Key EH&S Performance Indicators and Metrics for Senior Management in Higher Education

Midwestern Higher Education Compact 20th Annual Master Property Program Loss Control Workshop March 9, 2018 – St. Louis, Missouri

Bruce Backus, MS, MBA, PE Assistant Vice Chancellor, Environmental Health and Safety Washington University in St. Louis Scott Patlovich, DrPH, CBSP, CHMM, CPH Director, Environmental Health & Safety The University of Texas Health Science Center at Houston

Agenda

- Three realities we face in our setting
- An evidence-based approach to EH&S benchmarking
- EH&S Program Key Performance Indicators (KPI's)
- Safety Culture and desire to graduate students who meet corporate safety expectations
- Questions, discussion

For context, we face three realities.... 1st: Universities Compare Many Things

- Revenues
- Tuition and fees
- Size
- Appearance
- Number of students
- Number of faculty
- Research productivity
- School rankings
- Athletics

- Student entry grade point average, SAT scores
- Amount of grant funding and by whom
- Revenues from tech transfer
- Reputation
- ... and yet there are some who think you can't compare EH&S programs

"While individuals may be insolvable puzzles, in the aggregate they become mathematical certainties"

"Comparison is the mother of insight"

2nd: Measures for Compliance Differ from Measures of Performance

- For regulatory purposes we document...
 - Pounds of hazardous waste
 - If a person was trained
 - If a person was hurt

- For performance purpose we should document...
 - Number of pick ups
 - How many people were trained, and did their performance reflect it
 - How many people were hurt, what caused the injury, and what are we doing about it

Lagging versus Leading Indicators

• Lagging:

- OSHA Recordable Injury-Illness Rates
- Days Away Restricted or Transferred (DART) Rate
- Workers' Compensation Loss Costs
- Fines or penalties
- Property losses

• Leading:

- Number of people who correctly identify what to do in an emergency situation
- # Emergency Drills
- Anonymous Safety Perception Survey feedback
- Near miss reports and follow-up
- Mitigation efforts

3rd: The Constancy of Change

- At The University of Texas School of Public Health we have asked many safety professionals: "how long have your personally reported to the person you report to?"
- The results have been strikingly consistent:
 - About 80% have reported to the person they currently report to for less than 5 years
 - And 25% for less than 1 year!
- This suggests that most practicing safety professionals can expect to have 6 to 30 different bosses over a 30 year working career!

But While Some Things Change... Others Don't

- Although the organization you work for or person you report to may change, the key performance indicators (KPI) for the EH&S program remain constant....
 - Frequency and severity of reported illnesses and injuries; property losses
 - Regulatory compliance
 - Finances
 - Client satisfaction
- What <u>does</u> change is the method, framing, and formatting of the delivery of the information
- Acknowledging this fact is crucial for ongoing program support

Staffing Predictors

- The data from 102 colleges and universities from across the country indicate that four variables can account for 80% of the variability in EH&S staffing:
 - Non lab net assignable square footage
 - Lab net assignable square footage
 - Presence of Medical or Vet School (Y/N)
 - Existence of BSL-3 operations (Y/N)
- These predictors important because they are recognized and understood by those outside the EH&S profession
- With the collection of more data, the precision of the model could likely be improved to the benefit of the entire profession



Practical Example

 Institution with 5 million total institutional NASF and \$900 million in total annual institutional expenditures

• Using \$0.30/ft² = \$1,500,000

- Using most recent vital statistics model:
 - EHS expenditures = \$1,568,967
 - EHS staffing = 16.7 FTE
- If that same university was an AAHC institution
 - EHS expenditures = \$2,064,581 (31% increase)
 - EHS staffing = 22.9 FTE (37% increase)

Estimated Annual UTHealth Institutional Services Cost per Square Foot

(FY 10 estimates based on UTHealth square footage of 3,164,000 state ^(a) + 1,836,000 auxiliary = 5,000,000 ft^{2 (b)})

- Utilities (electricity, gas, steam)^a \$5.38
 Facilities Services (salaries, maint & ops)^a \$2.98
 Police^a \$1.00
- Information Technology Support^a \$1.00
- Contract Services (housekeeping, trash)^a
 \$0.58
- Insurance Premiums (property, WCI)^b
 \$0.50
- Environmental Health & Safety^b \$0.45

Budget Goal Example



Tracking Key Metrics



SHERM's Four Key Performance Indicators (KPI) for Safety Services to the Institution

KPI #1: Losses Personnel Property KPI #2 Compliance With external agencies With internal assessments

KPI #3 Finances Expenditures Revenues KPI #4 Client Satisfaction External clients served Internal department staff

KPI #1: Losses

• Personnel

- Numbers of first reports of injury submitted by employees, residents, students
- Employee injury and Illness rate
- Workers' Compensation Insurance experience modifier

• Property

- Losses incurred and covered by UTS Comprehensive Property Protection Program
- Losses incurred but covered by outside party
- Losses retained by UTHealth

FY17 Number of First Reports of Injury, by Population Type



Fiscal Year

Annual UTHealth Incidence Rate of Reported Employee Injuries and Illnesses Compared to National Hospital and University Rates and Three Major Companies With Acknowledged "Best in Class Safety" Programs (national data source: US Bureau of Labor Statistics)



OSHA Recordable Rate versus DART Rate



OSHA Days Away Restricted or Transferred (DART) Rate

Targeting High Risk Areas



FY17 Property Losses

Retained Losses (inclusive of insurance deductibles)

Туре	Location	Date	Cost
Auto	CDC	10/29/2016	\$5,000
Water	SPH	12/04/2016	\$2,000
Water	MSB	1/07/2017	\$20,000
Water	MSB	1/17/2017	\$89,000
Mold	SON	3/09/2017	\$800
Water	Housing	5/19/2017	\$700
Vandalism	UCT	5/29/2017	\$2,000
Auto	Field	8/14/2017	\$6,000
Water	Various	Various	\$3,700
TOTAL			\$129,200

NOTE: Above table does not include losses associated with Hurricane Harvey. Total losses expected to be approximately \$10mil with retained losses to UTHealth TBD.

Losses incurred and covered by third party

- Auto -----10/2016 \$5,000
- Water-----12/2016 \$2,000
- Hurricane--8/2017 approx. 10M
- Losses incurred and covered by UTS insurance
 - Auto-----8/2017 \$5,000

Retained Loss Cost Summary by Peril (Total FY17 retained losses)



KPI #2: Compliance

- With external agencies
 - Regulatory inspections; other compliance related inspections by outside entities
- With internal assessments
 - Results of EH&S routine safety surveillance activities

External Agencies Inspections

	Date	Agency	Findings	Status
18	July 18, 2017	Texas Department of State Health Services Radiation Control	Training records and dosimetry unavailable for unannounced inspection (UTHealth – Brownsville CRU, X-ray R10908, site 024)	Inspection file closed; training provided to bone densitometry operators and dosimetry reports provided.
19	July 18-19, 2017	Centers for Disease Control and Prevention, Federal Select Agent Program	Several minor observations and recommendations for improvement	All observations addressed; inspection file closed
20	August 7, 2017	Texas Department of State Health Services Radiation Control	No items of non-compliance (UT Physicians 3 clinics: Urology, General Medicine, TMC Sports Medicine, X-ray R26367, sites 033, 034 and 032)	Inspection file closed
21	August 15, 2017	Texas Department of State Health Services Radiation Control	No items of non-compliance (UTHealth – Broad license L02774, South Campus (BBSB, SCRB3 and SOD), site 007)	Inspection file closed
22	August 23, 2017	Texas Department of State Health Services Radiation Control	No items of non-compliance (UTHealth – School of Dentistry Building, X-ray R10908, site 009)	Awaiting inspection report

External Agency Inspections



Internal Compliance Assessments

- 6,041 workplace inspections documented
 - Progression of routine surveillance program emphasis: labs, building fire systems, now mechanical and non-lab spaces
 - 2,158 deficiencies identified (70% in non-lab spaces)
 - 789 of these deficiencies now corrected to date through improved communications with FPE
 - Remaining 1,369 deficiencies (predominantly minor issues) subject to follow up correction:
 - » Example: mechanical room deficiencies unlabeled circuit breakers, missing outlet covers, etc.
 - Working with FPE to track and report progress and reporting progress to appropriate safety committees
 - 4,739 individuals provided with required safety training
 - 70% of PIs have submitted chemical inventories for filing in database

KPI #3: Finances

• Expenditures

• Program cost, cost drivers

Revenues

• Sources of revenue, amounts

Campus Square Footage, SHERM Resource Needs and Funding

(modeling not inclusive of resources provided for, or necessary for Employee Health Clinical Services Agreement)



Total Hazardous Waste Cost Obligation and Actual Disposal Expenditures (Inclusive of Biological, Chemical, and Radioactive Wastes)



FY17 savings: \$122,476

FY17 Revenues

- Service contracts
 - UT Physicians \$396,293
 - UT Med Foundation WCI Administration \$31,993
- Continuing education courses/outreach
 - Training, honoraria, peer reviews, \$18,126
 and fit testing for non-UTHealth personnel
- Total \$446,412

NOTE: Equates to 17% of total SHERM budget for FY17

KPI #4: Client Satisfaction

- External clients served
 - Results of Client Satisfaction Survey for annual Area Safety Liaison training program
- Internal department staff
 - Summary of ongoing staff professional development activities

Survey of Area Safety Liaisons Regarding Annual ASL Training Provided by EHS

Web based survey distributed from 8/3/2017 to 8/24/2017 to 155 Area Safety Liaisons who participated in the 2017 ASL Training by Environmental Health and Safety Survey response rate: 80 out of 155 (52%)

Survey Question Resp			sponses			
				Yes	No	No Opinion
1.	Did the ASL 2017 training session provide information that is useful to you as an ASL?			78 (99%)	0 (0%)	1 (1%)
2.	Do you feel that the topics covered in this year's training session were appropriate for your needs?			80 (100%)	0 (0%)	0 (0%)
3.	Do you believe that the videos created by OSFP were beneficial to you as an ASL?			77 (96%)	1 (1%)	2 (3%)
4.	Do you feel the length of the training session was appropriate?			72 (92%)	4 (5%)	2 (3%)
5.	Do you feel that one training session per year is adequate for you to fulfill your duties as an ASL volunteer?			65 (82%)	12 (15%)	2 (3%)
6.	Do you feel you have adequate access to the ASL program information and assistance via either phone, email and/or in person?			76 (95%)	1 (1%)	3 (4%)
7.	Do you feel the OSFP staff process the knowledge to address your needs related to occupational safety and fire prevention at UTHealth?			79 (100%)	0 (0%)	0 (0%)
8.	Do you feel the OSFP personnel provide helpful and courteous service?			79 (99%)	0 (0%)	1 (1%)
		No Previous Experience	Better	Same	Worse	Other
9.	If you have been involved with the fire warden, fire prevention or area safety liaison program at other institutions, please rate how the service at UTHealth compares:	67 (86%)	5 (6%)	2 (3%)	1 (1%)	3 (4%)

Washington University in St. Louis Example

- Safety Perception Survey
 - Anonymous feedback from faculty, staff and students on their Top 3 Safety Concerns:

<u>Safety Concern</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Personal Security	27%	36%	25%
Chemical Hazards	24%	23%	14%
Indoor Air Quality	23%	21%	24%
Vehicle-Pedestrian-			
Bike Safety	19%	20%	14%
Ergonomics	18%	18%	21%
Total Worker Health	18%	17%	13%
No Safety Concerns	14%	12%	17%

Washington University in St. Louis Example: Anonymous Customer Service Feedback Survey Results from Faculty, Staff and Students

- To what extent do you think EH&S properly balances its oversight mission with providing you with the information you need to understand and meet your EH&S safety and compliance roles and responsibilities?
- How well does EH&S help you meet your safety and compliance training needs?



Washington University in St. Louis Example: Anonymous Customer Service Feedback Survey Results from Faculty, Staff and Students

- Do you feel comfortable reporting your safety concerns to your department or EH&S?
- Do you feel your department or the University follows up on your safety concerns, once reported?



Do not forget your own staff – anonymous staff satisfaction surveys



New Indicators Colleges & Universities are starting to Assess and Track

• Culture of Safety

- External Team of Experts review attitudes towards safety culture
 - On-campus(es) for multiple days
 - Meet with Provost, VP for Research, Dean, Department Chairs, Committee Chairs, Faculty, Lab Manager, Staff, Students, EH&S, Compliance, Risk Management
 - Tour facilities; review policies, procedures and practices
- Basis for reviews:
 - National Research Council
 - <u>Association of Public & Land-Grant</u> <u>Universities</u>
 - Expectations from Industry (Dow, DuPont, ExxonMobil, etc.)

The National Academies of SCIENCES • ENGINEERING • MEDICINE







Example of National Research Council Recommendations Comparison – presented to the Washington University Board of Trustees Audit Committee

Recommendation¤	In-Place¤	Challenges¤	Grade Versus Peers¤	Grade• Versus• NRC• Report•¤
Recommendation 1: Leaders · Actively · Demonstrate · Safety · is · Core · Value ¤	<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><complex-block></complex-block></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	• → ¤	Ц	Д
Recommendation 2: Incorporate Positive Safety Culture into Promotion, Tenure & Salary Decisions	→ In-place-for-staff¶ The University expects all employees to perform their job responsibilities in a safe and ethical manner, in compliance with federal and state meguations and in adherence to the University's Code of Conduct (http://odeofconduct.wustl.edu/) and the Employee Safety and Health Policy found in the Supervisor Policy and Procedure manual under section VI Employment Rights and Responsibilities. Please check this box to signify that supervisor and employee have discussed compliance with these standards along with compliance with other standards that may be specific to the department/school. Reviewed by:	• → ¤	ц	Ц

Example from Stanford University's 2014 assessment



Analysis: The question was phrased exactly the same for both groups, and there is statistically significant difference between the two groups. While mostly positive, it should give us pause that 28% of the researchers do not "agree" with this statement, but answer neutral or disagree.

Q; In our lab, safety is the highest priority

Stanford Lab Safety Culture Survey - Results v0.3 - Kuniavsky and Vinkhuyzen - March 21, 2014 - Confidential



Examples of industry driven initiatives

UNIVERSITY OF MINNESOTA Driven to Discover®

COLLEGE OF Science <u>C</u>Engineering

Dow + U = lab safety

A new safety campaign for laboratories takes hold

They say you can never be too careful. At the University of Minnesota, that goes double.



One Stop MyU : For Students, Faculty, and Staff

Washington University in St. Louis

School of Engineering & Applied Science

Q

MENU

OUR SCHOOL

Engineering > News > Partners in Academic Lab Safety (PALS) Initiative visit Exxon Mobil

Partners in Academic Lab Safety participants visit Exxon Mobil

Jun 7, 2017

Other News

Graduate students from the Department of Energy, Environmental & Chemical Engineering and the Department of Chemistry, as well as staff from Environmental Health & Safety participated in the PALS (Partners in Academic Lab Safety) Initiative in collaboration with Exxon Mobil May 31-June 2 in Houston. The workshop included tours, presentations about the culture of safety and best practices at ExxonMobil.

Participants from Washington University in St. Louis included:

- Brad King (Environmental Health) & Safety)
- Changwoo Kim (Energy,





students, faculty, space to experiment

Beyond Boundaries gives

Summary

• The key denominator for college and university EH&S is total net assignable square footage – so use this metric to your advantage!

• Key EH&S performance indicators include:

- 1. Losses, 2. compliance, 5. safety culture
- 3. financial, 4. client satisfaction,
- Collect data and readily display it at every opportunity!
- In our setting change and comparisons are inevitable.... we should take the lead so that evidenced-based, rational comparisons are made on a consistent basis

Your Questions and Comments are Welcomed

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Contact Information: backusb@wustl.edu Scott.J.Patlovich@uth.tmc.edu