CASE MIX USER WORKGROUP

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August 27, 2019

Agenda

➢ FY18 Case Mix Release Updates
➢ Case Mix Release Roadmap
➢ Website Updates
➢ Answered User Questions
➢ Q&A

CHIA.

Case Mix FY18 Release

CURRENT RELEASE TIMEFRAMES FOR EACH FILE:

- Inpatient (HIDD)

  Early September

- Emergency Department (ED)

  Early-Mid September

- Outpatient Observation (OOD)

  September

CHIA.

Case Mix FY18 Release

REPEAT APPLICANTS:

- For those applicants with previously approved projects who indicated they would like to receive data annually, we are currently accepting Certificates of Continued Need and Compliance (Exhibit B of your DUA)
- After receiving this, we will send you an invoice for the FY18 data and release data to you once payment is received and the data is ready.
- If you are making any changes to your project, you must go through the amendment process first.

Case Mix FY18 Release

NEW APPLICANTS / NEW PROJECTS:
- We will continue to accept new applications on a rolling basis.
- If you are requesting FY18 data, just click the box for "Subscription" on p. 3 of the application form:

1. Please indicate below whether this is a one-time request, or if the described Project will require a subscription.

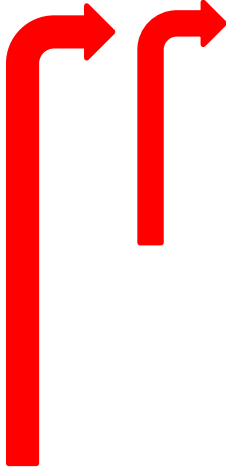☐ One-Time Request **OR** ☐ Subscription

2. Specify below the dataset(s) and year(s) of data requested for this Project, and your justification for requesting *each* dataset. Data prior to 2004 is not available.

☐ **Hospital Inpatient Discharge Data**
☐2004 ☐2005 ☐2006 ☐2007 ☐2008 ☐2009 ☐2010 ☐2011 ☐2012 ☐2013 ☐2014 ☐2015 ☐ 2016 ☐ 2017
Describe how your research objectives require Inpatient Discharge data:

Case Mix Release "Roadmap"

1) Data Submission and Compliance

2) Data Intake & Internal Processing

3) Quality / Release Assurance

4) Data Delivery

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COMING SOON: Live Case Mix Release Updates

- Release updates on current FY Case Mix data release will soon be on the CHIA website.
- Aiming to provide updates weekly or bi-weekly.
- What kinds of information would Case Mix users like to see?
  - ✓ Current estimated release date?
  - ✓ Where in the "roadmap" is CHIA currently?
  - ✓ Other information?
- Very possible we will do this for upcoming APCD releases as well.

MA APCD Release 8.0

- Available Winter 2019/2020

Please hold off on submitting Release 8.0 requests for now

- Will encompasses data from January 2014 – December 2018 with six months of claim runout (includes paid claims through 6/30/19)
- Will be linkable to Release 7.0 via crosswalk
- Additional information on highlights and enhancements will be presented in future APCD User Workgroups.

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USER QUESTIONS

Question: We are applying for Case Mix data and propose to use the 5-digit ZIP code to link to census data to obtain area measures for the social determinants of health. ICD-10-CM now has new coding descriptors for the social determinants of health. What are those codes and to what extent are they being used in Case Mix?

Answer: ICD-10-CM has over 80 diagnosis codes in the range Z55*, Z56*, Z59*, Z60*, Z62*, and Z63* that describe different components of the social determinants of health related to *education*, *economic stability*, *neighborhood & environment*, *social and community context*, and *health care*. *A few examples of those codes are below:*

Examples of ICD-10-CM Descriptors for the Social Determinants of Health

DXCode	Description	DXCode	Description
Z55	Problems related to education and literacy	Z62	Problems related to upbringing
Z550	Illiteracy and low-level literacy	Z620	Inadequate parental supervision and control
Z551	Schooling unavailable and unattainable	Z621	Parental overprotection
Z552	Failed school examinations	Z622	Upbringing away from parents
Z553	Underachievement in school	Z6221	Child in welfare custody
Z554	Educational maladjustment and discord with teachers and classmates	Z6222	Institutional upbringing
Z56	Problems related to employment and unemployment	Z6229	Other upbringing away from parents
Z561	Change of job	Z623	Hostility towards and scapegoating of child
Z562	Threat of job loss	Z626	Inappropriate (excessive) parental pressure
Z563	Stressful work schedule	Z6282	Parent-child conflict
Z564	Discord with boss and workmates	Z62820	Parent-biological child conflict
Z565	Uncongenial work environment	Z62821	Parent-adopted child conflict
Z5681	Sexual harassment on the job	Z62822	Parent-foster child conflict
Z59	Problems related to housing and economic circumstances	Z62890	Parent-child estrangement NEC
Z590	Homelessness	Z62891	Sibling rivalry
Z591	Inadequate housing	Z630	Problems in relationship with spouse or partner
Z593	Problems related to living in residential institution	Z631	Problems in relationship with in-laws
Z594	Lack of adequate food and safe drinking water	Z633	Absence of family member
Z595	Extreme poverty	Z6331	Absence of family member due to military deployment
Z596	Low income	Z6332	Other absence of family member
Z597	Insufficient social insurance and welfare support	Z634	Disappearance and death of family member
Z60	Problems related to social environment	Z635	Disruption of family by separation and divorce
Z602	Problems related to living alone	Z636	Dependent relative needing care at home
Z603	Acculturation difficulty	Z637	Other stressful life events affecting family and household
Z604	Social exclusion and rejection	Z6371	Stress on family due to return of family member from military deployment
Z605	Target of (perceived) adverse discrimination and persecution	Z6372	Alcoholism and drug addiction in family

FY2016-FY2017 Top Ranking Social Determinants of Health (SODH) Based on ICD-10-CM Codes in Hospital Inpatient Discharge Data (HIDD)

Answer *(continued): Seventy-two of 75 hospitals that submit HIDD use ICD-10-CM SODH coding. For all discharges,* **"Homelessness"** ● *(Z590) ranks as the top SODH code (see Table 1 below). For patients who expired,* **"Problems related to living alone"** *ranks as the top (see Table 2). For children < 18 years old (see Tables 3 and 4) , a* **"Personal history of physical and sexual abuse in childhood"** ●● *(Z62810) ranked top. For discharges with abuse coding, hospitals are also use additional ICD-10-CM codes in the range of T760*, T761*, T762*, T763*, T765* and T766* to provide more specificity on nature of maltreatment, physical abuse, sexual exploitation, psychological abuse, and neglect or abandonment. These codes also differentiate whether the episode of care was related to initial or subsequent abuse or sequela from the abuse.*

Ranking of Top Ten ICD-10-CM SODH Codes for All Discharges, Patients who Expire, and Children

DXCode	Table 1. Top 10 SODH Codes for All Discharges
Z590	Homelessness ●
Z560	Unemployment, unspecified
Z602	Problems related to living alone
Z62810	Personal history of physical and sexual abuse in childhood ●●
Z638	Other specified problems related to primary support group
Z634	Disappearance and death of family member
Z630	Problems in relationship with spouse or partner
Z639	Problem related to primary support group, unspecified
Z599	Problem related to housing and economic circumstances, unspecified
Z635	Disruption of family by separation and divorce

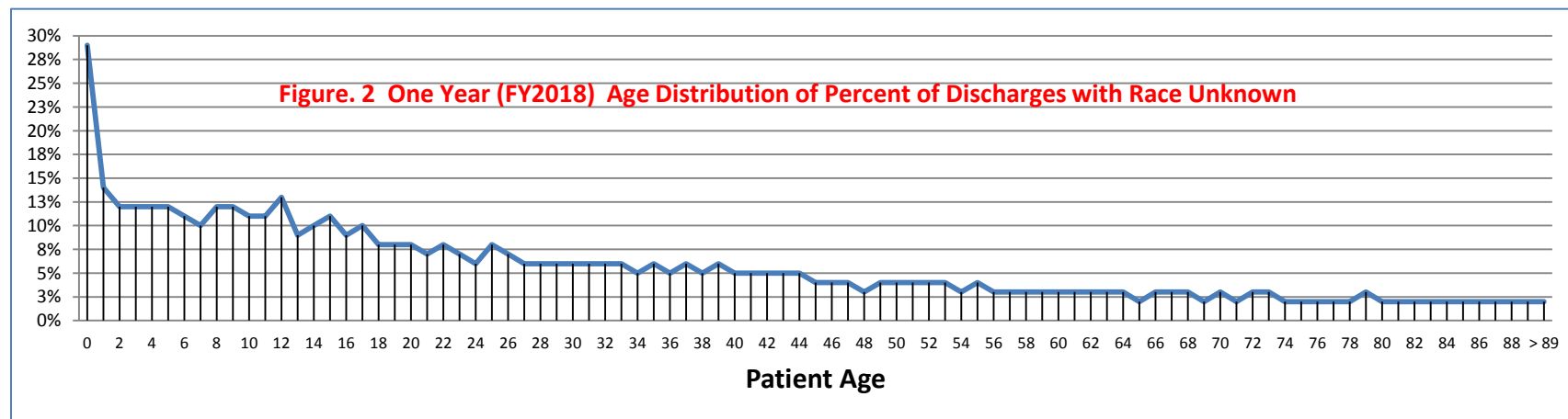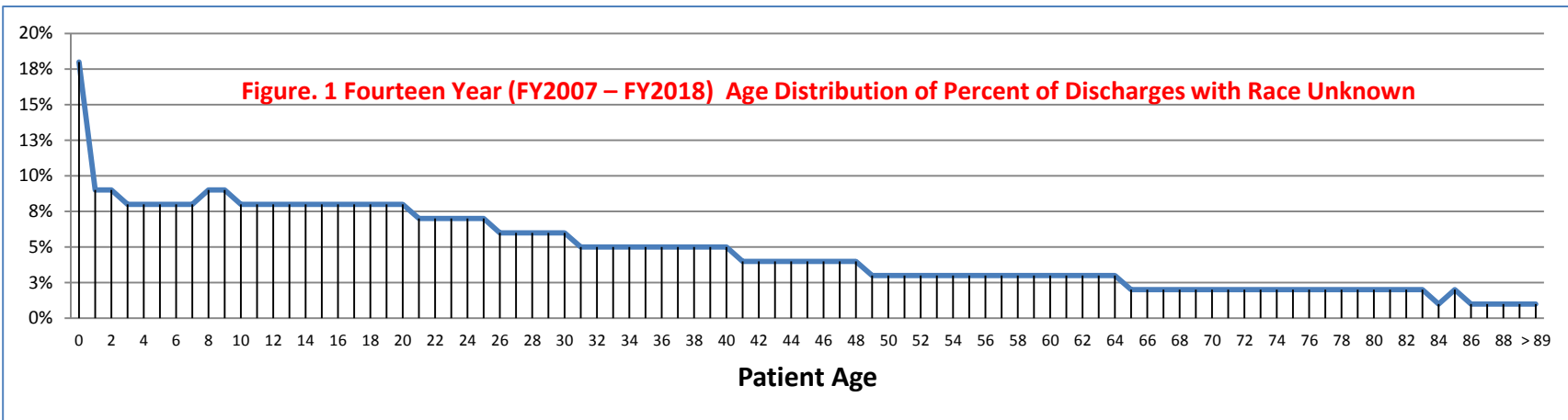| DXCode	Table 2. Top 10 SODH Codes for Patients who Expired
Z602	Problems related to living alone
Z590	Homelessness ●
Z560	Unemployment, unspecified
Z638	Other specified problems related to primary support group
Z635	Disruption of family by separation and divorce
Z634	Disappearance and death of family member
Z62810	Personal history of physical and sexual abuse in childhood ●●
Z599	Problem related to housing and economic circumstances, unspecified
Z593	Problems related to living in residential institution
Z639	Problem related to primary support group, unspecified

DXCode	Table 3. Top 10 SODH Codes for Females < 18 Years Old
Z62810	Personal history of physical and sexual abuse in childhood ●●
Z639	Problem related to primary support group, unspecified
Z638	Other specified problems related to primary support group
Z6221	Child in welfare custody
Z590	Homelessness ●
Z62820	Parent-biological child conflict
Z558	Other problems related to education and literacy
Z62812	Personal history of neglect in childhood
Z6379	Other stressful life events affecting family and household
Z62811	Personal history of psychological abuse in childhood

DXCode	Table 4. Top 10 SODH Codes for Males < 18 Years Old
Z62810	Personal history of physical and sexual abuse in childhood ●●
Z590	Homelessness ●
Z639	Problem related to primary support group, unspecified
Z6221	Child in welfare custody
Z638	Other specified problems related to primary support group
Z62812	Personal history of neglect in childhood
Z62820	Parent-biological child conflict
Z558	Other problems related to education and literacy
Z6379	Other stressful life events affecting family and household
Z62898	Other specified problems related to upbringing

Question: Over the years, the percent of inpatient discharges with unknown race has increased. We rely on race data to evaluate disproportionately higher burden of diseases and disparities. Do you have any recommendations for handling unknowns?

Handling Unknowns

Answer: In looking at the age distribution by percent of inpatient discharges with an unknown race over the past 14 years (FY2007 to FY2018), the highest proportion of unknowns tend to be in the pediatric population. ***See Figure 1 below.*** *This age distribution of unknowns skewed towards the pediatric population became even more pronounced in the most recent FY2018 inpatient data.* ***See Figure 2 below****. Rather than pooling the data, stratifying by age would allow you to see more clearly any distorting effect unknowns will have on disparity metrics.*
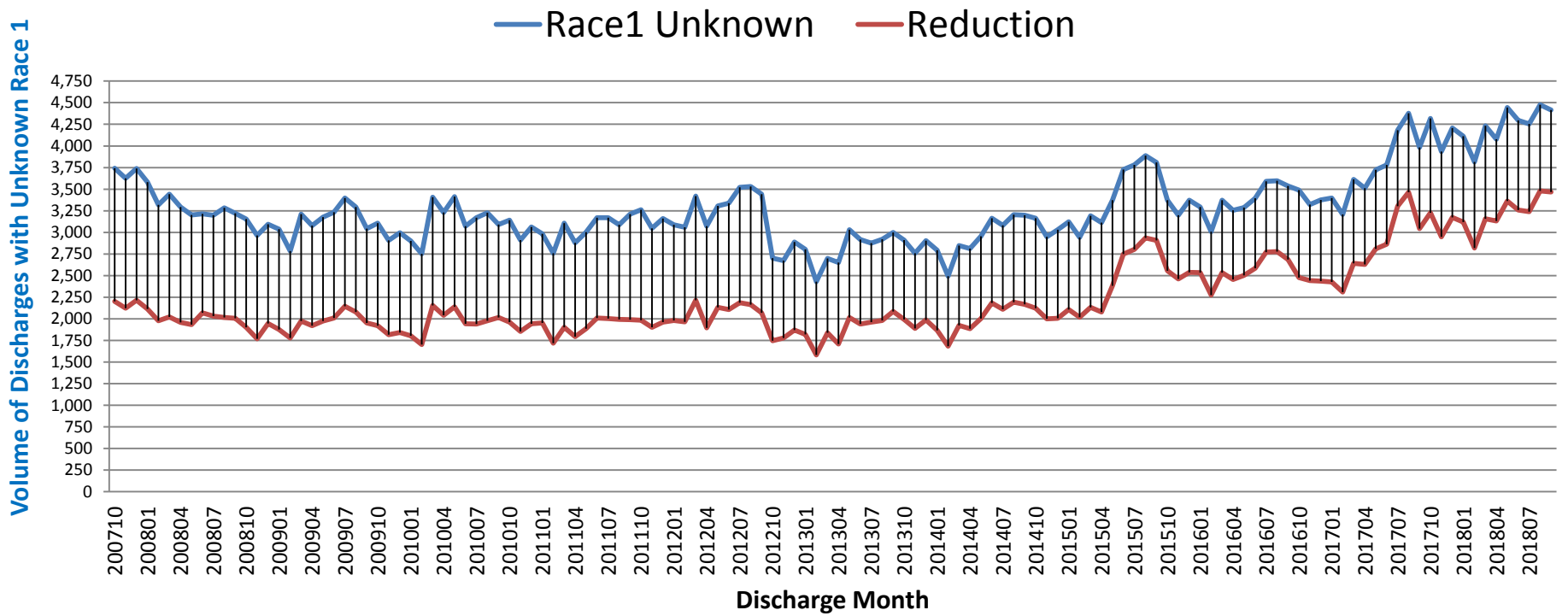

Figure. 1 Fourteen Year (FY2007 – FY2018) Age Distribution of Percent of Discharges with Race Unknown

Figure. 2 One Year (FY2018) Age Distribution of Percent of Discharges with Race Unknown

Answer (continued): *The encrypted UHIN can be used to determine within one year or across multiple years if a specific discharge record with unknown race had previously reported race as known during another episode of care.* ***In Figure 3 below,*** *14 years of Inpatient Hospital Discharge data from FY2007 to FY2018 was used to determine if patients with unknown race* <u>and</u> *a valid encrypted UHIN had previously reported race as known for another inpatient episode of care. And yes, they had. By linking any encrypted UHIN with an unknown race to encrypted UHINs with a known race, the successful linkage of the discharge to their race data in a previous inpatient record led to a monthly average 33% reduction in the number of discharges with race unknown. It is important to note that over a 14-year period 52% of unknowns do not have valid encrypted UHINs and that the greatest reduction in unknowns is achieved in the adult population.*

Figure 3. Reduction in Unknown Race1 Discharges by UHIN Linkage to Other Episodes of Care

Question: Our project involves a comparison of three states. Before applying to each individual state for their data, we need to know the difference between Massachusetts (MA) Hospital Inpatient Discharge data (HIDD) as released by CHIA and HIDD as released by the Agency for Healthcare Research and Quality (AHRQ) in their Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID).

Answer: It is important to first note that access to either HCUP data or CHIA data requires completion of the required application process for approved use. Some of the **key differences between HCUP SID and CHIA HIDD's limited data set** are as follows:

- *The HCUP SID central distributor releases MA data by __calendar year__ data available from CY1990 through CY2016 (January 1990 through December 2016). CHIA releases HIDD by __fiscal year__ available from FY2004 through FY2018 (October 2003 through September 2018).*
- *HCUP SID is only allowed to release MA data by 3-Digit ZIP Code, CHIA HIDD is available in 5-Digit ZIP Code or 3-Digit ZIP Code format.*
- *HCUP SID does not include patient town of residence, CHIA HIDD does include patient town of residence.*
- *HCUP SID does not include revenue codes or associated units of service, days of service and line item charges. CHIA HIDD does include revenue codes, units of service, days of service and line item charges.*
- *HCUP SID only includes the APR-DRG. CHIA's HIDD includes both the CMS-DRG and multiple versions of the APR-DRG.*
- *The HCUP SID reports age of infant's less than 1 year old in months (0 to 12 months), CHIA report's the age of such infants in weeks (0 to 52 weeks).*
- *HCUP SID includes a calculated field for median household income, CHIA HIDD does not.*

For additional information on AHRQ HCUP SID data see the following links:
- *List of States Participating in HCUP:* https://www.hcup-us.ahrq.gov/db/PartnerParticipation_CD.pdf
- *List of HCUP SID data elements:* https://www.hcup-us.ahrq.gov/db/state/siddist/siddistvarnote2016.jsp

Where can I find old User Workgroup Presentations?

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

MA APCD and Case Mix User Workgroup Information

These webinar workgroups bring together users of CHIA's APCD and Case Mix data with CHIA's in-house data experts to discuss analytical techniques, data issues, and data quality. These webinars are also used for making announcements regarding data releases, enhancements, and features. Each meeting features a segment where CHIA staff answer common questions from data users and field live questions from webinar participants.

Please register for one or both of these separate registration links. All meetings take place on Tuesday afternoons at 3:00 p.m.

Case Mix Workgroup Registration	MA APCD Workgroup Registration
NEXT MEETING	**NEXT MEETING**
Tuesday, February 26, 2019	Tuesday, March 26, 2019
Case Mix Workgroup Registration	MA APCD Workgroup Registration

Previous MA APCD / Case Mix Meeting Materials

Case Mix Tuesday, February 26, 2019

- Presentation (available shortly after the meeting)

MA APCD Tuesday, January 22, 2019

- Presentation (PDF) | PPT

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Questions?

- Questions related to MA 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.

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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 in 2019, contact Adam Tapply [adam.tapply@state.ma.us]

- If you are interested in **PRESENTING** at an MA APCD or Case Mix workgroup in 2019, contact Adam Tapply [adam.tapply@state.ma.us]

  You can present remotely, or in-person at CHIA.

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