

## **Effective Management of Ergonomics: Best Practices from Current Benchmarking**

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### **Introduction**

Humantech conducted a benchmarking study as part of an ongoing process to better understand the current status and successful elements of managing occupational ergonomics in today's workplace. Occupational ergonomics, as defined by the National Institute of Occupational Safety and Health (NIOSH), is "the science of fitting workplace conditions and job demands to the capabilities of the working population. Ergonomics is an approach or solution to deal with a number of problems; among them are work-related musculoskeletal disorders."

This proceedings paper was derived from the full report of the benchmarking study findings. This paper summarizes the general trends and high-level findings of the study.

The benchmarking study is the fourth in a series of studies on management practices. It focuses on identifying key elements of effective ergonomics programs and the management of these processes. The scope of the study was to:

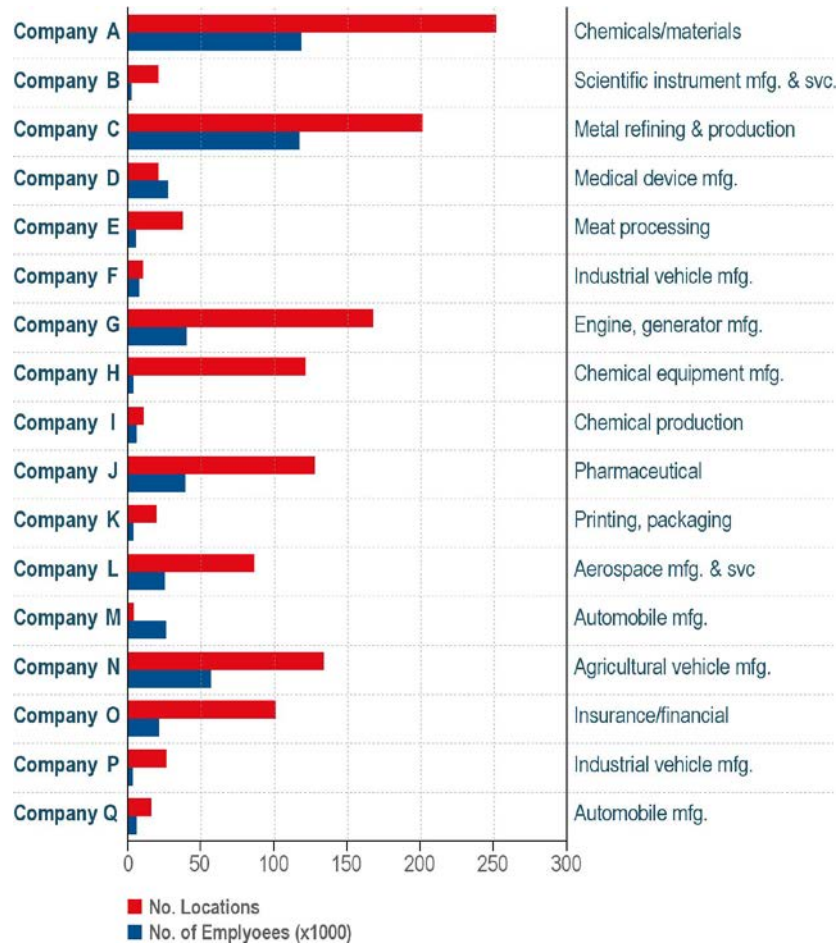
- Meet with 15 to 20 Fortune 500 organizations with established ergonomics programs. Thirty-five (35) participants volunteered through a self-nomination and survey question process. Seventeen companies were selected in the final study group based on their program history, scope, and reported results.
- Interview the person(s) responsible for ergonomics (Ergonomics Program Manager or equivalent).

- Identify key measures of program management, results, and critical program elements to which they attribute their success or challenges.
- Explore the approach and methods used to manage the company ergonomics program. Base the critical program elements on the Safety Management System model.
- Complete the benchmarking interview process in two months (mid-May through mid-July, 2011).
- Share study findings with the participating companies.
- Extract, summarize, and share the critical program elements through presentations and other communication methods to safety, engineering, and management professionals, to support greater understanding and use of the current key best practices identified for managing the ergonomics program.

To ensure consistency in interviews and reporting, interviews were conducted by a team of Humantech ergonomists. Each interviewer used a standard set of interview topics in the form of open-ended questions. The questions and interview process were designed to explore and understand each participating company's ergonomics program, and to follow the process elements aligned with recognized safety management system models, such as OHSAS 18001 and ANSI Z10.

## **Participant Characteristics**

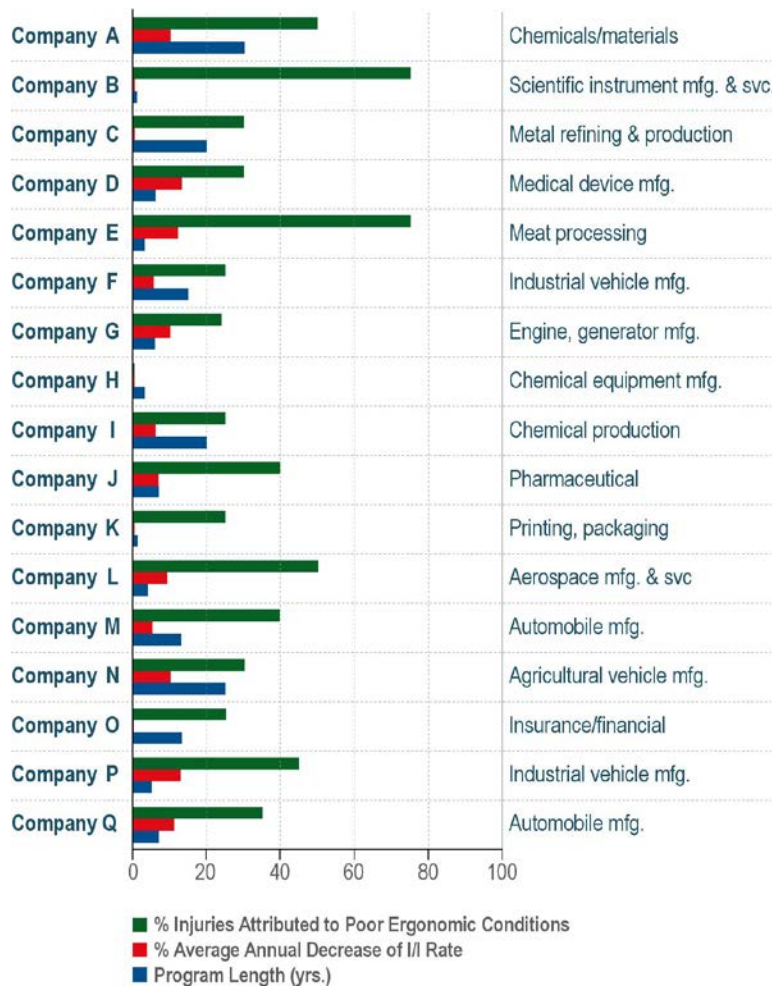
The benchmarking study focused on Fortune 500 domestic companies regulated by OSHA, with international operations, identified by NAICS (North American Industry Classification System), and with an established ergonomics program/process in place. Exhibit 1 summarizes the participant companies' sizes (employees and locations) and types of industries.



**Exhibit 1. Participant companies represented a wide range of industries and varied in size and number of locations.**

The study included a wide range of industry types and program scope, maturity, length, and effectiveness. It focused specifically on their current program management of workplace ergonomics.

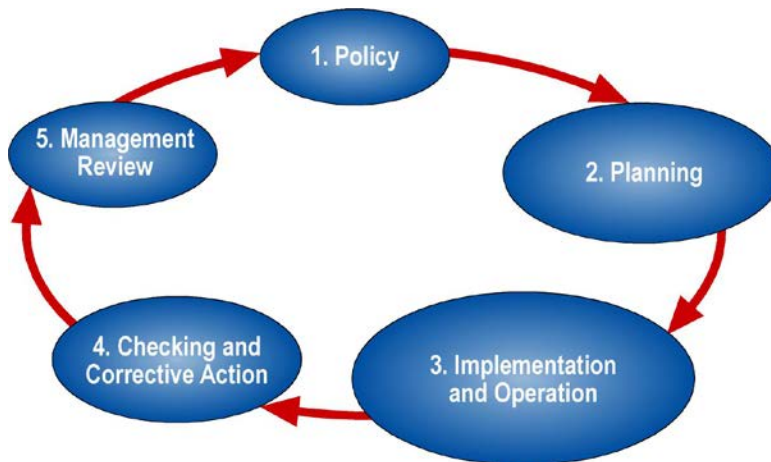
Exhibit 2 summarizes the percentage of recordable injuries/illnesses (“I/I”) each participant attributed to poor ergonomic conditions, and the average annual percentage reduction in recordable injury/illness rate (determined from rates and time periods provided by each company).



**Exhibit 2. Injury experience and length of program for each participant.**

### Program Elements Evaluated

Each ergonomics program was reviewed using questions aligned with the elements of the widely accepted **Safety Management System**. Each element within this system has its own set of criteria, and the number of criteria is represented in the following figure by the varying sizes of each element.

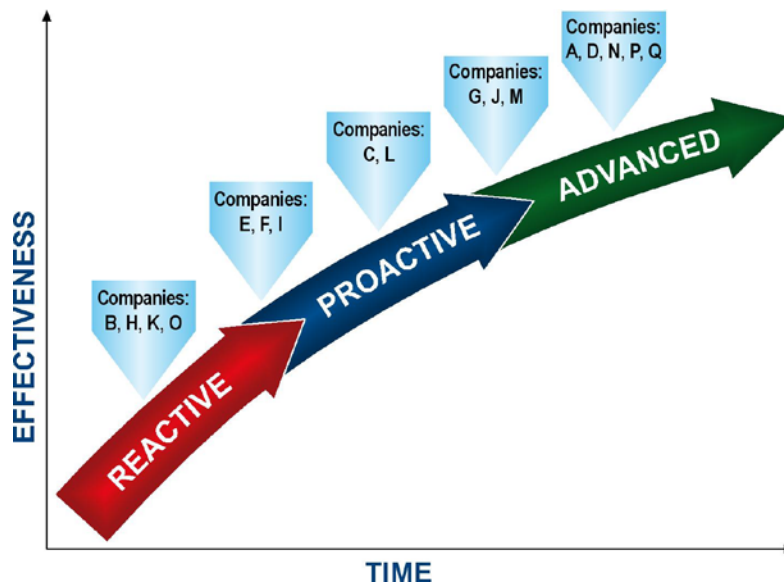


**Exhibit 3. Benchmarking topics were based on elements of Safety Management System.**

Because the participants' program maturity, integration, and effectiveness varied, we used the results of each interview to determine the relative position of each participant's ergonomics program/process on Humantech's Workplace Performance Maturity Curve.

The Workplace Performance Maturity Curve illustrates the general categories of maturity as an ergonomics program evolves through three levels. The levels reflect improving effectiveness, comprehensiveness, and sustainability of an ergonomics program over time.

Exhibit 4 illustrates the relative position of the participants' programs to these levels of maturity.



## Exhibit 4. Participants' programs mapped to the Workplace Performance Maturity Curve.

### Study Findings

A detailed comparison of participating companies' program elements, methods, and results was conducted. The findings, by safety management system element, were recorded and the trends identified. These results were provided to all participating companies in a detailed written report.

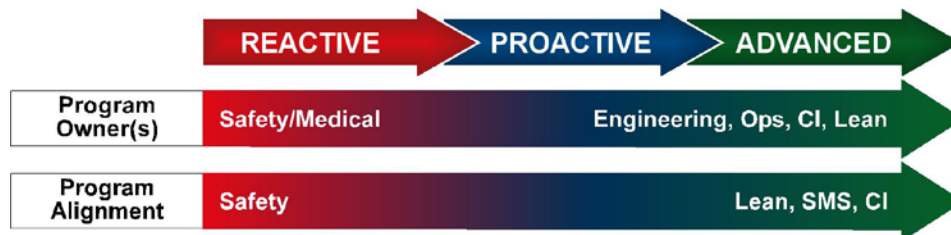
In general, we identified several trends based on the maturity, success (improvement), and effectiveness of each program.

#### History and Results Achieved

The one common measure of improvement calculated for all participants (and all U.S. employers) is change in the incidence rate of recordable injuries/illnesses. This was used as a common indicator of performance since there is no commonly used metric for ergonomics. MSDs are included in the total recordable incidence rate, but are only one of many variables in the calculation. Reduction in incidence rate was used as one indicator of program effectiveness.

- Participants attributed 24 to 75% of recordable injuries to poor ergonomic conditions in the workplace.
- Eleven (11) participants had before and after injury statistics from which to calculate reduction. These were organizations with Proactive and Advanced programs (on the maturity curve). The annual reduction varies widely from 5.5% to 22%. The average annual reduction was 11.5%.
- Seven (7) participants experienced 10% or more annual reduction over the past 3 to 6 years. Eighty-five percent (85%) of these higher performers had programs at the Advanced or Proactive/Advanced levels of maturity.

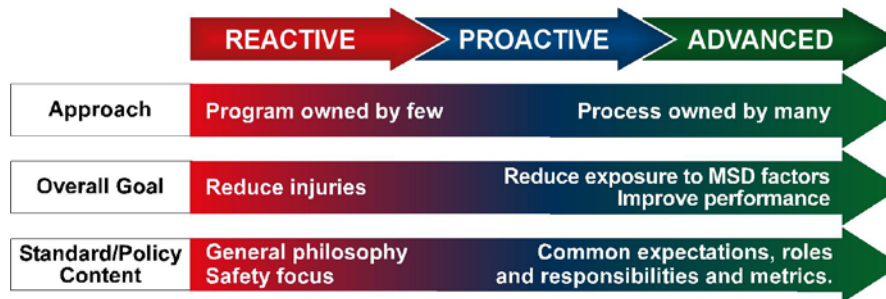
In reviewing the general program management practices, we found that as program maturity increased, involvement and ownership expanded to functional areas other than Safety, and ergonomics was integrated into other improvement initiatives.



**Exhibit 5. Trends in program maturity and general program management**

### Policy

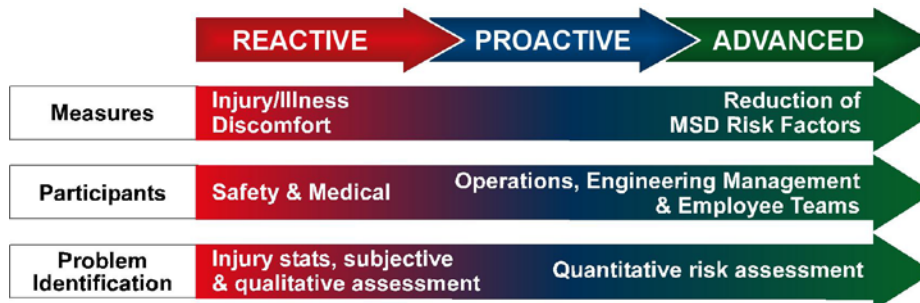
In reviewing the approaches used to establish and develop program direction and the content of program standards/policies (Policy elements), it was found that as company programs mature they; focus on managing the causes of MSDs and losses (exposure to risk factors), provide more specificity of expectations, define a clear common goal, and tend to manage the program as a process.



**Exhibit 6. Trends in Program Policy**

### Planning

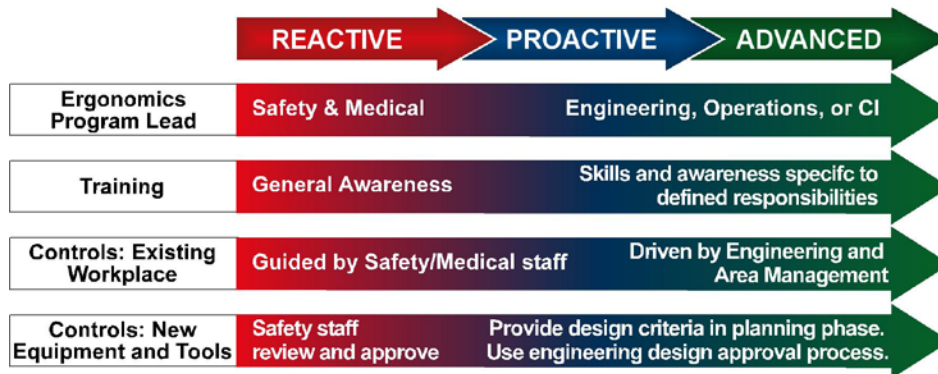
In reviewing the approaches in planning, as company programs mature, they tend to move toward leading measures based on risk, involve people outside of the safety organization and use objective quantitative methods for analysis..



**Exhibit 7. Trends in Program Planning**

### Implementation and Operations

In reviewing the practices in implementation and operations, as company programs mature, they tend to integrate the risk assessment and solution design process with existing engineering systems, include specific design criteria during the engineering review processes, and provide skills training for engineers, process leads, assessors, and senior management, aligned with their stated responsibilities.



**Exhibit 8. Trends in Program Implementation and Operations**

Checking and Corrective Action

In reviewing the practices in checking and corrective action, as company programs mature, they tend to refine their investigation of MSDs, and conduct regular follow-up reviews of job improvements and program management.



**Exhibit 9. Trends in Checking and Corrective Actions**

Management Review

All participants stated the results of program reviews are evaluated by site management. Eighty-six percent (86%) of site management teams develop improvement plans (tactical and/or strategic) to address discrepancies identified during the review.

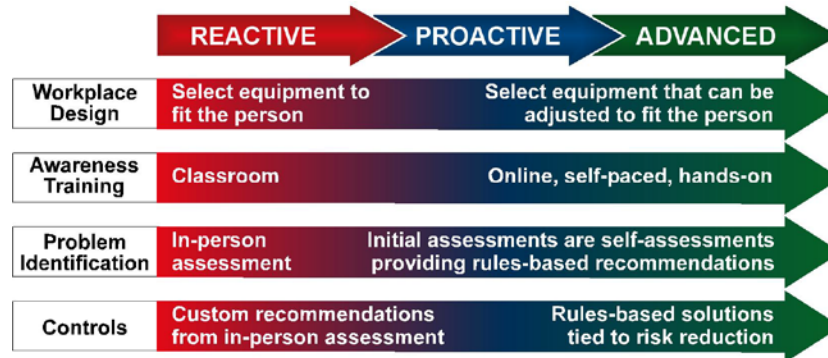
Office Ergonomics

The benchmarking study also looked more in depth at how organizations manage ergonomic issues in the office workplace. The office workplace has some characteristics that allow use of different methods and tools than those used in non-office tasks and workstations.

In reviewing the management practices of office ergonomics, as company programs mature, they are trending toward online solutions and tools that enable and empower people



to find and fix their own issues. This is a movement to focus the ergonomics specialists and team members on areas, operations, and individuals who need additional assistance.



**Exhibit 10. Trends in Managing Office Ergonomics**

## Impact of the Economic Downturn

Another new area we explored in this benchmarking study was the impact of the global economy on ergonomics programs and how improvements were managed. The results fell into three distinct categories, which varied more by the type of industry and culture of the organization, rather than the maturity of the ergonomics program:

- **No impact** – no significant impact on resources or program (23%)
- **Minor impact** – constraints on funding, and individuals’ availability and time (59%)
- **Greater impact** – loss of funding and key people supporting the ergonomics program, some changes in the overall goal and metrics (18%)

## Key Elements for Success

The benchmarking study participants identified the following five elements as key to the success of their own ergonomics program. Some elements were repeated by participants, as indicated by the number of times they were identified (in parentheses). A full list of elements is included in the benchmarking study report.

- **Policy** – Provide a clear and common goal for improvement, based on reduction of risk (8).
- **Planning** – Establish site/business unit goals and measures based on the common goals of the organization (9).
- **Implementation and Operations** – Drive the process through top management; sponsorship and leadership (13). Expand ownership/leadership to Operations and Engineering (9).
- **Checking and Corrective Action** – Conduct quantitative, follow-up assessments to validate improvements were effective (6).

## Conclusions

### Best Practices

The most common practices of the seven participating companies with the highest rate of improvement (annual reduction of injury rate of 10% or more) were identified as best practices. Following are five of the best practices for success (a full list is included in the benchmarking study report):

- Manage ergonomics as an improvement process.
- Define the roles and responsibilities (for ergonomics) for people at all levels of the organization. Include employees, engineers, supervisors, etc., and not just Safety staff and management.
- Establish a common leading goal for risk reduction and measures of results.
- Establish a program sponsor within senior level management who is accountable for the success of the program.
- Conduct follow-up assessments, using a quantifiable tool, to measure the effectiveness of workplace changes/engineering controls.

### Other Considerations

During the benchmarking interview process, we found some unique approaches for managing the ergonomic improvement process. Since they are not widely practiced, it is not appropriate to include them as key or critical activities; however, they are included for your consideration. Following are three of these practices (a full list is included in the benchmarking study report):

- Report injury/illness rate to each site once, only at the end of the year, to keep site programs focused on leading measures of proactive activities.
- Provide corporate funding for the initial investment for establishing knowledge and resources to develop and operate the site ergonomics process. Once the site program is established and sustained, the site funds the process.
- Have Product Design Engineers perform work and assembly tasks to experience what is required to assemble their design.