Planning and Deploying a Large Scale Ergonomics Process: Year by Year

Christy Lotz
Director of Ergonomics
VelocityEHS
clotz@ehs.com

Our Time Today

- Identifying key steps to take along the way
- Identifying and categorizing metrics for the life of your process
- eBook

If you only focus on

completing assessments…


…you will miss the big picture!

Data Important to an Ergonomics Process

Training

Employee Engagement

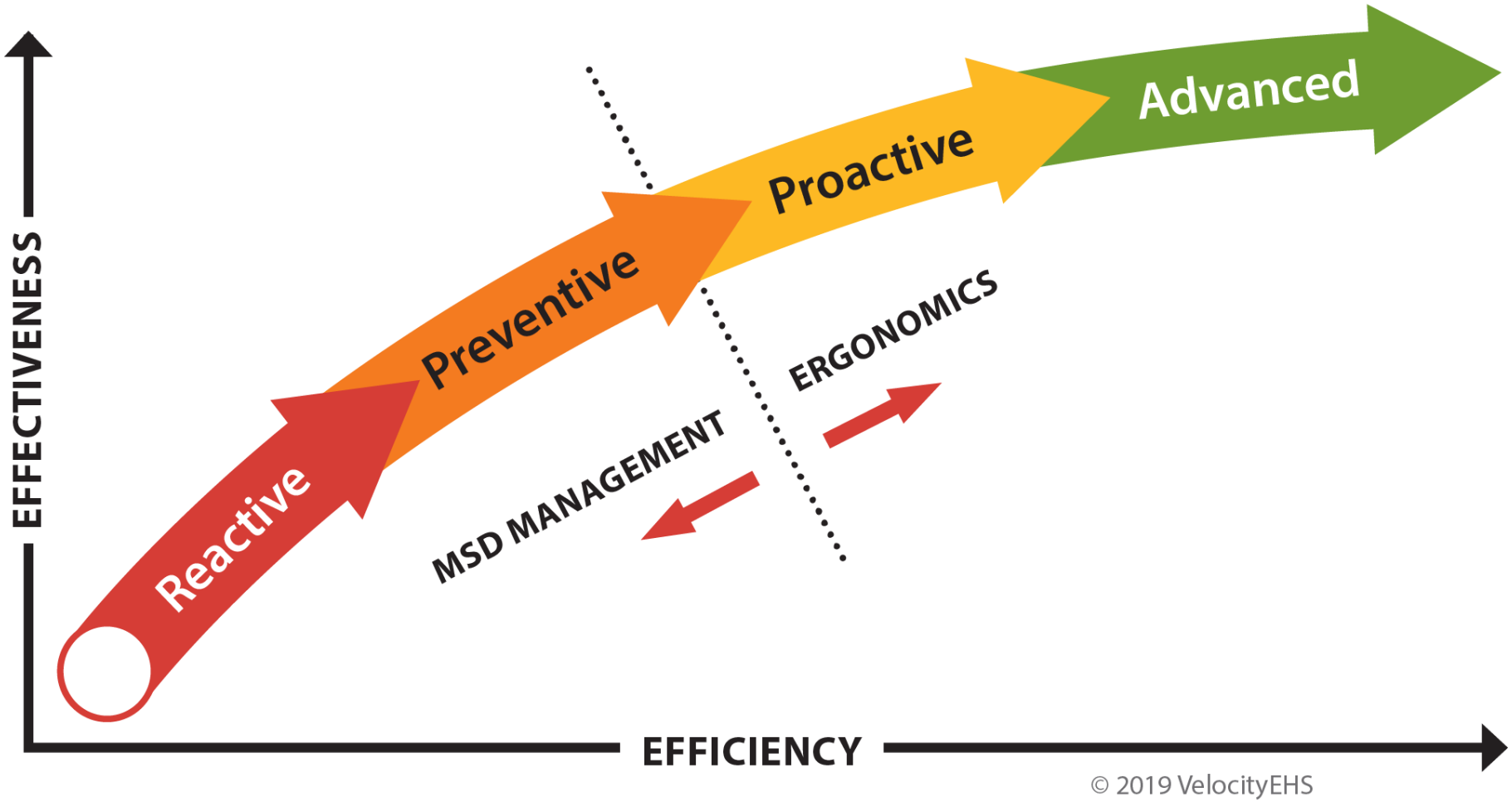
MSD Risk Factors

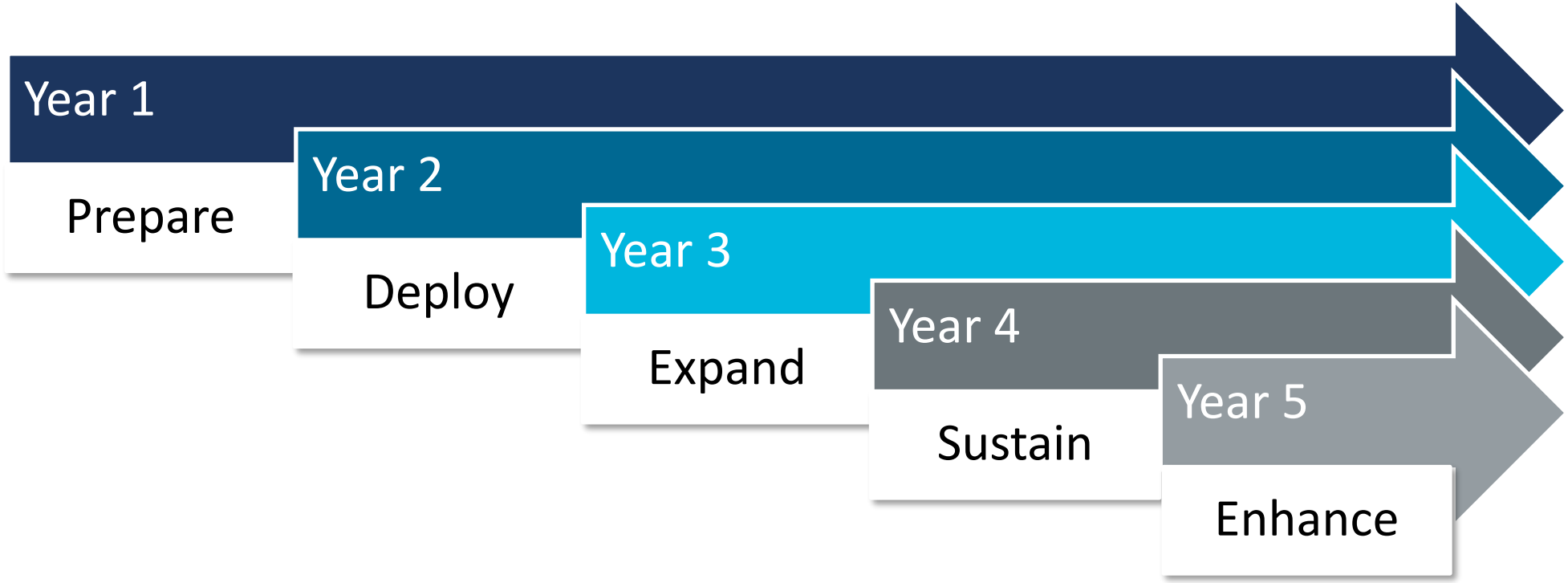
Risk Reduction

Direct Causes

Return On Investment

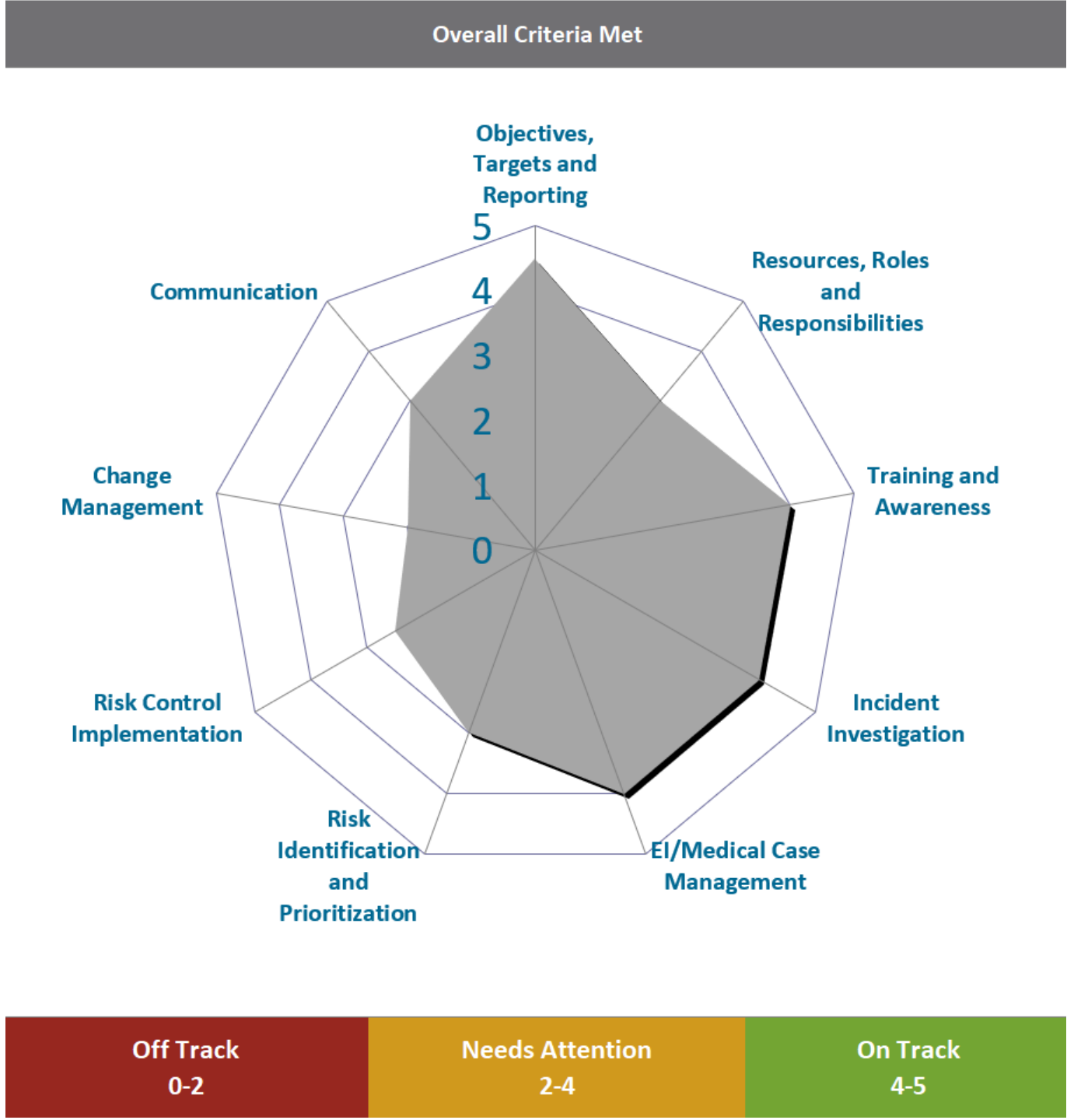
Ergonomics Maturity Curve®





Year 1: Prepare

1. Identify gaps/fit
   Develop policy/plan



Year 1: Prepare

1. Identify gaps/fit
   Develop policy/plan

2. Select supporting software

Tracking Results

- [ ] Can I easily track the status of identified improvements?
- [ ] Is there a method for verifying and documenting risk reduction through follow-up assessments?

Does the software help me easily track and report

- [ ] the root causes of risk factor exposures and their trends?
- [ ] the amount of risk reduction achieved?
- [ ] the number and types of improvements implemented?
- [ ] the status of current projects?
- [ ] the status of training?

- [ ] Do the reporting functions enable new project teams to gather lessons learned from existing workstations?
- [ ] Does the software facilitate sharing risks, successful solutions, and best practices across the organization?

Vendor Questions

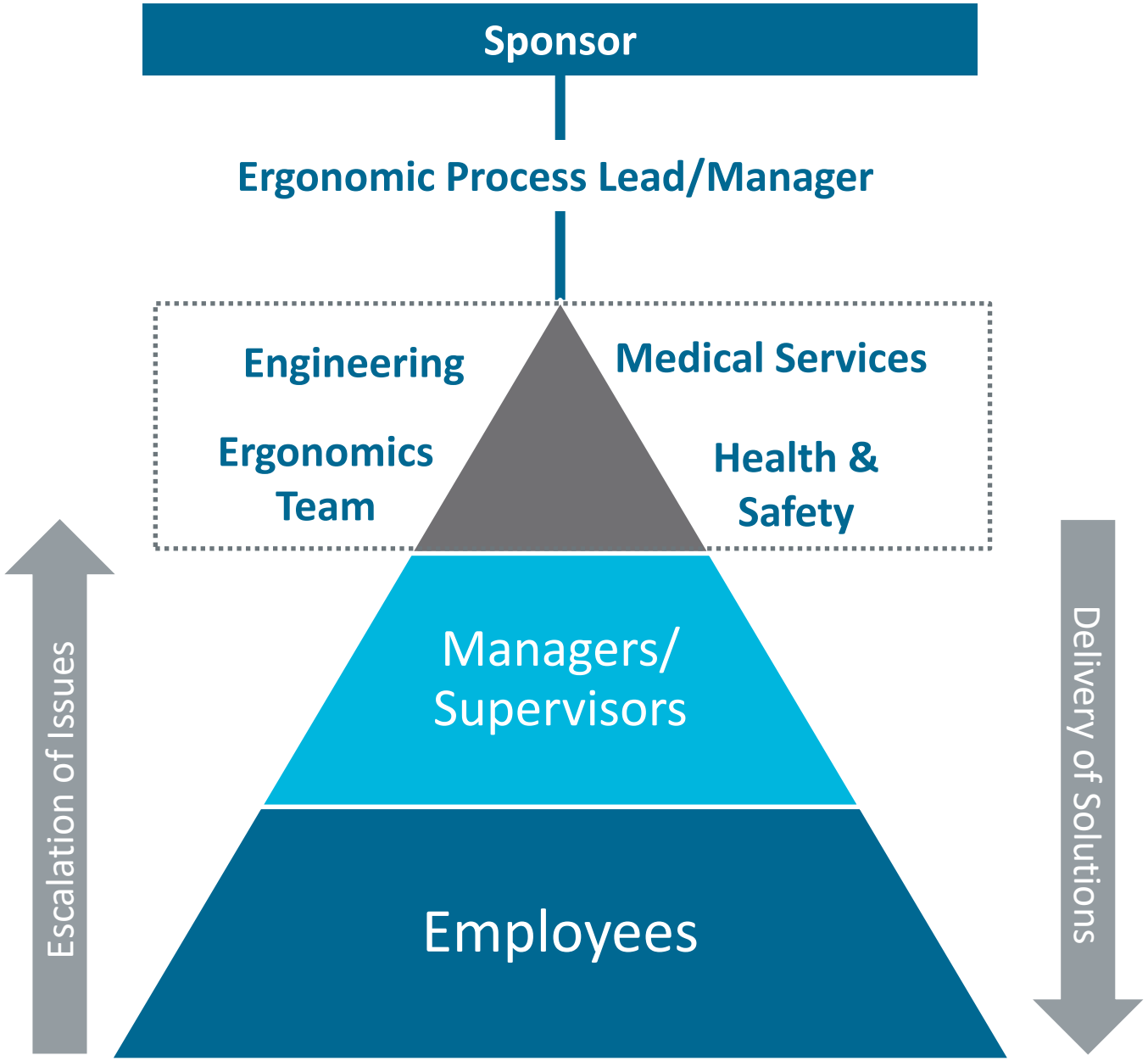
- [ ] Do you have a dedicated customer success team?
- [ ] How many developers do you have and how often do you improve the software based on client feedback?
- [ ] Is technical support in-house or outsourced?
- [ ] Overall, is the software user-friendly?
- [ ] Were user-experience designers involved in the creation of the software?
- [ ] Is the software mobile- and tablet-friendly?
- [ ] If I am in a facility with spotty or no internet access, will changes I make to assessment data automatically get saved and deployed next time I'm online?
- [ ] What are the qualifications of the on-staff subject matter experts available to assist with detailed ergonomics questions?

Year 1: Prepare

1. Identify gaps/fit
   Develop policy/plan

2. Select supporting software

3. Identify roles / responsibilities



Year 1: Prepare

1. Identify gaps/fit
   Develop policy/plan

2. Select supporting software

3. Identify rules/responsibilities

4. Implement training

Year 1: Prepare

1. Identify gaps/fit
   Develop policy/plan
2. Select supporting software
3. Identify roles / responsibilities
4. Implement training
5. Follow the job improvement process

Year 1: Metrics/Targets

Location	Course 0	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6
Enterprise	Complete	Passed	Passed	Passed	Not Started	Not Started	In Progress
Illinois > Chicago	Complete	Not Started	Not Started	Not Started	Not Started	Not Started	Not Started
Michigan > Ann Arbor	Complete	Passed	Passed	In Progress	In Progress	In Progress	In Progress
Illinois > Chicago	Complete	Passed	Passed	Passed	Passed	Passed	Passed
Illinois > Chicago	Complete	Passed	Passed	In Progress	Passed	Passed	Passed
Illinois > Chicago	Complete	Passed	Passed	Passed	In Progress	Passed	Passed
United States > Michigan	Complete	In Progress	In Progress	Passed	Passed	Passed	Passed
Enterprise	Complete	In Progress	In Progress	In Progress	Passed	Passed	Passed
Enterprise	Complete	Not Passed	Not Started	Not Started	Not Started	Not Started	Not Started
Michigan > Ann Arbor	Complete	Passed	Passed	Passed	Not Started	Not Started	Not Started
Enterprise	Complete	Passed	Passed	Passed	Passed	Passed	Passed
Enterprise	Complete	Passed	Passed	Passed	Passed	Passed	Passed
Enterprise	Complete	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress

Training

- % stakeholders signed off on policy
- # of employees trained
- # of sites with teams trained

Employee Engagement

- % sites with ergonomics teams identified

MSD Risk Factors

- # of jobs assessed

Year 2: Deploy

1. Establish rhythm

Year 2: Deploy

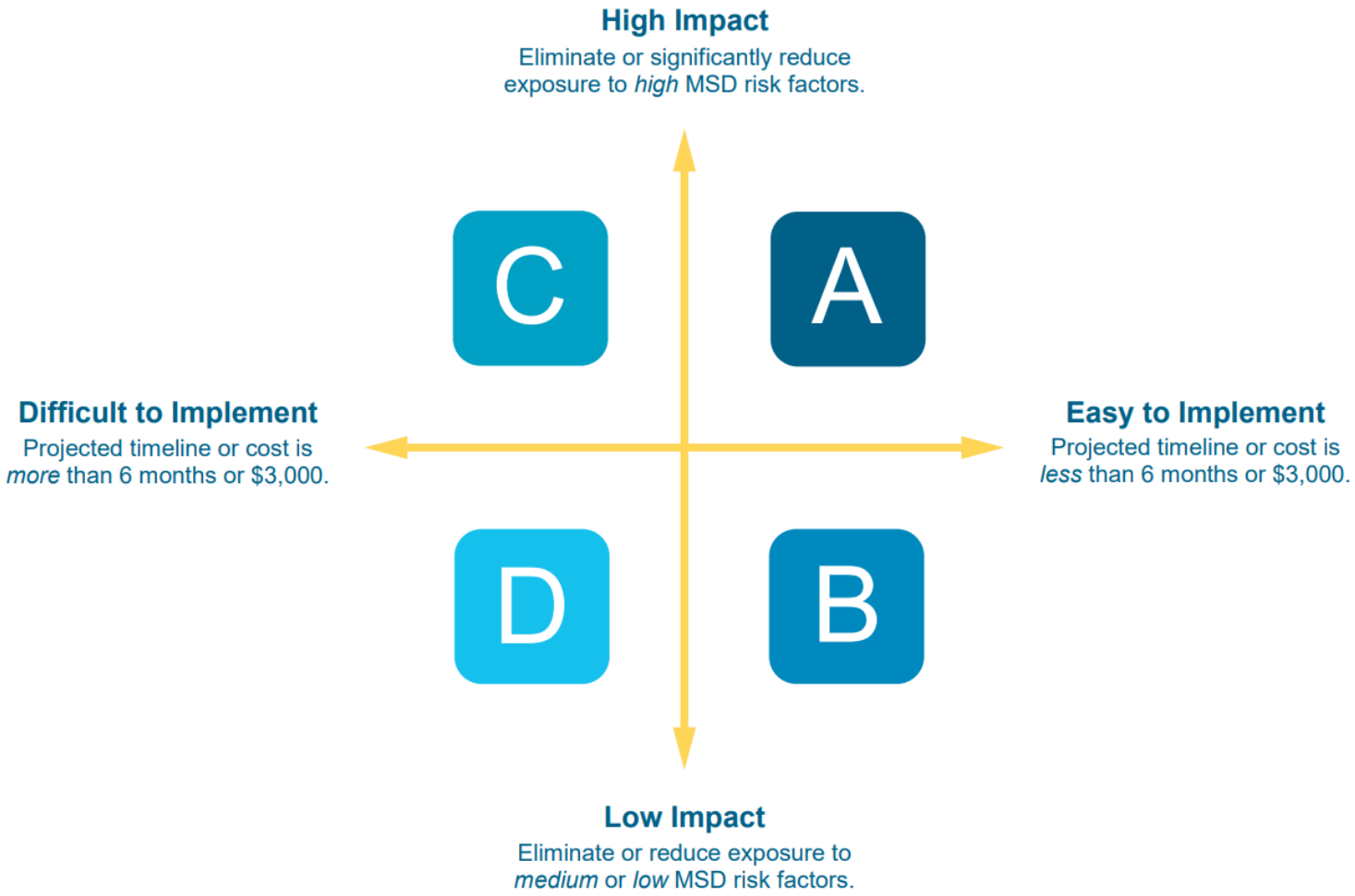
1. Establish rhythm

2. Engage operators

Year 2: Deploy

1. Establish rhythm
2. Engage operators
3. Categorize/prioritize/plan improvements

Priority Matrix



Year 2: Deploy

1. Establish rhythm
2. Engage operators
3. Categorize/prioritize/plan improvements
4. Identify metrics

Metrics	Goal	STATUS			
		Q1	Q2	Q3	Q4
Example: # of people trained	*100% safety staff*	*20%*	*30%*	*60%*	*100%*
% stakeholders signed off on policy					
# of people trained					
# of jobs assessed					
# of sites with teams trained					
% sites with ergonomics teams identified					
# of jobs assessed					
% jobs assessed per facility (or across organization)					
# of direct causes identified					
% of direct causes addressed					
% of high risk jobs with direct causes identified					
# reports of discomfort					
% change in reports of discomfort					
# improvements identified					
% improvements moved from waiting for decision to in progress					

Year 2: Metrics/Targets

23	29	35

MSD Risk Factors

- # of jobs assessed
- % jobs assessed across facility

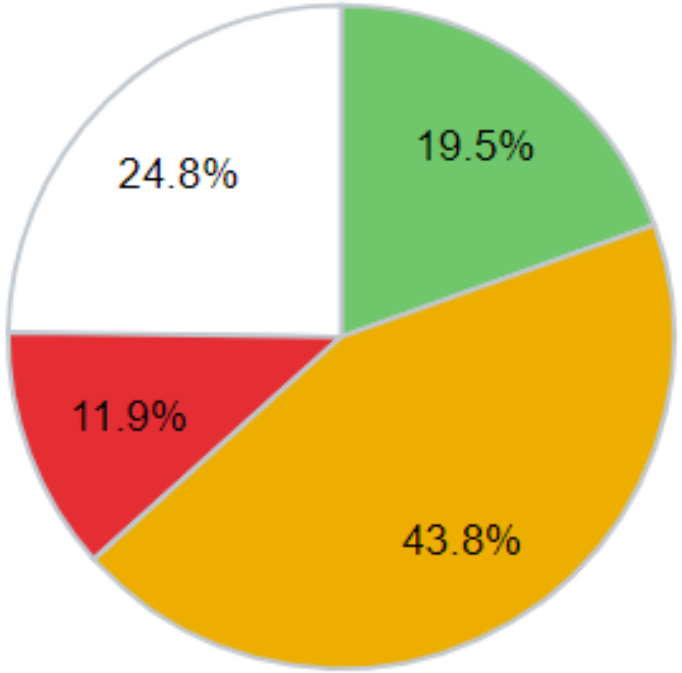
Direct Causes

- # direct causes identified and addressed
- % of high-risk jobs with direct causes identified

Employee Engagement

- # reports of discomfort

Risk Priority Score



241	Low
541	Moderate
147	High
306	No RPS

Year 2: Metrics/Targets

MSD Risk Factors

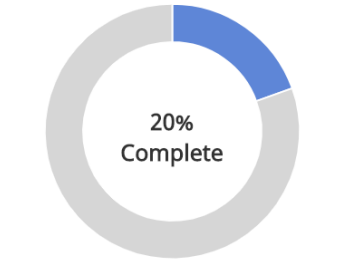
- # of jobs assessed
- % jobs assessed across facility

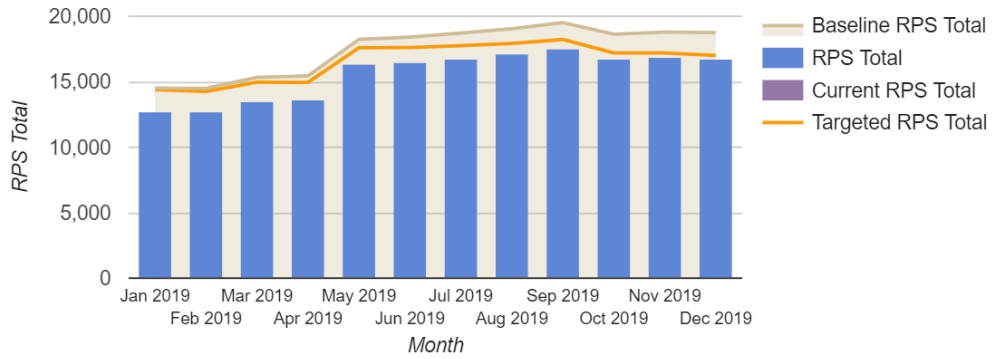
Direct Causes

- # direct causes identified and addressed
- % of high-risk jobs with direct causes identified

Employee Engagement

- # reports of discomfort





Annual RPS Reduction Metrics

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Total
RPS Reduction Target	105	105	105	105	105	105	105	105	105	105	105	105	1,263
RPS Points Removed	79	-41	9	0	100	18	22	10	10	27	13	0	247

Job Assessments with RPS

Month	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	
Low	226	227	227	230	238	238	237	238	238	239	238	238	25%
Moderate	478	480	505	505	536	540	555	555	559	550	552	551	59%
High	75	75	84	87	144	145	145	153	164	145	149	148	16%
Total	779	782	816	822	918	923	937	946	961	934	939	937	100%

Year 2: Metrics/Targets

Risk Reduction

- # improvements identified
- % improvements moved from ‘waiting for decision’ to ‘in progress’
- # improvements implemented
- % follow-up assessments completed
- % risk reduction

Year 3: Expand

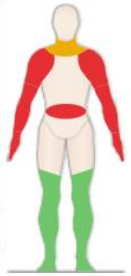
1. Eliminate hazards

Baseline	Follow-Up

Workstation Photos

Quantitative Analysis

Risk Priority Score (RPS)	46



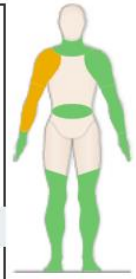
Whole-Body Assessment									
Hands/Wrists		Elbows		Shoulders					
Left	Right	Left	Right	Left	Right	Neck	Back	Legs	
3	3	3	3	3	3	2	3	0	

Physical Stressors: (L) (S) (I) (G)

Time on Task per Week: 20-40 hours

Manual Material Handling			
Lift/Lower	1.3	Push	
Pull		Carry	

Risk Priority Score (RPS)	8	83% Reduction



Whole-Body Assessment									
Hands/Wrists		Elbows		Shoulders					
Left	Right	Left	Right	Left	Right	Neck	Back	Legs	
1	1	0	2	0	2	0	0	0	

Physical Stressors:

Time on Task per Week: 20-40 hours

Manual Material Handling			
Lift/Lower	1.1	Push	
Pull		Carry	

Year 3: Expand

1. Eliminate hazards

2. Expand your team

Year 3: Expand

1. Eliminate hazards

2. Expand your team

3. Qualitative feedback

Year 3: Expand

1. Eliminate hazards
2. Expand your team
3. Qualitative feedback
4. Mine your data

Advanced Tool Overview

3 records found.

Location	Risk Reduction Metrics: Advanced Tool Score #	Advanced Tool Score %	Current Advanced Tool Score: All Jobs #	Higher #	Higher %	High #	High %	Moderate #	Moderate %	Low #	Low %	Lower #	Lower %	No Advanced Tool Score #	No Advanced Tool Score %
Enterprise > Canada	3	0%	936	0	0%	20	2%	40	4%	7	1%	8	1%	861	92%
Enterprise > Mexico	0	0%	4	0	0%	0	0%	0	0%	0	0%	0	0%	4	100%
Enterprise > United States	8	3%	295	2	1%	42	14%	38	13%	27	9%	8	3%	178	60%

Export options: CSV | Excel

Risk Overview

3 records found.

Location	Risk Reduction Metrics: RPS #	RPS %	Lift/Lower #	Lift/Lower %	Current Risk Priority Score: All Jobs #	High #	High %	Moderate #	Moderate %	Low #	Low %	No RPS #	No RPS %
Enterprise > Canada	67	7%	9	1%	936	68	7%	442	47%	218	23%	208	22%
Enterprise > Mexico	0	0%	0	0%	4	3	75%	0	0%	0	0%	1	25%
Enterprise > United States	47	16%	9	3%	295	76	26%	99	34%	23	8%	97	33%

Export options: CSV | Excel

Job Assessment Status

3 records found.

Location	All Jobs #	With Analysis: Analysis Any Tool #	Analysis Any Tool %	RPS #	RPS %	Advanced Tool Score #	Advanced Tool Score %	With Direct Causes: All Jobs #	All Jobs %	Identified #	Addressed #	Addressed %	With Improvements: All Jobs #	All Jobs %	Identified #	Completed #	Completed %	With Follow-up: RPS #	RPS %	Advanced Tool Score #	Advanced Tool Score %
Enterprise > Canada	936	753	80%	728	78%	75	8%	321	34%	678	45	7%	310	33%	701	96	14%	77	8%	17	2%
Enterprise > Mexico	4	3	75%	3	75%	0	0%	1	25%	1	0	0%	2	50%	2	0	0%	0	0%	0	0%
Enterprise > United States	295	265	90%	197	67%	116	39%	121	41%	391	39	10%	119	40%	327	43	13%	54	18%	16	5%

sent.

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Discomfort Survey

Operator Survey

Time On Job: 4 Year(s) 6 Month(s)

Body Part		Severity	Frequency
Left Hand/Wrist	☐	Mild	Seldom
Right Hand/Wrist	☑	Mild	Seldom
Left Elbow	☐	Moderate	Often
Right Elbow	☑	Moderate	Often
Left Shoulder	☐	Moderate	Often
Right Shoulder	☑	Moderate	Often
Neck	☐		
Back	☐		
Legs	☐		

Difficulties

Operator reports discomfort in upper right side of body from frequent use of the drill.

Improvements

N/A

		Risk Priority Score (RPS)			Whole-Body Assessment									Discomfort								
Job Assessment	# Oper.	1	2	% change	LH	RH	LE	RE	LS	RS	N	B	L	LH	RH	LE	RE	LS	RS	N	B	L
Job 3051	1	37.5	28.8	23%	2	2	3	3	1	1	1	1	1				x		x			
AM Assessment	1	20			2	3	2	1	2	1	1	2	0	x	x	x	x			x	x	
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
UPS Packers	3	32	18	44%	2	1	2	2	2	2	1	1	0	x	x		x				x	
Bull Gear Deburring Fixtures	3	49	16	67%	2	2	2	2	1	1	1	1	0	x	x	x	x					
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
AM 2nd Assessment	2	36			3	2	3	3	1	2	0	2	3	x	x	x	x			x	x	x
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
Seat Adjuster	2	32	17	47%	2	2	1	2	1	2	0	1	0		x		x		x			
Seat Adjuster	2	32	20	38%	2	2	1	2	1	1	3	1	0		x		x		x			
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			
Seat Adjuster	2	32	22	31%	2	2	1	2	1	2	3	1	0		x		x		x			

Year 3: Metrics/Targets

Employee Engagement

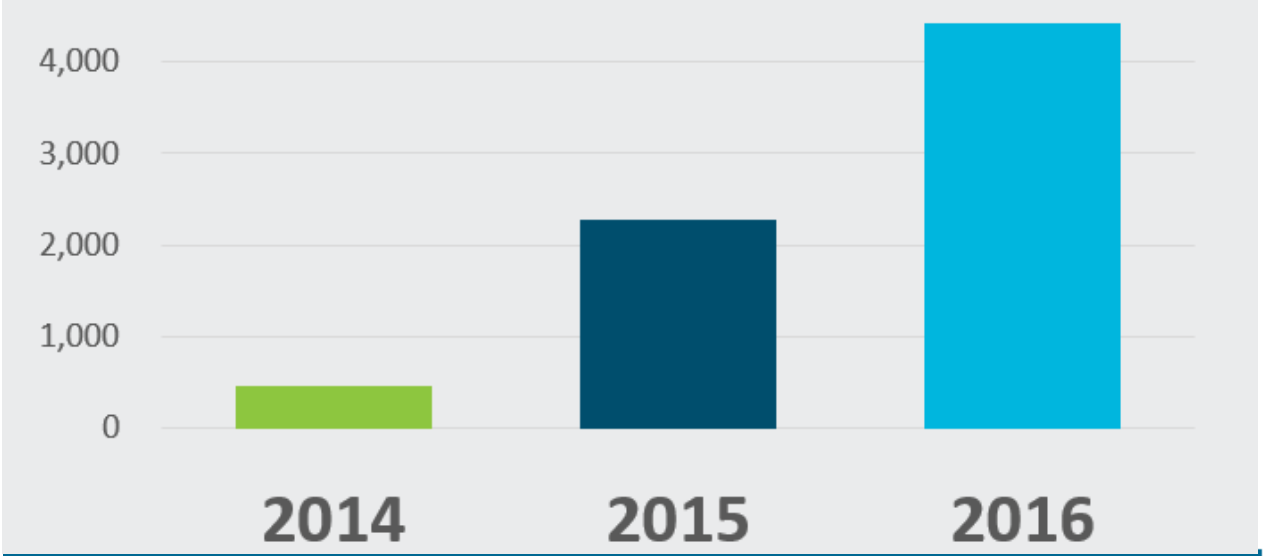
- % change in reports of discomfort

Risk Reduction

- Trending on-target to risk reduction goals
- % high-risk jobs
- # red jobs reduced to green/yellow
- % jobs with follow-ups completed

Return on Investment

- $ to implement solutions
- Injury reduction (in areas of improvement)



Results:

7,000+
Assessments

$12M
Direct Cost Savings

230+
Cummins Sites

$4M
Productivity Savings

85%
Incident Rate Reduction

272%
Return on Investment

Year 3: Metrics/Targets

Employee Engagement

- % change in reports of discomfort

Risk Reduction

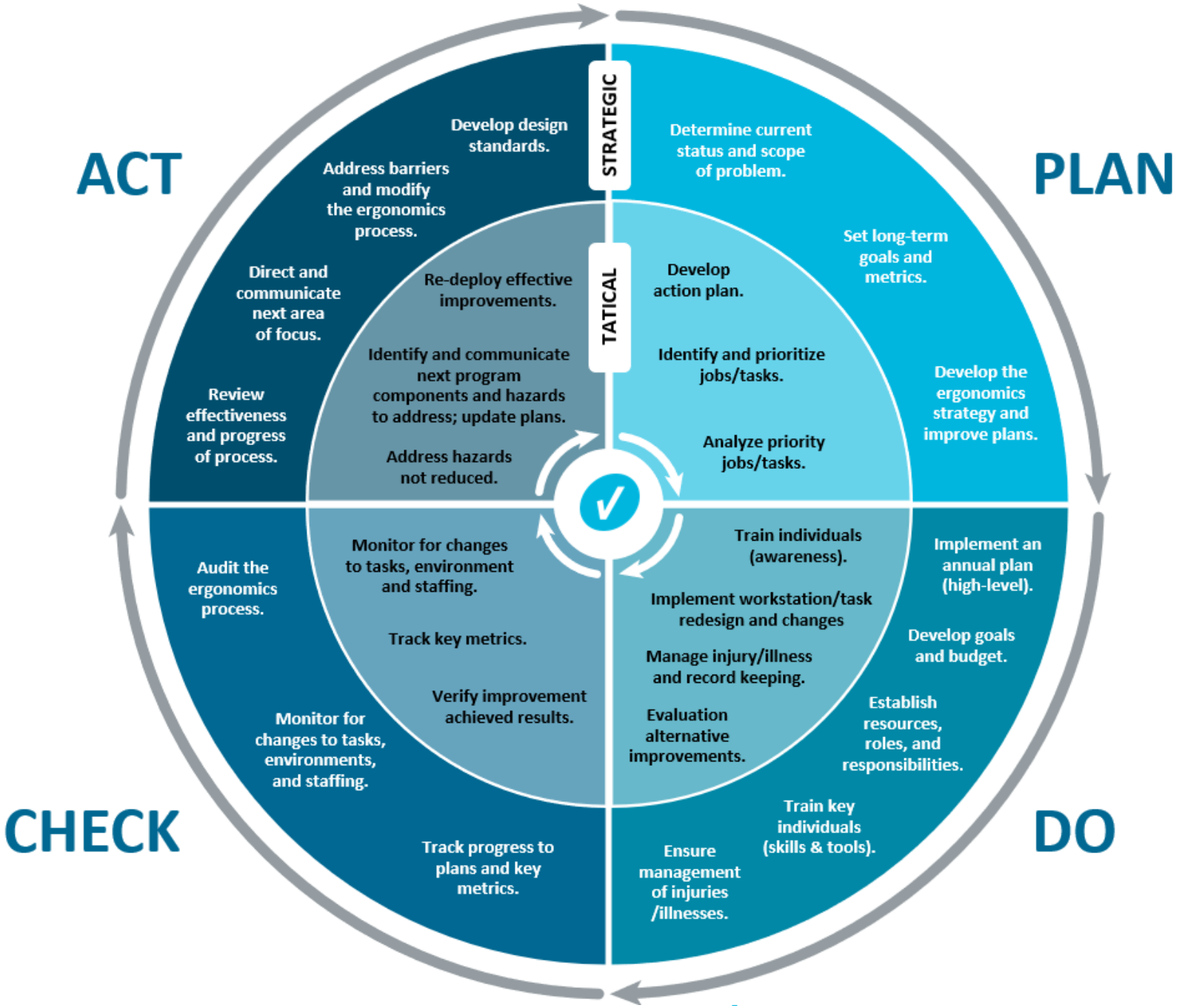
- Trending on-target to risk reduction goals
- % high-risk jobs
- # red jobs reduced to green/yellow
- % jobs with follow-ups completed

Return on Investment

- $ to implement solutions
- Injury reduction (in areas of improvement)

Year 4: Sustain

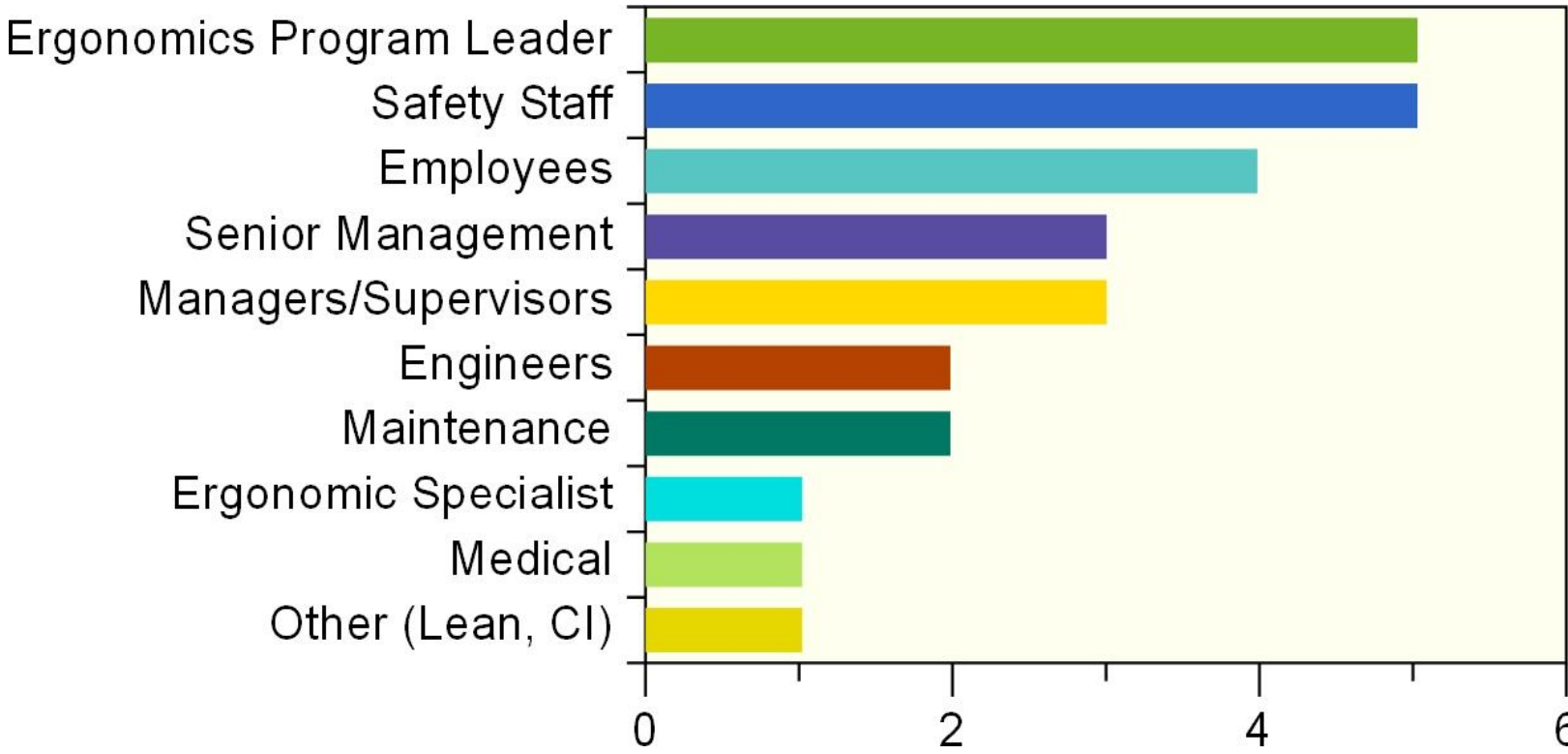
1. Integrate



Year 4: Sustain

1. Integrate

2. Expand your training



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Year 4: Sustain

1. Integrate

2. Expand your training

3. Audit

Audit Criteria (based on ISO 45001)							
	Criteria Number	Criteria	Rating		Evidence Type		
Objectives, Targets, and Reporting	1	Ergonomics policy in place to provide standards and guidance to plants	Partially Meets		Documentation	Interviews	
	2	Ergonomics policy clearly outlines a standardized process and set of tools to **identify MSD risk**	Meets		Documentation	Interviews	
	3	Ergonomics policy clearly outlines a process to **reduce MSD risk**	Does Not Meet		Documentation	Interviews	
	4	Company has a method and cadence to check goals, metrics, and/or KPIs	Partially Meets		Documentation		
Resources, Roles, and Responsibilities	5	Ergonomics policy clearly outlines roles and responsibilities for ergonomics process	Partially Meets		Documentation	Interviews	
	6	Leadership demonstrates commitment to the ergonomics process	Partially Meets		Interviews		
	7	Company has clearly-defined goals, metrics, and/or KPIs that pertain to ergonomics	Partially Meets		Documentation	Interviews	Visual Display
	8	Employees involved with the ergonomics process have performance measures which include ergonomics-related goals	Partially Meets		Interviews		
	9	Ergonomics process has dedicated resources (people, time, money)	Partially Meets		Interviews		
	10	Leadership is involved in policy review and updates	Does Not Meet		Documentation	Interviews	
Training and Awareness	11	Employees receive adequate ergonomics training and can demonstrate competence based on their role	Partially Meets		Interviews		
	12	Employees are aware that there is an ergonomics process	Meets		Interviews		

Year 4: Metrics/Targets

		Advanced Tool			Advanced Tool Body Parts								
Job Assessment	# Oper.	1	2	% change	LH	RH	LE	RE	LS	RS	N	B	L
AE JA	1	22	0	100%	0	0	0	0	0	0	0	0	0
mm dev #1	1	38	2	95%	2	0	0	0	0	0	0	0	0
Final Inspection	1	49	16	67%	0	0	3	3	3	2	3	1	1
AA Bracket prep	1	33	17	48%	1	0	1	6	1	6	2	0	0
AA Bracket prep	1	30	18	40%	1	1	3	4	3	4	1	0	1
AA Bracket prep	1	40	24	40%	2	2	5	4	5	4	1	0	1
Seat Adjuster	2	19	12	37%	1	1	0	4	0	4	2	0	0
Seat Adjuster - Copy	2	34	22	35%	3	3	3	4	2	3	2	0	2
Fulfillment coordinator	1	30	22	27%	1	1	5	4	5	4	1	0	1
Fulfillment coordinator	1	30	23	23%	1	1	3	0	3	6	4	2	3
Seat Adjuster	2	34	28	18%	2	2	4	2	3	6	4	2	3
S2 Order Picker	1	41	37	10%	2	2	7	5	6	5	3	2	5

Training

- # of locations audited
- % locations with improved annual audit score

Risk Reduction

- # red jobs introduced
- % red jobs
- % red body areas

Year 5: Enhance

1. Challenge yourself

Year 5: Enhance

1. Challenge yourself

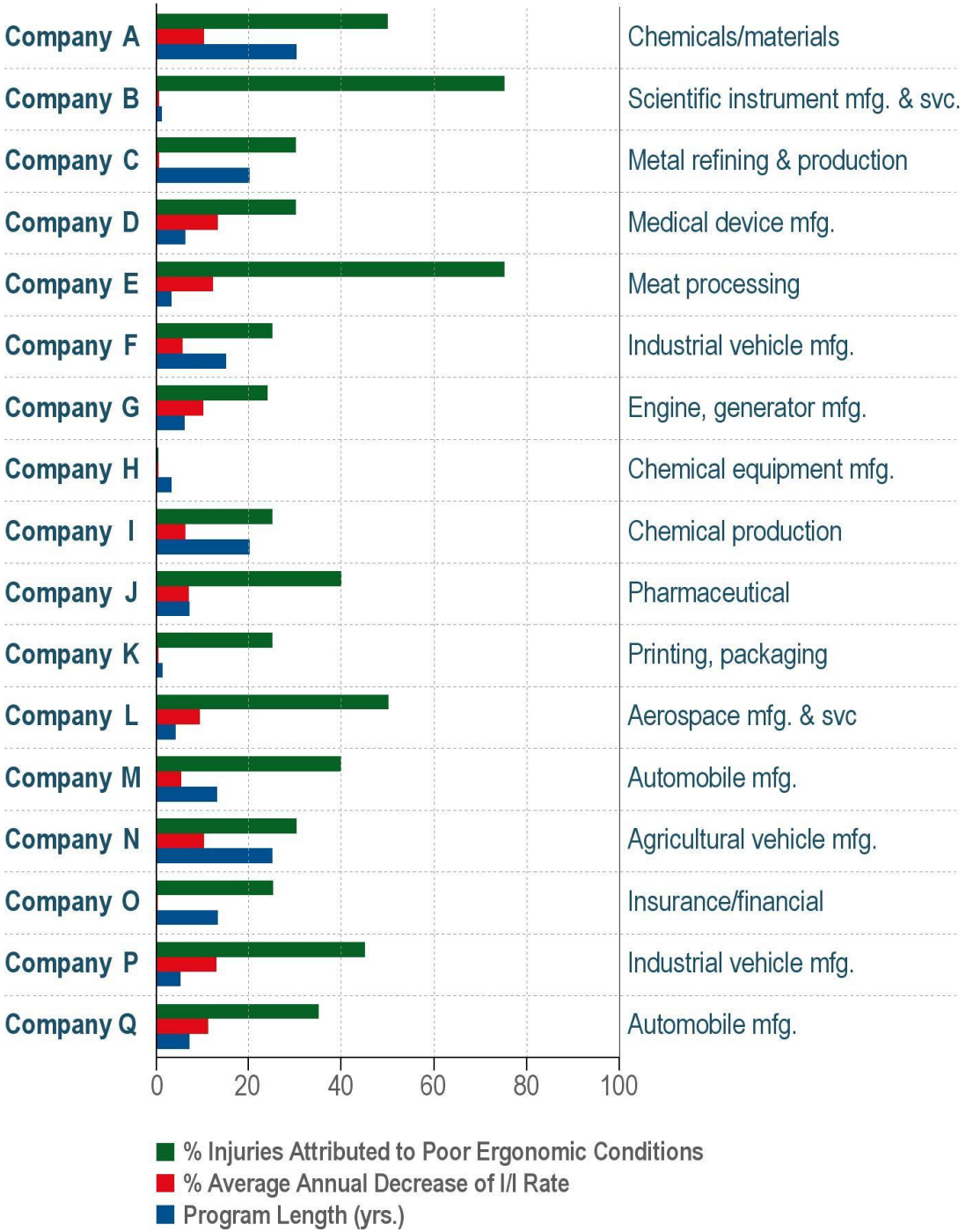
2. Network

Year 5: Enhance

1. Challenge yourself

2. Network

3. Benchmark



Investment	Findings
Size of Ergonomic Support Team	1-28 people Average = 11.8
Ratio of Ergonomic Support Team members to total employees	1:11 to 1:500
Time allocated for Ergonomics Process Lead to manage the program	Majority = 4-8 hours/month
Time allocated for Ergonomics Support Team for activities	Majority = 1-8 hours/month
Annual cost for expensed improvements	Majority = $10,000-$50,000/year
Annual cost for capital improvements	$0-$100,000/year

Results	Findings
Annual Reduction of Recordable Injury/Illness	5%-9% $2,977-$4,854
Annual Improvement in Productivity	0%-25%
Annual Improvement in Quality	$12,500-$25,000
Annual Savings from Employee Retention	$3,000-$30,000
Return on Investment (ROI)	77%-1,513%/year

Year 5: Metrics/Targets

Training

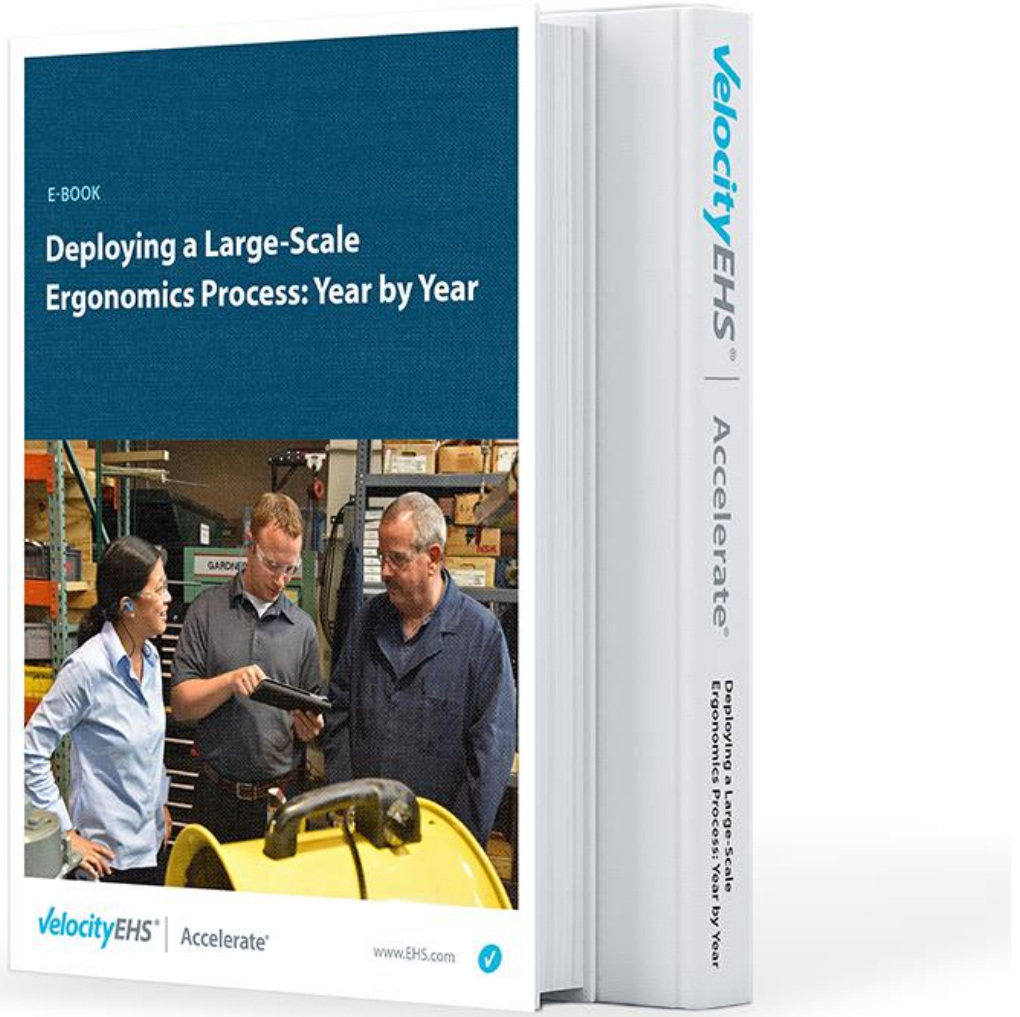
- % team members (re)trained
- New leadership/stakeholders committed

Employee Engagement

- # red body areas eliminated
- % risk reduction versus goal

Return on Investment

- 3 and 5 year ROI
- $ productivity, quality, and safety savings



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