




Arizona Substance Abuse Partnership

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Center for Health Information & Research Overview


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About CHIR

- CHIR began as a research group in 1999 before organizing into a multidisciplinary unit now part of the ASU College of Health Solutions.
- Our AZ Board of Regents designated research center serves as a community resource and partner for individuals and organizations seeking comprehensive health information, data analytics and reporting for public, private and research uses.
- We collect identifiable health information and information on social determinants of health from a variety of sources across the state voluntarily.
- We can track the health care and well-being of individuals and populations over time and across providers and health insurers through our linkable data sources.



Linkable Data Sources	Characteristics
<ul style="list-style-type: none"> Arizona Medicaid Claims and Encounters State Inpatient and Emergency Department Data Community Health Center Electronic Health Records Criminal Justice Data Physician, Nursing & Pharmacy Workforce Information Vital Statistics Records (Birth/Death) PolicyMap (online data mapping tool) Other Health Care and Social Determinant Data 	<ul style="list-style-type: none"> Individual level health encounter data on millions of Arizona residents Geographically-based Secure storage & processing Voluntary data sharing partnerships 

Our Services

- Data curation & integration
- Population health reporting
- Customized data requests
- Descriptive and predictive analysis
- Health outcomes studies
- Health workforce supply/demand
- Quality and performance assessments

Our Data Science & Analytic Capabilities


- Inferential Modeling**
 - Analyze influential factors and impacts (i.e., patients, providers, geographies, etc.)
- Time Series**
 - Trends in care utilization
 - Forecasting trends into the future with various population segments
- GIS**
 - Mapping patient and provider locations, including distance queries
- Social Network Analysis**
 - Nodes: Providers/Primary Services
 - Edges: Individuals seeking care
 - Identify influential providers/services & stable networks
- Data Mining & Machine Learning**
 - Neural Networks
 - Support Vector Machines
 - Random Forests

Extensive Network of Collaborations & Partnerships



Studies on Substance Use

Arizona State Opioid Response (SOR) Data Project



Sponsor: AHCCCS/Substance Abuse and Mental Health Services Administration (SAMHSA)

Partner: ASU Fulton School of Engineering

Data Sources: AHCCCS, Death Records

Purpose: Use of advanced analytics to create tools such as predictive models and mobile applications to combat the opioid epidemic.



Opioid Dashboard Simulations

Using Machine Learning to Predict Opioid Misuse & Concurrent Opioid and Benzodiazepine Use

Sponsor: NIH
Partner: University of Florida (UFL)
Data Source: AHCCCS, Death Records

Purpose: CHIR is providing data sets and expertise to support studies at the UFL that use machine learning to predict prescription opioid use and overdoses and to identify concurrent opioid and benzodiazepine use among older adults.

Opioid Prescriptions & Wastewater-based Epidemiology

Sponsor: NIH
Partner: ASU Biodesign Center for Environmental Health Engineering
Data Source: AHCCCS, City Wastewater

Purpose: CHIR integrated AHCCCS claims for opioid prescriptions with opioid concentrations found in the wastewater of the City of Tempe, Arizona to evaluate novel methods for monitoring the opioid crisis.

<https://biodesign.asu.edu/environmental-health-engineering/human-health-observatory>

Assessing Variation in Opioid Prescribing Across Community Health Centers in Arizona

Partner: ASU School of Health Care Delivery
Data Source: AHCCCS

Purpose: A collaborative project to analyze AHCCCS data to determine how opioid prescribing varies across AZ community health centers with a focus on behavioral health integration, community integration and patient well-being.

TIP QIC Targeted Investments Program Quality Improvement Collaborative

Sponsor/Partner/Data Source: AHCCCS

Purpose: A collaboration to supply TIP health care providers with monthly performance metrics and technical assistance to enhance their efforts to optimize integration of primary care and behavioral health for whole person care coordination.

<https://tipqc.org/>

Mapping the Cost of Chronic Mental Illness

Sponsor: Chuck and Laurie Goldstein
Partner: ASU Morrison Institute for Public Policy, Copia Health, Resilient Health
Data Sources: AHCCCS, HMS, MCSO Bookings, Phoenix Open Data, Copia Health Roster and Assessments, Resilient Health Roster and Assessments

Purpose: A partnership to analyze the impact of supportive permanent housing on cost and utilization for those suffering from Chronic Mental Illness/Serious Mental Illness.

Arizona Medicaid Crisis Service Analysis

Sponsor: RI International
Partner: SAMHSA
Data Source: AHCCCS, MCSO Bookings

Purpose: CHIR is conducting a descriptive analysis to validate models built around the Crisis Response system called the Crisis Now Model.

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THANK YOU!

ASU College of Health Solutions
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