Administered by: ACHI

ARKANSAS APCD DATA USERS GROUP

Kenley Money
Director of Information Systems Architecture

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HEALTHCARE TRANSPARENCY INITIATIVE

Agenda

- Welcome
- Topics
  - Featured Presentation
    - Family Map Inventory: Adverse Childhood Experiences & Healthcare Utilization/Outcomes
  - Arkansas Opioid and Naloxone Prescribing Trends
  - Data User Questions From Other APCDs
- Latest APCD Release Information and Data Tips
- Questions/Discussion

Presenters

- Kenley Money, MA, MFA — Director of Information Systems Architecture/ACPD Director, ACHI
- Dong Zhang, PhD — University of Arkansas for Medical Sciences, Department of Family and Preventive Medicine
- Mike Motley — Director of Analytics, ACHI

Family Map Inventory: Adverse Childhood Experiences & Healthcare Utilization/Outcomes

Featured Speaker

Dong Zhang, PhD

Dr. Zhang is a Family and Preventive Medicine instructor at the UAMS College of Medicine. His research involves exploring how environmental and contextual factors—including obesity, depression, and adverse childhood experiences—affect the mental and physical health of individuals and families. He is also interested in investigating how environmental factors interact with each other and people and how those interactions affect developmental outcomes and health disparities.

Dr. Zhang has a master's degree in statistics, a master's in public administration, and a doctor of philosophy degree in human development and family studies from Iowa State University.

Project Background

- Gaps exist in effective translation of prospective Adverse Early Childhood Experiences (ACEs) screening to clinical settings.
- Long-term goal:
  - Develop generalizable and feasible strategies for healthcare providers to screen for ACEs leading to insufficient preventive medical care and chronic conditions.
- Aim:
  - Determine the association of FMI-ACEs score at toddlerhood (age 3 or 4) and the healthcare utilization and health outcomes within 1 year of the interview
- Funding Source: COM Barton Award

Adverse Childhood Experiences (ACEs)

- Abuse
- Neglect
- Household Challenges

Adverse Childhood Experiences (ACEs)

- **Abuse**
  - **Emotional abuse:** A parent or other adult in your home ever swore at you, insulted you, or put you down.
  - **Physical abuse:** A parent or other adult in your home ever hit, beat, kicked or physically hurt you.
  - **Sexual abuse:** An adult or person at least 5 years older ever touched you in a sexual way, or tried to make you touch their body in a sexual way, or attempted to have sex with you.
- **Neglect**
- **Household Challenges**

Adverse Childhood Experiences (ACEs)

- Abuse
- **Neglect**
  - **Emotional neglect:** No one in your family loved you or thought you were important or special, or your family not looking out for each other, feeling close to each other, or supporting each other.
  - **Physical neglect:** Feeling that you didn't have enough to eat, your parents were too drunk or too high to take care of you, and you had to wear dirty clothes, had no one to protect you or take you to the doctor if you needed it.
- Household Challenges

Adverse Childhood Experiences (ACEs)

- Abuse
- Neglect
- **Household Challenges**
  - **Intimate partner violence:** Parents or adults in home ever slapped, hit, kicked, punched or beat each other up.
  - **Household substance abuse:** A household member was a problem drinker or alcoholic or used street drugs or abused prescription medications.
  - **Household mental illness:** A household member was depressed or mentally ill or a household member attempted suicide.
  - **Parental separation or divorce:** Parents were ever separated or divorced.
  - **Incarcerated household member:** A household member went to prison.

Family Map Inventories (FMI) Adverse Childhood Experiences (ACES)

The Family Map Inventories is a semi-structured interview to assess important aspects of the family and home environment:

- Prenatal, Infant/Toddler (0-3), and Early Childhood (3-5) versions
- Designed for use in collaboration with Head Start/Early Head Start providers and families.
- Systematically identifies areas of concern and strength so that providers can design interventions to reduce risk factors or enhance factors associated with healthy development; (1) physical and social conditions that children experience directly, (2) family climate/context, and (3) parental characteristics.

www.TheFamilyMap.org

the family map inventories

Family Map Inventories-Adverse Childhood Experiences

Construct	FMI-ACE Items
Emotional Abuse	Family Conflict: Lose Tempers and Yell in Anger (Often or Always) Discipline: Yell at Child (Often or Always)
Physical Abuse	Environmental Safety: Past Year Child Physically Hurt by Someone (>="Once"). Discipline: Spank with Object (>="Rarely")
Sexual Abuse	Environmental Safety: Past Year Child Seen Drug or Sexual Activities (At least "Once"). Basic Needs: Open CPS Case
Emotional Neglect	Family Cohesion: Feel Close and Help and Support (Not Often or Always).
Physical Neglect	Basic Needs: Food Did not Last or Cut Meal Size/Skipped (True). Routines: Temporary Housing (Yes) or Observed Chaos.
Parental Separation	Self-Support: Parent Outside the Home. Basic Needs: Owed Child Support
Domestic Violence	Environmental Safety: Past Year You or Someone in Home Physically Hurt or Child Seen Someone Physically Hurt (At least "Once").
Substance Abuse	Health: Friends/Family with Drinking/Drug Problem in Home or CAGE (Yes) or Observed Concern
Mental Illness	Health: PHQ-2 Screen Positive or Observed Concern
Incarcerated	Basic Needs: Involved w/Legal System

Data

- Consented FMI data is linked with ABI APCD using HASH_ID and gender combination
- Pulled APCD Enrollment/Claim/Pharm data (2013–2021)
- Applied inclusion/exclusion criteria: Continuous Enrollment for one year from the date of FMI interview

Sample

- Included children between the ages of 3 and 4 at the time of interview
- Served in early childhood education settings. N=2030
- Gender (53.2% female)
- Race (42.4% White, 47.9% Black)
- Caregiver Education Level (40% high school, 41% certificate, some college or college)

Analysis

- Health utilizations were categorized based on revenue codes, procedure codes, diagnostic code, and facility type. Count outcome. Negative binomial regression was fit.
- Clinical Classification Software (CCS) ICD-10. For ICD-9 era (before 2015 October), ICD-9 codes were converted to ICD-10 first. Binary outcome (yes/no). Logistic regression was fit.
- Age and gender adjusted.

Results

Associations between FMI ACEs score in early childhood (age 3 or 4) and the healthcare utilization within 1 year of the FMI.*

Outcomes	**aIRR**	Lower CL	Upper CL	StdErr	**P value**
ED visits for minor management	1.132	0.9953	1.2873	0.0656	0.059
ED visits	1.1194	0.9987	1.2548	0.0582	0.0528
Outpatient visits with immunization	0.9588	0.8714	1.0549	0.0487	0.3880
SLP visits	0.8978	0.5251	1.5349	0.2736	0.6936
Total outpatient visits	1.1983	1.0383	1.383	0.0731	0.0134
Pharmacy prescription	1.0645	0.9613	1.1788	0.052	0.2298
Total health utilization	1.1665	1.0352	1.3145	0.0609	0.0115

*Adjusted for age at the time of interview and gender

Associations between FMI ACEs score in early childhood (age 3 or 4) and the health outcome within 1 year of the FMI.*

CCS	aOR	LowerCL	UpperCL	P-value
Mycoses	1.396	0.986	1.978	0.0601
Viral infection	0.806	0.643	1.012	0.0629
Acute and chronic tonsillitis	0.702	0.493	0.998	0.0489
Other upper respiratory infections	0.893	0.787	1.012	0.0752
Adjustment disorders	1.457	1.106	1.919	0.0074
Attention-deficit conduct and disruptive behavior disorders	1.363	1.153	1.611	0.0003

*Adjusted for age at the time of interview and gender

Next Steps

- Identify co-occurring FMI-ACEs groups using latent class analyses.
- Explore associations between co-occurring FMI-ACEs groups and healthcare utilizations
- Examine associations between co-occurring FMI-ACEs groups and health outcomes

Questions?

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Arkansas Opioid and Naloxone Prescribing Trends

Opioid and Naloxone Prescribing Trend Analyses

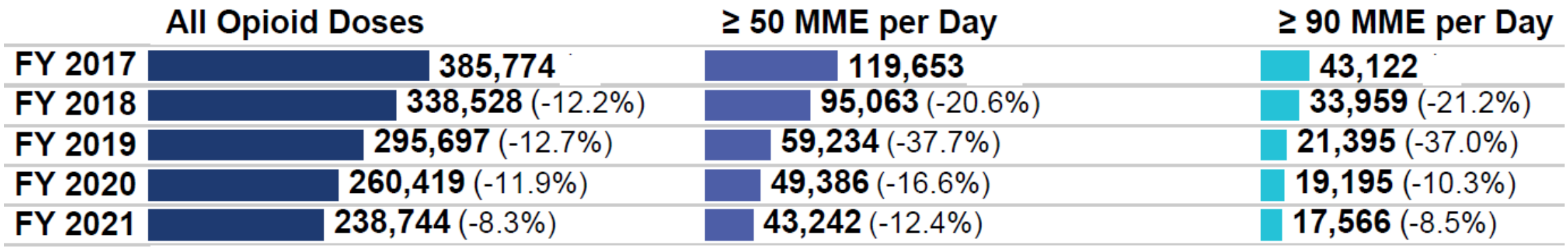
- In response to the opioid epidemic, polices to expand access to the overdose reversal drug naloxone have emerged
- Arkansas ACT 651 of 2021 requires a co-prescription of naloxone in some situations:
  - When dosage for an opioid is 50 or more morphine milligram equivalents per day
  - When a benzodiazepine has been prescribed or will be prescribed at the same time as an opioid
  - If an individual has a history of opioid use disorder or drug overdose
- In 2017, licensed pharmacists became authorized to order, dispense, and administer naloxone to individuals without a prescription under Arkansas's standing naloxone protocol

Opioid and Naloxone Prescribing Trend Analyses

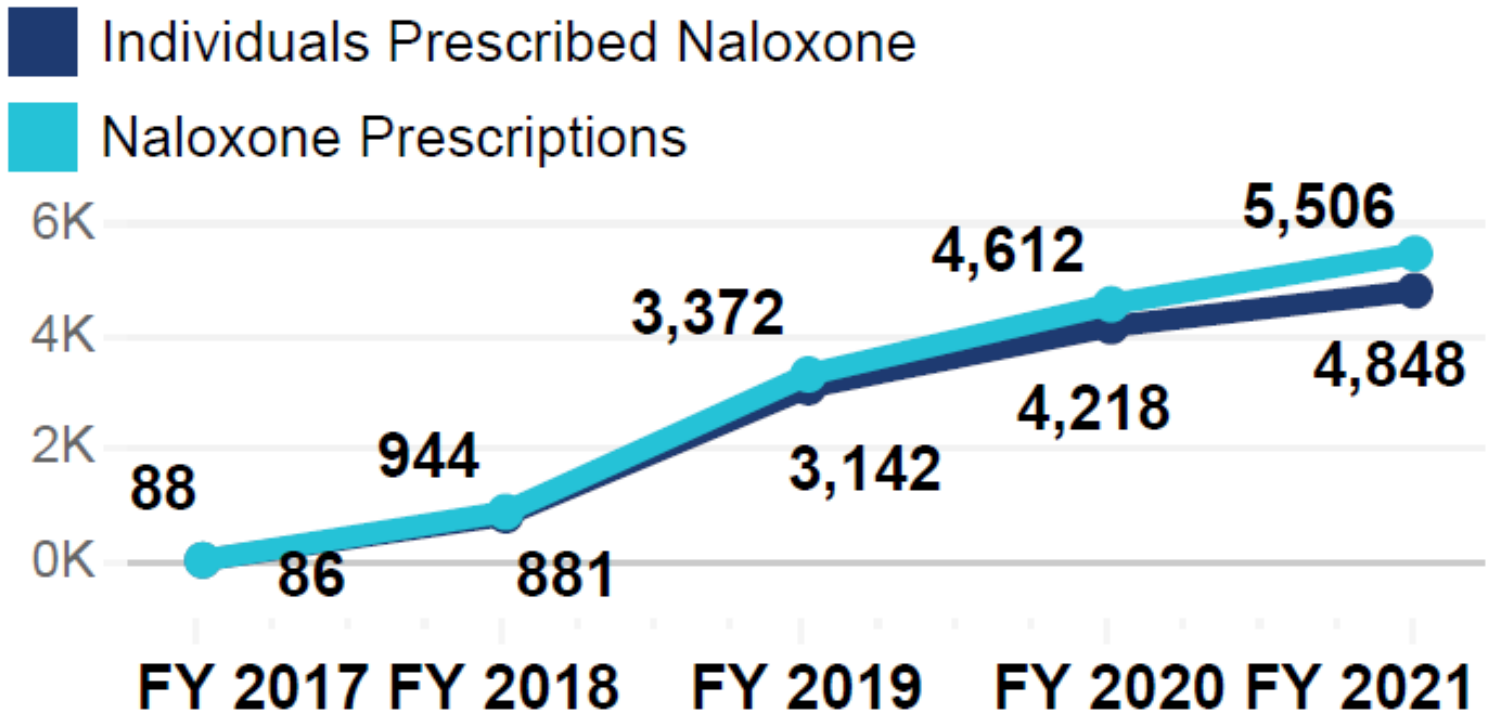
- To track opioid and naloxone co-prescribing trends, ACHI has operationalized several population-level metrics using HTI administrative claims data and other data sources
- Opioid doses of 50+ or 90+ MME were categorized using National Drug Codes (NDC) consistent with CDC guidelines*
- CDC conversion file contains opioid NDCs with MME conversion factors, product name, generic name, form of drug, strength and unit of measure for strength
- ACHI analyses can be accessed at: https://achi.net/news-releases/achi-analysis-shows-arkansas-making-progress-in-expanding-access-to-naloxone/

*https://www.cdc.gov/opioids/data-resources/index.html

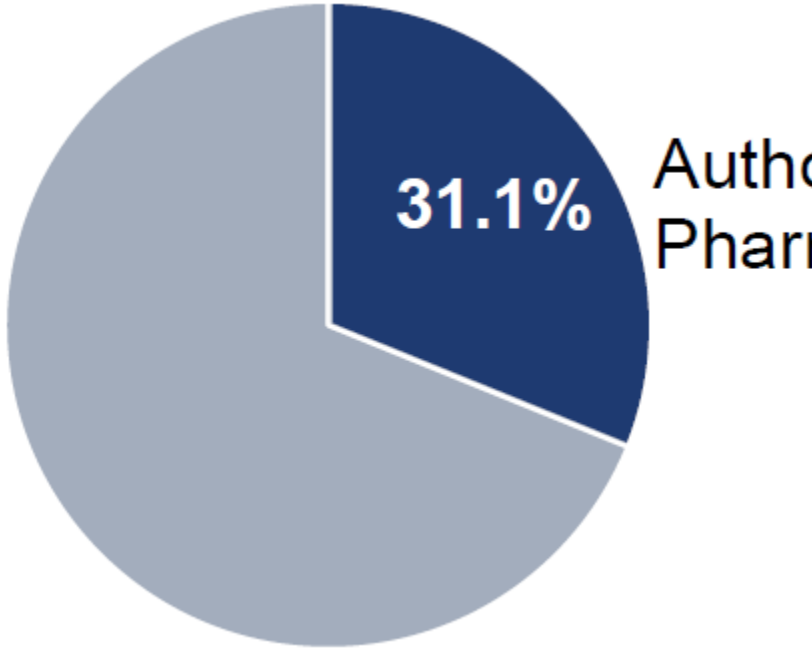
Arkansans with Opioid Prescriptions in HTI Data By Amount & Annual Percentage Change



Naloxone Prescribing Trends



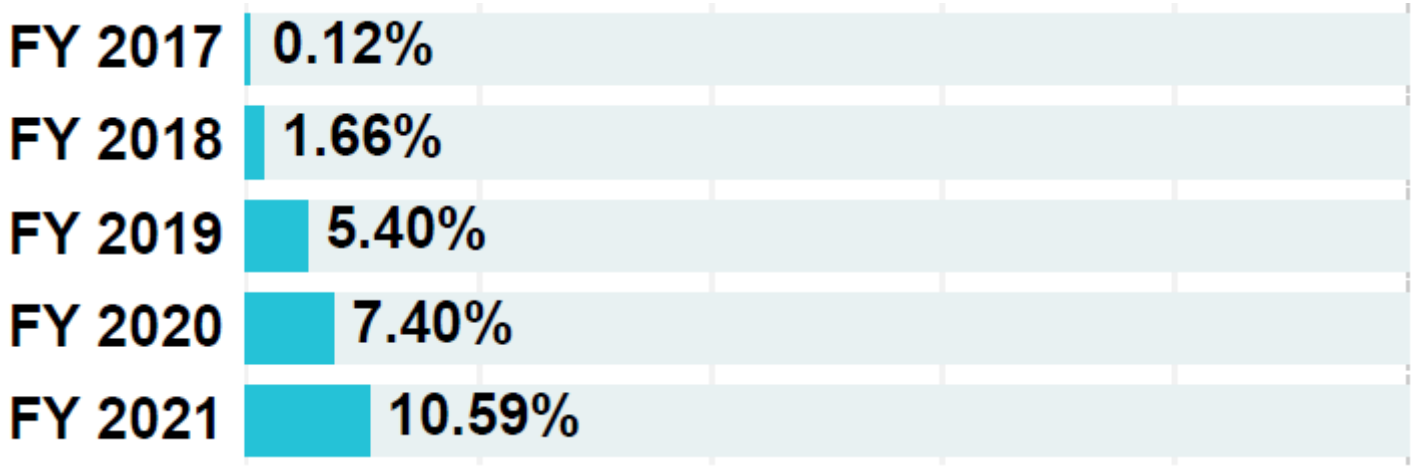
Percentage of Naloxone Pharmacist Prescriptions Under State Protocol, FY 2021



- In FY 2021, pharmacists authorized 1,714 out of 5,506 naloxone prescriptions under state protocol
- Naloxone prescriptions authorized by pharmacists were identified by either the pharmacist or acting Arkansas Secretary of Health being listed under prescribing provider in the data*

*https://www.pharmacyboard.arkansas.gov/wp-content/uploads/2020/08/AR-Naloxone-Protocol-2020-Dr-Balamurugan.pdf

Percentage of Individuals Who Received ≥ 90 MME Per Day Opioid & Naloxone Prescriptions



- In FY2021, one Naloxone prescription was dispensed for every 9 individuals with opioid prescriptions of 90 or more MME per day, an improvement from 1 per 14 individuals in FY 2020

Questions From Other APCDs

Center for Health Information and Analysis (CHIA) — Massachusetts APCD

- Q: Last year, the Centers for Medicare and Medicaid (CMS) announced that new ICD-10-CM diagnosis codes would be implemented to distinguish vaccination status. Are those codes currently submitted by hospitals for patients in case mix data or by carriers for its members in the MA APCD medical claims?
- A: Three new diagnosis codes were implemented into ICD-10-CM for reporting COVID-19 vaccination status. The CDC notes that these codes should not be used for individuals who are not eligible for the COVID-19 vaccines, as determined by the healthcare provider.
- Two of three new ICD-10-CM codes have been created for underimmunization for COVID-19 status:
  - Code Z28.310, Unvaccinated for COVID-19, may be assigned when the patient has not received at least one dose of any COVID-19 vaccine.
  - Code Z28.311, Partially vaccinated for COVID-19, may be assigned when the patient has received at least one dose of a multi-dose COVID-19 vaccine regimen, but has not received the full set of doses necessary to meet the Centers for Disease Control and Prevention (CDC) definition of “fully vaccinated” in place at the time of the encounter.
- The third new code describes other underimmunization status:
  - Code Z28.39, Other under immunization status, includes delinquent immunization status or lapsed immunization schedule status.

The implementation date of these diagnosis codes, in addition to seven new procedure codes for COVID-19 related therapeutics, was April 1, 2022

CMS Medicare reference: https://www.cms.gov/medicare/icd-10/2022-icd-10-cm

CDC reference: https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/ICD10CM/2022/icd10cm-tabular-2022-April-1.pdf

The three new COVID-19 diagnosis codes for underimmunization can be used in combination existing ICD-10-CM underimmunization codes which provide specificity on the reason why the immunization was not carried out. *See table on next slide.*

Also, the CDC advises, when applicable, these codes can be used in combination with code Z71.85 (encounter for immunization safety counseling).

ICD-10-CM Codes for Immunization Not Carried Out and Underimmunization (as of 4/2022)

Diagnosis Code	Full Description
Z28	Immunization not carried out and underimmunization status
Z280	Immunization not carried out because of contraindication
Z2801	Immunization not carried out because of acute illness of patient
Z2802	Immunization not carried out because of chronic illness or condition of patient
Z2803	Immunization not carried out because of immune compromised state of patient
Z2804	Immunization not carried out because of patient allergy to vaccine or component
Z2809	Immunization not carried out because of another contraindication
Z281	Immunization not carried out because of patient decision for reasons of belief or group pressure (not carried out because of religious belief)
Z282	Immunization not carried out because of patient decision for other and unspecified reason
Z2820	Immunization not carried out because of patient decision for unspecified reason
Z2821	Immunization not carried out because of patient refusal
Z2829	Immunization not carried out because of patient decision for other reason
Z283	Underimmunization status
Z2831	Underimmunization for COVID-19 status
Z28310	Unvaccinated for COVID-19
Z28311	Partially vaccinated for COVID-19
Z2839	Other underimmunization status
Z288	Immunization not carried out for other reason
Z2881	Immunization not carried out due to patient having had the disease
Z2882	Immunization not carried out because of caregiver refusal (Immunization not carried out because of guardian refusal, or Immunization not carried out because of parent refusal Excludes (Z28.1) Immunization not carried out because of caregiver refusal because of religious belief)
Z2883	Immunization not carried out due to unavailability of vaccine (Delay in delivery, lack of availability, or manufacturer delay of vaccine)
Z2889	Immunization not carried out for other reason
Z289	Immunization not carried out for unspecified reason

Maine Health Data Organization – Maine APCD

- Q. Is there a way to calculate how many procedures were in an encounter?
- A. It sounds like you are looking to compute a measure of utilization. The response varies depending on what particular characteristic of the **outpatient** procedures you are looking to analyze. Here are some scenarios:
  - On how many hospital **outpatient** encounters is HCPCS code X present? In this case, you would be counting how many unique HCPCS codes appear in the HCPCS Code fields, per encounter.
  - How many distinct times did patients have Procedure / Service X done? In this case, you would be counting distinct procedure instances, or unique combinations of HCPCS Code fields and the corresponding Service Date. On some encounters, a particular HCPCS code can appear more than once, each time with a different Service Date, so you would want to count each date as a separate procedure instance.

Possible Arkansas APCD field alignment:

- Identify outpatient claims using bill type (substring(MC036,1, 2) in ('13','14')
- HCPCS codes equate to Arkansas APCD Procedure Codes (MC055)
- Date of Service From (MC059) represents Service Date

Latest APCD Release Information and Data Tips

Release Information

- Current APCD Data: Jan. 1, 2013, through March 31, 2022
  - Release notes
    - Overall coverage dates
    - Source-specific release notes
    - New and revised data fields
      - New submission requirements required as of December 2021
      - Submitting entities were scheduled to begin submission of these new data as of June 30, 2022.

New Fields

Member	Description
ME024	Member Hispanic Indicator
ME159A	Subscriber Hispanic Indicator
ME910	Medicaid AID Category*

Pharmacy Claims	Description
PC113	Payment Arrangement Type
PC910	Medicaid AID Category*
PC038	Postage Amount Claimed

Medical Claims	Description
MC021	Point of Origin Code
MC910	Medicaid AID Category*
MC966	Other Insurance Paid Amount

Dental Claims	Description
DC113	Payment Arrangement Type
DC910	Medicaid AID Category*
DC911	Diagnosis Code
DC915A	ICD Indicator

*Review with this slide for additional information.

Revised Fields – Now Required

Data Element	Description
ME021, ME022	Member Race 1, Member Race 2
ME025, ME026	Member Ethnicity 1, Member Ethnicity 2
ME033, ME157A	Member Language, Subscriber Language
ME154A, ME155A	Subscriber Race 1, Subscriber Race 2
ME156A, ME166A	Subscriber Ethnicity 1, Subscriber Ethnicity 2

- Submitters are required to submit these data as of 6/30/2022
- Many submitters do not have these data yet, but will submit when available therefore these fields will not be well populated

Revised Fields – Definition Change

Data Element	Description
MC023	Final Discharge Status
MC039	Admitting Diagnosis
MC058-MC058L	ICD Procedure Codes
MC092	Covered Days
MC154-MC166	Present on Admission Codes

What changed? *These fields now represent institutional claims as well as inpatient claims.*

- Definition change details are found in the Release Notes; it is important to REVIEW these prior to use
- Submitters are required to submit these data with revised definitions as of 6/30/2022
- REMEMBER, claims paid (MC017) prior to 6/30/2022 will not have the required changes

Revised Fields – Definition Change

Data Element	Description
ME040	Member Product Code

What changed? *For 99MCD1 only. This field contains the Arkansas Medicaid State Aid Category for data requests pulled prior to 6/30/2022. Thereafter, the Arkansas Medicaid State Aid Category is in ME910. ME040 will contain the Medicaid Federal Aid Category instead.*

The Arkansas Medicaid State Aid Category data is now captured in a different field – ME910.

- Definition change details are found in the Release Notes; it is important to REVIEW these prior to use
- Submitters are required to submit these data with revised definitions as of 6/30/2022

Release Information

- Other Data User Resources
  - Universe counts
  - Data element frequency counts
  - Claim counts by month
  - Data dictionaries

Helpful Hint:
Refresh linkage methodology knowledge by reviewing the Data Attributes deck.

Data Tips and Issues

- What's New?
  - Quick link to Featured Data Tips and Issues
  - Monthly Data Tips and Issues email
    - Features new and updated tips and issues
    - Reviews older, still relevant data tips and issues
    - Highlights newly resolved data issues

Click here for the *Arkansas APCD Latest Data Tips and Issues* added or updated in the last 30 days.

Always check the Arkansas APCD Data Issues and Tips page for the latest information!

APCD Technical Support

- Reach out to adrs@achiapcd.atlassian.net for questions about data requests, data use, or pricing

Call to Action

- Sign up for the ACHI Newsletter
- Follow on social media: ACHI and the Arkansas Healthcare Transparency Initiative featuring the Arkansas APCD

- Check out the blog posts on ACHI website
- Next Data Users Group meeting: January 25, 2023

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