

NEW YORK

state department of

HEALTH

Using Prescription Drug Monitoring Program data to inform planning, policy, and prevention

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Background

- Governor's Interagency Workgroup on Prevention of Prescription Drug Misuse, Diversion and Overdose
 - State agencies and other stakeholders
 - Data monitoring subcommittee
 - Descriptive epidemiology
 - Outlier prescribers
 - Quick turn-around

Descriptive epidemiology of opioid prescriptions

- Frequency of prescriptions by opioid type
- Patient demographics
- Time trends
- Spatial patterns
 - Identify areas with excess prescriptions compared to statewide prescribing rates
 - Drill down for demographic information for areas with excess prescribing

Variables available for Filled Scripts

- Patient
 - Age, gender, ZIP Code (probably mailing address)
- Prescriber
 - License type (MD/DO, DDS, DVM, PA, etc), ZIP Code
- Pharmacy
 - ZIP Code
- Prescription
 - Payment type, date filled, National Drug Code, quantity dispensed, days supply, refills authorized, refill sequence

Data preparation

Prescribed medication

- Convert National Drug Code (NDC) number to strength
 - Daily dose = $[\text{strength per quantity} * \text{quantity dispensed}] / \text{days supply}$
 - Morphine Equivalent Dose = $[\text{daily dose} * \text{conversion factor specific to type of opiate}]$
- High dose = more than 100 MED per day, regardless of length of time on the drug

Data preparation

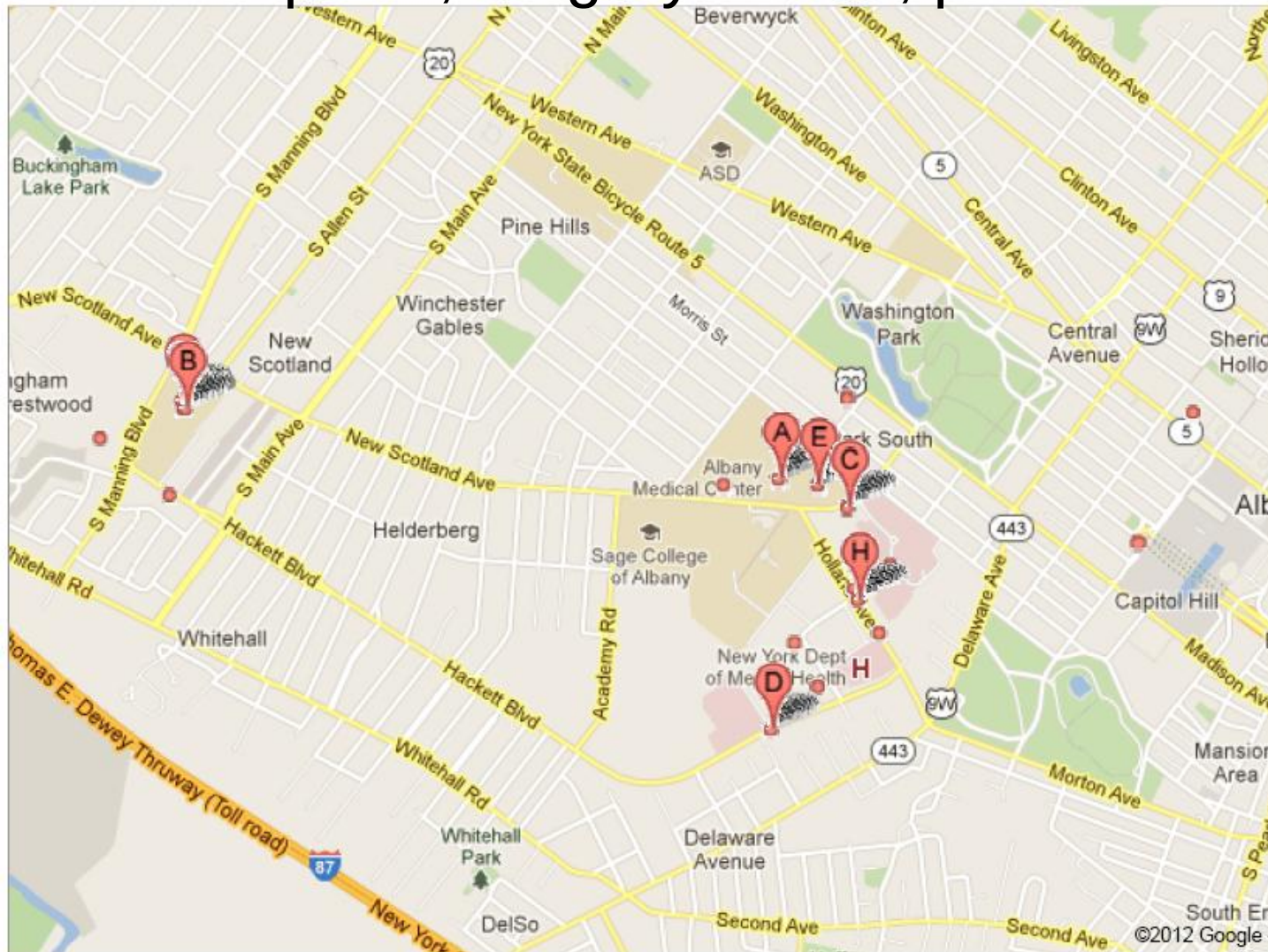
Geography

- ZIP Code of patient, pharmacy, prescriber
 - Only have denominator data for patient geocodes
- “Clean-up” patient ZIP Code
 - NY state ZIP codes to exclude out of state patients
 - Non Delivery Zip Codes combined with surrounding area ZIP Codes (i.e. Rockefeller Plaza)
 - Non delivery ZIP Codes are not in denominator data
- Convert patient ZIP Codes to other geocodes
 - County/Neighborhood
 - County built from ZIP Codes based on largest share of population
 - New York City Neighborhoods defined by ZIP Code
 - Rural-urban Continuum Codes from USDA (Beale Codes)

Denominators

- Population estimates by year, age, and gender
 - County populations from NCHS
 - ZIP Code population from vendor (Claritas Inc)
- Population estimates not as timely as PMP data
- Population estimates correspond to patient residence
 - More difficult to look at spatial patterns by prescribers or pharmacies because do not have denominators for prescribers or pharmacies

Denominators don't match numerators
Albany ZIP Code 12208
four hospitals, surgery center, public clinic, etc



Presentation of Analysis

- Tables
 - Counts and percents
 - Crude and age adjusted rates
- Maps
 - Quartiles of Rate by County/Neighborhood
 - Spatial Scan Statistic (SaTScan)
- Graphs
 - Joinpoint regression model for time trends

**New York State Prescription Drug Monitoring Program
Oxycodone with 100 MED or More Daily Dose Prescriptions**

Draft
10/24/2011

		2008			2009			2010			Percent increase 2008-2010
		N	%	Rate	N	%	Rate	N	%	Rate	
Region of Residence	New York State	329,805		17.2	408,105		21.1	511,007		26.1	52
	New York City	117,903	36	14.6	149,497	37	18.1	200,426	39	23.9	64
	NYS excluding NYC	211,902	64	19.1	258,608	63	23.6	310,581	61	28.0	46
Age Group	0 To 9	110	0	0.0	132	0	0.0	130	0	0.0	19
	10 To 19	1,214	0	0.1	1,637	0	0.1	1,904	0	0.1	59
	20 To 29	28,559	9	1.5	39,316	10	2.0	55,714	11	2.8	90
	30 To 39	53,946	16	2.7	68,127	17	3.5	88,762	17	4.5	66
	40 To 49	99,990	30	5.0	119,031	29	6.1	143,096	28	7.3	45
	50 To 59	90,347	27	4.8	111,650	27	5.9	138,954	27	7.1	48
	60 To 69	36,094	11	2.0	45,703	11	2.4	56,528	11	2.9	44
	70 To 79	13,579	4	0.7	15,828	4	0.8	18,292	4	0.9	33
	80 Plus	5,950	2	0.3	6,681	2	0.3	7,627	1	0.4	24
	Unknown Age	16	0		0	0		0	0		
Gender	Male	187,089	57	20.2	233,291	57	25.0	296,259	58	31.2	55
	Female	142,701	43	14.3	174,261	43	17.4	214,615	42	21.2	49
	Unknown Gender	15	0		553	0		133	0		
Daily Dose	Med-High (100-119 Med)	95,644	29	5.0	107,151	26	5.6	118,035	23	6.0	21
	Very-High (120+ Med)	234,161	71	12.2	300,954	74	15.6	392,972	77	20.1	65
Prescriber Type	Physician (MD)	274,980	83	14.3	331,891	81	17.2	409,388	80	20.9	46
	Resident Or Intern	10,229	3	0.5	12,708	3	0.7	15,494	3	0.8	49
	PA, NP, Or CNM	42,612	13	2.2	61,038	15	3.2	82,635	16	4.2	90
	Dentist (DDS)	1,240	0	0.1	1,614	0	0.1	2,134	0	0.1	70
	Podiatrist (DPM)	737	0	0.0	848	0	0.0	1,351	0	0.1	81
	Veterinarian (DVM)	7	0	0.0	6	0	0.0	5	0	0.0	-28
Payment	Government Ins				88,870	22	4.6	122,748	24	6.3	
	Private Ins				196,290	48	10.2	242,203	47	12.4	
	Cash				56,525	14	2.9	79,723	16	4.1	
	Other				47,715	12	2.5	64,999	13	3.3	
	Unknown Payment				18,705	5		1,334	0		
Rural-Urban Categories	Metro Area Core	270,520	82	16.9	337,231	83	20.9	429,290	84	26.2	55
	Metro Area High Commuting	17,496	5	18.7	21,386	5	23.1	24,180	5	26.1	40
	Metro Area Low Commuting	3,822	1	22.5	4,629	1	28.0	5,263	1	31.8	41
	Micro Area Core	13,802	4	16.8	16,542	4	20.3	18,873	4	23.2	38
	Micro Area High Commuting	3,265	1	15.9	3,827	1	18.6	4,206	1	20.6	30
	Micro Area Low Commuting	695	0	13.4	861	0	16.8	1,120	0	21.7	61
	Small Town Core	7,860	2	19.4	9,389	2	23.3	11,067	2	27.4	41
	Small Town High Commuting	587	0	22.4	622	0	24.2	596	0	23.1	3
	Small Town Low Commuting	909	0	23.0	1,102	0	28.1	1,242	0	31.7	38
	Rural Area	10,057	3	18.9	11,722	3	22.1	14,053	3	26.4	40
	Unknown Residence	6	0		16	0		29	0		

Sample Results

Age group

	2008			2009			2010			<i>Percent increase 2008- 2010</i>
<i>Age Group (yrs)</i>	<i>N</i>	<i>%</i>	<i>Rate</i>	<i>N</i>	<i>%</i>	<i>Rate</i>	<i>N</i>	<i>%</i>	<i>Rate</i>	
<i>0 To 9</i>	1,475	0	0.1	1,480	0	0.1	1,947	0	0.1	33
<i>10 To 19</i>	30,780	1	1.5	37,083	1	1.9	41,739	1	2.1	38
<i>20 To 29</i>	189,393	9	10.0	244,521	10	12.7	291,863	10	14.9	50
<i>30 To 39</i>	303,499	14	15.4	376,019	15	19.2	443,467	15	22.7	47
<i>40 To 49</i>	495,887	24	25.0	594,893	23	30.3	683,033	23	34.9	40
<i>50 To 59</i>	487,621	23	25.8	592,805	23	31.1	709,479	24	36.3	40
<i>60 To 69</i>	284,424	14	15.9	349,779	14	18.7	412,817	14	21.1	33
<i>70 To 79</i>	172,120	8	8.9	196,563	8	10.2	222,135	7	11.4	27
<i>80 Plus</i>	130,168	6	6.9	147,234	6	7.7	165,038	6	8.4	23

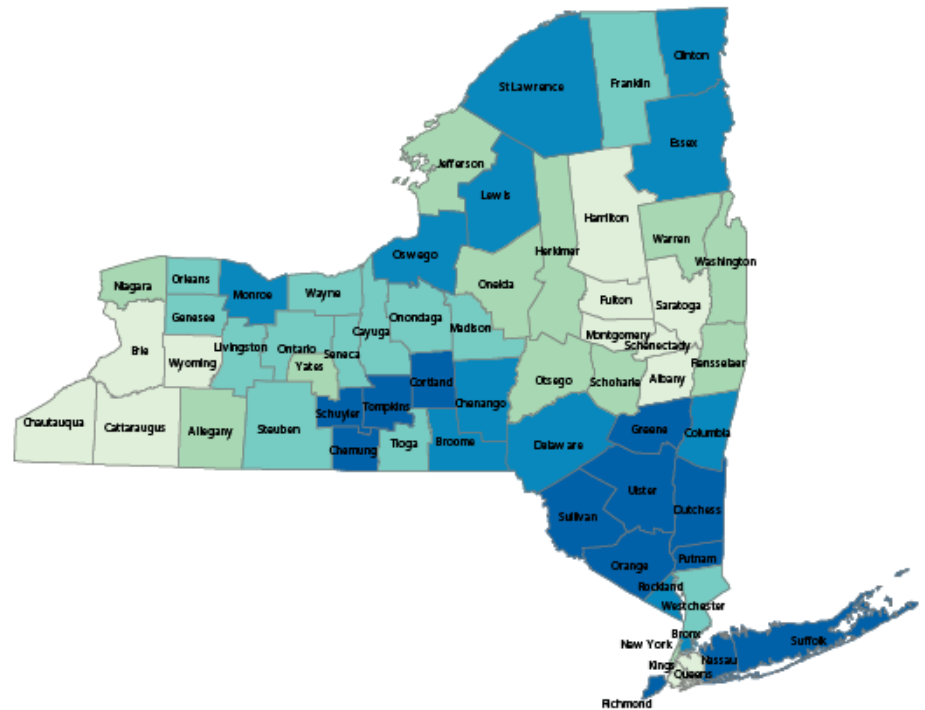
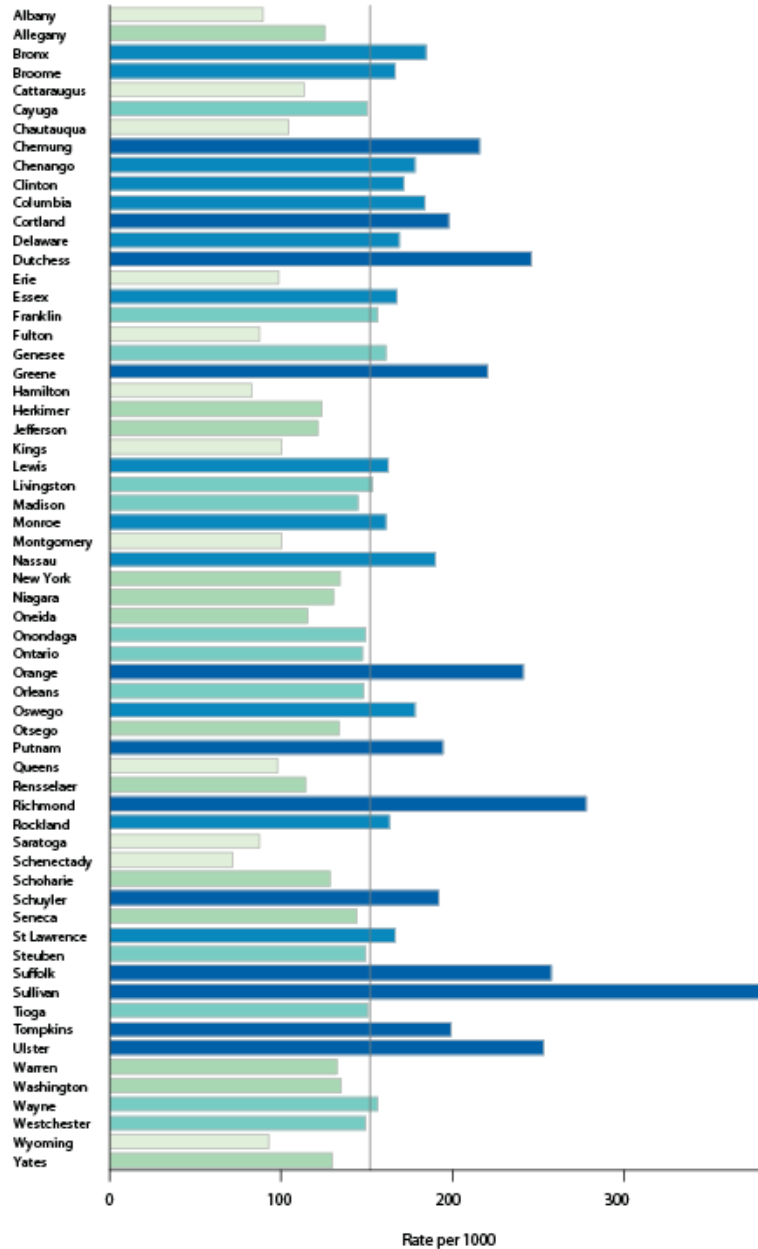
Sample Results

NYC Neighborhood

<i>Neighborhood</i>	<i>2008</i>		<i>2009</i>		<i>2010</i>		<i>Rate</i>	<i>Percent</i>
	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>Ratio</i>	<i>increase</i> <i>2008-2010</i>
<i>Bronx</i>	150,208	125.3	193,302	157.4	231,636	184.4	1.2	47
- <i>Kingsbridge - Riverdale</i>	12,540	125.8	13,818	140.5	15,961	162.4	1.1	29
- <i>Northeast Bronx</i>	17,716	94.2	23,132	121.1	27,796	143.1	0.9	52
- <i>Fordham - Bronx Park</i>	27,960	137.1	35,557	168.1	43,463	199.9	1.3	46
- <i>Pelham - Throgs Neck</i>	34,134	120.8	44,377	155.3	51,377	177.3	1.2	47
- <i>Crotona - Tremont</i>	21,787	133.3	28,668	168.6	35,152	201.1	1.3	51
- <i>High Bridge - Morrisania</i>	24,327	153.6	31,981	194.5	38,051	223.0	1.5	45
- <i>Hunts Point - Mott Haven</i>	11,740	105.0	15,760	137.1	19,825	166.4	1.1	58

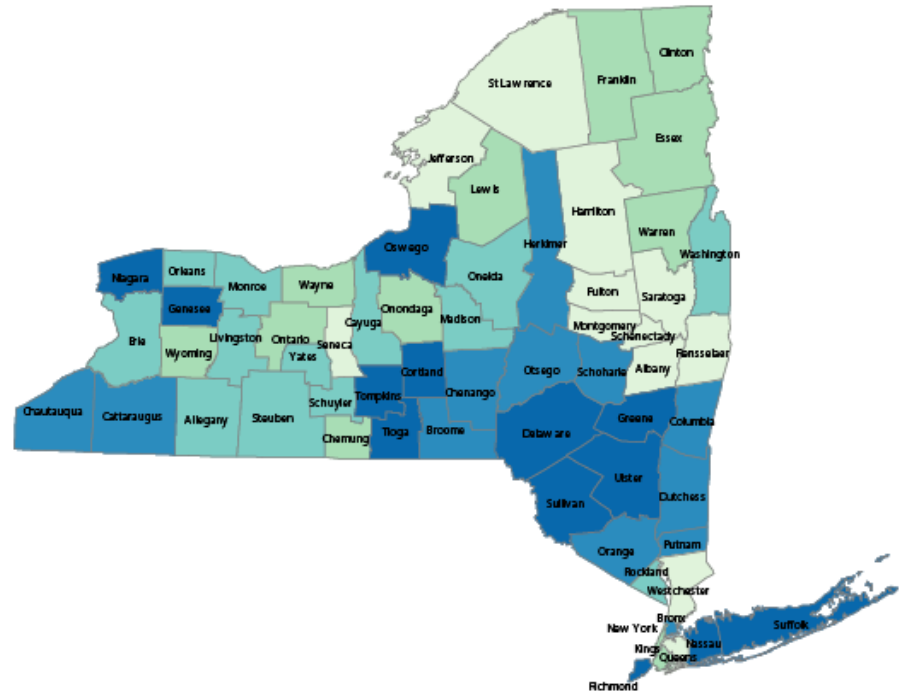
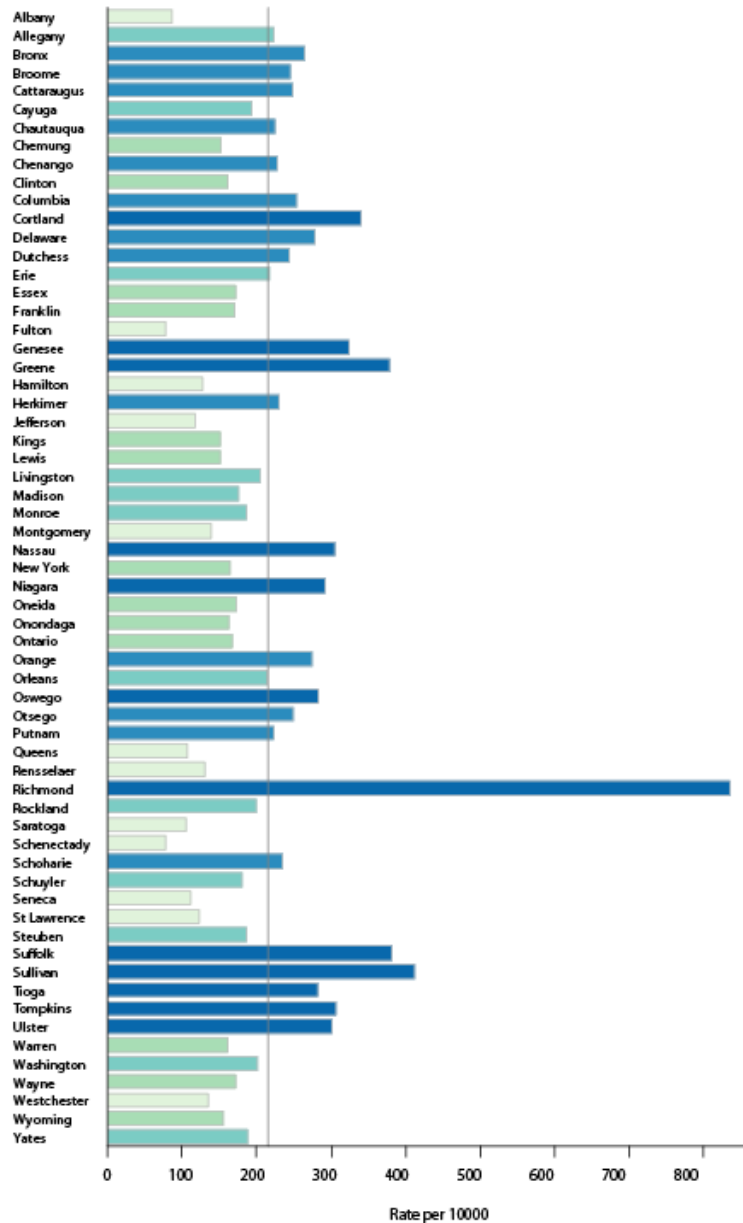
New York State Prescription Drug Monitoring Program, Number of Prescriptions by County
Oxycodone

DRAFT
10/24/2011



New York State Prescription Drug Monitoring Program, Number of Prescriptions by County, NYS 2010

Greater than 100 MED Oxycodone

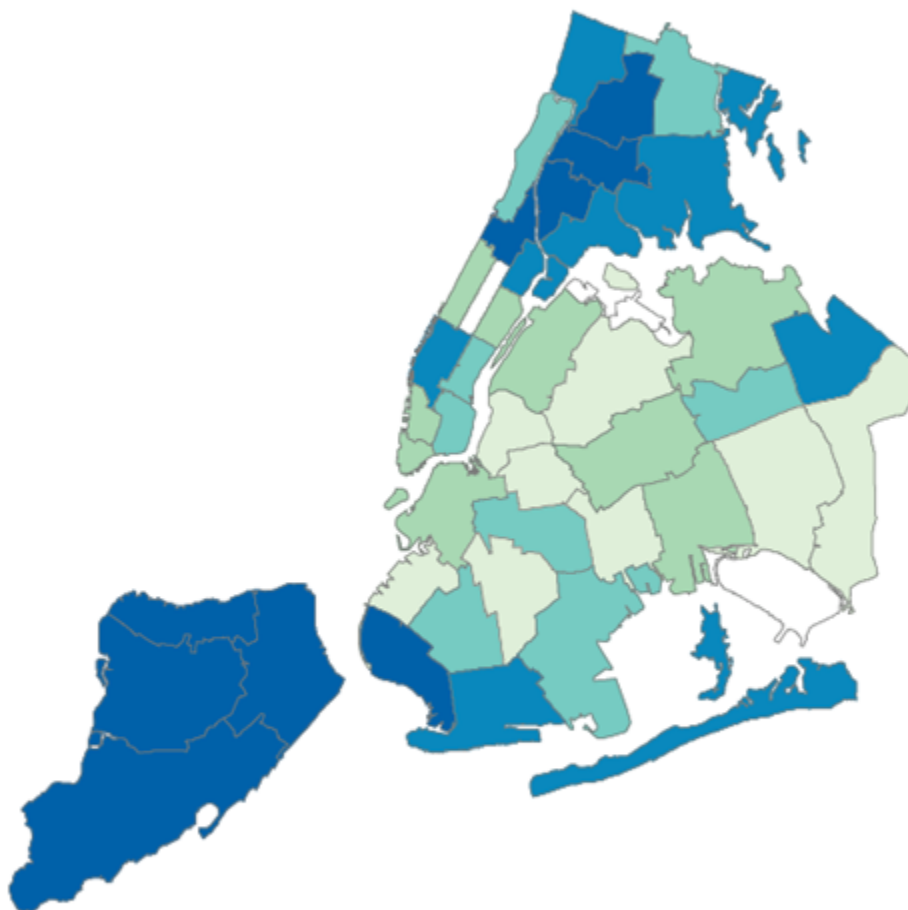
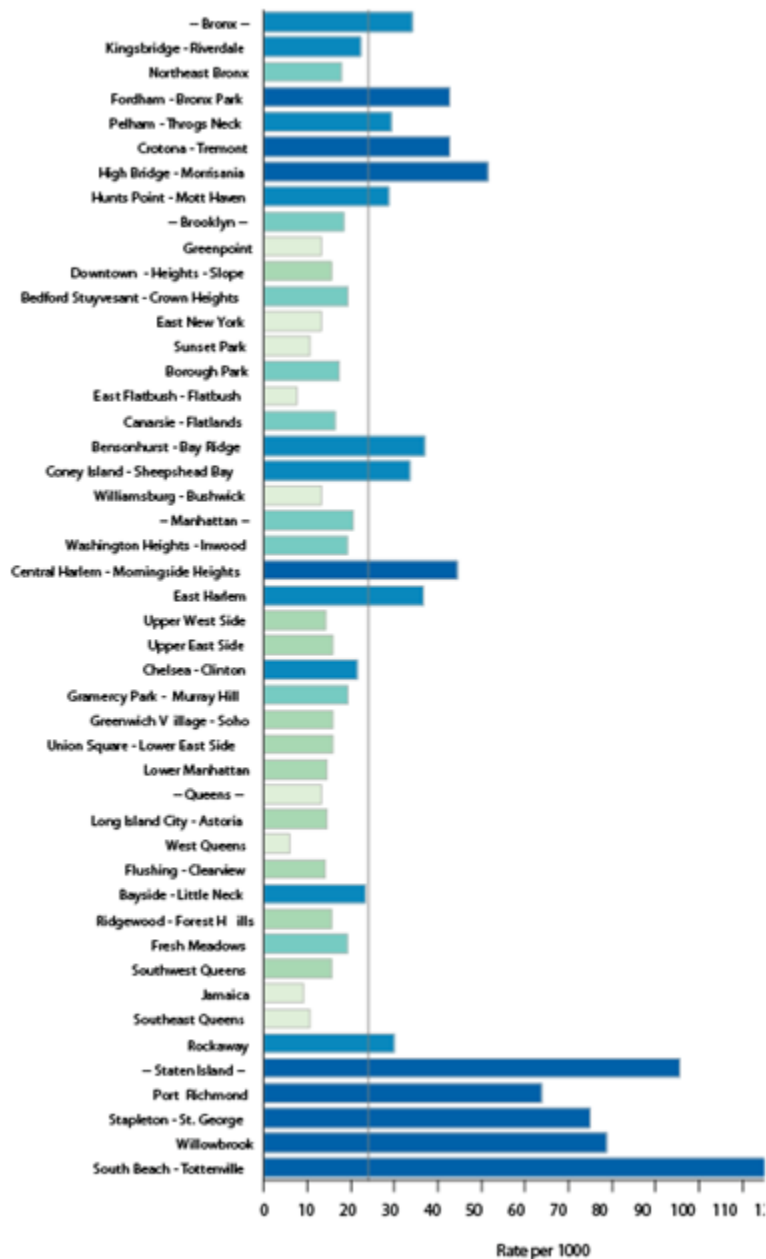


Age Adjusted Rate per 10000 residents



New York State Prescription Drug Monitoring Program, Number of Prescriptions by United Health Fund Neighborhood
Oxycodone with 100 MED or More Daily Dose

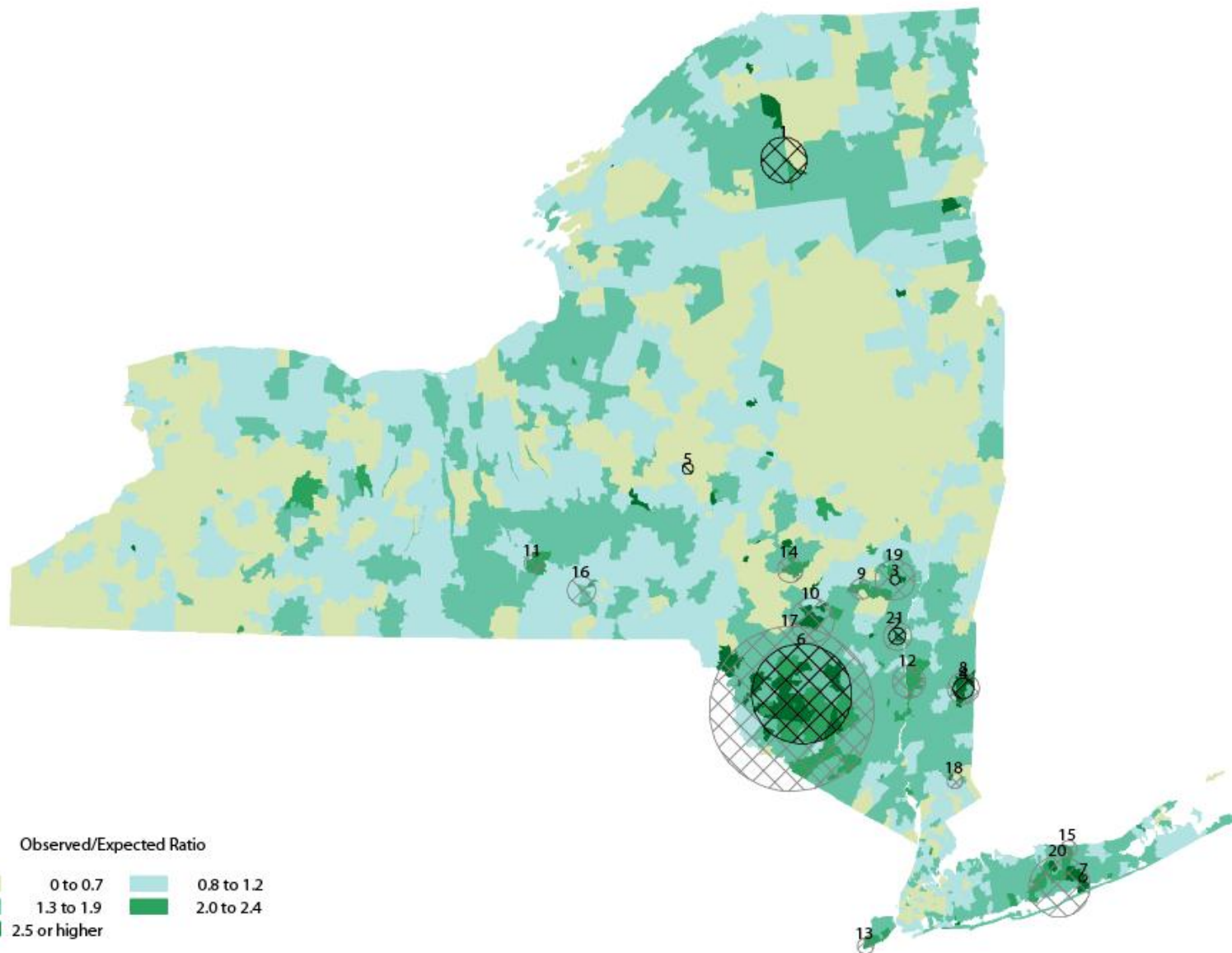
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Age Adjusted Rate per 1000 residents



Oxycodone Prescriptions by ZIP Code, New York State, 2010



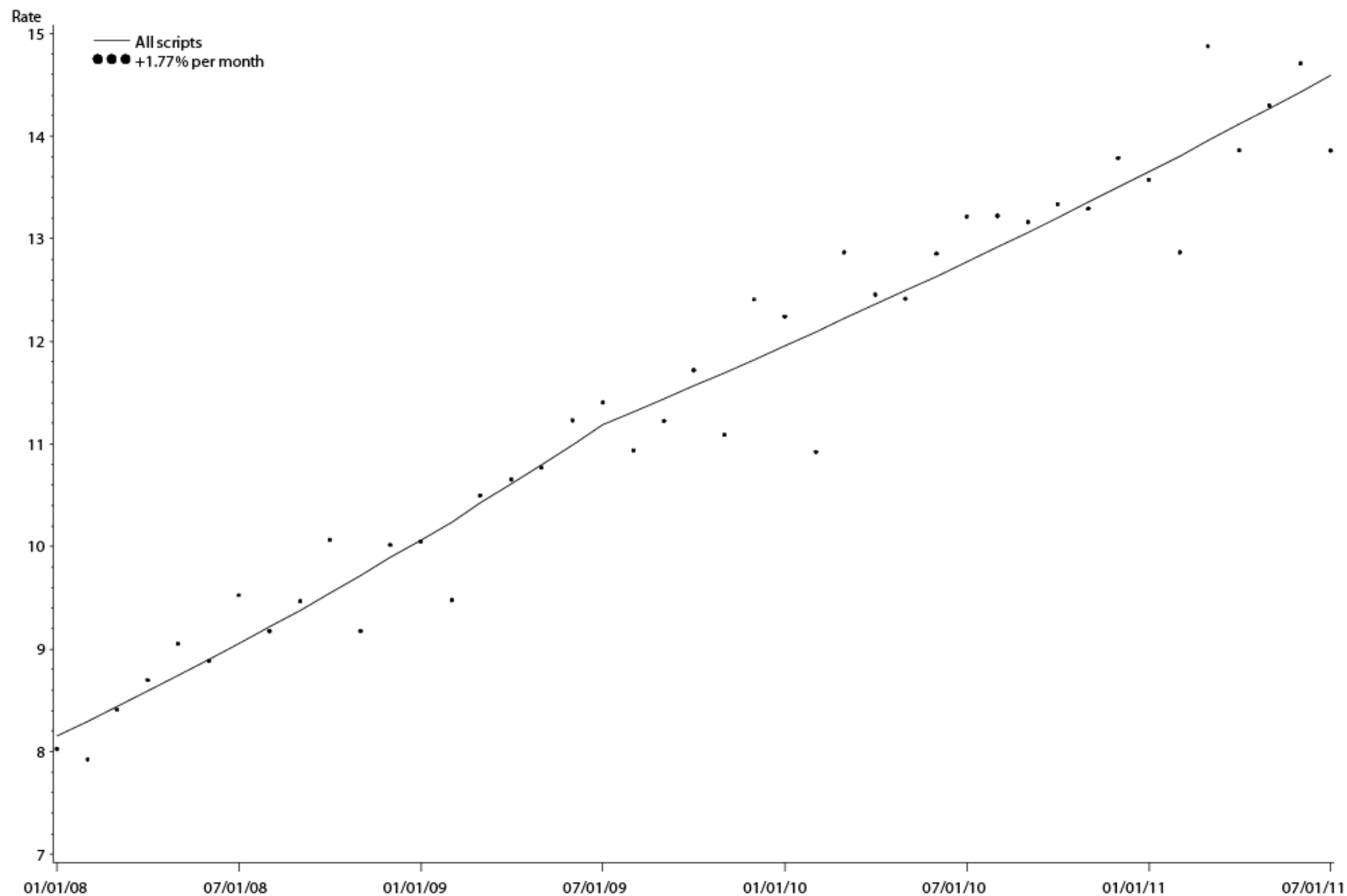
Observed/Expected Ratio is observed number of prescriptions relative to expected number, age adjusted to the statewide prescribing rate

Circles are Spatial Scan Statistic (SaTScan) non overlapping clusters

O (Black) Relative risk 2.5 or higher

O (Gray) Relative risk 2 or higher

New York State Prescription Drug Monitoring Program Monthly oxycodone scripts



Rate is number of prescriptions filled per 1000 residents
Monthly average percent change is based on best fitting Joinpoint trend

Thank you