patients with chronic pain.

Aim 2: Identify and compare patient demographic and clinical characteristics that influence the prescription of chronic pain management strategies among VA primary care provider groups (MD, NP, and PA).

Study Design

Descriptive, correlational study of VA chronic pain patients and their primary care providers

Utilized 12-month patient-provider **summary records** from October 2015 through September 2016

Primary outcomes: prescription of opioid & non-opioid

Secondary outcomes: opioid dosage & length of prescription

Data Sources

SHEP

- Patient ID
- Provider class (MD, NP, PA)
- Assignment as PCP
- Patient demographics
  - Race/ethnicity
  - Sex
  - Age
  - Level of education
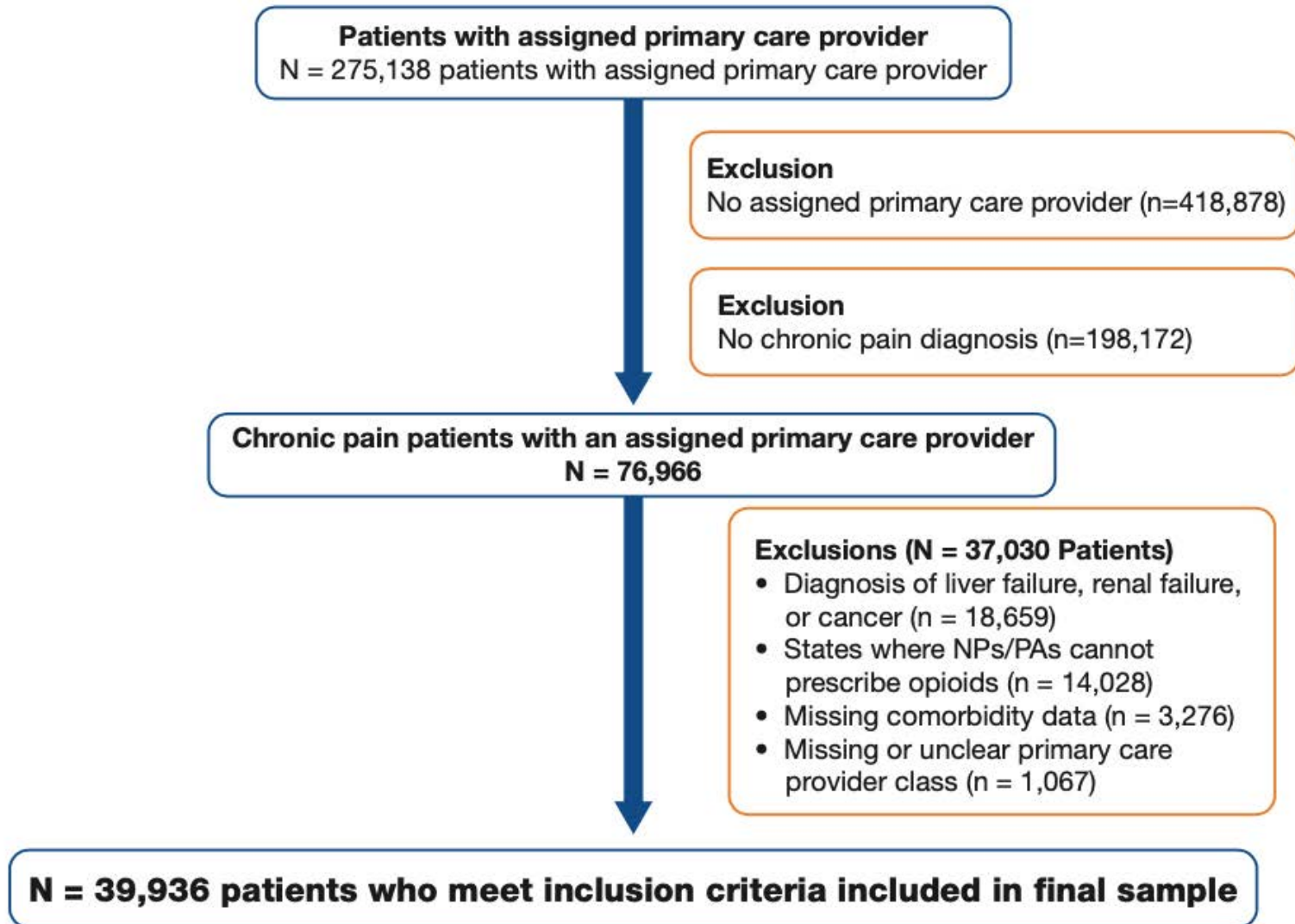- VA facility and state

CDW

- Patient ID
- Opioid prescriptions
  - Morphine milligram equivalents
  - Long-term use & number of days using opioid meds
- Non-opioid prescriptions
  - Anti-convulsants
  - Anti-depressants
  - NSAID
  - Acetaminophen
  - Muscle relaxant
- Elixhauser comorbidities
  - Individual & total score

Determination of Analysis Sample
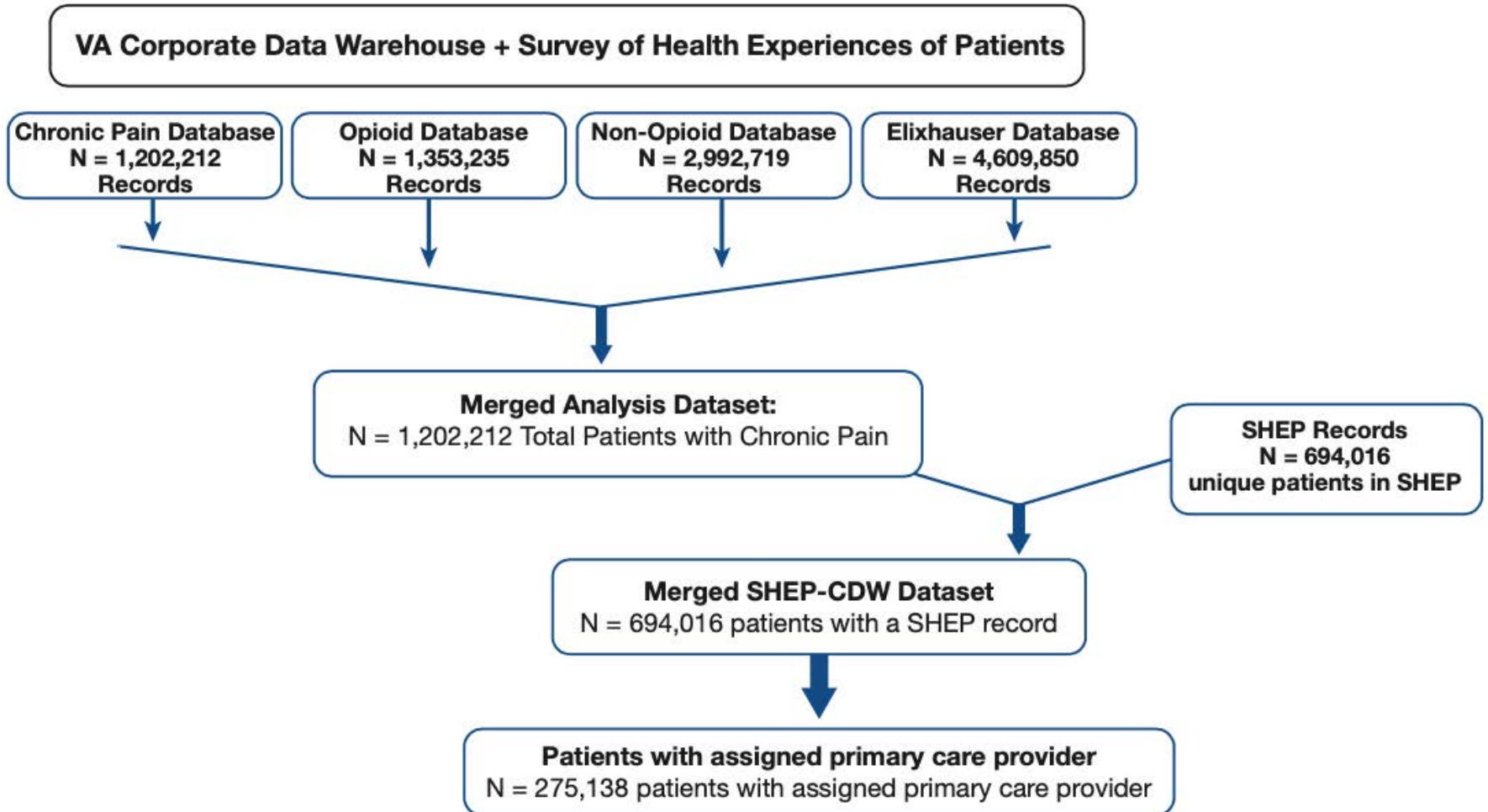
Determination of Analysis Sample

Measures

Provider Type (MD, NP, PA)

MDs: N=28,558, NPs: N=8,395, PAs: N=2,983

Patient Characteristics

- Demographics: Age Race/ethnicity, Sex at birth, education level
- Comorbidities, pain diagnoses, self-reported health and mental health

Outcomes

- Opioid & non-opioid prescription
- High-dose and long-term opioid prescriptions

Sample Characteristics

MDs

- Age 65+
- Postsecondary education
- Lower back pain (vs. PAs)
- Fair or poor health & mental health
- Hypertension
- Drug abuse
- Psychoses (vs. PAs)

NPs

- Female
- NH white (vs. MDs)
- Upper back pain
- Lower back pain (vs. PAs)
- 5+ comorbidities
- Congestive heart failure
- Hypothyroidism
- Psychoses (Vs. PAs)

PAs

- Osteoarthritis
- NH white (vs. MDs and NPs)

Impact of <u>Provider Type</u> on Opioid Prescriptions
(covariate adjusted)

Explanatory Variables	aOR	aOR 95% CI	p-value	*A posteriori* Pairwise Contrasts
Provider Group			**<0.01**	MD > (NP = PA)
MD vs NP	1.128	1.072, 1.187	<0.01	
MD vs PA	1.163	1.075, 1.258	<0.01	
NP vs PA	1.031	0.945, 1.124	0.4965	

*No significant differences in high-dose or long-term opioids between provider groups (all $p > 0.1$)

Impact of <u>Demographics</u> on Opioid Prescriptions
(covariate adjusted)

Explanatory Variables	aOR	aOR 95% CI	p-value	*A posteriori* Pairwise Contrasts
Age, in years			**<0.0001**	41-64 > (65+ = 18-40)
41-64 vs. 18-40	1.598	1.413, 1.806	<0.0001	
41-64 vs 65+	1.456	1.393, 1.523	<0.0001	
65+ vs. 18-40	1.097	0.970, 1.241	0.1406	
Race/ethnicity			**<0.0001**	
NH White vs NH Black	1.164	1.090, 1.242	<0.0001	NHW > (NHB = H = NHO)
NH White vs. Hispanic	1.201	1.088, 1.325	0.0003	
NH White vs. NH Other	1.083	1.000, 1.172	0.0488	
NH Black vs Hispanic	1.032	0.922, 1.155	0.5874	
NH Black vs NH Other	0.931	0.845, 1.025	0.1458	
NH Other vs Hispanic	1.109	0.982, 1.252	0.0970	
No post-secondary education	**1.054**	**1.010, 1.099**	**0.0165**	None > Any
Any post-secondary education				
Female Gender	**0.992**	**0.914, 1.078**	**0.8539**	
Male				

Impact of <u>Provider Type</u> on Non-Opioids Prescriptions
(covariate adjusted)

Explanatory Variables	aOR	aOR 95% CI	p-value	*A posteriori* Pairwise Contrasts
Provider Group			**0.0007**	MD > (NP = PA)
MD vs NP	1.084	1.011, 1.162	0.0236	
MD vs PA	1.196	1.079, 1.326	0.0007	
NP vs PA	1.103	0.984, 1.238	0.0936	

Impact of <u>Demographics</u> on Non-Opioid Prescriptions
(covariate adjusted)

Explanatory Variables	aOR	aOR 95% CI	p-value	*A posteriori* **Pairwise Contrasts**
Age, in years			**<0.0001**	(18-40 = 41-64) > 65+
41-64 vs. 18-40	0.822	0.658, 1.027	0.0844	
41-64 vs 65+	2.205	2.065, 2.356	<0.0001	
65+ vs. 18-40	0.373	0.299, 0.465	<0.0001	
Race/ethnicity			**<0.0001**	
NH White vs NH Black	0.732	0.658, 0.814	<0.0001	NHB > (NHW = H = NHO)
NH White vs. Hispanic	0.903	0.779, 1.047	0.1755	
NH White vs. NH Other	1.058	0.952, 1.176	0.2980	
NH Black vs Hispanic	1.234	1.035, 1.470	0.0190	
NH Black vs NH Other	1.445	1.253, 1.667	<0.0001	
NH Other vs Hispanic	0.854	0.716, 1.018	0.0778	
No post-secondary education	1.012	0.955, 1.072	0.6954	
Any post-secondary education				
Female Gender	1.269	1.109, 1.452	**0.0005**	Female > Male
Male				

Discussion

Patients of MDs had higher odds of opioid & non-opioid prescriptions compared to NPs/PAs; however very small effect sizes

Patients who were non-Hispanic white, age 41-64, with no postsecondary education had higher odds of an opioid prescription

Patients who were non-Hispanic black, < 65, & female had highest odds of a non-opioid prescription

Dosing & length of prescription did not differ among provider groups