How to Collect and Present Performance Metrics for Your Industrial Hygiene Program

Presented by:
Dave Risi, CIH, CSP
VelocityEHS

Agenda

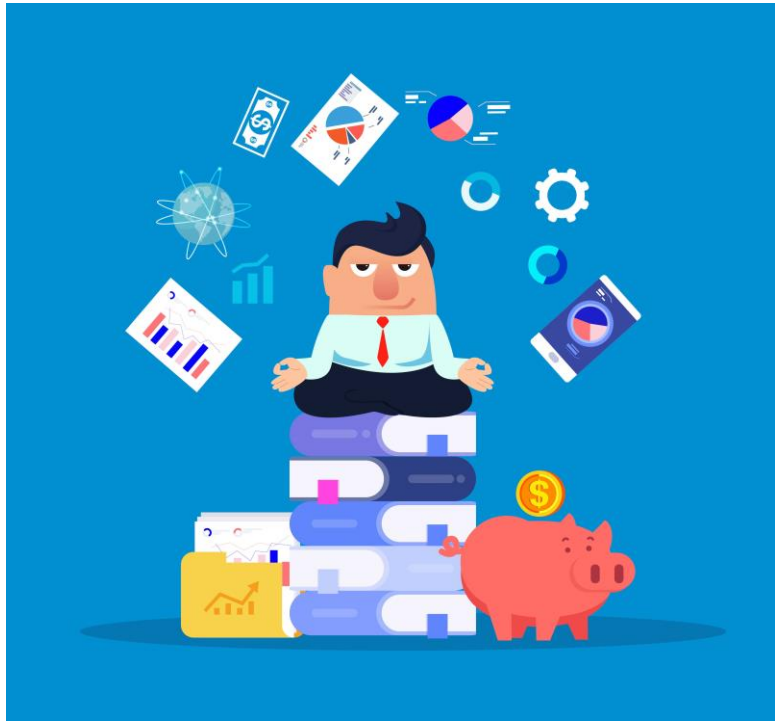
- Metrics Basics
- Types of Metrics
- How to Build Metrics
- Establishing a Metrics Program

Metric Basics

The What's and Why's

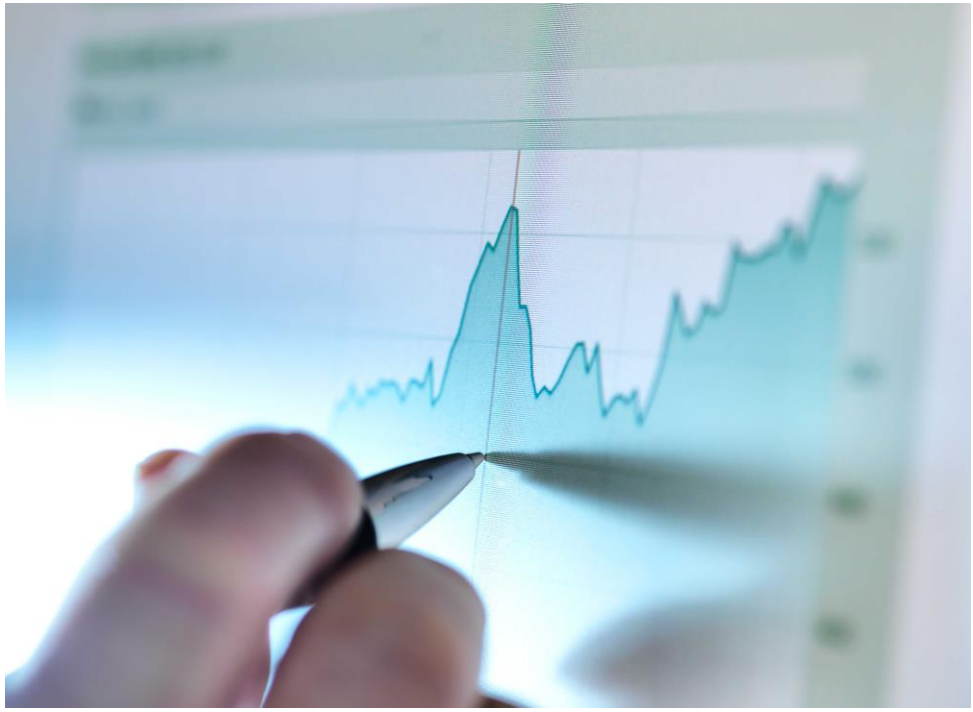
What are Metrics?

- A measure of past performance and a means to chart future progress
- A resource for making informed decisions
- Identify areas for actions to ensure compliance and meet performance goals
- Illustrate the value of our IH program



What Makes a Good Metric?

- Accurate
- Consistent
- Comparable
- Reproducible
- Relevant
- Actionable



Why Measure Performance?

- Evaluate or monitor your progress
- Track your achievement of goals
- Compare to a benchmark
- Demonstrate action to management
- Increase manager involvement
- Change behaviors

Types of Metrics

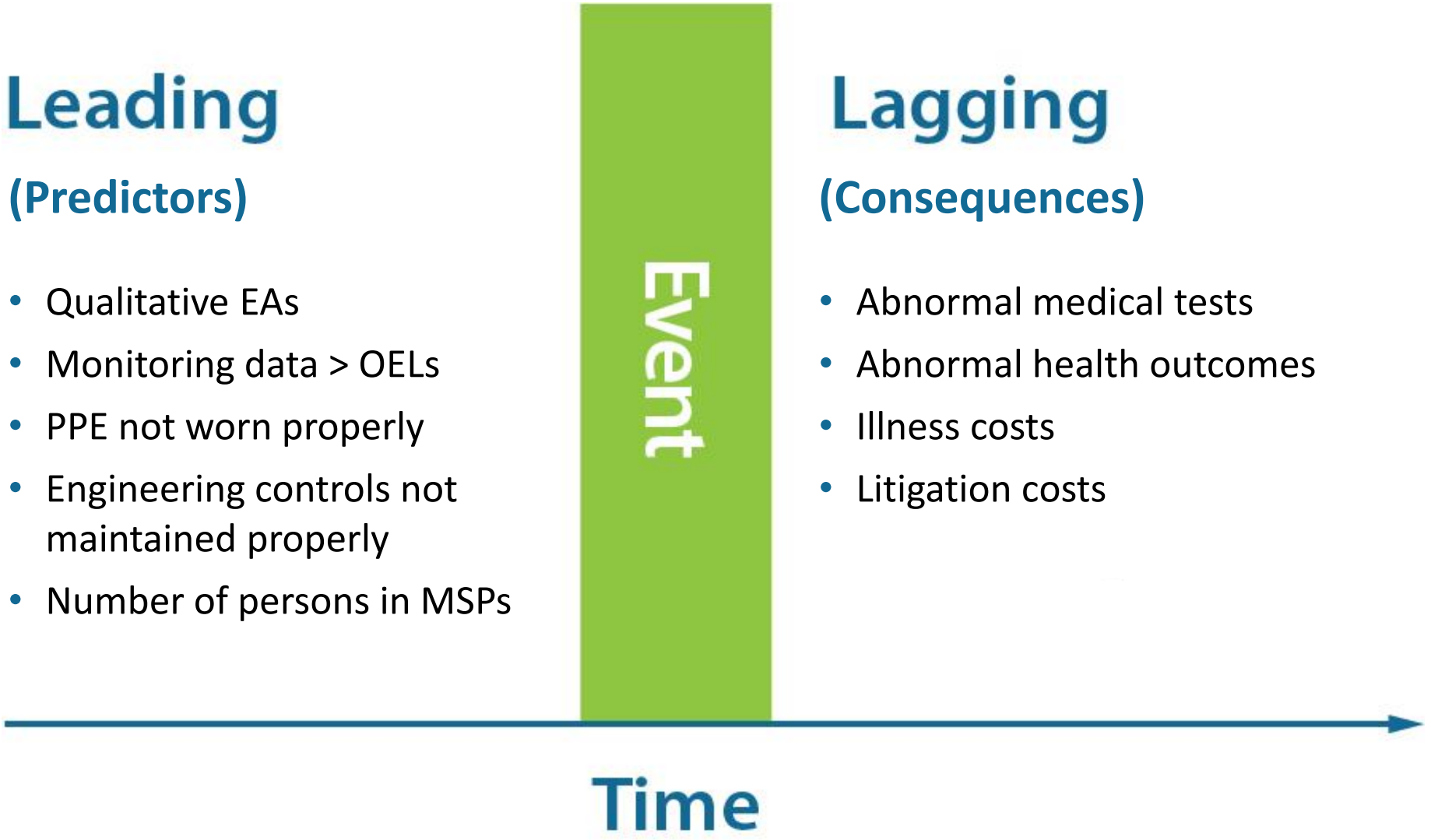
You Have Options

Leading VS Lagging Metrics: Examples

Leading

(Predictors)

- Qualitative EAs
- Monitoring data > OELs
- PPE not worn properly
- Engineering controls not maintained properly
- Number of persons in MSPs



Lagging

(Consequences)

- Abnormal medical tests
- Abnormal health outcomes
- Illness costs
- Litigation costs

Value/ROI Metrics

Pros	Cons
Language of Business	Value is More than $
Clear Meaning	Low IH issues = low ROI?
Linked to Business Objectives	Negatively Impact Safety/IH Culture?
Powerful Decision Tool	Challenge of Assigning Concrete Values to Chronic Health Effects

Blended/Composite Metrics

Measure	Status	Weighting	Score
QEA's completed	70%	0.5	35
Sampling plan completed	80%	0.3	24
"Normal" medical tests	90%	0.2	18
		IH TEAM ACTIVITIES	**109**

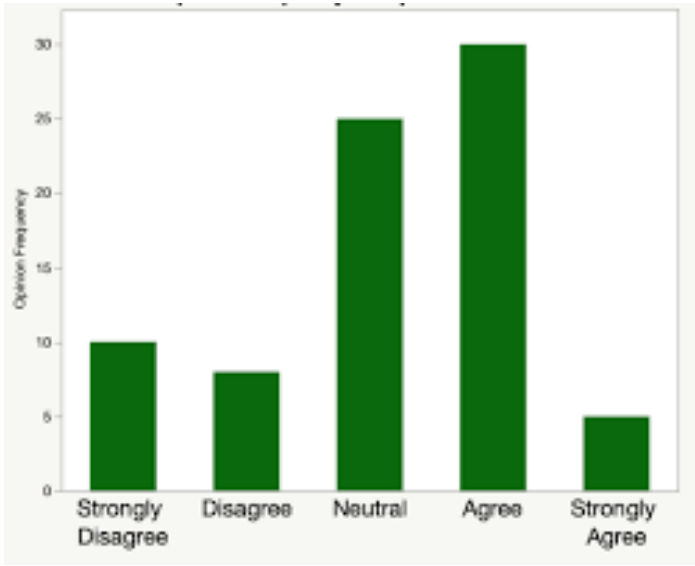
Balanced Scorecard

Houston Refinery: IH Balanced Scorecard							
Objective	**Measure**	**Owner**	**Target**	**Actual**	**Trend**	**On Target**	**Notes**
SEGs							
Completeness	% SEGs identified	Dave R.	100	100	→	🟢	Added SEGs for new Coker unit
Precision	% SEGs up to date for initial site characterizations	Dave R.	90	80	↓	🟡	Need to assess new catalysts and SDSs
Qual Assessments							
Completeness	% of QEAs performed on time	Dave R.	100	50	↓	🔴	Behind due to delays in turnaround activity
Precision	Average Uncertainty Rating	Kristi H.	0.4	0.7	→	🟡	Waiting to collect more data after turnaround
Exposure Rating	# of Exposure Ratings of 3 or 4	Sami S.	4	10	→	🔴	
Sampling Plan							
Completeness	% of sampling plan performed on time	Dave R.	100	50	↓	🔴	Behind due to delays in turnaround activity
Monitoring Data							
Exposure Risk	% of samples exceeding 50% of OEL	Kristi H.	10	20	→	🔴	More samples in Summer
Completeness	% of employee notification reports sent < 14 days	Kristi H.	100	90	↑	🟢	
Completeness	% of final reports completed < 20 days	Dave R.	100	50	↓	🔴	will catch up after 2-week vacation
Feedback							
Perception	Average value rating from questionnaire	Sami S.	4	3.8	↑	🟡	Better response rate and improved from 3.6

Pareto Analysis/Perception Questionnaire

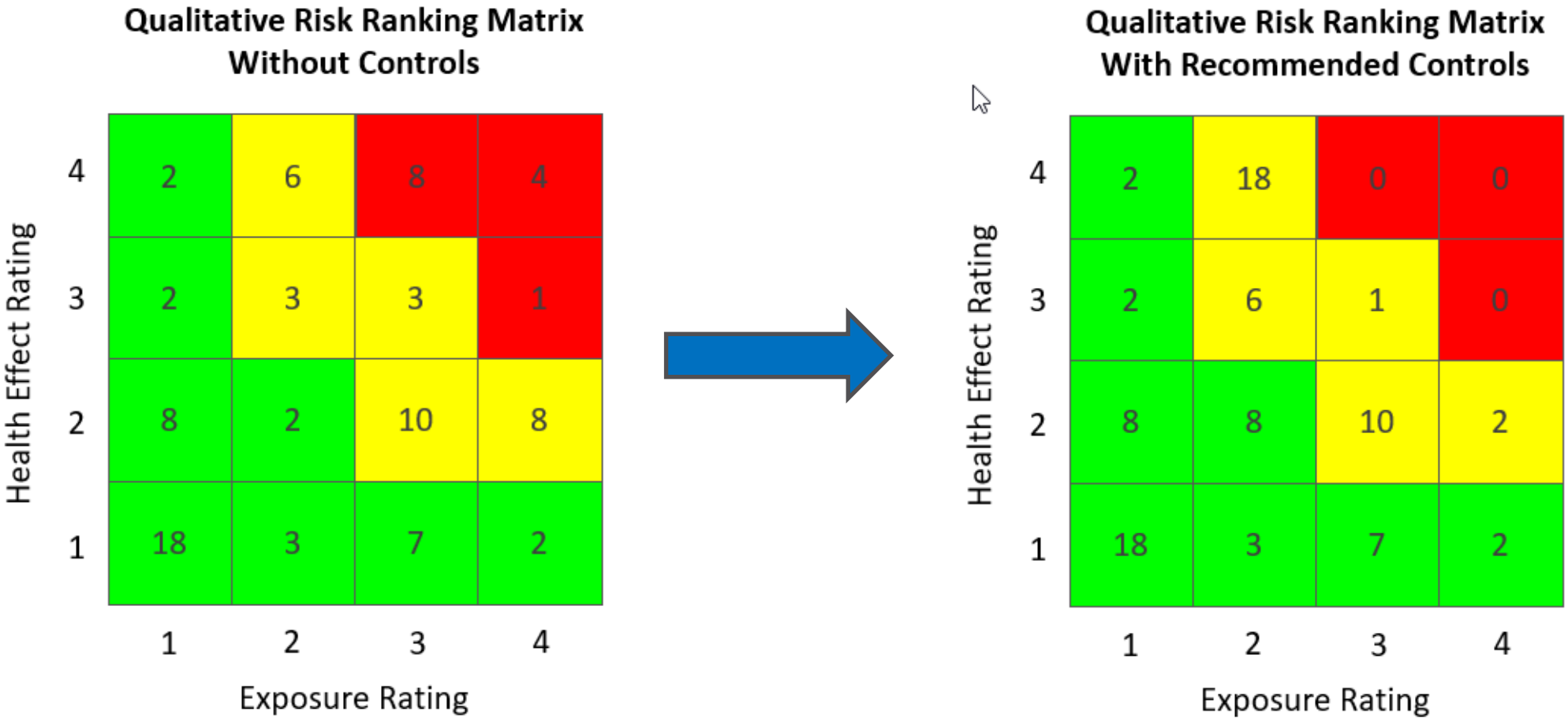
Question 1: I believe the Industrial Hygiene program is effective and protects me.

1:Strongly Disagree	2: Disagree	3: Neutral	4: Agree	5: Strongly Agree



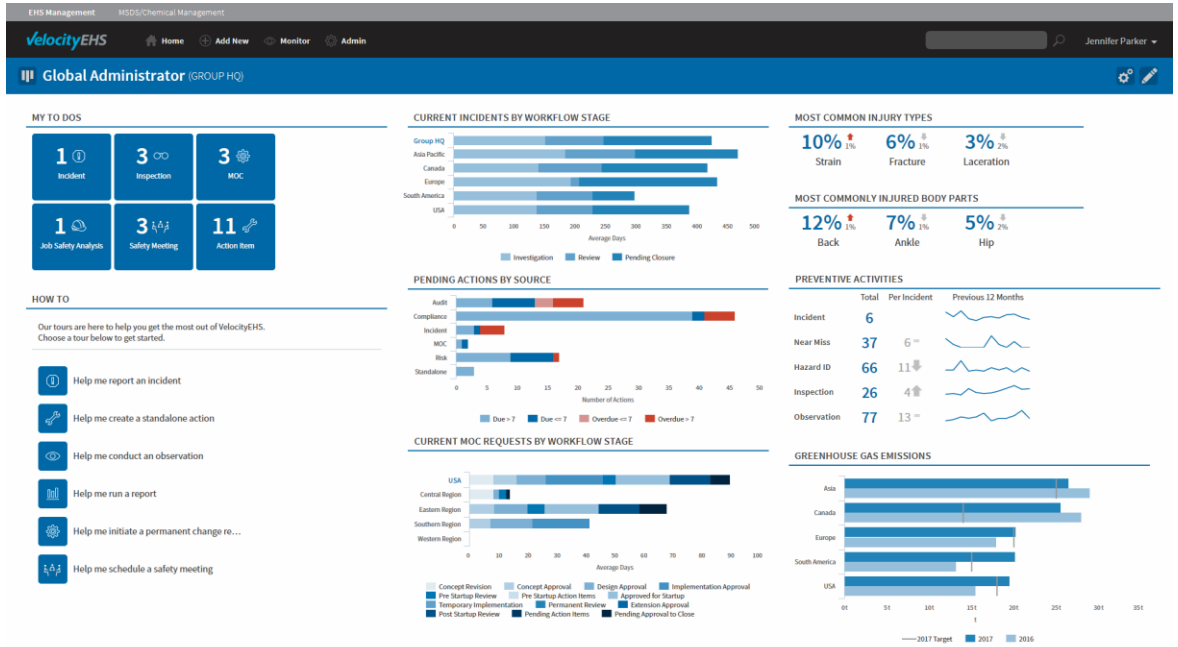
3.8
Average Rating

Risk Matrix



A Word on Dashboards

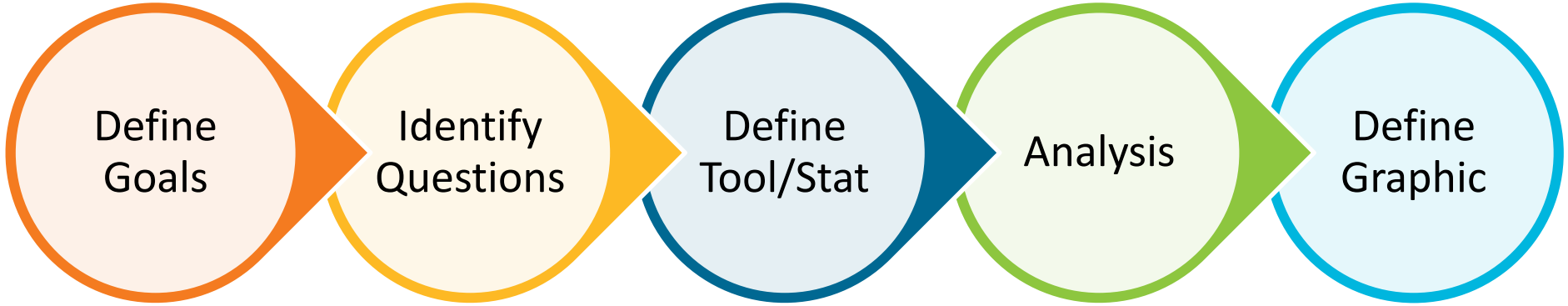
- Up-to-date
- Cloud-based
- Simple and intuitive
- Easily customizable
- Interactive



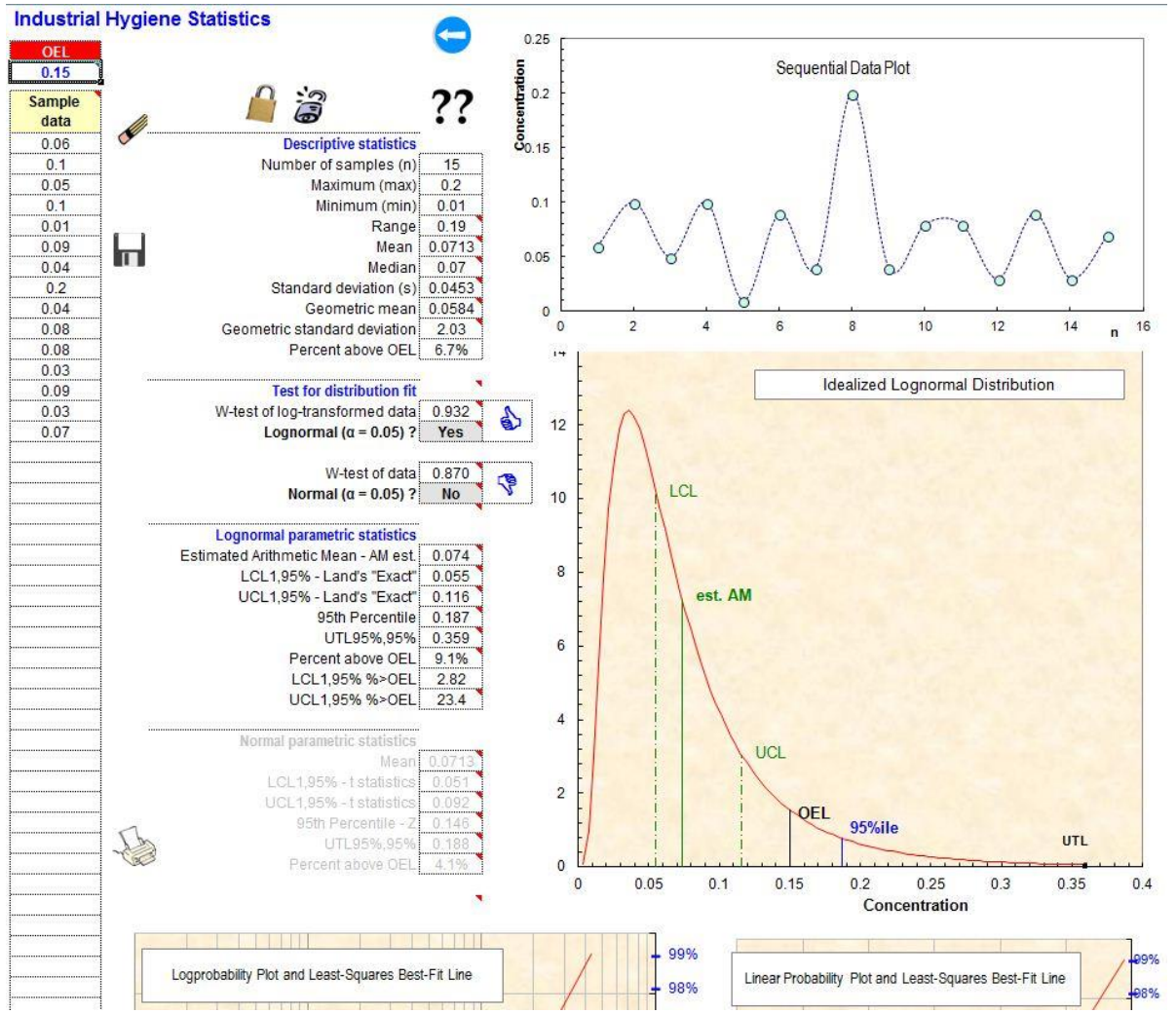
How to Build Metrics

With Examples

Steps to Build Metrics



Check Out My Metrics!



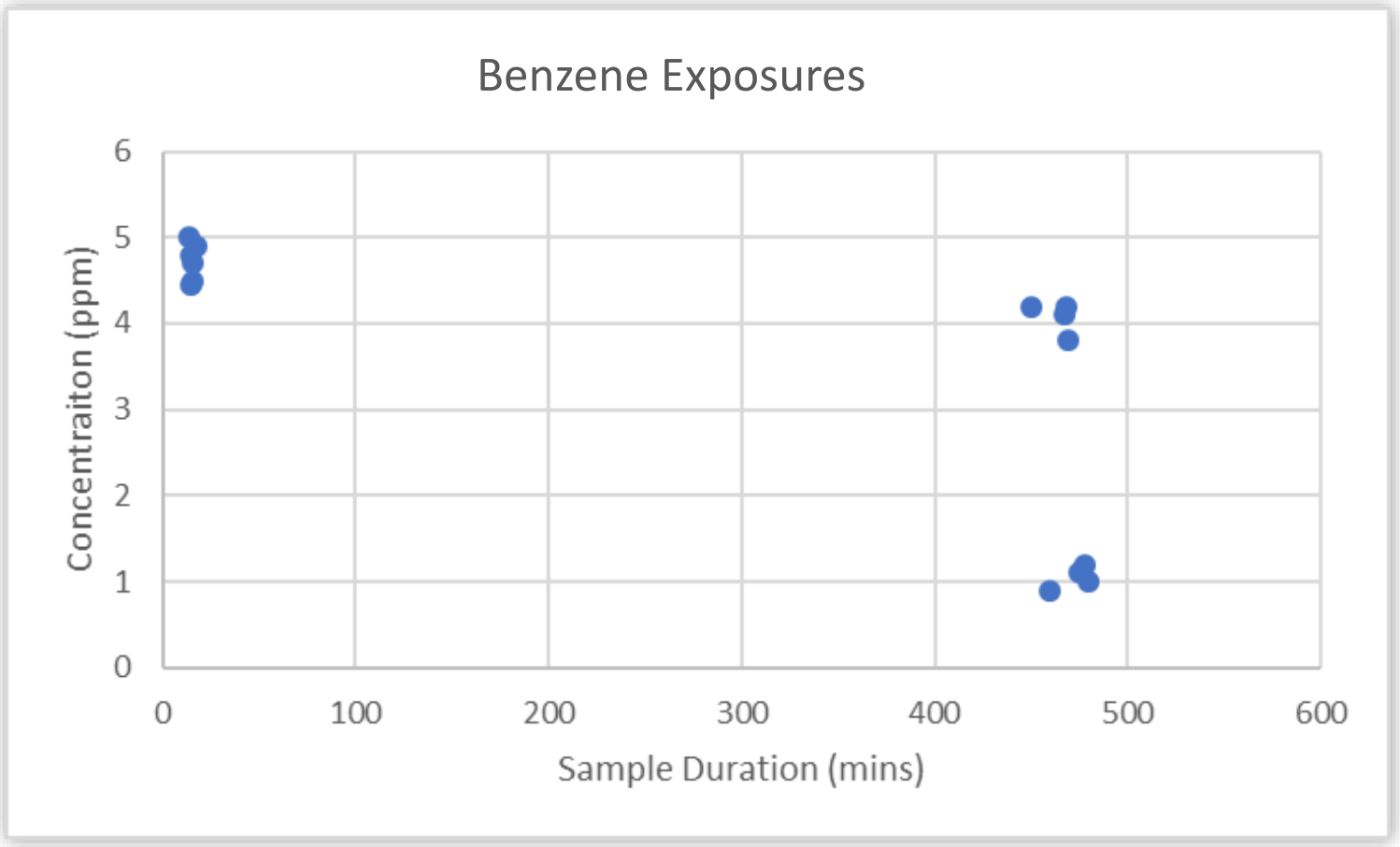
How to Build Metrics

- Define your goals & questions
  - SEG confirmation
  - Exposure rating confirmation
  - Compliance
  - Control verification
- Determine best method for each assessment
  - What analysis tool
  - What calculation/stat
- Perform analysis
- Present easy to understand metric

SEG Confirmation

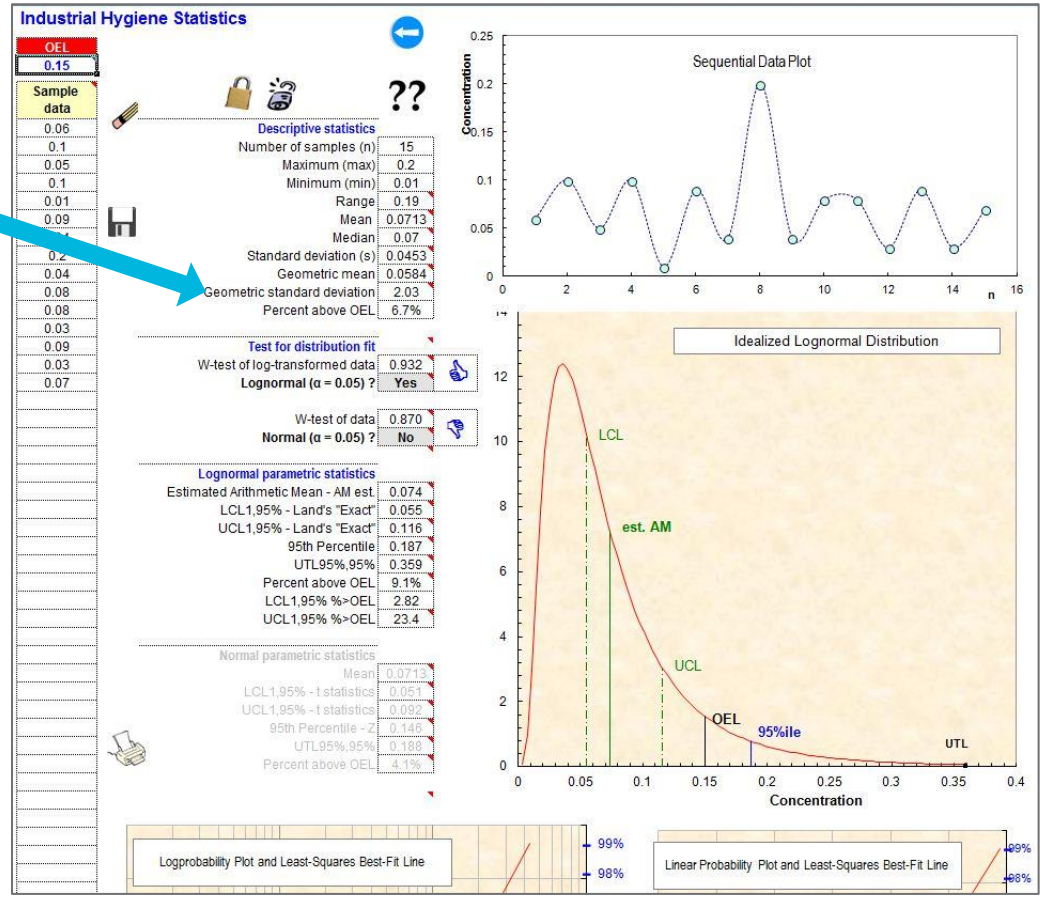
Are my SEGs homogeneous/similar?

SEG Confirmation Analysis: Scatter Diagram



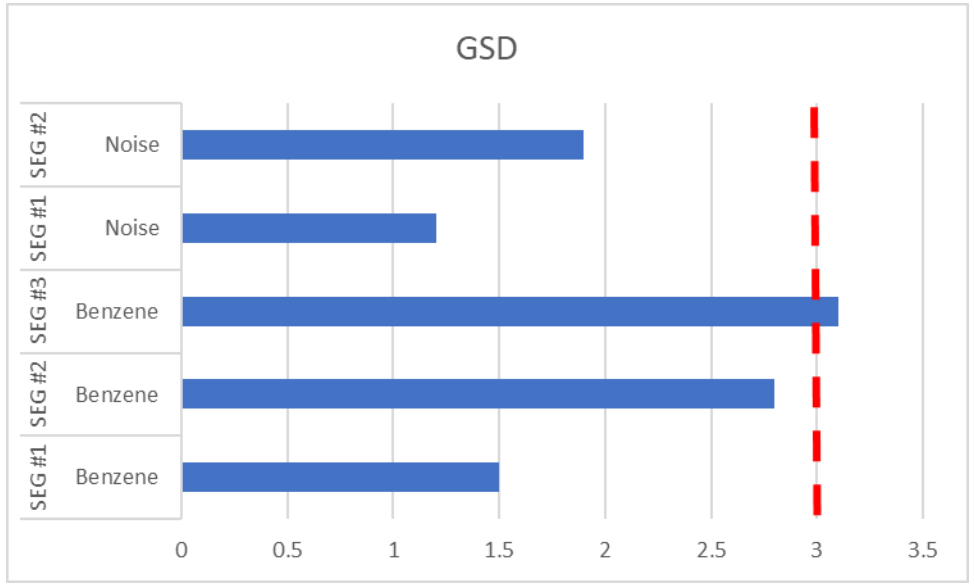
SEG Confirmation Analysis: Geometric Standard Deviation

- GSD < 3 is generally considered a good indicator of the SEG homogeneity
  - *A Strategy for Assessing and Managing Occupational Exposures.* 4th ed. AIHA
- IHSTAT tool is free to download



SEG Confirmation Metric Options

SEG	Stressor	GSD
SEG #1	Benzene	1.5
SEG #2	Benzene	2.8
SEG #3	Benzene	3.1
SEG #1	Noise	1.2
SEG #2	Noise	1.9



20%

SEGs with GSD> 3.0

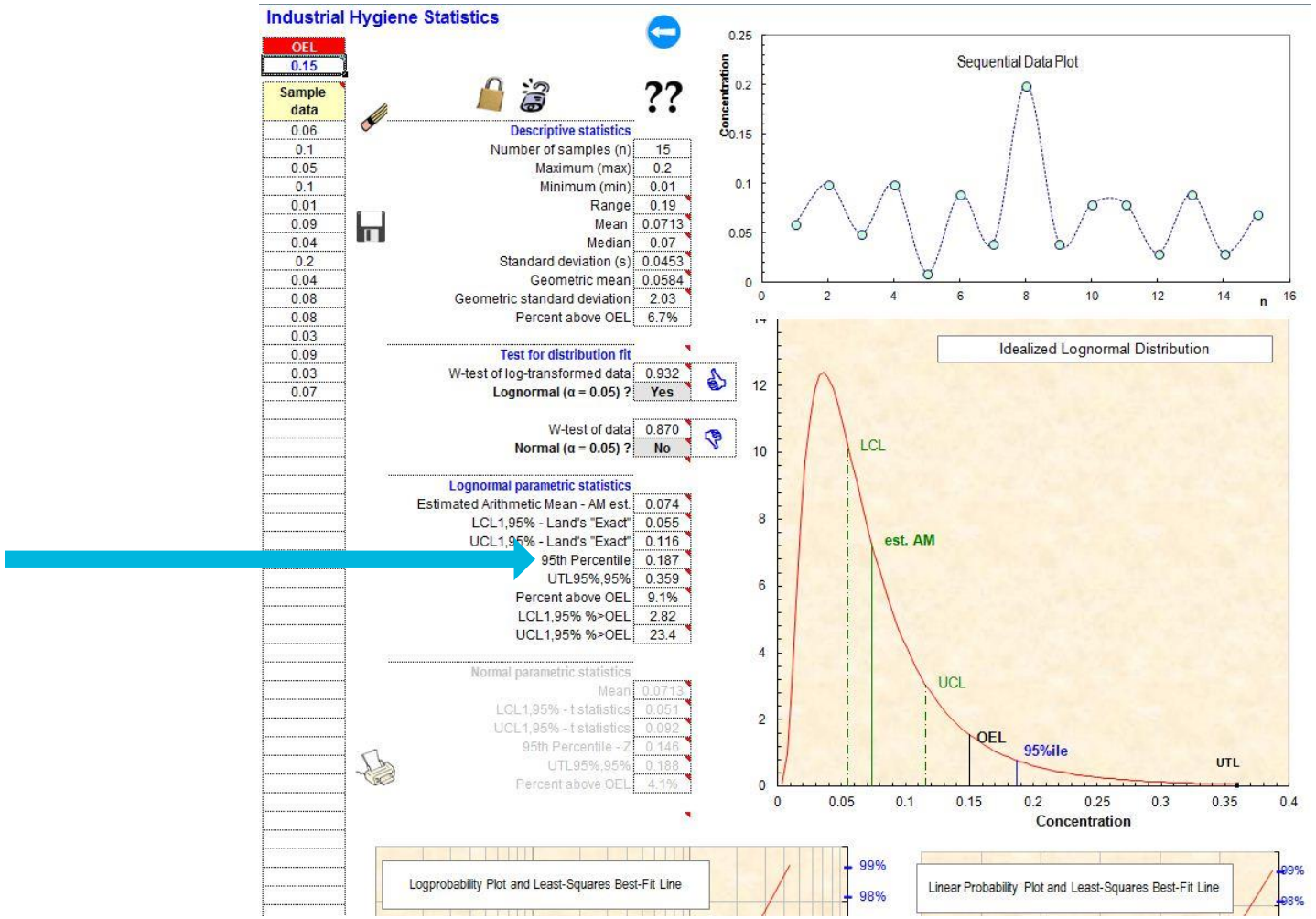
80%

Confirmed SEGs

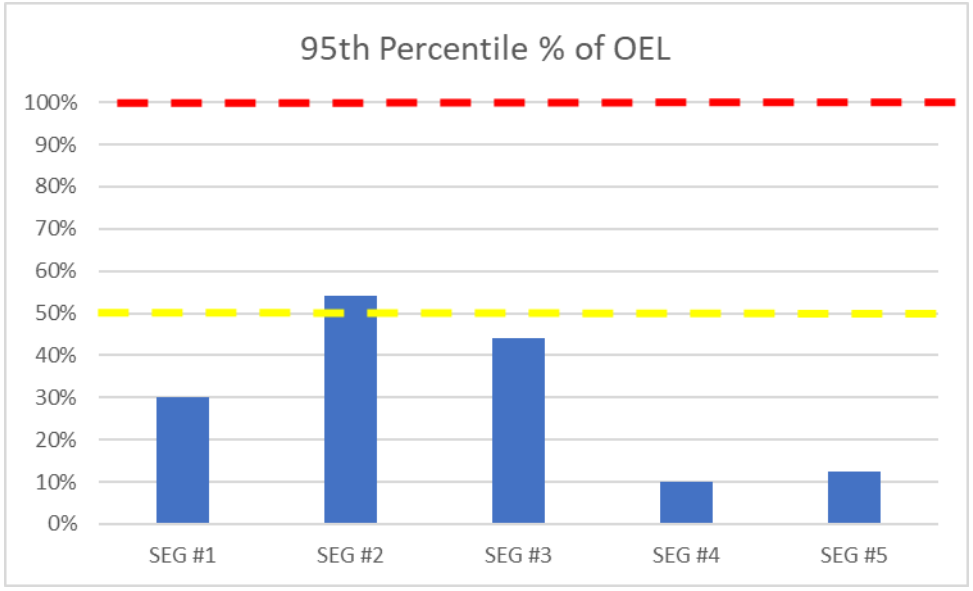
Exposure Compliance

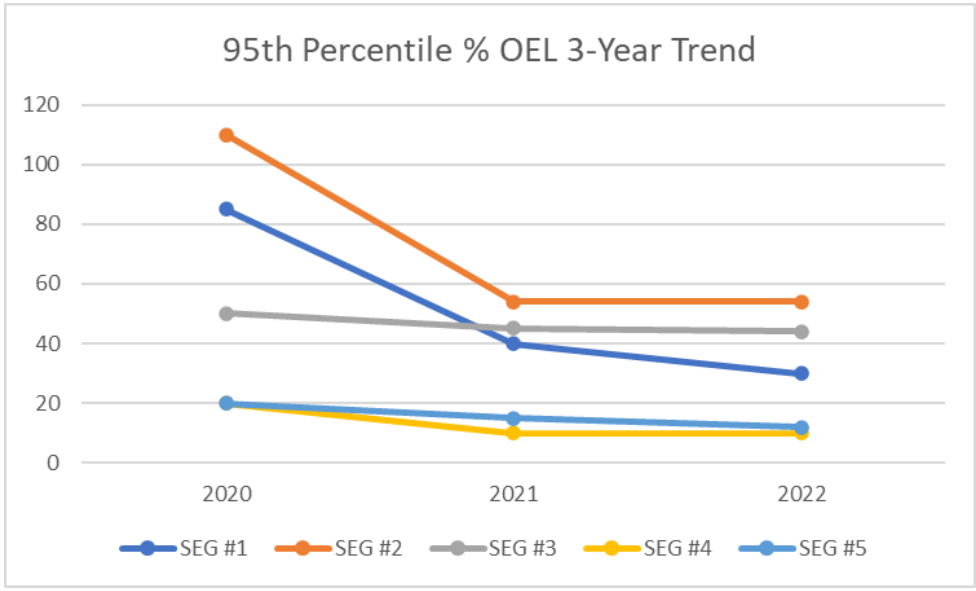
Are we in compliance with the OELs?

OEL Compliance Analysis: 95th Percentile



Exposure Compliance Metric Options





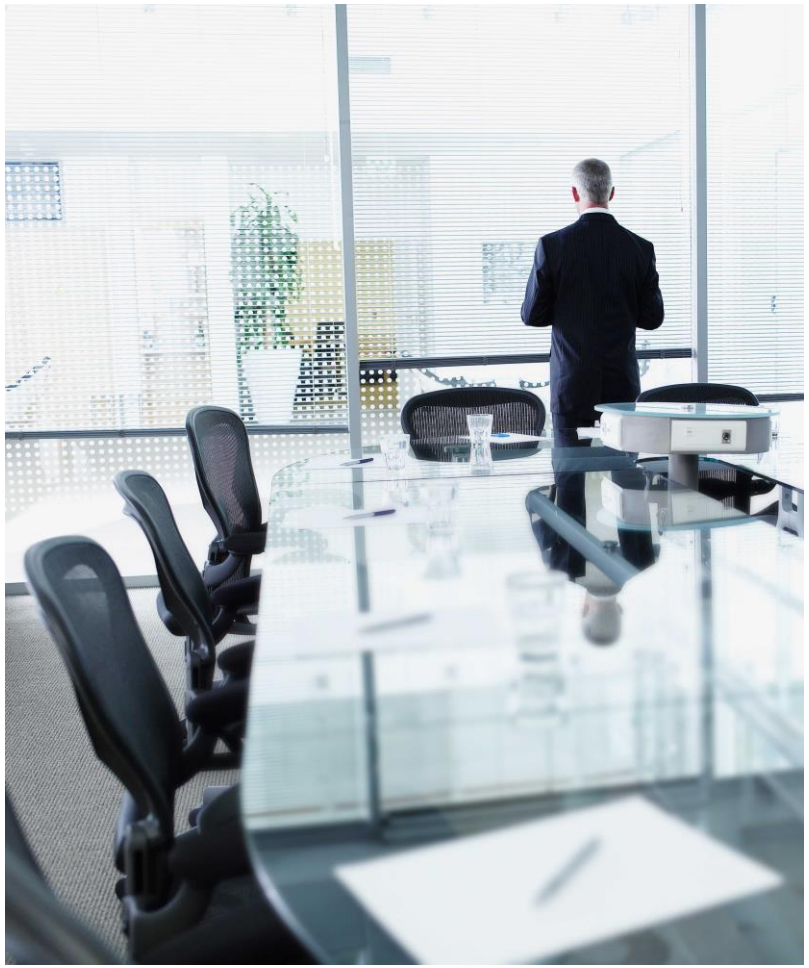
80%	0%	100%
Exposures <Action Level	Exposures >OEL	Exposure Compliance

Establishing a Metrics Program

Get Out of Your Black Box

Get Buy-In

- Collaborate with key stakeholders
- Align metrics with the goals of your business
- Better understanding of our value
- Ally to support program



Define Your Goals & Metrics

- Reduced illnesses
  - Hazard elimination
  - Qualitative exposure assessments completed VS planned
  - Sampling completed VS planned
  - Training activities
  - Corrective action metrics
  - Scheduled maintenance on engineering controls
- Greater employee engagement
  - Participation in safety committee meetings
  - Training sessions and other EHS management activities
  - Number of employee suggestions including IH issues
  - Surveys of employee perceptions and attitudes towards your IH programs.

Establish Benchmarks & Performance Targets

- Benchmark Data
  - Objective (quantitative)
  - Comparable (by industry, size, location, etc.)
  - Statistically valid (large sample size)
- Performance Targets
  - How aggressive are your performance goals?
  - What is the timeframe for achieving those goals?
  - Sufficient resources available to meet targets?

Document Data & Analysis Information

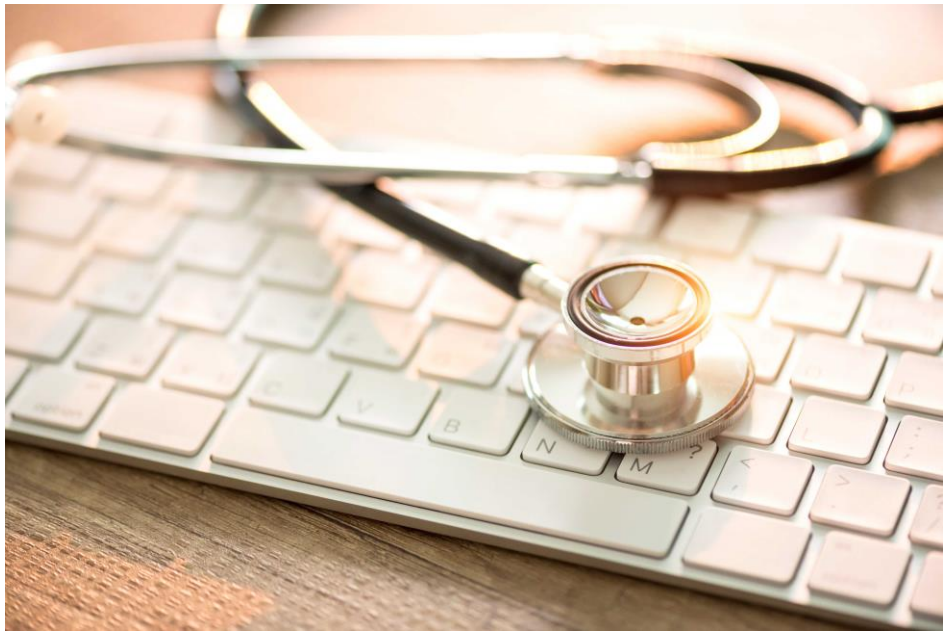
- Who's responsible
- Sources of data
- Tools & analysis methods (calculations, formulas)
- Frequency of collection and reporting
- Data collection and management procedures

Action Plan

- Document everything
- Set realistic expectations
- Be prepared for missed deadlines and setbacks

Program Review

- Remove metrics that no longer provide value to the organization
- Add or modify metrics as data needs change
- Benchmark industry best practices to fine-tune your program
- Over time, metrics will start to change behavior and may bias your data



Summary & Conclusions

- ✓Your metrics are unique
- ✓Engage key stakeholders
- ✓Align your metrics with your organization's greater business goals
- ✓Goals-question-tool-stat-analysis-graphic
- ✓Present easy to understand metrics
- ✓Document a plan with periodic reviews

Questions?

drisi@ehs.com