MA Center for Health Information & Analysis

Case Mix User Workgroup

February 27, 2018

Agenda

- Announcements
  - Expected timeframes for FY17
  - Updates on MA APCD Release 6.0
- Summarized Data Reports
- Publications Using CHIA Data
- User Questions
- Guest Presentation: Urbano Franca, Boston Children's Hospital

  "Regionalization of Definitive Pediatric Hospital Care"
- Q&A

Case Mix FY17 Release Calendar

CURRENT RELEASE TIMEFRAMES FOR EACH FILE:

- Inpatient (HIDD)

  JUNE
- Emergency Department (ED)

  AUGUST
- Outpatient Observation (OOD)

  SEPTEMBER

MA APCD Release 6.0

- Release 6.0 is available NOW – started shipping data to applicants earlier this month
- Encompasses data from January 2012 – December 2016 with six months of claim runout
- Application form has been updated

Available here: http://www.chiamass.gov/application-documents

MA APCD Release 6.0 Highlights

New and improved Member Enterprise ID (MEID)

- Master Data Management (MDM) approach updated to work with hashed patient information
- Added Nickname processing for first names (Joe, Joseph)
- Added NYSIIS phonetic processing for last names (Smith, Smyth)
- Removed the Pharmacy Benefit Manager data from the MDM process to decrease the duplication of member data by upwards of 40%
- 4 additional carriers added to the claims versioning

Future Years of Data

- No longer required to check any boxes on the application form for future years of data
- List the years you would like to request and we will fulfill all years available with the current Release
- To request future years of data (no longer limited to the upcoming 5 years), just click the box for “Subscription”

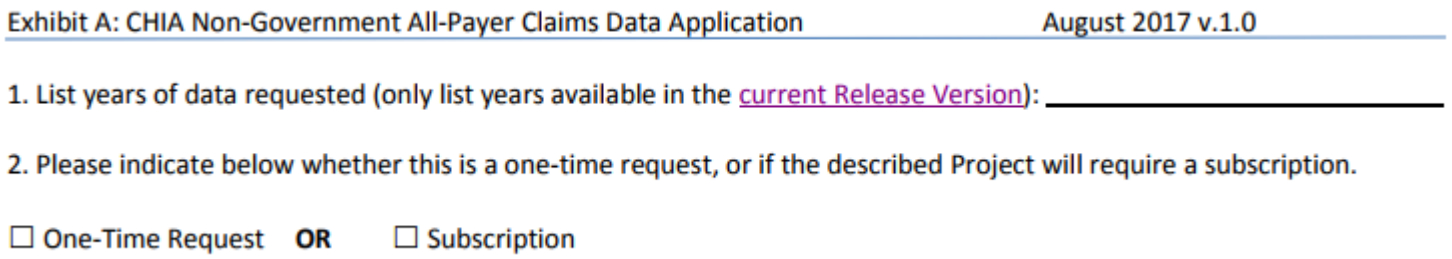


Exhibit A: CHIA Non-Government All-Payer Claims Data Application August 2017 v.1.0

1. List years of data requested (only list years available in the current Release Version): _____

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

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

Summarized Data Reports

- CHIA has updated our Data Release Regulations to allow for ***Summarized Data Reports***
- Will contain only aggregate data (data summaries) and De-identified Data, sourced from MA APCD and Case Mix data
  - Examples of Summarized Data Reports include: counts; totals; rates per thousand; index values; and other standardized metrics.
  - Will be subject to CHIA's cell suppression policy (no cell less than 11 will be displayed)
- Request form can be found on the MA APCD Application Documents page: http://www.chiamass.gov/application-documents

Summarized Data Reports

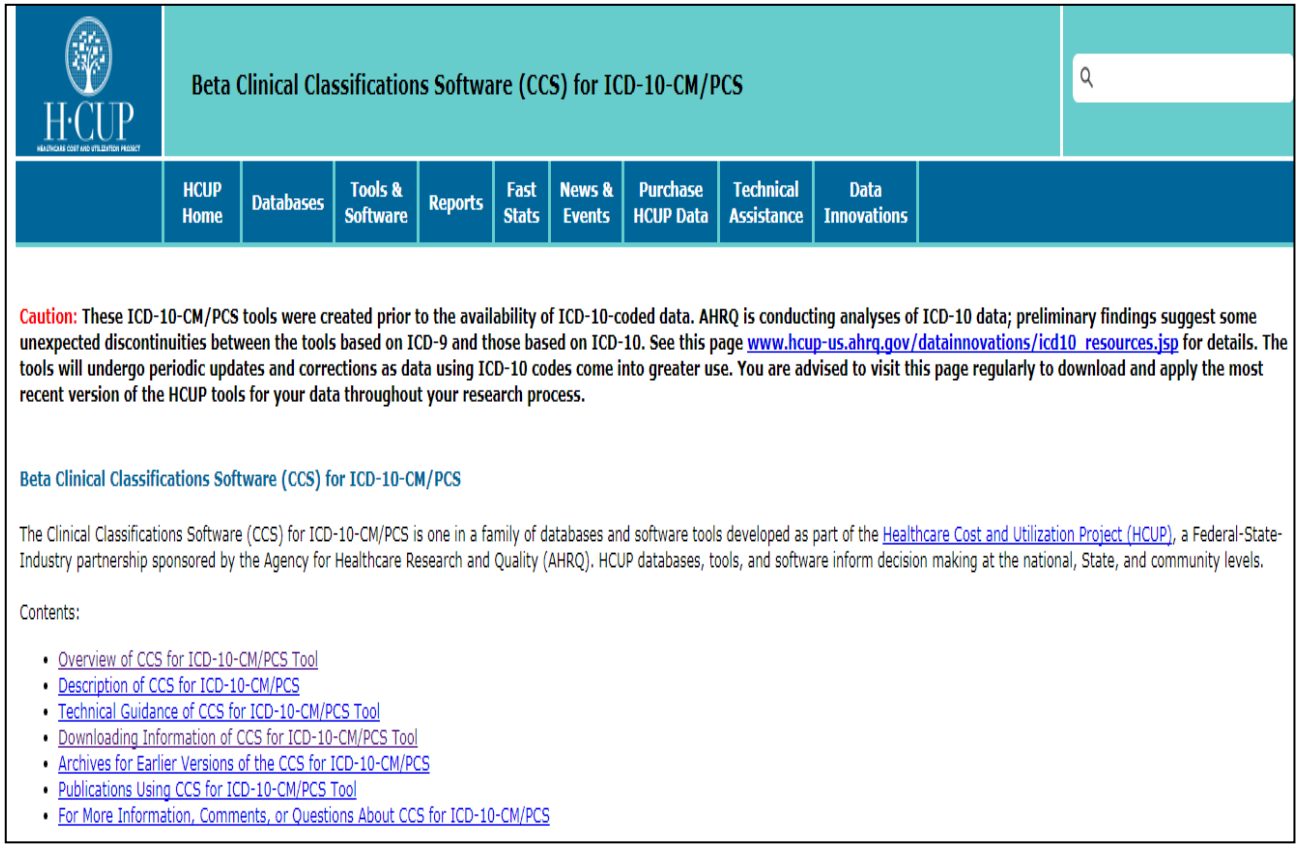
- In determining whether to compile such a report, CHIA will consider the **public interest served**, the **availability of its resources**, the **complexity** of the request, and **privacy concerns** (i.e. that there is no more than a minimal risk to individual privacy in the public release of the report)
- Submit the request via a new form (to be published after the revised regulation goes into effect.
  - Data Use Agreement and Data Management Plan not required
- The Executive Director (or his/her designee) will approve or deny such requests. Such approval/denial is final and not subject to further review or appeal.
- A support/production fee of $140/hour will be charged

Publications Using CHIA Data

- MA APCD and Case Mix websites now have galleries highlighting research completed by previous applicants for CHIA data using MA APCD and Case Mix
- If you would like to be included in the list, please send the publication citation and/or hyperlink to the publication to Adam.Tapply@state.ma.us
- These lists will be updated continually and will contain links to requestor's original application form on the public comment page

Question: CHIA has included AHRQ Clinical Classification Software (CCS) codes for grouping outpatient ED visits in past releases. How can researchers obtain this data in the future?

Answer: Data users requiring CCS codes can download them directly from the AHRQ-HCUP website. Please note that as of **February 26, 2018**, only a Beta version of the CCS for is available for ICD-10-CM/PCS on the AHRQ website, see: https://www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp .



H·CUP

Beta Clinical Classifications Software (CCS) for ICD-10-CM/PCS

HCUP Home | Databases | Tools & Software | Reports | Fast Stats | News & Events | Purchase HCUP Data | Technical Assistance | Data Innovations

Caution: These ICD-10-CM/PCS tools were created prior to the availability of ICD-10-coded data. AHRQ is conducting analyses of ICD-10 data; preliminary findings suggest some unexpected discontinuities between the tools based on ICD-9 and those based on ICD-10. See this page www.hcup-us.ahrq.gov/datainnovations/icd10_resources.jsp for details. The tools will undergo periodic updates and corrections as data using ICD-10 codes come into greater use. You are advised to visit this page regularly to download and apply the most recent version of the HCUP tools for your data throughout your research process.

Beta Clinical Classifications Software (CCS) for ICD-10-CM/PCS

The Clinical Classifications Software (CCS) for ICD-10-CM/PCS is one in a family of databases and software tools developed as part of the Healthcare Cost and Utilization Project (HCUP), a Federal-State-Industry partnership sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases, tools, and software inform decision making at the national, State, and community levels.

Contents:

- Overview of CCS for ICD-10-CM/PCS Tool
- Description of CCS for ICD-10-CM/PCS
- Technical Guidance of CCS for ICD-10-CM/PCS Tool
- Downloading Information of CCS for ICD-10-CM/PCS Tool
- Archives for Earlier Versions of the CCS for ICD-10-CM/PCS
- Publications Using CCS for ICD-10-CM/PCS Tool
- For More Information, Comments, or Questions About CCS for ICD-10-CM/PCS

AHRQ cautions users that AHRQ Tools undergo periodic **updates and corrections**. AHRQ reminds those who download data **to visit the site regularly to download and apply the most recent version** of their tools throughout your research process.

Question: I am using ED Visit Data to study visits related to tobacco use. Are there major changes in tobacco coding between ICD-9-CM and ICD-10-CM?

Answer: Yes, ICD-9-CM only refers to "tobacco use" while ICD-10-CM has new codes to distinguish "smoking" from "chewing" and harm due to "tobacco cigarettes" from "other tobacco and nicotine". Also, ICD-10-CM distinguishes tobacco use complicating pregnancy from puerperium with specific information on the trimester of the complication. Tables 1 and 2 and Figure 1 below compare tobacco use pregnancy complications in ICD-9-CM and ICD-10-CM.

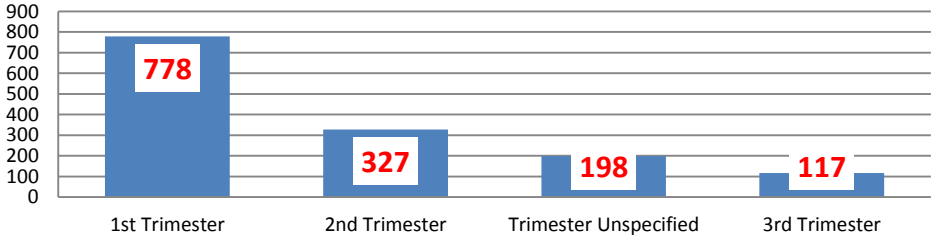
Table 1. FY2015 ICD-9-CM Pregnancy/Smoking

DX Code	Codes Used	Description
64903	1,071	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication
64900	72	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable
64904	25	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication
64901	*	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition

Table 2. FY2016 ICD-10-CM Pregnancy/Smoking

DX Code	Codes Used	Description
O99331	778	Smoking (tobacco) complicating pregnancy, first trimester
O99332	327	Smoking (tobacco) complicating pregnancy, second trimester
O99330	198	Smoking (tobacco) complicating pregnancy, unspecified trimester
O99333	117	Smoking (tobacco) complicating pregnancy, third trimester
O99335	22	Smoking (tobacco) complicating the puerperium
O99334	*	Smoking (tobacco) complicating childbirth

Figure 1. FY2016 ED Visit Smoking Pregnancy Complications by Trimester



QUESTIONS?

GUEST PRESENTATION

Urbano Franca, PhD
Research Fellow / Data Scientist
Boston Children’s Hospital / Harvard Medical School

"Regionalization of Definitive Pediatric Hospital Care"

Regionalization of Definitive Pediatric Hospital Care

Urbano L. França, PhD
Boston Children's Hospital
February 27, 2018

In collaboration with Michael L. McManus, MD, MPH

Pediatric care regionalization

- Pediatric hospital care requires specialized resources and expertise.
- Over the past decade, evidence of pediatric care regionalization has begun to appear, such as general surgery, otorhinolaryngology, and orthopedics.
- ED in academic centers are seeing large numbers of children referred with routine medical conditions.
- Pediatric inpatient transfers to academic centers are increasingly commonplace.

Hypothesis

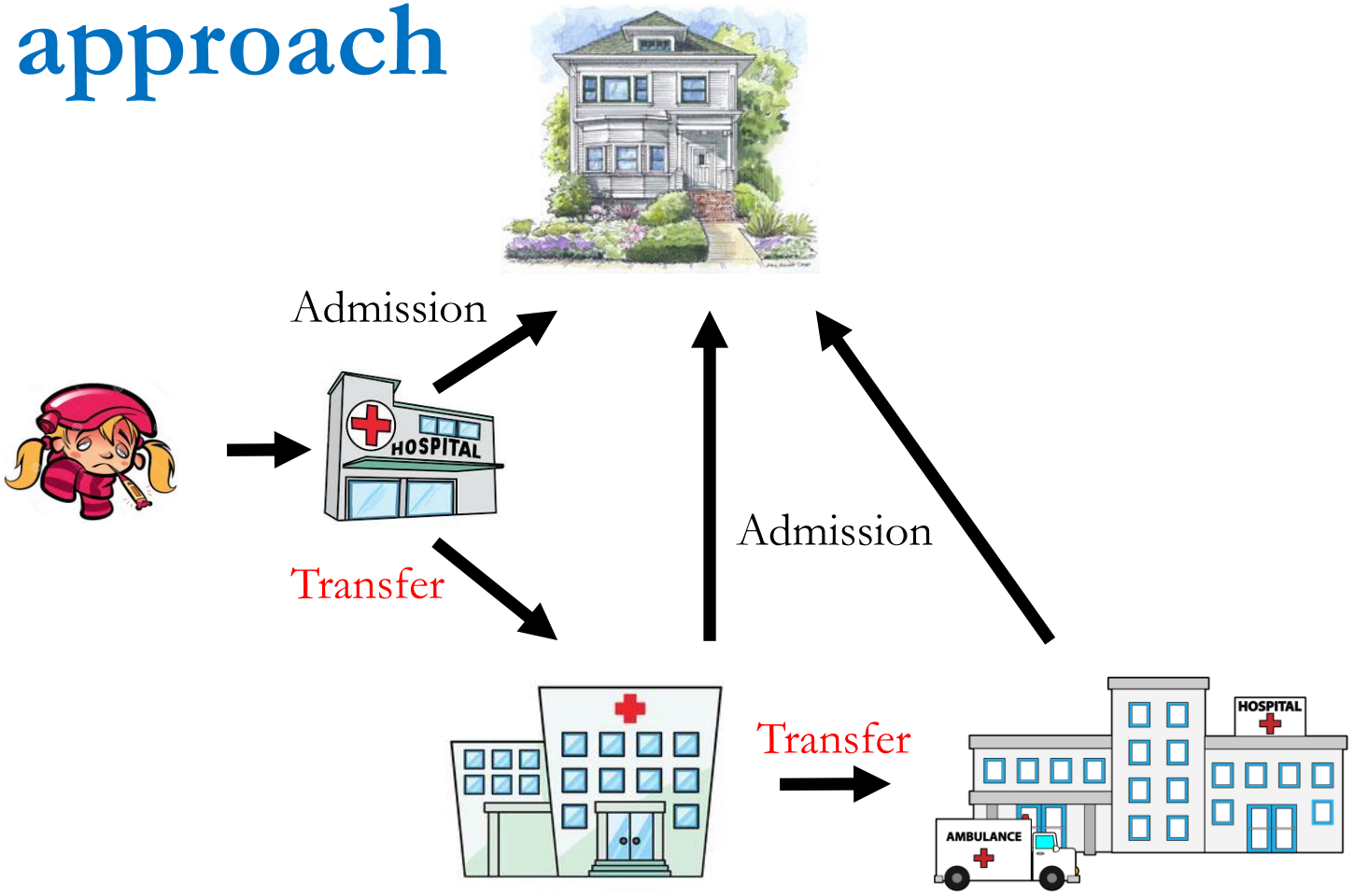
Because pediatric hospital care constitutes a smaller market and requires more specialized resources than adult care, we hypothesized that the qualitative signs of increasing regionalization reflect a disproportionate reduction in the availability of pediatric care.

How to quantify this?

Hospital Capability Index (HCI)

Regionalization Index (RI)

Our approach



Transfers and admissions as measures of definitive hospital care.

Hospital Capability Index (HCI)

$$\mathcal{P}(\text{Care completion}) = \frac{\#\ \text{Admitted}}{\#\ (\text{Admitted} + \text{Transferred})}$$

$$\text{HCI}(\text{hospital}) = \frac{\sum_{\text{conditions}} \mathcal{P}(\text{hospital}, \text{conditions})}{\text{Number of conditions}}$$

Average of **care completion** for the different conditions seem at the State.

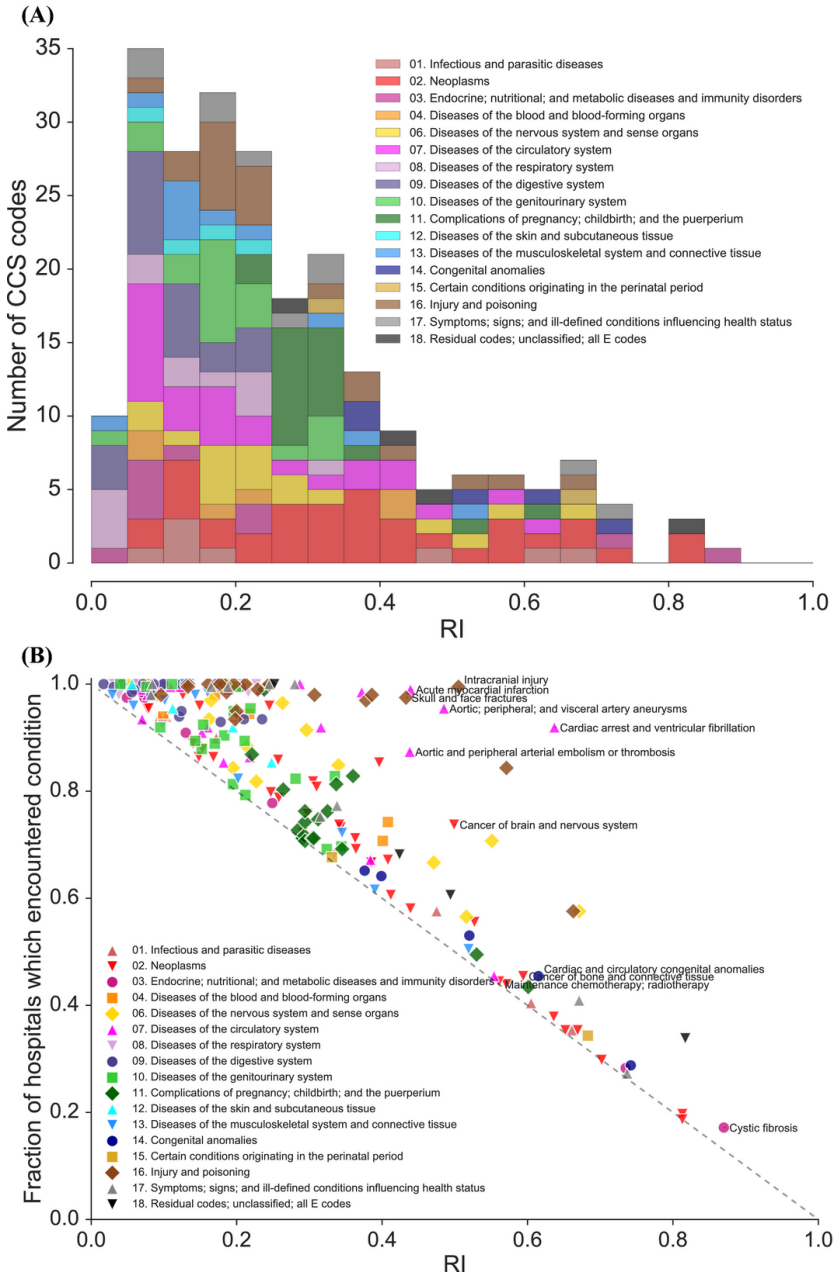
França & McManus, Health Services Research 2017

Regionalization Index (RI)

$$\mathcal{P}(\text{Care completion}) = \frac{\#\ \text{Admitted}}{\#\ (\text{Admitted} + \text{Transferred})}$$

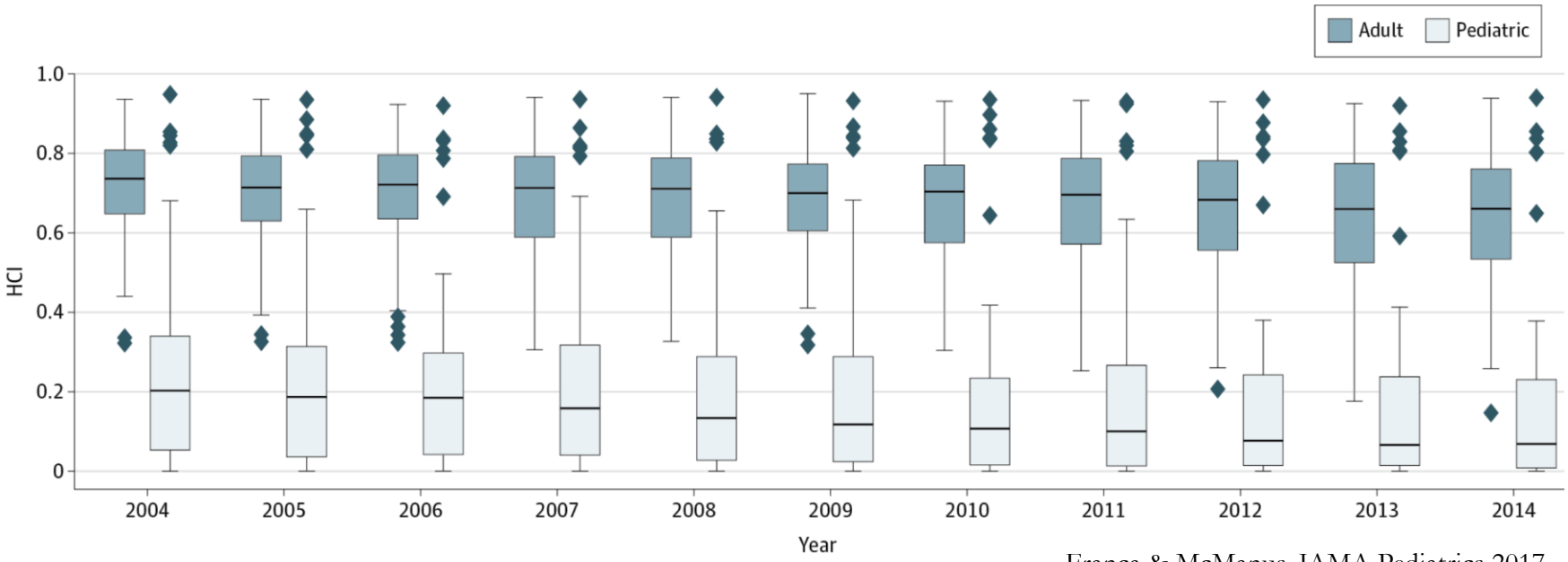
$$\text{RI}(\text{condition}) = 1 - \frac{\sum_{\text{hospitals}} \mathcal{P}(\text{hospital, condition})}{\text{Number of hospitals}}$$

Fraction of patients who are transferred *and* fraction of hospitals that no longer encounter a condition.



França & McManus, Health Services Research 2017

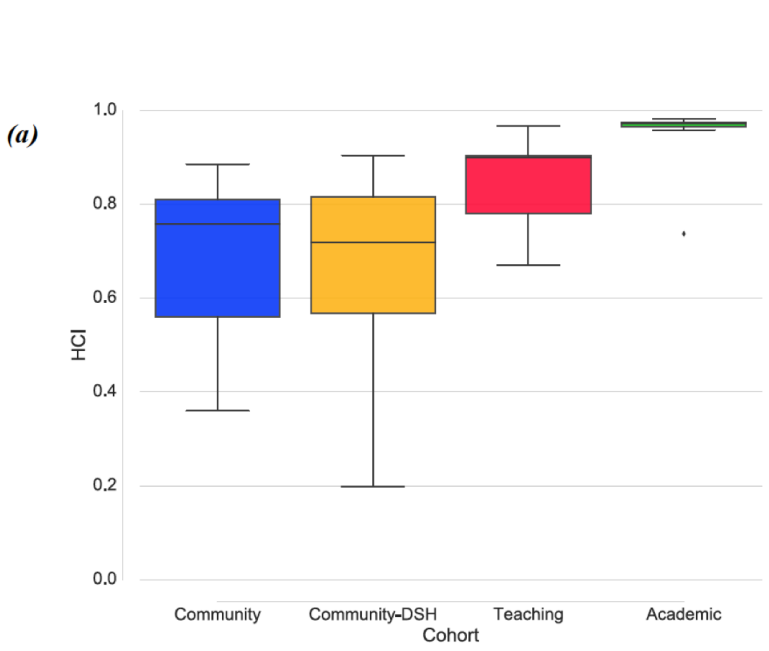
A decade of MA's system of care

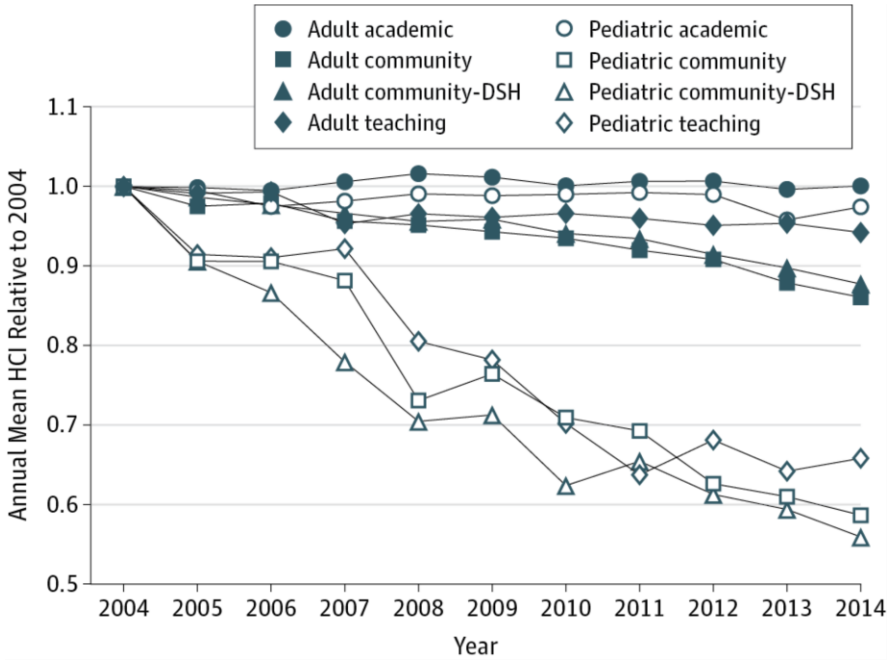


França & McManus, JAMA Pediatrics 2017

Pediatric and adult systems of care are effectively two different systems of care.

Hospital Cohorts



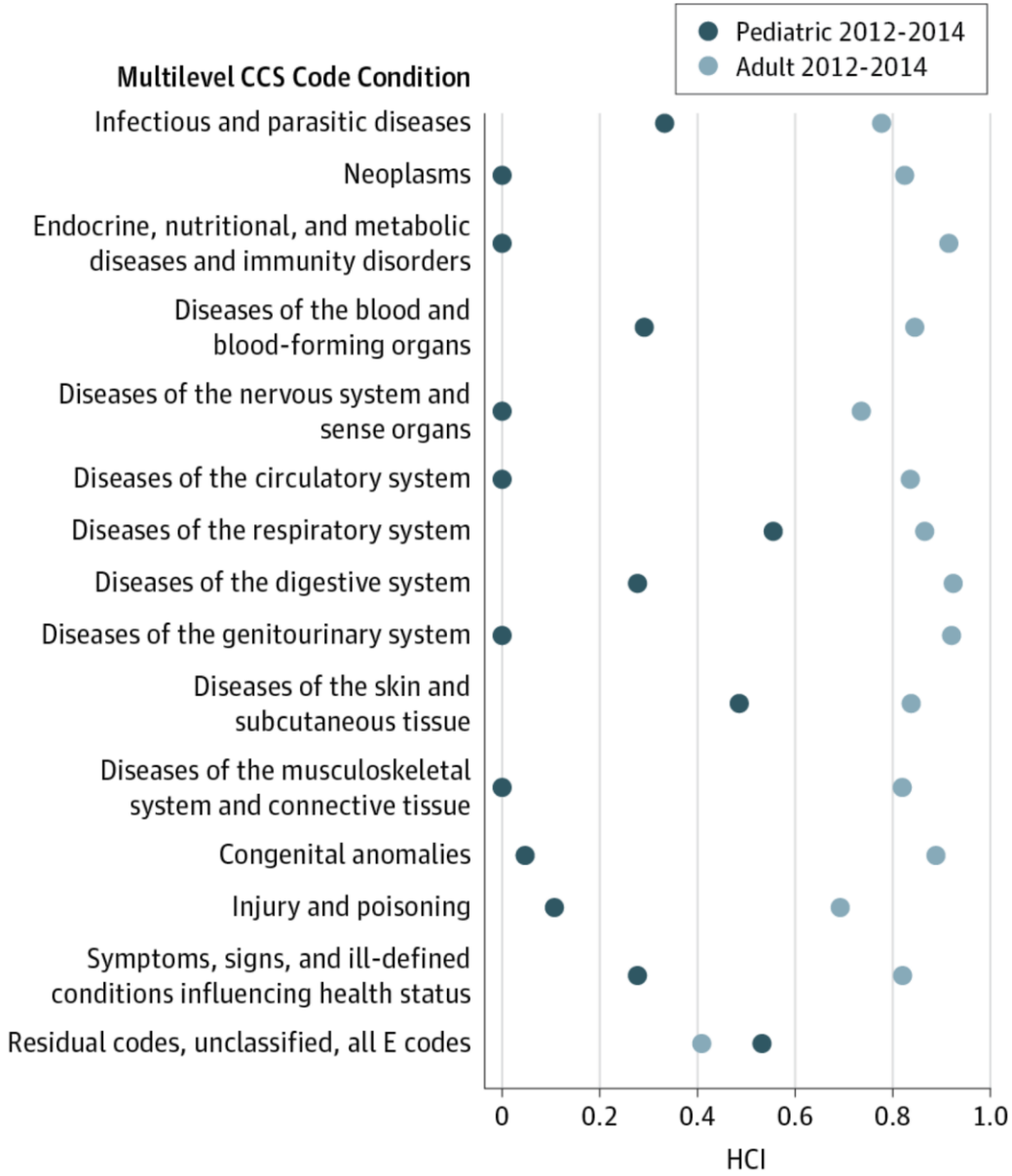


França & McManus, JAMA Pediatrics 2017

Significant decrease of **pediatric** capability in Teaching, Community, and Community–DSH hospitals.

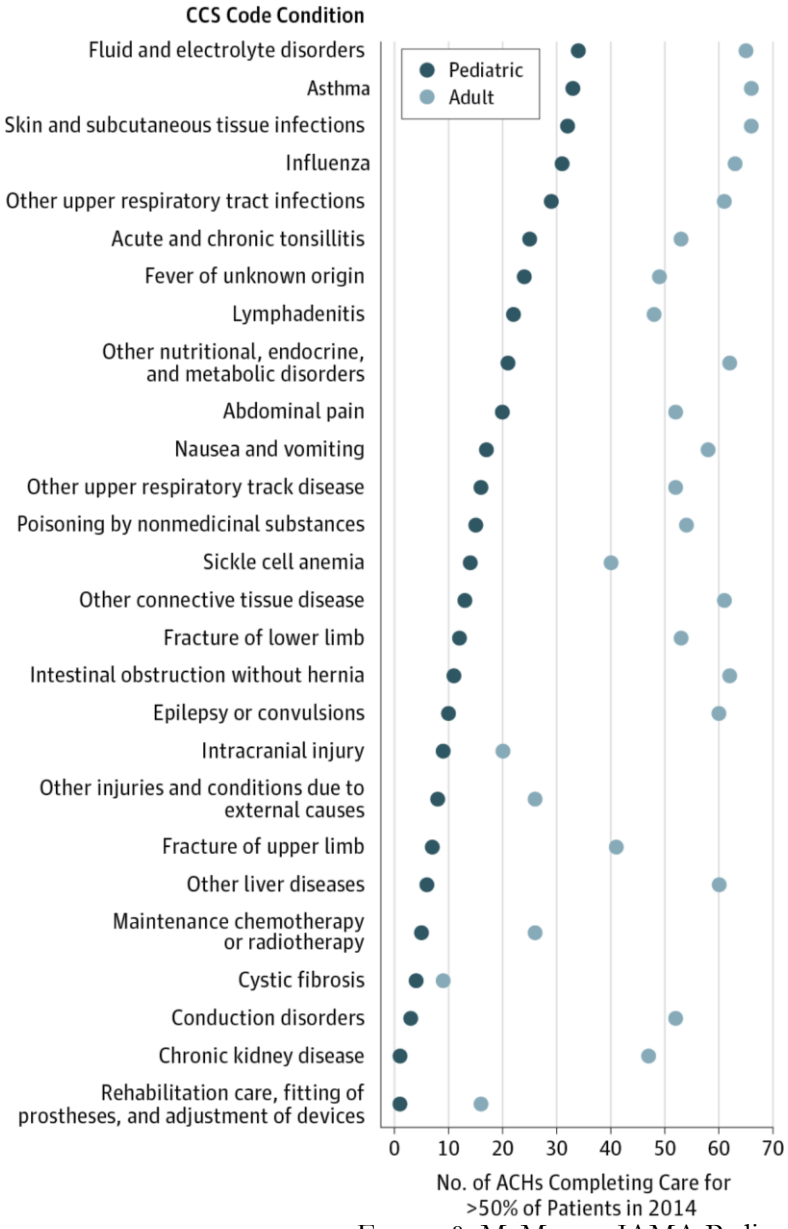
Zooming in on single hospitals and conditions

Representative Community Hospital in Massachusetts



França & McManus, JAMA Pediatrics 2017

Zooming out for a bird's-eye view of the system



França & McManus, JAMA Pediatrics 2017

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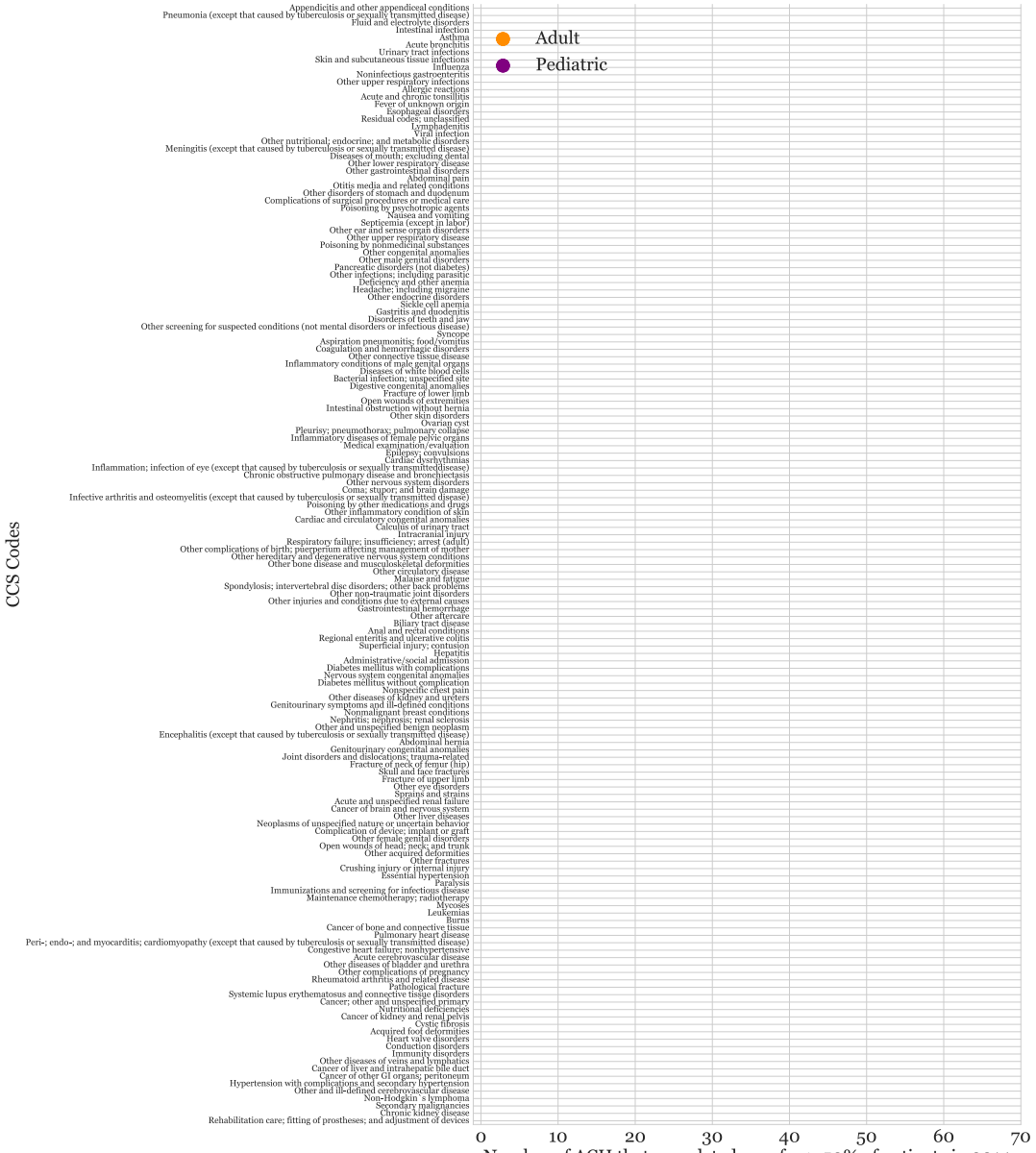
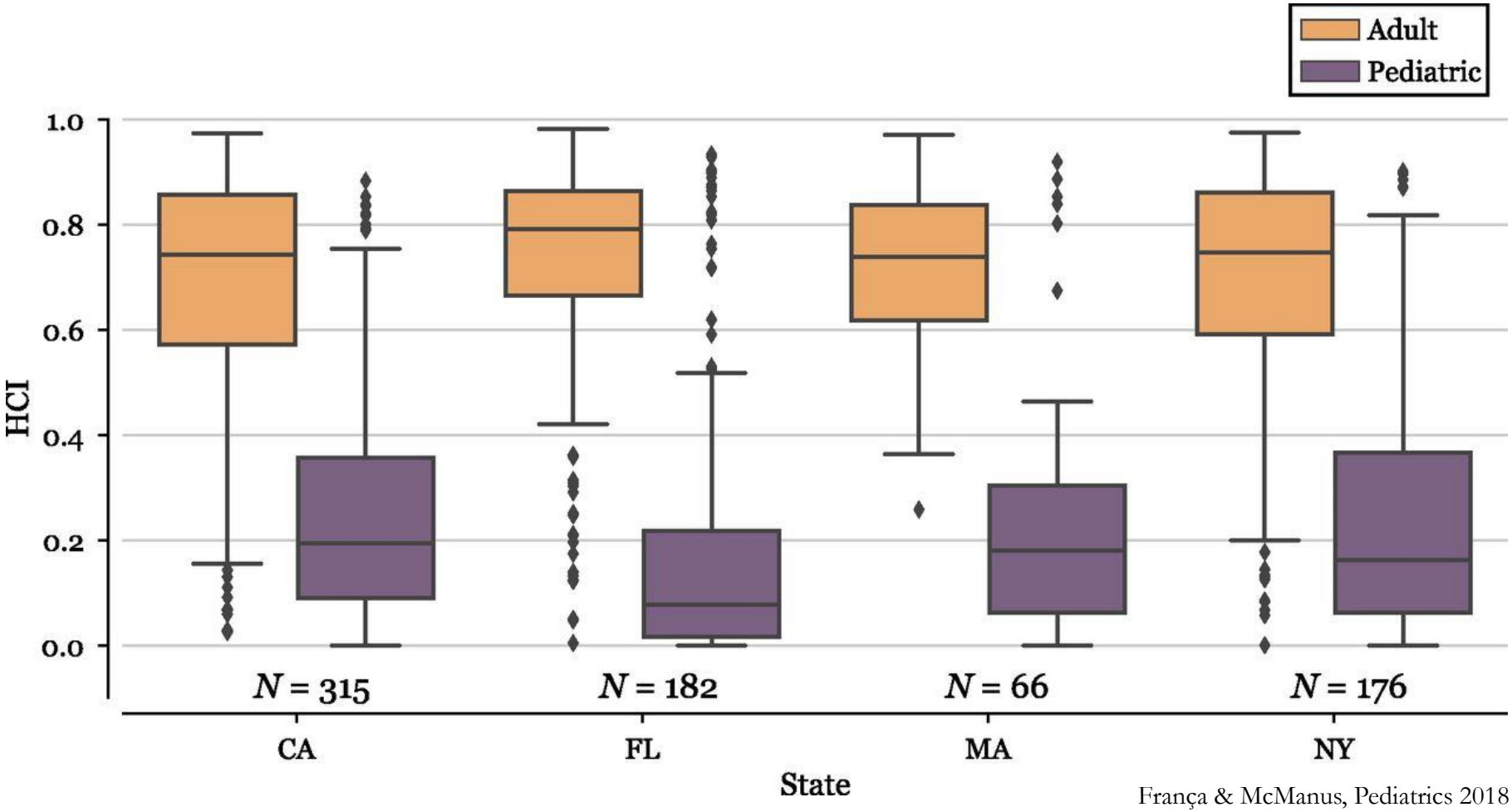


França & McManus, JAMA Pediatrics 2017

But are these results for MA generalizable?

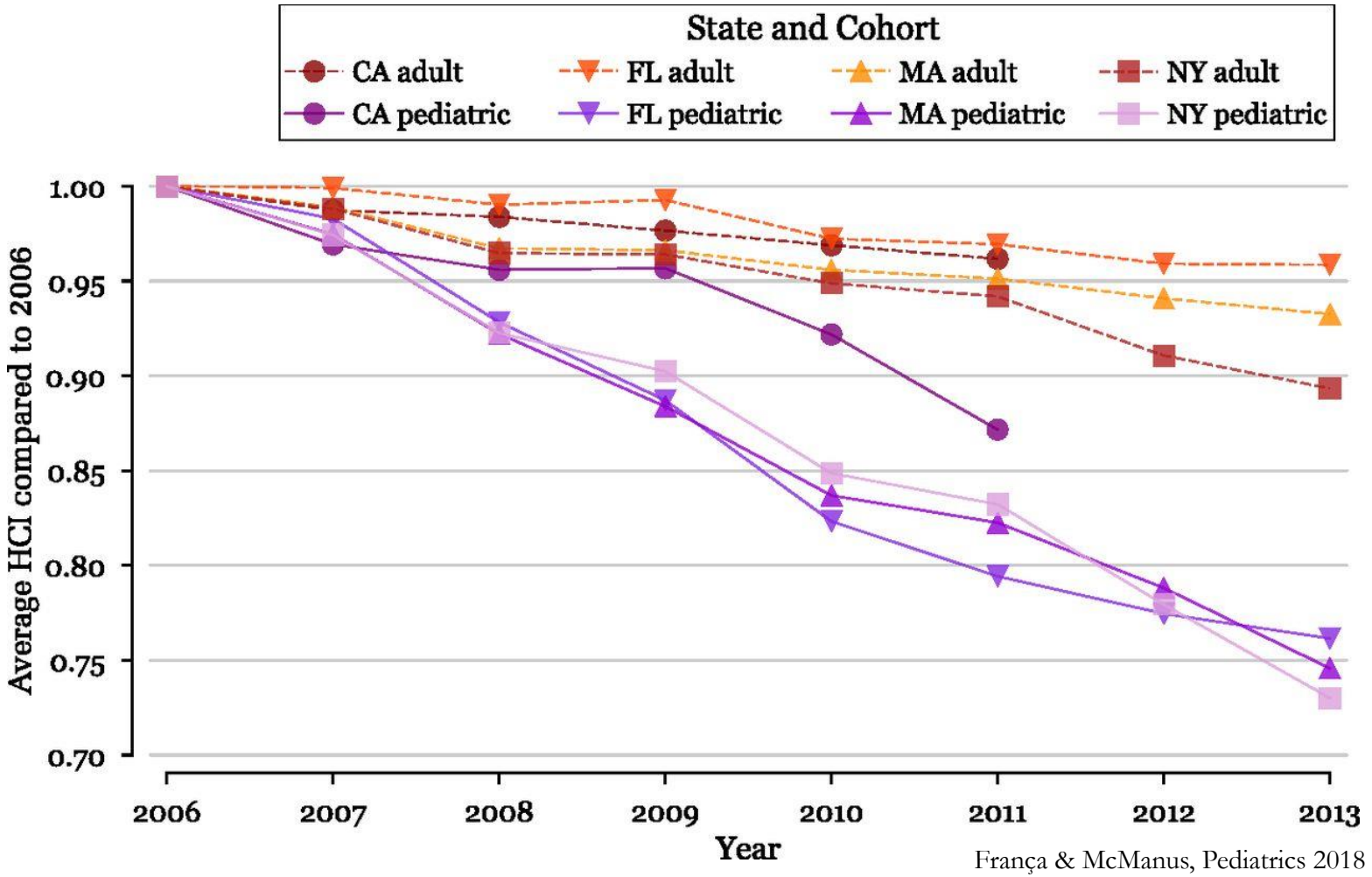
A comparison with three other States using AHRQ's HCUP data in CA, FL, and NY

Adult vs. Pediatric Care



França & McManus, Pediatrics 2018

Metrics for Healthcare Systems

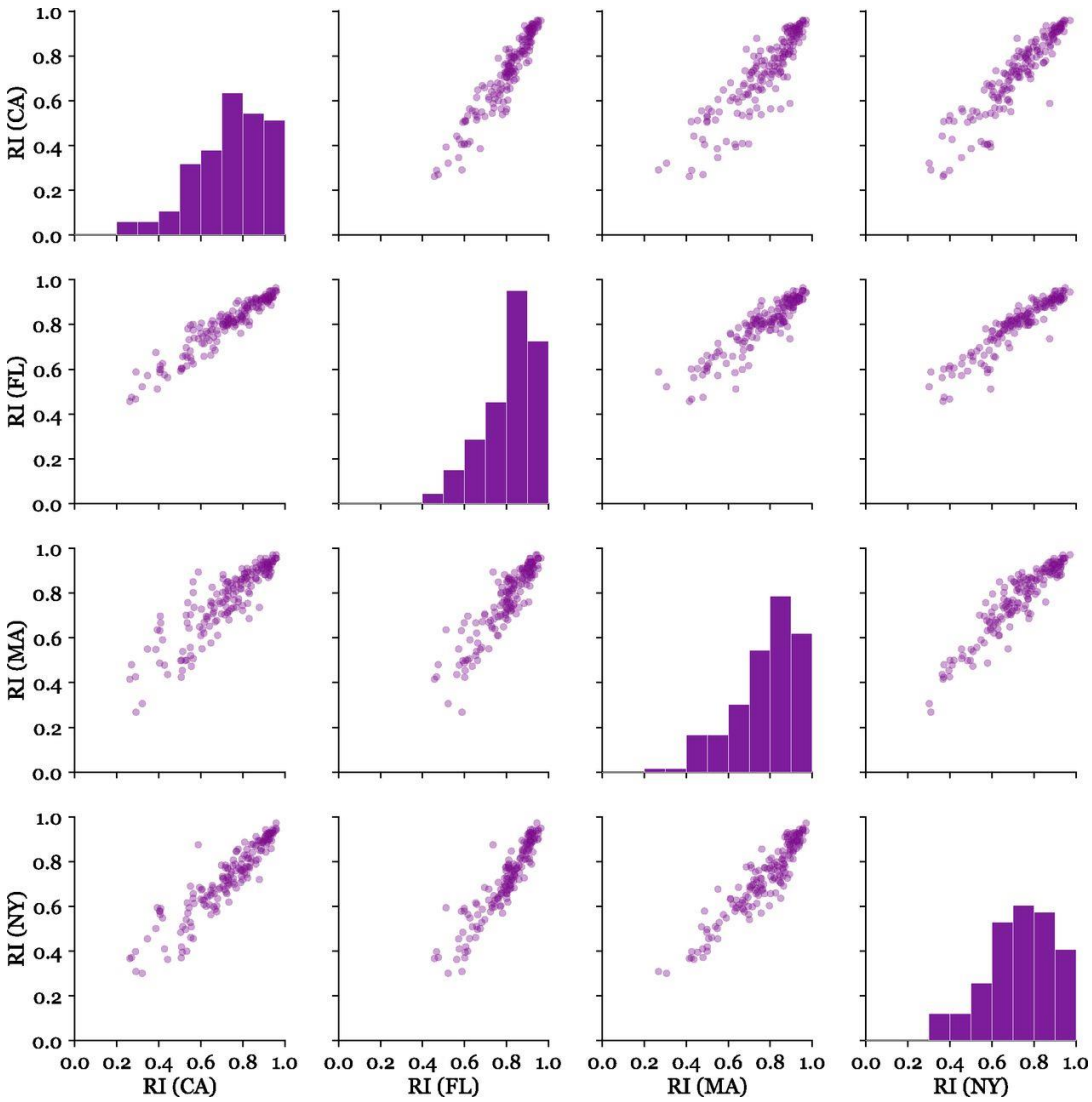


França & McManus, Pediatrics 2018

Similar regionalization in all states

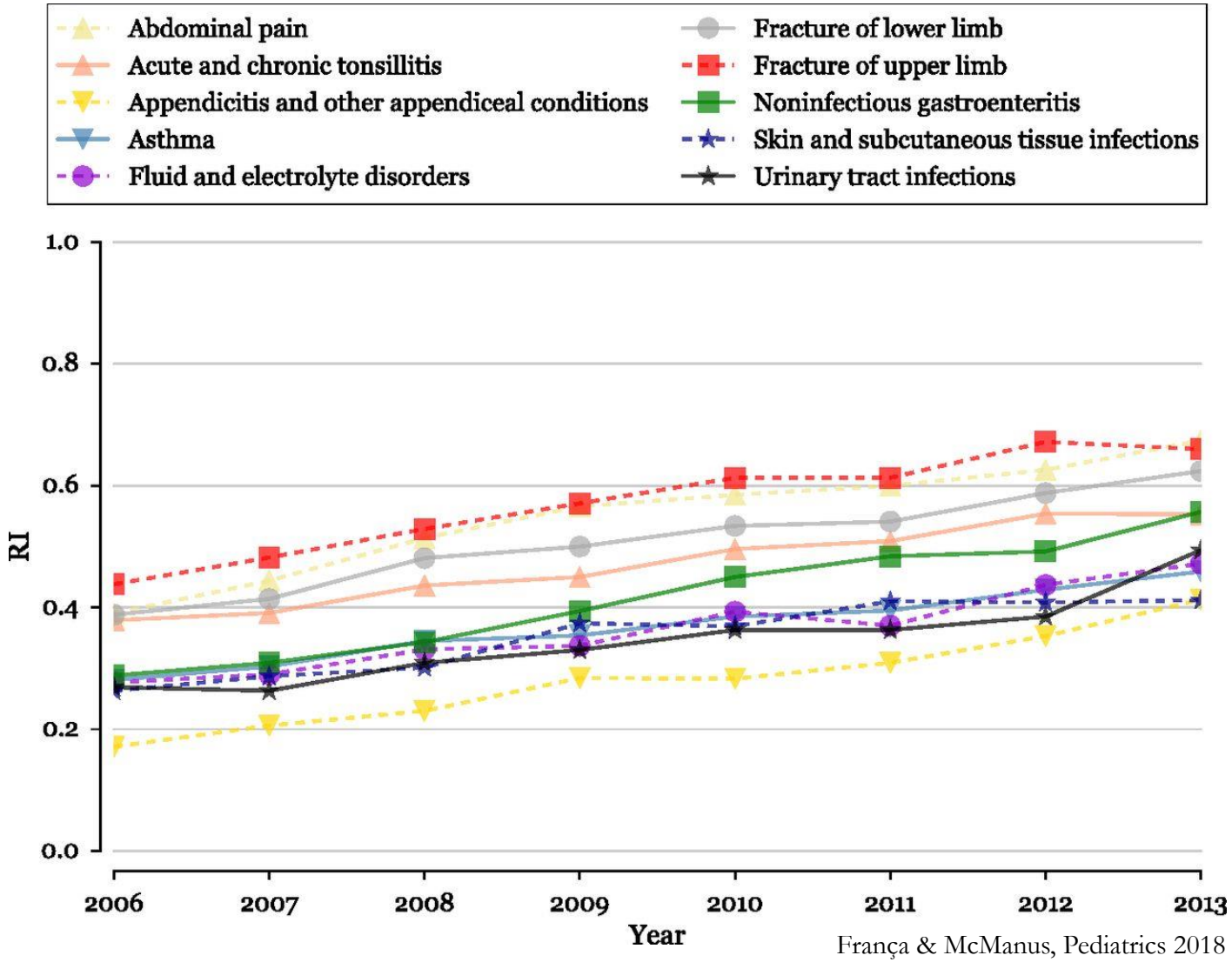
$$\mathcal{P}(\text{Care completion}) = \frac{\#\ \text{Admitted}}{\#\ (\text{Admitted} + \text{Transferred})}$$

$$\text{RI}(\text{condition}) = 1 - \frac{\sum_{\text{hospitals}} \mathcal{P}(\text{hospital}, \text{condition})}{\text{Number of hospitals}}$$



França & McManus, Pediatrics 2018

Increase in Regionalization



França & McManus, Pediatrics 2018

Conclusions and Future Work

- Recently created metrics quantify condition specific regionalization and hospital capability.
- Hospitals increasingly differ in their delivery of pediatric care and adult care.
- The short- and long-term impacts of care concentration remain to be seen (quality improvement vs. crowding of specialty centers, for instance).
- Network adequacy experience from adult populations is not transferrable to pediatric care.
- Inform EMS decisions, network adequacy, and understanding how to better delivery care to pediatric population.

Thanks!

urbano.franca@childrens.harvard.edu

References:

França UL, McManus ML. Transfer frequency as a measure of hospital capability and regionalization. *Health Serv. Res*. 2017;52(6):2237–2255

França UL, McManus ML. Availability of definitive hospital care for children. *JAMA Pediatr*. 2017;171(9):e171096

França UL, McManus ML. Trends in Regionalization of Hospital Care for Common Pediatric Conditions. *Pediatrics*. 2018; 141(1):e20171940

Gattu RK, Teshome G, Cai L, Wright C, Lichenstein R. Interhospital pediatric patient transfers: factors influencing rapid disposition after transfer. *Pediatr Emerg Care*. 2014;30(1):26-30.

Horeczko T, Marcin JP, Kahn JM, Sapien RE; Consortium of Regionalization Efforts in Emergency Medical Services for Children (CORE-EMSC). Urban and rural patterns in emergent pediatric transfer: a call for regionalization. *J Rural Health*. 2014;30(3):252-258.

Klein MD; Surgical Advisory Panel, American Academy of Pediatrics. Referral to pediatric surgical specialists. *Pediatrics*. 2014;133(2):350-356.

Li J, Monuteaux MC, Bachur RG. Interfacility transfers of noncritically ill children to academic pediatric emergency departments. *Pediatrics*. 2012;130(1):83-92.

Lorch SA, Myers S, Carr B. The regionalization of pediatric health care. *Pediatrics*. 2010;126(6):1182-1190.

Lorch SA. Ensuring access to the appropriate health care professionals: regionalization and centralization of care in a new era of health care financing and delivery. *JAMA Pediatr*. 2015;169(1):11-12.

Rosenthal JL, Hilton JF, Teufel RJ II, Romano PS, Kaiser SV, Okumura MJ. Profiling interfacility transfers for hospitalized pediatric patients. *Hosp Pediatr*. 2016;6(6):345-353.

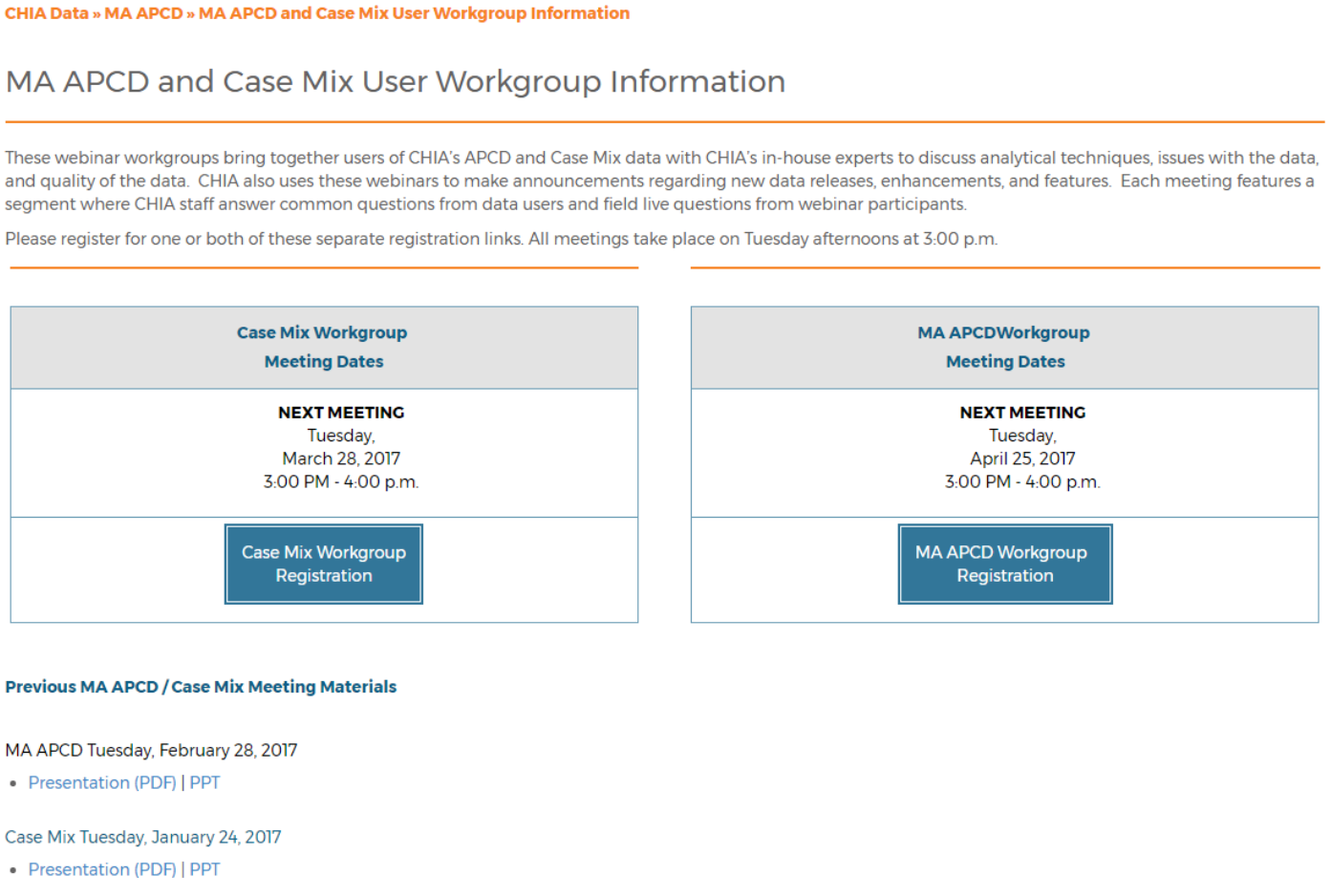
Questions?

- 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

Where can I find old User Workgroup presentations?

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



CHIA Data » MA APCD » 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 experts to discuss analytical techniques, issues with the data, and quality of the data. CHIA also uses these webinars to make announcements regarding new 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 Meeting Dates	MA APCDWorkgroup Meeting Dates
NEXT MEETING Tuesday, March 28, 2017 3:00 PM - 4:00 p.m.	**NEXT MEETING** Tuesday, April 25, 2017 3:00 PM - 4:00 p.m.
Case Mix Workgroup Registration	MA APCD Workgroup Registration

Previous MA APCD / Case Mix Meeting Materials

MA APCD Tuesday, February 28, 2017

- Presentation (PDF) | PPT

Case Mix Tuesday, January 24, 2017

- Presentation (PDF) | PPT

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.