The Missing Link: Connecting Ergonomic Injury Reduction Efforts to Return on Investment

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Office of the President

EHS Manager Job Summary

"Provide professional knowledge and expertise in the administration and support of environmental health and safety programs. Responsible for the overall coordination and implementation of environmental health and safety programs to assure compliance with regulatory agency guidelines and institutional policies."

Fire Extinguishers

- Cal/OSHA Title 8 CCR 6151

  e) Inspection, Maintenance and Testing.

  - (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.
  - (2) Portable extinguishers or hose used in lieu thereof under Subsection (d)(3) of this Section shall be visually inspected monthly.

  (d) Selection and Distribution.

  - (1) Where portable fire extinguishers are provided for employee use, they shall be selected and distributed based on the classes of anticipated work place fires and on the size and degree of hazard which would affect their use.
  - (2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9m) or less.

Risk-Based Job Summary

To provide professional knowledge and expertise in the administration, integration, and support of environmental health and safety programs at all levels of the organization. In coordination with the risk manager, develops environmental health and safety programs that reduce hazard, operational, strategic, reputational, and compliance risks in support of the strategic objectives and mission of the organization.

Enterprise Risk Management
ERM

The best safety professionals understand risk management,

and the best risk managers understand safety.

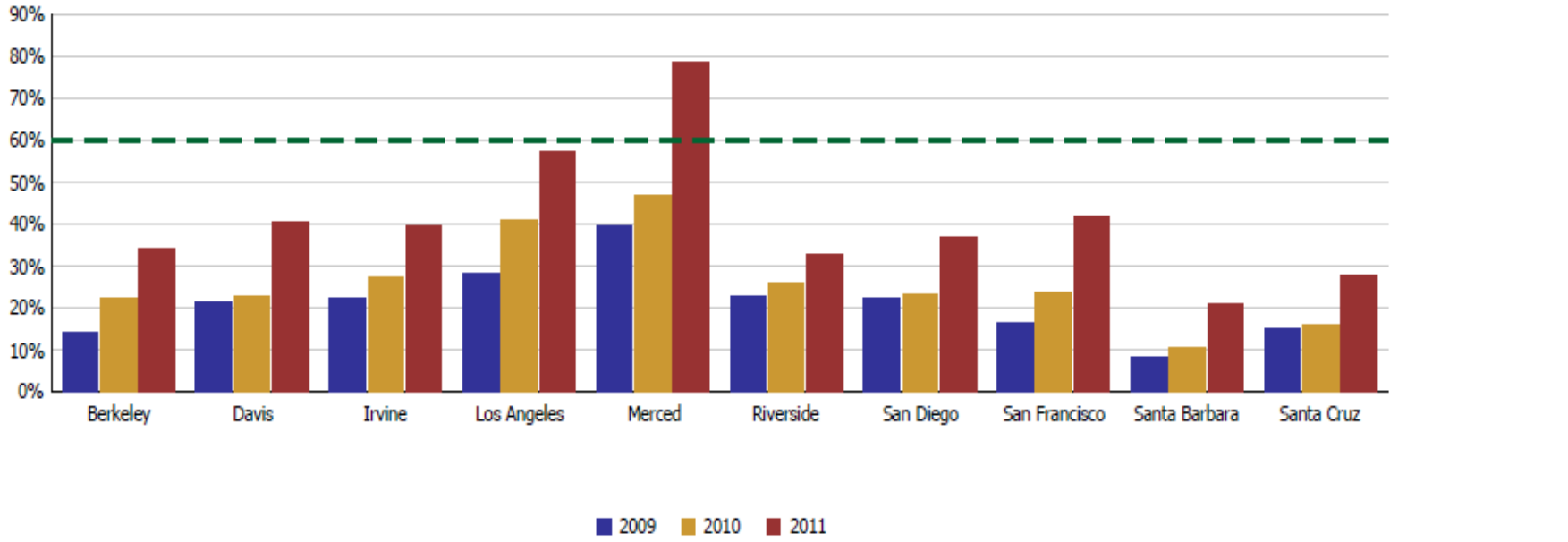
ERM is essentially the marriage of the two disciplines as it requires the risk and safety managers to collaborate in identifying and controlling a broad array of risk exposures in support of the organization's strategic plan and mission.

Everyone is a Risk Manager

What is ERM?

Enterprise Risk Management (ERM) is defined by the Committee of Sponsoring Organizations (COSO) as “a process, effected by an entity’s board of directors, management and other personnel, applied in strategy-setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.”

Percentage of Employees Receiving Electronic W-2 Forms
2009-2011



CY	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
2009	14.14%	21.17%	22.37%	28.32%	39.44%	22.83%	22.45%	16.20%	8.15%	15.20%
2010	22.17%	22.80%	27.28%	41.10%	46.72%	25.82%	23.38%	23.82%	10.56%	16.04%
2011	33.90%	40.50%	39.48%	57.45%	78.75%	32.70%	36.98%	41.81%	21.09%	27.83%

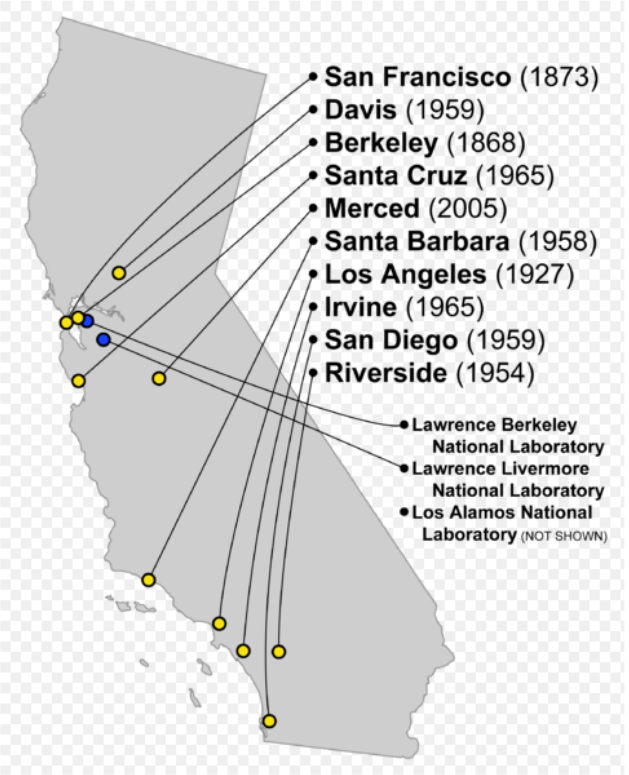
Types or Risk Exposures in ERM

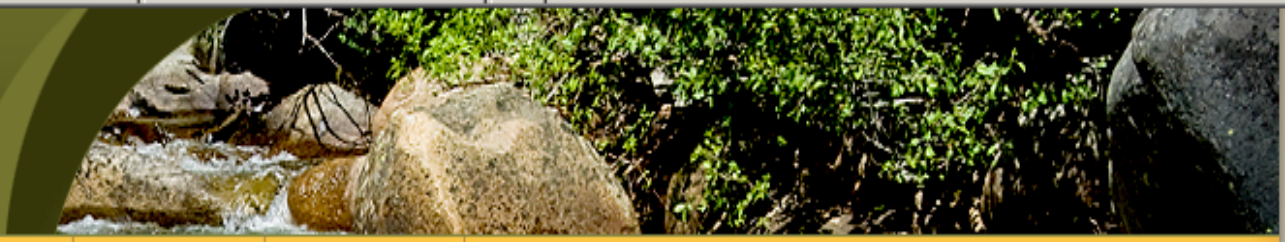
- **Hazard risk**
  - risks related to accidental losses, such as workplace injuries, liability torts, property damage, and natural disasters.
- **Financial risk**
  - risks related to financial activities, such as pricing, asset valuation, currency fluctuations, and liquidity.
- **Operational risk**
  - risks related to operations, such as supply chain, customer satisfaction, product failure, or loss of key personnel.
- **Strategic risk**
  - risks related with an organization’s long-term goals and management, such as partnerships, mergers, and acquisitions.
- **Compliance risk**
  - risks related to violations of or nonconformance with laws, rules, regulations, prescribed practices, internal policies, and procedures, or ethical standards.
- **Reputational risk**
  - risks related to the trustworthiness of business. Damage to a firm's reputation can result in lost revenue or destruction of shareholder value.

Reputational Risk

UC at a Glance

- 10 campuses
- 5 Medical Centers
- Lawrence Berkeley National Lab
- UC Division of Agricultural and Natural Resources
  - Office in each county
- UC family includes
  - 220,000+ students
  - 170,000+ faculty and staff





Home
Be Smart About Safety (BSAS)
Centers of Excellence
EH&S Academy
EH&S Directors Leadership Council
Medical Center Loss Prevention Council
Policies - Procedures - BMP's
Resources
Safety Spotlight - *New*
Strategic Plan
Workgroups

Strategic Plan

In the Spring 2010, the EH&S Directors Leadership Council developed a 5 year strategic plan that provides the necessary guidance to the UC system wide senior management as well as direction to campus and medical center EH&S programs. The goal is to strategically align EH&S resources so as to reduce to the greatest extent practicable the safety and environmental risks associated with the instructional, research and public service mission of the University.

Environment, Health, and Safety Leadership Council
Strategic Plan 2010-2015
(Revised 03-25-10)

Mission

EHS supports the UC mission by promoting a safe, healthful environment in a proactive and cost effective manner that helps the University community minimize their risk.

Vision

The University of California will be a recognized leader by customers, regulators, and our peers in establishing an effective safety culture which holds employees at all levels accountable for environment, health, and safety performance at Campus, Healthcare, and Laboratory settings.

Values

Accountability: Leadership

ROI from safety initiatives exists, but you need to know where to look and how to calculate it

What is Workers' Compensation?

Workers' compensation is a form of insurance providing wage replacement and medical benefits to employees injured in the course of employment in exchange for mandatory relinquishment of the employee's right to sue his or her employer for the tort of negligence.

A Fund for Failure

Typical Summary Loss Run

Fiscal Year	# of Claims valued 6/30/09	Total Incurred Valued 6/30/09
FY 06	5,898	$ 49,662,177
FY 07	5,705	$ 46,702,484
FY 08	5,663	$ 42,212,556
FY 09	4,826	$ 21,890,480

Loss Run Showing Development

Fiscal Year	# of Claims Valued at end of each year	# of Claims valued 6/30/09	Total Incurred End of each Year	Total Incurred Valued 6/30/09	Loss Development
FY 06	5,490	5,898	$22,391,668	$ 49,662,177	48 months
FY 07	5,342	5,705	$23,186,292	$ 46,702,484	36 months
FY 08	5,272	5,663	$25,977,736	$ 42,212,556	24 months
FY 09	4,826	4,826	$21,890,480	$ 21,890,480	12 months

How does risk financing work?

- Actuarial study performed to calculate funding requirements and rates
  - Study uses most recent 4 years of loss data excluding most recent
  - Typically does not credit loss prevention efforts
- Funded at confidence level determined by organization
- Loss development is key to a healthy fund balance
  - 95% of costs paid by year four
  - Rebates/assessments calculated

Rebates/Dividends vs. Safety ROI

- What is an insurance rebate/dividend?
  - Monies returned to organization as determined by actuary
- Where does rebate/dividend money go?
  - Operations
- What portion of rebates/dividends should be considered as part of the Safety ROI?
  - Loss costs below expected (50%) confidence level

Be Smart
About Safety

BSAS Initial Concept & Goals

Concept

- Developed as a funding mechanism to invest in *new and innovative* loss prevention and loss control measures with the goal of reducing the cost of risk as it relates to employee safety
- Not intended to supplement program budgets

Funding

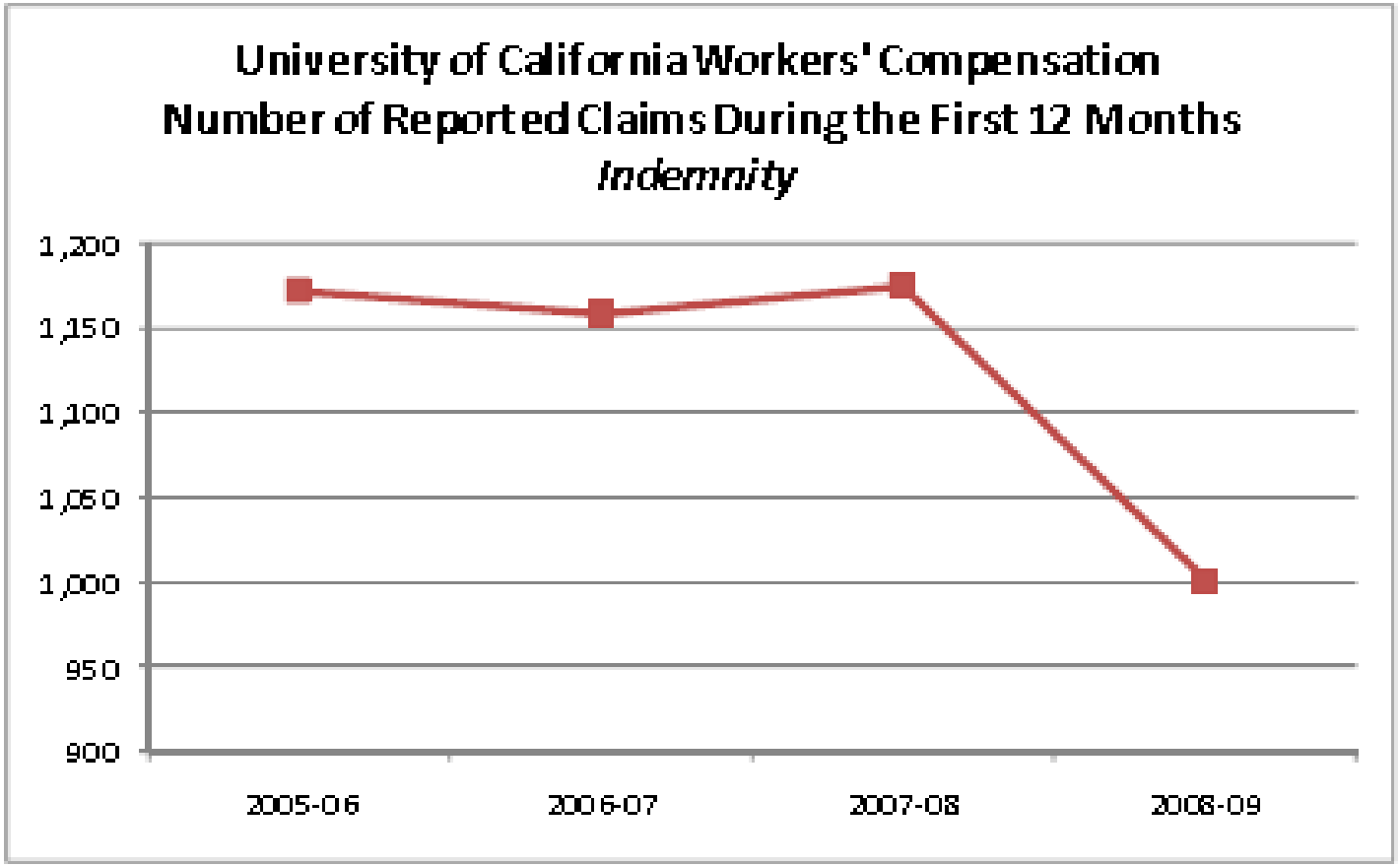
- Originally funded at 10% off each location's workers' compensation base accrual rate.

BSAS Initial Concept & Goals (cont)

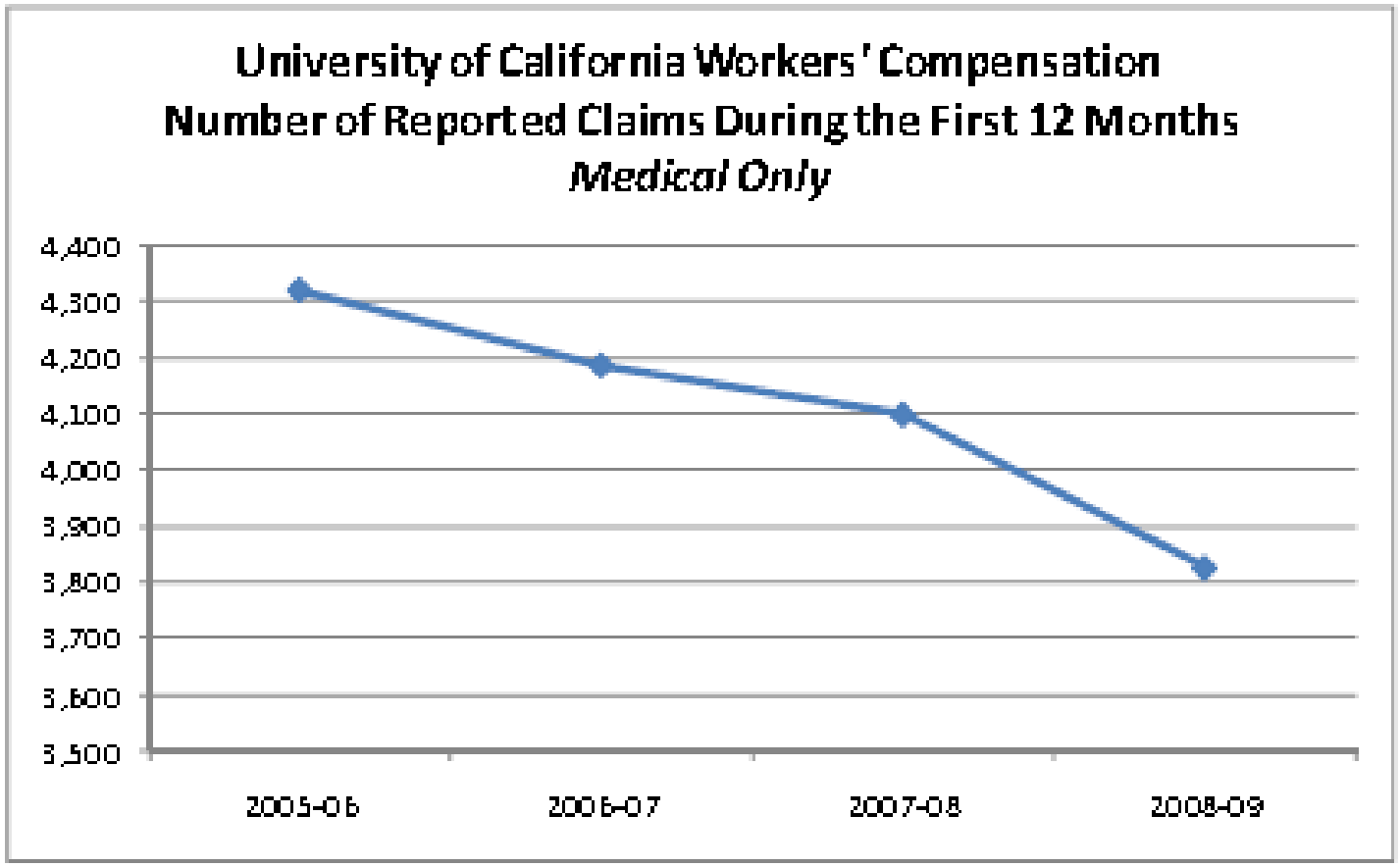
Rationale for Program

- Provides the locations with funding for loss prevention and loss control programs that were not available prior to the inception of BSAS
- Has a direct impact on the locations' WC accrual rate
  - Investing in loss prevention and loss control will reduce the locations' core premiums, as the actuary provides a rate discount to those locations participating in the BSAS program
- Investing in loss prevention will lead to a reduction in claim frequency, which in turn will have a positive effect on a location's severity and overall claim exposure
- Investing in employee health & safety through loss prevention and loss control is a sound business decision

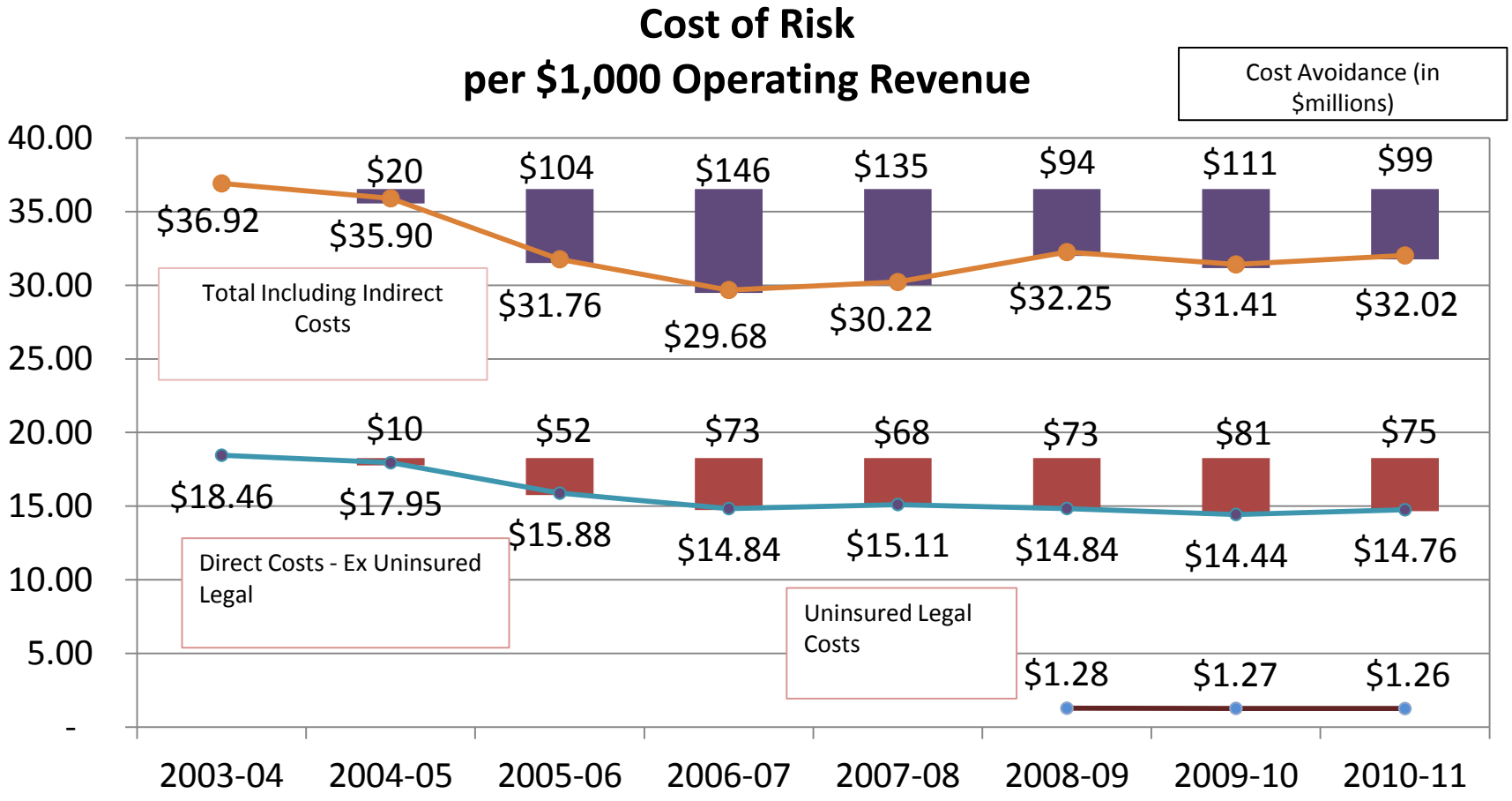
University of California: WC Claims



University of California: WC Claims



What happens when Risk Management and Safety Work Together?



University of California

Actuarial Review of the Self-Insured Workers' Compensation Program

Outstanding Liabilities as of June 30, 2011

Forecast for Program Year 2011-2012

ESTIMATED SAVINGS SINCE IMPLEMENTATION OF BSAS
Projected Accruals for Claim Costs ($000)
Trended to 2011-12

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Based on 2006-07 Rate	$130,033	$140,075	$143,086	$143,268	$144,968	$146,756	$848,186
Based on Actual Rate	130,033	112,490	89,020	77,766	76,280	71,297	556,884
Difference	$0	$27,586	$54,067	$65,502	$68,688	$75,459	$291,302

According to the table above, the difference between accrual costs at the 2006-07 rate level and costs at the actual level, trended to 2011-12, is about $291 million. Based on the funding amount thus far for BSAS, we estimate that the return on investment has been approximately 2:1.

Be Smart
About Safety

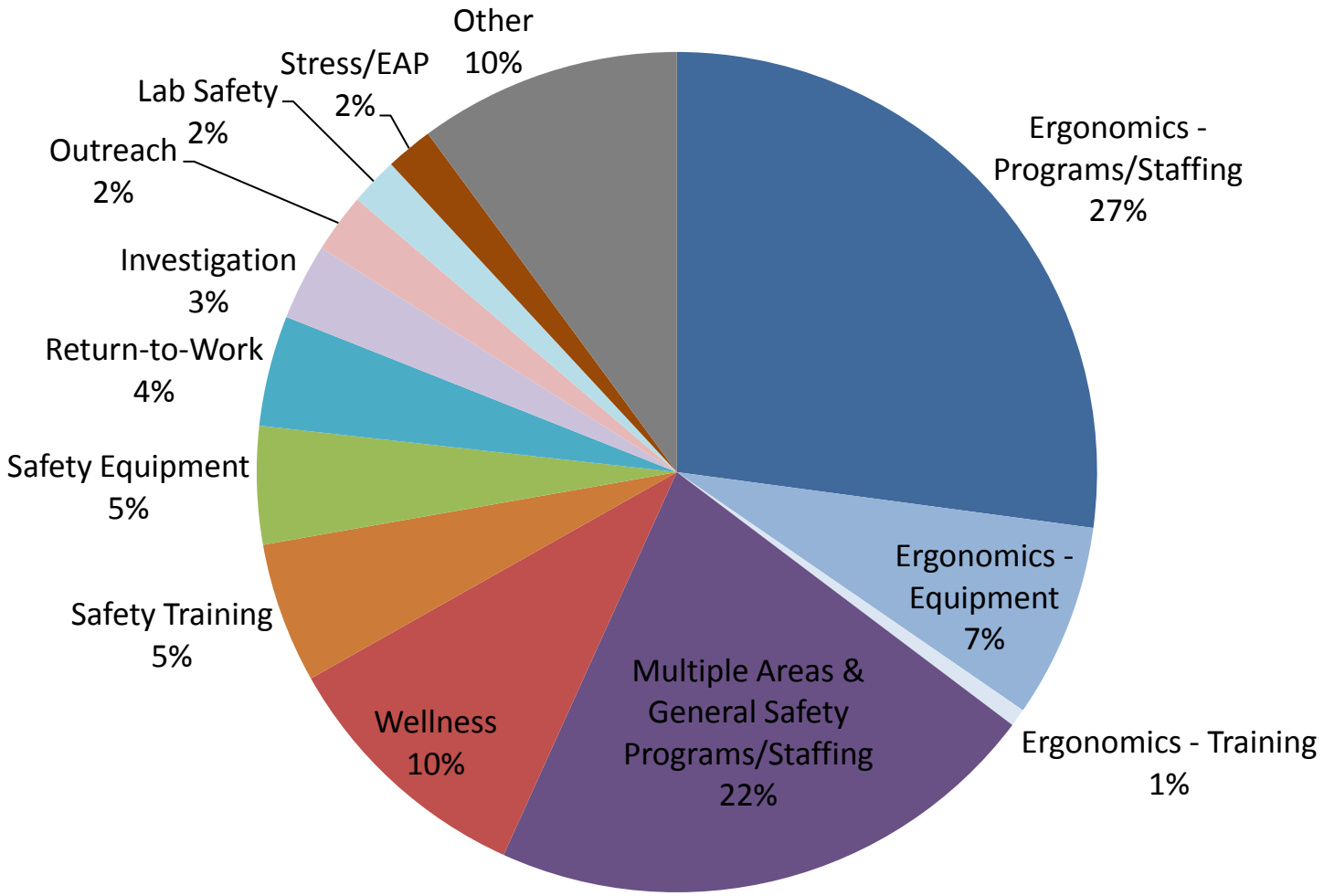
Analysis of Return on Investment

by

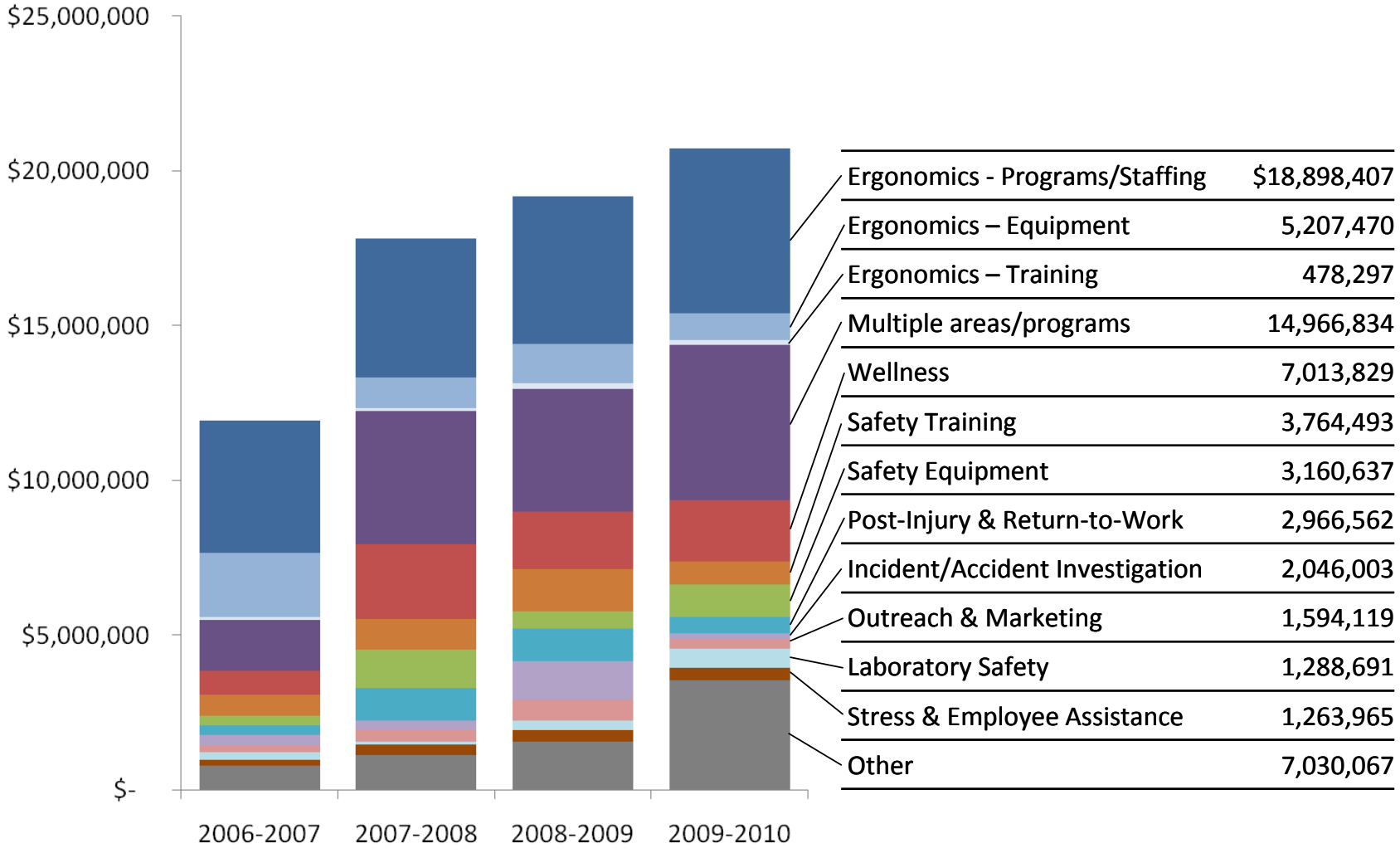
BRS

Bickmore Risk Services

Risk/Loss Profile Driven Strategy: Proposals by Project Purpose 2005-2010

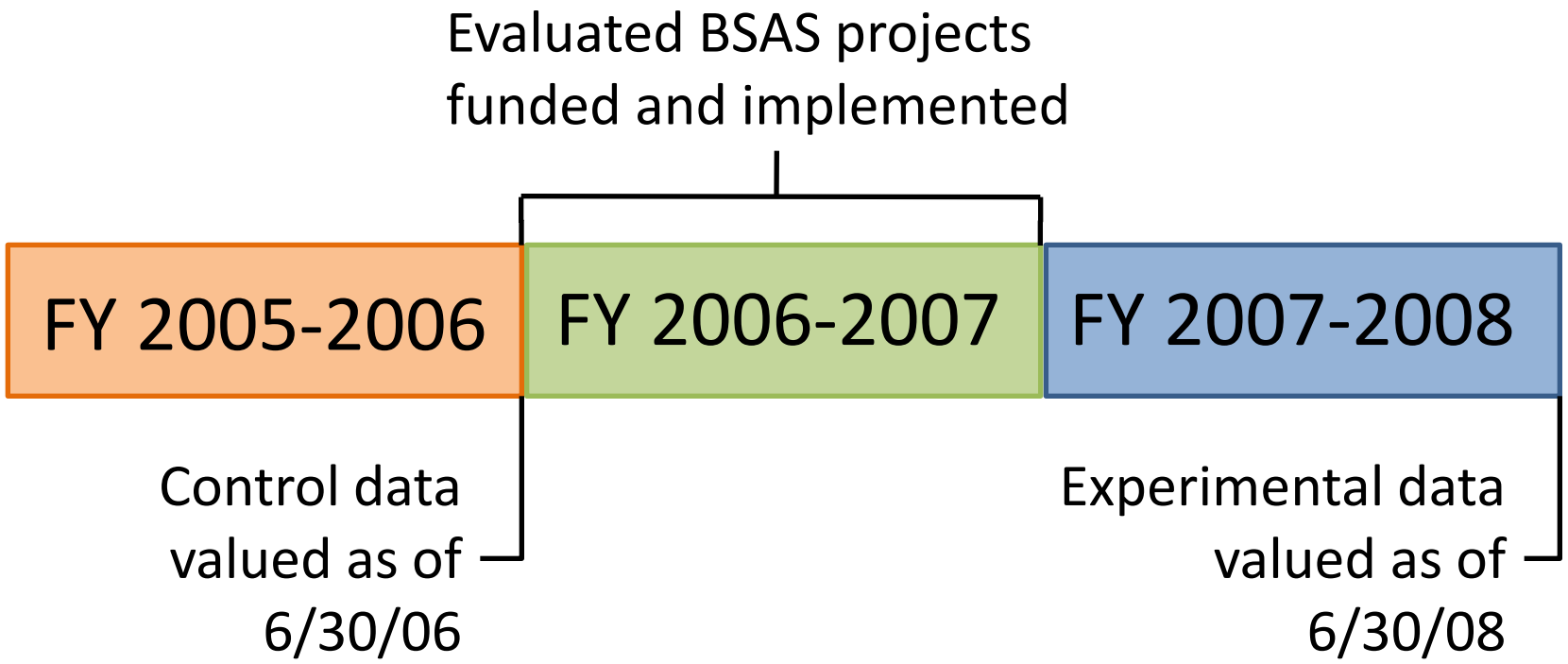


Funding Allocations:
Proposals by Project Purpose 2005-2010



Ergonomics - Programs/Staffing	$18,898,407
Ergonomics – Equipment	5,207,470
Ergonomics – Training	478,297
Multiple areas/programs	14,966,834
Wellness	7,013,829
Safety Training	3,764,493
Safety Equipment	3,160,637
Post-Injury & Return-to-Work	2,966,562
Incident/Accident Investigation	2,046,003
Outreach & Marketing	1,594,119
Laboratory Safety	1,288,691
Stress & Employee Assistance	1,263,965
Other	7,030,067

University of California "Be Smart About Safety" (BSAS): Analysis Methodology



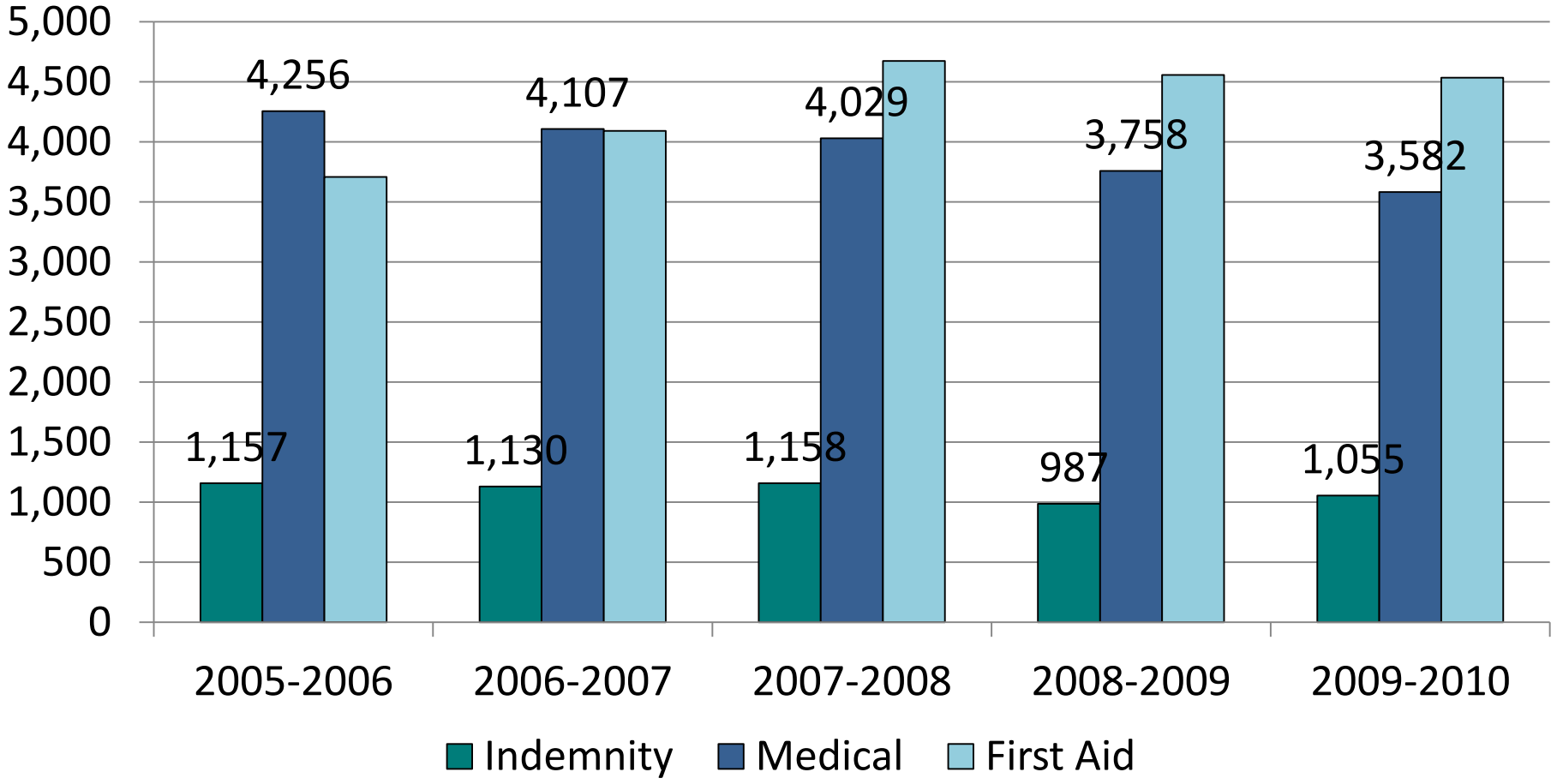
Claim Profile Results
Workers' Compensation Program Statistics

	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Losses	$22,349,394	$22,887,092	$26,071,261	$22,373,304	$24,141,225
Claims	9,121	9,328	9,861	9,301	9,172
Frequency	1.18	1.14	1.11	0.97	0.94
Severity	$2,450	$2,454	$2,644	$2,405	$2,632
Loss rate	$0.29	$0.28	$0.29	$0.23	$0.25

Frequency – Number of claims per $1,000,000 payroll
Severity – Average cost per claim
Loss rate – Cost of claims per $100 payroll

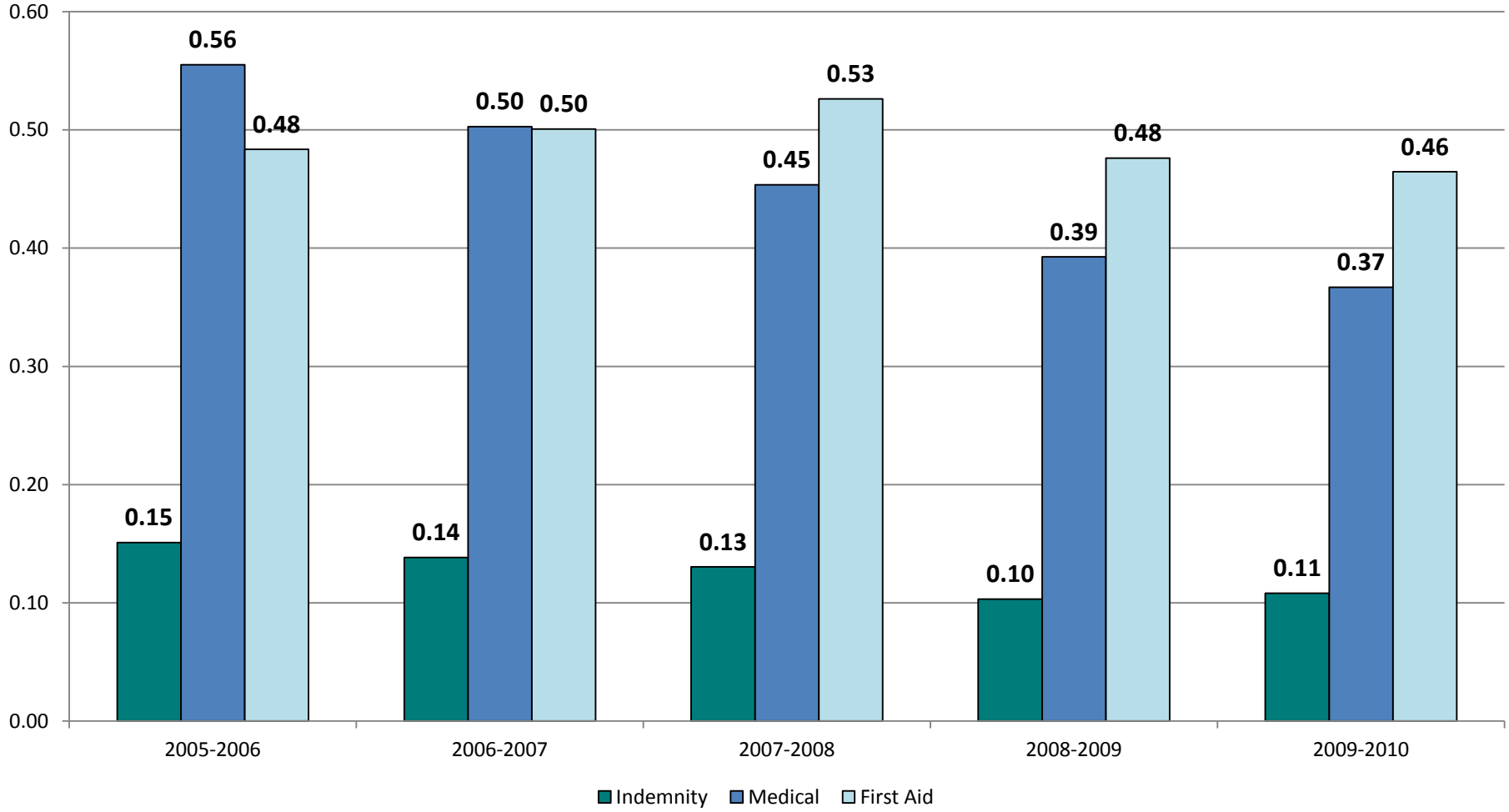
Participating Locations
Workers' Compensation Program Statistics

Changes in Claims Count by Claim Type
FY 2005-2006 to FY 2009-2010



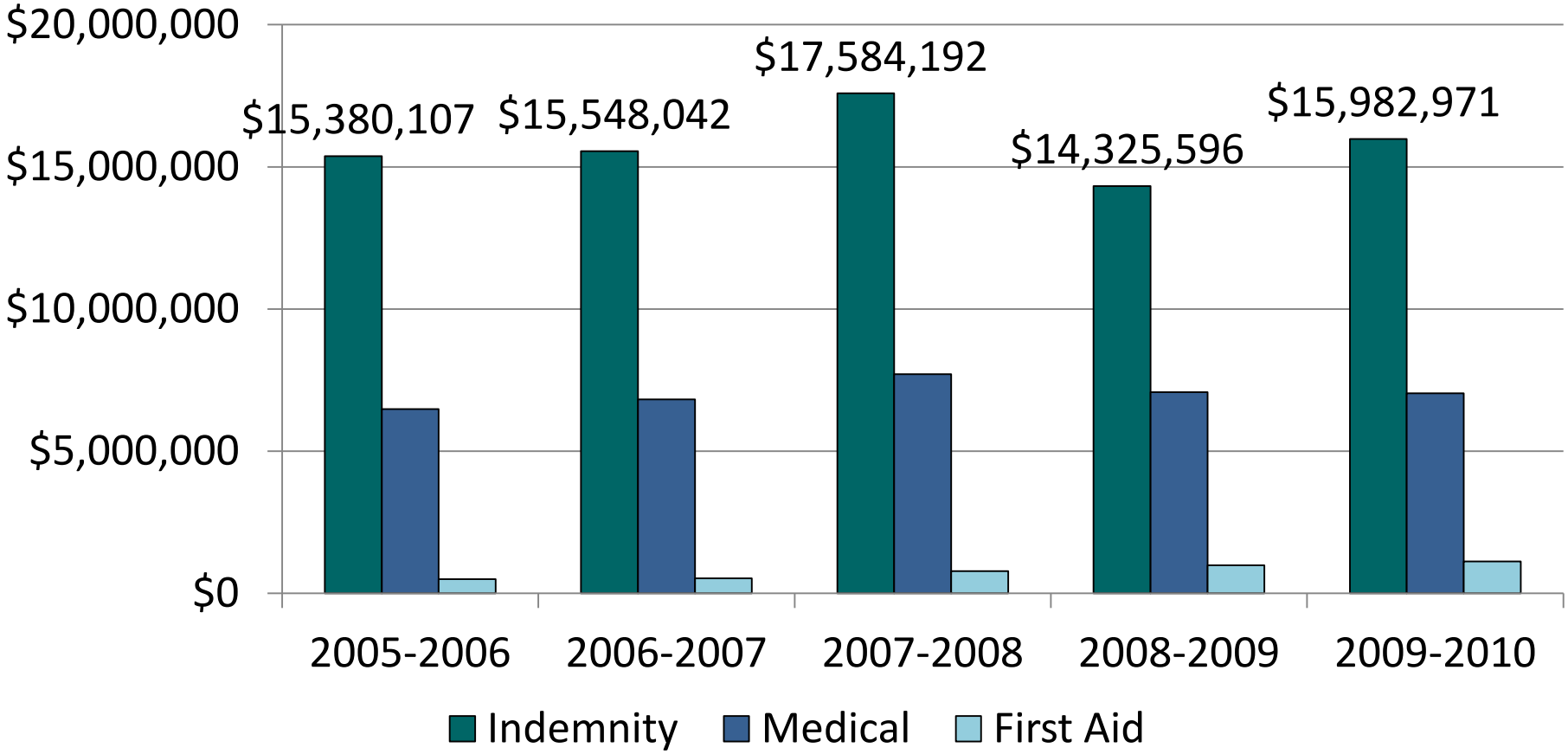
Participating Locations
Workers' Compensation Program Statistics

Changes in Frequency by Claim Type
FY 2005-2006 through FY 2009-2010
(claims per $1,000,000 payroll)

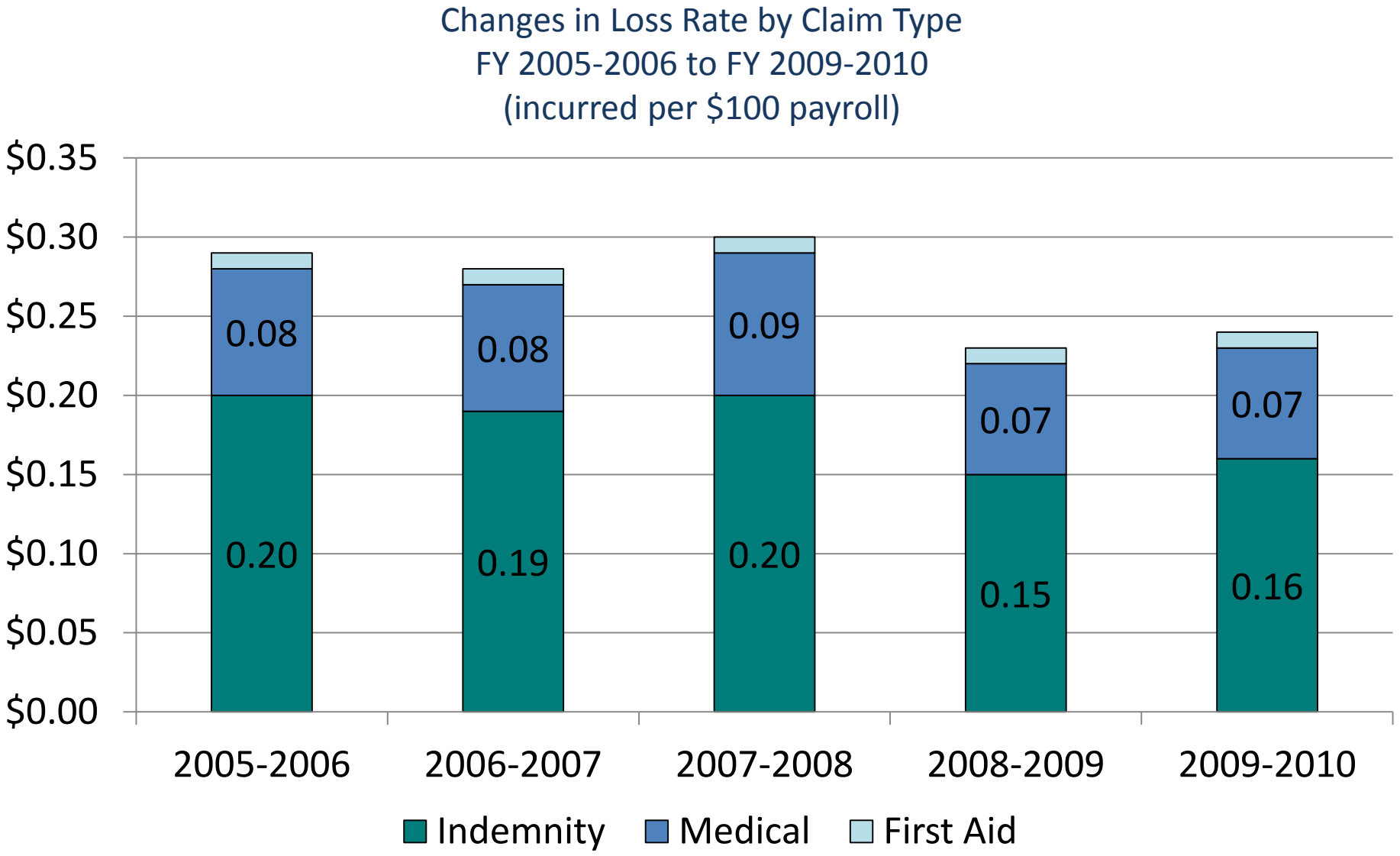


Participating Locations
Workers' Compensation Program Statistics

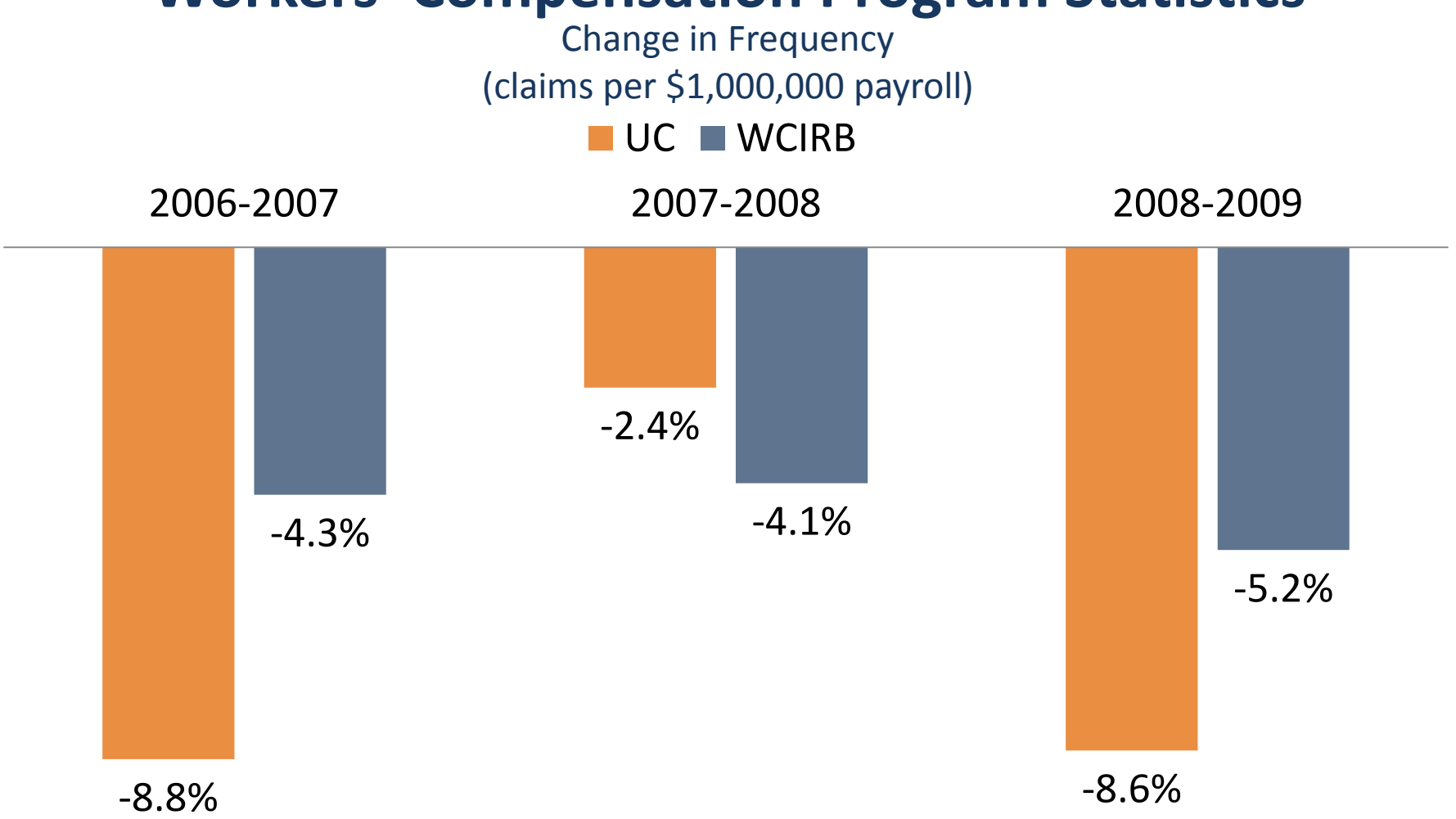
Changes in Incurred by Claim Type
FY 2005-2006 to FY 2009-2010



Participating Locations
Workers' Compensation Program Statistics

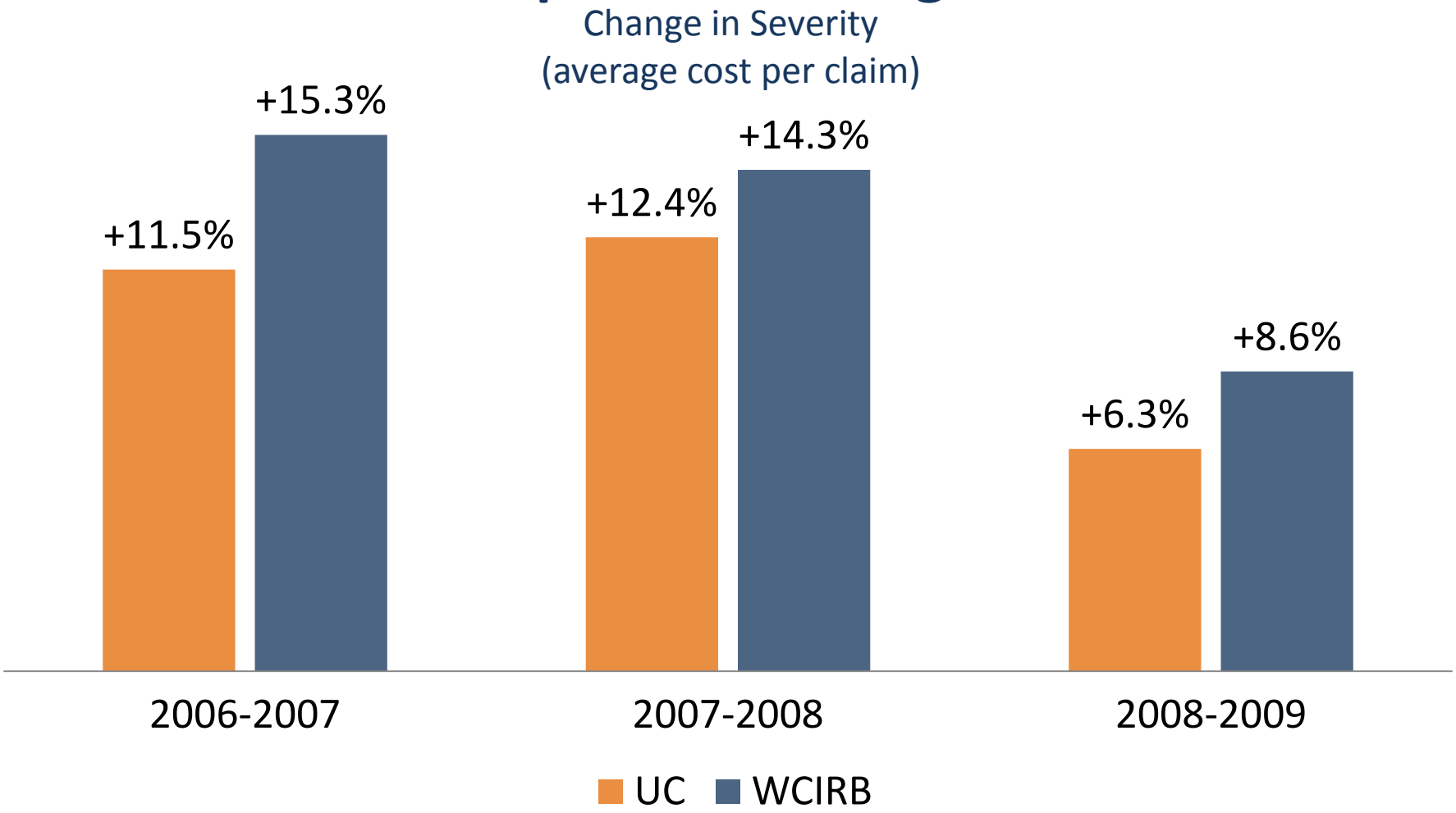


Participating Locations
Workers' Compensation Program Statistics



*Ultimate losses, UC losses limited to $100,000 per claim.

Participating Locations
Workers' Compensation Program Statistics



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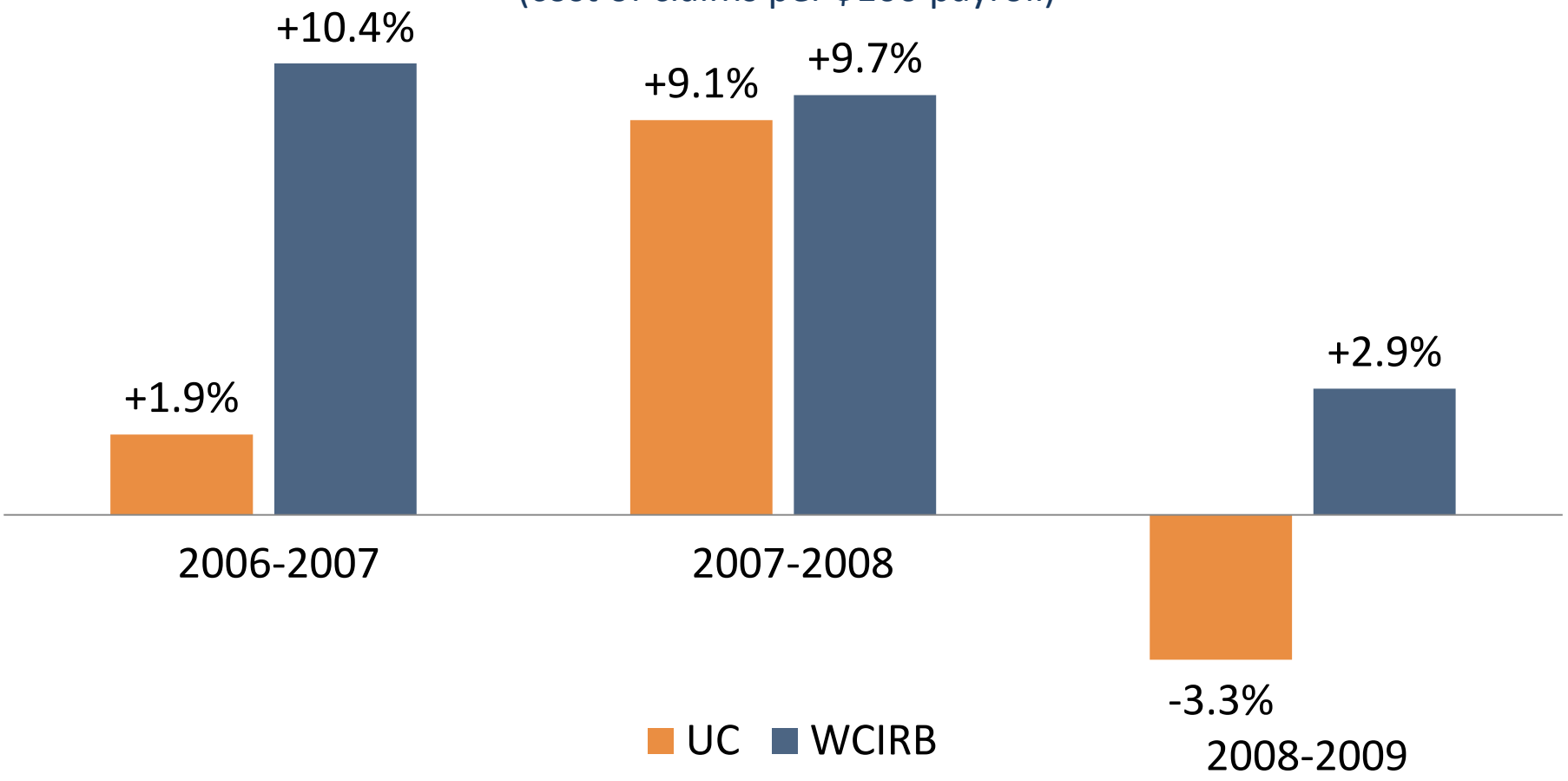
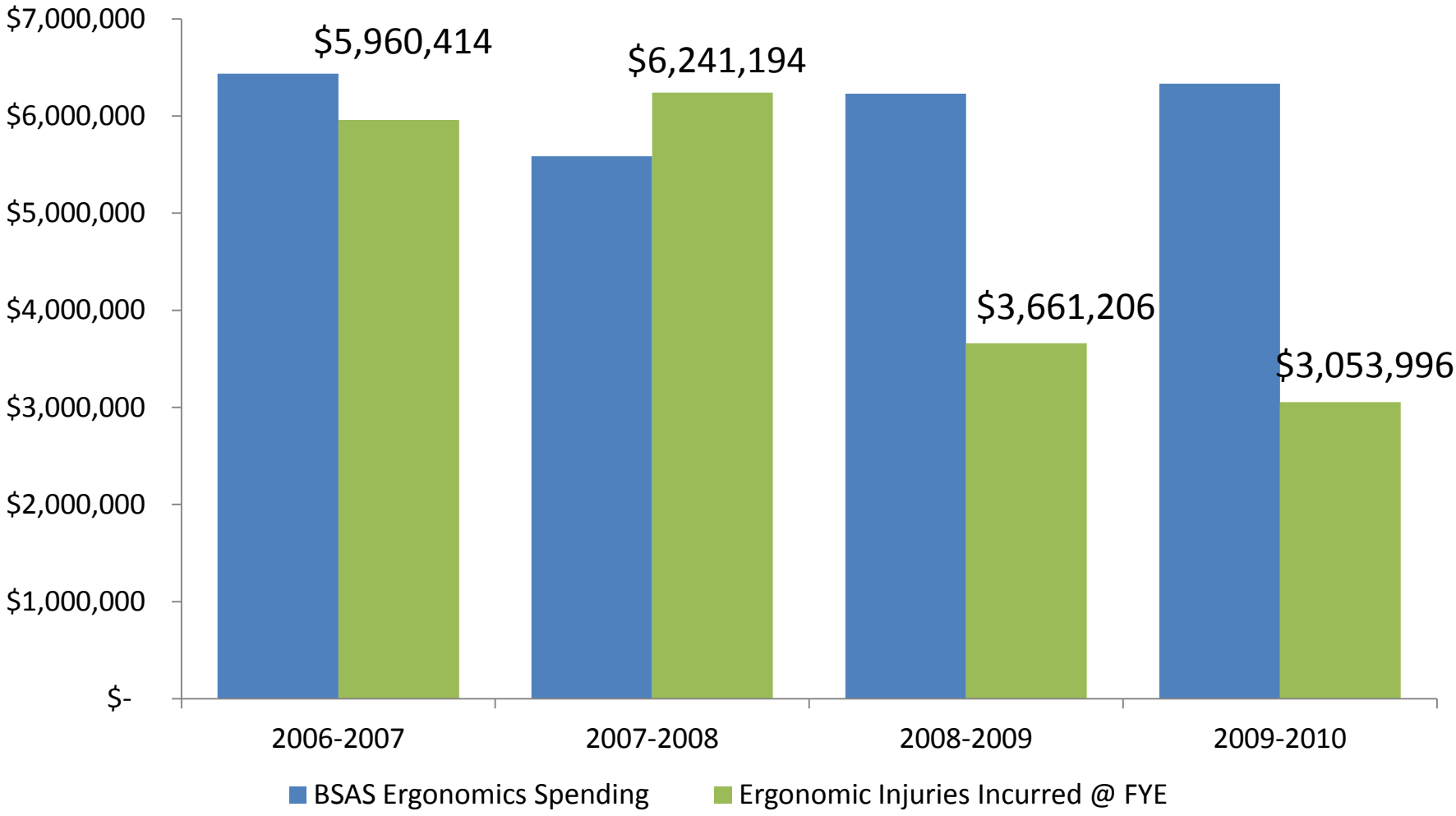
Participating Locations
Workers' Compensation Program Statistics

Change in Loss Rate
(cost of claims per $100 payroll)



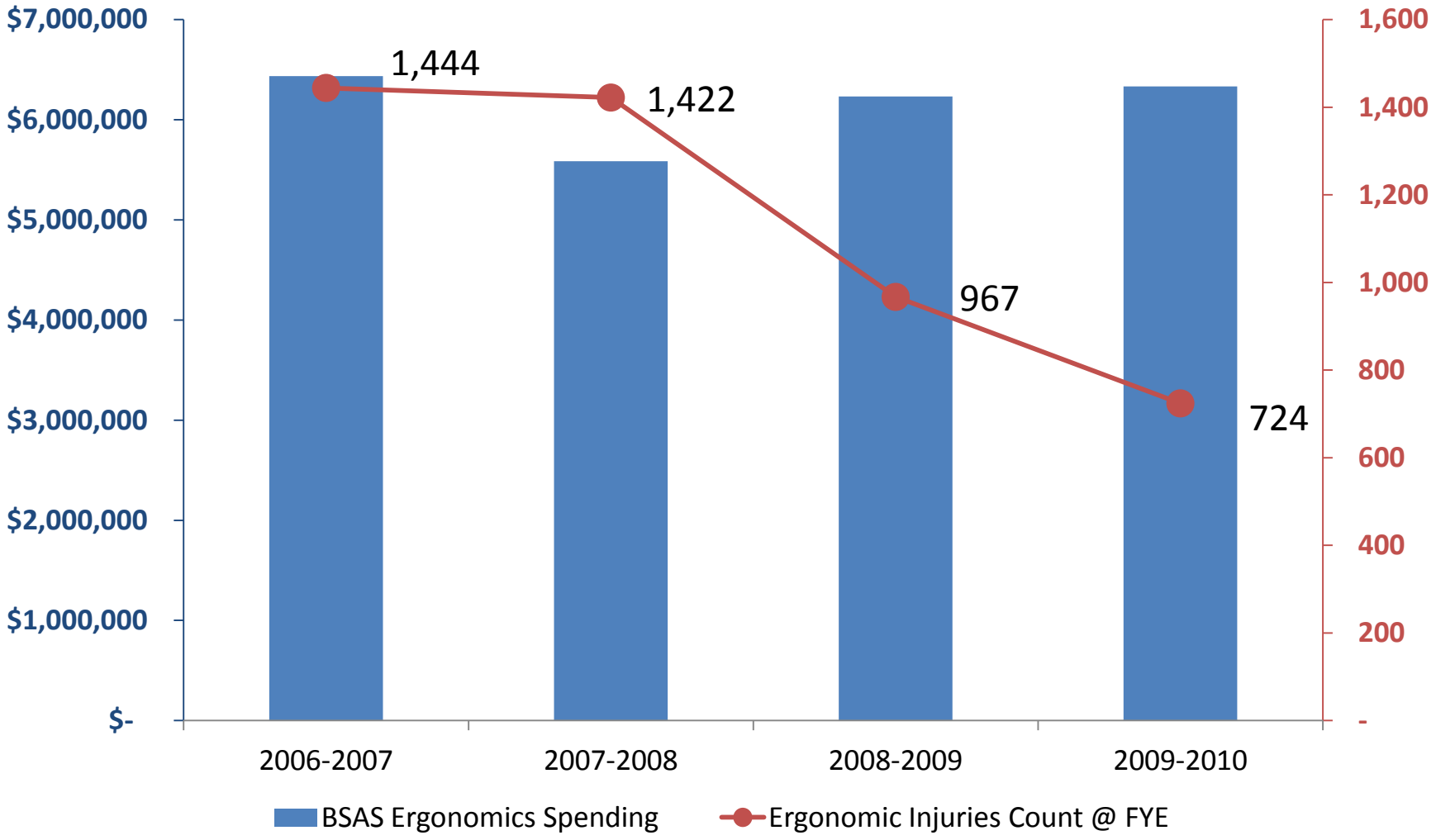
*Ultimate losses, UC losses limited to $100,000 per claim.

Funding vs. Injury Metrics
Ergonomics



* Incurred as of fiscal year end.

Funding vs. Injury Metrics
Ergonomics



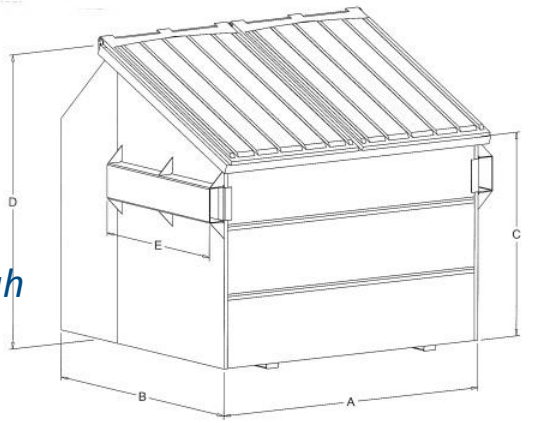
Analysis Conclusions

- Campuses investing in ergonomics-related programs showed strongest improvement
- Increases in first aid claims indicate employees are reporting problems and injuries earlier
- Marketing of safety and general awareness may assist in improving safety culture

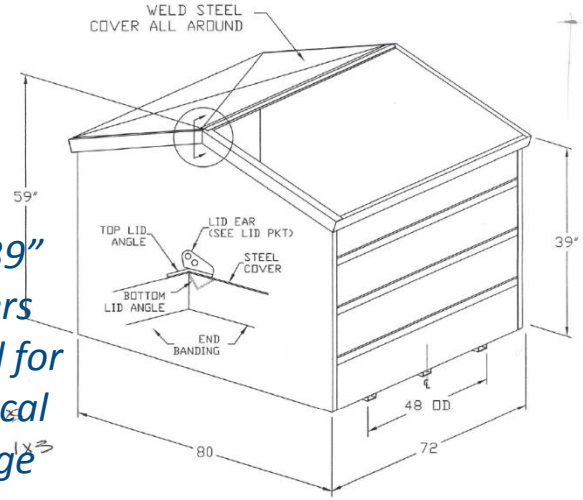
Student Housing & Facilities Management

- **Situation:** Custodians and groundskeepers injured while emptying trash into dumpster
  - Lifting, bending and reaching to put trash into receptacles
  - **$117,110** cost over past 5 years
- **Solution:** Purchased 35 new containers
- "Foot Pedal" modifications will give users
  - Mechanical advantage for easy opening and access
  - Ability to use two hands for dumping and closing lids
- Total project cost $28,678

BEFORE: Pitch-top dumpsters 50"-56" high



AFTER: 39" dumpsters modified for mechanical advantage



Work Station Ergonomics

- **Situation:** Employees at several office work locations experiencing pain & discomfort
- **Solution:** 144 ergonomic evaluations completed at individual employee work station stations in 2007-2008
- *Be Smart About Safety* funded 50% (up to $500 per person) for injury prevention for these 144 employees
- Cost avoidance example: $30-40K for just one carpal tunnel injury
- Total 2007-08 BSAS funds expended: $33,864

VMTH: Fork Lift Pivot Boom

- **Situation:** Past practice was for three or four employees to manually handle 1800 lb downed cow to keep it on its feet
- Projected back surgery cost >$60k for injured worker
- **Solution:** Purchase of pivot boom
- Pivot boom cost: $2,900

Shoes for Crews

- **Situation:** Food Service employees experience over 700 slip/fall injuries per year with associated direct WC cost in excess of $7 million

- **Solution:** Provided 2 pairs Shoes for Crews non-slip shoes to 4,000 food service employees annually. Shoes for Crews provides warranty which will pay up to $10,000 of WC claim if employee slips/falls while wearing shoes.
  - UC Irvine – 1 to 2 slip/falls per year w/program
  - UC Los Angeles – 100+ slip/falls per year w/o program

- Annual cost of $300,000 funded through WC Fund
- Expected direct WC annual savings in excess of $1.5 million

Shoes for Crews Implementation

- July 1, 2011
  - Mandatory for all Food Service employees - Notice requirement to unions systemwide
  - Offered to custodial employees who work in dining areas
  - CrewGuards provided to student employees (less than 20 hours/week)
  - Initial 5 month evaluation showed 40% reduction in claims from prior year

- January 1, 2012
  - Program expanded as non-mandatory to any occupations at the suggestion of EH&S/Risk Management
    - Custodial, Animal Research Centers, Hospitals, Facilities/Maintenance, Grounds
  - Issues encountered
    - Concerns about on going funding
    - Mandating program at campus level and notice issues
    - In Facilities/Maintenance, concerns about going to a lesser quality shoe compared to Wolverines
    - Comfort and durability for outside use

Shoes for Crews
Results

- Analysis
  - Evaluated slip/fall claims for Food Service Occupations from FY 2009-FY2013
  - Each year evaluated at end of each fiscal year (12 months development)
  - Each claim description reviewed to ensure accurate coding
    - Minor claim coding errors trip/fall listed as slip/fall or vice-versa
  - Tracking of shoe compliance implemented middle of FY12

Shoes for Crews
Results

- Average loss for 3 years prior to implementation
  - 74 claims
  - $199,000
- Average loss for FY12-13
  - 42 claims
  - $118,000
  - 57% reduction in claims and 59% reduction in cost
- Losses for first six months of FY13
  - 25 claims, however 14 of the claims employees were not wearing shoes, 11 total claims
  - $50,000, eliminating non-wearing claims, $12,000
  - TPA reviewed all claim notes and discussed with adjusters

Assuming claim trend continues

70% reduction in claims, 88% reduction in cost

http://ucanr.org/sites/ucehs/

- Biosafety Officers (BSO)
- Controlled Substances Program Administrators (UC CSPA)
- Emergency Managers
- Enivronmental Health
- Environmental Managers
- Ergonomics
  - Meetings
  - Members
  - Projects
- Field Operations
- Fire Marshals
- Hazardous Materials Shipping & Export
- Hazardous Waste Action Group (HWAG)
- Industrial Hygiene (UCIHSSC)
- Medical Centers
- Radiation Safety Officers
- EH&S Technology
- Training (STEW)

Featured Ergonomic Projects

Ergonomics Study of Dining Services Positions at the University of California May 2012

At the University of California, Dining Services plays a critical role in providing food for thousands of students, patients, guests, staff, and faculty. To perform this critical job function, workers are exposed to ergonomic risks such as repetitive motion, strain, and awkward postures. During fiscal years 2008-2011, ergonomic injuries in dining services accounted for 705 workers' compensation claims, with an actuarial estimated ultimate direct cost of $8,651,496. Loss data was valued as of November 30, 2011.

At the request of UCOP Risk Services, the UC Ergonomics Work Group conducted a study of Dining Services to identify the top five areas of ergonomic risk and develop strategies to address these issues. A project team comprised of ergonomists from various UC locations was formed.

Various approaches were used to meet the project objectives, including:

- Workers' Compensation data analysis
- Literature review
- Task analysis
- Direct observation and front line experiences at individual locations

The top 5 high risk tasks identified and addressed in this project include:

1. Food Preparation
2. Manual Material Handling in the Kitchen
3. Stocking the Storeroom/ Retrieving Items from Storeroom
4. Transporting Food to Remote Locations (catering, patient food distribution)
5. Dishwashing (dishes, pots, pans)

.....click here to read full report

Finding Money to Fund Safety Program

- EHS, Risk Manager and Actuary need to work together

- Workers' Compensation Rate Additive
  - Select an additional % as part of WC rate for new loss control programs

- Pay it Forward – Fund from WC Loss Fund
  - Must be able to demonstrate ROI to actuary
  - Fund programs with largest potential ROI first
    - Ergonomics, Slip/fall prevention