



MA Center for Health Information & Analysis

Case Mix User Workgroup

March 22, 2016

Agenda



- Announcements:
 - [Slides from Previous Workgroups Now Posted](#)
 - [Case Mix Limited Data Sets](#)
- Presentation: CHIA Work on Readmissions
- Q&A
- User Poll – Preferred Case Mix Formats

Reminder

2016 User Workgroup Changes



- Case Mix and APCD User Groups separated
 - Every other month
 - More presentations from CHIA's users and external users
- Content from presentations will be categorized by topic and posted to the CHIA website
 - Easier to find information

User Group Slides Posted Soon



[
<http://www.chiamass.gov/ma-apcd-and-case-mix-user-workgroup-information/>]

- Based on feedback, grouped by topic and not date of meeting
- Three categories:
 - ✓ Application Questions (“When do fees need to be paid?”)
 - ✓ Questions from Users – one PDF containing multiple questions (mostly short questions/answers with 1 or 2 slides each)
 - These two sections will be tagged with keywords. The list of keywords will be on the website and those keywords will be footnoted to each slide so people can Ctrl-F in the PDF
 - ✓ Tutorials – PDFs for each tutorial – hyperlink on the website will say what each tutorial is (Example: “How to Count Patients Admitted from the Emergency Dept. in the HDD file”)

Case Mix Limited Dataset (LDS)



- Goal: Protect patient privacy
 - Case Mix predates HIPAA
- Starting with FY2015 available in June 2016
 - Applies to non-government users only; government users may request additional elements
 - Revised application forms will be available in early May
- Changes are not retroactive to prior years of data
- DUAs and Data Management Plans are still required
- No changes in fees

CHIA Methodology



- Determined what must be excluded, including HIPAA-defined direct identifiers
- Investigated elements that potentially should be excluded due to patient privacy concerns (example: free text fields)
- Exclude certain quasi-identifiers, which make individuals unique in the population and thus could possibly be used for indirect re-identification
- Ended up with a “Core” LDS available to all applicants and offer “buy-up” options for date granularity, geographic granularity, and physician ID#

Case Mix LDS Options



	LDS – 1	LDS – 2	LDS – 3	LDS – 4	LDS – 5
Age	HCUP Age groupings				
Date	YYYY	YYYY	YYYY	YYYYMM	YYYYMMDD
Zip code MA Only	3 digit	3 digit	5 digit	5 digit	5 digit
City Municipality MA Only	No	Yes	No	Yes	Yes
State	MA, RI, CT, NY, VT, NH, ME. Other US = XX, Anything else Null				
Country	US & Non-US				
Sex	Male = M, Female = F, Unknown = U, anything else set to Null				
Physician #	No	Hashed	Borim		

Applicants must justify their need for specific “buy-ups”: Date granularity, 3- or 5-digit Zip Code, Geographic granularity, and Physician ID#

HCUP Age Groupings

Calculated based on DOB and Discharge Date



0 – 4	45 – 49
5 – 9	50 – 54
10 – 14	55 – 59
15 – 19	60 – 64
20 – 24	65 – 69
25 – 29	70 – 74
30 – 34	75 – 79
35 – 39	80 – 84
40 – 44	85 – 89
	90+

More Information in May



We will be presenting more information on Case Mix LDS rollout at the May Case Mix User Workgroup, including:

- Application Preview
- Documentation Preview
- Information for long-time/repeat requestors – how best to transition to the new format – no more “Levels”

NAHDO: Call for Abstracts



- For the 31st Annual Meeting in October: NAHDO is soliciting abstracts that demonstrate best practices in health care data management & dissemination protocols; data analysis & applications; new technologies to drive system transformation.
- Submissions accepted through Friday April 22nd.
- For more information view the call for abstracts:
[http://nahdo.us2.list-manage1.com/track/click?
u=53d6a039fa2e0e4a0cd40c228&id=a39e1f024f&e=80567850b
7](http://nahdo.us2.list-manage1.com/track/click?u=53d6a039fa2e0e4a0cd40c228&id=a39e1f024f&e=80567850b7)
- CHIA is a member of NAHDO and would welcome the opportunity to co-present with our users.

Application Reminders



- We need CVs of the PI(s) and at least the Lead Programmer/Analysts
- Please make sure you are **authorized** to sign the Data Use Agreement on behalf of your organization.
 - If you're not sure if you're an authorized signatory, there's a good chance you aren't.
 - The *organization* housing the data is the entity being bound in the DUA, not the researcher.
 - Many institutions (especially universities) have a Research Coordinator that is an authorized signatory and can sign agreements binding the organization.



QUESTIONS?



Using the Case Mix Hospital Inpatient Discharge Database to Report on All-Payer Readmissions in Massachusetts

Nick Huntington and Zi Zhang

Case Mix User Workgroup

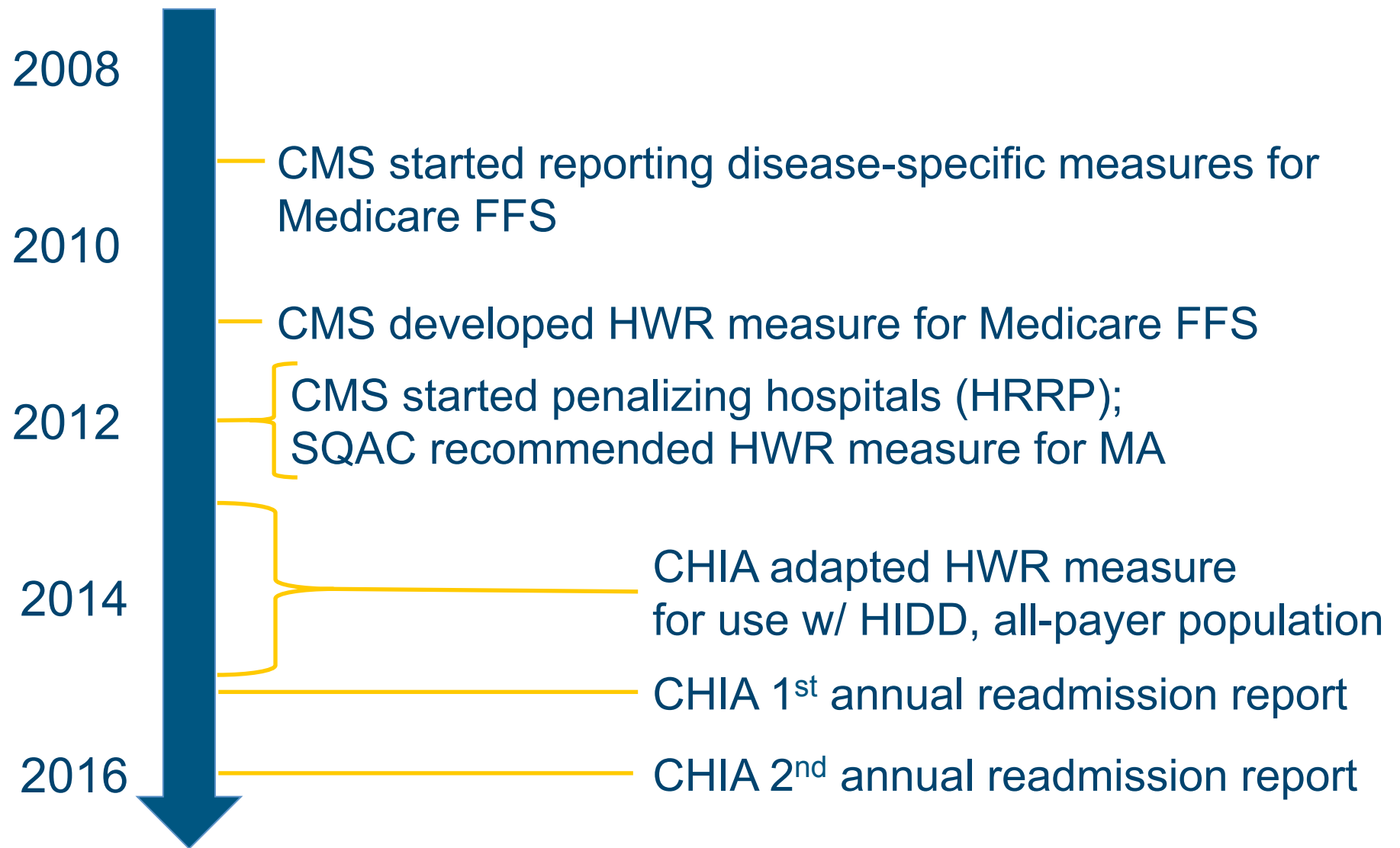
March 22, 2016

Today



1. Readmissions background
2. Measure
3. Using Case Mix HIDD data
4. Findings

All-Payer Readmissions Background



CHIA Readmissions Products



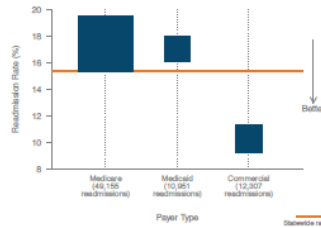
Annual Statewide Reports

CENTER FOR HEALTH INFORMATION AND ANALYSIS

HOSPITAL-WIDE ADULT ALL-PAYER

4 All-Payer Readmissions by Payer Type (SFY 2014)

Patients with commercial payers had lower readmission rates than those with public payers.



Note: The size of the squares in the figure is proportional to the number of readmissions. Analyses include discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care.
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2013 – June 2014.

12 All-Payer Readmission Rates by Payer Type (SFY 2014)

Payer Type	Number of Discharges	Percent of Discharges	Number of Readmissions	Percent of Readmissions	Readmission Rate
Commercial	118,549	24.7%	12,307	16.6%	10.3%
Medicare	383,122	56.5%	49,156	65.5%	17.4%
Medicaid	84,554	13.3%	10,881	14.8%	17.0%
Total	483,802	100.0%	74,144	100.0%	15.3%

Note: Figures in the table may not sum to the Total values because they exclude Self-Pay and Other payer categories, which together account for 6% of discharges, as well as a small number of discharges missing payer type information. Analyses include discharges for adults with any payer, excluding discharges for obstetric or primary psychiatric care.
Data source: Massachusetts Hospital Inpatient Discharge Database, July 2013 – June 2014.

3. Readmissions by Payer Type

Readmissions funded by public payers comprised 81% of all readmissions in the state in SFY 2014. Medicare and Medicaid readmission rates were higher and similar (17.4% and 17.0%, respectively), while the readmission rate for discharges covered

by private plans was lower (10.3%). As Medicare, Medicaid, and commercially insured patient populations differ widely on demographic, socioeconomic, and clinical characteristics, these differences in readmission rates by payer type likely reflect multiple factors.

www.chia.mass.gov

center for health information and analysis

Massachusetts Acute Care Hospital Readmissions Profile: July, 2012 to June, 2013 Athol Memorial Hospital September 2015

In June, 2015 the Center for Health Information and Analysis (CHIA) released Hospital-Wide Adult All-Payer Readmissions in Massachusetts: 2011-2013, its first annual report on hospital-wide all-cause readmissions in the Commonwealth. That report applied the Hospital-Wide All-Cause Unplanned 30-day Readmission Measure developed by the Centers for Medicare and Medicaid Services (CMS) and the Yale Center for Outcomes Research to the adult all-payer population in the Commonwealth. It included detailed readmission statistics for the state as a whole and hospital-specific readmission rates for 62 acute-care hospitals. This readmission profile series provides more in-depth information on each hospital.

It is important to note that with the exception of the table on this page and the first figure on the next, the readmission rates reported here are not risk-adjusted. The patterns and trends reported in this profile reflect this hospital's patient case-mix, practice patterns, and any licensure for providing specialized inpatient services.

This report contains the following information profiling readmissions at Athol Memorial. Except where indicated below, all displays cover the period from July 2012 to June 2013.

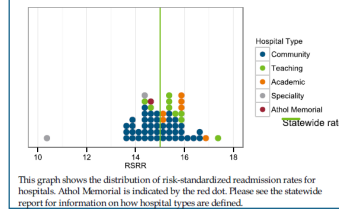
This profile presented Athol Memorial and to other Commonwealth hospitals.

It is important to note that with the exception of the table on this page and the first figure on the next, the readmission rates reported here are not risk-adjusted.

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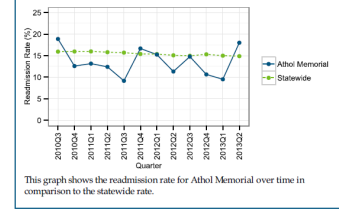
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All-Payer Risk-Standardized Readmission Rates by Hospital Type, July 2012 to June 2013



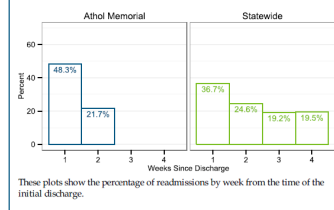
This graph shows the distribution of risk-standardized readmission rates for hospitals. Athol Memorial is indicated by the red dot. Please see the statewide report for information on how hospital types are defined.

All-Payer Readmission Rate by Quarter, July 2010 to June 2013



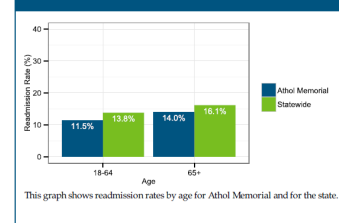
This graph shows the readmission rate for Athol Memorial over time in comparison to the statewide rate.

Length of Time Between Discharge and Readmission, July 2012 to June 2013



These plots show the percentage of readmissions by week from the time of the initial discharge.

All-Payer Readmission Rates by Age, July 2012 to June 2013



This graph shows readmission rates by age for Athol Memorial and for the state.

Hospital Readmissions Profiles

Yale/CMS Readmissions Measure



- Measure's official title: *“Hospital-Wide All-Cause Unplanned Readmissions Measure”*
 - Hospital-wide
 - All-cause
 - 30-day
 - Unplanned
 - Adult (18+)
- Two types of readmission rates:
 - Observed (“raw”) readmission rates
 - Risk-standardized readmission rates (RSRRs)

CHIA's Adaptations to the Measure



Original Yale/CMS Measure	CHIA's Adapted Version
Medicare FFS population, 65+	All-payer population, 18+
Based on Medicare claims & enrollment data	Based on Case Mix HIDD data

Calculating Observed (“raw”) Readmission Rates



Step 3
Divide one by the other and multiply by 100



Step 2
Count re-admissions



$$\text{Observed Readmission Rate} = \frac{\text{Number of Readmissions}}{\text{Number of Eligible (“Index”) Admissions}} \times 100$$

Step 1
Count “index” admissions



Calculating Risk-Standardized Readmission Rates (RSRRs)

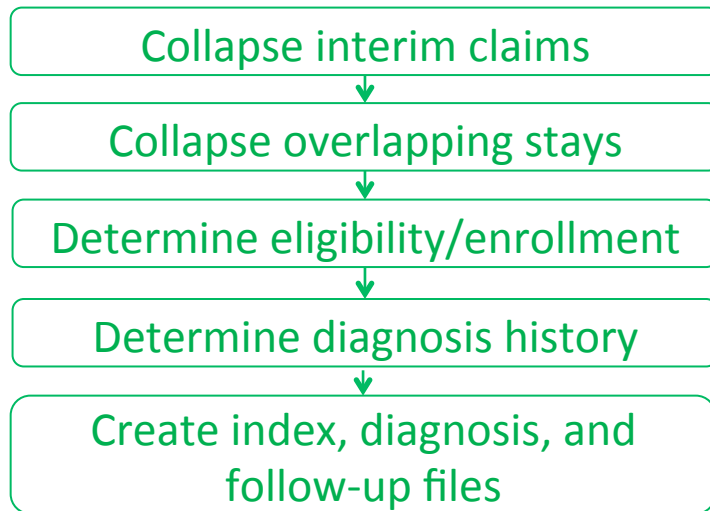


- RSRRs calculated at the hospital level
- Derived from statistical model
- Control for 3 background factors:
 - Age
 - Comorbidities
 - Discharge condition
- Compares two quantities for each hospital:
 1. “Predicted” # of readmissions, given 3 background factors plus hospital
 2. “Expected” # of readmissions, given 3 background factors *without hospital*

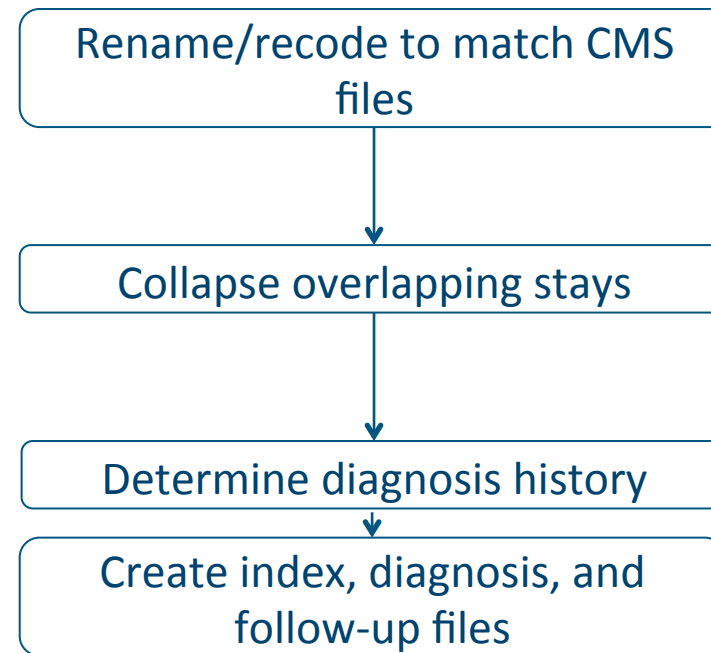
Adapting Data Processing to the HIDD Data



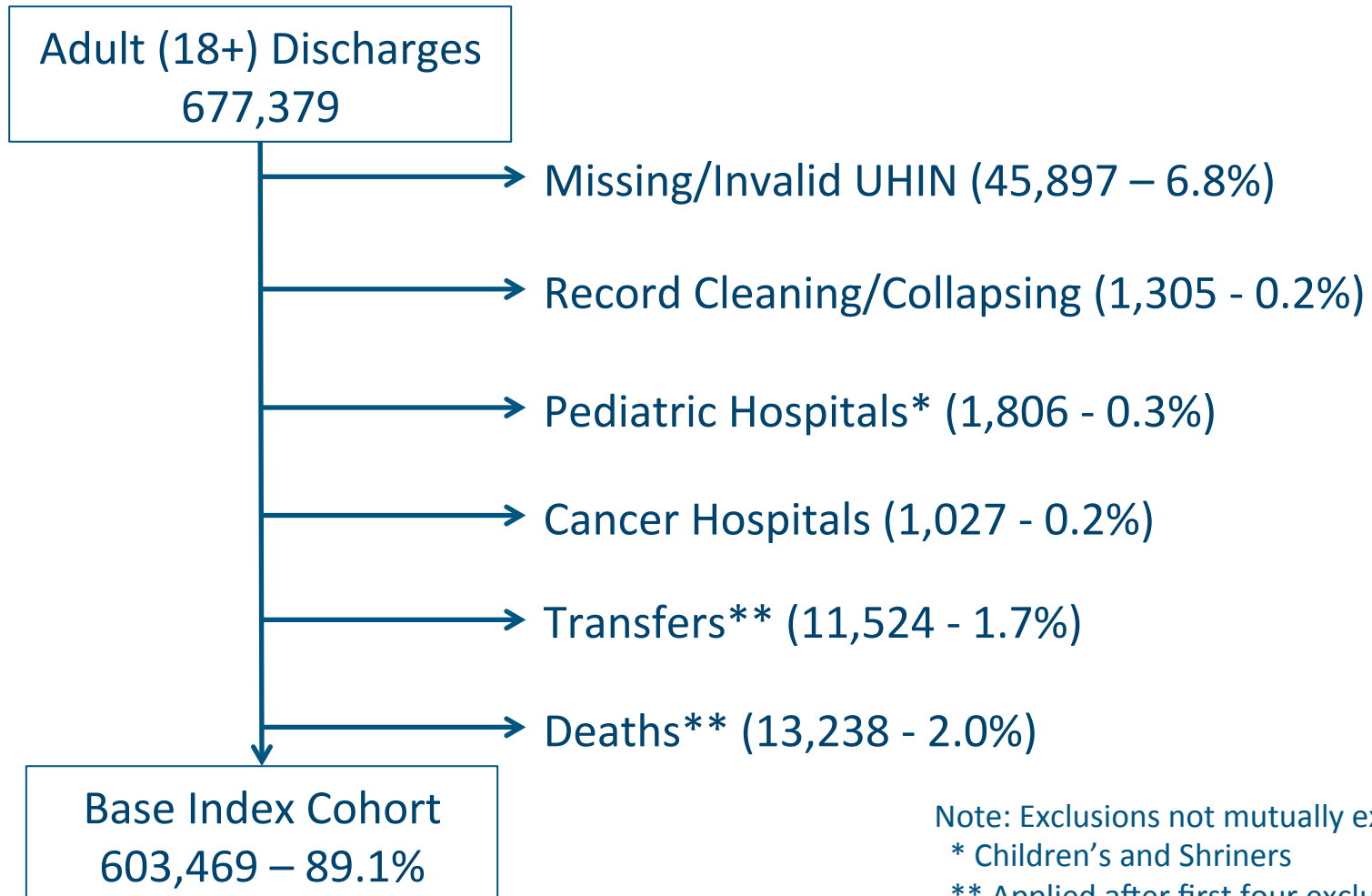
Original CMS Processing



CHIA Processing

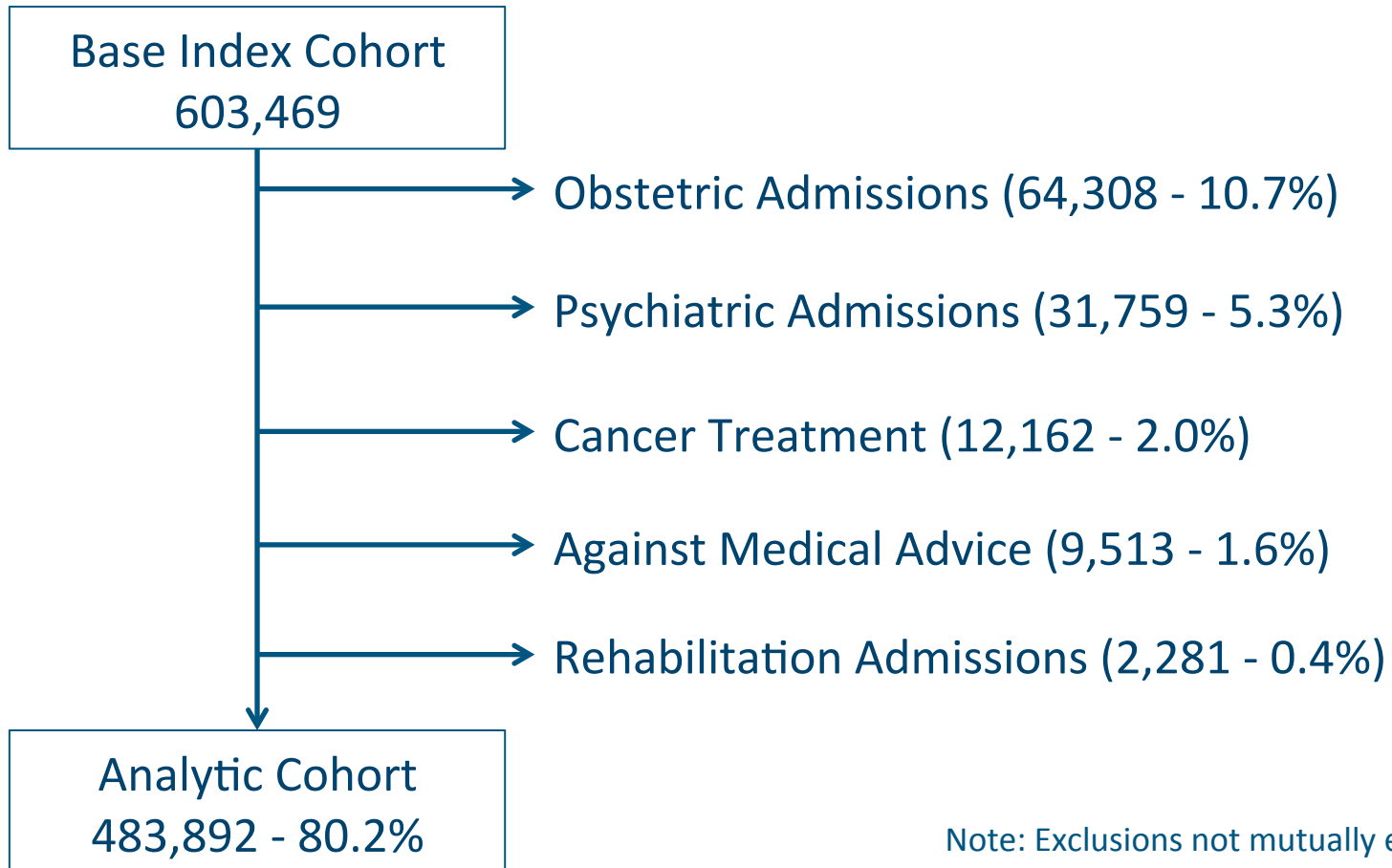


Forming Analytic Cohort with HIDD Data (SFY14)

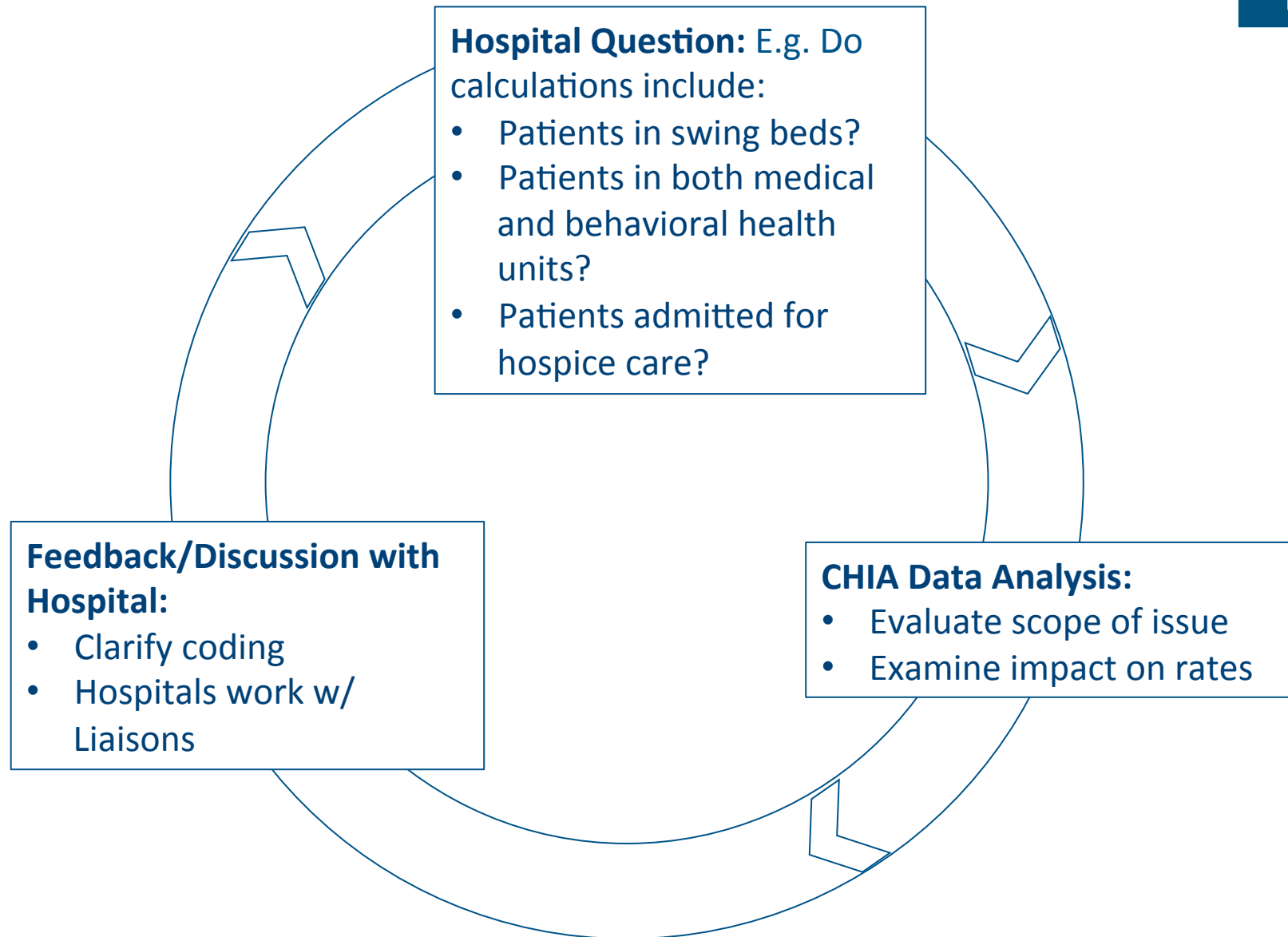


Note: Exclusions not mutually exclusive
* Children’s and Shriners
** Applied after first four exclusions

Forming Analytic Cohort with HIDD Data (SFY14)



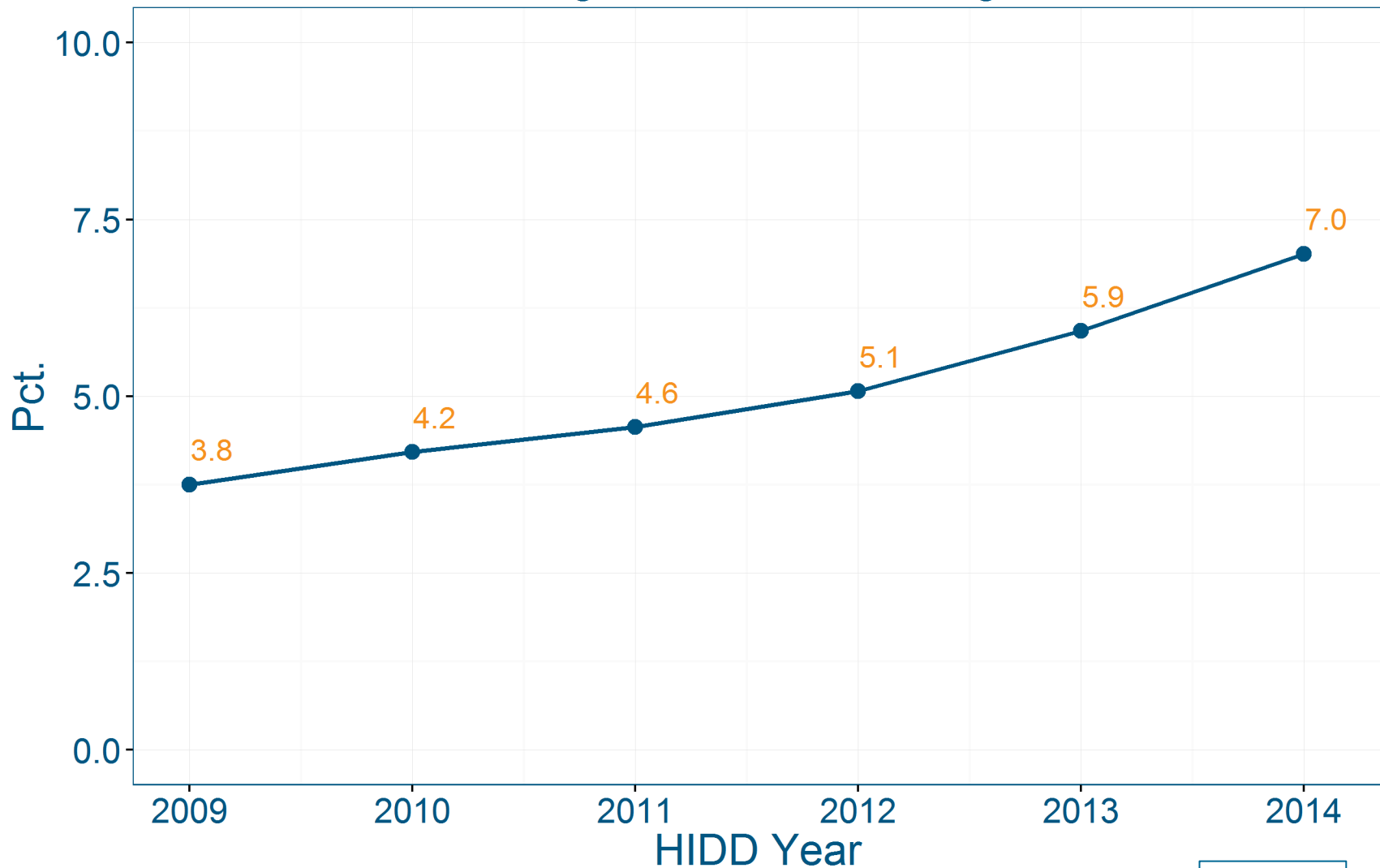
Potential for Hospital Feedback



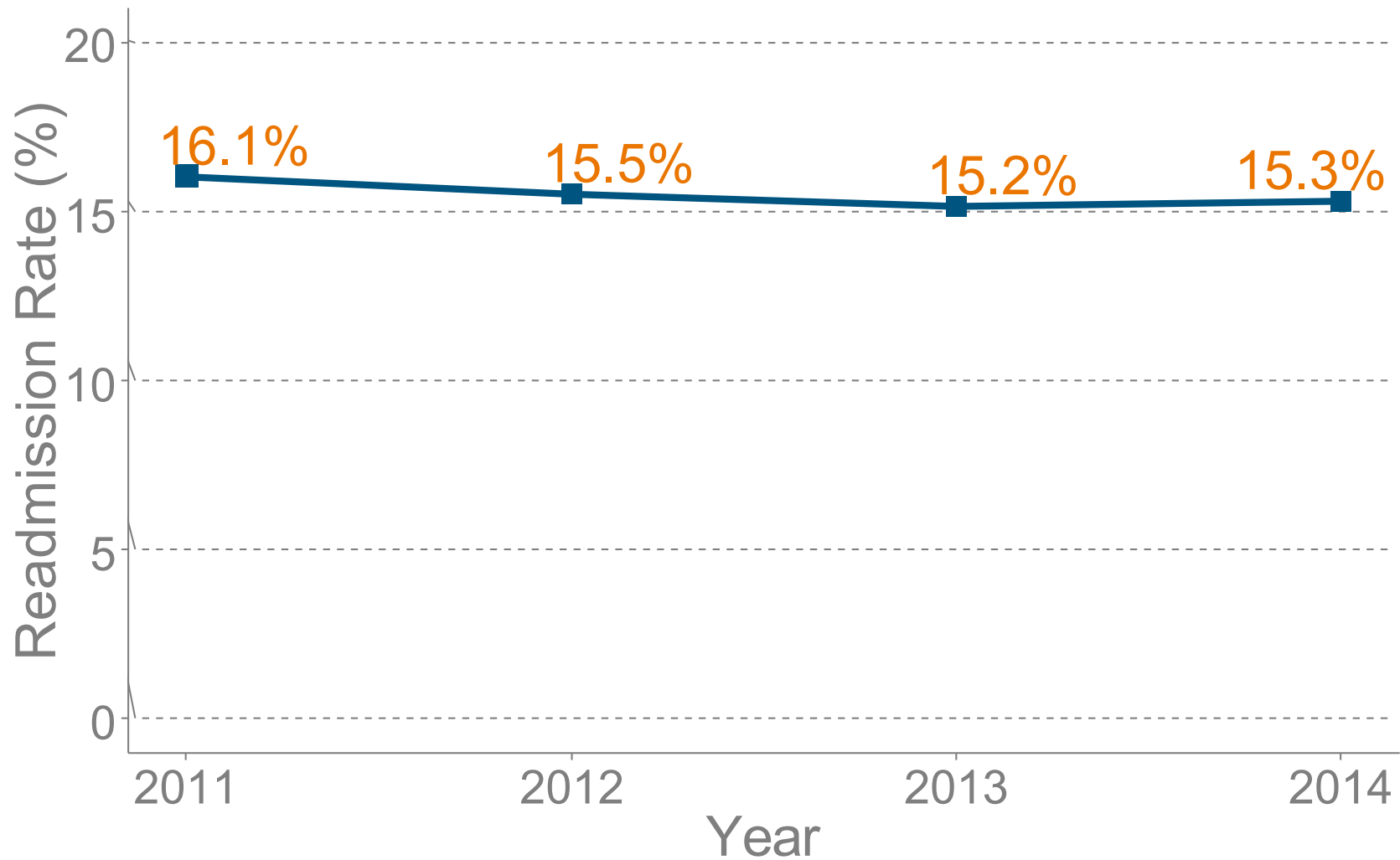
Potential Data Issue: Missing UHIN



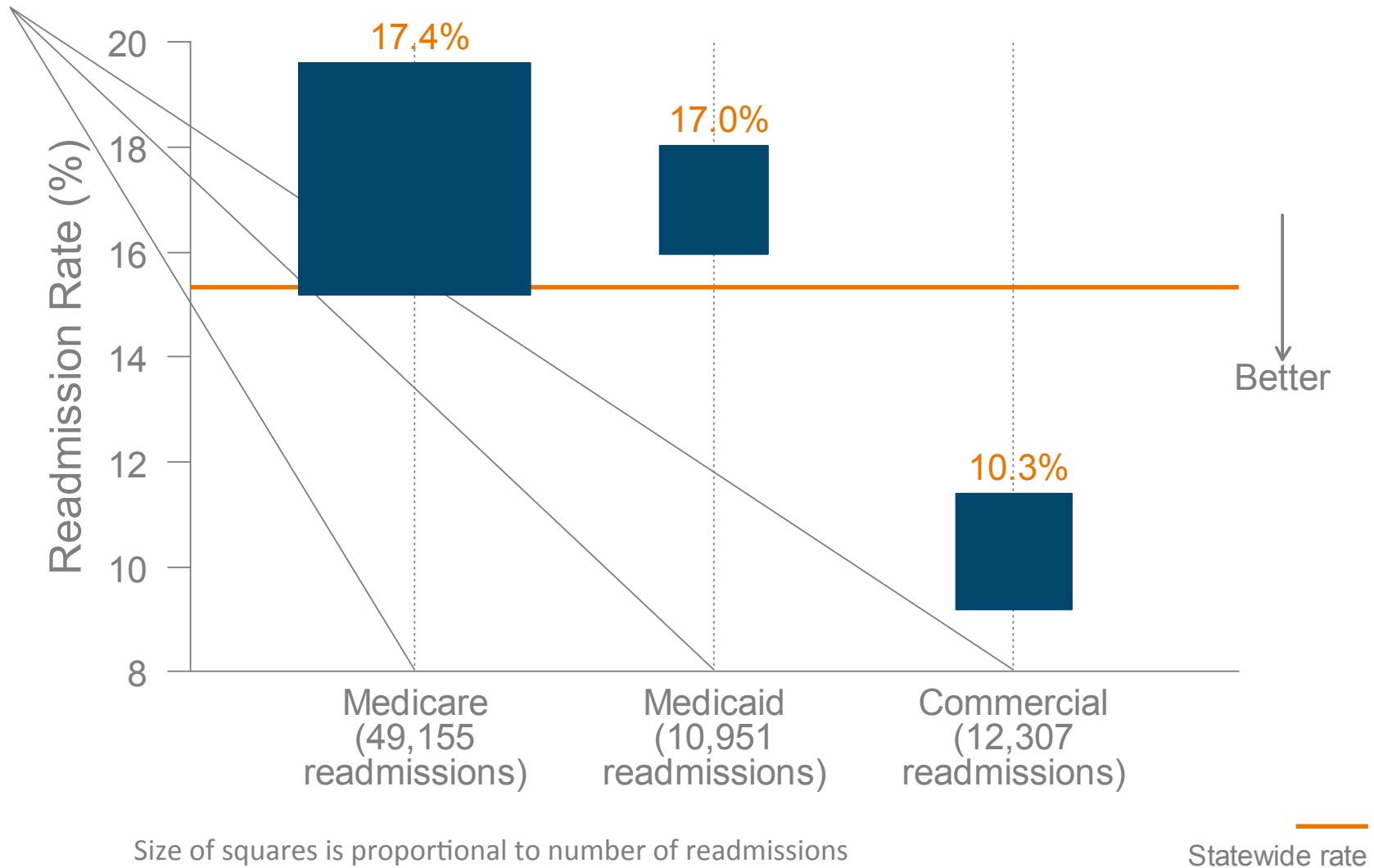
Percentage of Records Missing UHIN



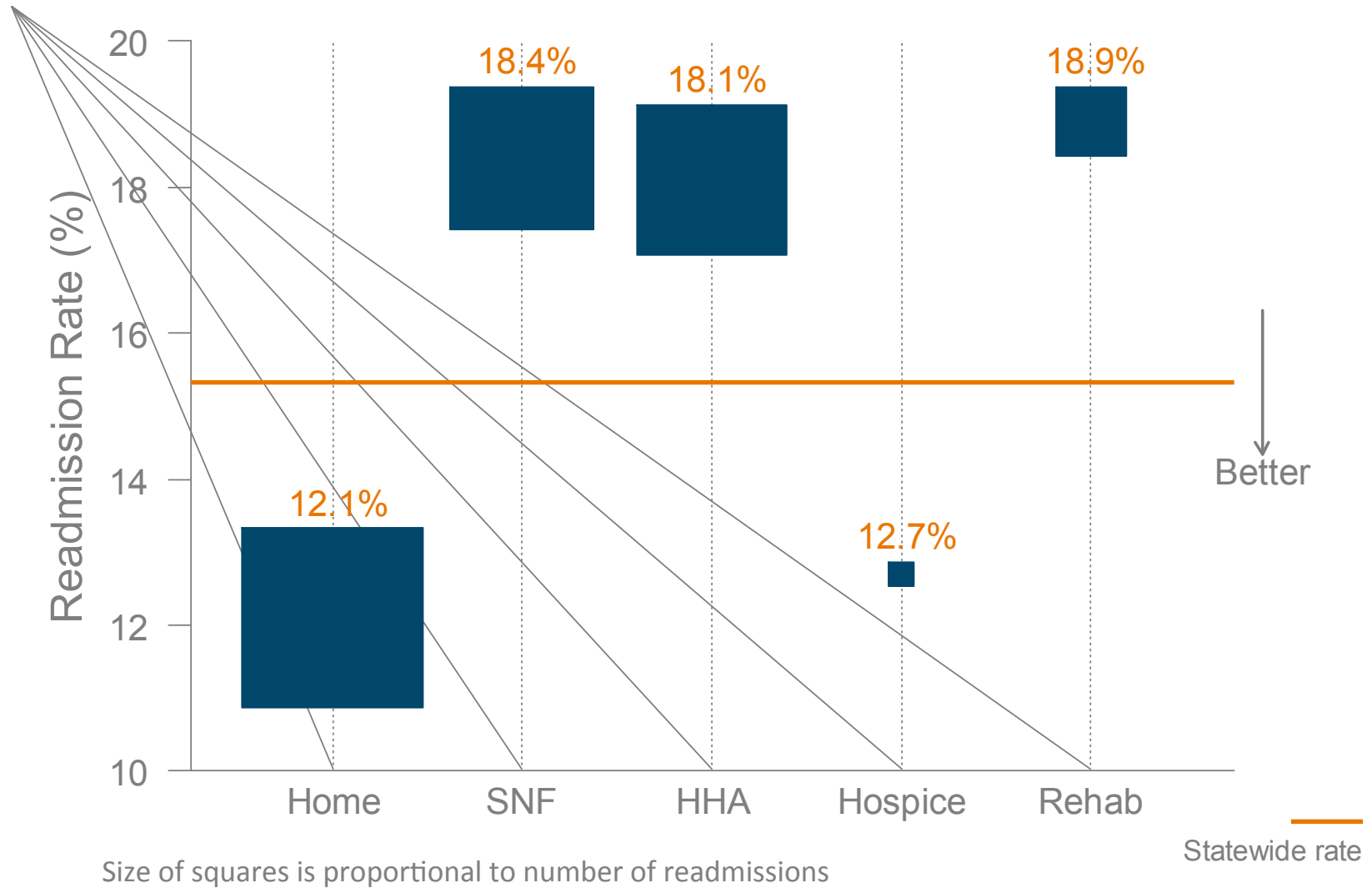
Trend in All-Payer Readmission Rate



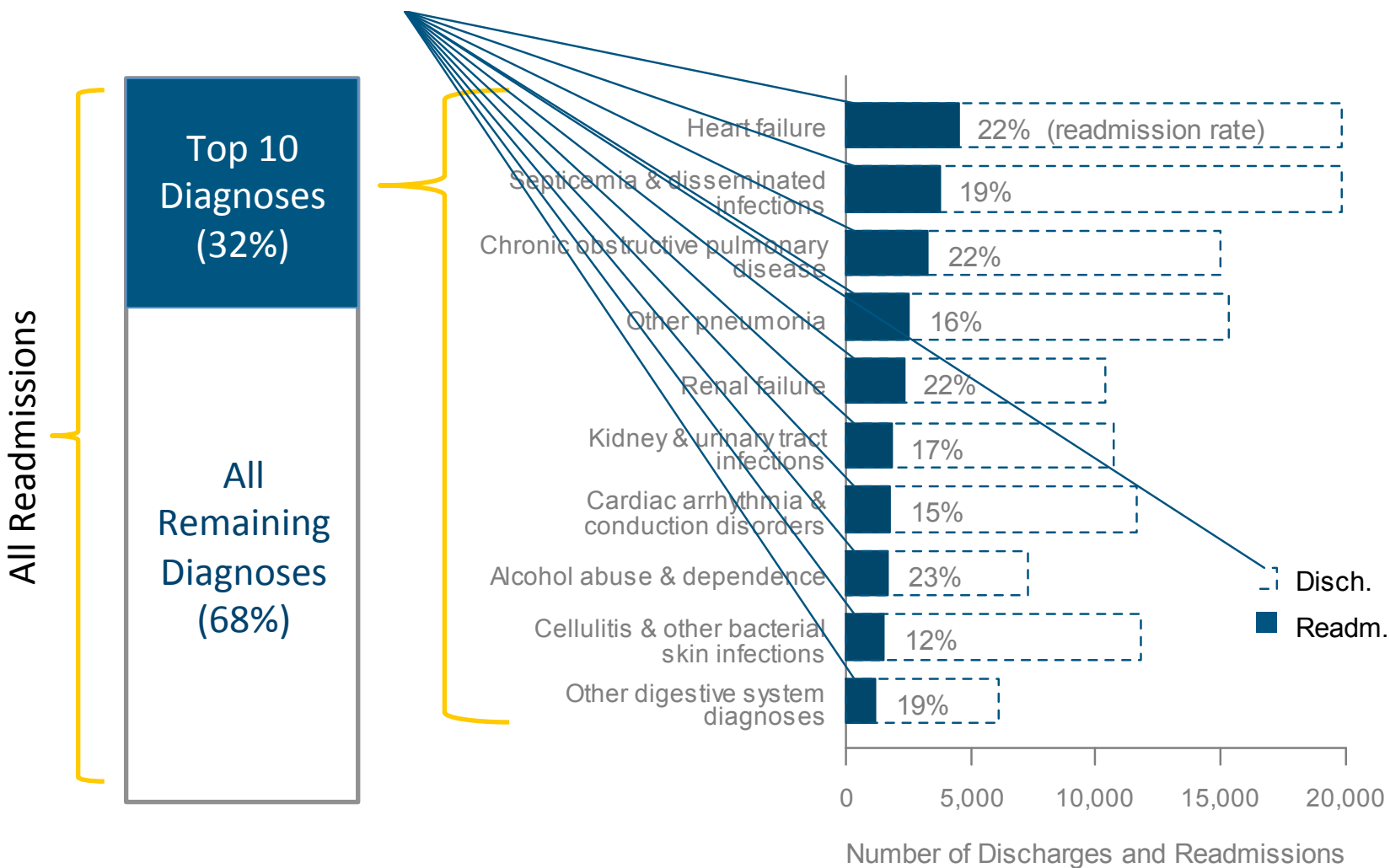
All-Payer Readmissions by Payer Type



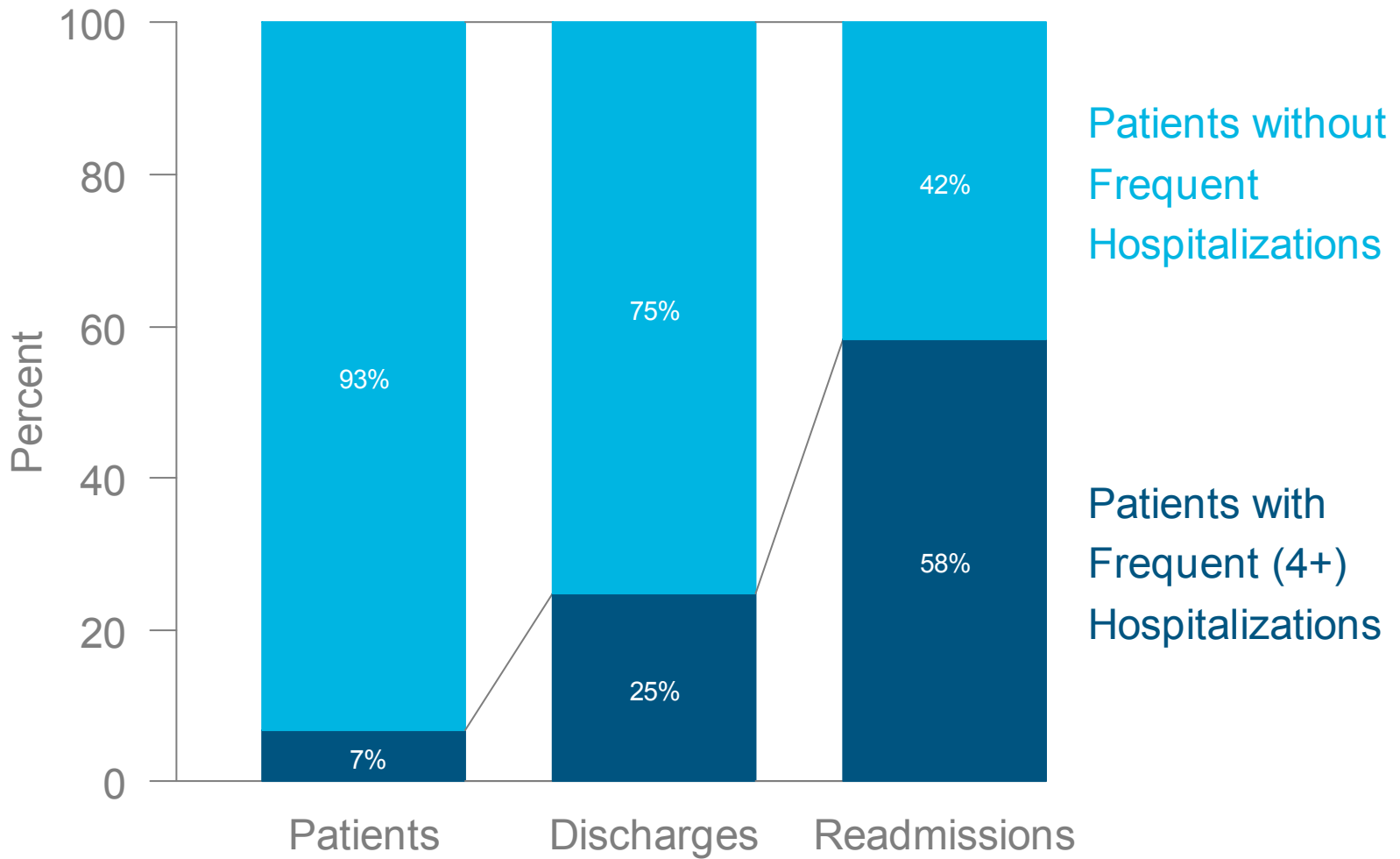
Readmissions by Discharge Setting



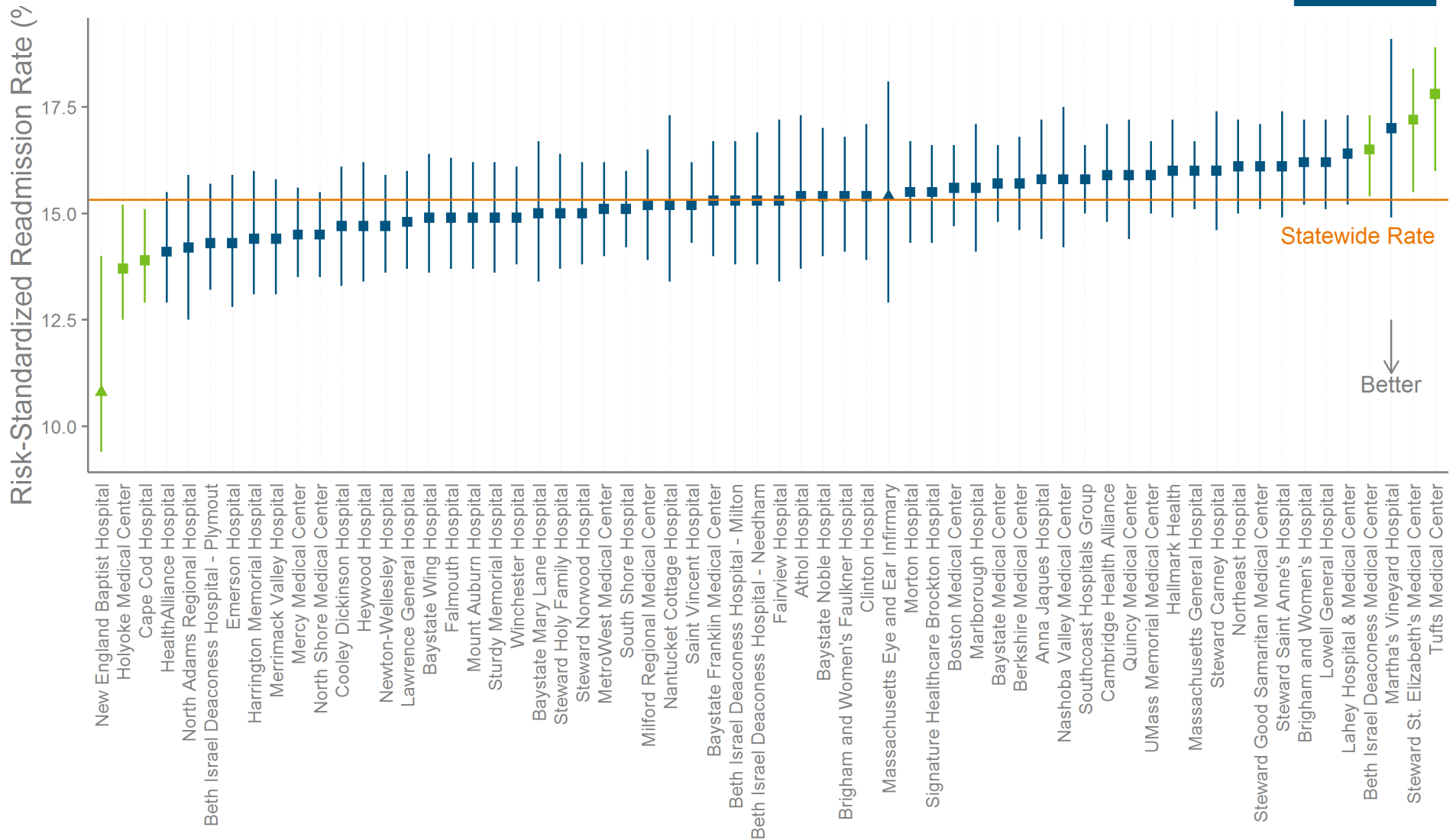
Top Readmissions Diagnoses



Frequent Users



Risk-Standardized Rates (RSRRs) by Hospital





Questions?

Contact:

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Center for Health Information and Analysis

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zi.zhang@state.ma.us

Questions?



- Questions related to APCD :
(apcd.data@state.ma.us)
- Questions related to Case Mix:
(casemix.data@state.ma.us)

REMINDER: Please include your **IRBNet ID#**, if you currently have a project using CHIA data

Call for Topics and Presenters



If there is a **TOPIC** that you would like to see discussed at an MA APCD or Case Mix workgroup, contact Adam Tapply [adam.tapply@state.ma.us]

If you are interested in **PRESENTING** at an MA APCD or Case Mix workgroup, contact Adam Tapply [adam.tapply@state.ma.us]

You can present remotely from your own office, or in-person at CHIA.

User Poll



In what format would you prefer to receive Case Mix files?

- Access files?
- SAS files?
- XML files?
- Delimited text files?
- No preference

GoToWebinar Poll should pop up shortly