



Patient & Site Identification Using an EMR Data System

David Thompson, PhD

Senior Vice President, Real World & Late Phase

Background

- Syneos Health in process of setting up a real-world study in mental health
- Design & feasibility work involves:
 - Developing & refining study design: patient inclusion/exclusion criteria, comparators, measures, sample size, analyses
 - Assessing study logistics: interplay between target enrollment, enrollment rate, numbers of sites & duration of enrollment
- EMR system used to assess study logistics, prequalify potential study sites, pre-identify potential study subjects

Logistical Challenge

- Study sponsor's product not widely used relative to competing products; hence, meeting enrollment targets anticipated to be an issue

EMR Monthly Counts of Patients, Sponsor Drug vs Competitors

Month/Year	Sponsor Drug			Drug 2	Drug 3	Drug 4	Monthly		
	Patients	Sites	New p/s/m	Patients	Patients	Patients	Total Patients	Total Sites	New p/s/m
3/1/2017	1	1	1.00	18	1	3	23	18	1.28
4/1/2017	5	5	1.00	33	11	4	53	38	1.39
5/1/2017	8	5	1.60	27	8	6	49	37	1.32
6/1/2017	7	6	1.17	35	4	6	52	41	1.27
7/1/2017	8	8	1.00	35	18	5	66	50	1.32
8/1/2017	3	3	1.00	36	5	7	51	44	1.16
9/1/2017	12	8	1.50	35	17	7	71	53	1.34
10/1/2017	11	8	1.38	40	18	7	76	53	1.43
11/1/2017	10	8	1.25	55	19	9	93	61	1.52
12/1/2017	13	8	1.63	74	25	9	121	77	1.57
1/1/2018	29	15	1.93	107	26	16	178	97	1.84
2/1/2018	25	18	1.39	137	38	23	223	103	2.17
3/1/2018	11			69	18	9	Not a full month		

- Sponsor drug monthly new patient Rx rate ~ 1.5 per site from Sep 2017 onward
- However, not all newly prescribed patients would qualify for study inclusion and not all who qualify would enroll

Enrollment Rate Analysis for Sponsor's Drug: Interplay between Enrollment Rate, Numbers of Sites & Duration

Sites: 20		Enrollment Duration (months)		
Enrollment Rate (p/s/m)	12	18	24	
0.15	36	54	72	
0.20	48	72	96	
0.25	60	90	120	
0.30	72	108	144	
0.35	84	126	168	
0.40	96	144	192	
0.45	108	162	216	
0.50	120	180	240	

Sites: 25		Enrollment Duration (months)		
Enrollment Rate (p/s/m)	12	18	24	
0.15	45	68	90	
0.20	60	90	120	
0.25	75	113	150	
0.30	90	135	180	
0.35	105	158	210	
0.40	120	180	240	
0.45	135	203	270	
0.50	150	225	300	

Sites: 30		Enrollment Duration (months)		
Enrollment Rate (p/s/m)	12	18	24	
0.15	54	81	108	
0.20	72	108	144	
0.25	90	135	180	
0.30	108	162	216	
0.35	126	189	252	
0.40	144	216	288	
0.45	162	243	324	
0.50	180	270	360	

Sites: 35		Enrollment Duration (months)		
Enrollment Rate (p/s/m)	12	18	24	
0.15	63	95	126	
0.20	84	126	168	
0.25	105	158	210	
0.30	126	189	252	
0.35	147	221	294	
0.40	168	252	336	
0.45	189	284	378	
0.50	210	315	420	

Example EMR Provider: Specialty Distribution

Provider Specialty by Patient Diagnosis

Note: Counts of patients and visits cannot be summed across specialties because patients can see multiple specialists.

Metric

Patients

Data last updated on 1/14/2018 4:37:04 PM

Code T... ICD9
 ICD10

Code Level

XXX*

Diagnosis Code

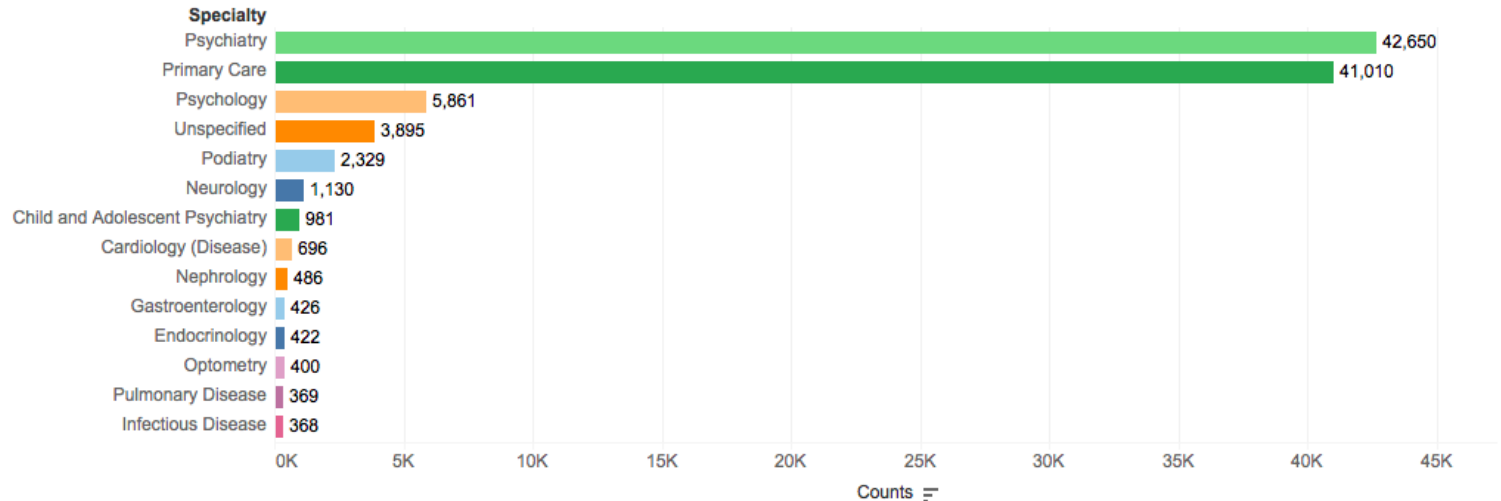
Provider Edit Level

- All Edit Levels
- MD/DO
- NP/PA
- RN
- Staff

Overall Counts

Diagnosis Code	Patients	Providers	Visits (last 12 months)
	93,590	17,510	742,381

Patients by Specialty

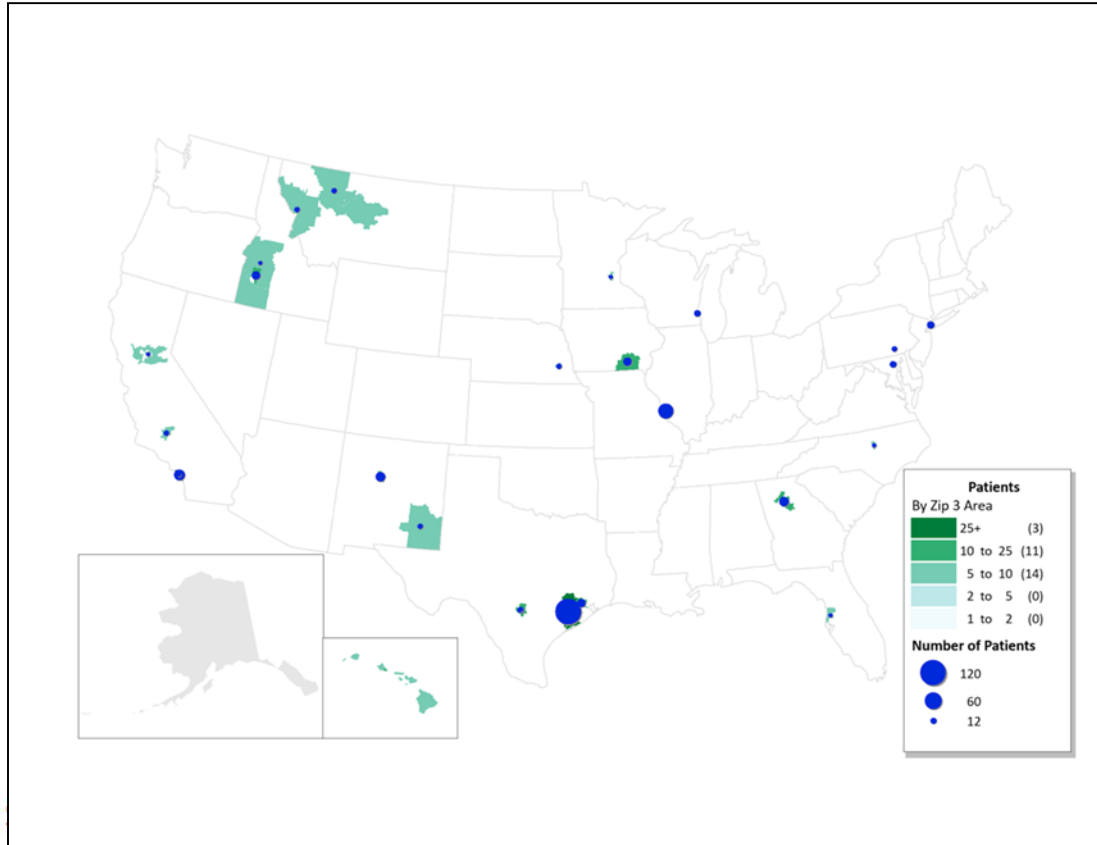


Sponsor Drug Prescribing Practice Density

Count of N_PATS	Number of Pts/Practice																					Grand Total		
	Column Labels	1	2	3	4	5	6	7	8	9	10	11	13	15	16	18	19	21	23	27	44		119	
Other	5					1																		6
Primary Care	36			1																				37
Psychiatry	64	16	8	6	5	3	3	1	3	1	2	1	1	1	2	1	1	1	1	1	1	1	1	123
Psychology	1									1														2
Grand Total	106	16	9	6	6	3	3	1	3	2	2	1	1	1	2	1	1	1	1	1	1	1	1	168

- Based on 668 patients seen at 168 practices in the past 12 months
- 30 practices with 5+ patients (see yellow highlight), but highly skewed with one practice having 119 patients

Geographic Distribution of Sponsor Drug Patients



use only

- Sparse geographic coverage confirmed
- Analysis of competing products shows little overlap in heat maps
- Suggests practices have a single 'favored' drug for this condition
- Problematic for research as site & drug effects highly correlated

Shortening the Distance From Lab to Life™
