# IMPACT STORY

## Advancing Workplace Health & Safety with the Ontario MSD Prevention Guideline

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ONTARIO POWER GENERATION

MSD PREVENTION GUIDELINE FOR ONTARIO

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# EXECUTIVE SUMMARY

Ontario Power Generation (OPG) is one of the largest and most diverse power generators in North America, producing about half of the province's energy needs through a mix of hydroelectric stations, nuclear plants, solar, biomass and natural gas. OPG employs over 10,000 workers across many different locations and hundreds of different teams. With a wide range of occupations including physically demanding industrial jobs and office-based work, musculoskeletal disorders (MSD) were recognized as a top risk for OPG's workforce early on. OPG was a leader in ergonomics research and programs in the 1980s and 1990s, improving the understanding of MSD hazards and developing standards and guidance for electrical generation and utilities across the province.

In 2000, OPG's leadership established an ambitious vision of Zero Injuries which drove a concerted focus on injury prevention across the organization. Over the next several years, significant success was achieved in establishing a strong safety culture and reducing serious injuries. By 2007, MSDs—accounting for 40–50% of all injuries—emerged as a key barrier to achieving that goal. The challenge was that MSDs were not regarded as "serious" or caused by work activities, and the "tough it out", "just part of the job" attitude prevailed among workers. A different approach was needed from what had been used to tackle other types of safety hazards in the workplace.

That same year, the Ontario Health and Safety System released the MSD Prevention Guideline for Ontario. OPG recognized the opportunity to benefit from that new "gold standard," evidence-based guidance resource in developing a new in-house strategy for MSD prevention. A gap analysis informed a multi-year action plan rooted in management commitment and union-led worker participation. Reporting systems were upgraded to emphasize early symptoms and proactive solutions, supported by strategic communications and mandatory training. A centralized database tracked ergonomic improvements, with departments encouraged to share success stories.

Initially, MSD reports rose, which was an expected outcome of increased awareness and reporting expectations. Over time, injuries declined, and by 2012, MSDs dropped to 23% of medically treated and lost-time cases. More importantly, MSD prevention became embedded in OPG's culture, with the term "MSD" regularly used in planning, safety discussions, and proactive hazard reporting. Driving change across OPG's large, dispersed workforce was very challenging. While some initiatives were organization-wide and others locally led, overall the company made meaningful strides in reducing MSDs, contributing to advancing overall health and safety performance at OPG to new levels of excellence.

## Learn how OPG:

1. **ESTABLISHED A SYSTEMATIC APPROACH**
2. **SHIFTED ORGANIZATIONAL CULTURE**
3. **DEVELOPED A SUSTAINABLE PROGRAM**

# INTRODUCTION

## COMPANY OVERVIEW & PROBLEM

Ontario Power Generation (OPG) produces over 50% of the electricity Ontarians rely on every day through hydroelectric stations, nuclear plants, solar, biomass, and natural gas. OPG has over 10,000 employees and employs thousands of contractors.

OPG's journey around musculoskeletal disorder (MSD) reduction extends back into the early 1990's. Between 1992 – 1999, a team of ergonomists were hired across the corporation, who completed targeted ergonomic studies on high-risk jobs, extensive ergonomics training, implementation of a Participative Ergonomics program, and established improved standards and assessment services for office ergonomics. Although many jobs were made safer and many employees learned how to prevent pains and strains, it was frustrating that OPG's MSD injury rate remained around 40-50% of all injuries (Figure 1), which was similar to the trends seen in provincial statistics, as well as in other jurisdictions at the time.

Why weren't MSD injuries decreasing further? This trend led to OPG's leadership taking a step back and questioning how to approach this problem. OPG seemingly had all the right things in place:

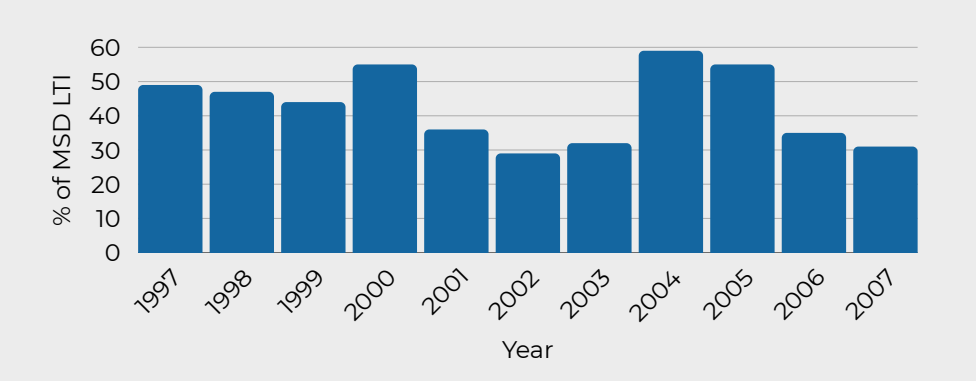


*Figure 1: Percentage of MSD lost time injury (LTI) claims from 1997-2007*

- Strong safety culture
- Health & safety reporting culture
- Ergonomists
- Good standards and tools for assessment of MSD hazards/conditions
- Training and awareness
- Instilled as a corporate wide priority
- Established process for safety hazard identification and control

Through working with front-line employees and examining safety data, it was apparent that MSDs and MSD hazards were not regarded the same way that other types of injuries and safety hazards were. This resulted in lower reporting of MSD symptoms and injuries and less identification of MSD hazards to enable prevention efforts.

# BACKGROUND

## MSD CULTURE - "OLD MINDSET"

Prior to 2007, "Cultural bias in the company and reporting MSD symptoms was seen as weakness. In OPG plants, it's a very 'macho' kind of environment so that was a problem."
*- Greg Jackson, Director, OPG Corporate Safety, 2015 CRE-MSD Conference*

# BACKGROUND

## MSD HAZARDS TREATED DIFFERENTLY THAN OTHER SAFETY HAZARDS

What do the workers in your workplace do if they see a puddle of grease on the floor or an exposed blade? Most workers know to speak up and do something about these hazards BEFORE someone gets hurt, which is known as proactive hazard identification and reporting.

What do most workers do when they see a very heavy, awkward item that needs to be moved or a task that's going to require very repetitive overhead work? Most workers likely forge ahead and try to do the task until they experience discomfort or pain, and only tell their supervisor about it if they're hurt badly enough to not be able to continue the job. This is known as reactive identification and reporting of hazards and injuries.

At OPG, people did very well at proactive reporting of safety hazards like electrical, chemical and falling objects, but the exact opposite happened for MSD hazards; most reports were only after people had gotten hurt (Figure 2).

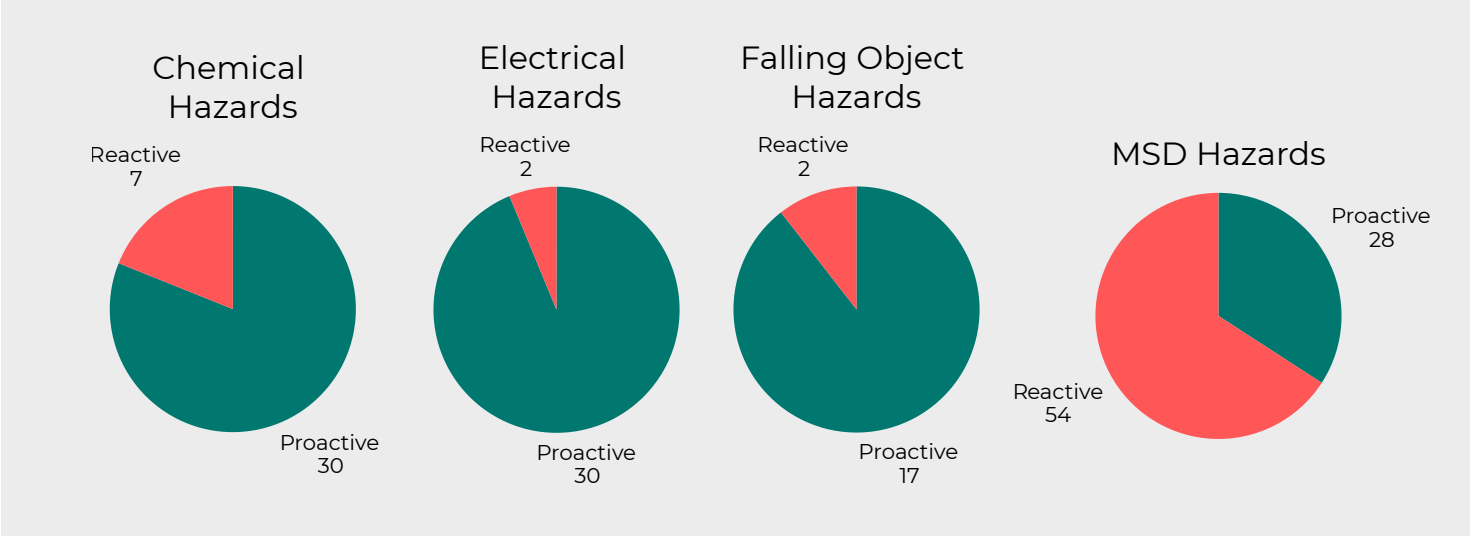


*Figure 2: Timing of hazard reporting for different types of safety hazards*

MSD hazards were not consistently dealt with in the same manner as other safety hazards. The cultural bias was that MSD injuries were a result of the person, not the task. MSD injury reports only addressed the injured worker status, not the causal factors/conditions and corrective actions to prevent reoccurrence.

Previous perception of MSD:

**"They were worker injuries, there was a problem with the worker, and that's why they were getting hurt."**

*- Greg Jackson, Director, OPG Corporate Safety, 2015 CRE-MSD Conference*

# BACKGROUND

## THE DRIVER FOR CHANGE

ZERO INJURIES Believe it. Achieve it.

In 2000, OPG's leadership set out an ambitious vision to strive for Zero Injuries. By 2007, the company had achieved great progress in reducing serious safety events like falls from heights and electrical exposures. However, despite improved safety in most areas, quite a lot of workplace injuries were still happening that required medical attention or lost time from work. When these injuries were analyzed, it was musculoskeletal disorders (MSD) that were the biggest problem – around 40-50% of all recorded injuries. It was clear that if the company was ever going to achieve Zero Injuries, something significant had to be done to reduce this last big category of workplace injuries – and that was going to take a big transformation of the culture, mindset and focus on MSD hazards.

## A STRATEGY FOR PREVENTING MSD

At the same time that OPG was turning their attention to tackling MSDs, the Ontario Health and Safety System had recognized that MSDs were a big problem in many workplaces – in fact the costliest type of injury based on WSIB claims. A team of experts had developed the ***MSD Prevention Guideline for Ontario*** to provide employers and workers with information on a systematic approach to preventing musculoskeletal disorders. OPG saw this as a perfect opportunity to follow the advice of this reputable, evidence-based source, which was setting a new standard for workplaces in Ontario in tackling their MSD challenges.


### Previous Approach to MSD Prevention

One key element that was initially recognized was that in the past, OPG's ergonomics and MSD prevention efforts had always been "add-on" or in-parallel with the rest of the health and safety program – seen as "special" initiatives with "special" people brought in (i.e., external ergonomists). While short-term success may have been achieved, those initiatives and results were not sustained. Not only that, but previous initiatives often focused on the worker (i.e., how the worker should move their body and lift things, how much weight they should lift), whereas other safety hazards focused on controlling or eliminating the hazard.

# BACKGROUND

## A STRATEGY FOR PREVENTING MSD (CONT'D)

### MSD Prevention Guideline for Ontario

The MSD Prevention Guideline incorporated the recognize, assess, control and evaluate (RACE) process, which is also applied to other types of safety hazards in a safety program and should be used for MSD hazards as well. What OPG needed to do differently was apply a systematic approach to MSD prevention, integrating and aligning with OPG's safety management system structure for hazard identification and control (i.e., procedures, forms, data collection and tracking results), just as how other safety programs were managed.

### Setting Clear Expectations, Action Plans and Reporting

A gap analysis was done comparing OPG's existing safety program against the Ontario's MSD Prevention Guideline to identify areas that OPG needed to add or re-focus efforts. The company drew up their own MSD Prevention Strategy based on the Guideline, with a plan to target certain steps in annual action plans. This formality of documenting a strategy (or "standard") set the expectation clearly for the organization, and the annual action plans ensured clarity on assignments, deadlines and progress tracking, and enabled annual reports to be prepared summarizing results, successes and challenges.

### Shifting the Workplace Culture around MSD Prevention

However, preventing MSDs is different than other safety issues like wearing hard hats and fall protection equipment. A ***"rules-based" approach*** doesn't fit well for a workforce of individuals with very different sizes, shapes, ages, strengths, fitness levels and past injuries. Individuals need to be aware of their own personal strength and limits and be motivated to protect themselves from injury and be conservative in how much to exert themselves when working. A ***"values-based" approach*** to safety was needed to drive internal motivation in workers to proactively look for MSD hazards and take action to protect themselves from overexertion and wear and tear. This was a fundamental consideration in all the tactics that were undertaken as part of the MSD Prevention Strategy – for example "hitting them in the heart" with testimonials of co-workers whose lives had been negatively impacted by MSD.

**CHALLENGE**

Despite efforts over many years to prevent MSDs, they accounted for over 40% of injuries at OPG. To achieve OPG's vision of Zero Injuries, a breakthrough in prevention of MSDs was needed.

**GOAL**

To reduce MSDs at OPG through implementation of an organization-wide MSD Prevention Strategy based on the ***MSD Prevention Guideline for Ontario.***

# PROGRAM DETAILS

## MANAGEMENT COMMITMENT

The first step recommended by the MSD Prevention Guideline for Ontario was “Management Commitment to MSD Prevention.” Everyone knows that there are always multiple competing priorities in workplaces, and front-line supervisors and managers have a lot to juggle every day to meet production and administrative expectations. Senior leadership has to not only allow for managers and workers to spend time on particular priorities, but they need to set a clear expectation and accountability to work on those priorities.

At OPG, this was key. The then Chief Nuclear Officer, Tom Mitchell (who subsequently became the Chief Executive Officer), agreed to speak to all OPG employees on video to lead the change in attitude towards MSDs through:

1. Recognizing the impacts that MSDs have on employees’ quality of life and their ability to work with excellence and enjoy their time outside of work, and
2. Setting the priority for everyone in the organization to focus on identifying and reporting MSD hazards to drive improvements to prevent these injuries.

Tom Mitchell, OPG Chief Nuclear Officer, 2006-2008

This message was communicated in multiple ways, including inserting it in the introduction of the new e-learning course being developed as mandatory training for all employees (more details ahead). Senior management named MSD prevention-related actions in the annual business plan priorities for safety, and locally, plant management set expectations for MSD prevention (as explained in following sections). Without that strong, consistent expectation communicated from the top of the house down to front-line management, it would not have been possible for time and attention to be given to MSD prevention by front-line teams.

As part of leadership’s commitment to MSD prevention, funding was allocated to hire ergonomics co-op students at each OPG nuclear station, head office, and several of the hydro-thermal stations over several years. This allowed a tremendous amount of work to be done affordably while providing excellent learning and development experiences for students in workplaces with strong safety cultures and systems.

# PROGRAM DETAILS

## WORKER PARTICIPATION IN MSD PREVENTION – HAZARD IDENTIFICATION

OPG recognized that worker-driven hazard identification and improvements are more effective, for both practical safety improvements and for worker engagement, than changes "imposed" from an outside source. Through the training and ongoing communications, all workers were encouraged to speak up to report potential MSD hazards as well as early signs and symptoms of MSDs through the existing OPG safe work planning and incident reporting processes, consistent with the expectation they were familiar with for other hazards and incidents. In addition, Joint Health and Safety Committees (JHSCs) have regular opportunities to look for hazards in their workplace inspections, so OPG added MSD hazards to the workplace inspection checklist used by JHSCs to help guide the identification of those hazards and ensure they were addressed. When "success stories" were shared (described later), recognition was given to workers and teams by naming them and/or including their photos in communications celebrating those achievements.

## PROCESS FOR MSD INJURY TRACKING

OPG staff were accustomed to using the existing incident management system to report safety hazards, incidents and injuries, and to monitor the injury rate ("AIR" – all injury rate defined as number of injuries per 200,000 hours worked) on an ongoing basis as an indicator of safety performance. This process also required incidents to be rated by severity and required corrective actions to be implemented to prevent recurrences.

To highlight the focus area of MSDs, OPG added an injury rate specific to reported MSD injuries to the monthly safety performance metrics report. This enabled management in all functions to have an eye on the prevalence of MSDs and see impacts over time of prevention efforts (including corrective actions implemented as a result of incidents). In addition, fields were added to the online injury reporting form to collect more detail on MSD injuries, enabling better analysis of the nature of these injuries and causes/contributing factors (i.e., to differentiate between repetitive activity, strain/exertion and body positioning/movement).

**INPUTS**
**(Program Investments)**

**OPG MSD Prevention Strategy and Annual Implementation Plans**

- Tripartite Committee
- All business units involved
- Ergonomics experts at each site
- Funds in safety program allocated based on risk

# PROGRAM DETAILS

## MSD PREVENTION TRAINING FOR ALL WORKERS

Education and training are critical in creating a consistent mindset and culture around preventing MSDs. Training and communications ensure that all employees understand what MSDs are, the kinds of things in their work that are hazards for MSDs, and the company's expectations and processes for reporting hazards, early MSD symptoms and injuries. If only some workers are trained while some workers and supervisors have the old mindset of "toughing it out" and not considering MSD hazards in the same way as other safety hazards, the improvement strategy will not be effective.

### e-Learning Courses


An e-learning course was developed entitled, '*MSD Awareness and Prevention,'* which covered understanding what MSDs are, MSD hazards, examples of ergonomic improvements, and the tools and processes for identifying, reporting and addressing these hazards in workers' day to day work.
Video testimonials were included from actual OPG employees who had experienced MSDs, which powerfully conveyed the personal impact of their injuries on their lives, and from managers in different departments, conveying the impact of injuries to their valued employees and their passion about the importance of preventing MSDs.

A powerful endorsement of the commitment to prioritize MSD prevention from senior management was that they agreed to make this e-learning mandatory for all employees with a deadline of one year to complete it. Taking workers off their jobs for even an hour interferes with production and is costly to the company, so it is not easy to get management agreement to add more training requirements for workers. It was a great success that over 7,000 employees completed the MSD Awareness and Prevention e-learning course in the first year.
To this day, that training (updated along the way) is mandatory for all new employees, and an additional Office Ergonomics e-learning course is available for office-based workers including training on adjusting the new standard style of office furniture in OPG offices.

A challenge to any type of training is to make sure that people take away key skills or changes in behaviour and mindset and that those changes are sustained over time. This is why continuing the conversation and maintaining a constant trickle of messaging is necessary to remind workers of how they felt when doing the training, re-invigorate their internal motivation and hear the key messages and expectations consistently repeated.

# PROGRAM DETAILS

## MSD PREVENTION TRAINING FOR ALL WORKERS (CONT'D)

### Safety Meetings

One way that ongoing training and reinforcement of messaging on MSD awareness and prevention was delivered was through safety meetings. OPG has a corporate requirement for all teams to hold regular safety meetings – 10 per year for teams working in industrial environments and 4 per year for office-based teams. This opportunity to reach employees while gathered together away from their day-to-day responsibilities to focus on safety was used to communicate MSD prevention information in a series of mandatory safety meeting presentations. The content complemented the e-learning course that all workers had taken, while prompting interactive discussion among team members about the MSD hazards in their own work and providing the opportunity for workers to share their personal experiences with MSDs.

### In-field Training

e-Learning is known to be less impactful than in-person training, so it was important to reach the teams identified as high risk for MSDs (based on MSD injury performance and hazards in their work), with face-to-face, in-field training. These interactive sessions were conducted by ergonomists and health and safety advisors where workers were guided to point out and discuss hazards in real time (building capacity for worker-driven hazard identification and solutions), and workers and supervisors were reminded about proactive reporting expectations.

### Integration of MSD into General Employee Training

Every two years, all employees were required to complete a "general employee training" e-learning course with a significant focus on safety, including any changes in rules or expectations, lessons learned from significant events, and refreshers on priority safety topics. MSD prevention was always one of the topics reviewed in this training. This was a brief but effective opportunity to reach all employees with consistent messaging and keep the culture and expectations around MSD prevention top of mind and sustained from year to year.

# PROGRAM DETAILS

## ENCOURAGE EARLY REPORTING AND BRINGING SOLUTION IDEAS FORWARD

Through the mandatory training for all employees and other communications, the expectation was established for employees to stop work and report aches, pains, strains and other MSD symptoms as soon as they were felt, and to speak up proactively during the pre-shift briefings, so that work assignments and/or work methods and equipment could be adjusted to prevent more serious injuries. If a worker reported a more serious strain or injury later (e.g., the next day), they were coached on earlier reporting, and messaging to that point was documented in the incident report to drive consistency of that expectation to others who read the incident reports across the company.

The foundation of consistent awareness and expectations had been set in year one of the strategy to drive a change in mindset around MSD hazards.

In year two, leadership set targets for the number of reports of “proactive” MSD hazards in the company incident reporting system – that is, reporting of conditions where MSD risk exists BEFORE anyone experienced discomfort or injury. For example, each department in the nuclear stations was given a target of reporting a certain number of MSD hazards per month, and as per the process for any condition or incident report, corrective actions had to be identified and documented. The Health and Safety function assisted with tracking and reporting of the data on proactive MSD hazard reporting so that the progress of all the departments against their targets could be seen by everyone. Where needed, health & safety advisors or ergonomists were brought in to help with solutions to control or eliminate the hazard. Some of the corrective actions for these reported conditions ended up being shared as “success stories” (refer to next section).

In year three, the target-setting changed to Ergonomics Change Success Stories. Targets were set for departments to share ergonomic improvement stories on a rotating basis at monthly station leadership meetings.

**Example of Proactive MSD Hazard Reporting**

A task which involved moving a very heavy load by hand in a very restricted space at floor level, while workers were on their knees or squatting, was identified as an MSD hazard. This was in a radiation area in a nuclear station where radiation-personal-protective-equipment had to be worn, further increasing the awkwardness of the posture when performing the task.

A variety of engineering (i.e., equipment) and administrative (i.e., work method and organization) controls were considered by a team of stakeholders including an ergonomist. The best possible approach for this very challenging situation was taken to prevent workers from being injured, and the learnings from that situation were documented and shared for future occurrences of the same kind of task in that station and others.

# PROGRAM DETAILS

## DEVELOP A CULTURE OF OPEN COMMUNICATION AND REPORT ON MSD PREVENTION EFFORTS

MSD hazard and incident reports were documented in the general incident reporting and management system, and a daily summary of all safety condition and incident reports was communicated through an email distribution list, which was discussed at morning station briefing meetings. In addition, several other tactics were used to share MSD prevention efforts:

- **Monthly safety performance reports**, which were distributed to and monitored by leadership in all functions, included the MSD-specific injury rate.

- A **logo** was designed for branding MSD prevention communications to help with recognition of MSD-related messaging and to maintain awareness of the focus on this topic. The character was varied from week to week, such as by adding a certain tool in its hand or carrying a box, to reflect the content of the messaging in “Ergo Tip of the Week” communications.


- **‘Ergo Tip of the Week’** communications and **success stories** were posted in weekly news emails and displayed on TV screens in common areas in stations and offices.

- In year three. **targets for ergonomic improvements** were set and each department was expected to share an ergonomic improvement in their team on a rotating basis at monthly station management meetings.

- An **Ergonomic Change Database** was developed, accessible on the employee intranet, where front-line staff and health & safety advisors could input ergonomic improvements that had been implemented in their functions and stations with photos and product information. The database had metadata fields set up to allow future searching and reporting on a variety of parameters such as MSD hazard, type of workplace, location/station, and type of equipment. This database included entries from OPG generating stations and offices all over the province. Examples of success stories were shared in various communications, and one year an “Ergo Cup” was awarded periodically to publicize and recognize a team’s efforts to make improvements to tasks to reduce MSD risk.

# DEVELOP A CULTURE OF OPEN COMMUNICATION AND REPORT ON MSD PREVENTION EFFORTS (CONT'D)

- A two-page **'MSD Injury Management Guideline' flyer** was developed jointly by the Employee Wellness and the Health and Safety teams for the Wellness team, which was provided to employees reporting MSD symptoms. This handout promoted awareness and understanding of the causes of MSD, guided employees to resources to help them identify and control MSD hazards in their work (e.g., web resources, checklists), provided first-aid advice for MSDs and guidance on seeking professional medical attention, and encouraged them to care for their overall health with good nutrition, hydration, sleep and stretching practices.

# PLANNING TO PREVENT MSD

Departments were encouraged to learn from each other through the sharing of **Ergonomic Change Success Stories**, and to search the **Ergonomic Change Database** if they had a particular challenge with a reported hazard, injury or challenge with a new task or type of equipment.

In addition, a huge initiative was undertaken to develop a **Cart Database**, where all carts across the nuclear part of the business were assessed for load capacity, initial and sustained push forces, tipping hazard and type of use. Photographs and details were documented in the database, and carts were labeled with load rating and contact information for the cart "owner" in the station. The purpose of this database was to ensure that teams referenced the database before selecting carts to use for specific tasks or to purchase new carts, to proactively minimize MSD hazards and accident risk when using carts. For example, a two-wheeled cart that needs to be tipped to roll it can be hazardous if used for the wrong type of load and/or weight of load. Any carts found to be unsafe were flagged to be removed from service.

OPG had an **engineering design process** for station or equipment modifications or new designs. Safety, ergonomics and human factors are elements in that process, and input from ergonomists, health & safety advisors and human factors engineers was included in this process when certain criteria were met.

# PLANNING TO PREVENT MSD (CONT'D)

Also, a **special project** was initiated to investigate the potential causes of MSDs and the challenges to addressing this hazard in the **group with the highest prevalence of MSD injuries**. A survey and focus group discussions were conducted with Business Services staff (primarily clerical and administrative staff with computer-intensive jobs). The quantitative and qualitative data collected was presented to the management team and to health & safety management, and action plans were developed collaboratively with input from the front-line staff. Some examples of actions taken were:

- purchasing an assortment of different ergonomic keyboards, mice/pointing devices, document holders and accessories for a "loaner library" for a large group of business services staff to try out so that they could find the best solution for their particular area of discomfort and functional needs,
- having a member of the team who worked as a yoga instructor outside of work lead stretching breaks for her team each day,
- rotation of particularly mouse-intensive tasks between staff, and
- individual ergonomics assessments for employees who had discomfort even after following the training and self-help guidance for adjusting their workstation equipment.

**OUTPUTS (Processes/Activities)**

| YEAR 1 | YEARS 2-3 | YEARS 4-5 |
|---|---|---|
| Leadership Priority | Proactive MSD hazard reporting targets | Targets for ergonomic change success stories |
| Mandatory all-employee MSD training | Safety meeting and in-field MSD training | Ergonomic change database |
| MSD injury rate tracked in safety metrics | MSD checklist for JHSC inspections | Communication of ergonomic change success stories |
| | | Cart database for safe selection of carts |

# PROGRAM OUTCOMES

## IMPACT ON MSD LOST TIME CLAIMS

Interestingly, in the first year after the OPG MSD Prevention Strategy was kicked off, a significant increase in the number of reported MSDs was seen (Figure 3, refer to difference in MSD Events between 2007 and 2008). This increase was a positive indication of the increased awareness of work-related MSDs and the expectation to report. Prior to 2008, it was very likely that MSD symptoms and injuries were happening at similar levels to that year, but workers were not reporting them as work-related injuries.

By 2012, the results of OPG's efforts were quite dramatic. Overall, All Injury Rate had dropped significantly, and MSD injuries dropped to 23% of all medically treated and lost-time injuries, down from the original 40-50% before the MSD Prevention Strategy was kicked off. This reduction in MSD injuries contributed to advancing overall health and safety performance at OPG to new levels of excellence.

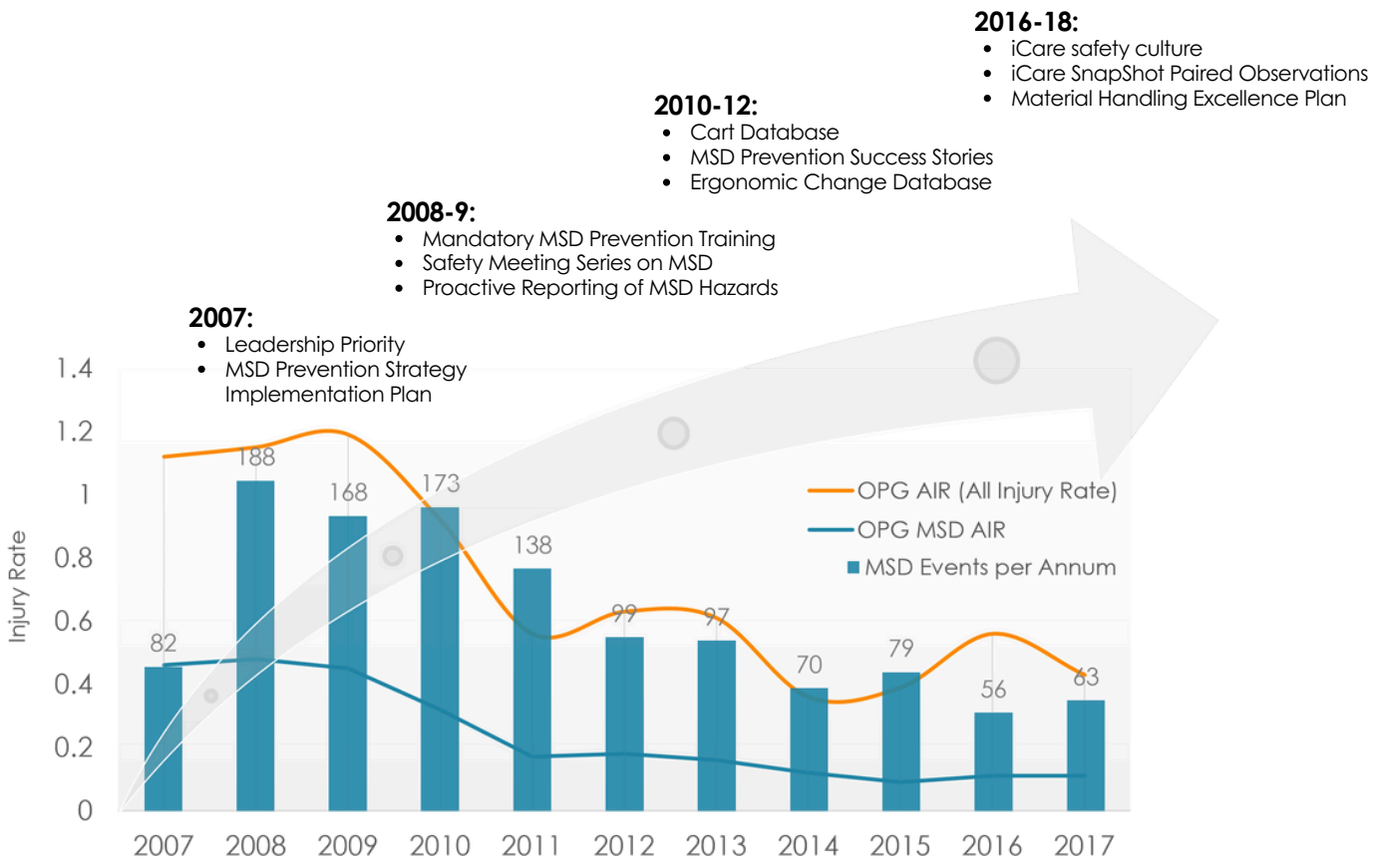


*Figure 3: Rate of injury in relation to key MSD prevention implementation phases*

# PROGRAM OUTCOMES

## CULTURE AROUND MSD HAD CHANGED

The term “MSD” was commonly heard in everyone’s vocabulary, which was previously not the case. MSD hazards were being identified and addressed in the same way as other safety hazards – discussed along with other hazards in work planning, pre-job briefings and incident reports. Early MSD symptom reporting and proactive MSD hazard reporting was normalized. The “tough it out” attitude was no longer considered “cool,” and speaking up about early MSD symptoms and hazards was the expectation and the right thing to do.

Prevention of MSDs was integrated into overall health & safety programs and processes, not a “flavour of the week” or “special” initiative that was above and beyond the regular safety program. Front-line teams were addressing everyday MSD hazards independently and seeking support for more challenging MSD hazards from Health & Safety and external experts.

### OUTCOMES/IMPACT

- **MSDs reduced from >40% to 23% of all injuries**
- Culture change around MSD seen in the focus, recognition of hazards and early reporting
- MSD hazards incorporated into safe work planning process and training the same way as other safety hazards
- Contributed to advancing health and safety performance at OPG to new levels of excellence

# REFLECTIONS

## KEY FACTORS TO SUCCESS

- Leadership and union support:
  - Champions at a leadership level who are passionate about MSD prevention can inspire others to focus on this challenge
  - Senior leadership sets the priority on MSD prevention for the organization
  - Buy-in from the union on the strategy and promoting worker engagement in MSD prevention

- Integration of MSD prevention into existing Health & Safety Management System elements, processes and programs (treating MSD hazards like any other safety hazard) for sustainability

- Front-line worker and management engagement, "ownership" of ergonomics improvements, and sharing successes

- A continuous "trickle" of MSD prevention messaging through Health & Safety communications and initiatives to sustain awareness and prioritization within the overall safety culture

- Continuing the journey: The reduction in OPG's MSD injury rates achieved several years ago continued, but the priority shifted to proactive metrics to ensure capacity for safety (i.e., the presence of defenses/controls and multiple controls to "fail safe" in safe work planning), along with the evolution of the overall health and safety program

# APPENDIX

## A. MSD PREVENTION STRATEGY LOGIC MODEL

## B. PROGRAM TIMELINE & MSD PREVENTION GUIDELINE STEPS

# OPG MSD Prevention Strategy Logic Model

## CHALLENGE

Despite efforts over many years to prevent MSDs, they accounted for over 40% of injuries at OPG. To achieve OPG's vision of Zero Injuries, a breakthrough in prevention of MSDs was needed.

## GOAL

To reduce MSDs at OPG through implementation of an organization-wide MSD Prevention Strategy based on the ***MSD Prevention Guideline for Ontario.***

## INPUTS (Program Investments)

**OPG MSD Prevention Strategy and Annual Implementation Plans**

- Tripartite Committee
- All business units involved
- Ergonomics experts at each site
- Funds in safety program allocated based on risk

## OUTPUTS (Processes/Activities)

| YEAR 1 | YEARS 2-3 | YEARS 4-5 |
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| Leadership Priority | Proactive MSD hazard reporting targets | Targets for ergonomic change success stories |
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## OUTCOMES/IMPACT

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# Program Timeline & MSD Prevention Guideline Steps

| Timeframe | Process/Activity | Step 1<br>Demonstrate Management Commitment and Leadership | Step 2<br>Facilitate and Encourage Workers' Participation | Step 3<br>Plan Hazard Identification and Risk Assessment | Step 4<br>Conduct Hazard Identification and Risk Assessments | Step 5<br>Develop a set of Targets and Goals to Eliminate Hazards & Control Risks | Step 6<br>Control Hazards & Implement Changes to Achieve Targets & Goals | Step 7<br>Provide Education and Training | Step 8<br>Evaluate Controls, the Program and the Organization's Performance | Step 9<br>Document Lessons Learned and Stakeholders' Feedback | Step 10<br>Review Processes, Achievements, and Identify Areas for Improvement |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2007 | Senior management identified the priority of MSD reduction | ● | | | | | | | | | |
| 2007 | Corporate MSD Prevention Team formed (including representatives of labour and all business units) to develop OPG MSD Prevention Strategy & Implementation Plan | ● | ● | | | ● | | | ● | ● | |
| 2007 | MSD injury rate added to safety performance metrics | ● | | | | ● | | | ● | | ● |
| 2008-2009 | Mandatory MSD Prevention Training | ● | ● | | | | | ● | | | |
| 2008-2009 | Safety Meeting Series on MSD Prevention | ● | ● | ● | | | | ● | | | |
| 2008-2009 | Proactive Reporting targets for MSD Hazards | ● | ● | ● | ● | ● | ● | | | | ● |
| 2008-2009 | MSD Hazards on JHSC Workplace Inspection Checklist | | ● | ● | ● | | | | | | ● |
| 2008-2009 | MSD Management Guidelines developed for workers and supervisors | | ● | ● | | | | ● | | | |
| 2008-2009 | Detail added to injury reporting form to provide more specific data on reported MSDs | | | | ● | | | | ● | | |
| 2010-2012 | Cart Database developed to guide selection of safest carts for certain loads and tasks to reduce risks in material handling | | | ● | ● | ● | ● | | | ● | |
| 2010-2012 | Targets set for departments across the company to implement and share Ergonomic Improvements | ● | ● | | | ● | ● | | ● | ● | |
| 2010-2012 | Ergonomic Change Database developed for sharing ergonomics improvements across the company | | ● | | ● | | ● | | | ● | |
| 2016-2018 | Implementation of "iCare" safety culture *(values-based vs. rules-based; "why I care to work safely"), relating to all aspects of safety* including MSD prevention | ● | ● | | | | | ● | | ● | ● |
| 2016-2018 | "iCare SnapShot" Paired Observations in the field with safety advisors and supervisors, on selected safety focus areas including MSD prevention; checklist and guidance provided | ● | ● | ● | ● | | | | | ● | ● |