

Arizona Occupational Health Indicators Lessons Learned and Bumps in the Road

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Health and Wellness for all Arizonans

Phoenix, Arizona



Hazards for Arizona Workers



Source: (Left) Flickr Creative Commons, (Right) Thom Wilson



Health and Wellness for all Arizonans

Background

**Building an occupational health
surveillance program in Arizona**



Goals

- Improve knowledge
- Identify areas of concern
- Improve partnerships
- Promote awareness



WestON

Participation in
WestON led to
collaboration with the
University of Arizona

OCCUPATIONAL HEALTH: WESTON

+ Directory & Features



Western States Occupational Network Meeting
The Western States Occupational Network, or WestON, is a network of occupational health epidemiologists and administrative professionals. This network was created to enhance occupational safety and health (OSH) capacity in the Western States with those that are just beginning their occupational safety and health (OSH) program. The annual WestON meeting is a group to meet and address common workplace safety issues and to enhance state-to-state collaborations and partnerships to enhance state-by-state prevention of work-related injuries and illnesses.

Background:



Health and Wellness for all Arizonans

Overcoming Challenges

- Getting Data
- Workers compensation data access
- Absent industry/occupation on hospital discharge

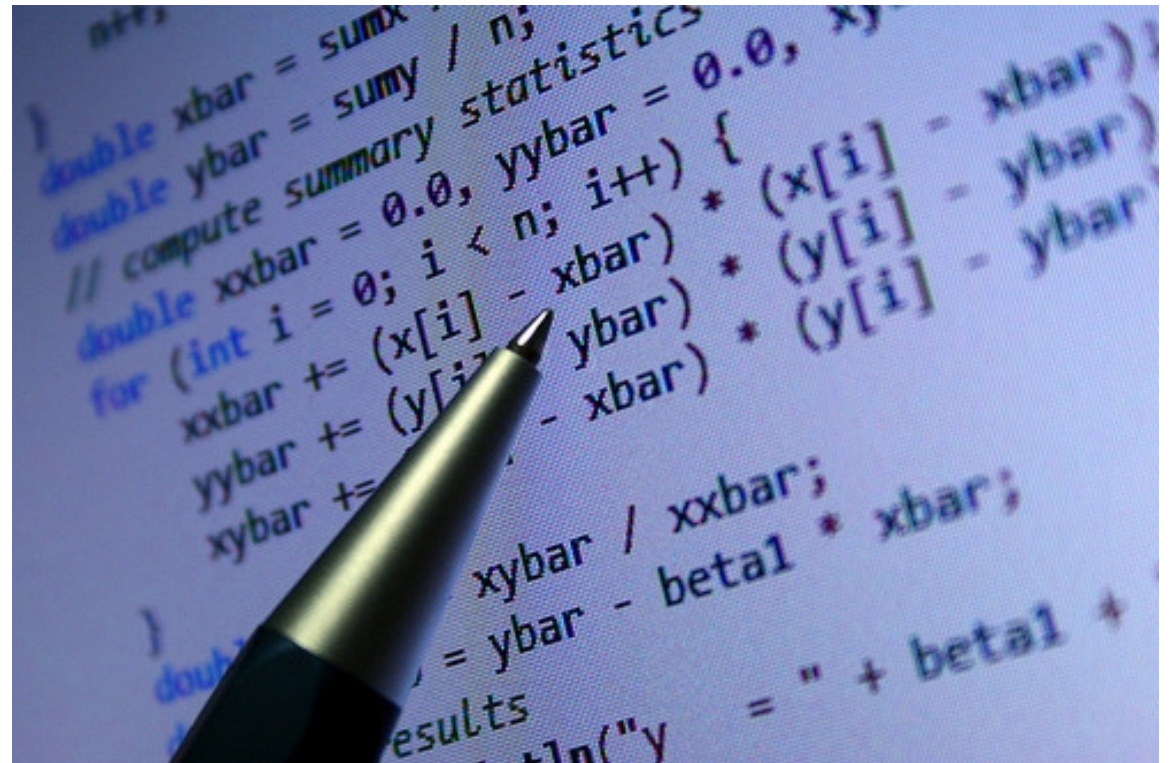


Photo: Jorge Franganillo



Health and Wellness for all Arizonans

Stakeholder Engagement

- Arizona Department of Health Services
- Arizona Division of Occupational Safety & Health
- Arizona Industrial Commission
- Council of State & Territorial Epidemiologists
- University of Arizona
- University of Colorado, Mountain and Plains ERC
- University of California, Davis, Western Center for Agricultural Health and Safety



Areas of Concern

Monitoring

Benchmarking

Resource Allocation

Focusing

CAUTION

A yellow caution tape is shown diagonally across the bottom half of the image. The word "CAUTION" is cut out of the tape in large, dark, bold letters. The background is a dark, textured surface.

Successes

- Occupational Health Indicator Report
- Development of Occupational Health Surveillance Website
- Networking



2008-2012

Arizona Occupational Health Hazard Indicators

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Arizona
Department of
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Indicator 1 Non-fatal Injuries and Illnesses

Arizona's highest incidence rate was 3,700 events per 100,000 FTE in 2008 and its lowest rate was 3,200 events per 100,000 FTE in 2011 and 2012. • The count and rate of all non-fatal injuries and illnesses has gradually decreased from 2008-2012. • From 2010-2012, the count and the rate of cases approached 15,400 cases and 900 cases per 100,000 FTE, respectively.

Year	All injuries and illnesses		Injuries and illness involving days away from work	
	Count	Rate*	Count	Rate*
2008	69,500	3,700	18,300	1,000
2009	62,500	3,500	17,500	1,000
2010	53,700	3,300	15,200	900
2011	55,900	3,200	14,900	900
2012	54,400	3,200	15,400	900

* per 100,000 FTE

Table 1.1 Number and incidence rate of injuries and illnesses in Arizona
Source: BLS Survey of Occupational Injuries and Illnesses

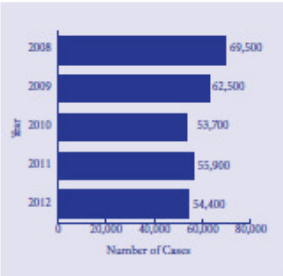


Figure 1.1 All work-related injuries and illnesses in Arizona
Source: BLS Survey of Occupational Injuries and Illnesses

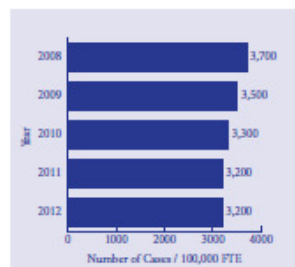


Figure 1.2 Incidence rate of work-related injury and illness in Arizona
Source: BLS Survey of Occupational Injuries and Illnesses

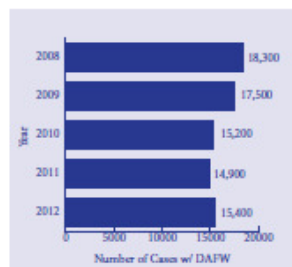


Figure 1.3 Work-related injuries and illnesses involving days away from work (DAFW) in Arizona
Source: BLS Survey of Occupational Injuries and Illnesses

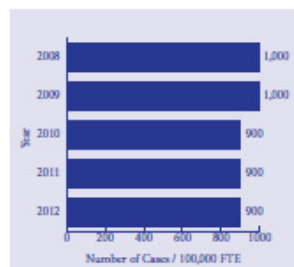


Figure 1.4 Incidence rate of work-related injury and illness involving days away from work in Arizona
Source: BLS Survey of Occupational Injuries and Illnesses

Indicator 2 Work-related Hospitalizations

In Arizona, there were at least 2,700 annual hospital discharges with primary payer listed as workers' compensation from 2008-2012. • The annual crude rate of workers hospitalized for a work-related injury or illness ranged from 95 per 100,000 workers in 2009 to 111 per 100,000 workers in 2008.

Year	Count	Rate*
2008	3,278	111.0
2009	2,703	95.3
2010	2,966	104.1
2011	2,910	106.5
2012	2,823	101.9

*per 100,000 FTE

Table 2.1 Number and rate of work-related hospitalizations in Arizona, ages 16 and older
Source: Arizona Department of Health Services' hospital discharge database; BLS Current Population Survey

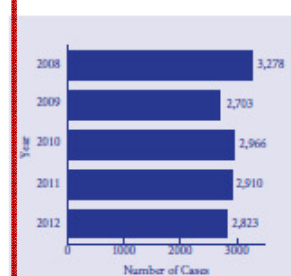


Figure 2.1 Number of inpatient hospitalizations in Arizona, ages 16 and older
Source: Arizona Department of Health Services' hospital discharge database

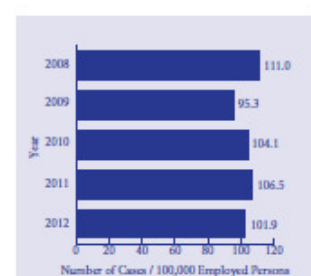


Figure 2.2 Crude rate of inpatient hospitalizations in Arizona, ages 16 and older
Source: Arizona Department of Health Services' hospital discharge database; Bureau of Labor Statistics Current Population Survey

SIGNIFICANCE

Individuals hospitalized with work-related injuries and illnesses have some of the most serious and costly work-related adverse health outcomes. Tracking of these significant adverse health effects should be undertaken to document the burden of occupational injuries and illnesses, and to identify settings in which workers may be at high risk. Tracking efforts will also be useful for designing, targeting, and evaluating prevention efforts over time.

METHODS

The number of work-related hospitalizations were obtained from Arizona's Department of Health Services, which collects data on all hospital discharges from Arizona licensed hospitals. The data does not include cases of unknown age, cases under 16 years-of age, out-of-state

residents, unknown residence, or out-of-state hospitalizations. Discharges from federal, military, and Department of Veteran Affairs hospitals are excluded. Crude rates of hospitalizations per 100,000 employed persons were calculated for each year from 2008-2012 using civilian employment estimates from the Bureau of Labor Statistics Current Population Survey as the denominator.

LIMITATIONS

- 1 Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- 2 Residents of one state may be hospitalized in another state and not be reflected in his/her state's hospitalization data.

- 3 All admissions are counted, including multiple admissions for a single individual.

RECOMMENDATIONS

- 1 Continue to track inpatient hospitalizations to get a more accurate representation of the overall trend.
- 2 Age, gender, race/ethnicity, zip code specific counts, and rates can be used to better define the pattern of work-related hospitalizations.
- 3 Examine the proportion of all hospitalizations in Arizona.

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Occupational Health

Home

Occupational injuries and illnesses are significant but preventable public health problems. There are more than 2.7 million workers employed in Arizona. In 2012, more than 54,000 injuries and illnesses occurred in Arizona workplaces. Among those who were injured, 60 people died from a fatal work-related injury. The Arizona Department of Health Services has taken the initiative to perform surveillance of occupational health indicators for use in setting priorities for education and prevention activities. Successful approaches to making workplaces safer and healthier begin with having the data necessary to understand the problem. The following links highlight some of the resources available to promote occupational safety.

- [National Institute for Occupational Safety and Health \(NIOSH\)](#)
Industry and occupation specific workplace safety information
- [Council of State & Territorial Epidemiologists – Occupational Health Indicators](#)
Occupational measures of health (work-related disease or injury) and factors associated with health (workplace exposures, hazards, or interventions)
- [Occupational Safety & Health Administration](#)
Information on worker rights, regulations, data, enforcement, and trainings
- [Arizona Division of Occupational Safety and Health \(ADOSH\)](#)
Report a workplace fatality, accident, or imminent danger



Data, Statistics, & Reports

- [2008-2012 Arizona Occupational Health Hazard Indicators Report](#)
This report summarizes workforce statistics such as demographic profiles, workforce safety and health, and the counts and rates of injuries and illnesses for varying occupational health indicators for Arizona from 2008-2012.
- [2012 Demographic Profile of Arizona Workforce](#)
Statistics on civilian employment by industry and occupation

Additional Resources

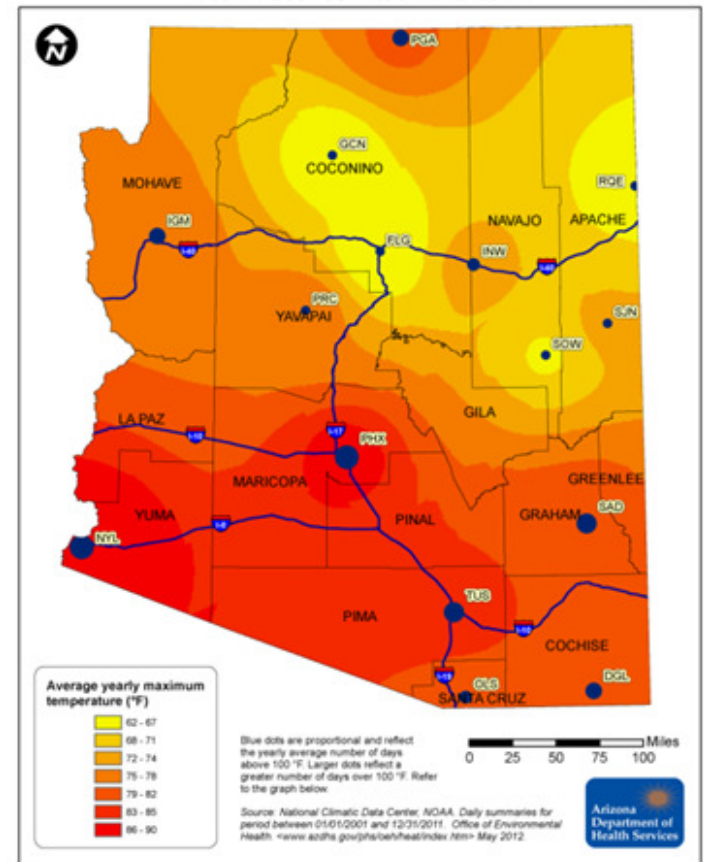
- [Heat and Outdoor Workers Toolkit](#)
Toolkit provides outdoor workers and employers with resources to prevent, recognize, and treat heat illness

Extreme Heat in Arizona

**114 Days Over 100
Degrees F in Phoenix**

**128 degrees F, Record
High, June 29, 1994,
Lake Havasu City**

Average maximum temperature and
average number of days per year over
100 °F between 2001 and 2011



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Heat-Related Illness

In 2014,

- 2,170 ED Visits
- 494 Inpatient Admissions



Heat-Related Deaths

- (2003-2014)
 - 154 Heat-Related Deaths Annually

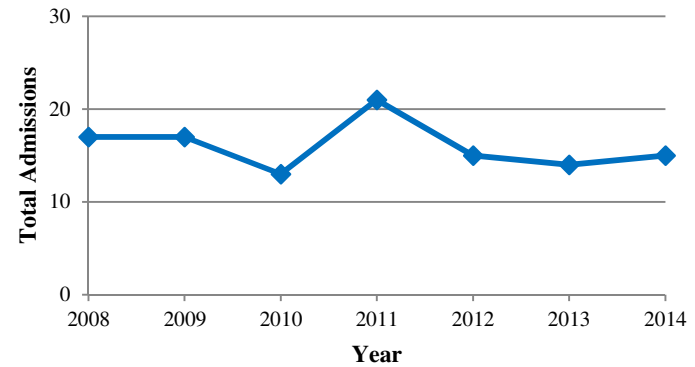


Work-Related Heat Illness

Inpatient Admissions

Year	Admissions	Total charges	Median charge	Total days	Median days
2014	15	\$ 730,546	\$ 23,276	69	2.0

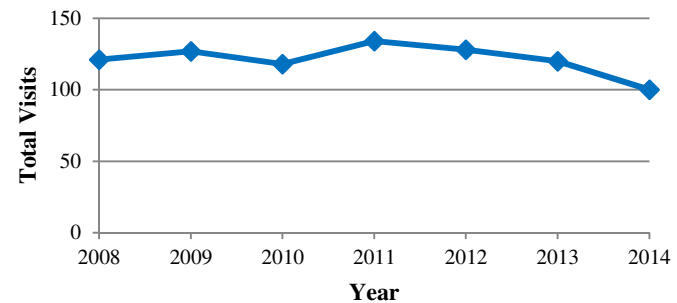
Inpatient Admissions



Emergency Department Visits

Year	Visits	Total charges	Median charge	Total days
2014	100	\$ 497,886	\$ 3,490	22

ED Visits





YouTube Video Link: <https://youtu.be/HGO-hddrdRo>



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From Data to Action:

- Are OH Indicators actionable?
 - Weston Agendas (2013-15): Excellent topics, but none used OHI's directly
- Can WC data analysis create motivation?
 - \$\$

HDD: Hospital Discharge Database

- Hospital inpatient (**IP**) Discharges
- Emergency Dept (**ED**) Visits
- 2008-2014
- Operationally define work-related by payer type = workers compensation

7 Clinical Groups (defined by ICD and CPT)

INJURY

- Back
- Trauma

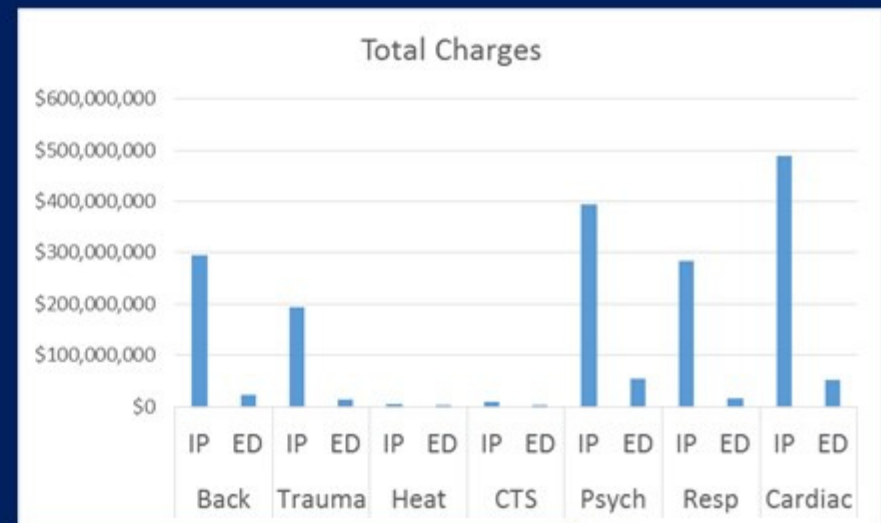
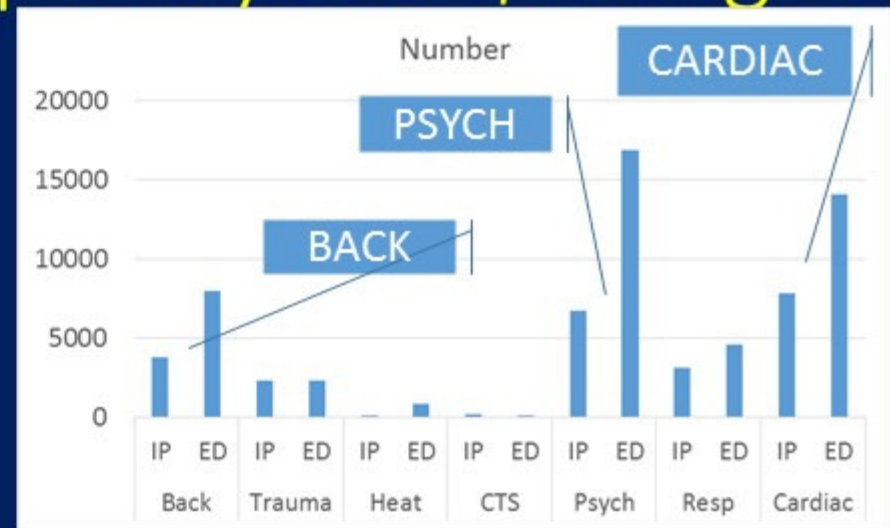
DISEASE

- Cardiac
- CTS
- Heat
- Psych
- Respiratory

“Big diagnoses” - frequency and \$charges

- Cardiac
- Psych
- Resp

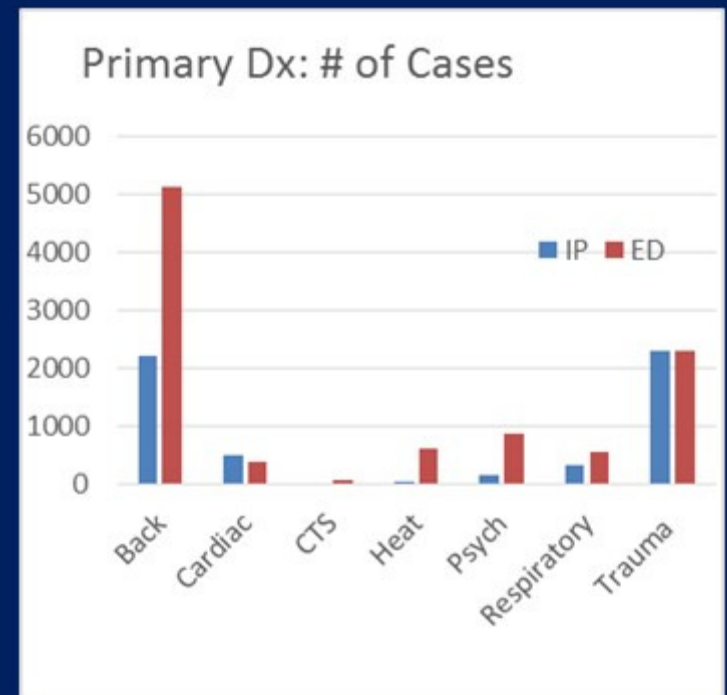
- Cardiac = \$543m
- Back = \$318m



YES.... BUT...

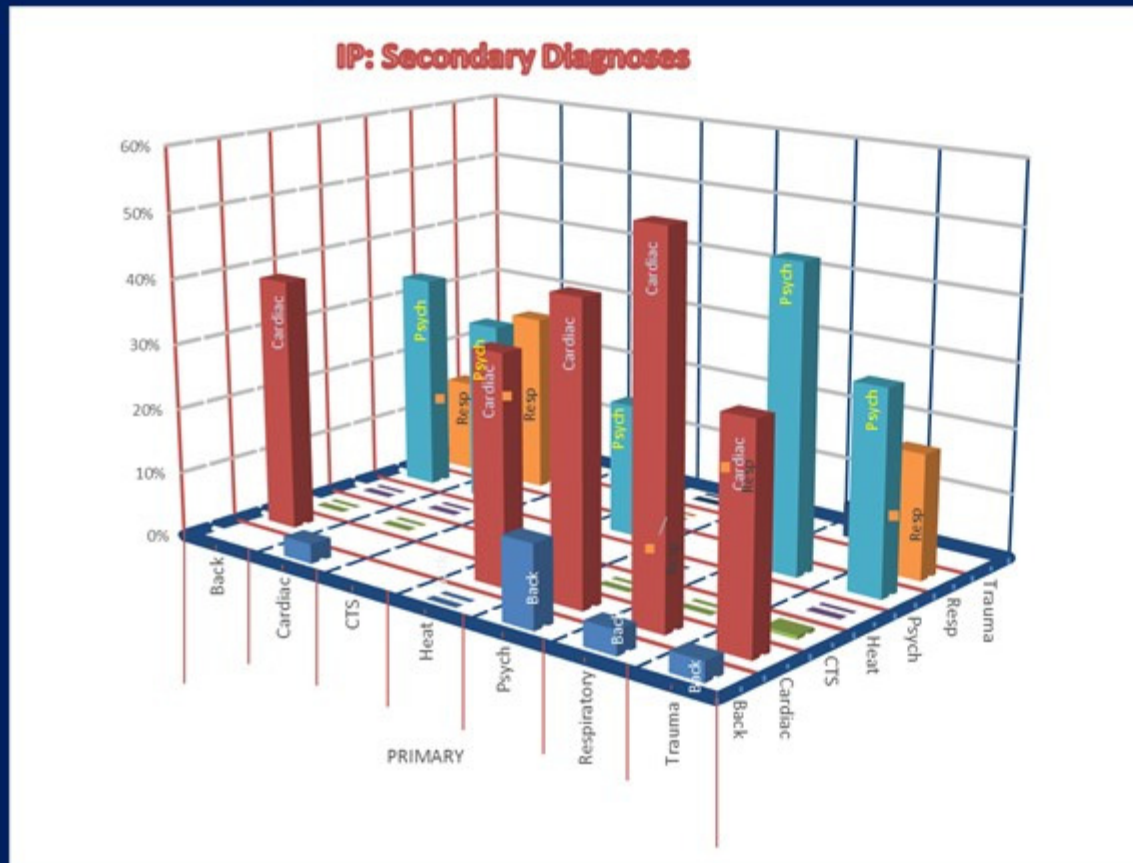
Principal vs Secondary Dx

- Back, Trauma, Heat usually 1⁰
- Psych, Cardiac, Resp generally 2⁰



Frequency of Concurrent Dx

Pretty picture... No time to discuss



HEAT RELATED ILLNESS: Value of examining concurrent diagnoses

- Published time series analyses strongly suggest impact of heat on heart and lung
- Finding:
 - Often a Primary Diagnosis
 - Rarely a secondary diagnosis for heart, lung
- Implication:
 - Coding probably does not capture major impact of HRI
 - (since heart, lung, kidney are major serious impacts of HRI, would expect more concurrent diagnoses)

Suggestions

- Diseases Inpatient and ED have big impact
- More in-depth analytic research needed
- Analyze Principal Dx separately
- "Diseases" need more attention:
 - Effect modifiers
 - Major driver of cost
 - Underrecognized
- Use OHI data to gain support

Hopes for AZ → Action

- Create sustainable statewide surveillance
- Capture interest of “decision-makers”
- Include work information in HDD abstracts
- Share workers compensation data (currently outsourced)

A photograph of a classroom with rows of dark-colored desks and chairs. In the background, there is a whiteboard and a bulletin board with some papers and a red poster. The text "Lessons Learned" is overlaid in white at the top center.

Lessons Learned

- Open Dialogue
- Partnerships
- Flexibility

Acknowledgements

- University of California, Davis, Western Center for Agricultural Health and Safety
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