

NC Agency Partnership

DHHS partnered with the Government Data Analytics Center (GDAC) to:

- Establish a Controlled Substance Analytics Environment to enable analysis of data in support of improved patient outcomes
- Integrate the NC CSRS system with the State's Health Information Exchange, NC HealthConnex, to increase access via established Electronic Health Systems (EHRs) connections



NC Government Data Analytics Center

The Department of Information Technology, Government Data Analytics Center supports the:

- Management of data privacy and establishment of data governance
- Integration and matching of records across domains
- Transformation of data into information utilizing analytic tools

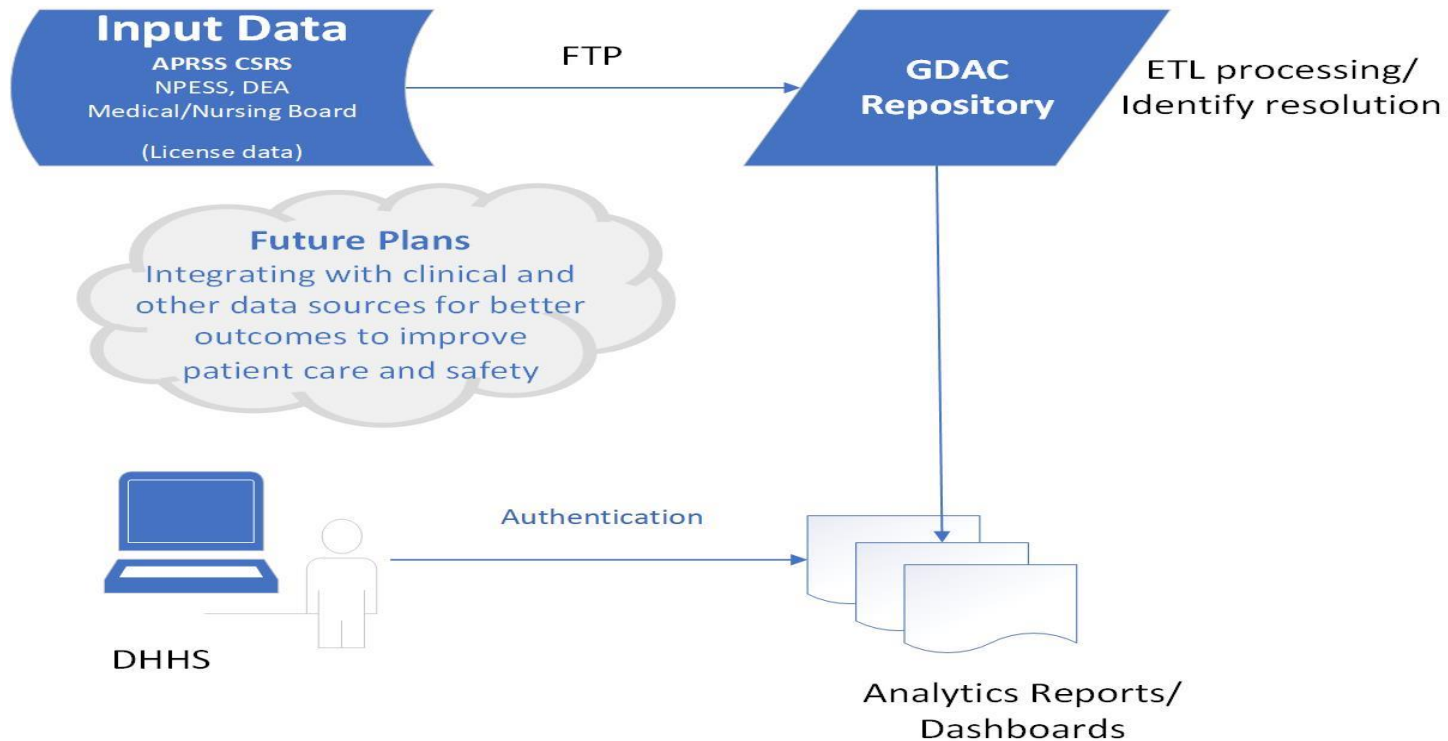


Controlled Substance Analytics Environment

- Establish a comprehensive Controlled Substance data repository which aligns to the NC Healthcare data model
- Create a master person index resolving patients, prescribers, and dispensers
- Establish data access and governance infrastructure ensuring data privacy
- Develop a reporting infrastructure that allows for the sharing of data and information



CSRS Analytics High-level Architecture



Successes

- **Incorporated data from previous database, including duplicate removal and entity resolution**
- **Automated production of quarterly North Carolina Medical Board Report**
- **Automated production of quarterly Opioid Action Plan Report**
- **Automated production of annual Legislative Report**

Future Plans

- **Automated production of Quarterly Board of Nursing Report**
- **Office of Chief Medical Examiner to upload overdose death records monthly**
- **Monthly uploads of licensee information from Board of Nursing, Board of Pharmacy, Board of Dental Examiners, and Veterinary Board**

Report A: Top Prescribers

CSRS Reports to Medical Board (Sample)

Reporting Period: April 1, 2018 to June 30, 2018

Report A1--Prescribers who fall within the top 2% of those prescribing a dosage of 100 mmes or more per day

Prescriber Name	Prescriber DEA #	Opioid Rank	Opioid Rx over 100 MME	Opioid Rx Count	Average MME
PRESCRIBER 1	AB0000001	1	1,400	4,800	84.87
PRESCRIBER 2	AB0000002	2	1,200	1,800	87.29
PRESCRIBER 3	AB0000003	3	1,100	2,250	84.58
PRESCRIBER 4	AB0000004	4	1,000	2,400	76.05
PRESCRIBER 5	AB0000005	5	850	3,000	68.05
PRESCRIBER 6	AB0000006	6	600	900	61.42
PRESCRIBER 7	AB0000007	7	590	1,450	77.85
PRESCRIBER 8	AB0000008	8	560	3,150	152.37
PRESCRIBER 9	AB0000009	9	550	1,850	157.95
PRESCRIBER 10	AB0000010	10	480	700	127.83
PRESCRIBER 11	AB0000011	11	460	1,550	159.12
PRESCRIBER 12	AB0000012	12	450	3,800	151.97
PRESCRIBER 13	AB0000013	13	430	2,950	96.67
PRESCRIBER 14	AB0000014	14	420	900	158.39
PRESCRIBER 15	AB0000015	15	415	900	132.27
PRESCRIBER 16	AB0000016	16	410	3,400	141.01
PRESCRIBER 17	AB0000017	17	405	1,400	76.28
PRESCRIBER 18	AB0000018	18	400	1,650	118.01
PRESCRIBER 19	AB0000019	19	385	1,400	93.03
PRESCRIBER 20	AB0000020	20	380	2,500	145.12
PRESCRIBER 21	AB0000021	21	375	900	71.70
PRESCRIBER 22	AB0000022	22	370	1,500	76.26
PRESCRIBER 23	AB0000023	23	360	700	132.42
PRESCRIBER 24	AB0000024	24	315	550	155.62
PRESCRIBER 25	AB0000025	25	310	1,950	76.62
PRESCRIBER 26	AB0000026	26	305	2,100	145.73
PRESCRIBER 27	AB0000027	27	300	1,300	153.01

Report A2--Prescribers who fall within the top 2% of those prescribing a dosage of 100 mmes or more per day in combination with a benzodiazepine, and who are in the top 1% of all controlled substance prescribers by volume

Prescriber Name	Prescriber DEA #	Benzo Rank	Benzo Rx Count	Opioid Rank	Opioid Rx over 100 MME	Opioid Rx Count	Average MME
PRESCRIBER 12	AB0000012	5	1,200	12	450	3,800	151.97

Report A3--Prescribers included in both Report 1 and Report 2

Prescriber Name	Prescriber DEA #	Benzo Rank	Benzo Rx Count	Opioid Rank	Opioid Rx over 100 MME	Opioid Rx Count	Average MME
PRESCRIBER 12	AB0000012	5	1,200	12	450	3,800	151.97

Report B: Patient Deaths

Report B (Sample)																	
Prescribers who have had two or more patient deaths in the preceding 12 months due to opioid poisoning where the prescribers authorized more than 30 tablets of an opioid to the decedent and the prescriptions were written within 60 days of the patient deaths.																	
Except as otherwise provided in the North Carolina General Statute 90-113.74., prescription information shall not be disclosed or disseminated to any person or entity by any person or entity authorized to review prescription information.																	
NOTE: Each quarterly report includes deaths from the 12 months preceding the end of the reporting quarter; therefore decedents may appear in more than one report.																	
Reporting Period: July 1, 2017 to June 30, 2018																	
Prescriber List																	
Prescriber Name	DEA #	Prescriber City	Prescriber Zip	Associated Deaths													
PREScriBER 1	AA0000001	RALEIGH	27001	2													
PREScriBER 2	AA0000002	DURHAM	27002	3													
Relevant Prescription List																	
Prescriber Name	DEA #	Prescriber City	Prescriber Zip	State	Name	Birth Date	Sex	Drug Prescribed	Rx Number	Quantity	Refill Number	Refills Authorized	Date Rx Written	Date Dispensed	Death Date	Death County	Manner
PREScriBER 1	AA0000001	RALEIGH	27001	NC	PATIENT 1	MM/DD/YYYY	F	OXYCODONE SA	0000001	120	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	RALEIGH	Accident
PREScriBER 1	AA0000001	RALEIGH	27001	NC	PATIENT 2	MM/DD/YYYY	F	OXYCODONE SA	0000002	120	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	RALEIGH	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 3	MM/DD/YYYY	M	OXYCODONE SA	0000003	150	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 4	MM/DD/YYYY	M	HYDROCODONE SA	0000004	90	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 4	MM/DD/YYYY	M	HYDROCODONE SA	0000005	90	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 5	MM/DD/YYYY	M	OXYCODONE SA	0000006	180	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 5	MM/DD/YYYY	M	OXYCODONE SA	0000007	180	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident
PREScriBER 2	AA0000002	DURHAM	27002	NC	PATIENT 5	MM/DD/YYYY	M	OXYCODONE SA	0000008	180	0	0	MM/DD/YYYY	MM/DD/YYYY	MM/DD/YY	DURHAM	Accident

Report C: Prescriber Practices

CSRS Reports to Medical Board (Sample)

Reporting Period: 2018Q2

Prescribers have a minimum of five patients for each criterion

Prescribers met atleast three of the 6 following criteria

- At least 25% of prescribers patients receiving opioids reside atleast 100miles from prescriber practice location
- At least 25% of prescribers patients receiving the same opioids and benzodiazepine combination
- At least 75% of prescribers patients receiving opioids self pay for prescriptions
- At least 50% of prescribers patients received opioid doses of 100MME or greater excluding office based treatment medications
- At least 25% of prescribers patients receiving opioids used three or more pharmacies within a three month period
- At least 90% of prescribers patients receiving opioids overlapped with another opioid prescription for at least one week by the same prescriber

SAS_Prescriber_DEA	SAS_Prescriber_Name	More than 75% patients self pay for prescriptions	More than 25% of patients reside 100 miles from prescriber location	More than 90% of patients received a prescription that overlapped with another prescription by a week	More than 25% of patients used three or more pharmacies	More than 25% of patients receive same opioids and benzo combination	More than 50% of patients received opioid doses of 100MME or greater
AA000001	PRESCRIBER 1	95%	46%	%	2%	92%	1%
AA000002	PRESCRIBER 2	95%	98%	53%	1%	28%	33%
AA000003	PRESCRIBER 3	10%	39%	12%	5%	44%	61%
AA000004	PRESCRIBER 4	6%	48%	6%	6%	43%	56%
AA000005	PRESCRIBER 5	4%	4%	7%	36%	43%	54%
AA000006	PRESCRIBER 6	3%	%	3%	23%	40%	51%
AA000007	PRESCRIBER 7	2%	%	%	27%	81%	71%
AA000008	PRESCRIBER 8	%	1%	%	28%	76%	55%
AA000009	PRESCRIBER 9	%	1%	6%	26%	69%	56%
AA000010	PRESCRIBER 10	%	%	5%	27%	36%	55%
AA000011	PRESCRIBER 11	%	%	%	26%	95%	98%
AA000012	PRESCRIBER 12	%	%	%	28%	36%	52%

Legislative Report

**Controlled Substances Reporting System
North Carolina General Statute 90-113.75B**

The report must include the following information about targeted controlled substances reported to the system during the preceding calendar year:

- (1) The total number of prescriptions dispensed, broken down by Schedule.
- (2) Demographics about the ultimate users to whom prescriptions were dispensed.
- (3) Statistics regarding the number of pills dispensed per prescription.
- (4) The number of ultimate users who were prescribed a controlled substance by two or more practitioners.
- (5) The number of ultimate users to whom a prescription was dispensed in more than one county.
- (6) The categories of practitioners prescribing controlled substances and the number of prescriptions authorized by each category of practitioner.

Exhibit 2: Demographics

Mecklenburg has the smallest controlled substance prescription per patient ratio of all North Carolina counties and Mitchell has the highest (Table 2.1).

Table 2.1 - Number of Controlled Substance Prescriptions Dispensed by County of Patient Residence

NC County	Rx per Patient
Mecklenburg	4.75
Mitchell	7.74

The age bracket obtaining the most controlled substance prescriptions is 50 – 59; with females at a one-third higher rate than males of the same age range (Table 2.2 below).

Table 2.2 - Number of Prescriptions Dispensed by Age and Gender

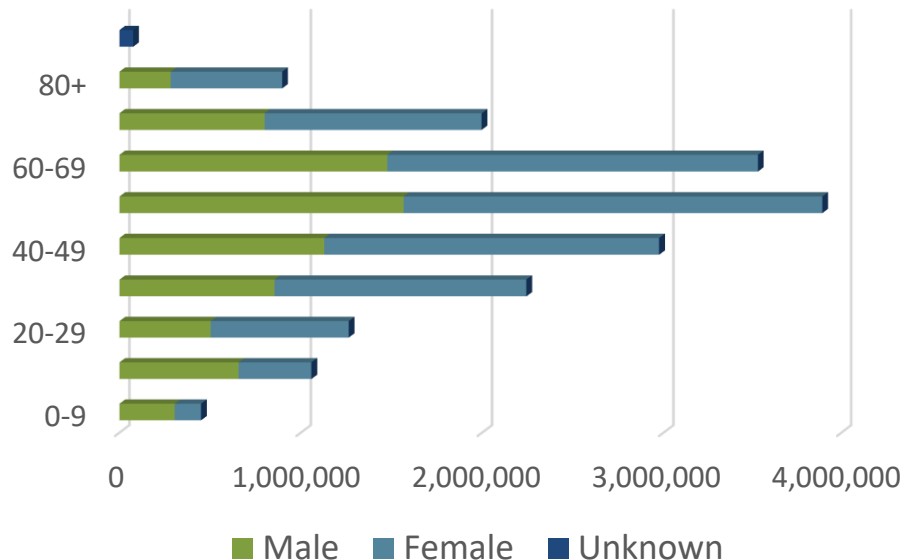
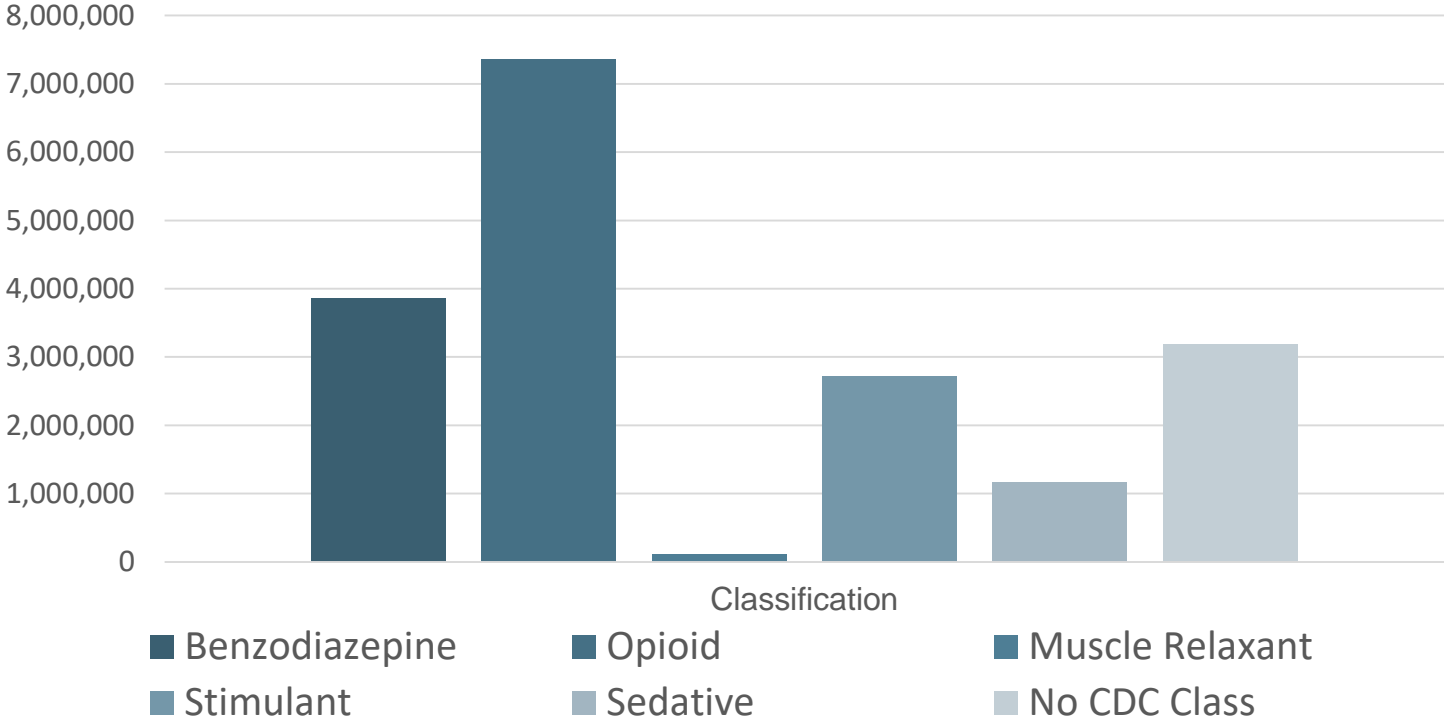


Exhibit 3: Pill Statistics

The highest category of controlled substance prescription is shown to be Opioids.

Table 3.1 – Pill Quantity by Classification



^No CDC Class – The Center for Disease Control (CDC) does not have a classification on file for the drug

Exhibit 4: Patients with Multiple Prescribers

The data reflects that a majority of patients were prescribed a controlled substance by only one practitioner within the reporting period.

The next largest category was prescribed a controlled substance by two practitioners within the reporting period.

Table 4.1 – Prescriber Counts

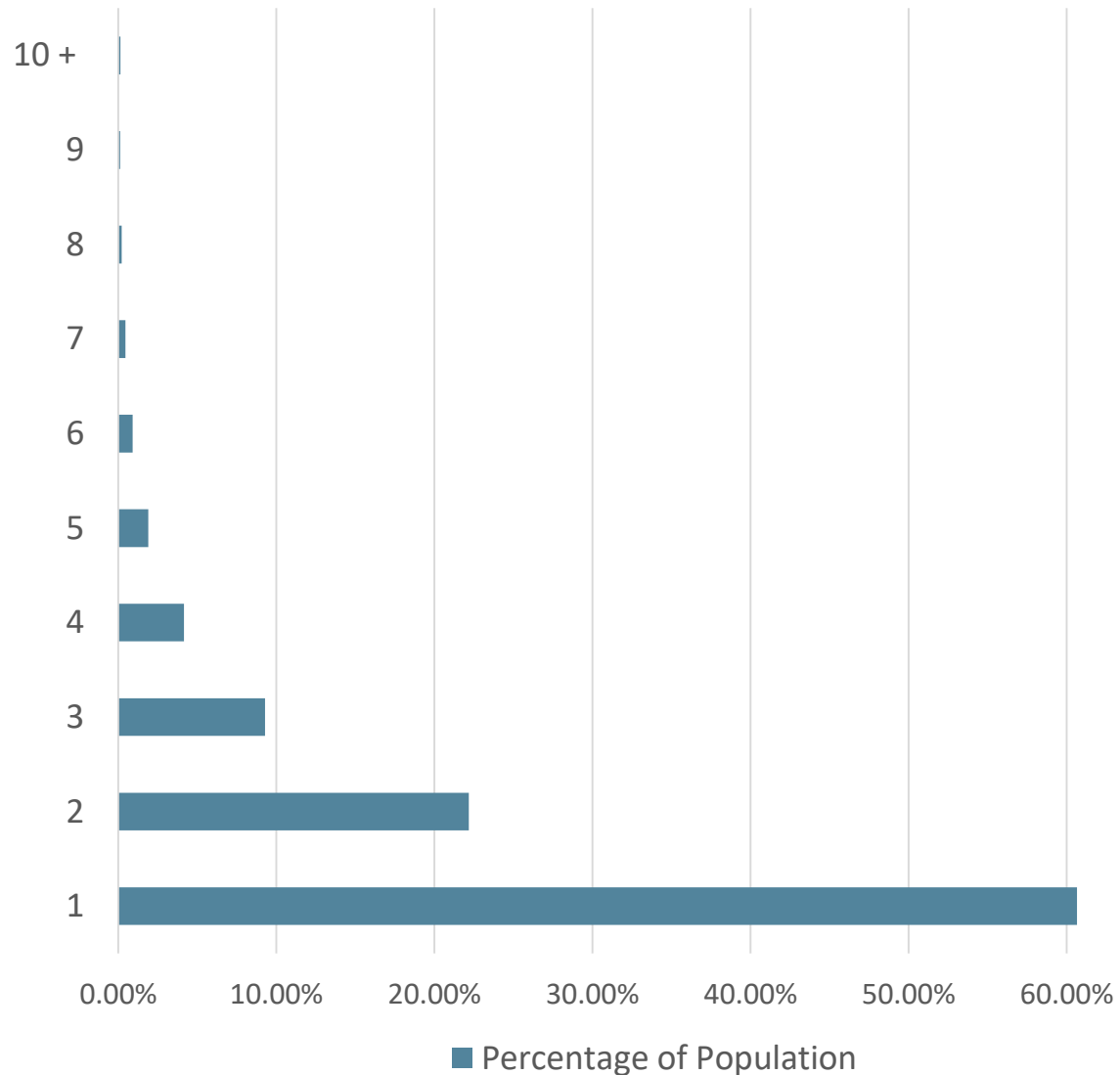


Exhibit 5: Patients with Multiple County Dispensing

The largest percentage of patients had controlled substance prescriptions dispensed in only one county which is significant because North Carolina has 100 counties.

Table 5.1 – Dispenser Counties

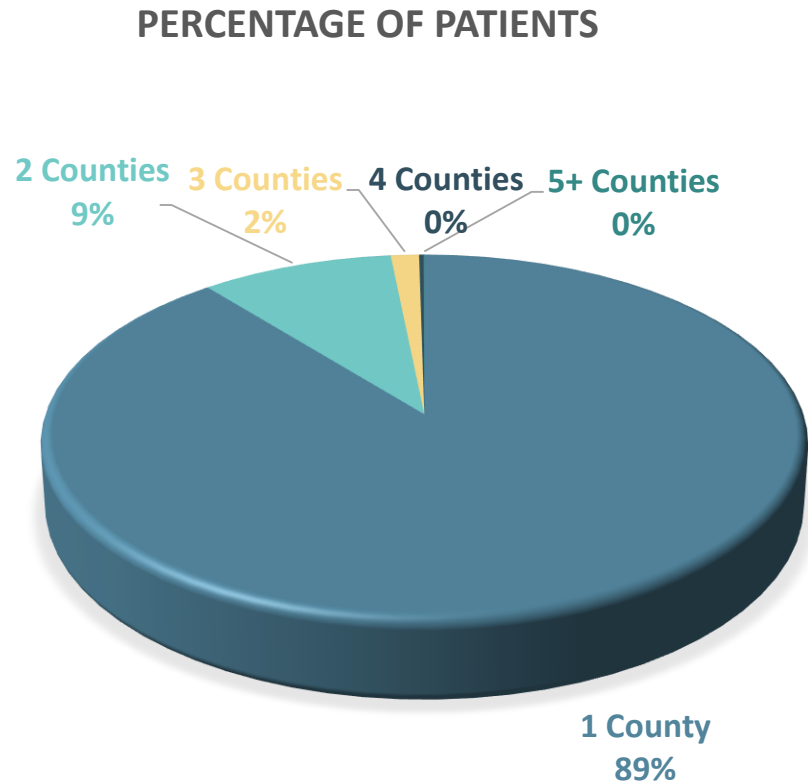


Exhibit 6: The Categories of Practitioners prescribing Controlled Substances and the Number of Prescriptions authorized by each Category of Practitioner

Of the identified specialties, the largest categories for both controlled substance prescriptions and patients are Medical Doctor and Pain Management.

Table 6.1 – Number of controlled substance prescriptions dispensed by prescriber specialty

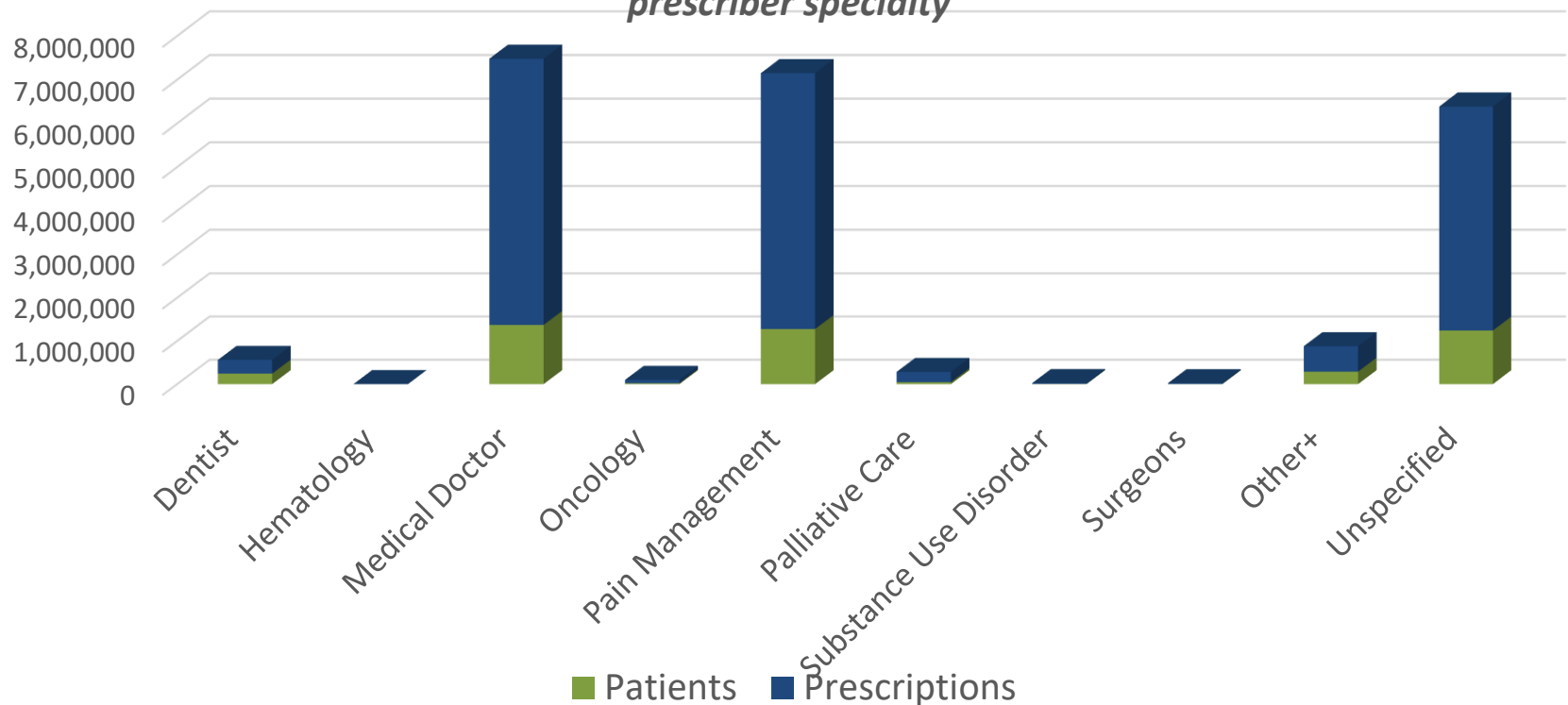
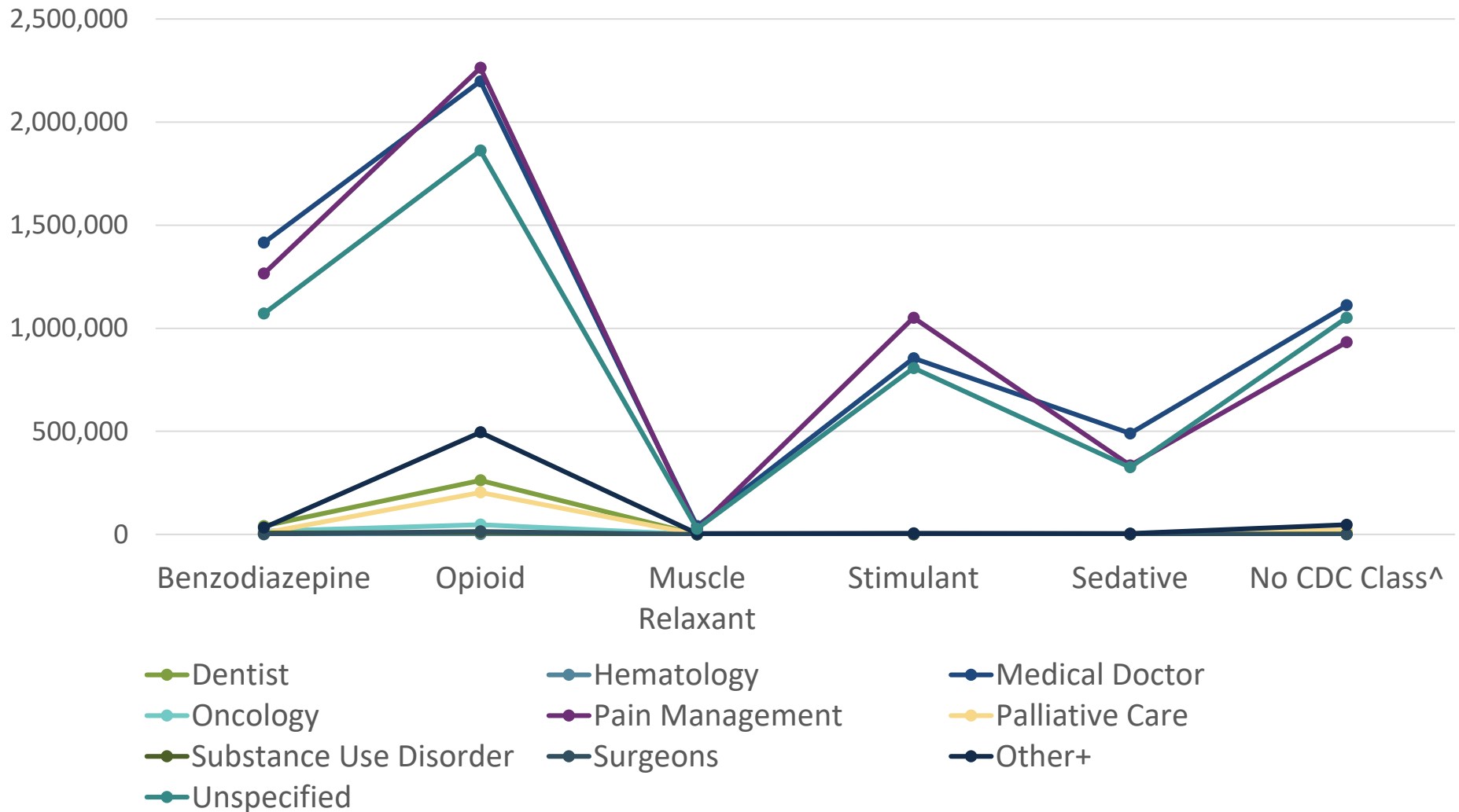


Table 6.2 – Number of prescriptions dispensed by prescriber specialty and drug class



^No CDC Class – The Center for Disease Control (CDC) does not have a classification on file for the drug
 +Specialty other than those in this list (e.g., Nurse Practitioner, Prescribing Pharmacist, et. al.)

Conclusion