CRISP

Connecting Physicians With Technology
to Improve Patient Care in Maryland

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Chesapeake Regional Information System for Our Patients

CRISP Data Utility Overview

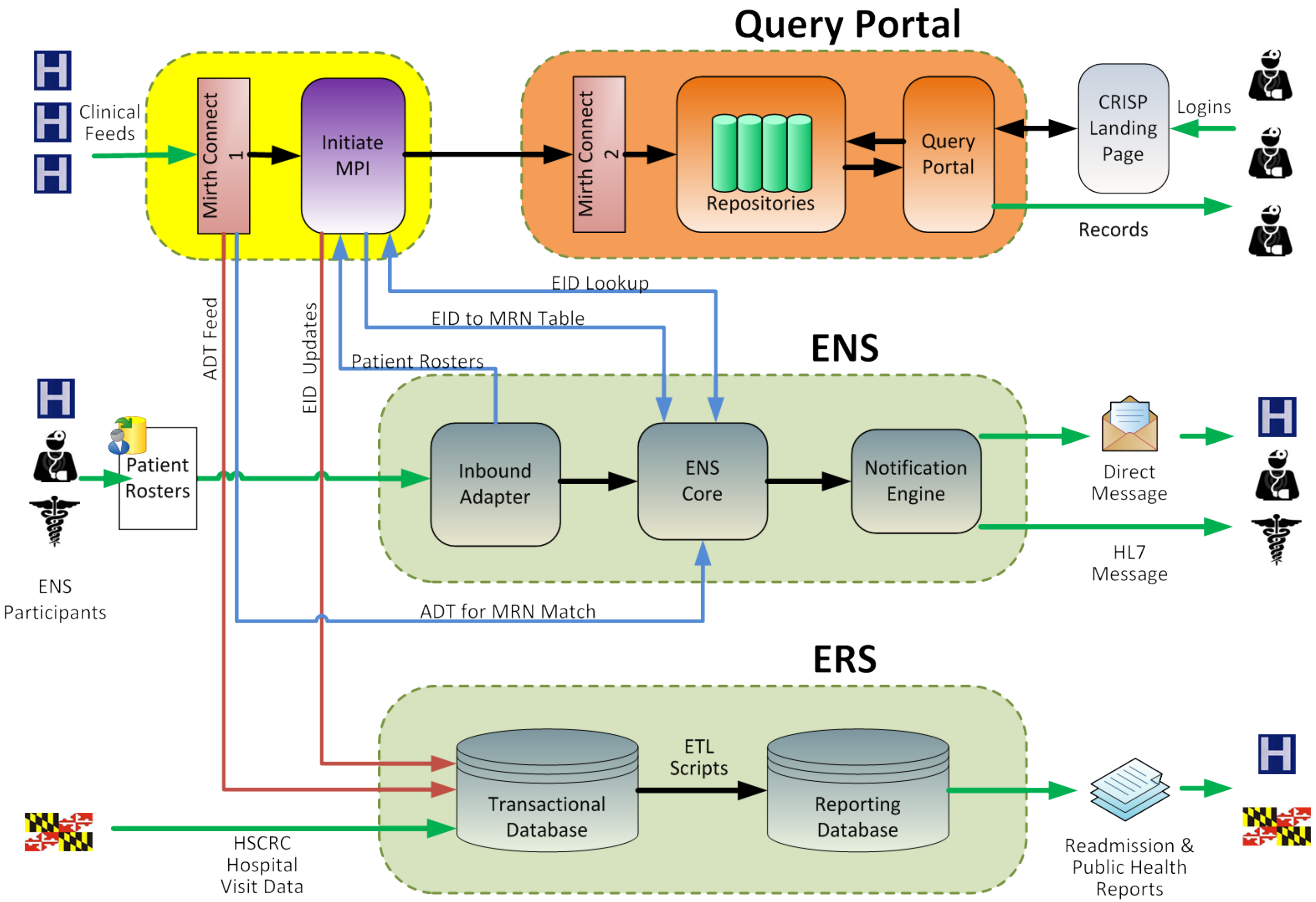
HSCRC Data and Infrastructure Workgroup Meeting

March 4, 2014

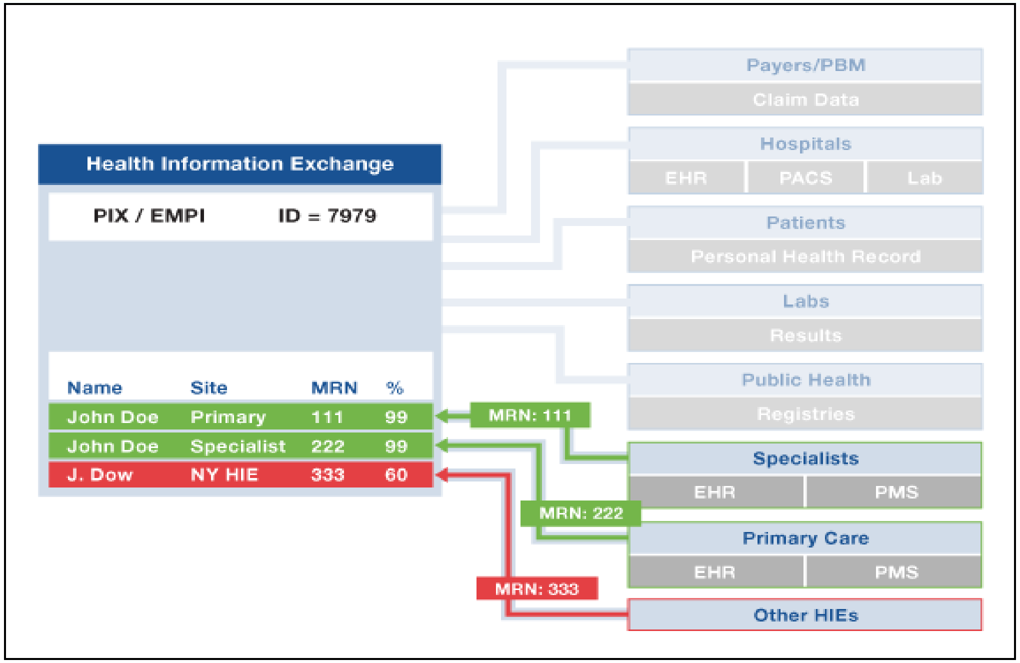
CRISP Services Overview

Chesapeake Regional Information System for Our Patients

CRISP Infrastructure


Query Portal
Clinical Feeds
Mirth Connect 1
Initiate MPI
Mirth Connect 2
Repositories
Query Portal
CRISP Landing Page
Logins
Records
ADT Feed
EID Updates
EID Lookup
EID to MRN Table
Patient Rosters
ENS
Patient Rosters
Inbound Adapter
ENS Core
Notification Engine
Direct Message
HL7 Message
ENS Participants
ADT for MRN Match
ERS
Transactional Database
ETL Scripts
Reporting Database
HSCRC Hospital Visit Data
Readmission & Public Health Reports

Patient Identity Management

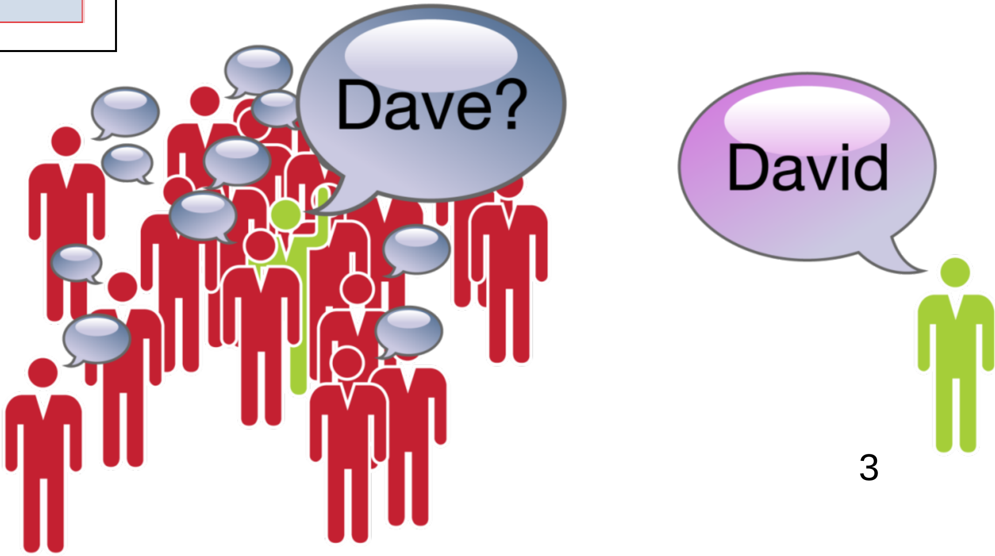

Health Information Exchange
PIX / EMPI
ID = 7979
Payers/PBM
Claim Data
Hospitals
EHR
PACS
Lab
Patients
Personal Health Record
Labs
Results
Public Health
Registries
Specialists
EHR
PMS
Primary Care
EHR
PMS
Other HIEs
MRN: 111
MRN: 222
MRN: 333

Name	Site	MRN	%
John Doe	Primary	111	99
John Doe	Specialist	222	99
J. Dow	NY HIE	333	60

The Challenge:
Accurately and consistently linking identities across multiple facilities to create a single view of a patient.

A near-zero tolerance of a false positive match rate with a low tolerance of a false negative match rate.

Effective Master Patient Indexing is a foundational concept to any population health-oriented or cross-entity payment or delivery reform initiatives.



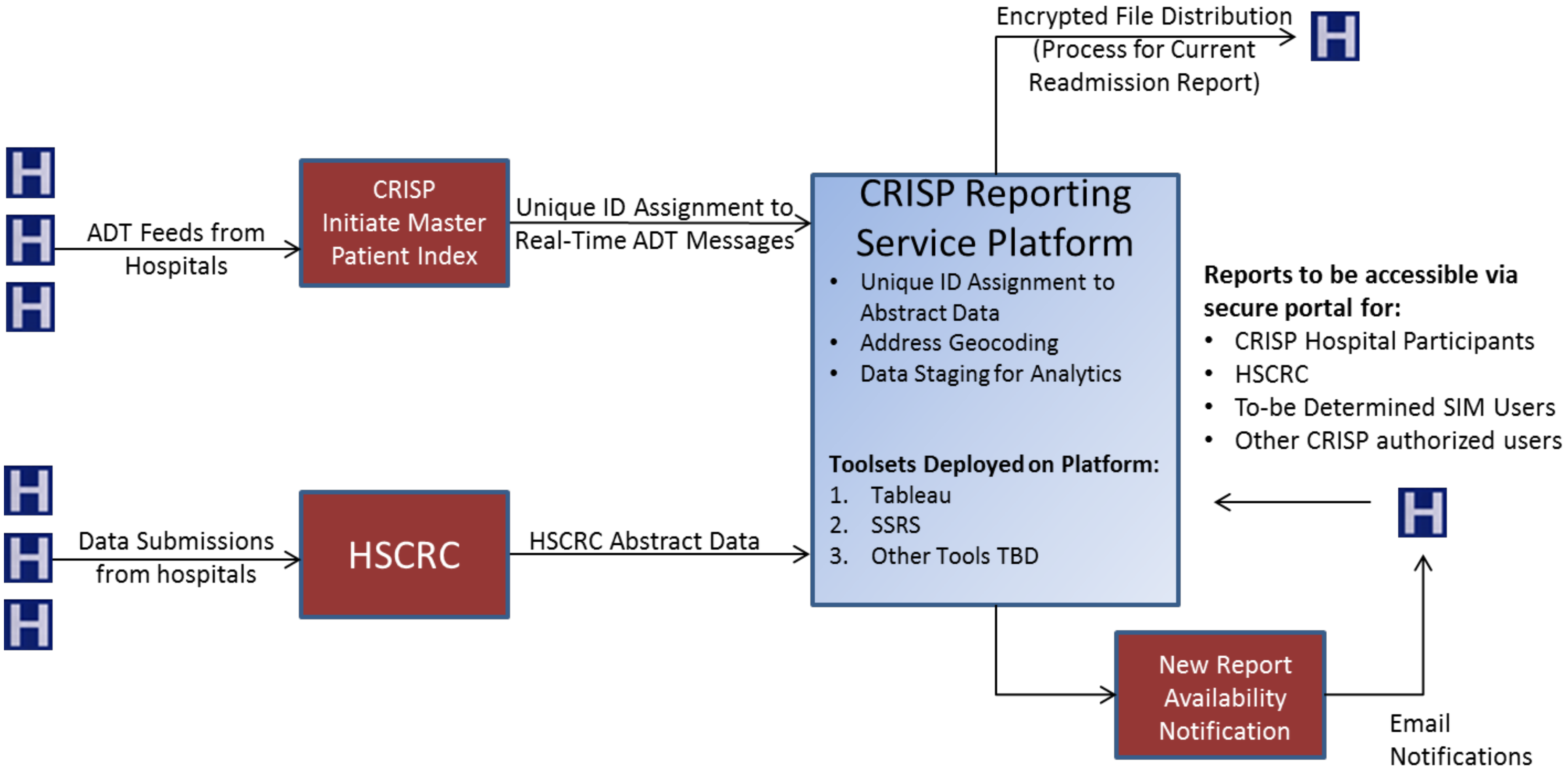
Reporting Background

- CRISP receives real-time encounter messages (called “ADTs”) which carry facility, medical record number, visit IDs, and other important information about visit.

- Unique Aspects of ADTs:
  - Enable population-health analysis (unduplicated users across hospitals)
  - Real –Time data flows
  - Street address, enabling more granular level of geographic analysis

- Linked ADT and HSCRC Abstract Data enables cross-entity and geographically granular analysis

CRS Basic Design



Encrypted File Distribution
(Process for Current
Readmission Report)

ADT Feeds from
Hospitals

CRISP
Initiate Master
Patient Index

Unique ID Assignment to
Real-Time ADT Messages

CRISP Reporting Service Platform

- Unique ID Assignment to Abstract Data
- Address Geocoding
- Data Staging for Analytics

Toolsets Deployed on Platform:

1. Tableau
2. SSRS
3. Other Tools TBD

Reports to be accessible via secure portal for:

- CRISP Hospital Participants
- HSCRC
- To-be Determined SIM Users
- Other CRISP authorized users

Data Submissions
from hospitals

HSCRC

HSCRC Abstract Data

New Report
Availability
Notification

Email
Notifications

Reporting Capability - Sample Reports

CRISP has developed the capability to generate reports through a combination of CRISP data and HSCRC tape data. Initial report ideas include:

Readmission analysis reports

- ☐ Monthly reports with patient drill downs
- ☐ Year-to-year and monthly
- ☐ By hospital, zip, region, county, HEZ
- ☐ by diagnosis or disposition

Patient attribution analysis

- ☐ based on prior visits
- ☐ identify exclusive patients and % of visit allocation by patient
- ☐ by census tract or neighborhood
- ☐ by diagnosis and charges

High utilization analysis

- ☐ by # of visits, LOS, date, overlap, etc.
- ☐ by census tract or neighborhood
- ☐ by diagnosis, disposition, or charges

Hospital Utilization by diagnosis, disposition, charges using HSCRC data

- ☐ County reports (patients, discharges, readmits by diagnosis)

Market share analysis

- ☐ Clinical service line utilization by hospital PSA
- ☐ by majority of inpatient visits, total visits, etc.
- ☐ by diagnosis and charges

Analysis of Potentially Avoidable Volume

- ☐ Visits with ambulatory sensitive conditions
- ☐ Readmission
- ☐ Market share shifts

Episode of Care analysis

- ☐ all subsequent hospital visits after discharge
- ☐ by diagnosis or disposition
- ☐ by census tract or neighborhood

Uncompensated Care/ACA Impact

- ☐ Using CRISP EID to link insurance status and UCC use across time periods

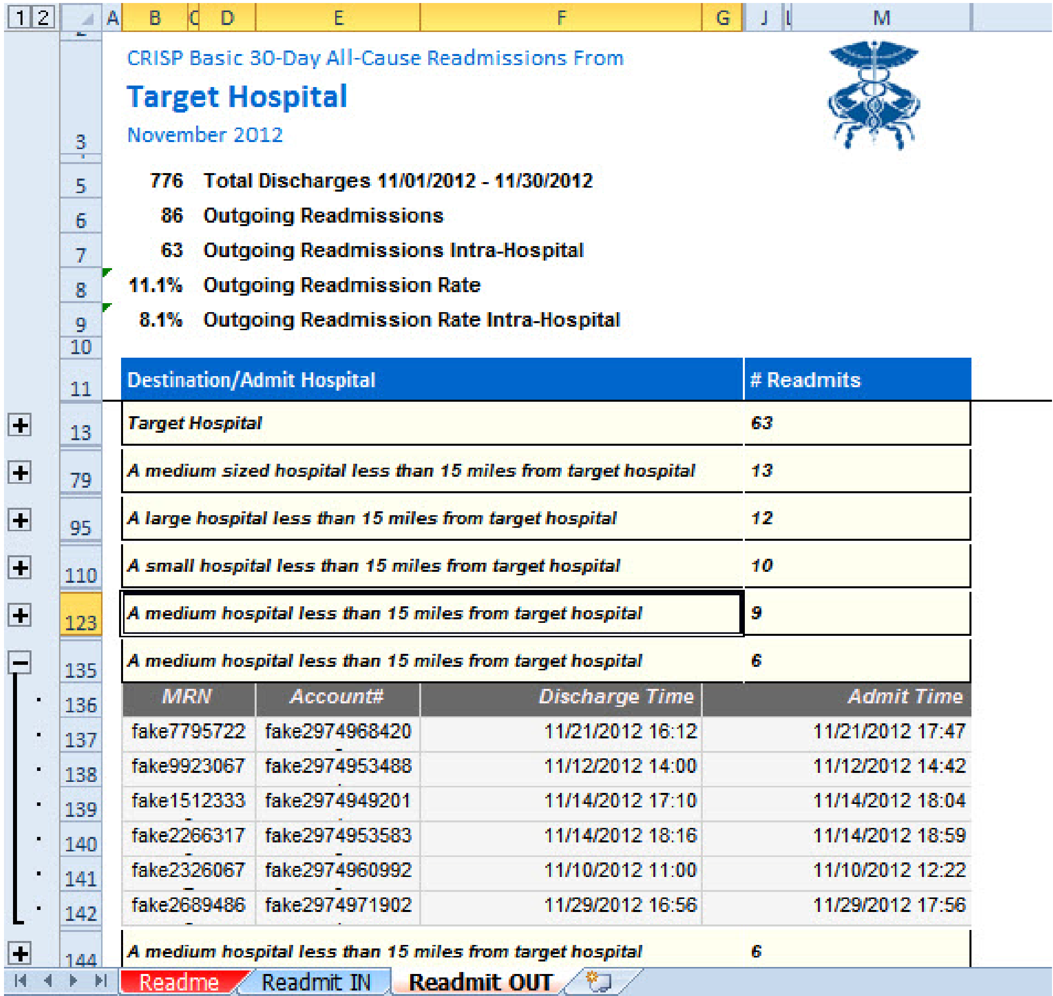
Upcoming Changes to our Readmission Report

Chesapeake Regional Information System for Our Patients

- Historically, our readmissions reports have relied on "basic" inter-hospital readmission logic using ADT data. This allowed hospitals an early view of inter-hospital readmissions.

- We are currently aligning our logic to exactly match the logic HSCRC will use to measure readmissions, including:
  - Using tape data visits (vs. real time ADTs)
  - Using same exclusions as HSCRC.

- CRISP will offer several reports of Intra-Hospital and Inter-Hospital readmissions to help track performance:
  - Monthly trend w/Medicare FFS
  - Statewide comparisons by clinical service line
  - Monthly MRN drill down (shown here)



CRISP Basic 30-Day All-Cause Readmissions From

Target Hospital

November 2012

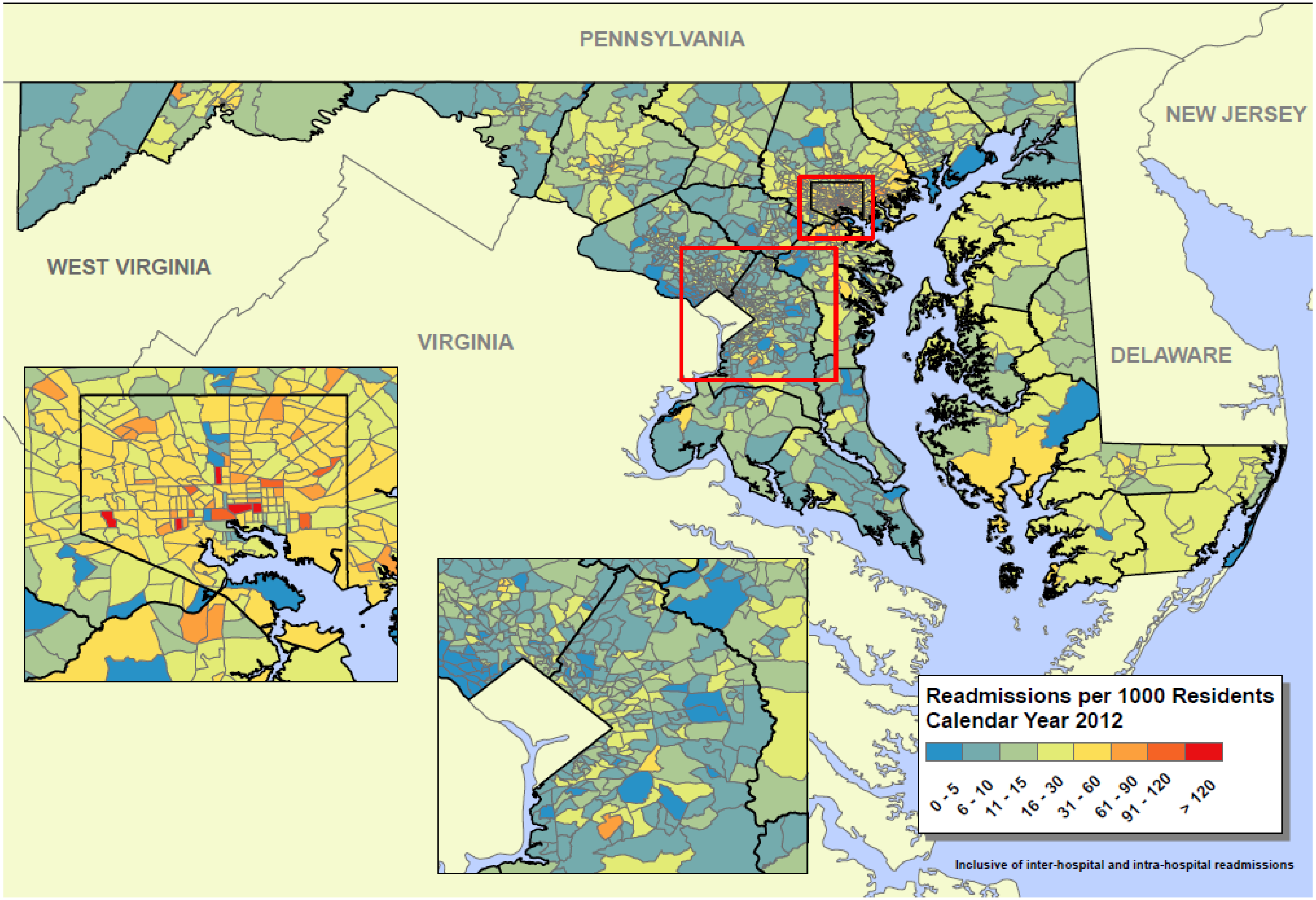
776	**Total Discharges 11/01/2012 - 11/30/2012**
86	**Outgoing Readmissions**
63	**Outgoing Readmissions Intra-Hospital**
11.1%	**Outgoing Readmission Rate**
8.1%	**Outgoing Readmission Rate Intra-Hospital**

Destination/Admit Hospital	# Readmits
Target Hospital	***63***
A medium sized hospital less than 15 miles from target hospital	***13***
A large hospital less than 15 miles from target hospital	***12***
A small hospital less than 15 miles from target hospital	***10***
A medium hospital less than 15 miles from target hospital	***9***
A medium hospital less than 15 miles from target hospital	***6***

MRN	*Account#*	*Discharge Time*	*Admit Time*
fake7795722	fake2974968420	11/21/2012 16:12	11/21/2012 17:47
fake9923067	fake2974953488	11/12/2012 14:00	11/12/2012 14:42
fake1512333	fake2974949201	11/14/2012 17:10	11/14/2012 18:04
fake2266317	fake2974953583	11/14/2012 18:16	11/14/2012 18:59
fake2326067	fake2974960992	11/10/2012 11:00	11/10/2012 12:22
fake2689486	fake2974971902	11/29/2012 16:56	11/29/2012 17:56

A medium hospital less than 15 miles from target hospital	***6***

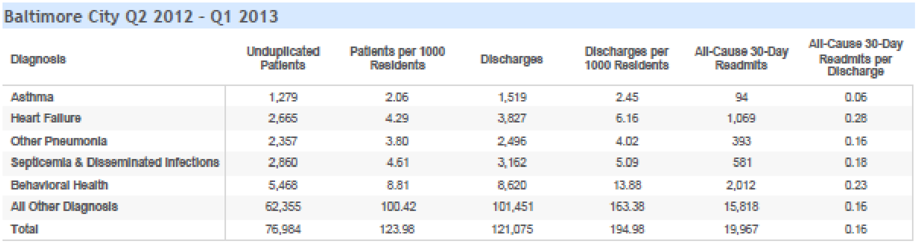
Utilization by Census Tract Map


PENNSYLVANIA
NEW JERSEY
WEST VIRGINIA
VIRGINIA
DELAWARE
0 - 5
6 - 10
11 - 15
16 - 30
31 - 60
61 - 90
91 - 120
> 120

Readmissions per 1000 Residents
Calendar Year 2012

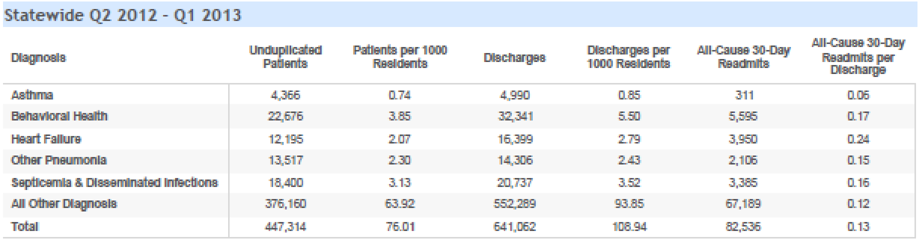
Inclusive of inter-hospital and intra-hospital readmissions

County HD Dashboard Top IP Diagnoses



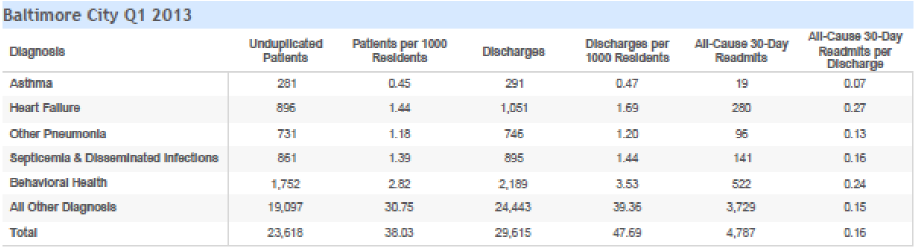
Baltimore City Q2 2012 - Q1 2013

Diagnosis	Unduplicated Patients	Patients per 1000 Residents	Discharges	Discharges per 1000 Residents	All-Cause 30-Day Readmits	All-Cause 30-Day Readmits per Discharge
Asthma	1,279	2.06	1,519	2.45	94	0.06
Heart Failure	2,665	4.29	3,827	6.16	1,069	0.28
Other Pneumonia	2,357	3.80	2,496	4.02	393	0.16
Septicemia & Disseminated Infections	2,860	4.61	3,162	5.09	581	0.18
Behavioral Health	5,468	8.81	8,620	13.88	2,012	0.23
All Other Diagnosis	62,355	100.42	101,451	163.38	15,818	0.16
Total	76,984	123.98	121,075	194.98	19,967	0.16



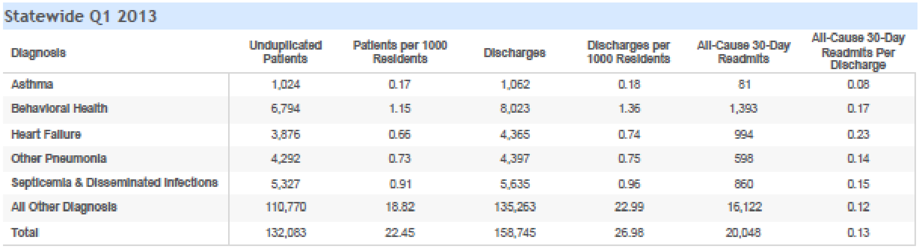
Statewide Q2 2012 - Q1 2013

Diagnosis	Unduplicated Patients	Patients per 1000 Residents	Discharges	Discharges per 1000 Residents	All-Cause 30-Day Readmits	All-Cause 30-Day Readmits per Discharge
Asthma	4,366	0.74	4,990	0.85	311	0.06
Behavioral Health	22,676	3.85	32,341	5.50	5,595	0.17
Heart Failure	12,195	2.07	16,399	2.79	3,950	0.24
Other Pneumonia	13,517	2.30	14,306	2.43	2,106	0.15
Septicemia & Disseminated Infections	18,400	3.13	20,737	3.52	3,385	0.16
All Other Diagnosis	376,160	63.92	552,289	93.85	67,189	0.12
Total	447,314	76.01	641,062	108.94	82,536	0.13



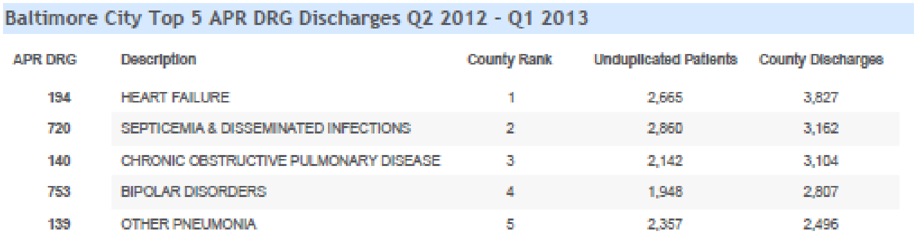
Baltimore City Q1 2013

Diagnosis	Unduplicated Patients	Patients per 1000 Residents	Discharges	Discharges per 1000 Residents	All-Cause 30-Day Readmits	All-Cause 30-Day Readmits per Discharge
Asthma	281	0.45	291	0.47	19	0.07
Heart Failure	896	1.44	1,051	1.69	280	0.27
Other Pneumonia	731	1.18	746	1.20	96	0.13
Septicemia & Disseminated Infections	861	1.39	895	1.44	141	0.16
Behavioral Health	1,752	2.82	2,189	3.53	522	0.24
All Other Diagnosis	19,097	30.75	24,443	39.36	3,729	0.15
Total	23,618	38.03	29,615	47.69	4,787	0.16



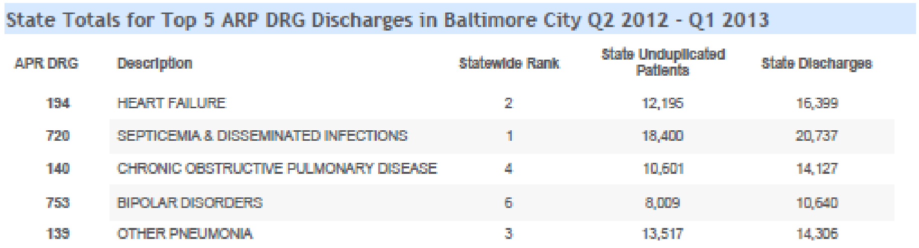
Statewide Q1 2013

Diagnosis	Unduplicated Patients	Patients per 1000 Residents	Discharges	Discharges per 1000 Residents	All-Cause 30-Day Readmits	All-Cause 30-Day Readmits Per Discharge
Asthma	1,024	0.17	1,062	0.18	81	0.08
Behavioral Health	6,794	1.15	8,023	1.36	1,393	0.17
Heart Failure	3,876	0.66	4,365	0.74	994	0.23
Other Pneumonia	4,292	0.73	4,397	0.75	598	0.14
Septicemia & Disseminated Infections	5,327	0.91	5,635	0.96	860	0.15
All Other Diagnosis	110,770	18.82	135,263	22.99	16,122	0.12
Total	132,083	22.45	158,745	26.98	20,048	0.13



Baltimore City Top 5 APR DRG Discharges Q2 2012 - Q1 2013

APR DRG	Description	County Rank	Unduplicated Patients	County Discharges
194	HEART FAILURE	1	2,665	3,827
720	SEPTICEMIA & DISSEMINATED INFECTIONS	2	2,860	3,162
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	3	2,142	3,104
753	BIPOLAR DISORDERS	4	1,948	2,807
139	OTHER PNEUMONIA	5	2,357	2,496

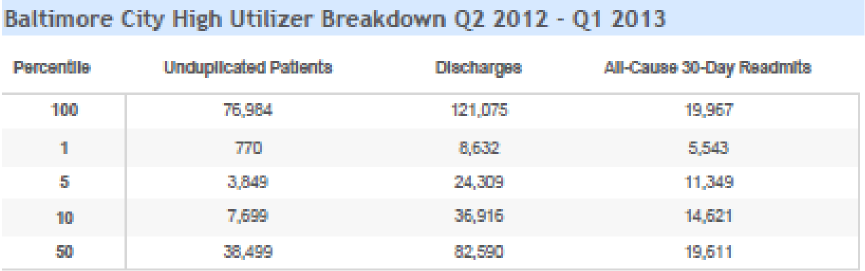


State Totals for Top 5 ARP DRG Discharges in Baltimore City Q2 2012 - Q1 2013

APR DRG	Description	Statewide Rank	State Unduplicated Patients	State Discharges
194	HEART FAILURE	2	12,195	16,399
720	SEPTICEMIA & DISSEMINATED INFECTIONS	1	18,400	20,737
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	4	10,601	14,127
753	BIPOLAR DISORDERS	6	8,009	10,640
139	OTHER PNEUMONIA	3	13,517	14,306

County HD Dashboard IP High Utilizers

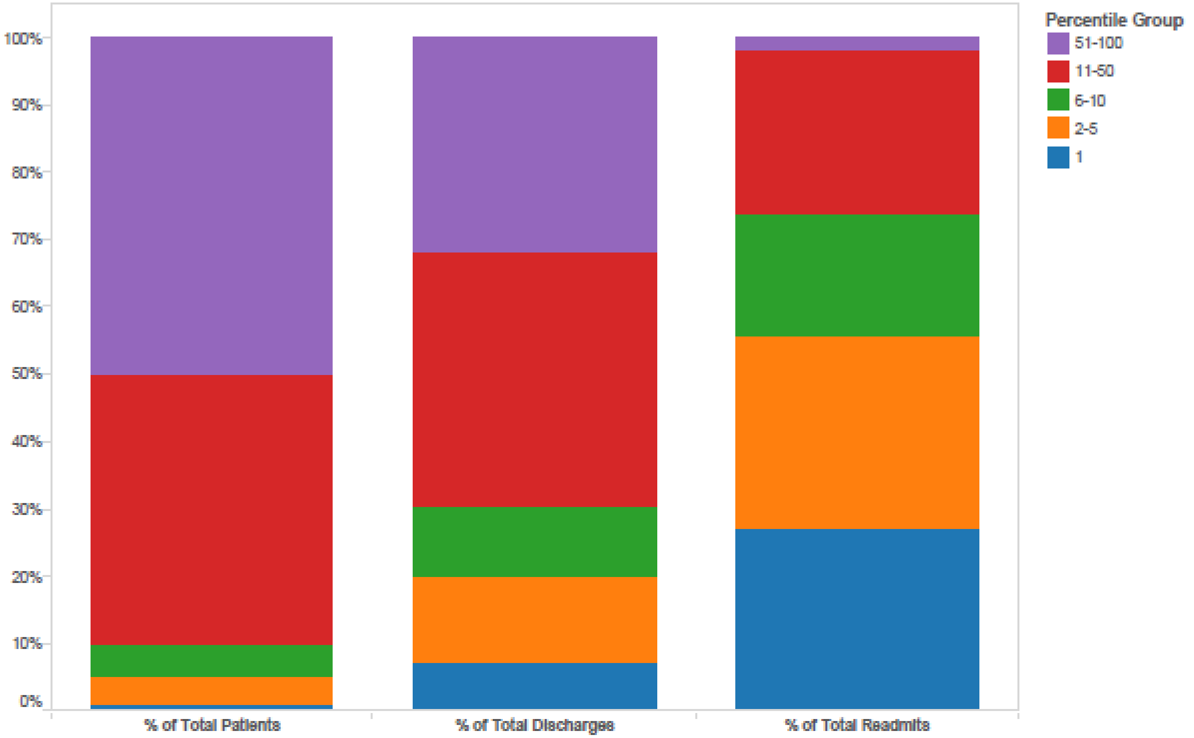
Chesapeake Regional Information System for Our Patients



Baltimore City High Utilizer Breakdown Q2 2012 - Q1 2013

Percentile	Unduplicated Patients	Discharges	All-Cause 30-Day Readmits
100	76,984	121,075	19,967
1	770	8,632	5,543
5	3,849	24,309	11,349
10	7,699	36,916	14,621
50	38,499	82,590	19,611

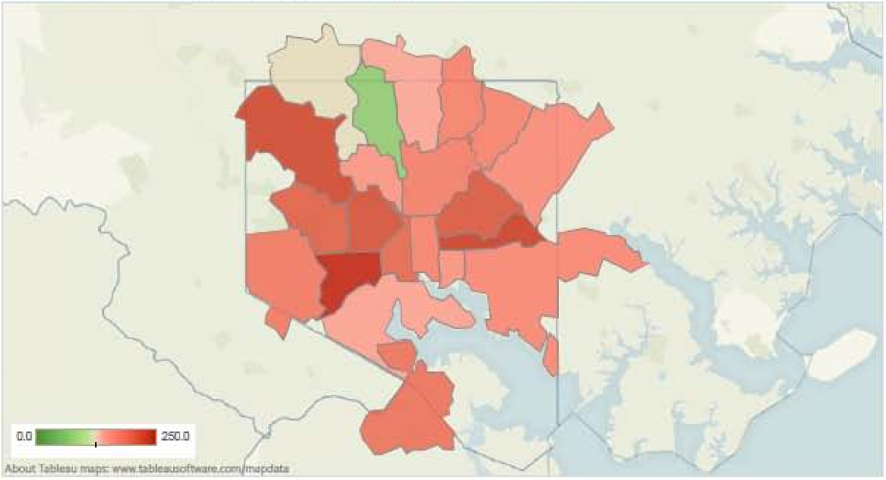
Baltimore City High Utilizers Q2 2012 - Q1 2013



County HD Dashboard IP Readmission Maps

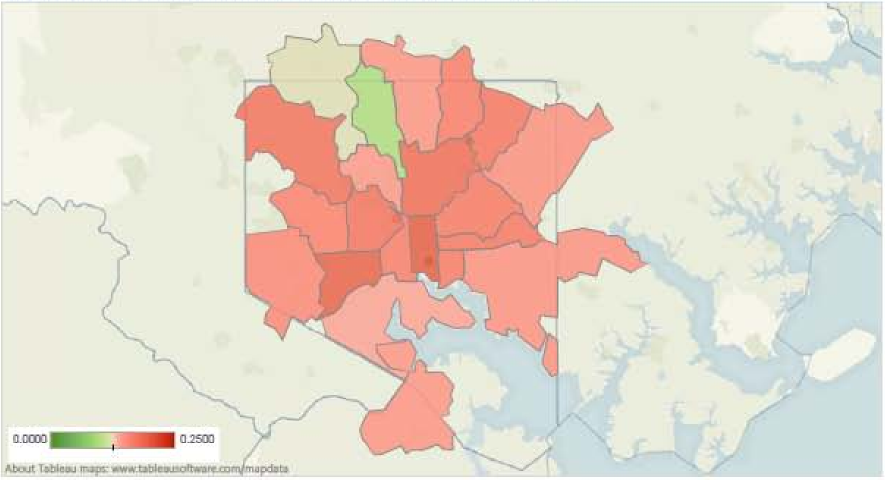
Chesapeake Regional Information System for Our Patients

Baltimore City Discharges per 1000 Residents by Zipcode Q2 2012 - Q1 2013



About Tableau maps: www.tableausoftware.com/mapdata

Baltimore City Readmissions Per Discharge by Zipcode Q2 2012 - Q1 2013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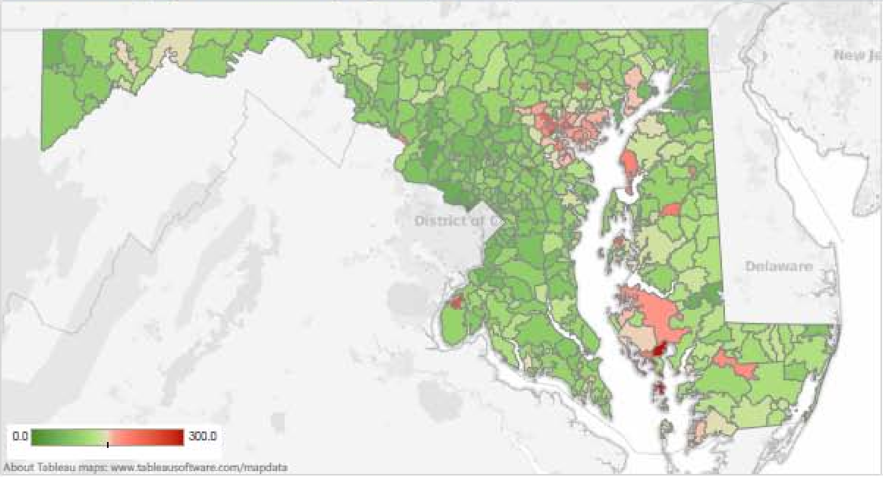
Statewide Discharges per 1000 Residents by Zipcode Q2 2012 - Q1 2013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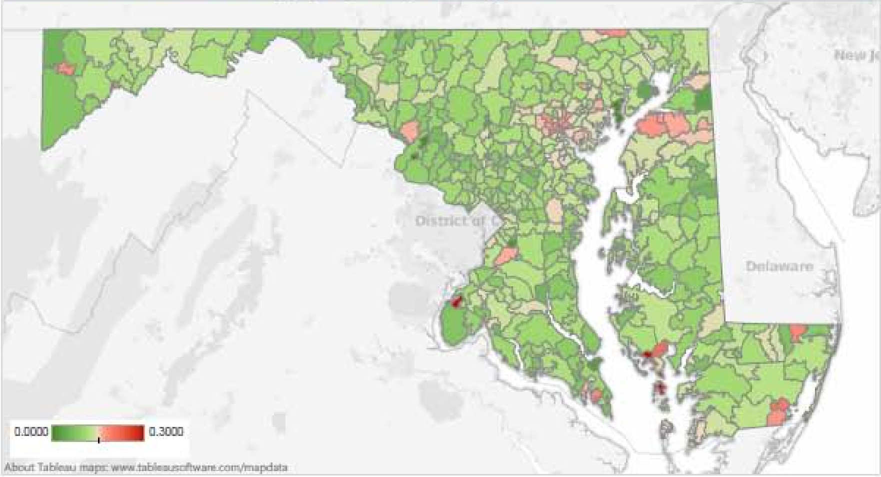
About Tableau maps: www.tableausoftware.com/mapdata

Statewide Readmissions Per Discharge by Zipcode Q2 2012 - Q1 2013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