**Supplementary File 1. CTN Nodes, CTN-affiliated PBRNs, and CTN-affiliated Participating PBRNs**



*As of fall 2019, there were 37 PBRNs affiliated with 12 CTN nodes.*

**Supplementary File 2**

**Opioid Management Survey at <PBRN Name>**

 <PBRN name> is interested in learning more about opioid prescribing policies and practices in place at your clinic/organization. This information will allow us to explore the level of variation in policies and practices across clinics and organizations in practice-based research networks nationally. This survey is sponsored by the National Institute of Drug Abuse Clinical Trials Network. We plan to include your responses anonymously in a study report, and data may also be included in future manuscripts. Your responses and organization/practice name will be kept completely confidential. Please return this survey to <contact name> by <date>.

Thank you for participating in this survey!

**Clinic or organization name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Were any providers in your clinic/organization prescribing buprenorphine for opioid use disorder (OUD) in the fall of 2016?**

Yes No

 **1a) If yes please provide an *estimate* (no query required) of the number of patients for whom your clinic/organization prescribed buprenorphine for opioid use disorder in calendar year 2016?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Did providers in your clinic/organization have access to the information in your state’s prescription drug monitoring program database in fall of 2016? (Please select one)**

Yes, consistently Yes, but not consistently No Unknown

**Comments:**

**Please indicate if your clinic usesthe following processes or resources when prescribing opioids and/or monitoring opioid use and chronic opioid therapy:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Our clinic/ organization has this and uses consistently** | **Our clinic/ organization has this and doesn’t use consistently** | **Our clinic/ organization has this and doesn’t use at all**  | **Our clinic/ organization does not have this**  | **Unknown** | **Was this process/ resource in place in the fall of 2016?****(Please indicate “Yes,” “No” or “I don’t know” for each row)** |
| **3)** | A clinic or organization-based chronic opioid therapy registry  |  |  |  |  |  |  |
| **4)** | Reports providing feedback to providers on their management of patients using chronic opioid medication |  |  |  |  |  |  |
| **5)** | A urine drug testing policy |  |  |  |  |  |  |
| **6)** | A random pill count policy |  |  |  |  |  |  |
| **7)**  | Formal written chronic opioid therapy treatment agreements or contracts |  |  |  |  |  |  |
| **8)** | Formal written policy discouraging or precluding prescription of opioids to patients using marijuana  |  |  |  |  |  |  |
| **9)**  | Formal written policy for avoiding co-prescribing of opioids and sedatives |  |  |  |  |  |  |
| **10)** | Formal written policy for periodically checking the state Prescription Drug Monitoring Program database for patients prescribed chronic opioids |  |  |  |  |  |  |
| **11)** | Formal written policies for chronic opioid therapy prescriptions (e.g., for refills, dose escalation, tapering) |  |  |  |  | ` |  |
| **12)**  | Other opioid prescribing process/es that your clinic or organization uses:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |

1. Any other comments or thoughts you’d like to share about your clinic or organization’s opioid prescribing practices?

**Supplementary File 3**

**Electronic Health Record (EHR) Query Protocol for CTN-PBRN Study: Using Electronic Health Record Data to Explore Opioid and Sedative Prescribing in Primary Care Practice**

**1. Purpose of the Study:**

The study aims to engage Practice-based Research Networks (PBRNs) affiliated with the National Institute on Drug Abuse’s (NIDA) Clinical Trials Network (CTN) in a collaborative project using electronic health record data (EHR) data to answer questions that primary care providers have identified as important to their practices:

1. What proportion of adult patients seen for a primary care visit in the past year was prescribed an opioid medication?; and
2. Of those patients, what proportion was prescribed a sedative in the same year?

**2. Background & Significance:**

In 2016, the WWAMI region Practice & Research Network (WPRN) collaborated with the Pacific Northwest Node of the CTN to identify questions of importance to primary care in the area of substance abuse. The WPRN sites chose opioid prescription management as a top issue, and conducted a study that included a query of their electronic health records and completion of a survey about opioid management policies and procedures. WPRN sites demonstrated considerable variation in opioid prescription rates across practices, high rates of potential co-prescribing of opioids and sedatives, and the highest rates of opioid prescribing among the oldest age group (age 80 years and older). The WPRN offered to share its methodology and materials for the project with other CTN-affiliated PBRNs.

As the NIDA CTN is seeks to expand the involvement of PBRNs in substance use disorder research, this project provides an opportunity to generate data both within and across PBRNs on the prescription of opioids, to cultivate PBRN engagement with substance use disorder research, and to demonstrate feasibility of substance use disorder research within CTN-affiliated PBRNs.

**3. Design & Procedures:**

Participating PBRNs will:

1. Use previously developed study parameters to extract opioid and sedative data for participating practices and organizations for the Oct 2015 – Sept 2016 time period (see attached definitions, medication list, and data tables)
2. Collect and send the EHR data to the WPRN Coordinating Center for collation
3. Participate in the development of a peer-reviewed article

As all EHR data will be reported in aggregate form, and surveys ask only organization-level data, there is no human subjects component to the project. However, each participating PBRN must fulfill the IRB exemption processes specified by their network or institution.

**4. Selection of Subjects:**

Counts of adult patients ages 18 or older with an in-person primary care office visit with a medical provider (MD, DO, NP, PA) during the pre-specified study period will be collected from the EHR data. The proportion of patients prescribed an opioid with or without a sedative medication will be collected from the EHR data. The results will be presented by sex/gender and by age group.

**5. Data Analysis:**

Note: the WWAMI region Practice & Research Network (WPRN) is the Coordinating Center for this project. The WPRN Coordinating Center will be sent the Excel spreadsheet with the counts of patients from each practice

Summary tables will be generated with the proportion of opioid and opioid with sedative prescriptions from each clinic. The rates by sex/gender and by age group will also be reported. Results may be aggregated by PBRN or region for publications or national presentations.

|  |
| --- |
| **Study Definitions** |
| **Term** | **Definitions** |
| Adult Patients | Adults: Ages 18 and older, DOB on or before 10/1/97  |
| Primary Care Visit\*  | In-person primary care\* office visit with a medical provider (MD, DO, NP, PA) |
| Prescription | A medication with a prescription start date between October 1, 2015 - September 30, 2016 (inclusive of these dates). * Include all medications in the EHR, regardless of where the prescription originated (e.g. in clinic or an outside clinic).
* Only include medications that have a prescription start date in the study period.
* If your EHR does not allow you to search for prescription start dates and only indicates whether the prescription is “active,” include an opioid or sedative prescription if it is “active” in the study period.
 |
| Any Opioid\*\* | If the individual patient has a prescription date between October 1, 2015 and Sept 30, 2016 (inclusive) for at least one medication that fits the following description:**<Any Opioid-Brand Names>** OR [**<Any Opioid- Generic Names>** AND none of the following words are included in the name of that medication **<Cough & Cold Ingredients>**]  |
| Any Opioid and Sedative\*\* | If the individual patient has a prescription date between October 1, 2015 and Sept 30, 2016 (inclusive) for:[At least one medication on **<Any Opioid-Brand Names>** list AND at least one medication on **<Sedative Names>** list]OR([At least one medication on **<Any Opioid- Generic Names>** list AND **none** of the following medications are included in the name of that medication **<Cough & Cold Ingredients>**] AND at least one medication on **<Sedative Names>** list) |
| **\***Some sites may provide specialty care only for some patients (e.g., sports medicine, behavioral health) and not serve as these patients’ primary care providers. For the purposes of this project, please include only those patients who were seen for a “primary care” visit. **\*\*** Please see tab 2, “Medication Lists” of this document for the names of opioid and sedative medications, and cough/cold ingredients to be used in defining opioid and sedative medications for this project. |

**Medication List**

|  |  |  |  |
| --- | --- | --- | --- |
| **Any Opioid-Brand Names** | **Any Opioid-Generic Names** | **Cough & Cold Ingredients** | **Sedative Names** |
| Abstral | Norco | Butorphanol  | bromodiphenydramine | Alprazolam |
| Actiq | Nucynta  | Codeine | brompheniramine | Ambien |
| Avinza | Opana  | Dihydrocodeine | chlorcyclizine | Ativan |
| Codeinum | Oxaydo | Fentanyl | chlorpheniramine | Chlordiazepoxide  |
| ConZip | Oxecta | Hydrocodone  | dexbrompheniramine | Clobazam |
| Darvon  | Oxycontin | Hydromorphone  | dexchlorpheniramine | Clonazepam |
| Demerol | Percocet | Levorphanol  | diphenhydramine | Clorazepate  |
| Dilaudid | Primlev | Meperidine  | ephedrine | Diazepam |
| Dolophine | Reprexain | Methadone | guaiacolsulfonate | Doral |
| Duragesic  | Roxicet  | Morphine  | guaifenesin | Edluar |
| Embeda | Roxicodone | Oxycodone | homatropine | Estazolam |
| Endocet | Ryzolt | Oxymorphone | menthol | Eszopiclone |
| Endodan | Subsys | Pentazocine  | mepyramine | Gabazolpidem |
| Exalgo  | Synalgos | Propoxyphene | pheniramine | Halcion |
| Fentora | Trezix | Tapentadol | phenylephrine | Intermezzo |
| Hycet | Ultracet | Tramadol  | phenylpropanolamine | Klonopin |
| Hysingla  | Ultram |  | phenyltoloxamine | Librax |
| Ibudone  | Vicodin |  | promethazine | Lorazepam |
| Ionsys | Vicoprofen |  | pseudoephedrine | Lunesta |
| Kadian | Xartemis  |  | pyrilamine | Midazolam |
| Lazanda | Xodol |  | terpin | Niravam |
| Lorcet | Xolox |  | triprolidine | Restoril |
| Lortab | Xtampza  |  |  | Onfi |
| Maxidone | Xylon |  |  | Oxazepam |
| Methadose | Zamicet |  |  | Quazepam |
| MorphaBond | Zohydro |  |  | Temazepam |
| Morphinum  | Zydone  |  |  | Sentrazolpidem  |
| MS Contin | Zyfrel |  |  | Sonata |
| Naloxone |  |  |  | Triazolam |
|  |  |  |  | Tranxene |
|  |  |  |  | Valium |
|  |  |  |  | Xanax |
|  |  |  |  | Zaleplon |
|  |  |  |  | Zolpidem |
|  |  |  |  | Zolpimist |

**CTN-PBRN Project- Opioid and Sedative Data Tables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Opioids Questions** | **Practice or Organization****A** | **Practice or Organization****B** | **<Add additional columns for additional clinics/ organizations >** |
| **1a)** Number of patients with at least one primary care visit from 10/1/2015 through 9/30/2016 (inclusive of these dates) |   |   |   |
| **1b)** Number of **male** patients with at least one primary care visit from 10/1/2015 through 9/30/2016 |   |   |   |
| **1c)** Number of **female** patients with at least one primary care visit from 10/1/2015 through 9/30/2016 |   |   |   |
| **2a)** Number of patients with at least one primary care visit from 10/1/2015 through 9/30/2016 who have at least one prescription for any opioid with a prescription start date between 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tabs 1 & 2)** |   |   |   |
| **2b)** Number of **male** patients with at least one primary care visit from 10/1/2015 through 9/30/2016 who have at least one prescription for any opioid with a prescription start date between 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tabs 1 & 2)** |   |   |   |
| **2c)** Number of **female** patients with at least one primary care visit from 10/1/2015 through 9/30/2016 who have at least one prescription for any opioid with a prescription start date between 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tabs 1 & 2)** |   |   |   |
| **3)** Number of patients with at least one primary care visit from 10/1/2015 through 9/30/2016 **by age** | Number of patients by age group (Clinic/ Organization A) | Number of patients by age group (Clinic/ Organization B) |   |
|  **Ages 18-29** |   |   |   |
| **Ages 30-49** |   |   |   |
| **Ages 50-59** |   |   |   |
| **Ages 60-69** |   |   |   |
| **Ages 70-79** |   |   |   |
| **Ages 80 or older** |   |   |   |
| **4)** Number of patients with at least one primary care visit from 10/1/2015 through 9/30/2016 who have at least one prescription for any opioid with a prescription start date between 10/1/2015 through 9/30/2016 **by age****Use *Definitions* and *Medication Lists* (Tab 1 & 2)** | Number of patients with opioid prescription by age group(Clinic/ Organization A) | Number of patients with opioid prescription by age group(Clinic/ Organization B) |   |
| **Ages 18-29** |   |   |   |
| **Ages 30-49** |   |   |   |
| **Ages 50-59** |   |   |   |
| **Ages 60-69** |   |   |   |
| **Ages 70-79** |   |   |   |
| **Ages 80 or older** |   |   |   |
|   |   |   |   |
| **Sedative Questions**  |  |
| Of patients with at least one primary care visit from 10/1/2015 through 9/30/2016 who have any opioid prescription with a prescription start date between 10/1/2015 through 9/30/2016 …. (Line 8 patients) |
| **5a)** Number of (opioid-prescribed) patients with at least one sedative prescription with a prescription start date from 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tab 1 & 2)** |   |   |   |
| **5b)** Number of **male** (opioid-prescribed) patients with at least one sedative prescription with a prescription start date from 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tab 1 & 2)** |   |   |   |
| **5c)** Number of **female** (opioid-prescribed) patients with at least one sedative prescription with a prescription start date from 10/1/2015 through 9/30/2016 **Use *Definitions* and *Medication Lists* (Tab 1 & 2)** |   |   |   |

**Supplementary File 4. Proportion of patients with an opioid prescription**

**in the project year, overall, by sex, and age**



*Overall chi-square tests compared the proportion of men and women with an opioid prescription in the project year, p≤0.001, and compared the proportion of patients with an opioid prescription across the six age groups, p≤0.001.*

*Reported ranges are for the participating PBRNs.*